

Compact KELMO Actuator Driven 10K Threaded Ball Valves

- ◆ EA, ED & EC Series Electric Actuators
- ◆ 100V/200V AC . 12V/24V DC . 50Hz/60Hz
- ◆ 1/4" to 2", Class 10K Bronze and Stainless Steel Threaded Ball Valves



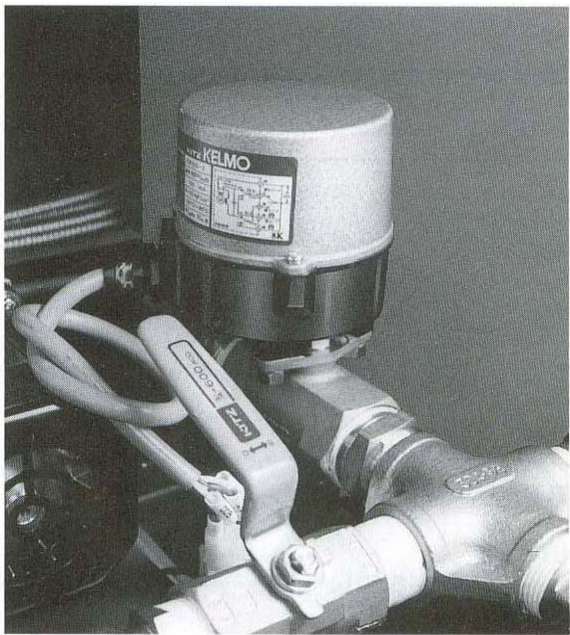
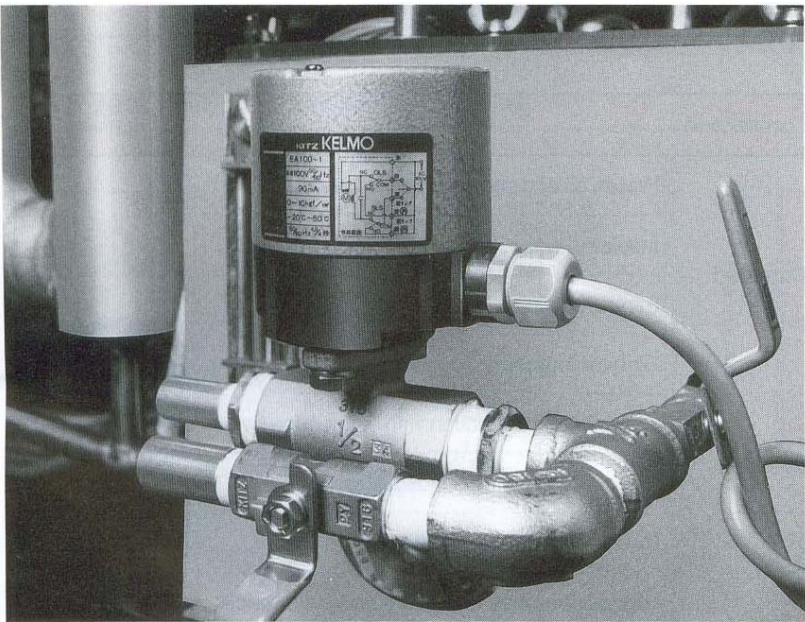
Unrivalled cost performance for electric actuation of compact ball valves for HVAC and light load industrial process

Compact KELMO Driven KITZ Threaded Ball Valve

KELMO Electric Actuators : EA,ED & EC Series
KITZ 10K Threaded Ball Valves : 1/4" to 2" Bronze & Stainless Steel

General design features

- Compact size and light weight with die cast aluminum
Housing and powerful miniature motor for economy and handling ease.
- Simple mechanism with minimized number of component parts for high durability and trouble-free service
- None of the concerns common with conventional solenoid valves, including; water hammer, pressure Loss, malfunction caused by jammed valve interior, And restricted flow direction.
- All weather type design for outdoor service.
- Availability of manual operation in case of electric failure.
- Versatile applications by means of optional built-in relay circuit for parallel drive, terminal boxes and 180° rotary mechanism for 3-way flow direction
- Safety provision to protect the motor from overheat damage caused by accidental overload.
- Factory-made actuator-to-valve assembly for off-the-Shelf supply.



Compact KELMO actuators : power sources and functional features

Type of actuator	Power source	Functional features
EA100 / EA200	100V AC 200V AC (50Hz / 60Hz)	90° bi-directional rotation
EAR100 / EAR200		90° bi-directional rotation / Built-in relay
EAB100 / EAB200		90° bi-directional rotation / Terminal box
EARB100 / EARB200		90° bi-directional rotation / Built-in relay / Terminal box
EAS100 / EAS200		180° bi-directional rotation
EASB100 / EASB200		180° bi-directional rotation / Terminal box
ED12 / ED24	12V / 24V DC	90° bi-directional rotation / Parallel drive
EC100 / EC200 / EC24	100V AC 200V AC 24V AC (50Hz / 60Hz)	90° Uni-directional rotation
ECR100 / ECR200 / ECR24		90° Uni-directional rotation / Built-in relay
ECS100 / ECS200 / ECS24		180° Uni-directional rotation
ECSR100 / ECSR200 / ECSR24		180° Uni-directional rotation / Built-in relay

Design features

- Standard reduced bore for better flow characteristics and lower pressure loss than those of conventional solenoid valves.
- Convenient size range from 1/4" through 2"
- integral actuator mounting pads enabling easy mounting or dismantling of actuators for maintenance service.
- Tight contact between PTFE ball seats and high precision machined balls for leakage-free service.
- Dezincification resistant stems made of KITZ' S special copper alloy K-metal for long service life of valve operating mechanism..
- Choice of materials : Stainless steel for corrosion resistant service and bronze or brass for general WOG service.

Design specifications

Threaded ends :	JIS B 0203
Union ends :	JIS B 2301
Maximum service pressure :	
TKE/TKVE :	5 Kgf/cm ² for 3/4" & 1"
All other valves :	10 Kgf/cm ²
Seat P-T rating :	See Page 5
Test pressure :	
BODY :	20 Kgf/cm ² (Hydrostatic)
Seat :	6 Kgf/cm ² (Pneumatic)

Ball valve designs and applications

KITZ Fig.	Material	Port	Neck	End connection	Applications	Actuator		
TE	BC	2-way	Short	Threaded	Water ,oil and gas service	EA100/200 EAR100/200 EAB100/200 EARB100/200 ED12/24		
TLE			Long		Insulated water, oil and gas piping			
TNE		Horizontal 3-Way	Short		Simplified piping system			
TGE		2-Way			High temperature piping/Packing Retightening			
TUE				Male and female	Easy piping connection with union rings			
TLUE				Threaded	Easy connection for insulated Piping			
UTE	SCS14		Long	Threaded	Corrosion resistant service			
UTGE		High temperature corrosion resistant service						
TNVE	BC	Vertical 3-Way			Short	Threaded	Simplified piping system	EAS100/200 EASB100/200
TKE	Chrome plated C3771 BE	2-Way					Water , oil and gas service	EC100/200/24 ECR100/200/24
TKVE		Vertical 3-Way	Simplified piping system	ECS100/200/24 ECSR100/200/24				

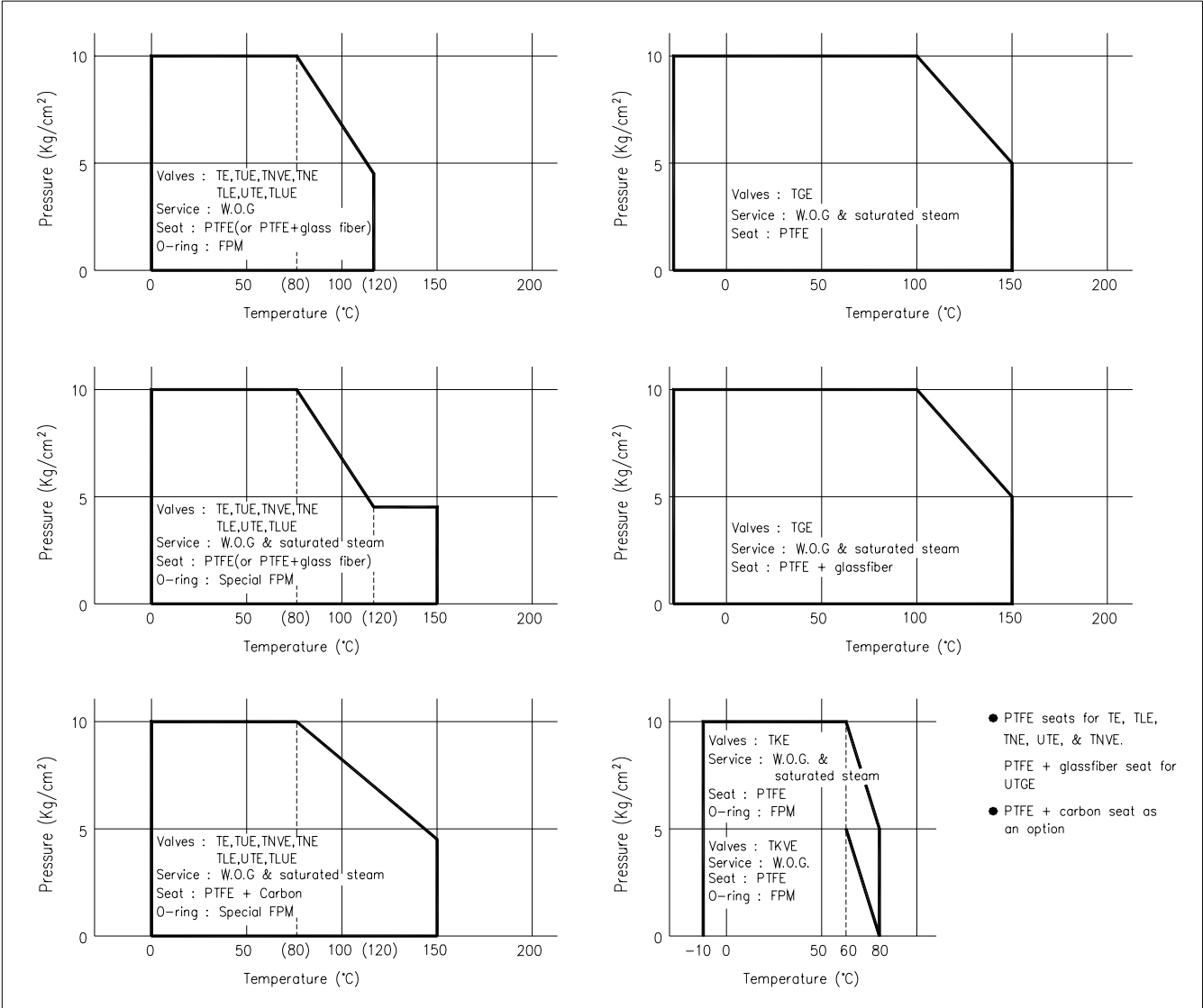
Note: Versatility in mounting KELMO actuators on KITZ ball valves is limited as indicated in the table. It is not recommended to mount KELMO actuators on KITZ ball valves in any combination other than specified here.

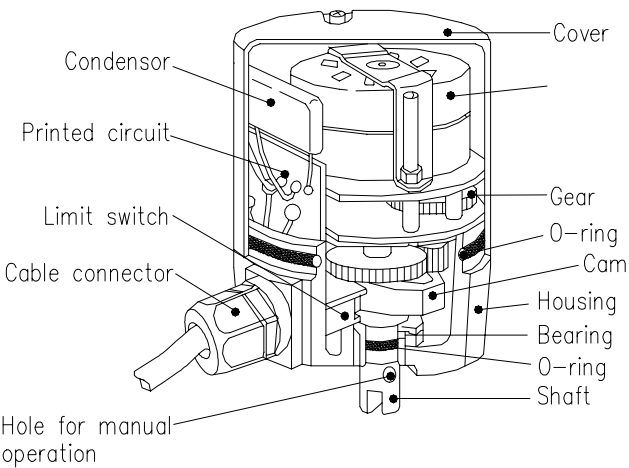
Compact KELMO Driven Ball Valves

Valve flow coefficient (Cv for fully opened valves)

Valve. size Fig.	1/4	3/8	1/2	3/4	1	1¼	1½	2
TE,TLE	–	2.1	5.6	15	27	45	85	120
TNE	0.5	1	3	6	11	17	28	37
TGE	–	2.1	5.6	15	27	–		
TUE,TLUE	–	–	4	8	–	–		
UTE,UTGE	1	2	5	10	15	20	37	60
TNVE	–	–	3	7.3	13	–		
TKE	1.3	3	4.5	7.9	14	–		
TKVE	–	–	2.2	3.9	7			

PTFE seat pressure-temperature rating

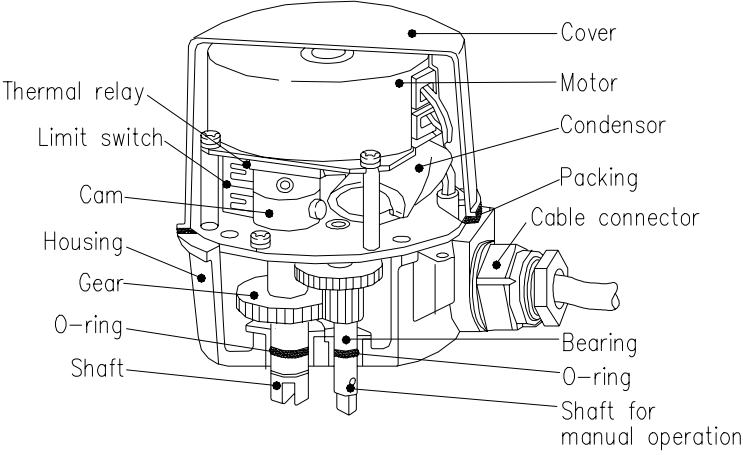




EA100/EA200 Size 1

Type EA actuator design specifications

EA100/200		Size 1	Size 2
Power source		100V/200V AC610%	
Rated current (Ma)	100V AC	90	150
	200V AC	50	80
Starting current		Rated current x 1.3	
Max. power consumption(W)		9/10	15/16
Rated time (Minute)		5	10
Valve closing rime (Seconds)	50Hz	4.8	12
	60Hz	4	10
Position limit switch		Open / Close	
Output torque (kgf-cm)		18	70
Rotating direction		Bi-directional(90°)	
Insulation class		JIS Class E	
Insulation resistance		Minimum 10M Ω (DC500V)	
Overload protection		Impedance protection	Thermal protection
Standard protection		Weather proof	
Ambient temperature (°C)		-20 to +50	120 to +80
Mounting position		Vertical to horizontal	
Wiring		Vinyl5-cord(30cm long)	
		0.3mm ²	0.5mm ²

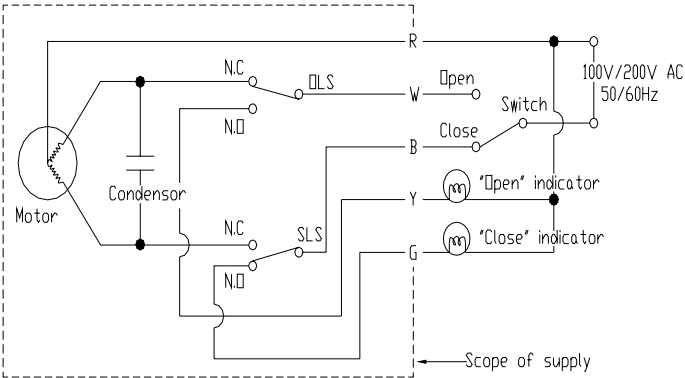


EA100/EA200 Size 2

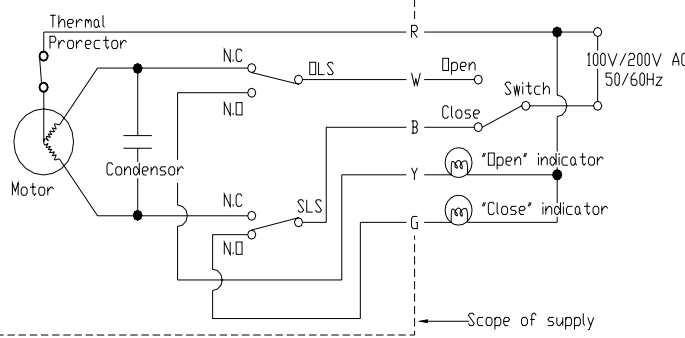
Type EA actuator circuit diagrams

(with the valve fully closed)

EA100/200 Size 1



EA100/200 Size 2



* Wire color : R red W white B black Y yellow G green

* Actuator rotates :

R-W : Counter-clockwise to fully open the valve.

R-B : Clockwise to fully close the valve

* Limit switches activate.

OLS : on fully opening the valve

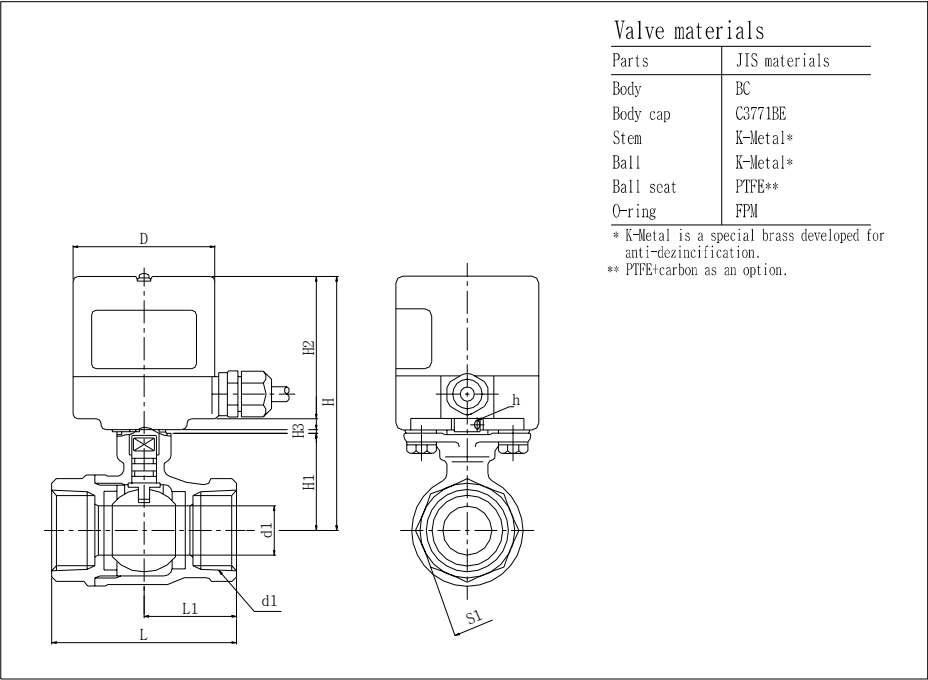
SLS : on fully closing the valve

Type EA Electric Actuators/Class 10K Bronze Ball Valves

KITZ Fig. EA100/200-TE

Actuator Size 1

Valve size 3/8" to 3/4"



Dimensions

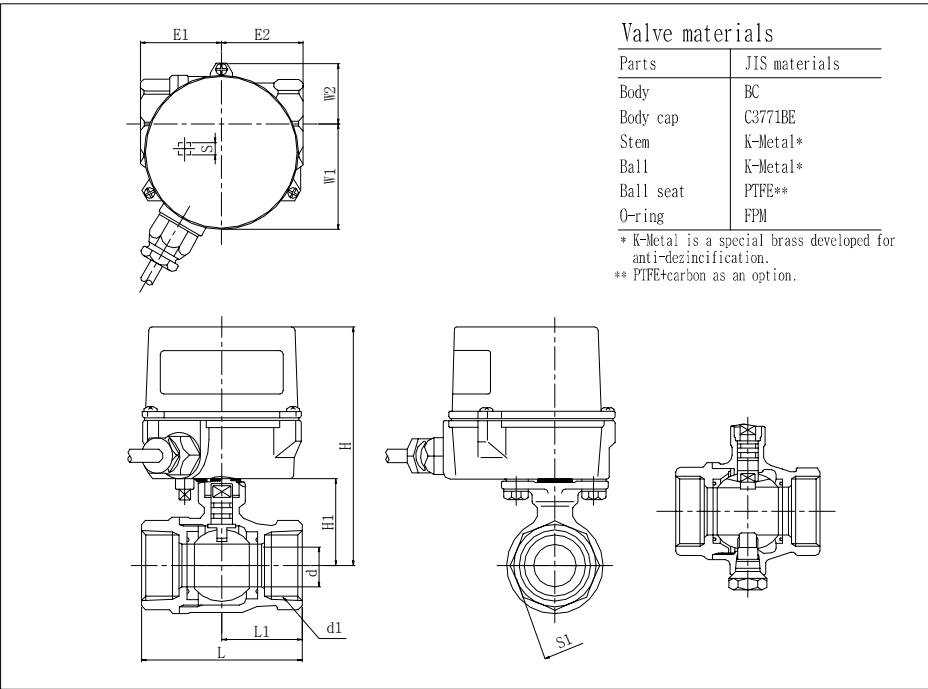
mm

Valve size (inch)	d	d	H	H	L	L	S	Actuator				
								H	H	D	h	Type
3/8	7.5	Rc3/8	94	28	46	22	22	60	5	60	4	EA100/200-1
1/2	10	Rc1/2	99.5	33.5	65	32.5	28					
3/4	15	Rc3/4	103.5	37.5	68	34	34					

KITZ Fig. EA100/200-TE

Actuator Size 1

Valve size 3/8" to 3/4"



Dimensions

mm

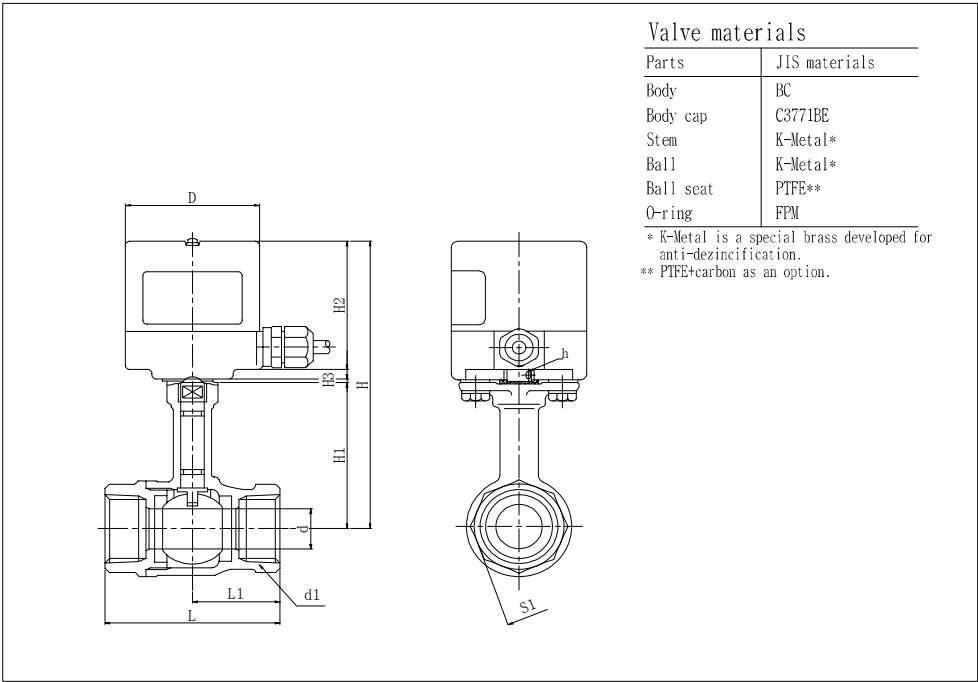
Valve size (inch)	d	d	H	H	H ↘	L	L	S	Actuator					
									E	E ↘	W	W ↘	S	Type
1	20	Rc1	117.5	41.5	—	79	39.5	41	39	39 ↘	52	30 ↘	5.5	EA100/200-2
1¼	25	Rc1¼	121.5	45.5	—	86	43	50						
1½	32	Rc1½	135.5	59.5	53.5	96	48	56						
2	40	Rc2	141.5	65.5	60	109	54.5	68						

Type EA Electric Actuators/Class 10K Long Neck Bronze Ball Valves

Kitz Fig. EA100/200-TLE

Actuator Size 1

Valve size 1/2" & 3/4"



Dimensions

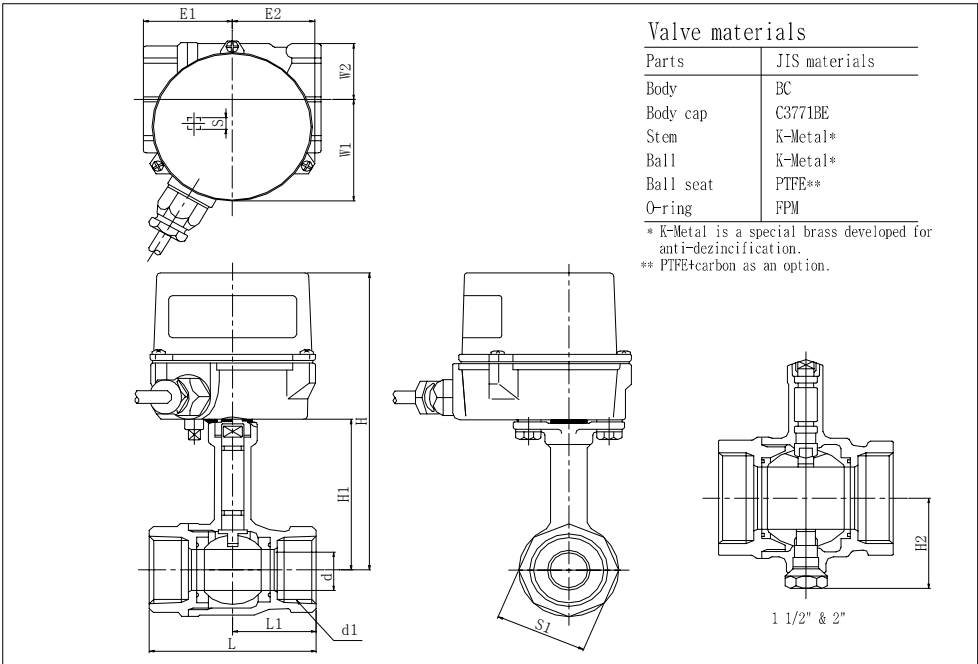
mm

Valve size (inch)	d	D	H	H	L	L	S	Actuator				
								H	H	D	h	Type
1/2	10	Rc1/2	122	56	56	28	27	60	5	60	4	EA100/200-1
3/4	15	Rc3/4	126.5	60.5	65	32.5	33					

Kitz Fig. EA100/200-TLE

Actuator Size 2

Valve size 1" & 2"



Dimensions

mm

Valve size (inch)	d	d	H	H	H	L	L	S	Actuator					
									E	E	W	W	S	Type
1	20	Rc1	139	64	-	78	39	41	39	39	52	30	5.5	EA100/200-2
1¼	25	Rc1¼	155	80	-	86	43	51						
1½	32	Rc1½	158	83	53.5	96	48	58						
2	40	Rc2	165	90	60	109	54.5	71						

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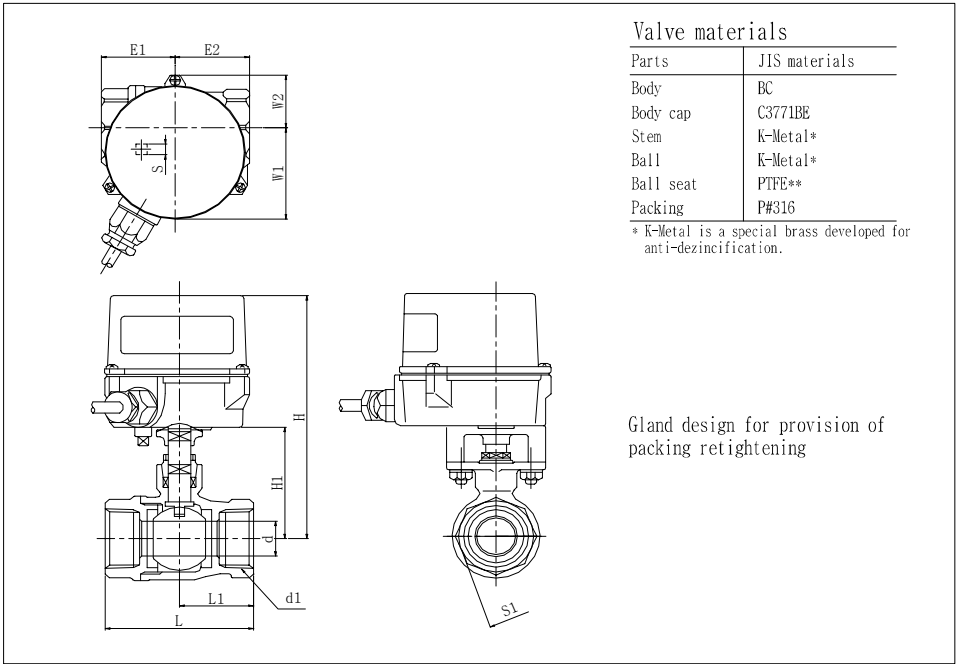
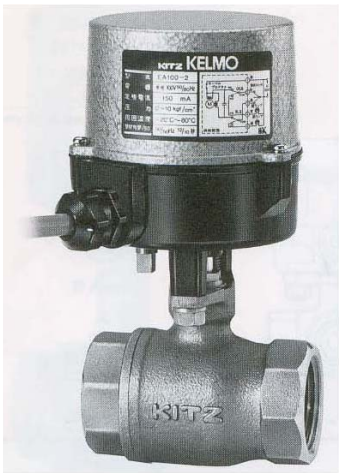
Valve size (inch)	d	Compact KELMO Driven KITZ Threaded Ball Valve										or				
					\			\		-	E	E	W	W	S	Type
1	20	Rc1	118	42	-	79	39.5	39.5	41	-	39	39	52	30	5.5	EA100/200-2
1¼	25	Rc1¼	123	46.5	-	89	44.5	44.5	50							
1½	32	Rc1½	135	59.2	53.5	100	50	50	56							
2	40	Rc2	142	65.5	60	115	57.5	57.5	68							

Type EA Electric Actuators/Class 10K Bronze Ball Valves

Kitz Fig. EA100/200-TGE

Actuator Size 1

Valve size 3/8" to 1"



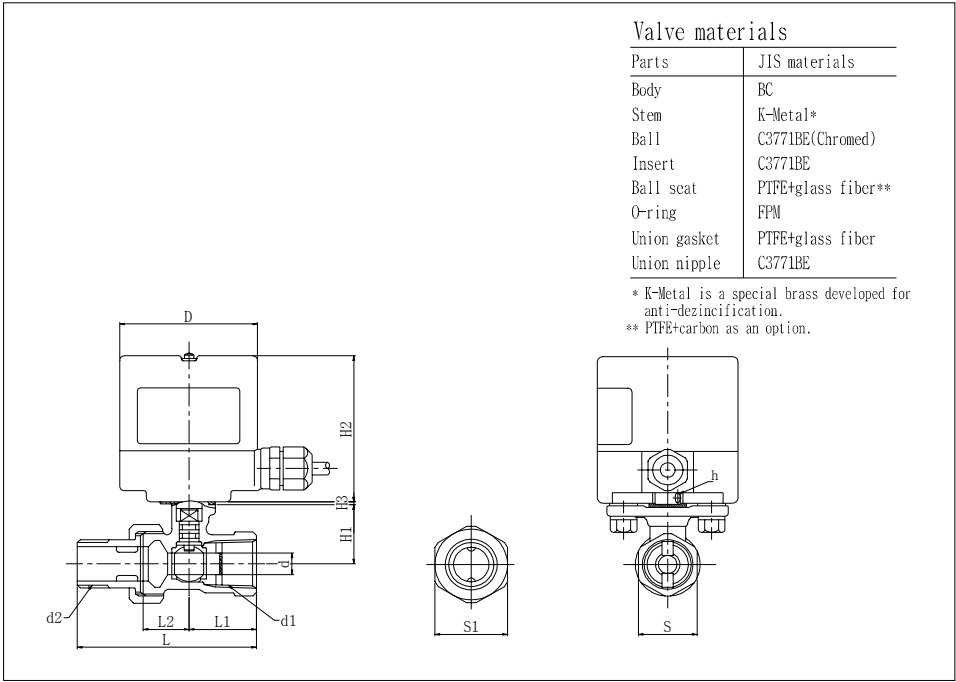
Dimensions

Valve size (inch)	d	d	H	H	L	L	S	Actuator					
								E	E	W	W	S	Type
								39	39	52	30	5.5	EA100/200-2
3/8	7.5	Rc3/8	123	48	46	22	21						
1/2	10	Rc1/2	128.5	53.5	65	32.5	21						
3/4	15	Rc3/4	132.5	57.5	68	34	28						
1	20	Rc1	136.5	61.5	79	39.5	34						

Kitz Fig. EA100/200-TUE

Actuator Size 1

Valve size 1/2" & 3/4"



Dimensions

Dimensions

mm

(8)

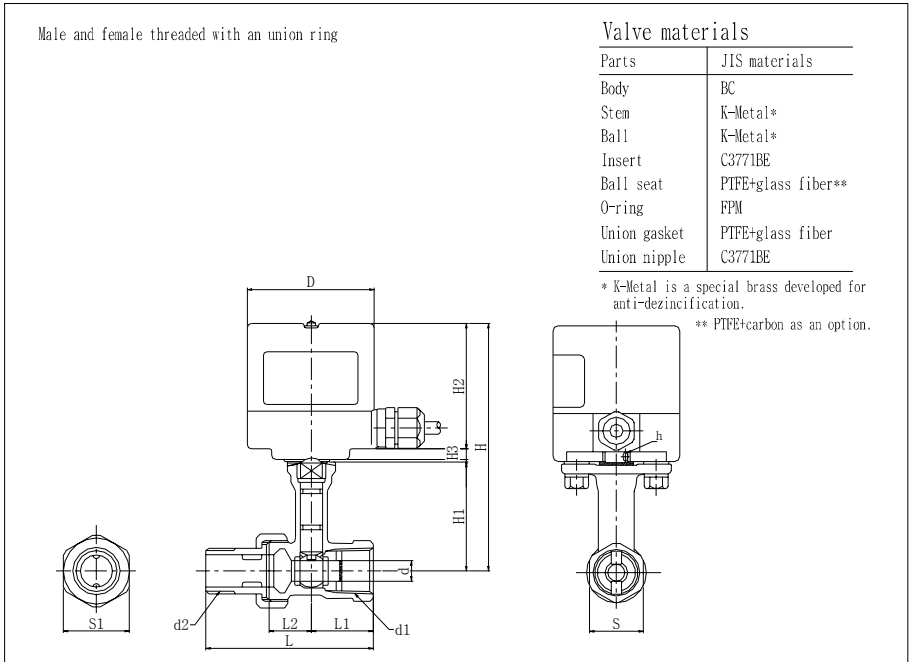
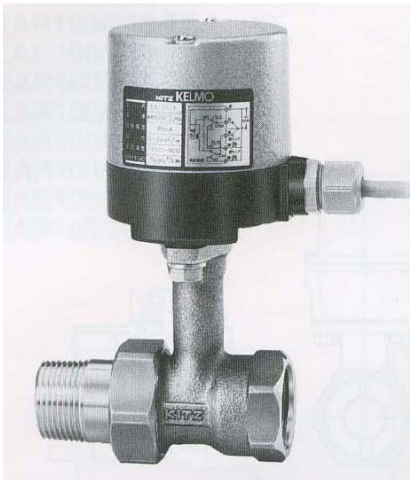
Valve size (inch)	d	Compact KELMO Driven KITZ Threaded Ball Valve											Actuator			
			\					\				H	H	D	h	Type
												60	5	60	4	EA100/200 -1
1/2	9.2	Rc1/2	R1/2	92	26	78.5	29	20	25	31						
3/4	12.5	Rc3/4	R3/4	94.5	28.5	81	29	20	32	36						

Type EA Electric Actuators/Class 10K Long Neck Bronze Ball Valves

Kitz Fig. EA100/200-TLUE

Actuator Size 1

Valve size 1/2” to 3/4”



Dimensions

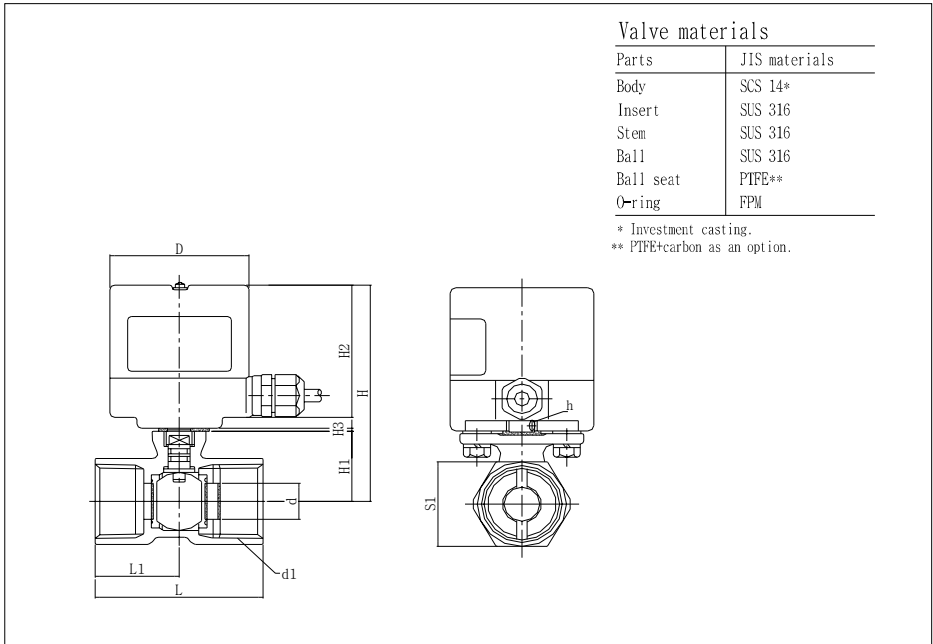
Valve size (inch)	d	d	d	H	H	L	L	L	S	S	Actuator				
											H	H	D	h	Type
1/2	9.2	Rc1/2	Rc1/2	118.5	52.5	78.5	29	20	25	31	60	5	60	4	EA100/200-1
3/4	12.5	Rc3/4	Rc3/4	121	55	81	29	20	32	36					

Type EA Electric Actuators/Class 10K Stainless Steel Ball Valves

Kitz Fig. EA100/200-UTE

Actuator Size 1

Valve size 1/4” & 1”



Dimensions

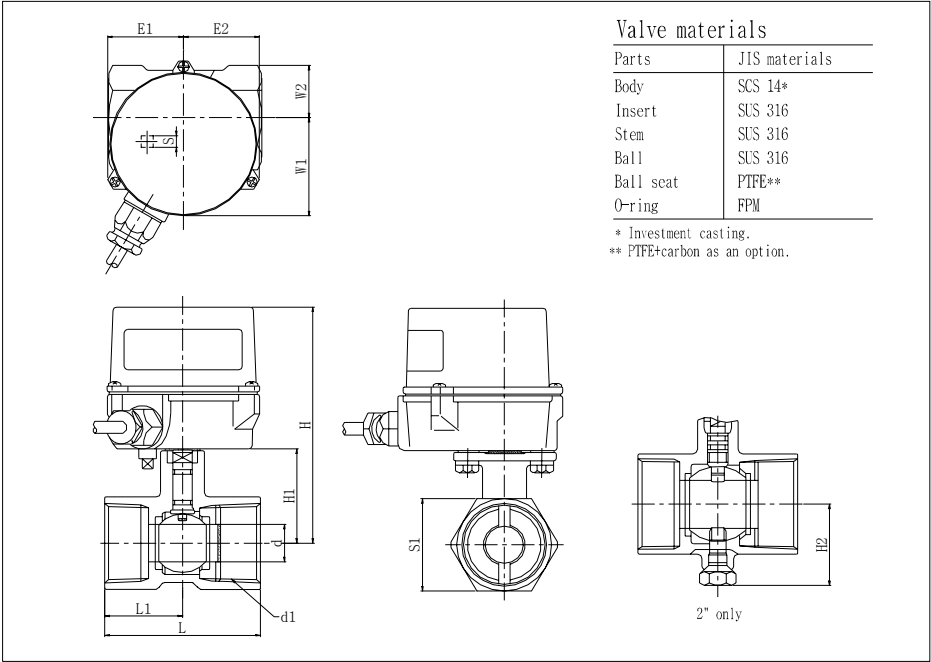
Valve size (inch)	d	d	H	H	L	L	S	Actuator				
								H	H	D	h	Type
1/4	5.3	Rc1/4	92	27	44	21	21	60	5	60	4	EA100/200-1
3/8	7.7	Rc3/8	92	27	44	21	21					
1/2	9.2	Rc1/2	92	27	56.5	27.5	25					
3/4	12.5	Rc3/4	95	30	59	30	32					
1	16	Rc1	98	33	71	36	38					

Type EA Electric Actuators/Class 10K Stainless Steel Ball Valves

Kitz Fig. EA100/200-UTE

Actuator Size 2

Valve size 1 1/4" to 2"



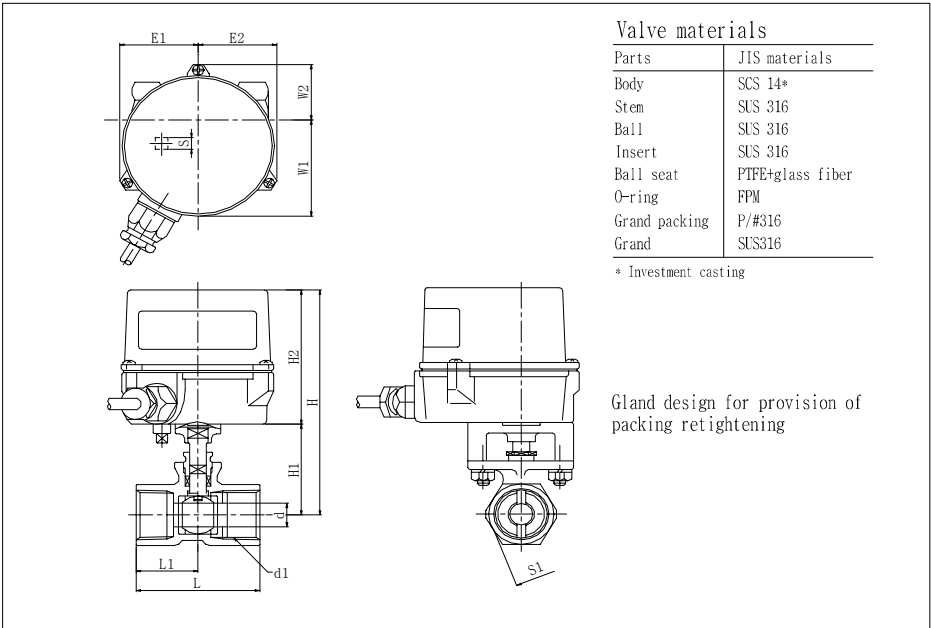
Dimensions

Valve size (inch)	d	d	H	H	H	L	L	S	Actuator					
									E	E	W	W	S	Type
									39	39	52	30	5.5	EA100/200-2
1 1/4	20	Rc1 1/4	125	49.5	-	78	40	49						
1 1/2	24.5	Rc1 1/2	128	52.5	-	83	42.5	53						
2	32	Rc2	134	58.5	53.5	100	51	65						

Kitz Fig. EA100/200-UTGE

Actuator Size 2

Valve size 1/4" & 1"



Dimensions

Valve size (inch)	d	d	H	H	L	L	S	Actuator						
								-	E	E	W	W	S	Type
								-	39	39	52	30	5.5	EA100/200-2
1/4	5.3	Rc1/4	121	46	44	21	21							
3/8	7.7	Rc3/8	121	46	44	21	21							
1/2	9.2	Rc1/2	121	46	56.5	27.5	25							
3/4	12.5	Rc3/4	123	48	59	30	32							
1	16	Rc1	127	52	71	36	38							