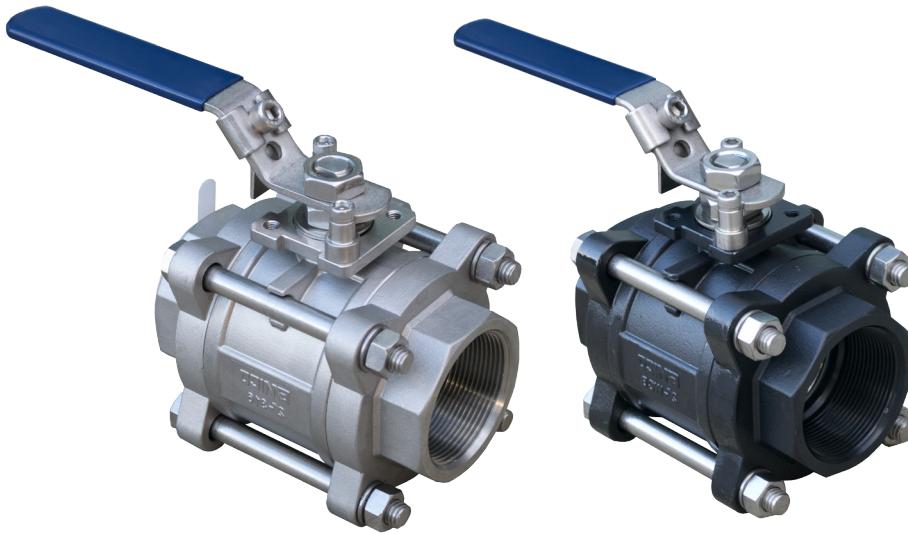


# EMICO

FIG. EA-305 3-PIECE FIRESAFE BALL VALVES



**AGA-APPROVED MANUAL & AUTOMATIC**



### DESIGN

WALL THICKNESS:	- EN12516-1, PN63
BODY:	- Investment Castings
TEST, SHELL & SEAT:	- API 598. Shell Test Pressure 10350 kPa
SEALING:	- Bubble-tight bi-directional
WORKING PRESSURE:	- 6900 kPa (1000 PSI)
FIRESAFE TEST:	- API 607 Edition 4. Tested and Certified in USA
TEMPERATURE RANGE:	- -29° to 232°C
AGA APPROVALS:	- (i) Manual Shut-off Class 1 AS 4617-2004 (Incl. Amd1) Certificate No. 8427  - (ii) Automatic Shut-off Valve & Vent Valve Class 1 AS 4629-2005 (Incl. Amd1) Certificate No. 8435





**AGA CERTIFIED PRODUCT**

**AGA**

**JAS-ANZ**

Certificate Holder: **EAYUAN METAL INDUSTRIAL CO., LTD**  
 ABN/ACN No. (if applicable): **N/A**  
 Manufacturer: **Eayuan Metal Industrial Co., Ltd**  
 Agent (if applicable): **N/A**  
 Type of Component: **Class 1 Manual Shut Off Ball Valves**  
 Model No. & Description: **EMICO EA-305**  
*(Refer [www.aga.asn.au](http://www.aga.asn.au) for more details)*  
 Sizes: **DN8, DN10, DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80**  
 Maximum Working Pressure: **5000 kPa**  
 Working Temperature Range: **0°C to 60°C**

Relevant Standard(s): **AS 4617 – 2004 (Incorporating Amendment Nos. 1 & 2)**

This is to certify that the particular **COMPONENT** specifically described herein and supplied to The Australian Gas Association (hereafter called the AGA) by the Certificate Holder named above has been subject to "type-testing" and assessed by the AGA to comply with the requirements of the AGA's Product Certification Scheme for Type Tested Gas Products.

**This Certificate is issued on the express conditions that:**

- (i) The Certificate Holder undertakes to comply with the Rules Governing The AGA's Product Certification Scheme (hereafter called the Rules Governing);
- (ii) This Certificate remains the property of the AGA; and
- (iii) The AGA reserves the right to cancel this Certificate in accordance with the Rules Governing, and in such an event the Certificate Holder undertakes to surrender the Certificate to the AGA upon request.

**COMPONENT**

Client Manager

Certificate Authorised

Certificate first issued: **23 May 2017** Certificate No: **8427**  
 This copy valid from: **23 May 2017** Refer specification issue: **01**

QF714/11 This Certificate issued by The Australian Gas Association ABN 98 004 206 044

**EMICO**

AGA Certificate No: **AGA 8427 G (5000kpa)**

**Fig. EA - 305**

**Manual Valve Lever Handle Data**

**Automatic Shut-off and Vent Valve Name Plate Data**

Australian Standard AS 4629-2005 (Amdt 1)  
**AGA Certificate No. AGA 8435 G**

Automatic Shut-Off Valves, Class 1  
 Automatic Vent Valves, Class 1

Valve Model: EA-305  C  A

Ends:  NPT  BSP  SW  Flanged

Serial No: M/D: P/T: 5000kPa / 0~60°C

Fitted with Emico EA-SR Actuator, Burkert 6519 Solenoid, ALS-400M2 Limit Switch

Supplied by: 03 9878 8653

**AGA CERTIFIED PRODUCT**

**AGA**

**JAS-ANZ**

Certificate Holder: **EAYUAN METAL INDUSTRIAL CO., LTD**  
 ABN/ACN No. (if applicable): **N/A**  
 Manufacturer: **Eayuan Metal Industrial Co., Ltd**  
 Agent (if applicable): **N/A**  
 Type of Component: **Class 1 Automatic Shut Off Valves**  
 Model No. & Description: **EMICO EA-305**  
*(Refer [www.aga.asn.au](http://www.aga.asn.au) for more details)*  
 Sizes: **DN8, DN10, DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80**  
 Maximum Working Pressure: **5000 kPa**  
 Working Temperature Range: **0°C to 60°C**

Relevant Standard(s): **AS 4629 – 2005 (Incorporating Amendment Nos. 1 & 2)**

This is to certify that the particular **COMPONENT** specifically described herein and supplied to The Australian Gas Association (hereafter called the AGA) by the Certificate Holder named above has been subject to "type-testing" and assessed by the AGA to comply with the requirements of the AGA's Product Certification Scheme for Type Tested Gas Products.

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**COMPONENT**

Client Manager

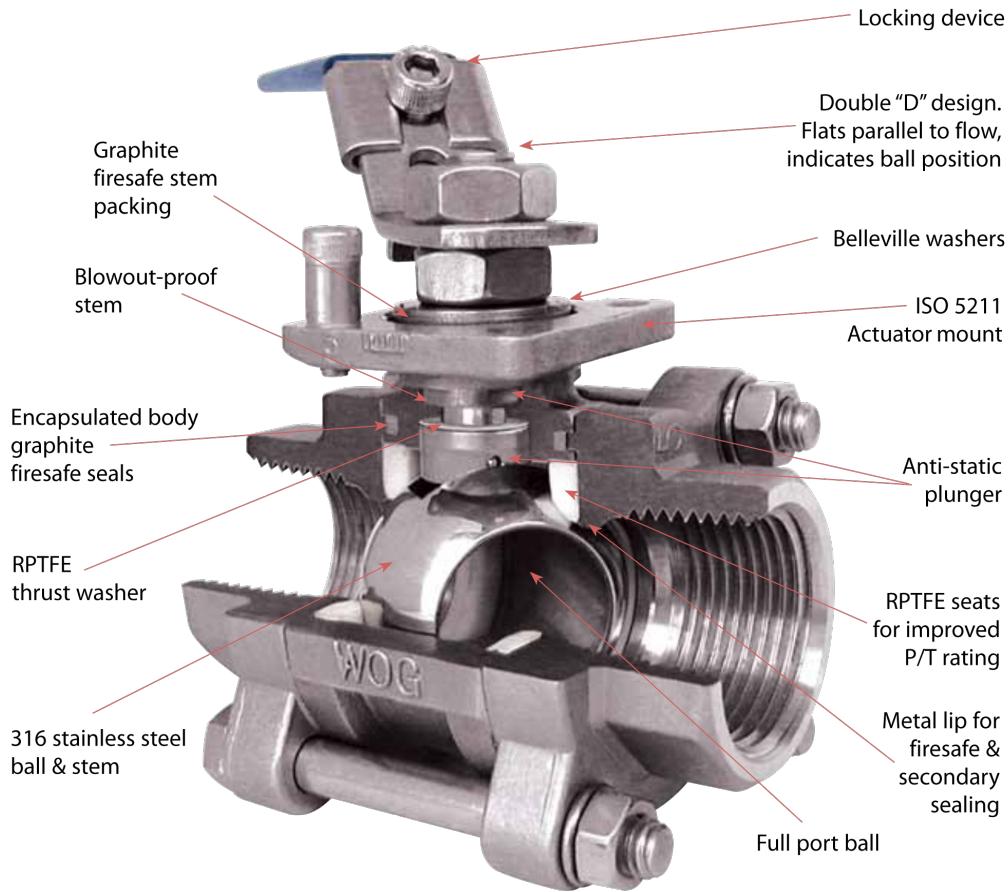
Certificate Authorised

Certificate first issued: **23 May 2017** Certificate No: **8435**  
 This copy valid from: **23 May 2017** Refer specification issue: **01**

QF714/11 This Certificate issued by The Australian Gas Association ABN 98 004 206 044



**FIG. EA-305 BALL VALVE FEATURES**

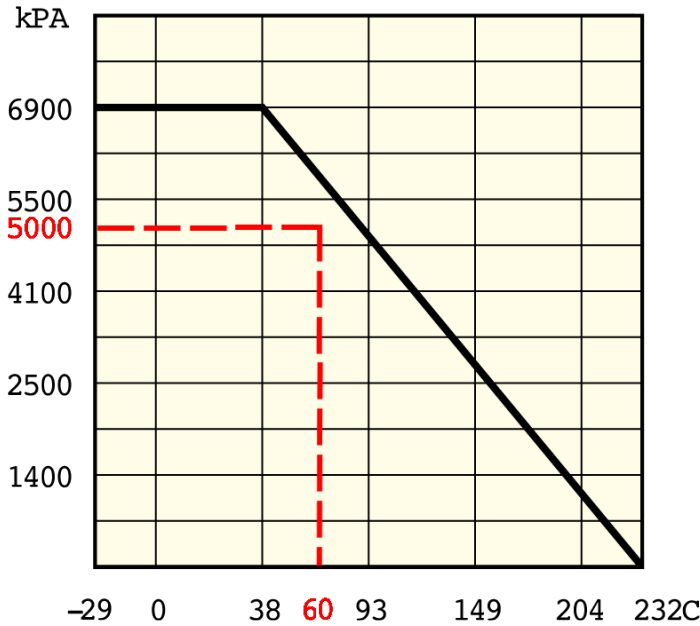


**FEATURES**

<b>FULL PORT:</b>	- No pressure drop
<b>ANTI-STATIC PLUNGER:</b>	- Positive earthing of ball and stem to valve body. Prevents static electricity build-up in ball.
<b>BLOWOUT-PROOF STEM:</b>	- Internally fitted back-seated stem provides anti-blowout function under pressure.
<b>LOCKING DEVICE ON LEVER:</b>	- Open and closed position locks.
<b>BELLEVILLE WASHERS ON STEM:</b>	- Live loaded gland packing for long cycle life.
<b>ISO5211 ACTUATOR MOUNT:</b>	- Standard mounting for all modern pneumatic actuators.
<b>ACTUATION OPTIONS:</b>	- Spring-close and double-acting actuated valves from stock or stock components.
<b>END CONNECTION OPTIONS:</b>	- NPT, BSP, SW, BW ends (pipe or tube), Flanged.
<b>HEAT NUMBERED, DATED:</b>	- Fully certified and traceable. Date of manufacture on body castings.
<b>REPAIR KITS:</b>	- Comprising seats, body seals, gland packing and thrust washer from stock.
<b>SIZE RANGE:</b>	- 8mm through 100mm
<b>PRESSURE RELIEF:</b>	- Internal pressure equalising vent (ball drilled with upstream pressure relief vent hole) can be supplied for certain applications (i.e. ammonia, chlorine, etc.) Heating of trapped media in body cavity can cause pressure rise, permanently distorting seats or ball.



PRESSURE & TEMPERATURE RATING



\*Red dashed line signifies AGA product testing of valves 5000kPa @ 60°C

**Maximum pressure over working temperature range:**

For standard valve: 0kPa @ 232°C  
As AGA-tested valve: 5,000kPa @ 60°C

**Maximum temperature over working pressure range:**

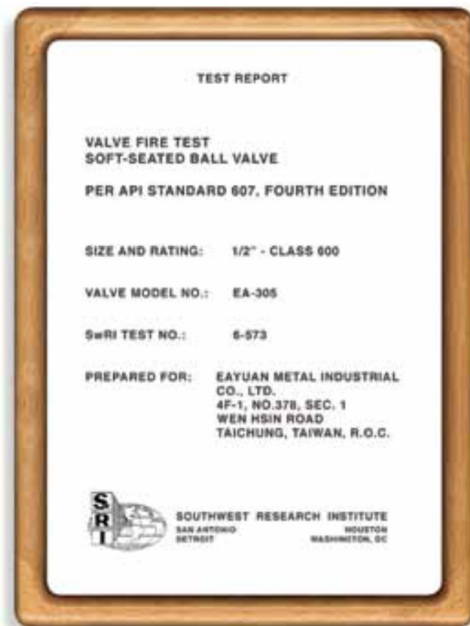
For standard valve: 38°C @ 6,900kPa  
As AGA-tested valve: 60°C @ 5,000kPa

**Type of Valve:**

Ball Valve

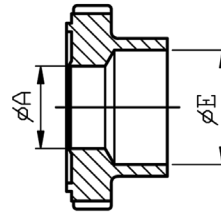
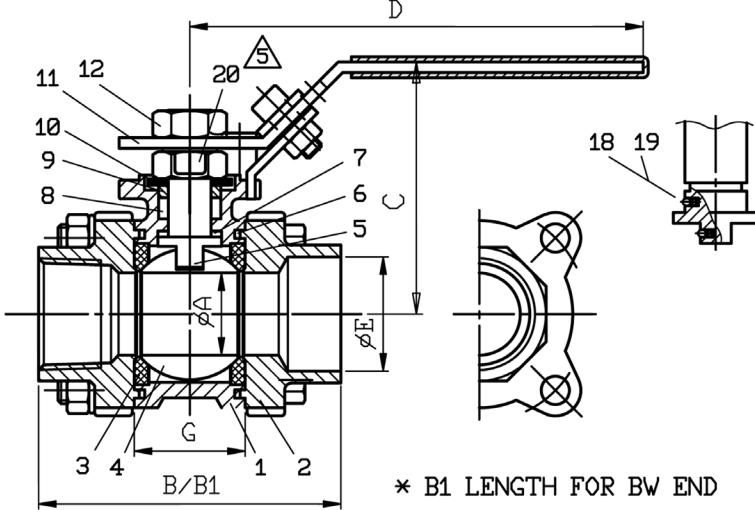
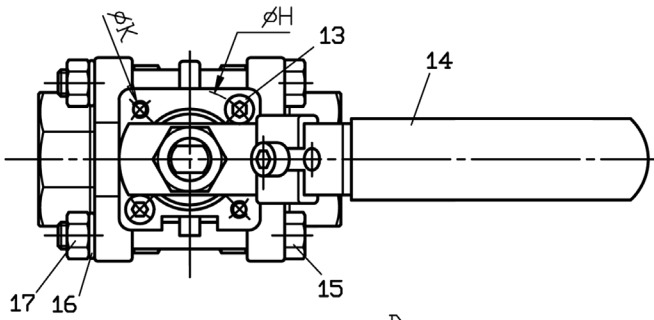
**Class of AGA Automatic shut-off valve:**

Class 1

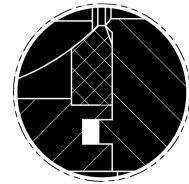


Fire-Safe Test Reports To API 607 Ed.4

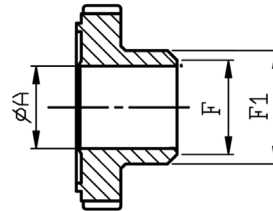
**Size: 8 ~ 50mm**



SW

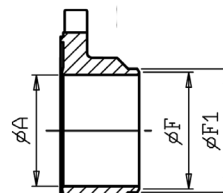
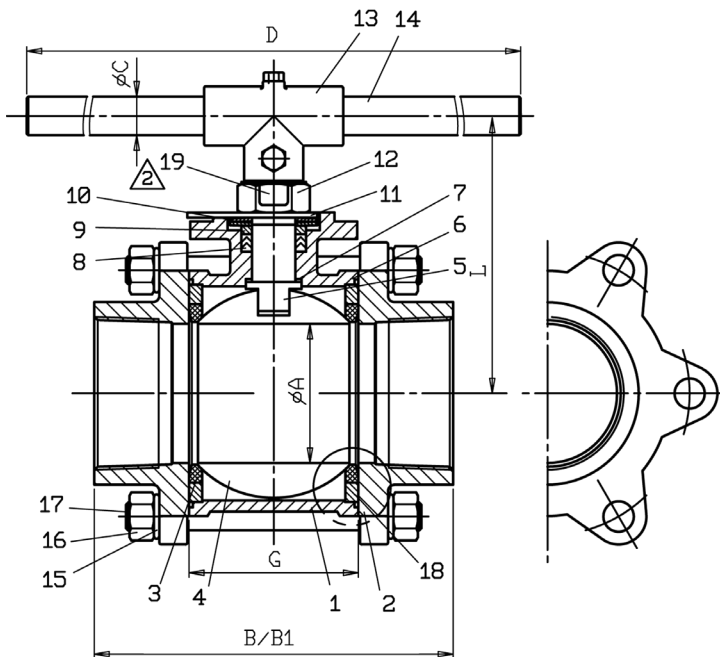


Fire Safe  
Seat and  
Graphite  
Body Seal  
Detail

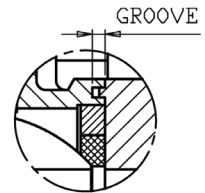


BW

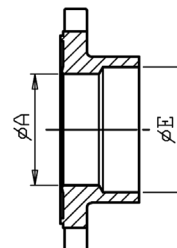
**Size: 65 ~ 80mm**



BW



FIRE SAFE DETAIL



SW

Face to Face according DIN 3202 M3/S13  
Permissible deviations  $\pm 2\text{mm}$  \* B1 LENGTH FOR BW END

**FIG. EA-305 BALL VALVE B.O.M. & DIMENSIONS**



ITEM	PART	MATERIALS		QTY
		Fig. EA-305A 316 Stainless Steel	Fig. EA-305C Carbon Steel	
1	BODY	ASTM A351 CF8M	ASTM A216 WCB	1
2	END CAPS	ASTM A351 CF8M	ASTM A216 WCB	2
3	SEATS	PTFE +15% G.F.	PTFE +15% G.F.	2
4	BALL	ASTM A351 CF8M	ASTM A351 CF8M	1
5	STEM	SUS 316	SUS 316	1
6	BODY SEALS	GRAPHITE	GRAPHITE	2
7	GASKET	PTFE +15% G.F.	PTFE +15% G.F.	1
8	SEAL	GRAPHITE	GRAPHITE	1
9	GLAND RING	SUS 304	SUS 304	1
10	BELLEVILLE SPRING WASHERS	SUS 301	SUS 301	2
11	HANDLE	SUS 304	SUS 304	1
12	LEVER NUT	SUS 304	SUS 304	1
13	STOP SCREW	SUS 304	SUS 304	1
14	HANDLE COVER	VINYL	VINYL	1
15	BOLTS	SUS 304	SUS 304	4
16	SPRING WASHERS	SUS 304	SUS 304	4
17	BOLT NUTS	SUS 304	SUS 304	4
18	ANTI-STATIC DEVICE	SUS 316	SUS 316	2
19	SPRING	SUS 316	SUS 316	2

DIMENSIONS (mm)													
Size	A	B	B1	C	D	E	F	F1	F2	G	H	K	L
8	10	65	70	46.5	110	14	13	17.2	N/A	21.5	36	M5	N/A
10	12.5	65	70	46.5	110	17.7	13	17.2	N/A	21.5	36	M5	N/A
15	16	75	75	52.5	110	21.9	17	21.3	N/A	25.2	36	M5	N/A
20	20	80	90	55	110	27.2	22	26.9	N/A	27.7	36	M5	N/A
25	24.5	90	100	70.8	135	34	28	33.7	N/A	33	42	M5	N/A
32	32	110	110	76	135	42.7	37	42.4	N/A	41.2	42	M5	N/A
40	38	120	125	88.2	165	48.8	43	48.3	N/A	49.3	50	M6	N/A
50	50	140	150	96.83	165	61.3	54	60.3	N/A	63.6	50	M6	N/A
65	65	185	190	19	380	77	72	76.1	77	82.1	70	M8	138.5
80	80	205	220	22	400	90	84	88.9	91	95.8	102	M10	159.5

**FEATURES**

- Emico fire-safe 3-piece ball valves fitted with Spring Return pneumatic actuators.
- Valves have actuators sized for full rated line pressure (6900 kPa) and based on 550 kPa air supply.
- Mounting brackets and drive couplings manufactured in stainless steel.
- Valve/actuator mounting can be easily removed for gland packing adjustment.
- Drive couplings have stainless steel fold-down locking tabs to secure gland nut against loosening.
- EMICO valves have ISO 5211 mounting flanges for actuation.
- Actuators have Namur-standard air connections and accessory mounts.
- “Bolt-on” accessories include solenoid valve & limit switch.


**TORQUE DETAILS**

Valve Size (mm)	Valve Nett Break Torque	EMICO Fig.	MAST (Nm) 316 SS Stem	MAST (Nm) 17-4pH
8	2.50 Nm	EA 305	5.8	16.2
10	2.50 Nm	EA 305	5.8	16.2
15	4.0 Nm	EA 305	10.1	28.2
20	5.60 Nm	EA 305	10.1	28.2
25	12.80 Nm	EA 305	23.9	66.9
32	15.40 Nm	EA 305	23.9	66.9
40	24.50 Nm	EA 305	47.5	132.9
50	33.60 Nm	EA 305	47.5	132.9
65	59.0 Nm	EA 305	104.2	291.6
80	75.0 Nm	EA 305	211.7	592.6

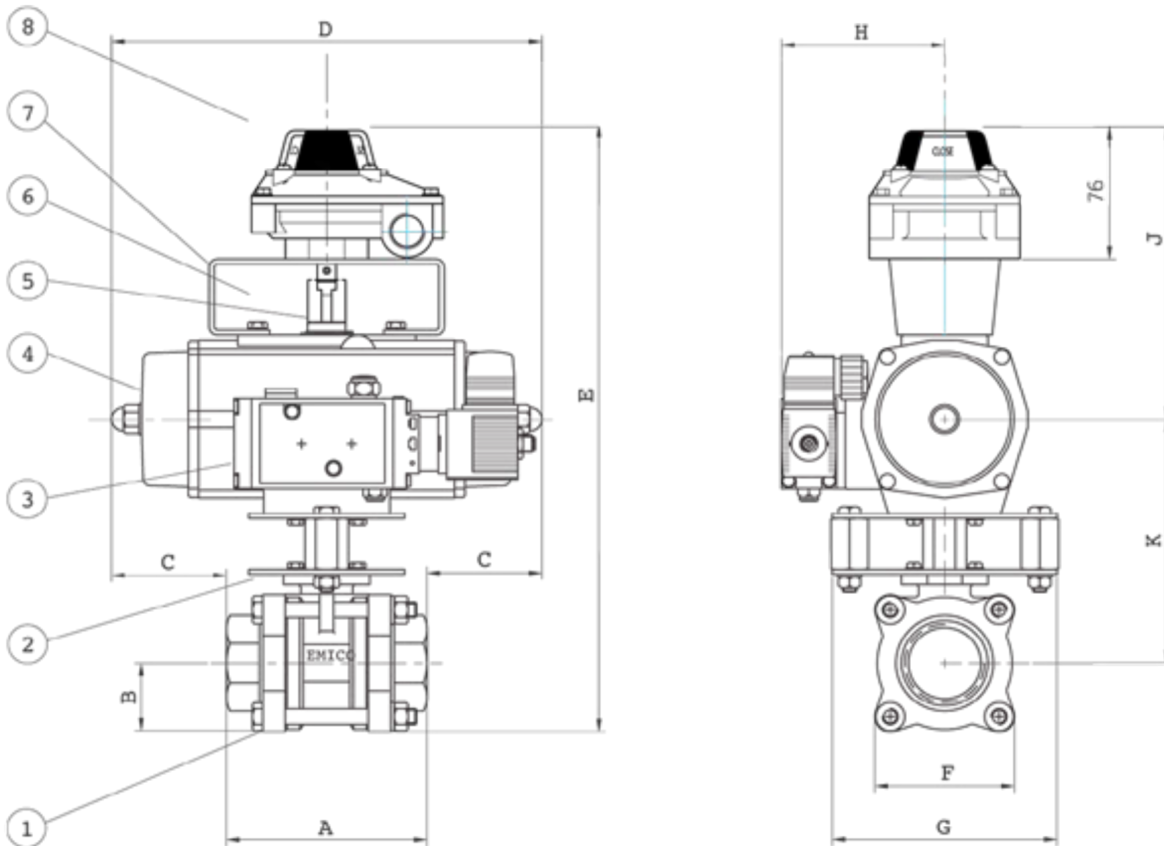
**Refer to EMICO Technical Bulletin No. 3-16-38 dated 5th August 2016 for AGA Automatic Shut-off & Vent Valve Class 1 details**



**FIG. EA-305 BALL VALVE ACTUATION**



ITEM	DESCRIPTION	MATERIAL
1	Ball Valve-EMICO 3 piece Fire Safe, NPT/SW/BSP, BW, flanged ends	CS/SS
2	Mounting Bracket (Valve/Actuator)	SS
3	3/2 Way Solenoid Valve	Poly/Aluminium
4	Pneumatic Actuator (S/R) - EMICO	AL. Alloy
5	Coupling /Actuator/Limit Switch	SS
6	Visual Position Indicator	ABS/Poly
7	Mounting Bracket (Limit Switch /Actuator)	CS
8	Limit Switch	AL. Alloy



Emico Ball Valves		Actuator Model	Solenoid Valve	Limit Switch	DIMENSIONS (mm)									
Part No.	Size (mm)	Spring Return	3/2 Way		A	B	C	D	E	F	G	H	J	K
EA 305C EA 305A	8	EA-SR52/10	BURKERT / POWER - GENEX 6519	ALS-400M2 / ALS-500M2 / ALS-200M2	65	20	17	147	253	40	68	70	142	85
	10	EA-SR52/10			65	20	17	147	253	40	68	70	142	85
	15	EA-SR52/10			75	23	22	147	256	45	68	70	142	91
	20	EA-SR52/10			80	27	46	147	264	54	68	83	142	95
	25	EA-SR75/10			90	31	57	168	284	61	80	90	150	103
	32	EA-SR75/10			110	37	47	184	317	74	80	90	156	124
	40	EA-SR83/10			120	40	65	204	347	81	130	95	161	146
	50	EA-SR92/10			140	50	64	262	377	100	130	100	165	162
	65	EA-SR125/10			185	70	70	280	415	140	120	110	175	172
	80	EA-SR125/10			205	85	75	310	450	170	140	120	185	182

Note: All dimensions are approximate only and not as-built.

Fig. EA-305  
Flanged x NPT ends or  
Flanged x SW ends

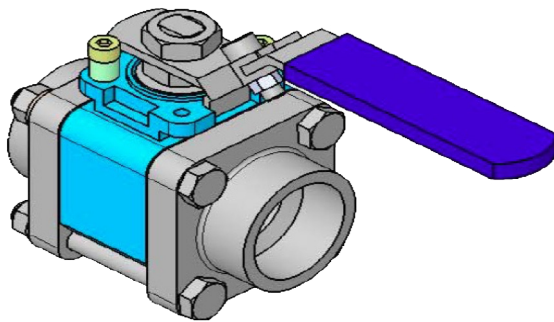
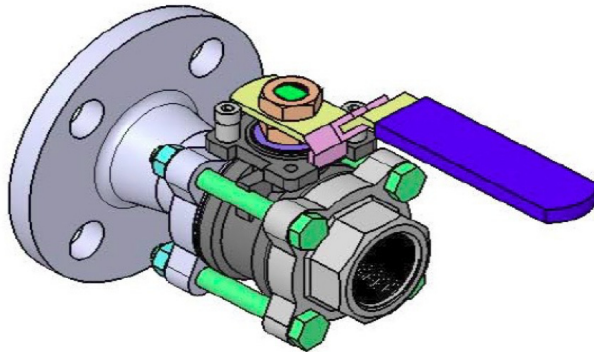
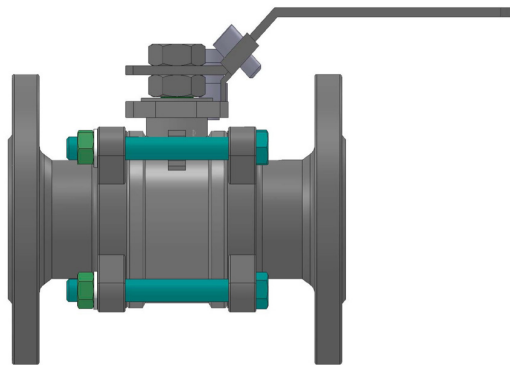


Fig. EA-305  
SW Ends

Fig. EA-305  
Flanged both ends  
(15mm-40mm Class 150 + Class 300  
with ASME B16.10 F/Face)  
All sizes available with  
DIN Face-to-Face ends



**INSTALLATION PROCEDURE**

**INSTALLATION**

Drop-out centre section permits pipework assembly without barrel unions either side of valve.

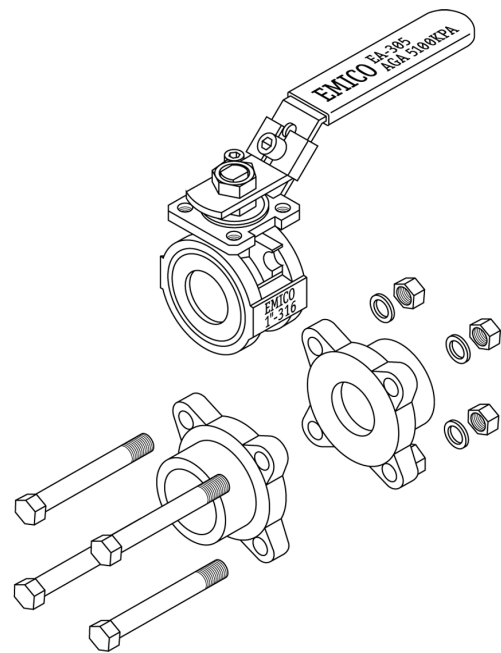
Valves with socket-weld ends must be dismantled (after spot-welding) to avoid heat-damage to PTFE seals during full welding process.

Adjoining pipework must have sufficient clearance to allow release of centre section without damage to spigots on end connections. Refer to illustration.

**RE-ASSEMBLY**

Original Graphite body-seals can be re-used if not disturbed or damaged during valve dismantling and attachment of ends. Re-tighten nuts to manufacturer’s recommended torque (as shown in the table below).

Valve size (mm)	15	20	25	32	40	50
Torque (Nm)	19	22	25	31	41	41



**THREADED VALVES**

1. Clean valve and pipe threads thoroughly. Emico firesafe 3-piece ball valves have NPT threads.
2. Apply sealing paste or PTFE thread-seal to threaded pipe or nipple.
3. Attach ball valve to pipe or nipple using a wrench on the connecting end, not the opposite end, to prevent valve distortion.
4. The assembled joints can be tested for air or gas leakage using soapy water or other approved leak protection procedure.
5. 3-piece valves can be dismantled and re-assembled with the original graphite body joints if care is taken to avoid damage to these components at all times during the procedure.

**SOCKET WELD VALVES**

1. Clean pipe and valve ends prior to welding.
2. With valve in open position, insert pipe into valve end, within approximately 2mm of end stop.
3. Tack weld.
4. Loosen bolts and remove centre section or swing it away from welding area to avoid heat damage to seats. Take care to protect ball, seats and gasket surfaces from weld splatter or other damage.
5. Carry out fillet-weld and allow ends to cool.
6. Re-assemble using original graphite body joints, unless sealing surfaces are damaged or show leakage during pressure test, which will require replacement seals.

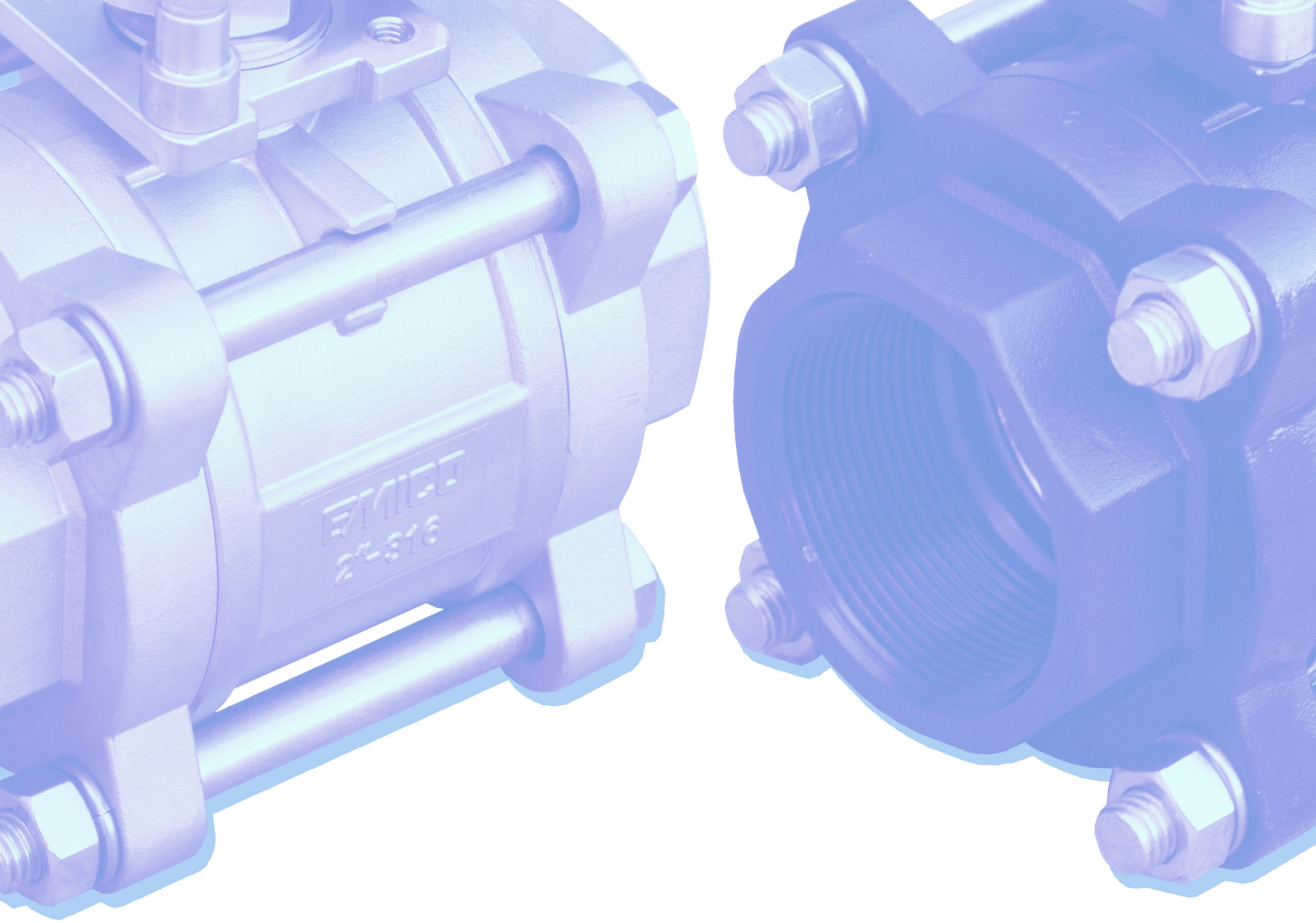
**MAINTENANCE PROCEDURE**

**A. MANUAL VALVES**

- Remove lever nut and lever
- Re-tension gland packing by tightening stem nut
- Replace lever and lever nut

**B. ACTUATED VALVES**

- Remove or loosen actuated mounting sufficient to raise stem nut lock washer
- Tighten stem nut in rotations of 1/6 of a turn to ensure re-alignment of the stem nut lock washer with stem nut flats
- Replace stem nut lock washer over stem nut ensuring fold-down tabs fit snugly over flats on stem nut
- Replace and re-tighten actuator/mounting bracket assembly and drive coupling



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