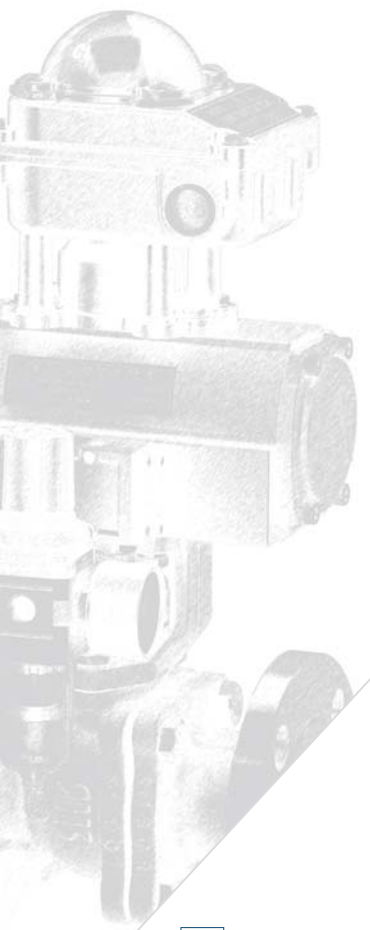




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Automatic Valve & Accessory

# PNEUMATIC VALVE



주식회사 오토마

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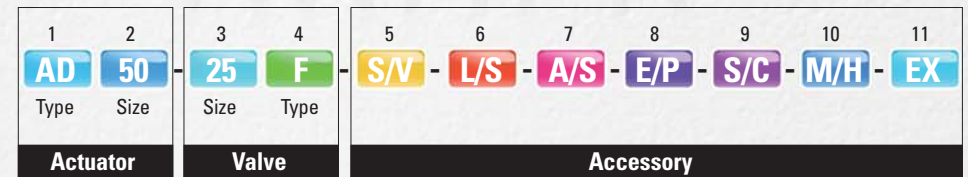
### Automatic Valve

- 04 1-PIECE SCREWED BALL VALVE - DOUBLE ACTING
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- 37 SPEED CONTROLLER - FC Series, MUFFLER - AS Series
- 38 MANUAL HANDLE - ADG Series

# HOW TO ORDER



#### 1. AD : Actuator Type

- **AD**: Double Acting (Scotch-Yoke Type)
- **AS**: Single Acting (Scotch-Yoke Type)
- **ADR**: Double Acting (Rack&Pinion Type)
- **ASR**: Single Acting (Rack&Pinion Type)

#### 2. 50 : Actuator Size

- $\phi 50 \sim \phi 300$  : Scotch-Yoke Type
- $\phi 32 \sim \phi 200$  : Rack&Pinion Type

#### 3. 25 : Valve Size

- **10A ~ 50A** : 1-Piece Screwed Ball
- **8A ~ 50A** : 3-Piece Screwed Ball
- **15A ~ 250A** : Flanged Ball Valve
- **40A ~ 600A** : Butterfly Valve

#### 4. F : Valve Type

- **S1** : 1-Piece Screwed Ball
- **S3** : 3-Piece Screwed Ball
- **F** : Flanged Ball
- **S3W** : 3-Way Screwed
- **F3W** : 3-Way Flanged Ball
- **BF** : Butterfly
- **HBF** : High-Performance Butterfly
- **VF** : V-Notch Segmental Ball
- **S** : Sanitary Ball

#### 5. S/V : Solenoid Valve

#### 6. L/S : Limit Switch Box

#### 7. A/S : Air Set

#### 8. E/P : E/P Positioner

#### 9. S/C : Speed Controller

#### 10. M/H : Manual Handle

#### 11. EX : Ex-Proof

# 1-PIECE SCREWED BALL VALVE - DOUBLE ACTING



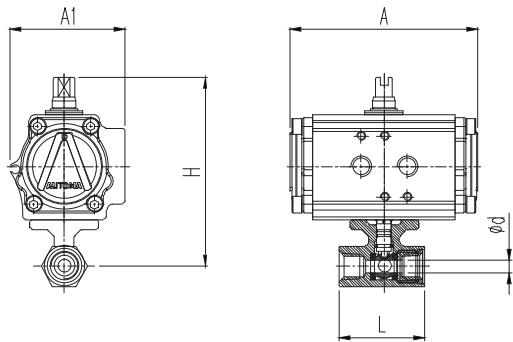
## Application

- Water Distribution Pipes
- Industrial Cleaning Machines
- Sterilizers, Boilers
- Air conditioners, Water Filters
- Medical equipments, Vacuum packing

## Specification

• This is subject to change.

Valve Size	10A (3/8")	15A (1/2")	20A (3/4")	25A (1")	32A (1-1/4")	40A (1-1/2")	50A (2")
Actuator Model	ADR40				ADR65		
Actuator Type	Double Acting						
Operating Media	Compressed Dry Air						
Operating Pressure	4 - 7kg/cm <sup>2</sup>						
Rotating Angle	90° ± 5°						
Fluid Temperature	-20°C ~ 80°C						
Rating	1000psi						
Body Material	A351-CF8 / Body		A351-CF8 / Ball			PTFE / Seat	
Accessory	Solenoid Valve, Limit Switch Box, Air Filter Regulator, E/P Positioner						



## Dimension

• END CONNECTION : PT SCREW (mm)

Model	Size		A	A1	H Approx.	L	φd
	mm	Inch					
ADR40-10S1	10A	3/8"	96	63	110	45	7
ADR40-15S1	15A	1/2"	96	63	111	55	9.2
ADR40-20S1	20A	3/4"	96	63	117	60	12.5
ADR40-25S1	25A	1"	96	63	120	73	15
ADR40-32S1	32A	1-1/4"	96	63	123	78	20
ADR65-40S1	40A	1-1/2"	131	89	159	89	25
ADR65-50S1	50A	2"	131	89	167	100	32

# 1-PIECE SCREWED BALL VALVE - SINGLE ACTING



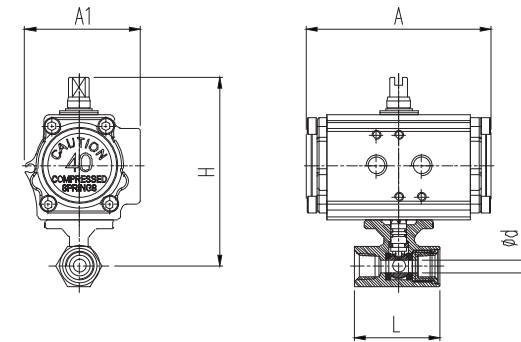
## Application

- Water Distribution Pipes
- Industrial Cleaning Machines
- Sterilizers, Boilers
- Air conditioners, Water Filters
- Medical equipments, Vacuum packing

## Specification

• This is subject to change.

Valve Size	10A (3/8")	15A (1/2")	20A (3/4")	25A (1")	32A (1-1/4")	40A (1-1/2")	50A (2")
Actuator Model	ASR40	ASR50			ASR65		ASR80
Actuator Type	Single Acting						
Operating Media	Compressed Dry Air						
Operating Pressure	4.5 - 7kg/cm <sup>2</sup>						
Rotating Angle	90° ± 5°						
Fluid Temperature	-20°C ~ 80°C						
Rating	1000psi						
Body Material	A351-CF8 / Body		A351-CF8 / Ball			PTFE / Seat	
Accessory	Solenoid Valve, Limit Switch Box, Air Filter Regulator, E/P Positioner						



## Dimension

• END CONNECTION : PT SCREW (mm)

Model	Size		A	A1	H Approx.	L	φd
	mm	Inch					
ASR40-10S1	10A	3/8"	96	63	110	45	7
ASR50-15S1	15A	1/2"	133	75	126	55	9.2
ASR50-20S1	20A	3/4"	133	75	132	60	12.5
ASR50-25S1	25A	1"	133	75	135	73	15
ASR65-32S1	32A	1-1/4"	154	89	155	78	20
ASR65-40S1	40A	1-1/2"	154	89	159	89	25
ASR80-50S1	50A	2"	220	101	186	100	32

# 3-PIECE SCREWED BALL VALVE - DOUBLE ACTING



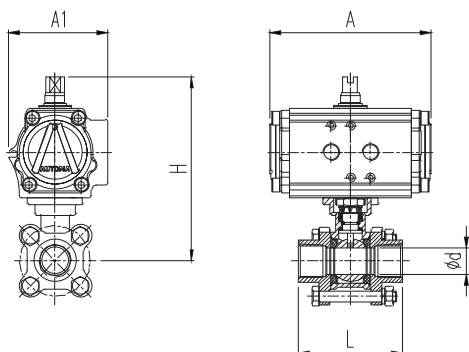
## Application

- Water Distribution Pipes
- Industrial Cleaning Machines
- Sterilizers, Boilers
- Air conditioners, Water Filters
- Medical equipments, Vacuum packing

## Specification

• This is subject to change.

Valve Size	8A(1/4")	10A (3/8")	15A (1/2")	20A (3/4")	25A (1")	32A (1-1/4")	40A (1-1/2")	50A (2")
Actuator Model	ADR40							
Actuator Type	Double Acting							
Operating Media	Compressed Dry Air							
Operating Pressure	4 - 7kg/cm <sup>2</sup>							
Rotating Angle	90° ± 5°							
Fluid Temperature	-20°C ~ 80°C							
Rating	1000psi							
Body Material	A351-CF8 / Body		A351-CF8 / Ball			PTFE / Seat		
Accessory	Solenoid valve, Limit Switch Box, Air filter Regulator, E/P Positioner							



## Dimension

• END CONNECTION : PT SCREW (mm)

Model	Size		A	A1	H Approx.	L	φd
	mm	Inch					
ADR40-8S3	8A	1/4"	96	63	124	64	12.5
ADR40-10S3	10A	3/8"	96	63	124	64	12.5
ADR40-15S3	15A	1/2"	96	63	127	72	15
ADR40-20S3	20A	3/4"	96	63	133	80	20
ADR50-25S3	25A	1"	119	75	155	85	25
ADR65-32S3	32A	1-1/4"	131	89	177	105	32
ADR65-40S3	40A	1-1/2"	131	89	187	113	38
ADR80-50S3	50A	2"	189	101	221	132	50

# 3-PIECE SCREWED BALL VALVE - SINGLE ACTING



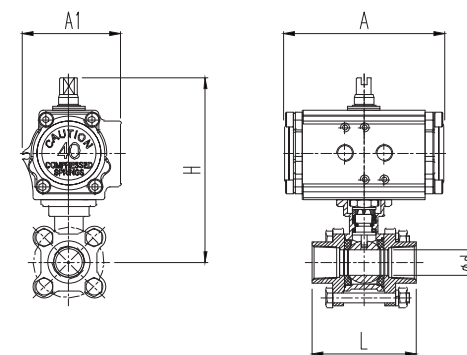
## Application

- Water Distribution Pipes
- Industrial Cleaning Machines
- Sterilizers, Boilers
- Air conditioners, Water Filters
- Medical equipments, Vacuum packing

## Specification

• This is subject to change.

Valve Size	8A(1/4")	10A (3/8")	15A (1/2")	20A (3/4")	25A (1")	32A (1-1/4")	40A (1-1/2")	50A (2")
Actuator Model	ASR40		ASR50			ASR65		ASR80
Actuator Type	Single Acting							
Operating Media	Compressed Dry Air							
Operating Pressure	4.5 - 7kg/cm <sup>2</sup>							
Rotating Angle	90° ± 5°							
Fluid Temperature	-20°C ~ 80°C							
Rating	1000psi							
Body Material	A351-CF8 / Body			A351-CF8 / Ball			PTFE / Seat	
Accessory	Solenoid valve, Limit Switch Box, Air filter Regulator, E/P Positioner							



## Dimension

• END CONNECTION : PT SCREW (mm)

Model	Size		A	A1	H Approx.	L	φd
	mm	Inch					
ASR40-8S3	8A	1/4"	96	63	124	64	12.5
ASR50-10S3	10A	3/8"	133	75	139	64	12.5
ASR50-15S3	15A	1/2"	133	75	142	72	15
ASR50-20S3	20A	3/4"	133	75	148	80	20
ASR65-25S3	25A	1"	154	89	172	85	25
ASR65-32S3	32A	1-1/4"	154	89	177	105	32
ASR80-40S3	40A	1-1/2"	220	101	206	113	38
ASR80-50S3	50A	2"	220	101	221	132	50

# FLANGED BALL VALVE - DOUBLE ACTING



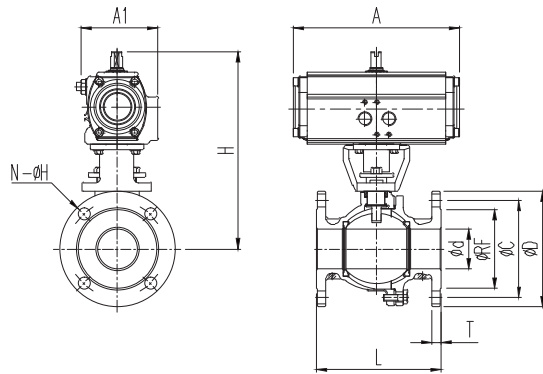
## Application

- Water Distribution Pipes
- Industrial Cleaning Machines
- Sterilizers, Boilers
- Air conditioners, Water Filters
- Medical equipments, Vacuum packing
- Food & Beverage lines
- Vacuum distribution pipes

## Specification

• This is subject to change.

Valve Size	15A(1/2")-250A(10")		
Actuator Model	AD50-AD200		
Actuator Type	Double Acting		
Operating Media	Compressed Dry Air		
Operating Pressure	4 ~ 7kg/cm <sup>2</sup>		
Rotating Angle	90° ±5°		
Fluid Temperature	-20°C ~ 150°C		
Rating	JIS 10K (20K) (40K)	ANSI 150# (300#) (600#)	
Body Material	SCS13 (SCS14, SCPH2)/Body	SCS13 (SCS14)/Ball	PTFE (RTFE, PEEK, METAL)/Seat
Accessory	Solenoid valve, Limit Switch Box, Air filter Regulator, E/P Positioner, Manual Handle		



## Dimension

Model	SIZE		A	A1	H	L	END CONNECTION (JIS 10K RF)					N-ØH
	mm	inch					Approx.	T	Φd	ΦRF	ΦC	
AD50-15F	15A	1/2"	162	75	188	108	12	15	51	70	95	4-15
AD50-20F	20A	3/4"	162	75	191	117	14	20	56	75	100	4-15
AD50-25F	25A	1"	162	75	200	127	14	25	67	90	125	4-19
AD65-32F	32A	1-1/4"	202	89	220	140	16	32	76	100	135	4-19
AD65-40F	40A	1-1/2"	202	89	242	165	16	40	81	105	140	4-19
AD65-50F	50A	2"	202	89	249	178	16	50	96	120	155	4-19
AD80-65F	65A	2-1/2"	253	101	279	190	18	65	116	140	175	4-19
AD80-80F	80A	3"	253	101	319	203	18	80	126	150	185	8-19
AD100-100F	100A	4"	311	129	357	229	18	100	151	175	210	8-19
AD125-125F	125A	5"	390	151	415	356	20	125	182	210	250	8-23
AD140-150F	150A	6"	431	164	480	394	22	150	212	240	280	8-23
AD160-200F	200A	8"	506	189	589	457	22	200	262	290	330	12-23
AD200-250F	250A	10"	605	231	720	533	24	250	324	355	400	12-25

# FLANGED BALL VALVE - SINGLE ACTING



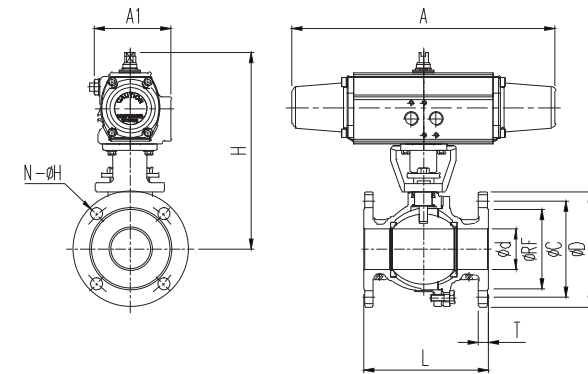
## Application

- Water Distribution Pipes
- Industrial Cleaning Machines
- Sterilizers, Boilers
- Air conditioners, Water Filters
- Medical equipments, Vacuum packing
- Food & Beverage lines
- Vacuum distribution pipes

## Specification

• This is subject to change.

Valve Size	15A(1/2")-200A(8")		
Actuator Model	AS50-AS200		
Actuator Type	Single Acting		
Operating Media	Compressed Dry Air		
Operating Pressure	4.5 ~ 7kg/cm <sup>2</sup>		
Rotating Angle	90° ±5°		
Fluid Temperature	-20°C ~ 150°C		
Rating	JIS 10K (20K) (40K)	ANSI 150# (300#) (600#)	
Body Material	SCS13 (SCS14, SCPH2)/Body	SCS13 (SCS14)/Ball	PTFE (RTFE, PEEK, METAL)/Seat
Accessory	Solenoid valve, Limit Switch Box, Air filter Regulator, E/P Positioner, Manual Handle		



## Dimension

Model	SIZE		A	A1	H	L	END CONNECTION (JIS 10K RF)					N-ØH
	mm	inch					Approx.	T	Φd	ΦRF	ΦC	
AS50-15F	15A	1/2"	257	75	188	108	12	15	51	70	95	4-15
AS50-20F	20A	3/4"	257	75	191	117	14	20	56	75	100	4-15
AS65-25F	25A	1"	314	89	217	127	14	25	67	90	125	4-19
AS65-32F	32A	1-1/4"	314	89	220	140	16	32	76	100	135	4-19
AS80-40F	40A	1-1/2"	421	101	246	165	16	40	81	105	140	4-19
AS80-50F	50A	2"	421	101	268	178	16	50	96	120	155	4-19
AS80-65F	65A	2-1/2"	421	101	279	190	18	65	116	140	175	4-19
AS100-80F	80A	3"	500	129	341	203	18	80	126	150	185	8-19
AS125-100F	100A	4"	606	151	383	229	18	100	151	175	210	8-19
AS140-125F	125A	5"	682	164	433	356	20	125	182	210	250	8-23
AS160-150F	150A	6"	781	189	504	394	22	150	212	240	280	8-23
AS200-200F	200A	8"	982	231	657	457	22	200	262	290	330	12-23

# 3-WAY SCREWED BALL VALE - DOUBLE ACTING



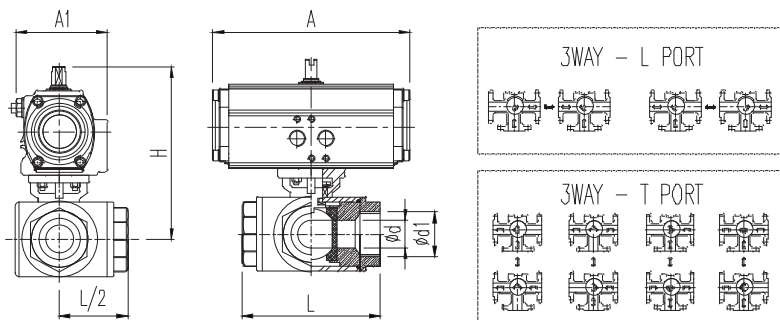
## Application

- Water Distribution Pipes
- Industrial Cleaning Machines
- Sterilizers, Boilers
- Air conditioners, Water Filters
- Medical equipments, Vacuum packing

## Specification

• This is subject to change.

Valve Size	8A(1/4")	10A(3/8")	15A(1/2")	20A(3/4")	25A(1")	32A(1-1/4")	40A(1-1/2")	50A(2")
Actuator Model	AD40			AD50			AD65	
Actuator Type	Double Acting							
Operating Media	Compressed Dry Air							
Operating Pressure	4 ~ 7kg/cm <sup>2</sup>							
Rotating Angle	90° ± 5°							
Fluid Temperature	-20°C ~ 80°C							
Rating	1000psi							
Body Material	A351-CF8/Body		A351-CF8/Ball			PTFE / Seat		
Accessory	Solenoid valve, Limit Switch Box, Air filter Regulator, E/P Positioner							



## Dimension

(mm)

Model	SIZE		A	A1	H Approx.	L	L/2	END CONNECTION (PT SCREW)	
	mm	inch						Φd	Φd1
AD40-8S3W	8A	1/4"	96	63	130	72	36	12	1/4"
AD40-10S3W	10A	3/8"	96	63	130	72	36	12	3/8"
AD40-15S3W	15A	1/2"	96	63	130	72	36	12	1/2"
AD50-20S3W	20A	3/4"	162	75	149	83	41.5	15	3/4"
AD50-25S3W	25A	1"	162	75	157	99	49.5	20	1"
AD50-32S3W	32A	1-1/4"	162	75	163	112	56	25	1-1/4"
AD65-40S3W	40A	1-1/2"	202	89	186	125	62.5	32	1-1/2"
AD65-50S3W	50A	2"	202	89	197	149	74.5	38	2

# 3-WAY FLANGED BALL VALVE - DOUBLE ACTING



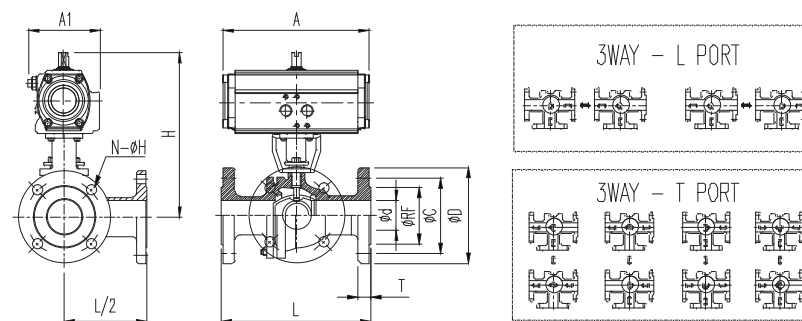
## Application

- Water Distribution Pipes
- Industrial Cleaning Machines
- Sterilizers, Boilers
- Air conditioners, Water Filters
- Medical equipments, Vacuum packing
- Food & Beverage lines
- Vacuum distribution pipes

## Specification

• This is subject to change.

Valve Size	15A(1/2")-200A(8")		
Actuator Model	AD50-AD200		
Actuator Type	Double Acting		
Operating Media	Compressed Dry Air		
Operating Pressure	4 ~ 7kg/cm <sup>2</sup>		
Rotating Angle	90° ± 5°		
Fluid Temperature	-20°C ~ 150°C		
Rating	JIS 10K		ANSI 150#
Body Material	SCS13(SCS14)/Body	SCS13(SCS14)/Ball	PTFE/Seat
Accessory	Solenoid valve, Limit Switch Box, Air filter Regulator, E/P Positioner, Manual Handle		



## Dimension

(mm)

Model	SIZE		A	A1	H Approx.	L	L/2	END CONNECTION (JIS 10K RF)					
	mm	inch						T	Φd	ΦRF	ΦC	ΦD	N-ΦH
AD50-15F3W	15A	1/2"	162	75	181	190	95	12	15	52	70	95	4-15
AD50-20F3W	20A	3/4"	162	75	184	190	95	14	20	58	75	100	4-15
AD65-25F3W	25A	1"	202	89	214	200	100	14	25	70	90	125	4-19
AD65-40F3W	40A	1-1/2"	202	89	217	240	120	16	40	85	105	140	4-19
AD80-50F3W	50A	2"	253	101	261	260	130	16	50	100	120	155	4-19
AD80-65F3W	65A	2-1/2"	253	101	270	320	160	18	65	120	140	175	4-19
AD100-80F3W	80A	3"	311	129	330	360	180	18	80	130	150	185	8-19
AD125-100F3W	100A	4"	390	151	368	430	215	18	100	155	175	210	8-19
AD140-125F3W	125A	5"	431	164	450	499	249.5	20	125	185	210	250	8-23
AD160-150F3W	150A	6"	506	189	500	560	280	22	150	215	240	280	8-23
AD200-200F3W	200A	8"	605	231	643	660	330	22	200	265	290	330	12-23

# BUTTERFLY VALVE - DOUBLE ACTING



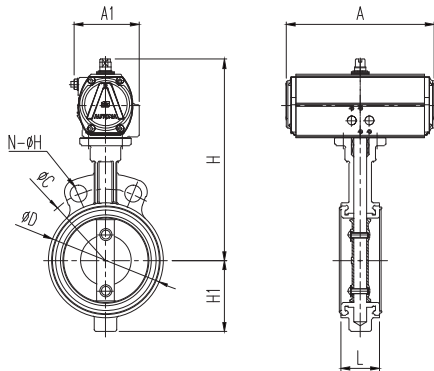
## Application

- Water Distribution Pipes
- Industrial Cleaning Machines
- Sterilizers, Boilers
- Medical equipments, Vacuum packing
- Air ventilation systems

## Specification

• This is subject to change.

Valve Size	40A(1-1/2")-600A(24")		
Actuator Model	AD50-AD200		
Actuator Type	Double Acting		
Operating Media	Compressed Dry Air		
Operating Pressure	4 ~ 7kg/cm <sup>2</sup>		
Rotating Angle	90° ±5°		
Fluid Temperature	-15°C ~ 80°C		
Rating	JIS 10K	ANSI 150#	
Body Material	FC (SCS13)/Body	SCS13 (SCS14)/Disc	EPDM (PTFE)/Seat
Accessory	Solenoid valve, Limit Switch Box, Air filter Regulator, E/P Positioner, Manual Handle		



## Dimension

Model	SIZE		A	A1	H Approx.	H1	L	END CONNECTION (JIS 10K WAFER)		
	mm	inch						ΦC	ΦD	N-ΦH
AD50-40BF	40A	1-1/2"	162	75	215	58	41	105	86	4-19
AD50-50BF	50A	2"	162	75	217	65	43	120	105	4-19
AD50-65BF	65A	2-1/2"	162	75	227	71	46	140	114	4-19
AD65-80BF	80A	3"	202	89	256	83	46	150	129	8-19
AD65-100BF	100A	4"	202	89	270	100	52	175	155	8-19
AD80-125BF	125A	5"	253	101	300	110	56	210	180	8-23
AD80-150BF	150A	6"	253	101	314	130	56	240	207	8-23
AD100-200BF	200A	8"	311	129	390	163	60	290	260	12-23
AD100-250BF	250A	10"	311	129	428	227	68	355	331	12-25
AD125-300BF	300A	12"	390	151	482	252	78	400	377	16-25
AD140-350BF	350A	14"	431	164	510	272	78	445	416	16-25
AD160-400BF	400A	16"	506	189	585	343	102	510	475	16-27
AD160-450BF	450A	18"	506	189	625	366	114	565	535	20-27
AD200-500BF	500A	20"	605	231	783	421	127	620	590	20-27
AD200-600BF	600A	24"	605	231	870	493	154	730	695	24-33

# BUTTERFLY VALVE - SINGLE ACTING



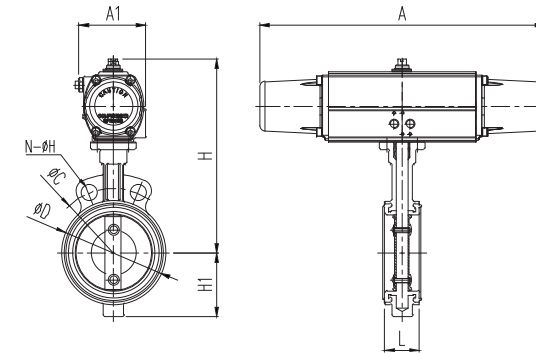
## Application

- Water Distribution Pipes
- Industrial Cleaning Machines
- Sterilizers, Boilers
- Medical equipments, Vacuum packing
- Air ventilation systems

## Specification

• This is subject to change.

Valve Size	40A(1-1/2")-500A(20")		
Actuator Model	AS50-AS200		
Actuator Type	Single Acting		
Operating Media	Compressed Dry Air		
Operating Pressure	4.5 ~ 7kg/cm <sup>2</sup>		
Rotating Angle	90° ±5°		
Fluid Temperature	-15°C ~ 80°C		
Rating	JIS 10K	ANSI 150#	
Body Material	FC (SCS13)/Body	SCS13 (SCS14)/Disc	EPDM (PTFE)/Seat
Accessory	Solenoid valve, Limit Switch Box, Air filter Regulator, E/P Positioner, Manual Handle		



## Dimension

Model	SIZE		A	A1	H Approx.	H1	L	END CONNECTION (JIS 10K WAFER)		
	mm	inch						ΦC	ΦD	N-ΦH
AS50-40BF	40A	1-1/2"	257	75	215	58	41	105	86	4-19
AS65-50BF	50A	2"	314	89	234	65	43	120	105	4-19
AS65-65BF	65A	2-1/2"	314	89	250	71	46	140	114	4-19
AS65-80BF	80A	3"	314	89	256	83	46	150	129	8-19
AS80-100BF	100A	4"	421	101	287	100	52	175	155	8-19
AS80-125BF	125A	5"	421	101	300	110	56	210	180	8-23
AS100-150BF	150A	6"	500	129	334	130	56	240	207	8-23
AS100-200BF	200A	8"	500	129	390	163	60	290	260	12-23
AS125-250BF	250A	10"	606	151	455	227	68	355	331	12-25
AS140-300BF	300A	12"	682	164	500	252	78	400	377	16-25
AS160-350BF	350A	14"	781	189	544	272	78	445	416	16-25
AS160-400BF	400A	16"	781	189	585	343	102	510	475	16-27
AS200-450BF	450A	18"	982	231	704	366	114	565	535	20-27
AS200-500BF	500A	20"	982	231	780	421	127	620	590	20-27

# HIGH PERFORMANCE BUTTERFLY VALVE - DOUBLE ACTING

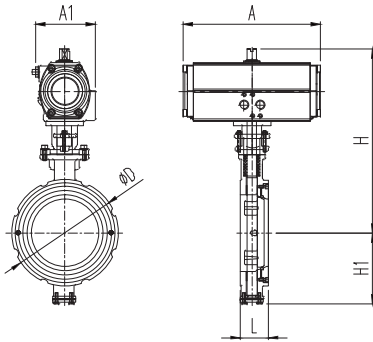


## Application

- Steam Header
- Textile Machine
- Gas and Steam Line
- Water Line

## Specification

Valve Size	15A(1-1/2")-150A(18")		
Actuator Type	Double Acting		Single acting
Actuator Model	AD50 - AD160		AS50 - AS200
Operating Media	Compressed Dry Air		
Operating Pressure	4 - 7kg/cm <sup>2</sup>		4.5 - 7kg/cm <sup>2</sup>
Fluid Temperature	PTFE (-20°C ~ 160°C)	RTFE (-20°C ~ 180°C)	MTFE (-30°C ~ 195°C) SS316 (-50°C ~ 300°C)
Rating	JIS 10K / 20K		ANSI 150# / 300#
Body Material	FCD450, SCPH2, SCS13, SCS14		
Disc Material	SCS13, SCS14		
Seat Material	MTFE, PTFE, RTFE, SS316		
Accessory	Solenoid valve, Limit Switch Box, Air filter Regulator, E/P Positioner, Manual Handle		



## Dimension

END CONNECTION JIS 10K WAFER (mm)

Model	SIZE		A	A1	H Approx.	H1	L	ØD
	mm	inch						
AD50-40HBF	40A	1-1/2"	162	75	254	73	43	86
AD50-50HBF	50A	2"	162	75	261	81	44	100
AD65-65HBF	65A	2-1/2"	202	89	289	83	46	123
AD65-80HBF	80A	3"	202	89	303	87	46	132
AD65-100HBF	100A	4"	202	89	310	111	52	157
AD80-125HBF	125A	5"	253	101	369	121	57	185
AD80-150HBF	150A	6"	253	101	390	145	62	220
AD100-200HBF	200A	8"	311	129	467	180	83	277
AD125-250HBF	250A	10"	390	151	531	220	87	337
AD125-300HBF	300A	12"	390	151	579	279	98	380
AD140-350HBF	350A	14"	431	164	625	309	100	410
AD160-400HBF	400A	16"	506	189	680	340	115	475
AD160-450HBF	450A	18"	506	189	720	370	115	534

Dimension will be vary according to it's body material.

# V-NOTCH SEGMENTAL BALL VALVE (Fire Safety Design)

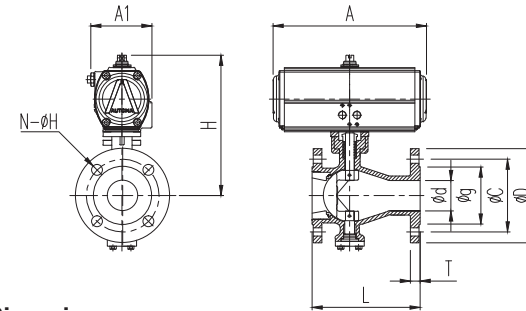


## Application

- Fiber and Slurry Service
- Pulp and Paper Industry
- Steel Industry

## Specification

Valve Size	15A(1/2") - 400A(16")	
Disc Form	Segmental ball disc with V-notch cut	
Characteristics	Inherent characteristic	
Body Rating	JIS 10K - 63K	ANSI 150# - 1500#
End Connection	RF(Flanged Type), Wafer(Flangeless Type), Butt Welding	
Body Material	SCPH2 (WCB), SCS13(CF8), SCS14(CF8M), SCS16(CF3M) and other alloy steels	
Seat Material	Soft Seat(PTFE, RTFE), Metal Seat(SUS316), Stellite Metal Seat	
Leakage Class	ANSI CLASS VI (Soft Seat), ANSI CLASS IV (Metal Seat)	
Bonnet Type	Plain, Extension, Long Extension(Cryogenic)	
Fluid Temp. Range	-196°C - 600°C	
Actuator Type	Single Acting / Double Acting Cylinder, Electric Motor	
Face To Face	ASME B16.34, API 6D	
Testing	API 598, MSS SP-61, BS 6755	



## • Cv Table

Size	Rated Cv	Size	Rated Cv
1/2" (15A)	7.5	4" (100A)	480
3/4" (20A)	17	5" (125A)	750
1" (25A)	30	6" (150A)	1080
1-1/2" (40A)	68	8" (200A)	1920
2" (50A)	120	10" (250A)	3000
2-1/2" (65A)	188	12" (300A)	4320
3" (80A)	270		

## Dimension

(mm)

Model	SIZE		A	A1	H Approx.	L	END CONNECTION (JIS 10K RF)					
	mm	inch					T	Ød	Øg	ØC	ØD	N-ØH
AD50-15VF	15A	1/2"	162	75	199	108	12	15	51	70	95	4-15
AD50-20VF	20A	3/4"	162	75	221	117	14	20	56	75	100	4-15
AD65-25VF	25A	1"	202	89	221	127	14	25	67	90	125	4-19
AD65-40VF	40A	1-1/2"	202	89	229	165	16	40	81	105	140	4-19
AD80-50VF	50A	2"	253	101	255	178	16	50	96	120	155	4-19
AD80-65VF	65A	2-1/2"	253	101	263	190	18	65	116	140	175	4-19
AD100-80VF	80A	3"	311	126	308	203	18	80	126	150	185	8-19
AD100-100VF	100A	4"	311	126	324	229	18	100	151	175	210	8-19
AD125-125VF	125A	5"	390	151	383	356	20	125	182	210	250	8-23
AD140-150VF	150A	6"	431	164	478	394	22	150	212	240	280	8-23
AD160-200VF	200A	8"	506	189	517	457	22	200	262	290	330	12-23
AD200-250VF	250A	10"	605	231	584	533	24	250	324	355	400	12-25
AD250-300VF	300A	12"	755	301	660	610	24	300	368	400	445	16-25



# PLASTIC BALL VALVE - DOUBLE ACTING



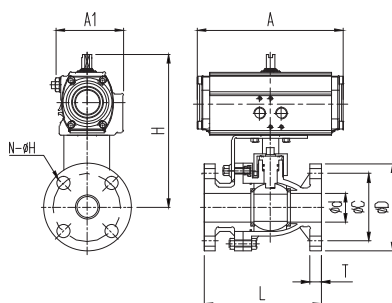
## Application

- Chemical Industry
- Sea Water Line
- Ultra Pure Water Line

## Specification

• This is subject to change.

Valve Size	15A(1/2")-150A(6")		
Actuator Model	AD50-AD125		
Actuator Type	Double Acting		
Operating Media	Compressed Dry Air		
Operating Pressure	4 ~ 7kg/cm <sup>2</sup>		
Rotating Angle	90° ±5°		
Fluid Temperature	-10°C ~90°C		
Rating	JIS 10K		ANSI 150#
Body Material	PP, C-PVPC, PVDF		
Accessory	Solenoid valve, Limit Switch Box, Air filter Regulator, E/P Positioner		



## Dimension

(mm)

Model	SIZE		A	A1	H Approx.	L	END CONNECTION (JIS 10K FF)				
	mm	inch					T	φd	φC	φD	N-φH
AD50-15F	15A	1/2"	162	75	168	145	14	15	70	95	4-15
AD50-20F	20A	3/4"	162	75	177	150	15	20	75	100	4-15
AD50-25F	25A	1"	162	75	190	170	15	25	90	125	4-19
AD65-30F	30A	1-1/4"	202	89	217	175	16	30	100	135	4-19
AD65-40F	40A	1-1/2"	202	89	217	190	18	40	105	140	4-19
AD65-50F	50A	2"	202	89	233	210	19	50	120	155	4-19
AD80-65F	65A	2-1/2"	253	101	301	260	20	65	140	175	4-19
AD80-80F	80A	3"	253	101	301	265	20	75	150	185	8-19
AD100-100F	100A	4"	311	129	337	300	22	100	175	210	8-19
AD125-125F	125A	5"	390	151	408	360	24	125	210	250	8-23
AD140-150F	150A	6"	431	164	451	360	24	150	240	280	8-23

# PLASTIC BUTTERFLY VALVE - DOUBLE ACTING



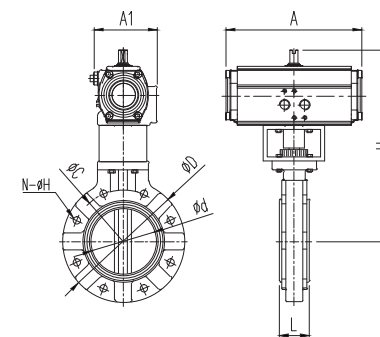
## Application

- Chemical Industry
- Sea Water Line
- Ultra Pure Water Line

## Specification

• This is subject to change.

Valve Size	50A(2")-400A(16")		
Actuator Model	AD50-AD160		
Actuator Type	Double Acting		
Operating Media	Compressed Dry Air		
Operating Pressure	4 ~ 7kg/cm <sup>2</sup>		
Rotating Angle	90° ±5°		
Fluid Temperature	-10°C ~90°C		
Rating	JIS 10K		ANSI 150#
Body Material	PP, C-PVC, PVDF		
Accessory	Solenoid valve, Limit Switch Box, Air filter Regulator, E/P Positioner		



## Dimension

(mm)

Model	SIZE		A	A1	H Approx.	L	END CONNECTION (JIS 10K WAFER)			
	mm	inch					φd	φD	φC	N-φH
AD50-50BF	50A	2"	162	75	284	42	59	165	120	4-19
AD50-65BF	65A	2-1/2"	162	75	298	46	70	185	140	4-19
AD65-80BF	80A	3"	202	89	338	46	79	200	150	8-19
AD65-100BF	100A	4"	202	89	363	56	103	229	175	8-19
AD80-125BF	125A	5"	253	101	411	66	130	254	210	8-23
AD80-150BF	150A	6"	253	101	438	73	151	285	240	8-23
AD100-200BF	200A	8"	311	129	558	94	203	340	290	12-23
AD100-250BF	250A	10"	311	129	660	111	255	406	355	12-25
AD125-300BF	300A	12"	390	151	747	131	311	484	400	16-25
AD140-350BF	350A	14"	431	164	771	134	348	520	445	16-25
AD160-400BF	400A	16"	506	189	932	174	398	600	510	16-27

# SANITARY BALL VALVE - DOUBLE ACTING

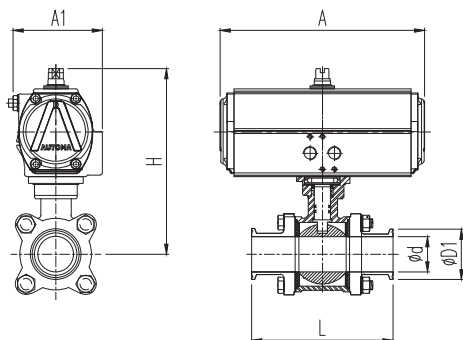


## Application

- Food
- Beverage
- Chemical Industry
- Pharmaceutical Industry
- Semiconductor Industry

## Specification

Valve Size	0.5S(1/2")	0.75S(3/4")	1.0S(1")	1.5S(1-1/2")	2.0S(2")	2.5S(2-1/2")	3.0S(3")	4.0S(4")
Actuator Model	AD40		AD50		AD65		AD80	AD100
Actuator Type	Double Acting							
Operating Media	Compressed Dry Air							
Operating Pressure	4 ~ 7kg/cm <sup>2</sup>							
Rotating Angle	90° ±5°							
Fluid Temperature	-40°C ~ 180°C							
Rating	1000psi							
Body Material	A351-CF8M/Body		A351-CF8M/Ball			PTFE/Seat		
Accessory	Solenoid valve, Limit Switch Box, Air filter Regulator, E/P Positioner							



## Dimension

• END CONNECTION : CLAMP (mm)

Model	Size		A	A1	H Approx.	L	φd	φD1
	mm	Inch						
AD40-0.5S	15A	1/2"	96	63	122	89	9.5	25.4
AD40-0.75S	20A	3/4"	96	63	132	101	15.9	25.4
AD50-1.0S	25A	1"	162	75	158	114	22.2	50.5
AD65-1.5S	40A	1-1/2"	202	89	196	140	35	50.5
AD65-2.0S	50A	2"	202	89	204	156	47.6	64
AD80-2.5S	65A	2-1/2"	253	101	246	197	60.3	77.5
AD80-3.0S	80A	3"	253	101	254	229	73	91
AD100-4.0S	100A	4"	311	129	300	241	97.4	119

# FRP BALL VALVE - DOUBLE ACTING

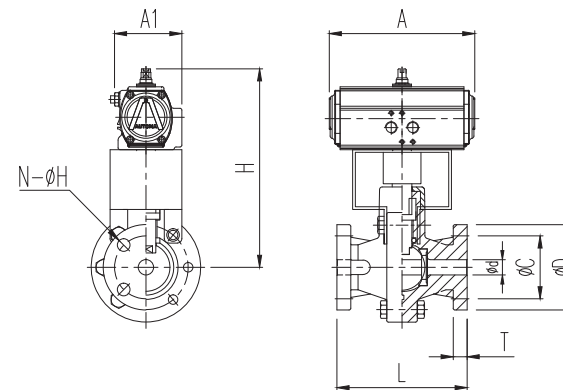


## Application

- Water Supply Facilities
- Waste Water Plant
- Sewage Treatment Plant
- Chemical Industry
- Sea Water Line

## Specification

Valve Size	15A(1/2")-300A(12")		
Actuator Model	AD50 ~AD250		
Actuator Type	Double Acting		
Operating Media	Compressed Dry Air		
Operating Pressure	4 ~ 7kg/cm <sup>2</sup>		
Rotating Angle	90° ±5°		
Fluid Temperature	-29°C ~ 150°C		
Rating	JIS 10K / ANSI 150#		
Body Material	FRP/Body	FRP/Ball	PTFE/Seat
Accessory	Solenoid valve, Limit Switch Box, Air filter Regulator, E/P Positioner		



## Dimension

Model	SIZE		A	A1	H Approx.	L	END CONNECTION (JIS 10K FF)				
	mm	inch					T	φd	φC	φD	N-φH
AD50-15F	15A	1/2"	162	75	246	145	19	15	70	95	4-15
AD50-20F	20A	3/4"	162	75	246	150	20	20	75	100	4-15
AD50-25F	25A	1"	162	75	246	170	23	25	90	125	4-19
AD65-40F	40A	1-1/2"	202	89	307	190	23	40	105	140	4-19
AD65-50F	50A	2"	202	89	307	210	23	50	120	155	4-19
AD80-65F	65A	2-1/2"	253	101	326	260	26	65	140	175	4-19
AD80-80F	80A	3"	253	101	346	268	31	80	150	185	8-19
AD100-100F	100A	4"	311	126	403	300	30	100	175	210	8-19
AD125-125F	125A	5"	390	151	464	360	30	125	210	250	8-23
AD140-150F	150A	6"	431	164	502	360	35	150	240	280	8-23
AD160-200F	200A	8"	506	189	613	420	35	200	290	330	12-23
AD200-250F	250A	10"	605	231	736	515	38	250	355	400	12-25
AD250-300F	300A	12"	755	301	975	655	45	300	400	445	16-25

# DIAPHRAGM VALVE



Double Acting

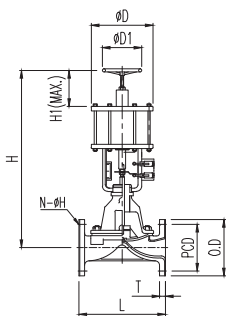
Single Acting

## Application

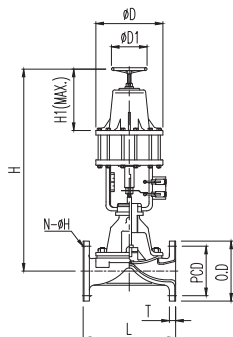
- Chemical Industry
- Pharmaceutical Industry
- Water Treatment
- Wastewater Treatment

## Specification

Valve Size	15A(1/2") - 150A(6")	
Actuator Type	Double Acting	Single Acting
Operating Media	Compressed Dry Air	
Operating Pressure	4.5 - 5.5kg/cm <sup>2</sup>	
Fluid Temperature	-20°C - 80°C	
Rating	JIS 10K	ANSI 150#
Body Material	FC(SCPH2, SCS13)/Body	EPDM/Diaphragm
Accessory	Solenoid valve, Limit Switch Box, Air filter Regulator, Manual Handle	



Double Acting



Single Acting

## Dimension

Model	SIZE		D	D1	Double		Single		L	END CONNECTION (ANSI 150# FF)		
	mm	inch			H(Approx.)	H1	O.D.	PCD		N-φH		
ADV-15A	15A	1/2"	138	95	380	420	110	85	125	89	60.5	4-16
ADV-20A	20A	3/4"	138	95	385	430	110	85	135	98	70.0	4-16
ADV-25A	25A	1"	138	95	390	430	110	85	145	108	79.5	4-16
ADV-40A	40A	1-1/2"	192	125	440	495	130	100	165	127	98.5	4-16
ADV-50A	50A	2"	192	125	490	530	135	100	197	152	120.5	4-19
ADV-65A	65A	2-1/2"	250	155	695	785	170	125	222	178	139.5	4-19
ADV-80A	80A	3"	250	155	750	835	190	130	260	191	152.5	4-19
ADV-100A	100A	4"	265	195	805	870	205	135	313	229	190.5	8-19
ADV-125A	125A	5"	265	195	845	895	215	145	364	254	216	8-22
ADV-150A	150A	6"	330	225	885	985	220	150	414	191	152.5	8-22

(mm)

# PNEUMATIC CYLINDER ON-OFF GLOBE VALVE

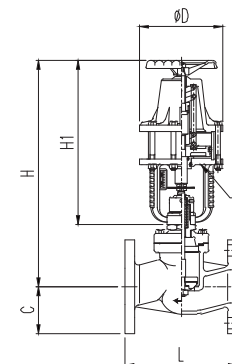


## Application

- Water Distribution Pipes
- Industrial Cleaning Machines
- Dyeing Machine Temperature Control
- Middle And Low Stem Equipments Control
- Wastewater Disposal Plant

## Specification

Valve Size	25A(1")	32A(1-1/4")	40A(1-1/2")	50A(2")	65A(2-1/2")	80A(3")
Actuator Model	Cylinder Type					
Actuator Type	Single Acting					
Operating Media	Compressed Dry Air					
Operating Pressure	4.5 - 7kg/cm <sup>2</sup>					
Manual Operation	Manual Handle(Optional)					
Fluid Temperature	-30°C - 220°C					
Rating	JIS 10K					
Body Material	SCS13					
Leakage Allowance	ANSI Class V					
Accessory	Solenoid valve, Limit Switch, Air filter Regulator					



## Dimension

Model	Size		φD	H Approx.	H1	C	L	PT
	mm	Inch						
AGV-25A	25A	1"	138	355	271	63	140	1/4"
AGV-32A	32A	1-1/4"	138	361	271	68	156	1/4"
AGV-40A	40A	1-1/2"	138	361	271	70	180	1/4"
AGV-50A	50A	2"	138	373	271	78	186	1/4"
AGV-65A	65A	2-1/2"	192	422	300	88	196	1/4"
AGV-80A	80A	3"	192	422	300	93	250	1/4"

END CONNECTION : JIS 10K FF (mm)

# TANK BOTTOM BALL VALVE - DOUBLE ACTING

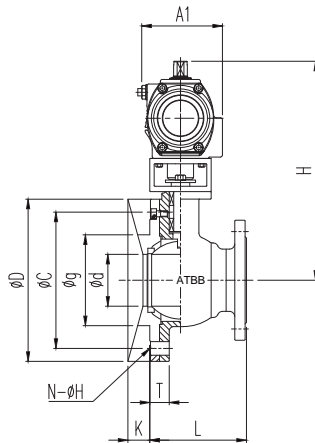


## Application

- Application For Tank Draining
- Fit For Tank Flange

## Specification

Valve Size	25A(2")-150A(6")		
Actuator Model	ATBB - Series		
Actuator Type	Double Acting		
Operating Media	Compressed Dry Air		
Operating Pressure	4 ~ 7kg/cm <sup>2</sup>		
Fluid Temperature	-10°C ~ 110°C		
Rating	JIS 10K	ANSI 150#	
Material	SCS13(SCS14)/Body	SCS13(SCS14)/Ball	PTFE/Seat
Accessory	Solenoid valve, Limit Switch Box, Air filter Regulator, Speed Controller, E/P Positioner, Manual Handle		



## Dimension

Model	A1	H Approx.	L	K	TANK PAD CONNECTION (MAKER STANDARD)					
					T	Φd	Φg	ΦC	ΦD	N-ΦH
ATBB50-25F	75	235	93	28.5	25	25	49	105	140	4-15
ATBB65-40F	89	289	109	29	25	40	61	120	155	4-15
ATBB65-50F	89	302	124	32	28	50	77	140	175	4-15
ATBB80-65F	101	331	131	37	30	65	102	160	195	6-15
ATBB80-80F	101	351	153	45	32	80	140	210	250	6-19
ATBB100-100F	129	383	170	62.5	35	100	166	240	280	8-19
ATBB125-125F	151	450	254	62.5	43	125	192	265	305	8-19
ATBB140-150F	164	516	277	62.5	45	150	243	310	350	8-23

# TANK BOTTOM FLUSH VALVE

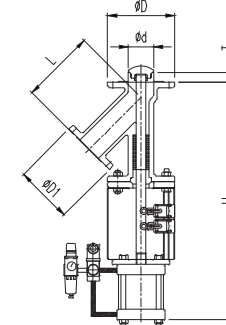


## Application

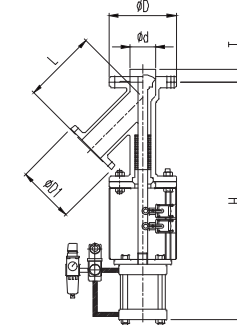
- Application For Tank Draining
- Minimize remains By Insertion nozzle Into Tank
- Customizable suitable draining speed according to customer's demand.
- There are two types ; Upper Type And Lower Type

## Specification

Valve Size	25A(1")-250A(10")	
Actuator Model	ATFV - Series	
Actuator Type	Double Acting Cylinder	
Operating Media	Compressed Dry Air	
Operating Pressure	4 ~ 7kg/cm <sup>2</sup>	
Fluid Temperature	-40°C ~ 120°C	
Rating	JIS 10K	ANSI 150#
Body Material	SCS13, SCPHZ	
Packing Material	TEFLON	
Accessory	Solenoid valve, Limit Switch Box, Air filter Regulator, Speed Controller, E/P Positioner, Manual Handle, Jacket	



UPPER TYPE



LOWER TYPE

## Dimension

Class	A X B	1" X 1-1/2"	1-1/2" X 2"	2" X 2-1/2"	2" X 3"	2-1/2" X 3"	3" X 4"	4" X 5"	5" X 6"	6" X 8"	8" X 10"	10" X 12"
		H	T	L	Ød	ØD	ØD1					
JIS 10K ANSI 150#	H	570	600	800	700	700	780	780	780	800	920	1150
	T	30	30	65	65	65	64	70	90	100	115	120
	L	125	140	190	190	190	215	255	290	300	350	400
	Ød	48	60	76	89	89	114	140	165	216	267	318
	ØD	JIS 10K & ANSI 150# & For Approval										
ØD1	JIS 10K & ANSI 150# & For Approval											

# PNEUMATIC CYLINDER Y - TYPE VALVE

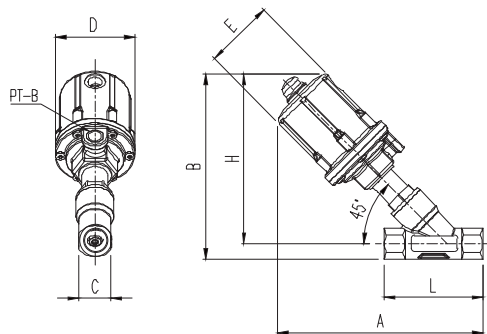


## Application

- Water Distribution Pipes
- Industrial Cleaning Machines
- Dyeing Machine Temperature Control
- Middle And Low Stem Equipments Control

## Specification

Valve Size	15A(1/2")-50A(2")	
Actuator Model	Cylinder Type	
Actuator Type	Single Acting	
Operating Media	Compressed Dry Air	
Operating Pressure	4.5 ~ 7kg/cm <sup>2</sup>	
Liner Adjust	None Manual Handle	
Fluid Temperature	Valve : -10°C ~ 180°C	
End Connection	Female Thread, Soket Welding	Flange Type (Option)
Body Material	SCS14	
Leakage Allowance	ANSI Class VI	
Accessory	Limit Switch, Air filter Regulator	



## Dimension

END CONNECTION : PT SCREW (mm)

Model	SIZE		E	A	B	C	D	H	L	PT-B
	mm	inch								
AGV-25Y	25A	1/2"	φ50	174.5	158	27	φ68	84	144.5	1/4"
AGV-20Y	20A	3/4"	φ50	182	163.5	34	φ68	94	146.5	1/4"
AGV-25Y	25A	1"	φ63	211	192.5	40	φ84	104	172.5	1/4"
AGV-32Y	32A	1-1/4"	φ63	225	211.5	49	φ84	120	187	1/4"
AGV-40Y	40A	1-1/2"	φ80	252	238.5	55	φ105	130	211	1/4"
AGV-50Y	50A	2"	φ80	275	267	70	φ105	150	232	1/4"

# KNIFE GATE VALVE - DOUBLE ACTING

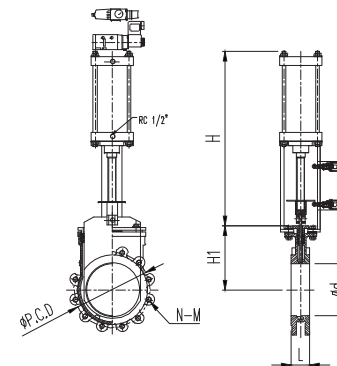


## Application

- Design Features
- Less Torque Pneumatic Cylinder
- Durable Internal Thread
- Leakage - Proof Gland
- Tow Pawls For Tight Seal

## Specification

Valve Size	50A(2")-500A(20")	
Actuator Model	AKGV - Series	
Actuator Type	Double Acting Cylinder	
Operating Media	Compressed Dry Air	
Operating Pressure	4 ~ 7kg/cm <sup>2</sup>	
Fluid Temperature	-40°C ~ 120°C	
Rating	JIS 10K	ANSI 150#
Body Material	SCS13, FCD45	
Accessory	Solenoid valve, Limit Switch Box, Air filter Regulator, E/P Positioner, Manual Handle	



## Dimension

END CONNECTION : JIS 10K LUG (mm)

Model	SIZE		H1	H	L	φd	φP.C.D	N-M
	mm	inch		Approx.				
AKGV-50A	50A	2"	100	409	48	48	120	4-M16
AKGV-65A	65A	2-1/2"	109	447	51	58	140	4-M16
AKGV-80A	80A	3"	102	464	51	79	150	8-M16
AKGV-100A	100A	4"	145	526	51	100	175	8-M16
AKGV-125A	125A	5"	169	571	57	125	210	8-M20
AKGV-150A	150A	6"	180	668	57	150	240	8-M20
AKGV-200A	200A	8"	219	770	70	200	290	12-M20
AKGV-250A	250A	10"	276	902	70	252	355	12-M22
AKGV-300A	300A	12"	314	1031	76	303	400	12-M22
AKGV-350A	350A	14"	340	1153	76	337	445	16-M22
AKGV-400A	400A	16"	400	1338	89	387	510	16-M24
AKGV-450A	450A	18"	413	1472	89	438	565	16-M24
AKGV-500A	500A	20"	495	1573	114	540	620	20-M24

# 2-STAGE FLANGED BALL VALVE - DOUBLE ACTING

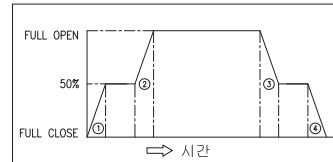
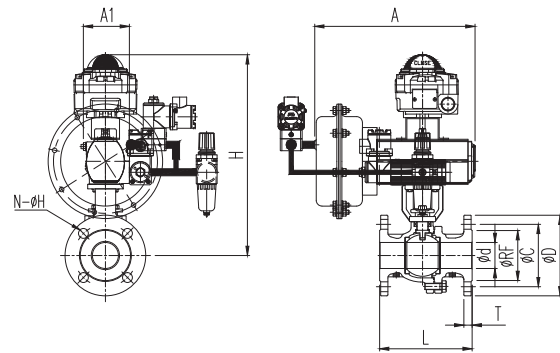


## Application

- Fixed flow control
- Water hammer protection
- Food & Beverage lines
- Vacuum distribution pipes
- Oil Tank Storage system

## Specification

Valve Size	15A ~ 80A		
Actuator Model	AD65, AD80 + Diaphragm		
Actuator Type	Double Acting		
Operating Media	Compressed Dry Air		
Operating Pressure	4 ~ 7kg/cm <sup>2</sup>		
Rotating Angle	90° ± 5°		
Fluid Temperature	-10°C ~ 90°C (-10°C ~ 150°C)		
Rating	JIS 10K		ANSI 150#
Body Material	SCS13(SCS14, SCPH2)/Body	SCS13(SCS14)/Ball	PTFE(RTFE)/Seat
Accessory	Solenoid valve, Limit Switch Box, Air filter Regulator		



	Sol V/V operate		Air direction of flow		No.
	Sol-1	Sol-2	Sol-1	Sol-2	
1 Step	ON	ON	→	→	1
Full Open	OFF	ON	→	→	2
1 Step	ON	ON	→	→	3
Full Close	ON	OFF	→	←	4

## Dimension

Model	SIZE		A	A1	H Approx.	L	END CONNECTION (JIS 10K RF)					N-φH
	mm	inch					T	φd	φRF	φC	φD	
AD65-15F-2ST	15A	1/2"	315	89	351	108	12	15	52	70	95	4-15
AD65-20F-2ST	20A	3/4"	315	89	354	117	14	20	58	75	100	4-15
AD65-25F-2ST	25A	1"	315	89	363	127	14	25	70	90	125	4-19
AD65-32F-2ST	32A	1-1/4"	315	89	366	140	16	32	80	100	135	4-19
AD65-40F-2ST	40A	1-1/2"	315	89	388	165	16	40	85	105	140	4-19
AD65-50F-2ST	50A	2"	315	89	395	178	16	50	100	120	155	4-19
AD80-65F-2ST	65A	2-1/2"	361	101	423	190	18	65	120	140	175	4-19
AD80-80F-2ST	80A	3"	361	101	465	203	18	80	130	150	185	8-19
AD100-100F-ST	100A	4"	478	137	488	229	18	100	151	175	210	8-19

(mm)

# DAMPERS

## Application

- Low Pressure Air and Gas Line
- High Temperature Air and Gas Line

## Specification

Valve Size	80A ~ 1500A (3" ~ 60")
Body Type	Round Type, Square Type
Body Rating	Maker Standard Thickness / JIS 2K, 5K, 10K / ANSI 125#, 150#
End Connection	FF(Flanged Type)
Body Material	SS400, SUS304, SUS316 and etc.
Seat Material	Non Seat Type, Soft Seat(Teflon, Graphite), Metal Seat
Leakage Class	Under 5% of Full Opening Cv
Fluid Temp. Range	-5°C ~ 600°C
Actuator Type	Single Acting / Double Acting Cylinder, Electric Motor
Accessory	Air set, E/P positioner, Solenoid Valve, Limit Switch, Manual Handle and etc.

## The Methods of Calculation To Fit Damper

### 1) Round Type Damper

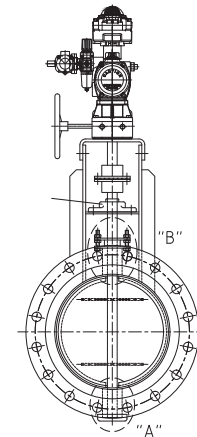
$$T = \frac{d^3 \times \Delta P}{12 \times n} \times 10^{-9} \times 1.8 = [Kg \cdot m]$$

↳ Bearing Mounting  
(None Mounting = 2.5)

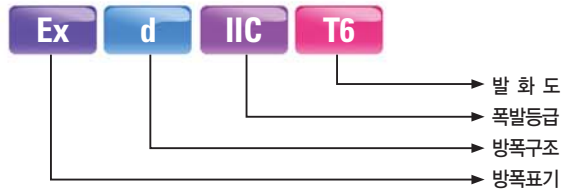
### 2) Square type Damper

$$T = \frac{a^2 \times b \times \Delta P}{8 \times n} \times 10^{-9} \times 1.8 = [Kg \cdot m]$$

a : Height  
b : Horizontal  
d : Diameter  
ΔP : Pressure (mmAq)  
n : Blade Q'ty



• 방폭등급 표기



• 방폭구조

- (1) 내압방폭구조 (기호 : d)  
가장 많이 사용되는 구조이며 용기내부에서 폭발성가스 또는 증기가 폭발하였을 때 용기가 그 압력에 견디며 또한 접점면, 전선인입구 등을 통해서 외부의 폭발성 가스, 증기에 인화되지 않도록 한 구조.
- (2) 압력방폭구조 (기호 : p)  
용기 내부에 보호가스(신선한공기 또는 불연성가스)를 압입하여 내부압력을 유지함으로써 폭발성가스 또는 증기가 용기내부로 유입되지 않도록 된 구조.
- (3) 안전증방폭구조 (기호 : e)  
정상 운전중에 폭발성가스 또는 증기에 점화원이 될 전기불꽃, 아크 또는 고온부분 등의 발생을 방지하기 위하여 기계적, 전기적 구조상 또는 온도상승에 대해서 특히 안전도를 증가시킨 구조.
- (4) 유입방폭구조 (기호 : o)  
전기불꽃, 아크 또는 고온이 발생하는 부분을 기름속에 넣고 기름면 위에 존재하는 폭발성가스 또는 증기에 인화되지 않도록 한 구조.
- (5) 본질안전방폭구조 (기호 : ia 또는 ib)  
정상시 및 사고시(단선, 단락, 지락 등에 발생하는 전기불꽃, 아크 또는 고온에 의하여 폭발성가스 또는 증기에 점화되지 않는 것이 점화시험, 기타에 의하여 확인된 구조.
- (6) 몰드방폭구조 (기호 : m)  
폭발성가스 또는 증기에 점화시킬 수 있는 전기불꽃이나 고온발생부분을 콤팩트도로 밀폐시킨 구조.

• 폭발등급

한국(KS) 일본(JIS)	폭발등급	1급	2급	3급
	특새의폭	0.6mm이상		
해당가스	부탄, 메탄등 2,3급 제외 전가스		에틸렌, 석탄가스	수소, 아세틸렌

IEC	폭발등급	I	II A	II B	II C
	특새의폭	탄관용	0.9mm이상	0.5mm이상 0.6mm 이하	0.5mm이하
해당가스	메탄	아세톤, 벤젠, 부탄, 프로판	에틸렌, 부타디엔	아세틸렌	

• 발화도

발화도	KS, JIS	G1	G2	G3	G4	G5	
	IEC	T1	T2	T3	T4	T5	T6
발화점(°C)		≤450	≤300	≤200	≤135	≤100	≤85

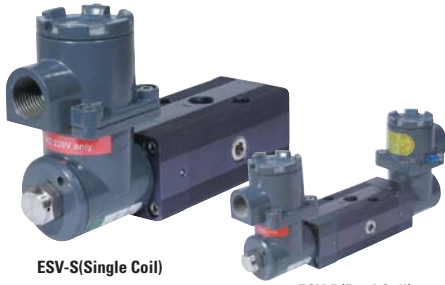
**ACCESSORY** →

• 위험장소

KS, JIS : 0종장소, 1종장소, 2종장소로 구분  
IEC : ZONE0, ZONE1, ZONE2로 구분

- (1) 0종장소 (ZONE0) : 0종 장소라 하면 계속하여 위험한 상태가 될 우려가 있는 장소로 폭발성가스의 농도가 연속적으로 또는 장시간 계속하여 폭발한계 이상으로 되는 장소를 말한다.
- (2) 1종장소 (ZONE1) : 보통상태에서 위험한 상태가 될 우려가 있는 장소로 다음과 같은 장소를 말함.
  - ① 폭발성 가스가 보통상태에서 집적되어 위험농도가 될 우려가 있는 장소.
  - ② 수리, 보수 또는 LEAKAGE로 인하여 가끔 폭발성가스가 집적되어 위험농도가 될 우려가 있는 장소. 여기서 보통상태라는 것은 장치가 본래의 필요성에 의하여 정상으로 운전조작되어 있는것을 의미하고 제품의 반출, 뚜껑의 개폐 안전변의 동작 등도 포함.
- (3) 2종장소 (ZONE2) : 이상상태에서 위험상태로 될 우려가 있는 장소로 다음과 같은 장소를 말함.
  - ① 위험성 제품을 항상 취급하고 있지만 그것들은 밀폐한 용기설비내에 봉합되어 있는데 그 용기설비가 사고때문에 파손되었을 경우 또는 조작을 잘못했을 경우만이 그것들이 누출되어 위험한 농도가 될 우려가 있는 장소.
  - ② 확실한 기계적 환기장치에 의한 폭발성가스가 집적되지 않도록 하고 있지만 환기장치에 고장이 났을 경우에는 폭발성가스가 집적하여 위험한 농도가 될 우려가 있는 장소.
  - ③ 1종장소의 주변 또는 인접한 실내에서 폭발성가스가 위험한 농도로 가끔 침입할 우려가 있는 장소, 0종장소에서는 본질 안전방폭구조의 기기를 사용해야 하며 1종장소, 2종장소에서는 일반적으로 내압방폭 구조의 기기를 많이 사용한다.

# SOLENOID VALVE - ESV Series



ESV-S(Single Coil)

ESV-D(Dual Coil)

**Explosion proof solenoid valve for a confident control under rough working environments**

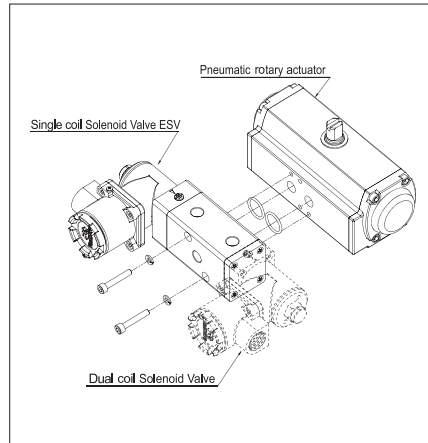
### Features

- Rugged aluminum die-cast housing
- Convertible from 5/2 way to 3/2 way
- Rotatable valve head for optimal mounting
- Direct NAMUR mounting or SCREW mounting
- Optional dual coil

### Specification

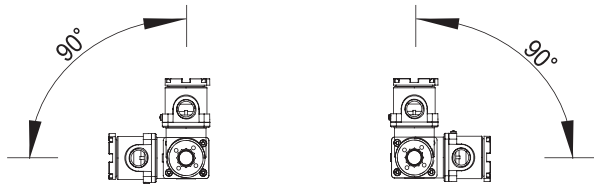
Model	ESV
Operating Air Pressure	1.5 - 10 kgf/cm <sup>2</sup>
Air Supply (Max.)	15 kgf/cm <sup>2</sup>
Operating Voltage / Power	AC 110V : 6.1 VA AC 220V : 3.8 VA DC 24V : 3.4 W
Voltage Tolerance	±10%
Frequency	50Hz / 60Hz
Explosion proof Class	Exd II C T6
Operating Ambient Temperature	-20°C ~ +60°C
Flow Capacity (Cv)	0.9
Mounting Configuration	NAMUR or SCREW interface
Pneumatic Connections	PT 1/4" or NPT 1/4"
Electrical Connection	PT 1/2" or NPT 1/2"
Coil Insulation Grade	Class F
Duty Cycle	100%
Weight	0.9kg (Dual : 1.4kg)
Silencers	2 pcs included as standard

### Mounting



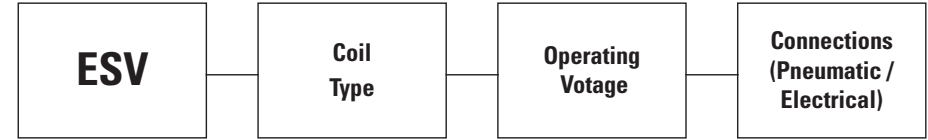
### Rotatable valve Head

The ESV valve head can be rotated by 90° to the right or the left for left for an optimal mounting as shown below



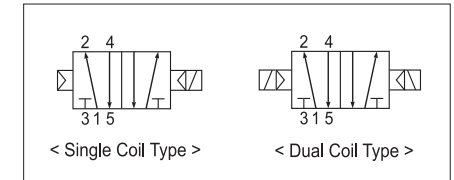
# SOLENOID VALVE - ESV Series

### How to order



Description	ESV
Coil	S : Single Coil D : Dual Coil
Operating Voltage	A220 : AC220V A110 : AC110V D24 : DC 24V
Connections (pneumatic-electrical)	P : PT1/4-PF1/2 N : NPT 1/4-NPT 1/2

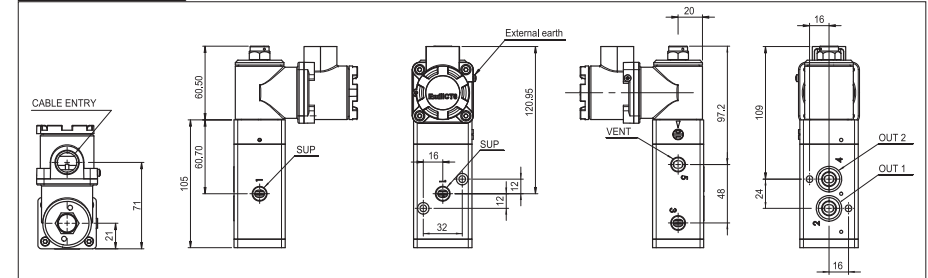
### Symbol of Operation



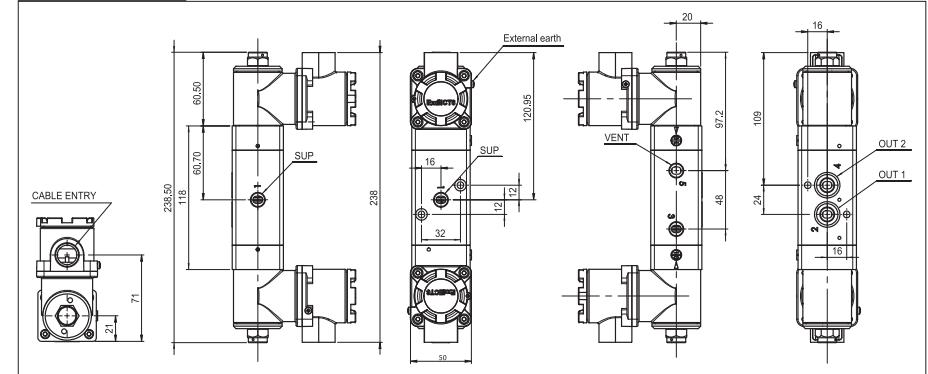
Ex) ESV-S-D24P (Single Coil, 24VDC, PT1/4-PF1/2)

### Dimension

#### Single Coil Type



#### Dual Coil Type





# SOLENOID VALVE - ANS Series

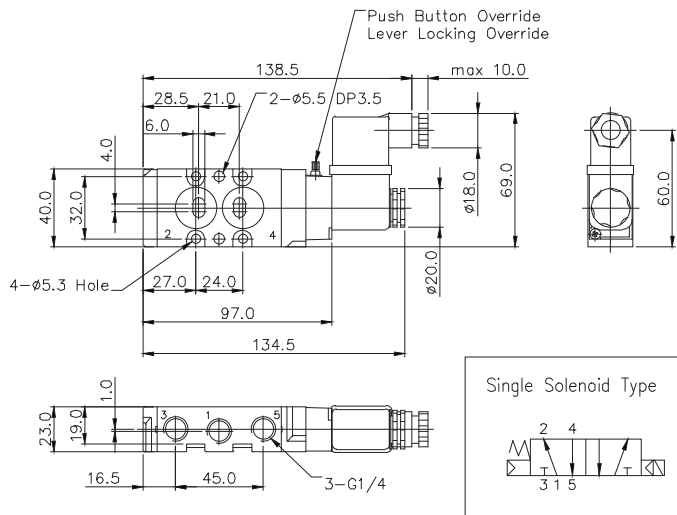


### Features

- 5 Port pilot type
- NAMUR interface
- Compact - light weight
- Mass flow -CV1.0
- Excellent endurance

### Specification

Model	ANS (single coil)	ANS-D (Dual coil)
Fluid	Air & Inert Gas	
Pressure (Bar)	1.5 ~10.0	2.0 ~ 10.0
Ambient Temperature	5°C ~ 60°C	
Response Time(at 5 Bar)	below 25ms	35ms
Lubrication	Not required	
Rated Voltage	AC110V, 220V (50/60HZ), DC24V	
Coil Insulation Grade	Class F	
Coil Enclosure	IP65	
Electric Connection	DIN connector (Standard), 1/2"PF Metal Connector (Option), Lamp Type (Option)	



# LIMIT SWITCH BOX - ALS Series



ALS 1X Series  
(Weather Proof, IP68)



ALS 3X Series  
(Explosion Proof, Exd II C T6, IP68)

### 1. Valve position Indicator

Limit switch box indicator offers clear location of the current valve position by 2 mechanical switches

### 2. "Quick-Set" Cam

The operating position of the switches can be easily changed by adjusting the high resolution spline cams manually and independently without the need for additional tools (cam closed-up, cam open-down)

### 3. Easy Wiring

ALS series are equipped with 2 standard conduit entries and 1 terminal strip with 8 point

### 4. Dual Wire Conduit

ALS10 : Dual 1/2" conduit entries  
ALS30 : Dual 3/4" conduit entries

### 5. Captive Cover Bolts

Designed to be captured into the cover

### 6. Easy Mounting Bracket

Any actuator for rotary motion can be easily mounted.  
NAMUR bracket supplied for easy mounting onto the actuator

### Ordering Number

Series	Area Classification	Switch Type
ALS	1 : Weather proof	0 : 2 SPDT
	3 : Explosion proof	1 : Proximity Sensor (PNP/NPN)
		2 : 3 SPDT
		3 : 4 SPDT
		4 : 2 DPDT (ALS 3X Series Only)

### Standard Materials of Construction

Name	No.	Specification
Outer position indicator	1	PE
Inner Position indicator	1	ABS
Housing(Body, Cover)	2	Die-Casting Aluminum
Shaft(Stem)	1	303 Stainless Steel
Mechanical Switch	2	Used in UL CSA approved
Inserts(ALS3X)	1	Bronze
O-Ring	4	Nitrile (Rubber)
Cam	2	ABS
Spring	1	304 Stainless Steel
Cover Screws	4	304 Stainless Steel
Terminal Strip	1	Polyethylene

# LIMIT SWITCH BOX - ALS Series

## Specification

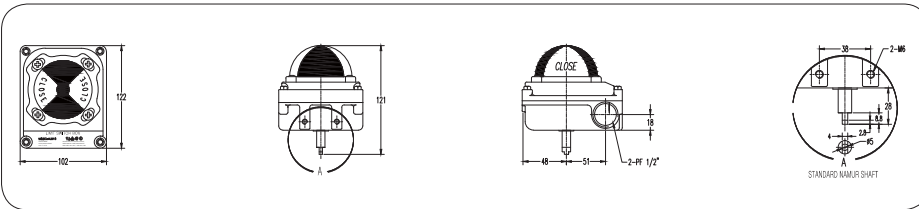
Description	Series	
Model	ALS 1X Series	ALS 3X Series
Ambient Temperature	-20°C - 85°C (-4°F - 185°F)	
Cable Entry Standard	2 x 1/2" PF/PT	2 x 3/4" PF/PT
Cable Entry Option	2 x 1/2" NPT/M20/PG13.5	2 x 3/4" NPT/M20/M25/PG13.5/PG16
Terminal Block Standard	8 Points	
Terminal Block Option	12 & 14 Points / Solenoid Valve Connection 14 Points	
Position indicator	0° to 90° (Red for Close / Yellow for Open)	
Painting	Polyester Powder Coating With Black Color	
Bracket	Steel / SUS	

## Certificate

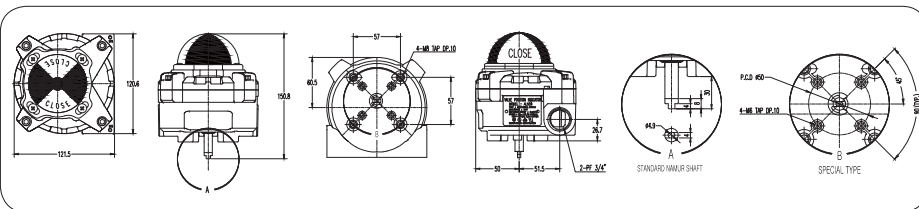
MARK	ALS 1X Series		ALS 3X Series	
	Ratings	Reg No.	Ratings	Reg No.
KTL	IP68	13-040252-01	IP68	13-054947-01
KOSHA			Exd II CT6	13-AV2B0-0752X
CE (TUV NORD)	Low-Voltage Directive 2006/95/EC	K3441/L10	Low-Voltage Directive 2006/95/EC	K3441 / L10
FM Approvals			XP/II/1/ABCD/T5 Ta=+85°C, I/1/AEx d II C/T5 Ta=+85°C, DIP/II, III/1/EFG/T5 Ta=+85°C; IP67	3041064

## Dimension

### ALS10 (Weather Proof)







### ALS30 (Explosion Proof)



# LIMIT SWITCH BOX - ALS Series

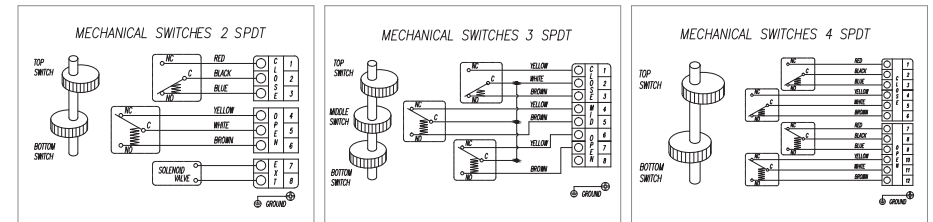
## Mounting bracket

1 NAMUR standard bracket is spplied together with 1 limit switch box as standard

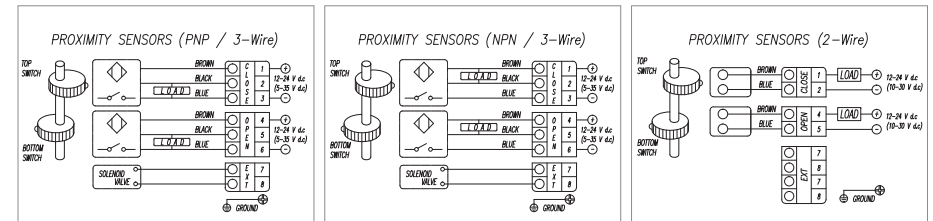
MODEL	BRACKET	Material	Actuator size	Model	Bracket	Material	Actuator size
	AB1 ALS 1X,3X Series	SUS	30 X80 H:20		AB3 ALS 1X,3X Series (For A40)	Steel	25 X 50 H:20
	AB2 ALS 1X,3X Series (For A200, 250)	SUS	30 X130 H:30		S1 ALS 1X Series	Steel	30 X 80 H:20-30

## Wiring Diagram

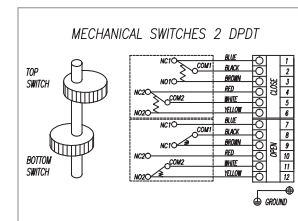
### Mechanical Switch Type (UL CSA VDE Approved)



### Proximity Sensor Type (UL CE Approved)



### Mechanical Switch Type (UL CSA VDE Approved)



# AIR FILTER REGULATOR - AFR Series



## Features

- Compact design
- Pressure adjustment without a tool

## Specification

Model	AFR-10	AFR-20
Max. Pressure	15 bar	
Fluids	Air	
Filtration	5micron	
Ambient Temperature	-20°C ~ 70°C	
Set Pressure Range	0 ~ 8 Bar	0.5 ~ 8.5 Bar
Drain Capacity (cm <sup>3</sup> )	12	
Port Size	PT 1/4" or NPT 1/4"	PT 1/4"
Material	Aluminum die-cast	PC Bowl
Weight	0.5kg	

# SPEED CONTROLLER - FC Series



## Features

The speed controller is installed on actuators such as cylinders and air motors and controls to adjust the flow through the actuator.

## Specification

Model	FC1-8	FC3-8	FC3G-8
Operating Pressure	0.5-15.3 kgf/cm <sup>2</sup>		
Fluids Temperature	5°C ~ 60°C		
Ambient Temperature	-10°C ~ 60°C		
No. of Needle Rotations	14	10	
Port Size	PT 1/4"		

# ELECTRO-PNEUMATIC POSITIONER - EP Series



## Features

- Easy maintenance
- Simple SPAN and ZERO adjustments
- NAMUR mounting
- Simple structure for feedback connection
- Simple conversion direct acting and reverse acting

## Specification

Model	E P R (Rotary type)	E P L (Linear type)
Enclosure	Ex dmb II B+H <sub>2</sub> T6, Ex dmb II C T6/T5, Ex ia II T6/IP66	
Fluids	Air	
Input Signal	4 ~ 20 mA DC	
Split range Application	4 ~ 12 or 12 ~ 20 mA DC	
Voltage Supply Min/ Max	8 Vdc / 30 Vdc	
Linearity	Within ± 1.0 % FS	
Hysteresis	Within 1.0 % FS	
Sensitivity	Within ± 0.5 % FS	
Operating Temperature	-20 ~ +70°C	
Pneumatic Connections	1/4" PT(NPT)	
Electrical Connections	1/2" PF(NPT)	
Material	Aluminum die-cast	
Weight	3.5kg(with terminal box)	3.3kg(with terminal box)

# MUFFLER - AS Series



## Features

Mufflers are designed to attenuate the exhaust noise caused by control of pneumatic lines. In general, mufflers are mounted on the exhaust ports of solenoid valve, directional control valves and so on, to reduce exhaust noise when direction is changed. This contributes to overall noise reduction in plants.

## Specification

Model	ASC-8A	ASL-8A
Operating Pressure	0-10 kgf/cm <sup>2</sup>	
Fluids Temperature	5°C ~ 60°C	
Ambient Temperature	-10°C ~ 60°C	
Noise	20dB	
Port Size	PT 1/4"	
Material	Metal	
Function	Speed control + Suppression	Sound Suppression

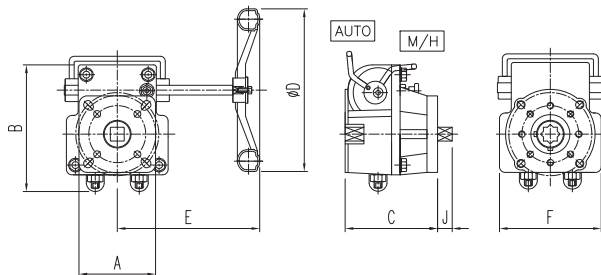
# MANUAL HANDLE - ADG Series



- Features**
- Direct Mounting
  - High Power

## Specification

Model	ADG050N	ADG070N	ADG102N	ADG140N
MAX Output Torque	270 Nm	360 Nm	780 Nm	1300 Nm
Pneumatic Actuator Mounting Flange (ISO 5211)	F05 / F07	F07 / F10	F10 / F12	F10 / F12 / F14
Valve Mounting Flange (ISO 5211)	F05 / F07	F07 / F10	F10 / F12	F10 / F12
Reduction Ratio	40 : 1	38 : 1	36 : 1	50 : 1
Number Of Turns 90°	10 TURN	9.5 TURN	9 TURN	12.5 TURN
Handwheel Diameter	Ø200	Ø280	Ø280	Ø400
Weight	3.1 Kg	4.5 Kg	7.0 Kg	14.7 Kg
Application For Pneumatic Actuator	AS50/65 AD50/65/80	AS80 AD100/125	AS100 -	AS125 AD140/160



PNEUMATIC ACTUATOR MOUNTING

VALVE MOUNTING

## Dimension

Model	DIM										Pneumatic Actuator				Valve Mounting	
	A	B	C	ΦD	E	F	G (TOP)	J	H (BOTTOM)	DP	BCD1/2/3	4-ØD1/2	BCD4/5	4-ØM1/2		
ADG050N	70	131	103	200	151	88	14X14	16	17X17	20	Ø50/70	4-Ø6.5/8.5	Ø50/70	4-M6/M8		
ADG070N	95	161	114	200	178	125	17X17	18	17X17	20	Ø70/102	4-Ø8.5/10.5	Ø70/102	4-M8/M10		
ADG102N	114	182	130	280	220	140	22X22	24	22X22	30	Ø102/125	4-Ø10.5/12.5	Ø102/125	4-M10/M12		
ADG140N	129	231	167	400	290	187	22X22	24	27X27	30	Ø102/125/140	4-Ø11/12.5/16.6	Ø102/125	4-M10/M12		

# VALVE PHOTOS

