



TANK GAUGES

DIGITAL COUNTER TYPE /
2- POINTER DIAL INDICATING TYPE

510 511

FEATURES

- ±2mm MEASURING ACCURACY
- WITH A KNOB FOR FLOAT CHECK TO HOIST FLOAT AT FIELD SITE
- SEAL PIPE VERSION IS AVAILABLE
- SEAL POT OF V / U-SHAPED ARE PROVIDED
- FLOATING ROOF / CONE ROOF / TOP MOUNTING ARE AVAILABLE
- WITH A MAGNETIC FOLLOWER FOR MIDDLE PRESSURE VERSION
- ALARM SETTER / TRANSMITTER CAN BE ADDED

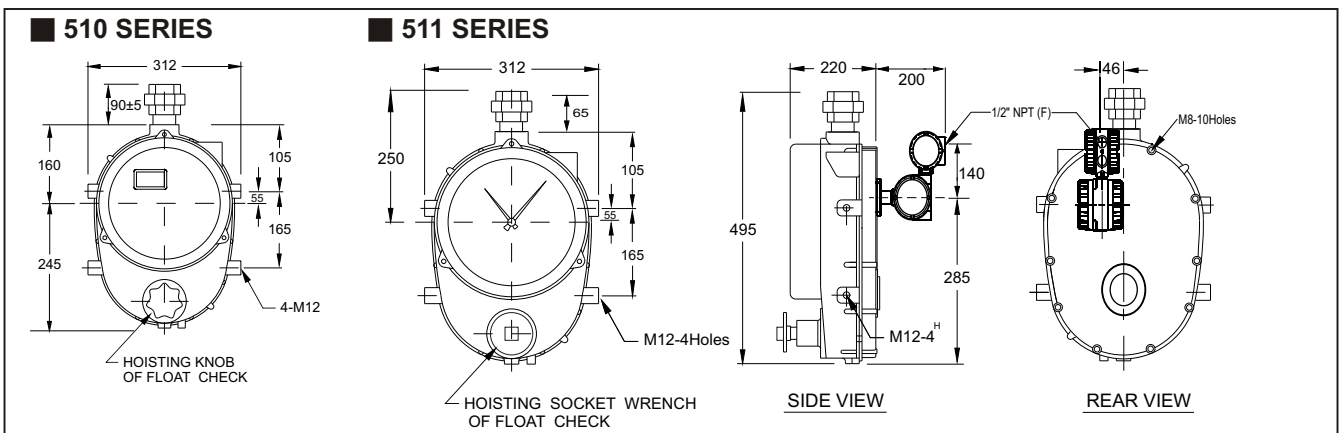


SPECIFICATIONS FOR GAUGES HEAD

ITEMS	SPECIFICATIONS	
	510	511
MODEL NUMBER	510	511
INDICATION	Digital counter for metre display and vernier dial for mm measurement.	2-pointer dial with metre unit for outside scale and mm scale inside.
METERING RANGE	0~6M, 0~12M, 0~18M, 0~24M, 0~30M	0~5M, 0~10M, 0~15M, 0~20M, 0~30M
DISPLAY RESOLUTION	3 digits (0~99.9M) and 2 mm scale divided for vernier	2mm for inside scale
CONNECTION OF GAUGE HEAD	1½" NPT with a union coupling for standard version or 1½" flange connection for high pressure versions	
ELECTRIC HOUSING (OPTIONAL)	Assembled in the back cover of gauge head / Exd IIC T6, IP67	
FLOAT HOISTING	With a knob or crank (optional) for float check	
INDICATION ACCURACY	±2mm for float-tape versions, ±10mm for seal pipe (standard) / Less than 10mm for options.	
OPERATING PRESSURE	Less than 20KPa (0.2 kg/cm ² G) / Less than 100KPa (1.02 kg/cm ² G) for middle pressure version Use seal pipe for high pressure tank (≤3MPa)	
LIQUID TEMPERATURE	0~+150C for float-tape versions -200~+400C for pipe sealing versions	
LIQUID DENSITY	≥ 0.5 g/cm ³	
LIQUID VISCOSITY	Max.600 cPs without sticking / crystallization	
GAUGEHEAD ENCLOSURE	Water proof IP67	
FINISH	Polyester epoxy painted for aluminium alloy gaugehead versions	
GAUGE SUPPORT	With a bracket used for side supporting	
OPTIONAL DEVICES	Shut-off Valve / Transmitter / Alarm Device (Alarm Setters)	

LEVEL

DIMENSIONS (m/m)

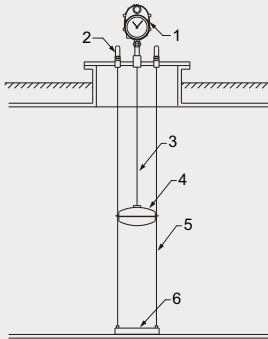


MODEL SELECTIONS

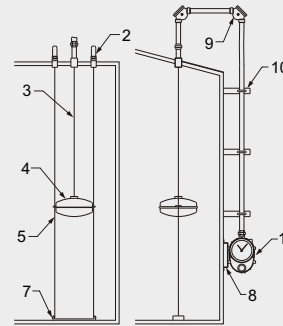
ITEMS	CODE	SPECIFICATIONS							
① MODEL	510	TANK GAUGE FOR DIGITAL COUNTER DISPLAY TYPE							
	511	TANK GAUGE FOR 2-POINTER DIAL INDICATING TYPE							
② FLOAT STYLE (See page 3~4)	A	Float actuated tape for universal usage							
	B	Magnetic float / Seal pipe not provided							
	C	Magnetic float / Seal pipe provided							
	D	Use for floating roof tank of float well type							
	E	Use for floating roof tank of floating cover or gas holder type							
	F	To be specified							
③ MOUNTING CONFIGURATION (See page 3~4)	CODE	TYPICAL INSTALLATIONS				AVAILABLE FLOAT STYLE			
					A	B / C	D / E	F	
	-1	Top mounting / Roof reading				○	○	×	○
	-2	Tank side reading (90 °Guide SHEAVE provided)				○	○	○	○
	-3	Tank side reading with V-shaped seal pot				○	×	×	×
	-4	Tank side reading with U-shaped seal pot				○	×	×	×
	-5	Tank side reading for spherical tank used				○	○	×	○
-6	To be specified								
④ MATERIALS	CODE	GAUGE HEAD	FLOAT & TAPE	GUIDE WIRE / SEAL PIPE	BOTTOM ANCHOR	SHEAVE ELBOW / TOP ANCHOR	SEAL POT		
	0	ADC12	304SS	304SS	304SS	AC2A	304SS		
	1	ADC12	304SS	304SS	304SS	304SS	304SS		
	2	ADC12	316SS	316SS	316SS	316SS	316SS		
	3	304SS	316SS	316SS	316SS	316SS	316SS		
	4	To be specified							
⑤ CONNECTION OF GAUGEHEAD	0	NPT (Standard)							
	1	ANSI 150LB Flange							
	2	To be specified							
⑥ CONNECTION OF SHEAVE ELBOW / TOP ANCHOR	-A	NPT (Standard)							
	-B	ANSI 150LB Flange							
	-C	To be specified							
⑦ HOIST DEVICE OF FLOAT CHECK	A	Knob (Standard)							
	B	Socket wrench							
	C	To be specified							
⑧ TRANSMITTER (For optional)	A	Not required							
	B	4~20mA DC , Traditional type , model 315							
	C	4~20mA DC+HART Protocol , smart type , model 320							
	D	4~20mA DC with LCD display and 10 steps calculation							
	E	To be specified							
⑨ ALARM DEVICE (For optional)	A	Not required							
	B	With non-display alarm setter of model 367A for mounting on the other site or panel							
	C	With LED display alarm setter of model 367B for mounting on the other site or panel							
	D	With alarm device of 314 series for micro switch type							
	E	To be specified							
⑩ METERING RANGE (Maximum)	CODE	FOR 510			CDOE	FOR 511			
	-06	6 metres	-24	24 metres	-05	5 metres	-20	20 metres	
	-12	12 metres	-30	30 metres	-10	10 metres	-25	25 metres	
	-18	18 metres	-xx	To be specified	-15	15 metres	-xx	To be specified	
⑪ PROVIDED COMPONENTS	A	Standard provided parts (See page 3~4)							
	B	To be specified							
⑫ EXTRA TREATMENT	/A	Not required							
	/B	Special finished							
	/C	To be specified							

FLOAT STYLE / MOUNTING CONFIGURATION

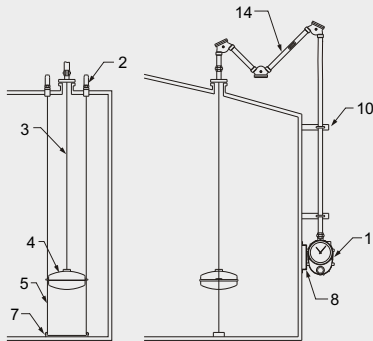
A-1 Float actuated tape
 Top mounting / Roof reading
 ⑦ Standard provided parts : **1 / 2 / 3 / 4 / 5**



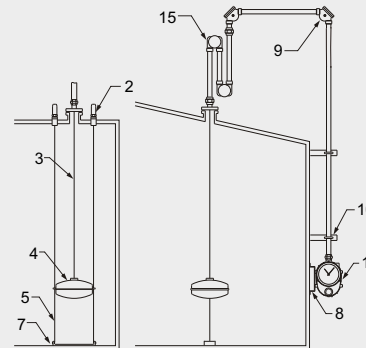
A-2 Float actuated tape (Tank side reading)
 ⑦ Standard provided parts : **1 / 2 / 3 / 4 / 5 / 7 / 8 / 9**



A-3 Float actuated tape style with V-shaped seal pot
 ⑦ Standard provided parts : **1 / 2 / 3 / 4 / 5 / 7 / 8 / 14 / Seal liquid**

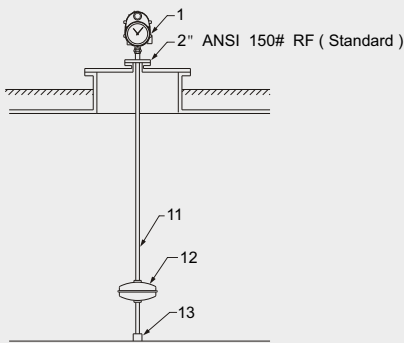


A-4 Float actuated tape style with U-shaped seal pot
 ⑦ Standard provided parts : **1 / 2 / 3 / 4 / 5 / 7 / 8 / 9 / 15 / Seal liquid**



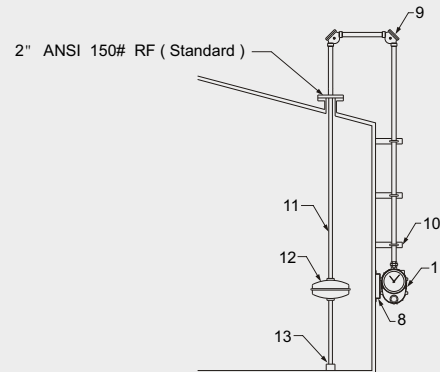
B-1 Magnetic float style
 Top mounting / Roof reading
 Seal pipe provided by customer
 ⑦ Standard provided parts : **1 / 12 / 13**

C-1 Magnetic float style
 Top mounting / Roof reading
 Seal pipe provided by vendor
 ⑦ Standard provided parts : **1 / 11 / 12 / 13**



B-2 Magnetic float style
 Tank side reading
 Seal pipe provided by customer
 ⑦ Standard provided parts : **1 / 8 / 9 / 12 / 13**

C-2 Magnetic float style
 Tank side reading
 Seal pipe provided by vendor
 ⑦ Standard provided parts : **1 / 8 / 9 / 11 / 12 / 13**

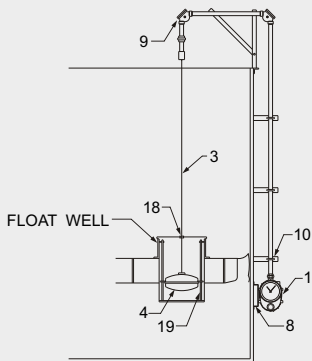


SYMBOL	1	GAUGE HEAD	6	ANCHOR WEIGHT	11	SEAL PIPE	16	135° SHEAVE ELBOW
	2	TOP ANCHOR	7	BOTTOM ANCHOR	12	MAGNETIC FLOAT	17	SHUT OFF VALVE (OPTION)
	3	MEASURING TAPE	8	GAUGE SUPPORT	13	BOTTOM ANCHOR	18	GUIDE BUSHING
	4	FLOAT	9	90° SHEAVE ELBOW	14	V-SHAPED SEAL POT	19	GUIDE ROD OF FLOAT
	5	GUIDE WIRE	10	SUPPORT	15	U-SHAPED SEAL POT	20	

FLOAT STYLE / MOUNTING CONFIGURATION

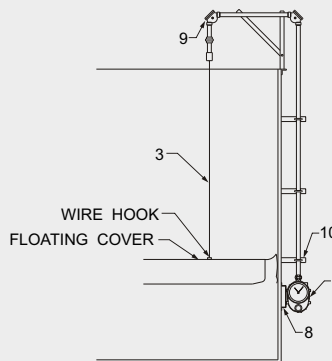
D-2 Floating roof tank of float well type

⑦ Standard provided parts : 1/3/4/8/9



E-2 Floating roof tank of floating cover type

⑦ Standard provided parts : 1/3/8/9



1	GAUGE HEAD	2	TOP ANCHOR	3	MEASURING TAPE	4	FLOAT	5	GUIDE WIRE
6	ANCHOR WEIGHT	7	BOTTOM ANCHOR	8	GAUGE SUPPORT	9	90° SHEAVE ELBOW	10	SUPPORT

314 ALARM DEVICE (OPTIONAL)

■ SPECIFICATIONS

CONTACT FORM	SPDT / DPDT (Micro switch)
CONTACT RATING	AC 125V 5A / 250V 3A (St'd)
ALARM POINTS	Max. 4 points
ALARM SETTING	Adjustable at field site
SETTING RANGE	0~100% (Measuring range)
LATCHING RANGE	25% ± 2% (St'd) (Measuring range)
DETECTING ACCURACY	±5% F.S.
CABLE ENTRY	½" NPT(F)
AMBIENT TEMP.	-10 to 80C & 90%RH max.
ELECTRICAL PROTECTION	Weather-proof , IP 67 or options
HOUSING MATERIAL	Low copper aluminum alloy with polyester epoxy painted or 316 SS

Featuring eccentric cam and element of micro switch , this alarm device can be combined with tank gauges for transmitting dry contact output signals , liquid level alarm monitoring or control purposes.

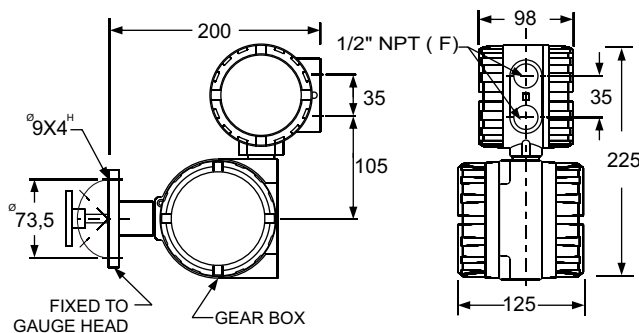


LEVEL

■ MODEL SELECTIONS

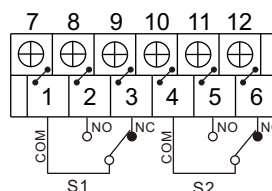
ITEM	CODE	SPECIFICATIONS
① MAIN TYPE (Actuation lever)	314A	For 510 / 511 Series
	314B	For 512 / 513 Series
	314C	For 515 / 516 Series
	314D	To be specified
② ALARM POINTS	- 1	1-point (St'd)
	∩	∩
	- 4	4-points
③ CONTACT FORM	1	SPDT (Suitable between 1 to 4 points)
	2	DPDT (Suitable between 1 to 2 points)
	3	To be specified
④ CONTACT RATING	1	125V 5A / 250 AC 3A (St'd)
	2	To be specified
⑤ CABLE ENTRY	- A	½" NPT(F) (St'd)
	- B	To be specified
⑥ HOUSING MATERIAL	A	Aluminum alloy with polyester epoxy painted
	B	316SS
	C	To be specified
⑦ ELECTRICAL PROTECTION	A	Weather-proof , IP 67 (St'd)
	B	Exd II C T6
	C	Exia II C T6 (Note 1)
	D	To be specified
⑧ OPTIONAL	A	Not required
	B	Special finished
	C	With an auto-drain valve
	D	To be specified

■ DIMENSIONS (m/m)

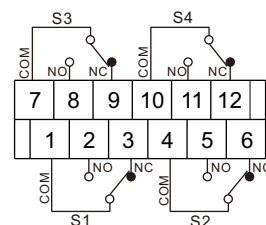


■ WIRING CONNECTIONS

■ FORM-A (1 or 2 switches)



■ FORM-B (3 or 4 switches)



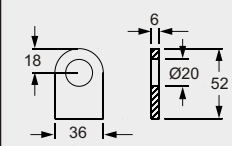
Note:1.A safety relay must also be installed ,subject to user scope.

COMPONENTS

MEASURING TAPE / WIRE

P / N	STYLE	MATERIAL
AE1-1L	TAPE	304SS
AE1-1R	TAPE	316SS
AE1-1M	WIRE	304SS
AE1-1B	WIRE	316SS
AE1-1S	To be specified	

WIRE HOOK

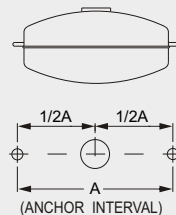


P / N	MATERIAL
AE1-4L	SS400
AE1-4R	304SS
AE1-4M	316SS
AE1-4S	To be specified

GUIDE WIRE

P / N	DIAMETER	MATERIAL
AE3-1L	Ø 3 mm	304SS
AE3-1R	Ø 3 mm	316SS
AE3-1M	Ø 4 mm	304SS
AE3-1B	Ø 4 mm	316SS
AE3-1S	To be specified	

FLOAT

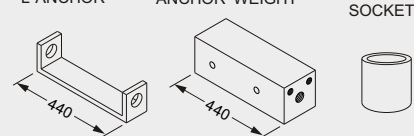


P / N	FLOAT DIAMETER	MATERIAL	OPERATING PRESSURE
AE2-2L	Ø 400 mm	304SS	≤ 0.2MPa
AE2-2R	Ø 400 mm	316SS	
AE2-2M	Ø 300 mm	304SS	
AE2-2B	Ø 300 mm	316SS	
AE2-2S	To be specified		≤ 1.0MPa
AE2-3L	Ø 400 mm	304SS	
AE2-3R	Ø 400 mm	316SS	
AE2-3S	To be specified		
AE2-5L	Ø 400 mm	304SS	≤ 2.0MPa
AE2-5R	Ø 400 mm	316SS	
AE2-5S	To be specified		

FLOAT DIAMETER **A**
INTERVAL

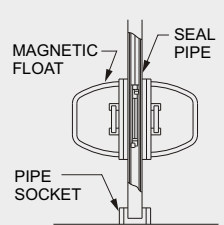
Ø 400 mm 440 mm
Ø 300 mm 330 mm

BOTTOM ANCHOR



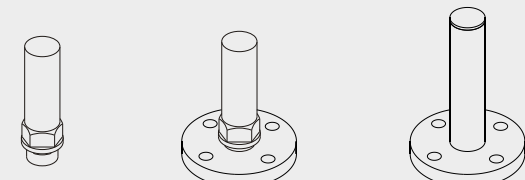
P / N	TYPE	MATERIAL
AE3-2L	L-ANCHOR	304SS
AE3-2R	L-ANCHOR	316SS
AE3-2M	ANCHOR WEIGHT	304SS
AE3-2B	ANCHOR WEIGHT	316SS
AE3-2C	PIPE SOCKET	304SS
AE3-2D	PIPE SOCKET	316SS
AE3-2S	To be specified	

MAGNETIC FLOAT (EXCLUDES SEAL PIPE)



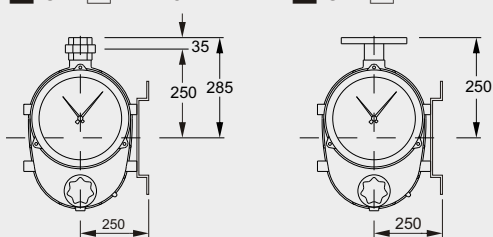
P / N	MATERIAL	OPERATING PRESSURE
AE2-1L	304SS	1.0 MPa
AE2-1R	316SS	1.0 MPa
AE2-1M	304SS	2.0 MPa
AE2-1B	316SS	2.0 MPa
AE2-1S	To be specified	

TOP ANCHOR



P / N	CONNECTION	MATERIAL	OPERATING PRESSURE
AE3-3L	1" NPT	AC2A	≤ 0.4MPa
AE3-3R	1" NPT	304SS	
AE3-3M	1" NPT	316SS	
AE3-3LF	1" ANSI 150lb RF(Adapter)	AC2A	
AE3-3RF	1" ANSI 150lb RF(Adapter)	304SS	≤ 1.0MPa
AE3-3MF	1" ANSI 150lb RF(Adapter)	316SS	
AE3-3B	1½" ANSI 150lb RF	304SS	
AE3-3C	1½" ANSI 150lb RF	316SS	≤ 2.0MPa
AE3-3D	1½" ANSI 300lb RF	304SS	
AE3-3E	1½" ANSI 300lb RF	316SS	
AE3-3S	To be specified		

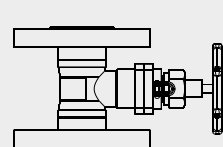
GAUGE SUPPORT & ASSEMBLY DIMENSIONS



511□-□□0 **511□-□□1**

P/N : AE4-2RR (304SS)
AE4-2RRL (316SS)
AE4-2RRS (To be specified)

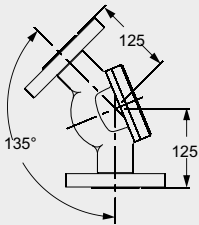
SHUT-OFF VALVE



P / N	CONNECTION	MATERIAL	OPERATING PRESSURE
AE5-1L	1½" ANSI 150lb RF	304SS	≤ 1.0MPa
AE5-1R	1½" ANSI 150lb RF	316SS	
AE5-1M	1½" JIS 10K RF	304SS	
AE5-1B	1½" JIS 10K RF	316SS	
AE5-1C	1½" ANSI 300lb RFSF	304SS	≤ 2.0MPa
AE5-1D	1½" ANSI 300lb RFSF	316SS	
AE5-1S	To be specified		

COMPONENTS

■ SHEAVE ELBOW 135°

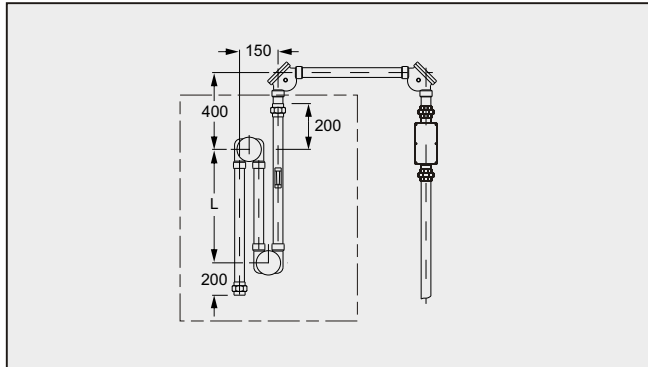


P / N	CONNECTION	MATERIAL	OPERATING PRESSURE
AE5-3L	1½" ANSI 150lb RFSF	304SS	≤ 1.0MPa
AE5-3R	1½" ANSI 150lb RFSF	316SS	
AE5-3M	1½" ANSI 300lb RFSF	304SS	≤ 2.0MPa
AE5-3B	1½" ANSI 300lb RFSF	316SS	
AE5-3S	To be specified		

■ PULLEY OF ELBOW

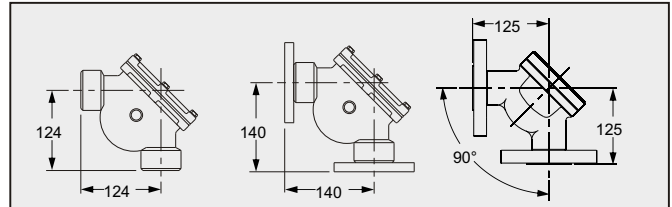
P / N	MATERIAL
AE5-9A	POM
AE5-9B	PVDF
AE5-9C	ALUMINUM
AE5-9D	304SS
AE5-9E	316SS
AE5-9F	To be specified

■ U-SHAPED SEAL POT



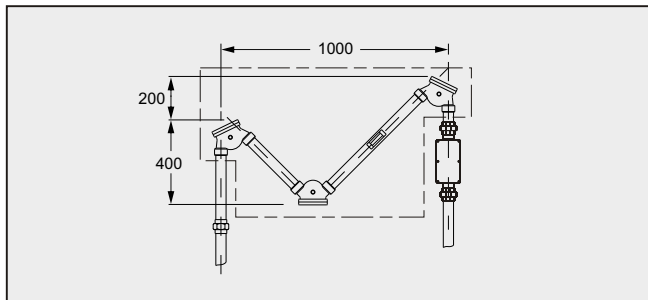
P / N	"L" LENGTH	CONNECTION	MATERIAL	SEAL LIQUID
AE5-6L	300 mm	1½"NPT(F)	304SS	1.5 Liters
AE5-6R	400 mm	1½"NPT(F)	304SS	1.7 Liters
AE5-6M	500 mm	1½"NPT(F)	304SS	2.0 Liters
AE5-6B	600 mm	1½"NPT(F)	304SS	2.3 Liters
AE5-6C	700 mm	1½"NPT(F)	304SS	2.6 Liters
AE5-6D	800 mm	1½"NPT(F)	304SS	2.9 Liters
AE5-6S	To be specified			

■ SHEAVE ELBOW 90°



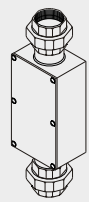
P / N	CONNECTION	MATERIAL	OPERATING PRESSURE
AE5-2L	1½" NPT(F)	AC2A	≤ 0.4MPa
AE5-2R	1½" NPT(F)	304SS	
AE5-2M	1½" NPT(F)	316SS	
AE5-2LF	1½" ANSI 150lb RF(Adapter)	AC2A	
AE5-2RF	1½" ANSI 150lb RF(Adapter)	304SS	≤ 1.0MPa
AE5-2MF	1½" ANSI 150lb RF(Adapter)	316SS	
AE5-2B	1½" ANSI 150lb RFSF	304SS	≤ 2.0MPa
AE5-2C	1½" ANSI 150lb RFSF	316SS	
AE5-2D	1½" ANSI 300lb RFSF	304SS	≤ 2.0MPa
AE5-2E	1½" ANSI 300lb RFSF	316SS	
AE5-2S	To be specified		

■ V-SHAPED SEAL POT



P / N	CONNECTION	MATERIAL	SEAL LIQUID
AE5-5L	1½"NPT(F)	304SS	1.5 Liters
AE5-5R	1½"NPT(F)	316SS	1.5 Liters
AE5-5M	1½" ANSI 150lb RF	304SS	1.5 Liters
AE5-5B	1½" ANSI 150lb RF	316SS	1.5 Liters
AE5-5S	To be specified		

■ JUNCTION BOX



P / N	CONNECTION	MATERIAL
AE5-4L	1½" NPT	304SS
AE5-4R	1½" NPT	316SS
AE5-4M	1½"NPT(F) WITH UNION	304SS
AE5-4B	1½"NPT(F) WITH UNION	316SS
AE5-4S	To be specified	

LEVEL 5

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