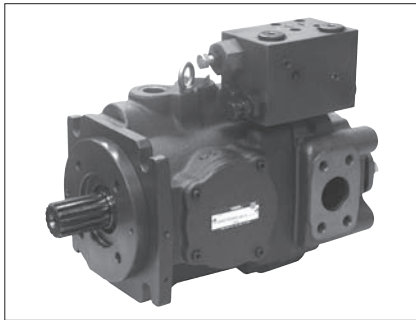
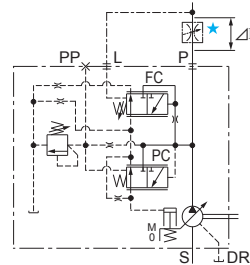


A3HG Series high Pressure Variable Displacement Piston Pumps Load Sensing Type



Graphic Symbol



★ A flow control valve is not included with the pump. Install the valve separately.

Specifications

Model Numbers	Geometric Displacement cm ³ /rev	Operating Pressure ^{★1} MPa		Load Sensing Pres. Difference ΔP MPa	Shaft Speed Range r/min		Approx. Mass kg	
		Rated	Intermittent		Max. ^{★3}	Min.	Flange Mtg.	Foot Mtg.
A3HG16- *R14 * - *C-11	16.3	31.5	35	1.5 ^{★2} (At the time of shipment)	3600	600	19.5	23.5
A3HG37- *R14 * - *C-11	37.1						29	37.5
A3HG37- *R14 * - *D-11					2500	600	37	45.5
A3HG56- *R14 * - *C-11	56.3						35	42.5
A3HG56- *R14 * - *D-11					70.7	2300	600	47.5
A3HG71- *R14 * -E1D/E2D-11	100.5							2100
A3HG71- *R14 * -U1D/U2D/J1D-11					145.2	1800	600	
A3HG100- *R14K-E1D/E2D-11	180.7							1800
A3HG100- *R14SP * -E1D/E2D-11					180.7	1800	600	
A3HG100- *R14 * -U1D/U2D/J1D-11	180.7							1800
A3HG145- *R14K-E1D/E2D-11					180.7	1800	600	
A3HG145- *R14SP * -E1D/E2D-11	180.7							1800
A3HG145- *R14 * -U1D/U2D/J1D-11					180.7	1800	600	
A3HG180- *R14K-E1D/E2D-11	180.7							1800
A3HG180- *R14SP * -E1D/E2D-11					180.7	1800	600	
A3HG180- *R14 * -U1D/U2D/J1D-11								

- ★1. The operating pressure means pump discharge pressure.
- ★2. Load pressure difference is adjustable in range of 1.0 -3.0 MPa
- ★3. The maximum shaft speeds shown in the above table are at suction pressure 0 kPa.

Model Number Designation

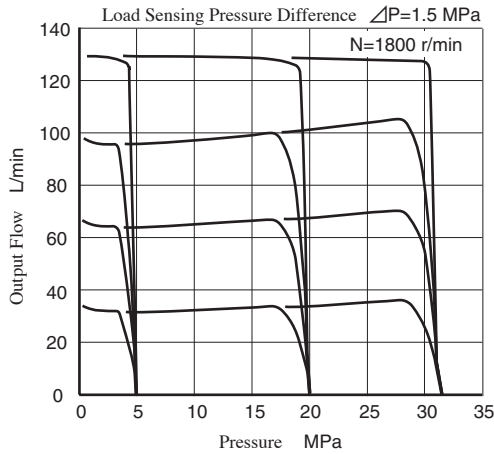
A3HG16	-F	R	14	K	-E1					D	-11
Series Number	Mounting	Direction of Rotation	Control Type	Shaft Extension	Main Pump Mtg. Flange Connecting Port / Pipe Flange Thread Second Pump Mtg.					Number of Pump Mtg. Bolts	Design Number
A3HG16 (16.3 cm ³ /rev)	F: Flange Mtg. L: Foot Mtg.	(Viewed from Shaft End) R: Clockwise (Normal)	14: Load Sensing Type	K: Keyed Shaft SP: Splined Shaft (High torque) SP1: Splined Shaft (Conforms to ISO 3019-1)						C: 2	11
A3HG37 (37.1 cm ³ /rev)										C: 2 D: 4	11
A3HG56 (56.3 cm ³ /rev)											11
A3HG71 (70.7 cm ³ /rev)										D: 4	11
A3HG100 (100.5 cm ³ /rev)											11
A3HG145 (145.2 cm ³ /rev)											11
A3HG180 (180.7 cm ³ /rev)											11
					Code	Main Pump Mtg. Flange	Connecting Port	Pipe Flange Thread	Second Pump Mtg.		
					E1	ISO 3019-2	Metric	Metric	ISO 3019-2		
					E2	ISO 3019-2	Metric	Metric	ISO 3019-1		
					U1	ISO 3019-1	Unified	Unified	ISO 3019-1		
					U2	ISO 3019-1	BSPP	Metric	ISO 3019-1		
					J1	ISO 3019-1	Rc	Metric	ISO 3019-1		

■ Pipe Flange Kits

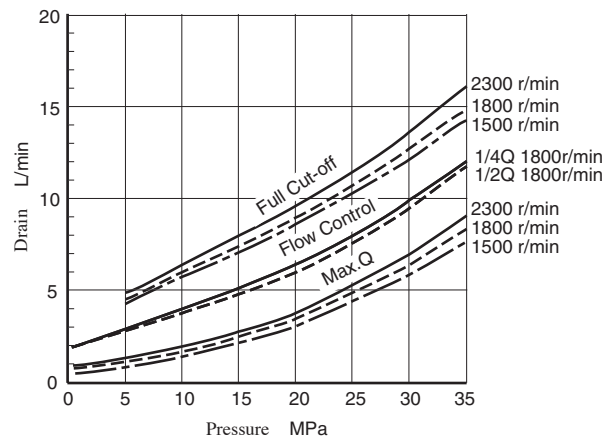
Pipe flange mouting surface conforms to SAE J 518, 4 bolt split flange.
 Pipe flange kits are not available. Contact us for the details.

Typical Performance Characteristics of Type “A3HG71” at Viscosity 32 mm²/s [ISO VG32 oils, 40°C]

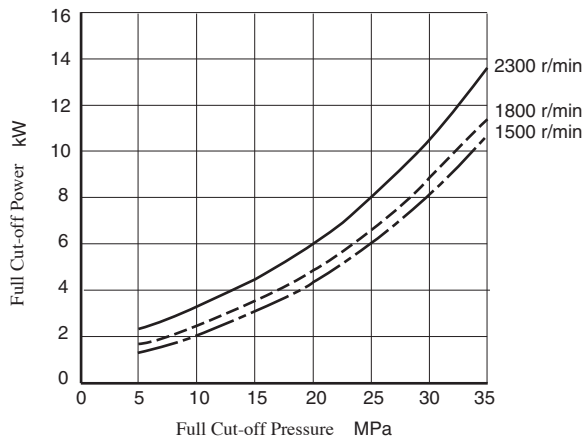
■ Pressure vs. Output Flow



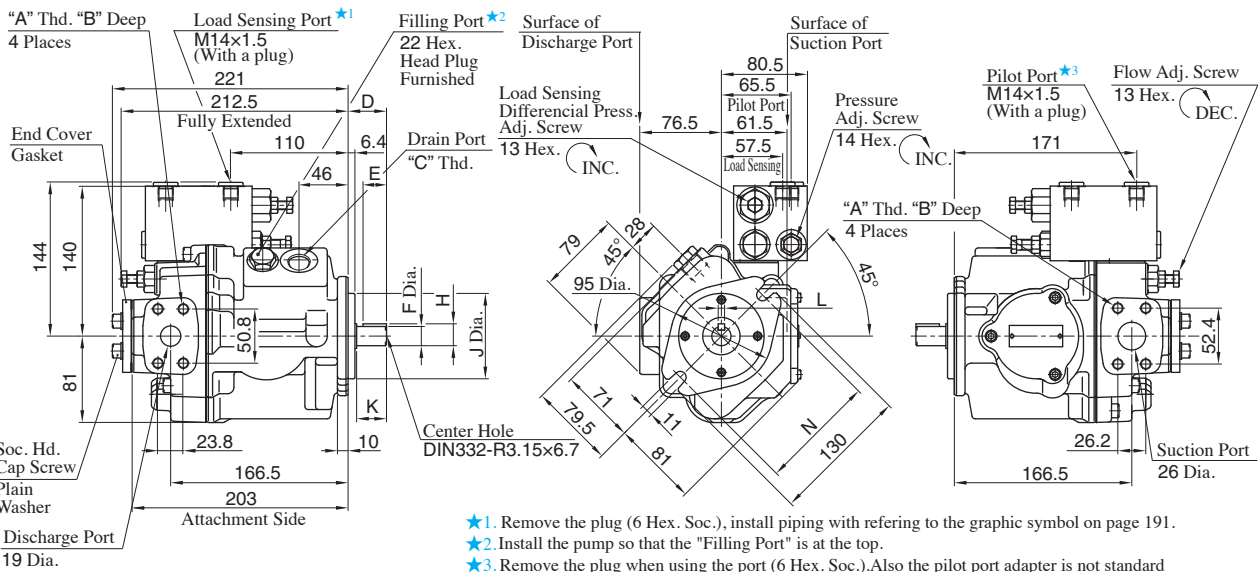
■ Drain



■ Full Cut-off Power



Flange Mtg.:A3HG16-FR14K-E1C/U1C/U2C/J1C



- ★1. Remove the plug (6 Hex. Soc.), install piping with referring to the graphic symbol on page 191.
- ★2. Install the pump so that the "Filling Port" is at the top.
- ★3. Remove the plug when using the port (6 Hex. Soc.). Also the pilot port adapter is not standard accessory, so it must be ordered separately referring to the "Pilot Port" on page 179.

Model Numbers	A	B	C	D	E	F	H	J	K	L	N	Mounting Flange	Connecting Port	Pipe Flange Threads
A3HG16-FR14K-E1C	M10	19	M22x1.5	36	22	18 ^{+0.008} _{-0.003}	20.5 ^{+0.008} _{-0.133}	80 ⁰ _{-0.046}	28	6 ⁰ _{-0.03}	109	Conforms to ISO 3019-2	Metric	Metric
A3HG16-FR14K-U1C	3/8-16 UNC	17	G 1/2	41	28	19.05 ⁰ _{-0.03}	21.24 ⁰ _{-0.16}	82.55 ⁰ _{-0.05}	33	4.76 ^{+0.03} ₀	106	Conforms to ISO 3019-1	Unified	Unified
A3HG16-FR14K-U2C	M10	19	G 1/2	41	28	19.05 ⁰ _{-0.03}	21.24 ⁰ _{-0.16}	82.55 ⁰ _{-0.05}	33	4.76 ^{+0.03} ₀	106	Conforms to ISO 3019-1	BSP	Metric
A3HG16-FR14K-J1C	M10	19	G 1/2	41	28	19.05 ⁰ _{-0.03}	21.24 ⁰ _{-0.16}	82.55 ⁰ _{-0.05}	33	4.76 ^{+0.03} ₀	106	Conforms to ISO 3019-1	Rc	Metric

Load Sensing Port/Pilot Port

Load Sensing Port is common to that of Pilot Port(except the height dimension from the center of the pump). Refer to page 179 for the dimensions of Pilot Port.

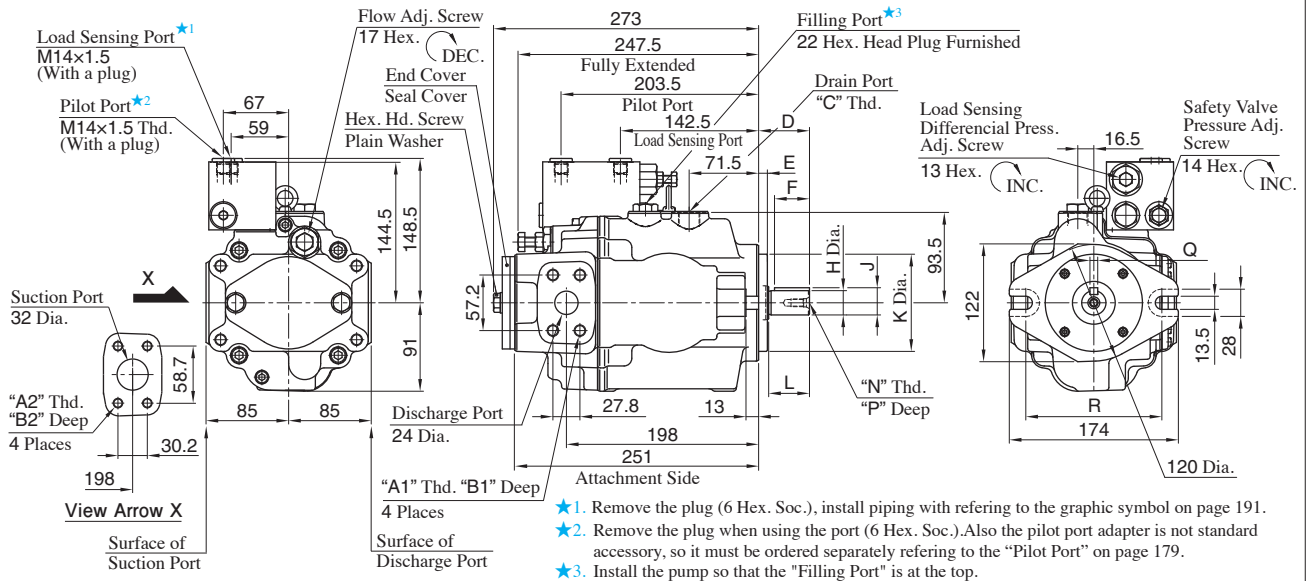
Drain Port

Drain Port is common to that of pressure compensator model.Refer to page 167 for the dimensions of Drain Port.

Foot Mtg.:A3HG16-LR14K-E1C/U1C/U2C/J1C

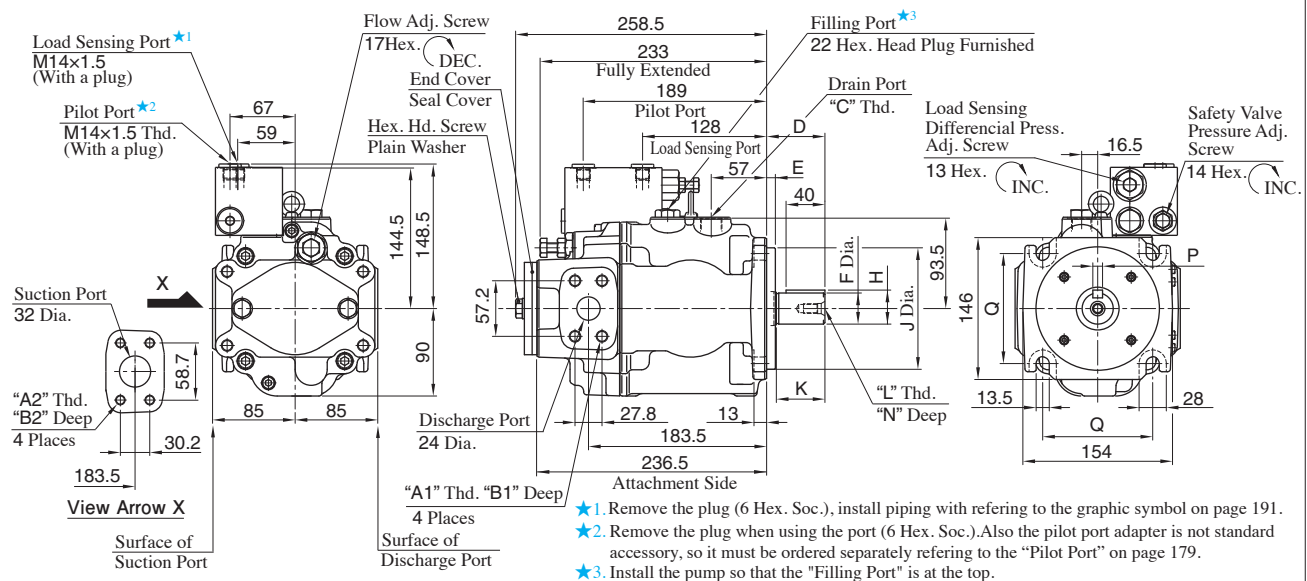
Mounting bracket is common to that of pressure compensator model (except max height dimension). Refer to page 167 for the dimensions of mounting bracket.

Flange Mtg. Two Bolts:A3HG37-FR14K-E1C/E2C/U1C/U2C/J1C



Model Numbers	A1	A2	B1	B2	C	D	E	F	H	J	K	L	N	P	Q	R	Mounting Flange	Connecting Port	Pipe Flange Threads
A3HG37-FR14K-E1C/E2C	M12	M10	22	18	M22×1.5	52	9	36	25 ^{+0.009} _{-0.004}	28 ^{+0.009} _{-0.294}	100 ⁰ _{0.054}	42	M8	19	8 ⁰ _{-0.036}	140	Conforms to ISO 3019-2	Metric	Metric
A3HG37-FR14K-U1C	7/16-14 UNC		20		G 1/2	46	9.7	32	25.4 ⁰ _{-0.05}	28.18 ⁰ _{0.18}	101.6 ⁰ _{0.05}	38	1/4-20 UNC	16	6.35 ^{+0.03} ₀	146	Conforms to ISO 3019-1	Unified	Unified
A3HG37-FR14K-U2C	M12	M10	22	18	G 1/2	46	9.7	32	25.4 ⁰ _{-0.05}	28.18 ⁰ _{0.18}	101.6 ⁰ _{0.05}	38	1/4-20 UNC	16	6.35 ^{+0.03} ₀	146	Conforms to ISO 3019-1	BSP	Metric
A3HG37-FR14K-J1C	M12	M10	22	18	G 1/2	46	9.7	32	25.4 ⁰ _{-0.05}	28.18 ⁰ _{0.18}	101.6 ⁰ _{0.05}	38	1/4-20 UNC	16	6.35 ^{+0.03} ₀	146	Conforms to ISO 3019-1	Rc	Metric

Flange Mtg. Four Bolts:A3HG37-FR14K-E1D/E2D/U1D/U2D/J1D



Model Numbers	A1	A2	B1	B2	C	D	E	F	H	J	K	L	N	P	Q	Mounting Flange	Connecting Port	Pipe Flange Threads
A3HG37-FR14K-E1D/E2D	M12	M10	22	18	M22×1.5	60	9	32 ^{+0.018} _{+0.002}	35 ^{+0.018} _{-0.288}	125 ⁰ _{0.063}	50	M10	22	10 ⁰ _{-0.036}	113.2	Conforms to ISO 3019-2	Metric	Metric
A3HG37-FR14K-U1D	7/16-14 UNC		20		G 1/2	56	12.7	31.75 ⁰ _{-0.05}	35.32 ⁰ _{-0.18}	127 ⁰ _{-0.05}	48	5/16-18 UNC	19	7.94 ^{+0.03} ₀	114.5	Conforms to ISO 3019-1	Unified	Unified
A3HG37-FR14K-U2D	M12	M10	22	18	G 1/2	56	12.7	31.75 ⁰ _{-0.05}	35.32 ⁰ _{-0.18}	127 ⁰ _{-0.05}	48	5/16-18 UNC	19	7.94 ^{+0.03} ₀	114.5	Conforms to ISO 3019-1	BSP	Metric
A3HG37-FR14K-J1D	M12	M10	22	18	G 1/2	56	12.7	31.75 ⁰ _{-0.05}	35.32 ⁰ _{-0.18}	127 ⁰ _{-0.05}	48	5/16-18 UNC	19	7.94 ^{+0.03} ₀	114.5	Conforms to ISO 3019-1	Rc	Metric

Load Sensing Port/Pilot Port

Load Sensing Port is common to that of Pilot Port(except the height dimension from the center of the pump). Refer to page 179 for the dimensions of Pilot Port.

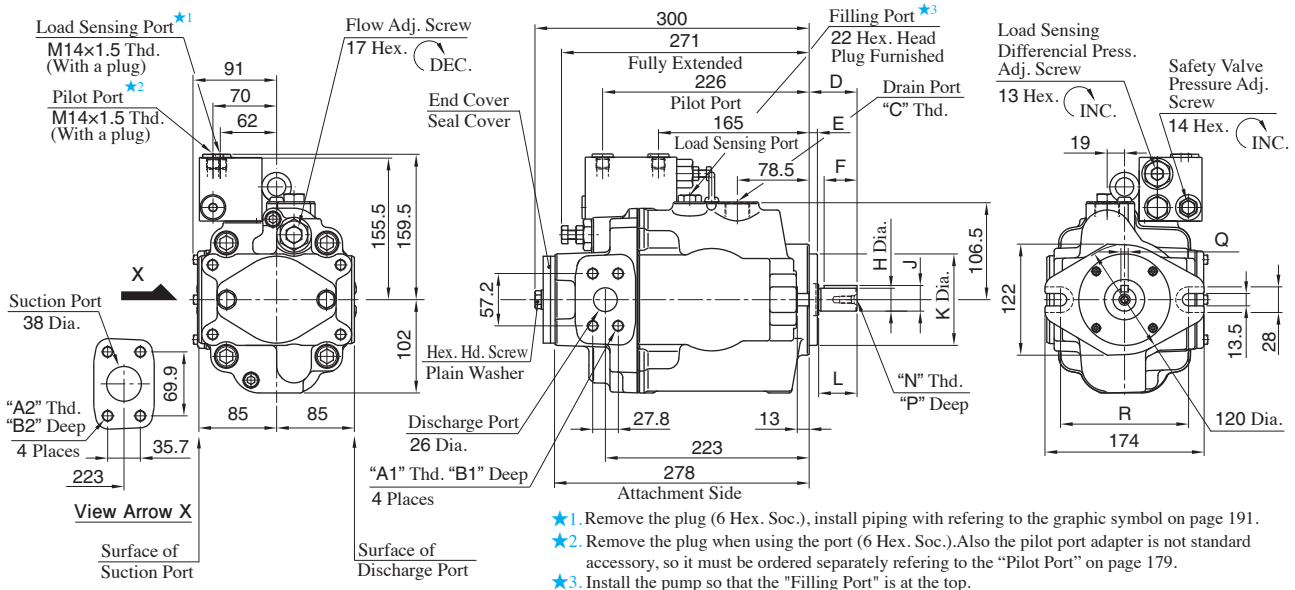
Drain Port

Drain Port is common to that of pressure compensator model.Refer to page 168 or 169 for the dimensions of Drain Port.

Foot Mtg.:A3HG37-LR14K-E1C/E2C/U1C/U2C/J1C, A3HG37-LR14K-E1D/E2D/U1D/U2D/J1D

Mounting bracket is common to that of pressure compensator model (except max height dimension). Refer to page 168 and 169 for the dimensions of mounting bracket.

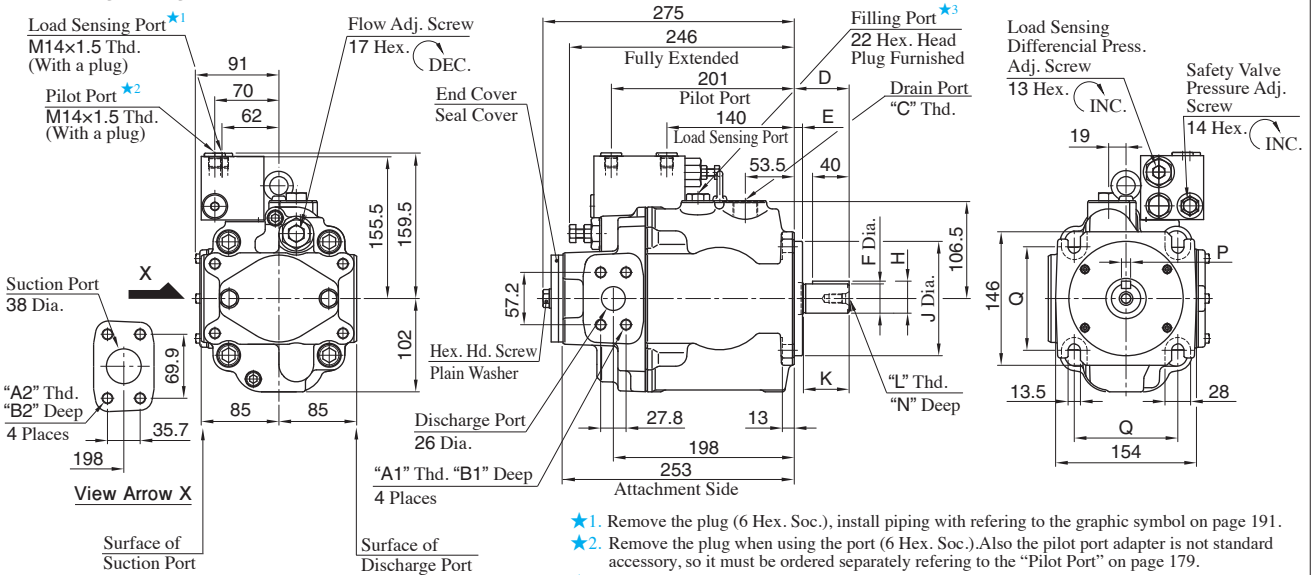
Flange Mtg. Two Bolts:A3HG56-FR14K-E1C/E2C/U1C/U2C/J1C



- ★1. Remove the plug (6 Hex. Soc.), install piping with referring to the graphic symbol on page 191.
- ★2. Remove the plug when using the port (6 Hex. Soc.).Also the pilot port adapter is not standard accessory, so it must be ordered separately referring to the "Pilot Port" on page 179.
- ★3. Install the pump so that the "Filling Port" is at the top.

Model Numbers	A1	A2	B1	B2	C	D	E	F	H	J	K	L	N	P	Q	R	Mounting Flange	Connecting Port	Pipe Flange Threads
A3HG56-FR14K-E1C/E2C	M12	M12	22	22	M27X2	52	9	36	25 ^{+0.009} _{-0.004}	28 ^{+0.009} _{-0.294}	100 ⁰ _{0.054}	42	M8	19	8 ⁰ _{-0.036}	140	Conforms to ISO 3019-2	Metric	Metric
A3HG56-FR14K-U1C	7/16-14 UNC	1/2-13 UNC	20	21	G 3/4	46	9.7	32	25.4 ⁰ _{-0.05}	28.18 ⁰ _{-0.18}	101.6 ⁰ _{-0.05}	38	1/4-20 UNC	16	6.35 ^{+0.03} ₀	146	Conforms to ISO 3019-1	Unified	Unified
A3HG56-FR14K-U2C	M12	M12	22	22	G 3/4	46	9.7	32	25.4 ⁰ _{-0.05}	28.18 ⁰ _{-0.18}	101.6 ⁰ _{-0.05}	38	1/4-20 UNC	16	6.35 ^{+0.03} ₀	146	Conforms to ISO 3019-1	BSPP	Metric
A3HG56-FR14K-J1C	M12	M12	22	22	G 3/4	46	9.7	32	25.4 ⁰ _{-0.05}	28.18 ⁰ _{-0.18}	101.6 ⁰ _{-0.05}	38	1/4-20 UNC	16	6.35 ^{+0.03} ₀	146	Conforms to ISO 3019-1	Rc	Metric

Flange Mtg. Four Bolts:A3HG56-FR14K-E1D/E2D/U1D/U2D/J1D



- ★1. Remove the plug (6 Hex. Soc.), install piping with referring to the graphic symbol on page 191.
- ★2. Remove the plug when using the port (6 Hex. Soc.).Also the pilot port adapter is not standard accessory, so it must be ordered separately referring to the "Pilot Port" on page 179.
- ★3. Install the pump so that the "Filling Port" is at the top.

Model Numbers	A1	A2	B1	B2	C	D	E	F	H	J	K	L	N	P	Q	Mounting Flange	Connecting Port	Pipe Flange Threads
A3HG56-FR14K-E1D/E2D	M12	M12	22	22	M27X2	60	9	32 ^{+0.018} _{-0.002}	35 ^{+0.018} _{-0.288}	125 ⁰ _{-0.063}	50	M10	22	10 ⁰ _{-0.036}	113.2	Conforms to ISO 3019-2	Metric	Metric
A3HG56-FR14K-U1D	7/16-14 UNC	1/2-13 UNC	20	21	G 3/4	56	12.7	31.75 ⁰ _{-0.05}	35.32 ⁰ _{-0.18}	127 ⁰ _{-0.05}	48	5/16-18 UNC	19	7.94 ^{+0.03} ₀	114.5	Conforms to ISO 3019-1	Unified	Unified
A3HG56-FR14K-U2D	M12	M12	22	22	G 3/4	56	12.7	31.75 ⁰ _{-0.05}	35.32 ⁰ _{-0.18}	127 ⁰ _{-0.05}	48	5/16-18 UNC	19	7.94 ^{+0.03} ₀	114.5	Conforms to ISO 3019-1	BSPP	Metric
A3HG56-FR14K-J1D	M12	M12	22	22	G 3/4	56	12.7	31.75 ⁰ _{-0.05}	35.32 ⁰ _{-0.18}	127 ⁰ _{-0.05}	48	5/16-18 UNC	19	7.94 ^{+0.03} ₀	114.5	Conforms to ISO 3019-1	Rc	Metric

Load Sensing Port/Pilot Port

Load Sensing Port is common to that of Pilot Port(except the height dimension from the center of the pump). Refer to page 179 for the dimensions of Pilot Port.

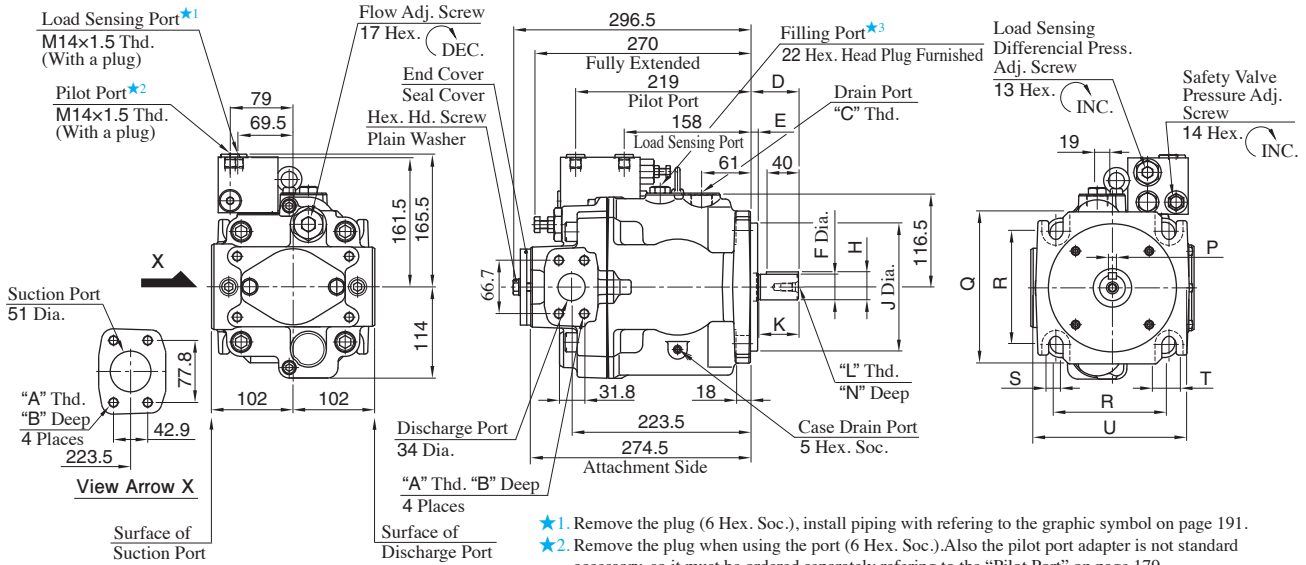
Drain Port

Drain Port is common to that of pressure compensator model.Refer to page 170 or 171 for the dimensions of Drain Port.

Foot Mtg.:A3HG56-LR14K-E1C/E2C/U1C/U2C/J1C, A3HG56-LR14K-E1D/E2D/U1D/U2D/J1D

Mounting bracket is common to that of pressure compensator model (except max height dimension). Refer to page 170 and 171 for the dimensions of mounting bracket.

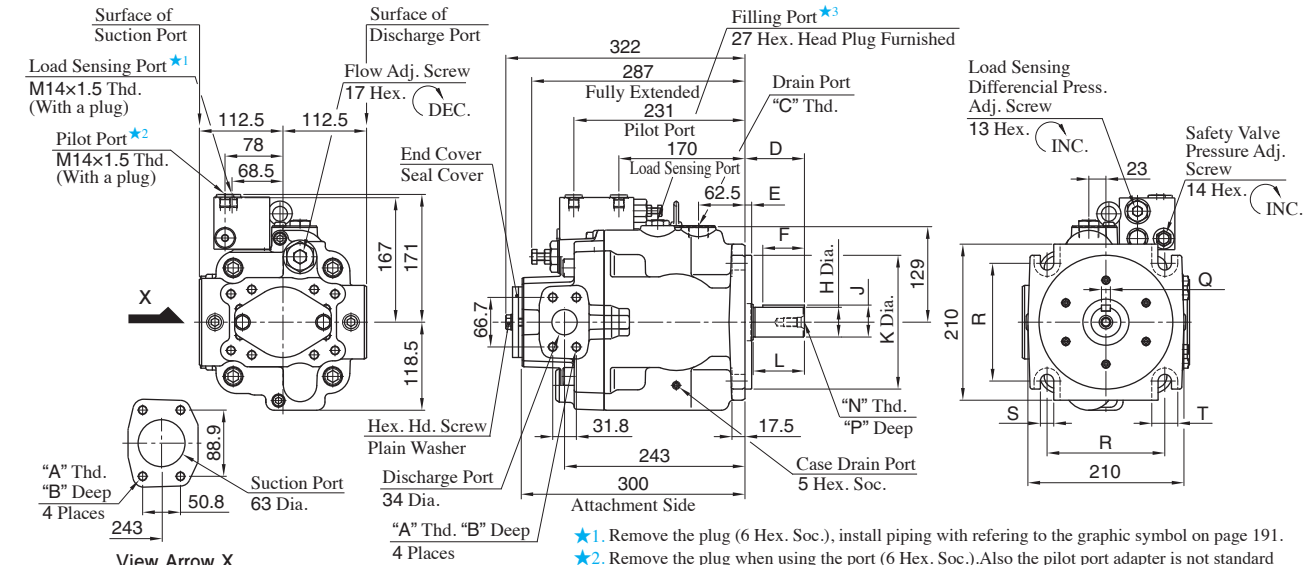
Flange Mtg.:A3HG71-FR14K-E1D/E2D/U1D/U2D/J1D



- ★1. Remove the plug (6 Hex. Soc.), install piping with referring to the graphic symbol on page 191.
- ★2. Remove the plug when using the port (6 Hex. Soc.).Also the pilot port adapter is not standard accessory, so it must be ordered separately referring to the "Pilot Port" on page 179.
- ★3. Install the pump so that the "Filling Port" is at the top.

Model Numbers	A	B	C	D	E	F	H	J	K	L	N	P	Q	R	S	T	U	Mounting Flange	Connecting Port	Pipe Flange Threads
A3HG71-FR14K-E1D/E2D	M12	22	M27×2	60	9	32 ^{+0.018} / _{+0.002}	35 ^{+0.018} / _{-0.288}	160 ⁰ / _{-0.063}	50	M10	22	10 ⁰ / _{-0.036}	190	141.4	18	35	192	Conforms to ISO 3019-2	Metric	Metric
A3HG71-FR14K-U1D	1/2-13 UNC	21	G 3/4	56	12.7	31.75 ⁰ / _{-0.05}	35.32 ⁰ / _{-0.18}	127 ⁰ / _{-0.05}	48		19	7.94 ^{+0.03} / ₀	143	114.5	13.5	28	155	Conforms to ISO 3019-1	Unified	Unified
A3HG71-FR14K-U2D	M12	22	G 3/4	56	12.7	31.75 ⁰ / _{-0.05}	35.32 ⁰ / _{-0.18}	127 ⁰ / _{-0.05}	48	5/16-18 UNC	19	7.94 ^{+0.03} / ₀	143	114.5	13.5	28	155	Conforms to ISO 3019-1	BSP	Metric
A3HG71-FR14K-J1D	M12	22	G 3/4	56	12.7	31.75 ⁰ / _{-0.05}	35.32 ⁰ / _{-0.18}	127 ⁰ / _{-0.05}	48		19	7.94 ^{+0.03} / ₀	143	114.5	13.5	28	155	Conforms to ISO 3019-1	Rc	Metric

Flange Mtg.:A3HG100-FR14K-E1D/E2D/U1D/U2D/J1D



- ★1. Remove the plug (6 Hex. Soc.), install piping with referring to the graphic symbol on page 191.
- ★2. Remove the plug when using the port (6 Hex. Soc.).Also the pilot port adapter is not standard accessory, so it must be ordered separately referring to the "Pilot Port" on page 179.
- ★3. Install the pump so that the "Filling Port" is at the top.

Model Numbers	A	B	C	D	E	F	H	J	K	L	N	P	Q	R	S	T	U	Mounting Flange	Connecting Port	Pipe Flange Threads
A3HG100-FR14K-E1D/E2D	M12	22	M27×2	80	9	56	40 ^{+0.018} / _{+0.002}	43 ^{+0.018} / _{-0.288}	180 ⁰ / _{-0.063}	70	M12	28	12 ⁰ / _{-0.043}	158.4	18	35		Conforms to ISO 3019-2	Metric	Metric
A3HG100-FR14K-U1D	1/2-13 UNC	21	G 3/4	62	12.7	45	38.1 ⁰ / _{-0.05}	42.36 ⁰ / _{-0.18}	152.4 ⁰ / _{-0.05}	54		28	9.53 ^{+0.03} / ₀	161.6	21.5	39		Conforms to ISO 3019-1	Unified	Unified
A3HG100-FR14K-U2D	M12	22	G 3/4	62	12.7	45	38.1 ⁰ / _{-0.05}	42.36 ⁰ / _{-0.18}	152.4 ⁰ / _{-0.05}	54	7/16-14 UNC	28	9.53 ^{+0.03} / ₀	161.6	21.5	39		Conforms to ISO 3019-1	BSP	Metric
A3HG100-FR14K-J1D	M12	22	G 3/4	62	12.7	45	38.1 ⁰ / _{-0.05}	42.36 ⁰ / _{-0.18}	152.4 ⁰ / _{-0.05}	54		28	9.53 ^{+0.03} / ₀	161.6	21.5	39		Conforms to ISO 3019-1	Rc	Metric

Load Sensing Port/Pilot Port

Load Sensing Port is common to that of Pilot Port(except the height dimension from the center of the pump). Refer to page 179 for the dimensions of Pilot Port.

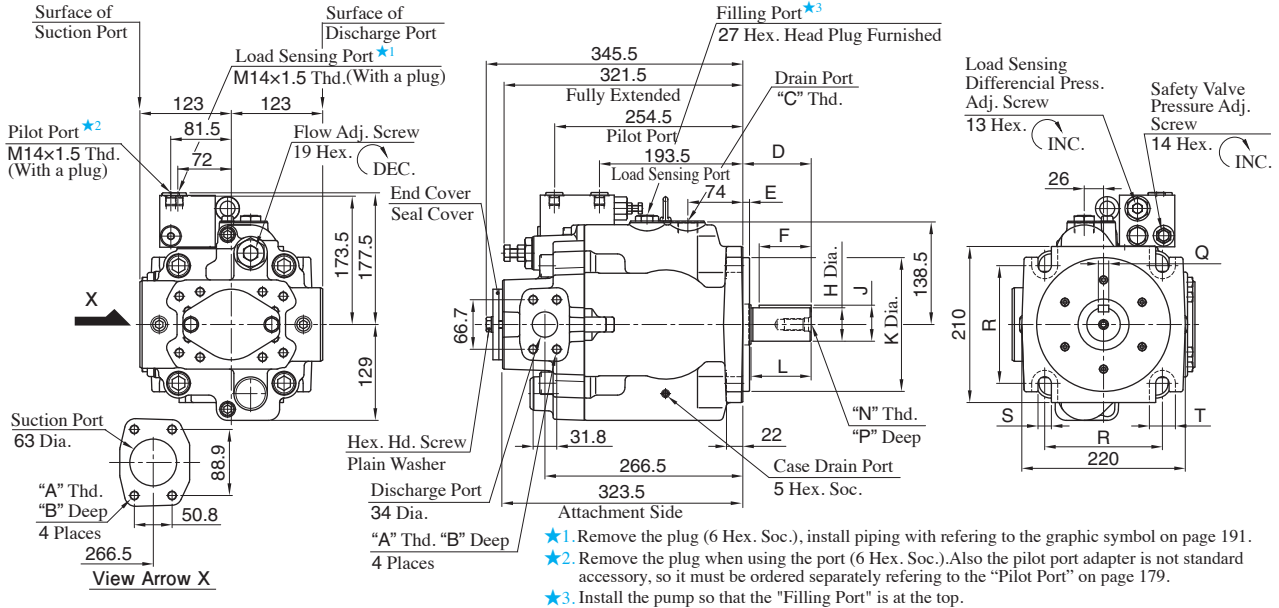
Drain Port

Drain Port is common to that of pressure compensator model.Refer to page 172 or 173 for the dimensions of Drain Port.

Foot Mtg.:A3HG71-LR14K-E1D/E2D/U1D/U2D/J1D, A3HG100-LR14K-E1D/E2D/U1D/U2D/J1D

Mounting bracket is common to that of pressure compensator model (except max height dimension). Refer to page 172 and 173 for the dimensions of mounting bracket.

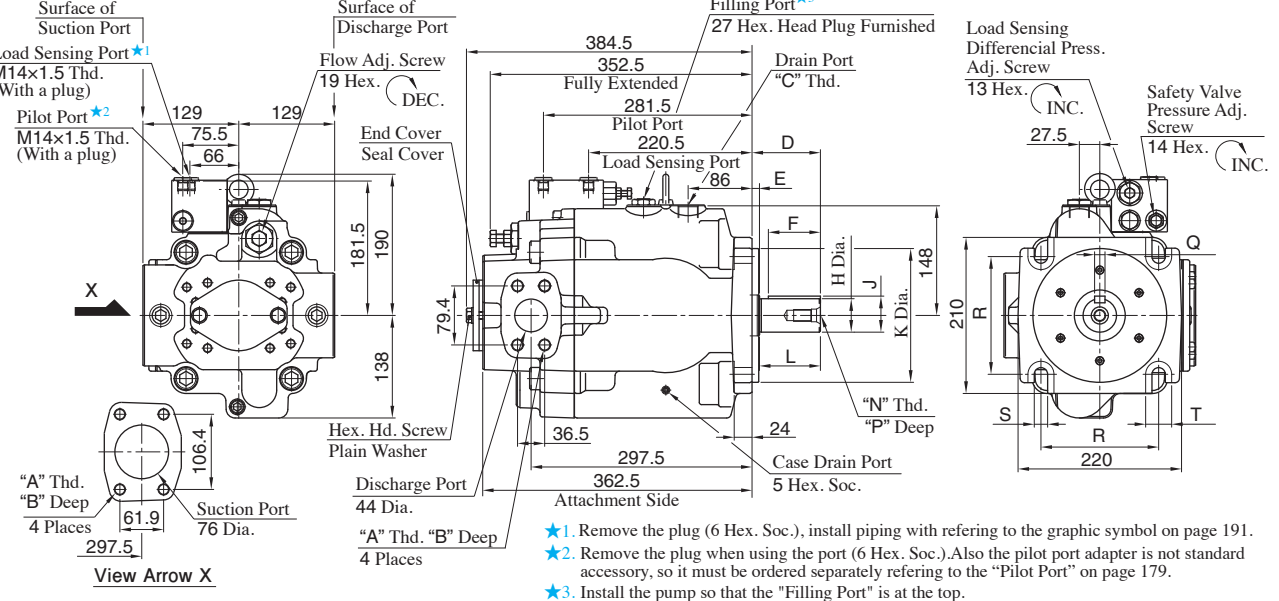
Flange Mtg.:A3HG145-FR14K-E1D/E2D/U1D/U2D/J1D



- ★1. Remove the plug (6 Hex. Soc.), install piping with referring to the graphic symbol on page 191.
- ★2. Remove the plug when using the port (6 Hex. Soc.).Also the pilot port adapter is not standard accessory, so it must be ordered separately referring to the "Pilot Port" on page 179.
- ★3. Install the pump so that the "Filling Port" is at the top.

Model Numbers	A	B	C	D	E	F	H	J	K	L	N	P	Q	R	S	T	Mounting Flange	Connecting Port	Pipe Flange Threads
A3HG145-FR14K-E1D/E2D	M12	22	M27×2	92	9	70	45 ^{+0.018} / _{+0.002}	48.5 ^{+0.018} / _{-0.288}	180 ⁰ / _{-0.063}	82	M16	36	14 ⁰ / _{-0.043}	158.4	18	35	Conforms to ISO 3019-2	Metric	Metric
A3HG145-FR14K-U1D	1/2-13 UNC	21	G 3/4	75	12.7	56	44.45 ⁰ / _{-0.05}	49.39 ⁰ / _{-0.18}	152.4 ⁰ / _{-0.05}	67		32	11.11 ^{+0.03} / ₀	161.6	21.5	39	Conforms to ISO 3019-1	Unified	Unified
A3HG145-FR14K-U2D	M12	22	G 3/4	75	12.7	56	44.45 ⁰ / _{-0.05}	49.39 ⁰ / _{-0.18}	152.4 ⁰ / _{-0.05}	67	1/2-13 UNC	32	11.11 ^{+0.03} / ₀	161.6	21.5	39	Conforms to ISO 3019-1	BSPP	Metric
A3HG145-FR14K-J1D	M12	22	G 3/4	75	12.7	56	44.45 ⁰ / _{-0.05}	49.39 ⁰ / _{-0.18}	152.4 ⁰ / _{-0.05}	67		32	11.11 ^{+0.03} / ₀	161.6	21.5	39	Conforms to ISO 3019-1	Rc	Metric

Flange Mtg.:A3HG180-FR14K-E1D/E2D/U1D/U2D/J1D



- ★1. Remove the plug (6 Hex. Soc.), install piping with referring to the graphic symbol on page 191.
- ★2. Remove the plug when using the port (6 Hex. Soc.).Also the pilot port adapter is not standard accessory, so it must be ordered separately referring to the "Pilot Port" on page 179.
- ★3. Install the pump so that the "Filling Port" is at the top.

Model Numbers	A	B	C	D	E	F	H	J	K	L	N	P	Q	R	S	T	Mounting Flange	Connecting Port	Pipe Flange Threads
A3HG180-FR14K-E1D/E2D	M16	29	M27×2	92	9	70	45 ^{+0.018} / _{+0.002}	48.5 ^{+0.018} / _{-0.288}	180 ⁰ / _{-0.063}	82	M16	36	14 ⁰ / _{-0.043}	158.4	18	35	Conforms to ISO 3019-2	Metric	Metric
A3HG180-FR14K-U1D	5/8-11 UNC	29	G 3/4	75	12.7	56	44.45 ⁰ / _{-0.05}	49.39 ⁰ / _{-0.18}	152.4 ⁰ / _{-0.05}	67		32	11.11 ^{+0.03} / ₀	161.6	21.5	39	Conforms to ISO 3019-1	Unified	Unified
A3HG180-FR14K-U2D	M16	29	G 3/4	75	12.7	56	44.45 ⁰ / _{-0.05}	49.39 ⁰ / _{-0.18}	152.4 ⁰ / _{-0.05}	67	1/2-13 UNC	32	11.11 ^{+0.03} / ₀	161.6	21.5	39	Conforms to ISO 3019-1	BSPP	Metric
A3HG180-FR14K-J1D	M16	29	G 3/4	75	12.7	56	44.45 ⁰ / _{-0.05}	49.39 ⁰ / _{-0.18}	152.4 ⁰ / _{-0.05}	67		32	11.11 ^{+0.03} / ₀	161.6	21.5	39	Conforms to ISO 3019-1	Rc	Metric

Load Sensing Port/Pilot Port

Load Sensing Port is common to that of Pilot Port (except the height dimension from the center of the pump). Refer to page 179 for the dimensions of Pilot Port.

Drain Port

Drain Port is common to that of pressure compensator model.Refer to page 174 or 175 for the dimensions of Drain Port.

Foot Mtg.:A3HG145-LR14K-E1D/E2D/U1D/U2D/J1D, A3HG180-LR14K-E1D/E2D/U1D/U2D/J1D

Mounting bracket is common to that of pressure compensator model. Refer to page 174 and 175 for the dimensions of mounting bracket.