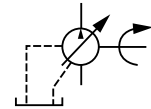


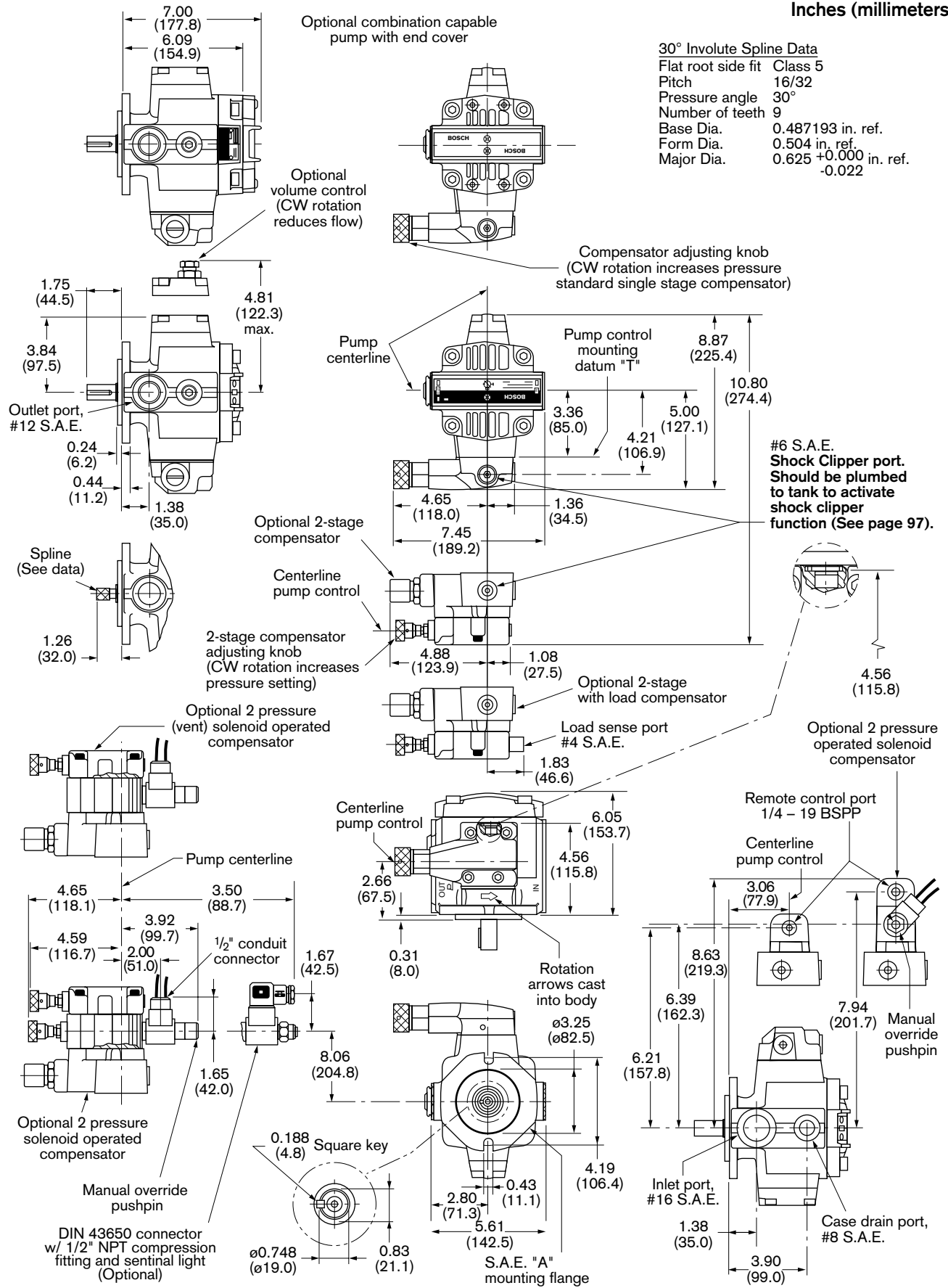
VPV 16, Single pump, S.A.E. 'A' flange, RH rotation



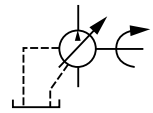
Inches (millimeters)

30° Involute Spline Data

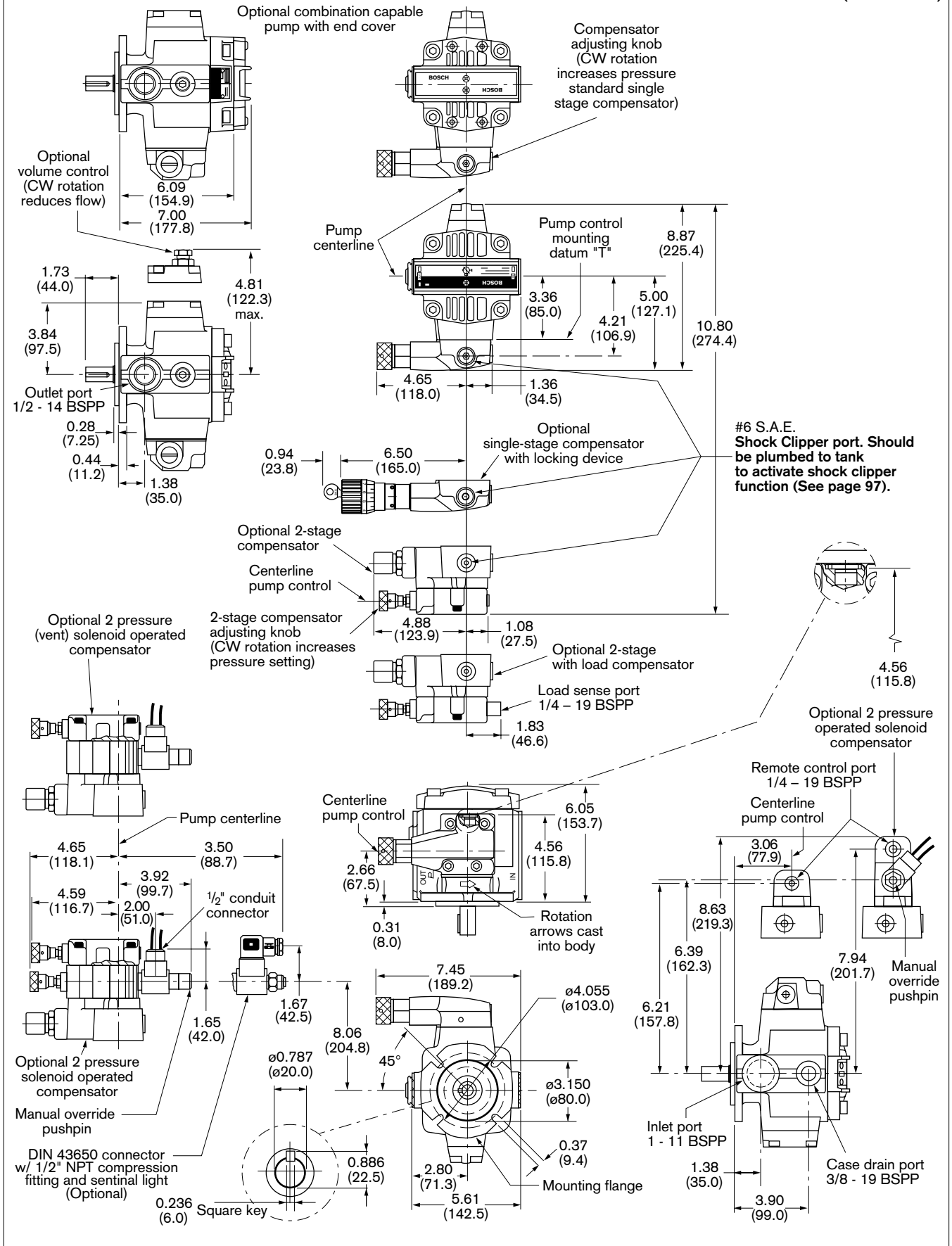
Flat root side fit	Class 5
Pitch	16/32
Pressure angle	30°
Number of teeth	9
Base Dia.	0.487193 in. ref.
Form Dia.	0.504 in. ref.
Major Dia.	0.625 +0.000 in. ref. -0.022



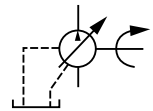
VPV 16 Single pump, Metric flange, RH rotation



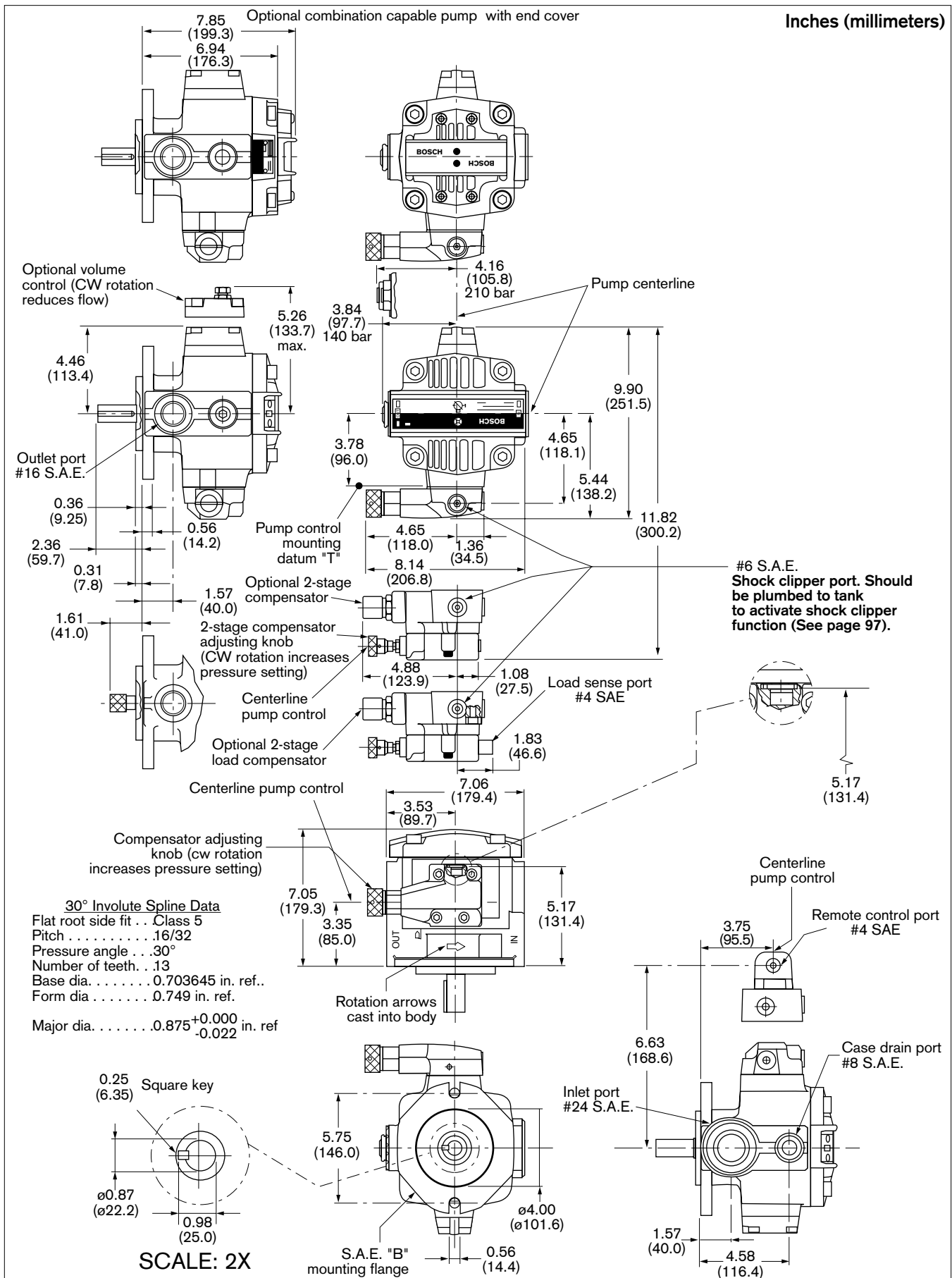
Inches (millimeters)



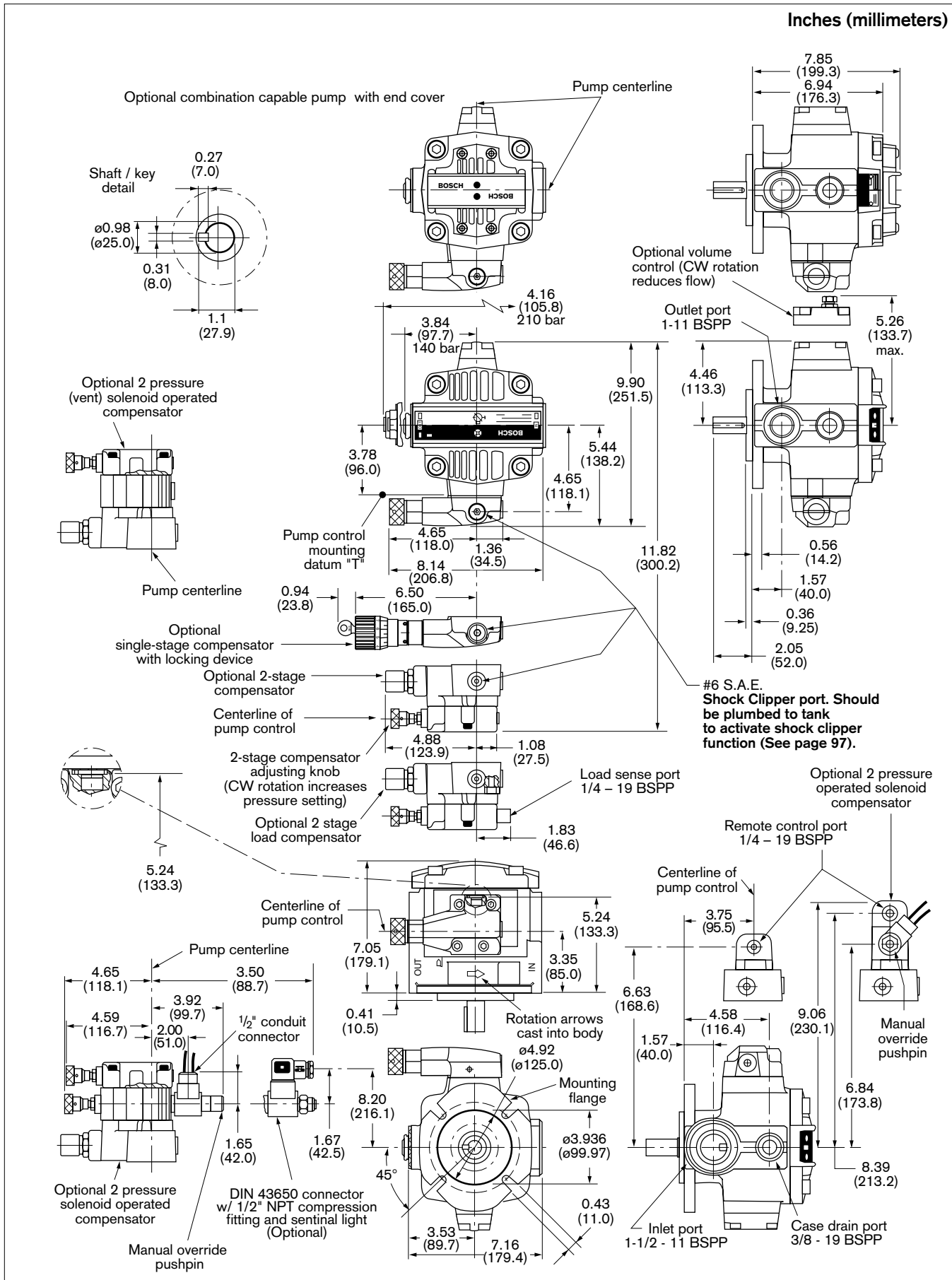
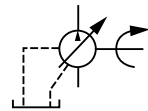
VPV 25/32, Single pump, S.A.E. 'B' flange, RH rotation



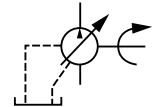
Inches (millimeters)



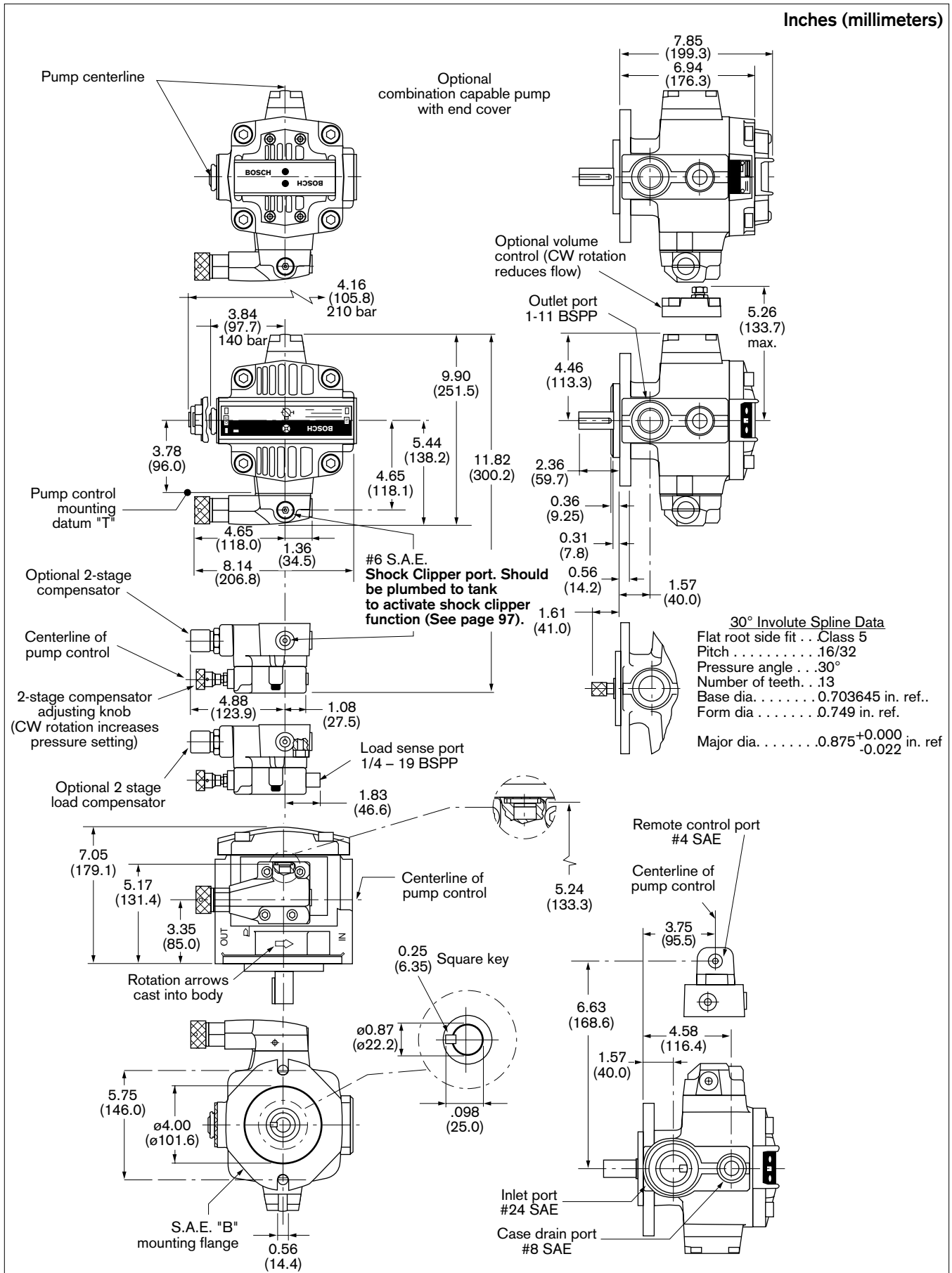
VPV 25/32, Single pump, Metric flange, RH rotation



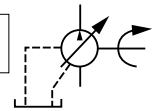
VPV 25/32, Single pump, S.A.E. 'B' flange, RH rotation



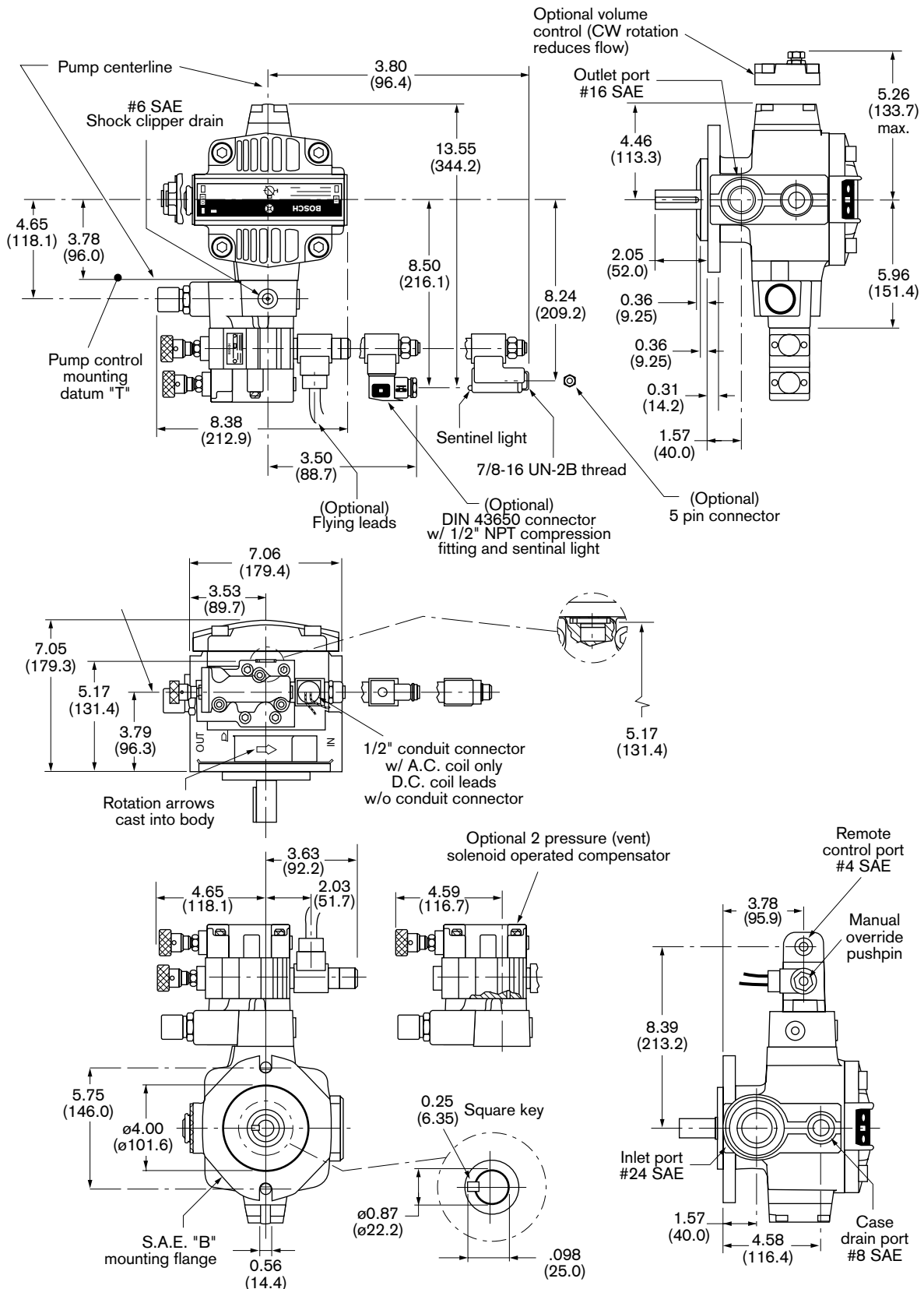
Inches (millimeters)



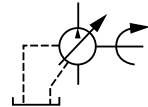
VPV 25/32, Single pump, S.A.E. 'B' flange, w/ solenoid 2-pressure compensator



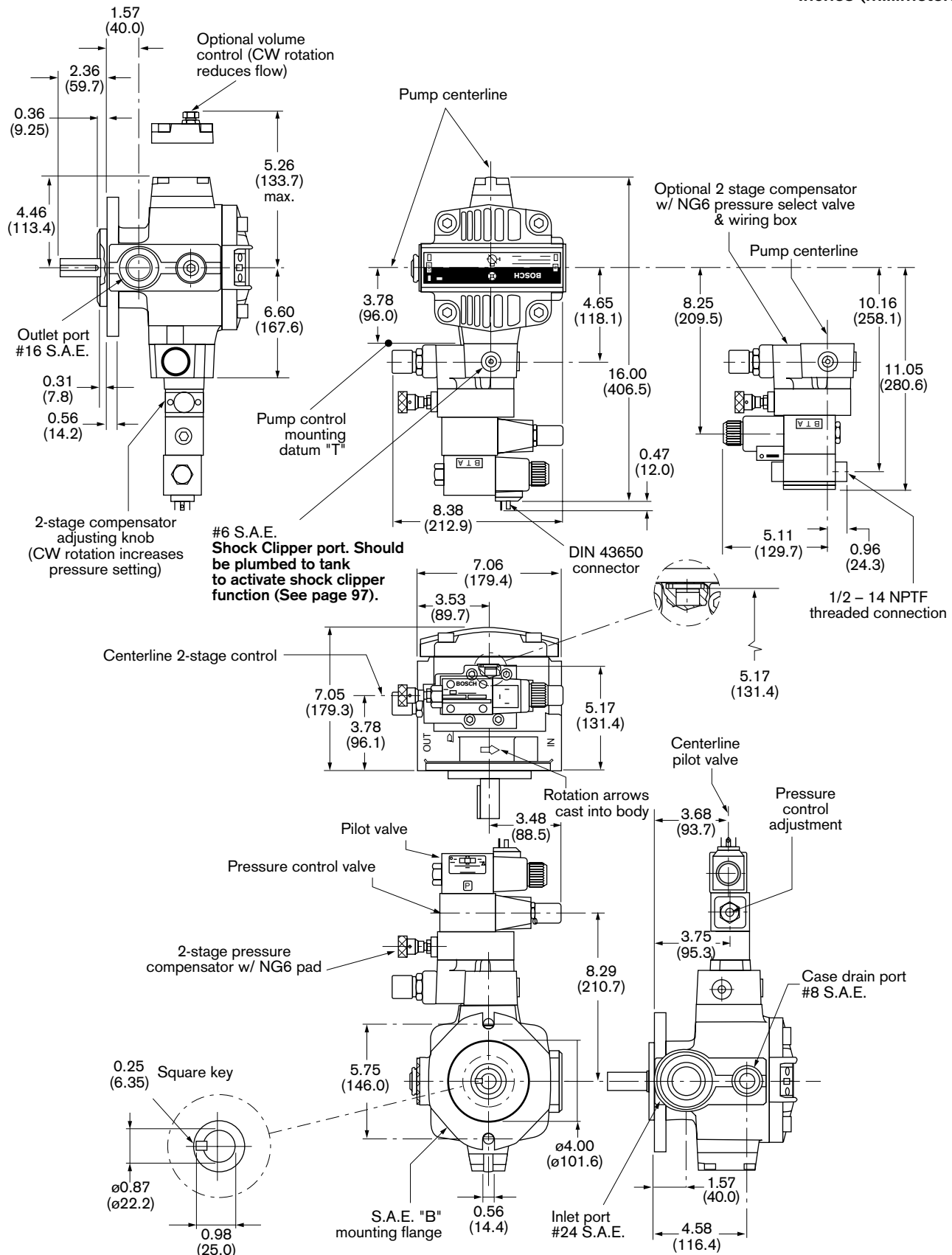
Inches (millimeters)



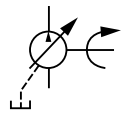
VPV 25/32, Single pump, S.A.E. 'B' flange, w/ NG6 pilot valve



Inches (millimeters)

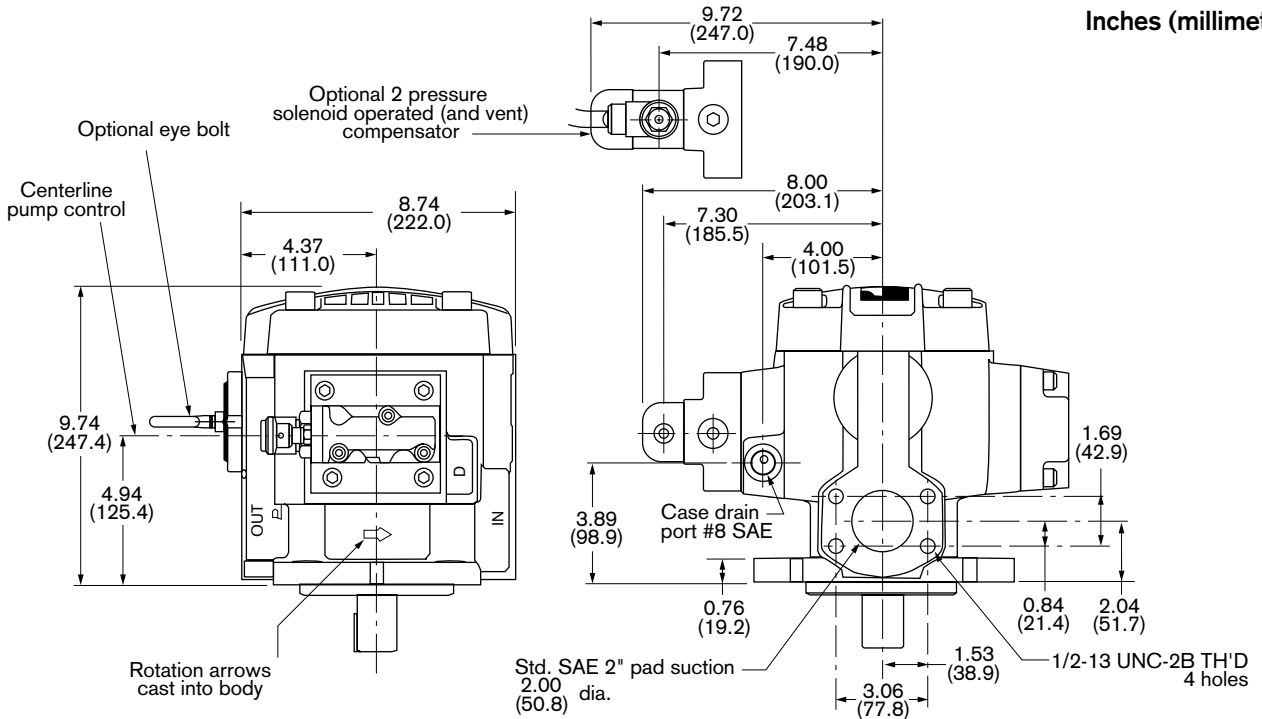


SCALE: 2X

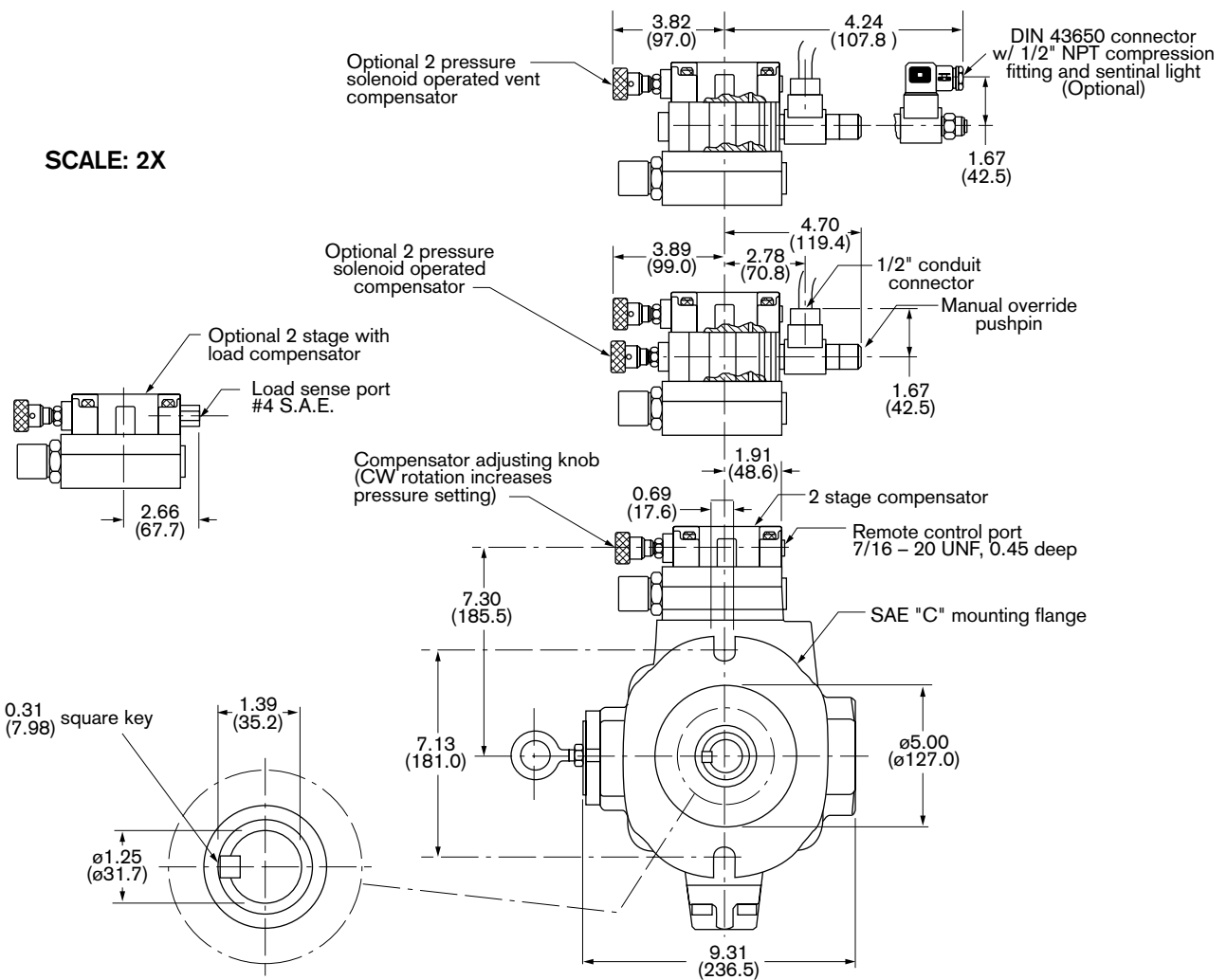


VPV 45/63/80, Single pump, S.A.E. 'C' flange, RH rotation

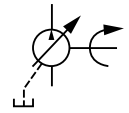
Inches (millimeters)



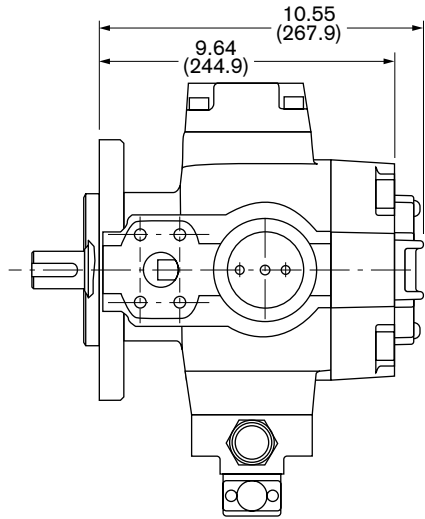
SCALE: 2X



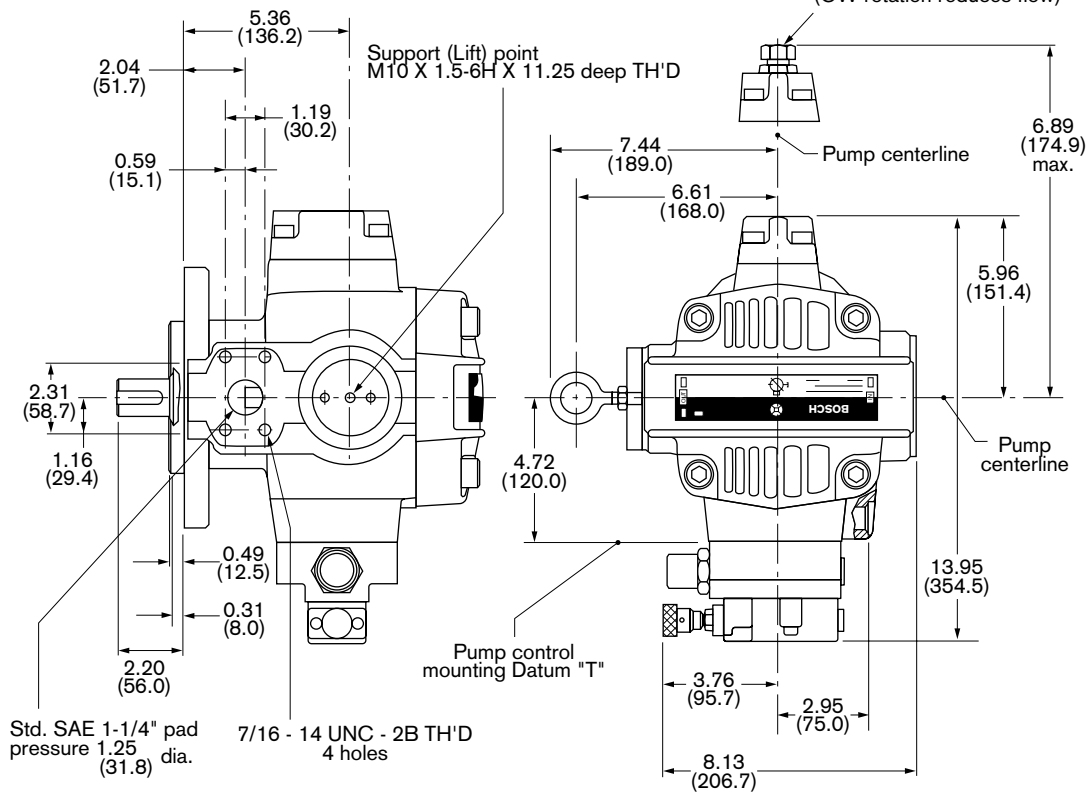
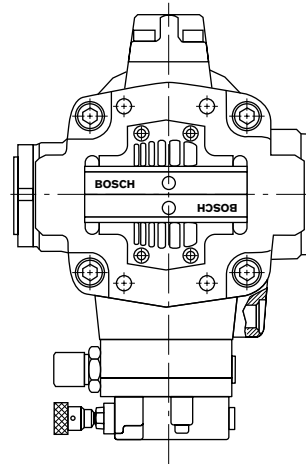
VPV 45/63/80, Single pump, S.A.E. 'C' flange, RH rotation, (continued)

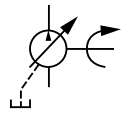


Inches (millimeters)



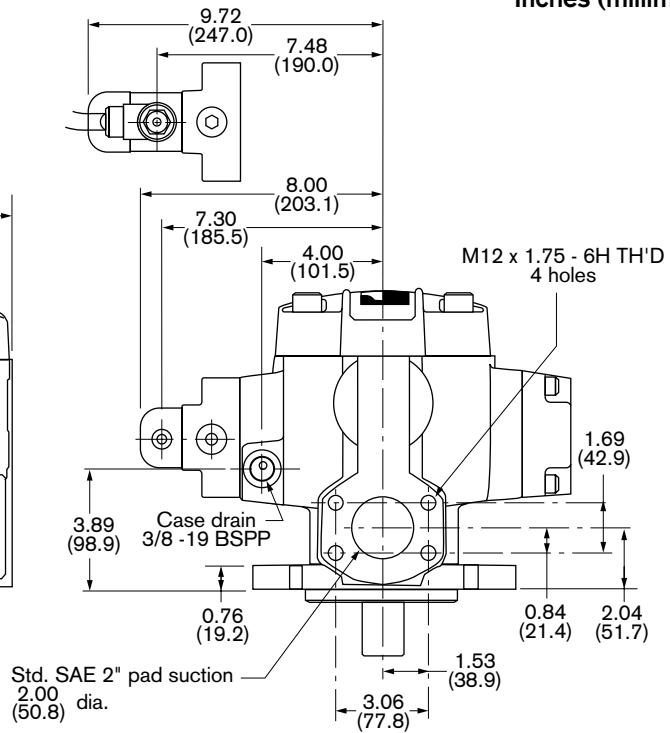
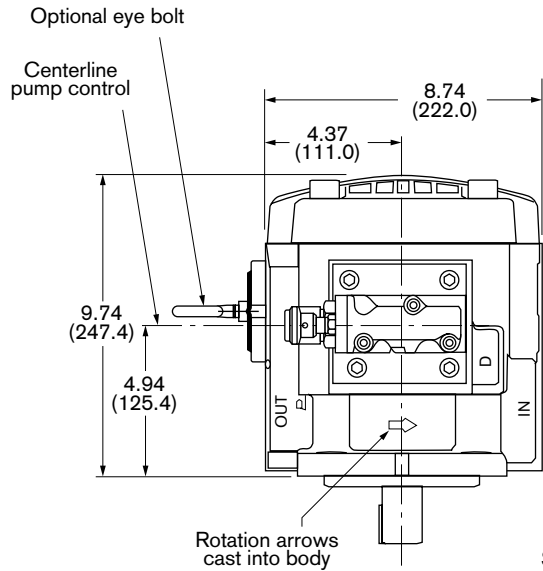
Optional combination capable pump with end cover (P1 Version)





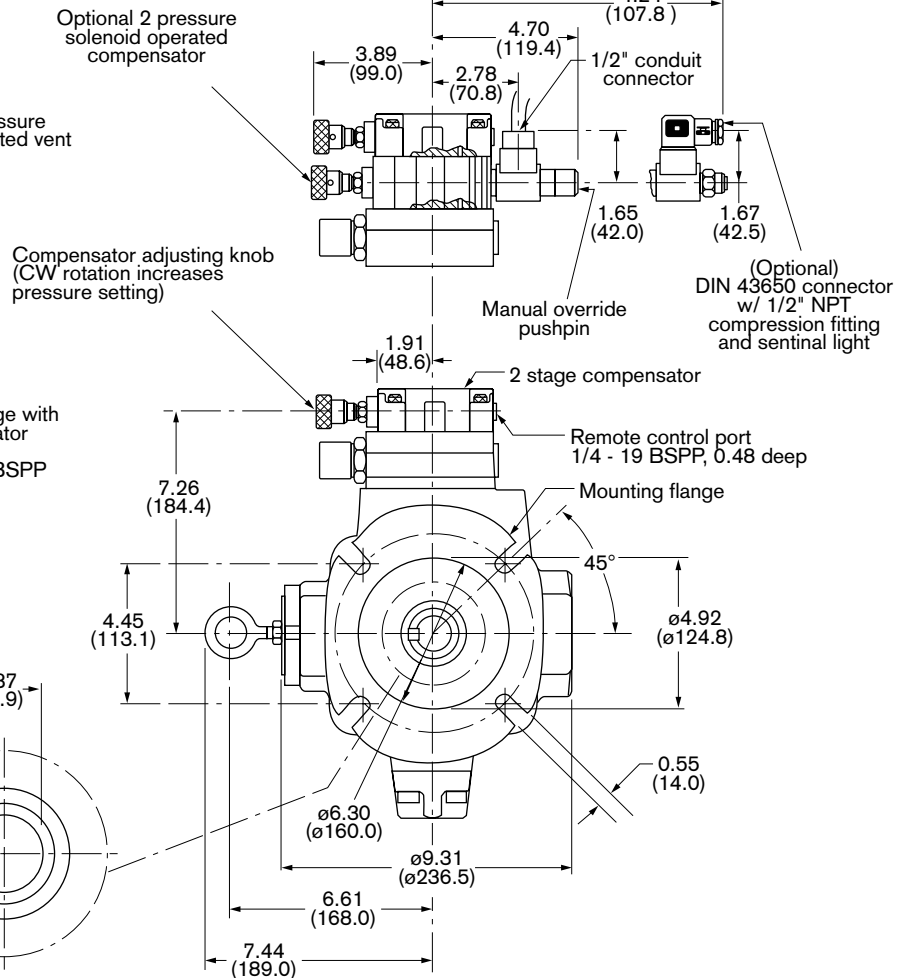
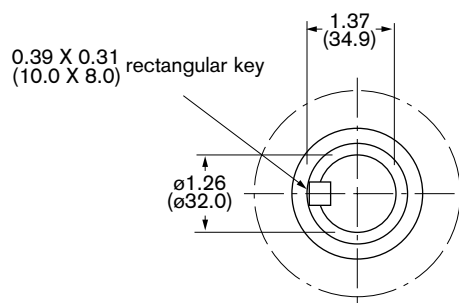
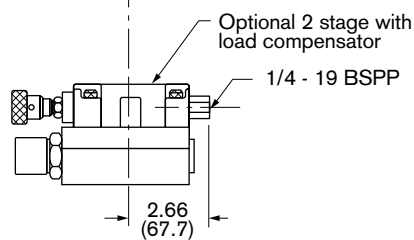
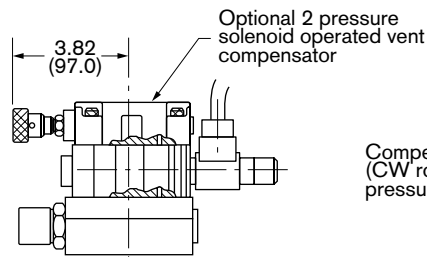
VPV 45/63/80, Single pump, Metric flange, RH Rotation

Inches (millimeters)

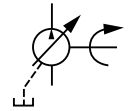


SCALE: 2X

**SINGLE STAGE CONTROL
NOT AVAILABLE ON VPV 45-164**

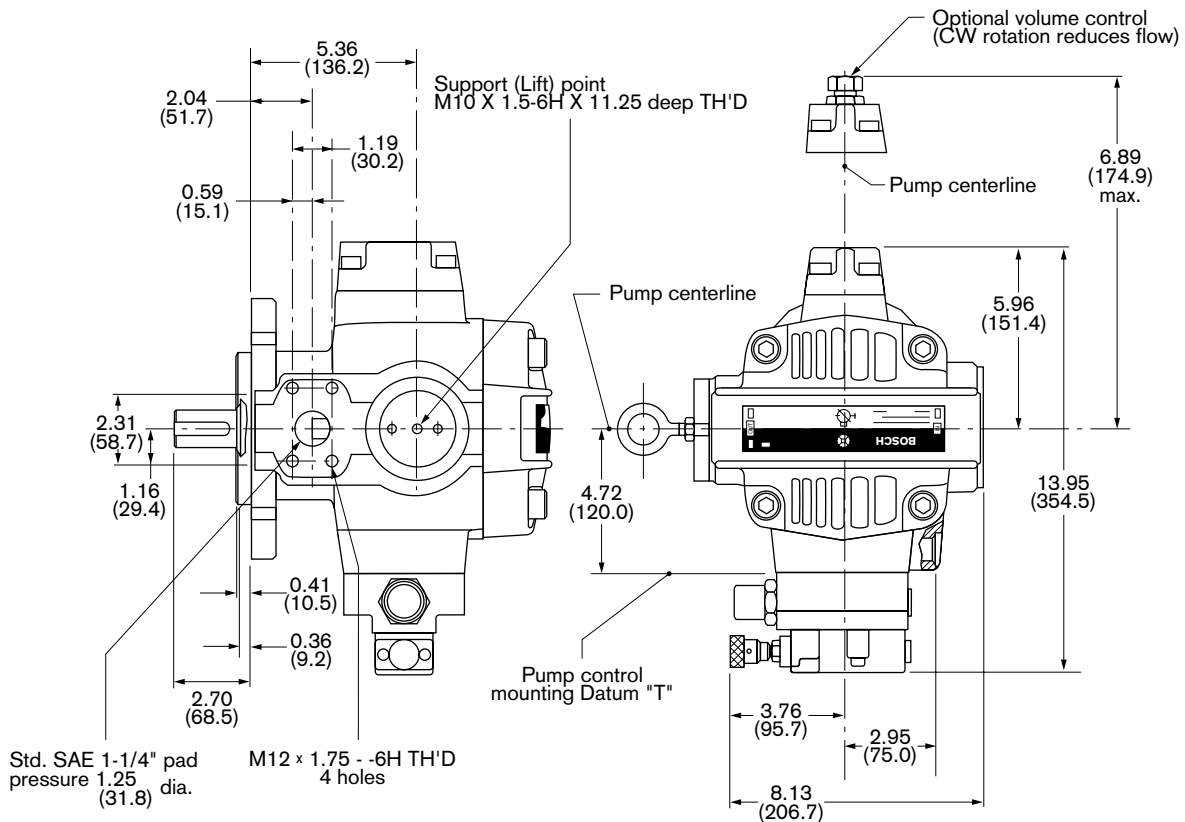
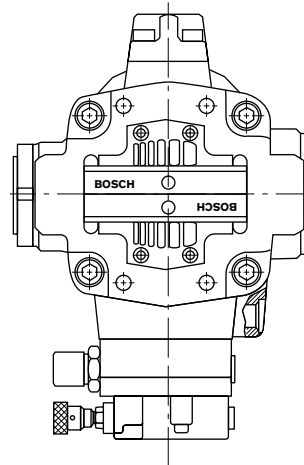
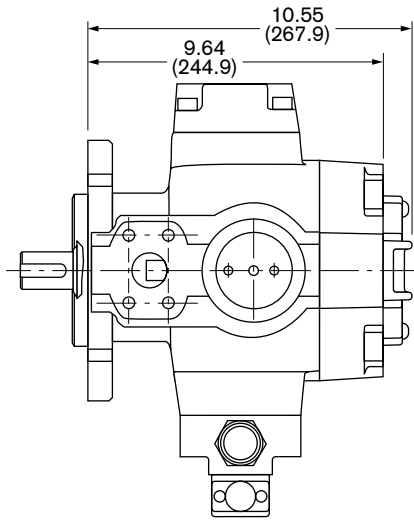


VPV 45/63/80, Single pump, Metric flange, RH Rotation, (continued)

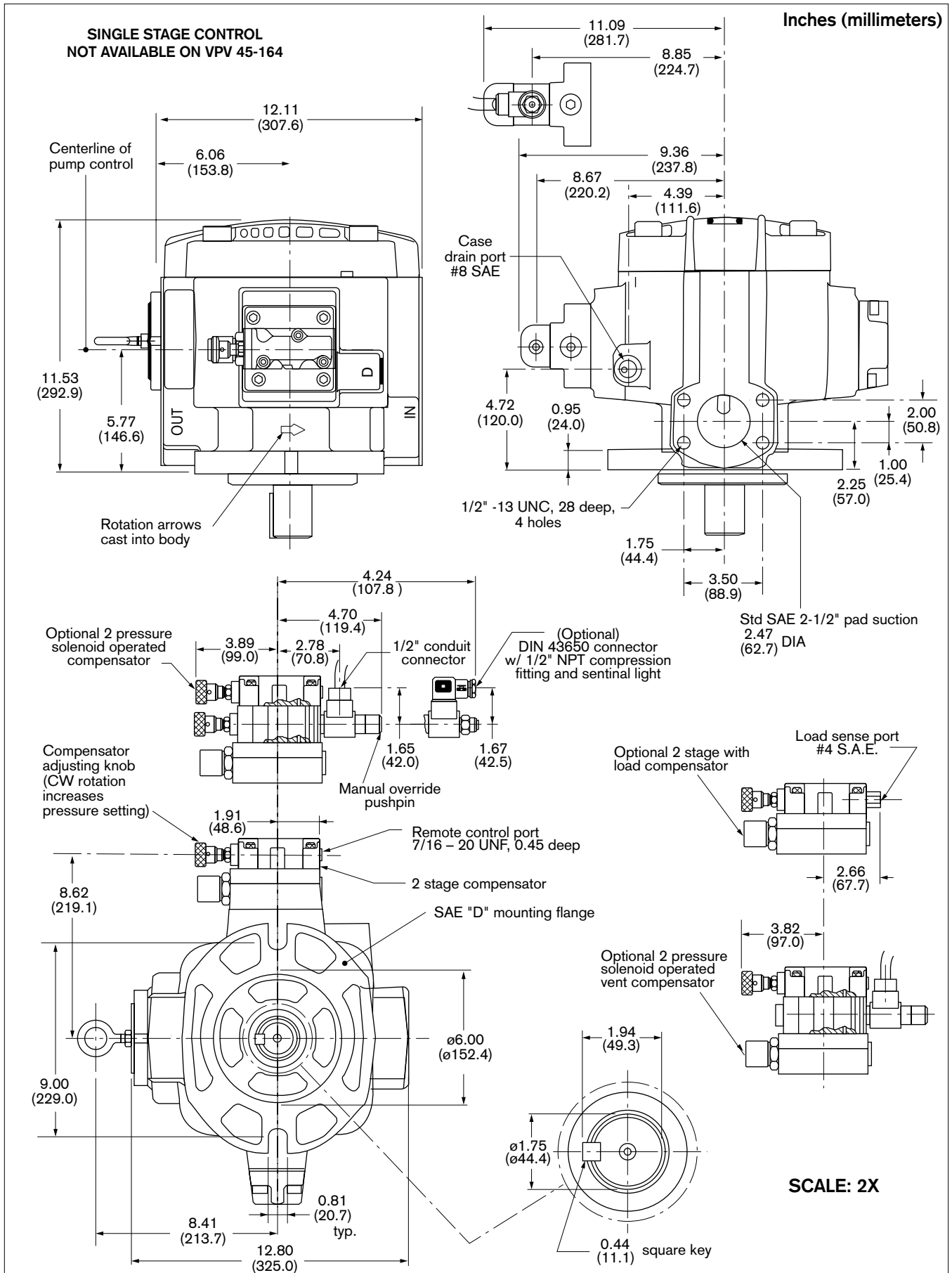
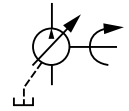


Inches (millimeters)

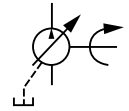
Optional combination capable pump with end cover (P1 Version)



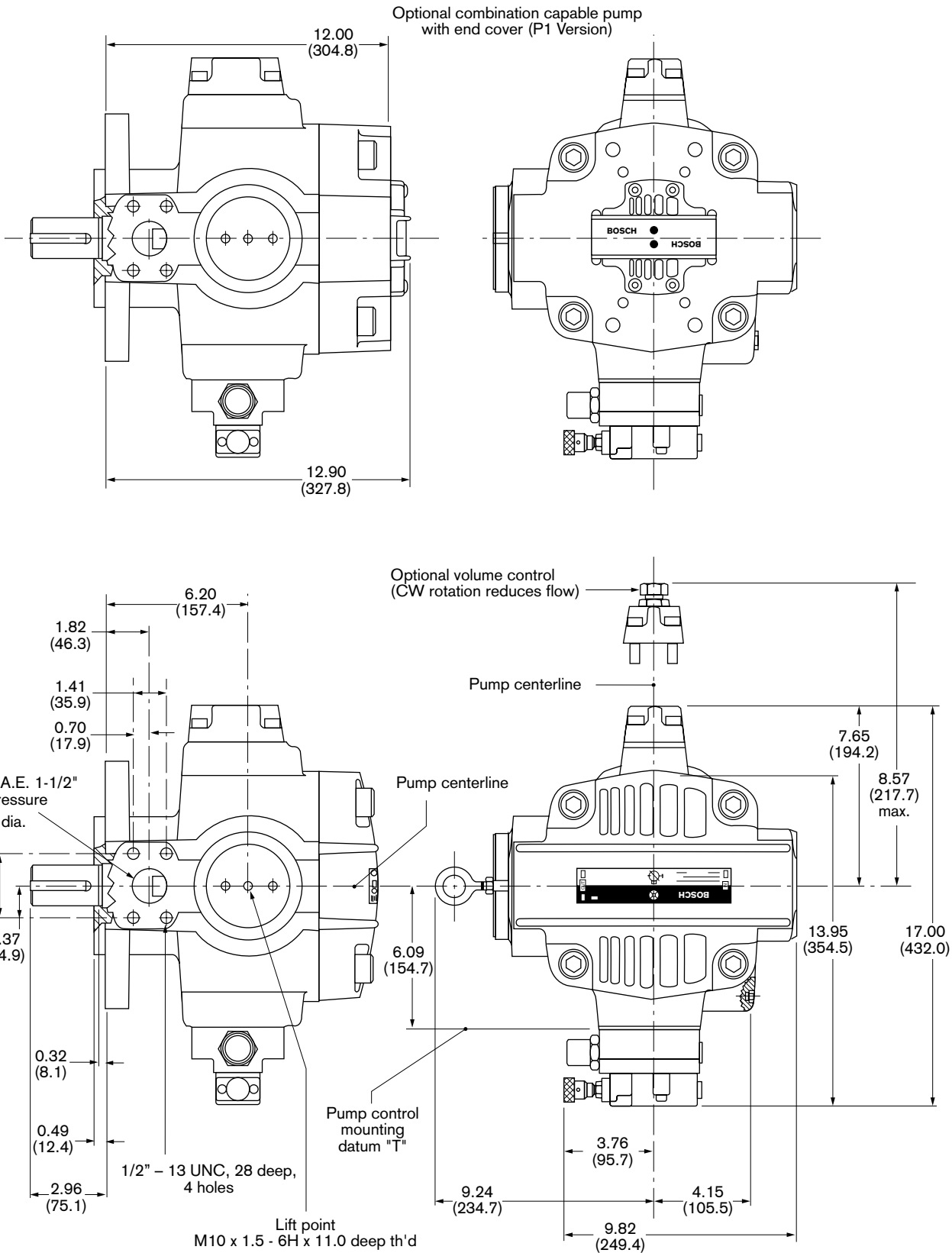
VPV 100/130/164, Single pump, S.A.E. 'D' flange, RH rotation



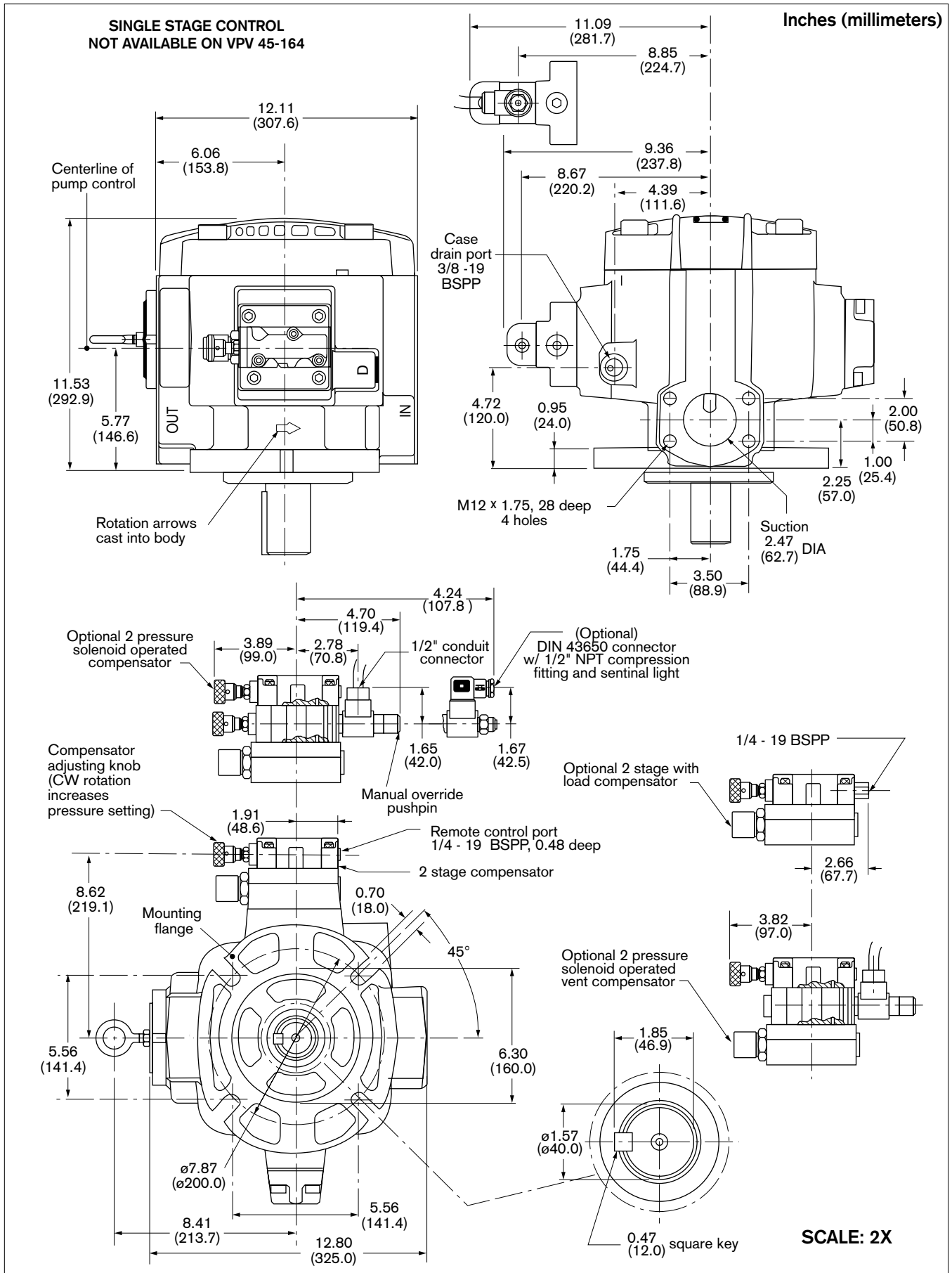
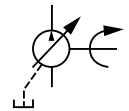
VPV 100/130/164, Single pump, S.A.E. 'D' flange, RH rotation (continued)



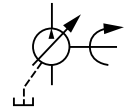
Inches (millimeters)



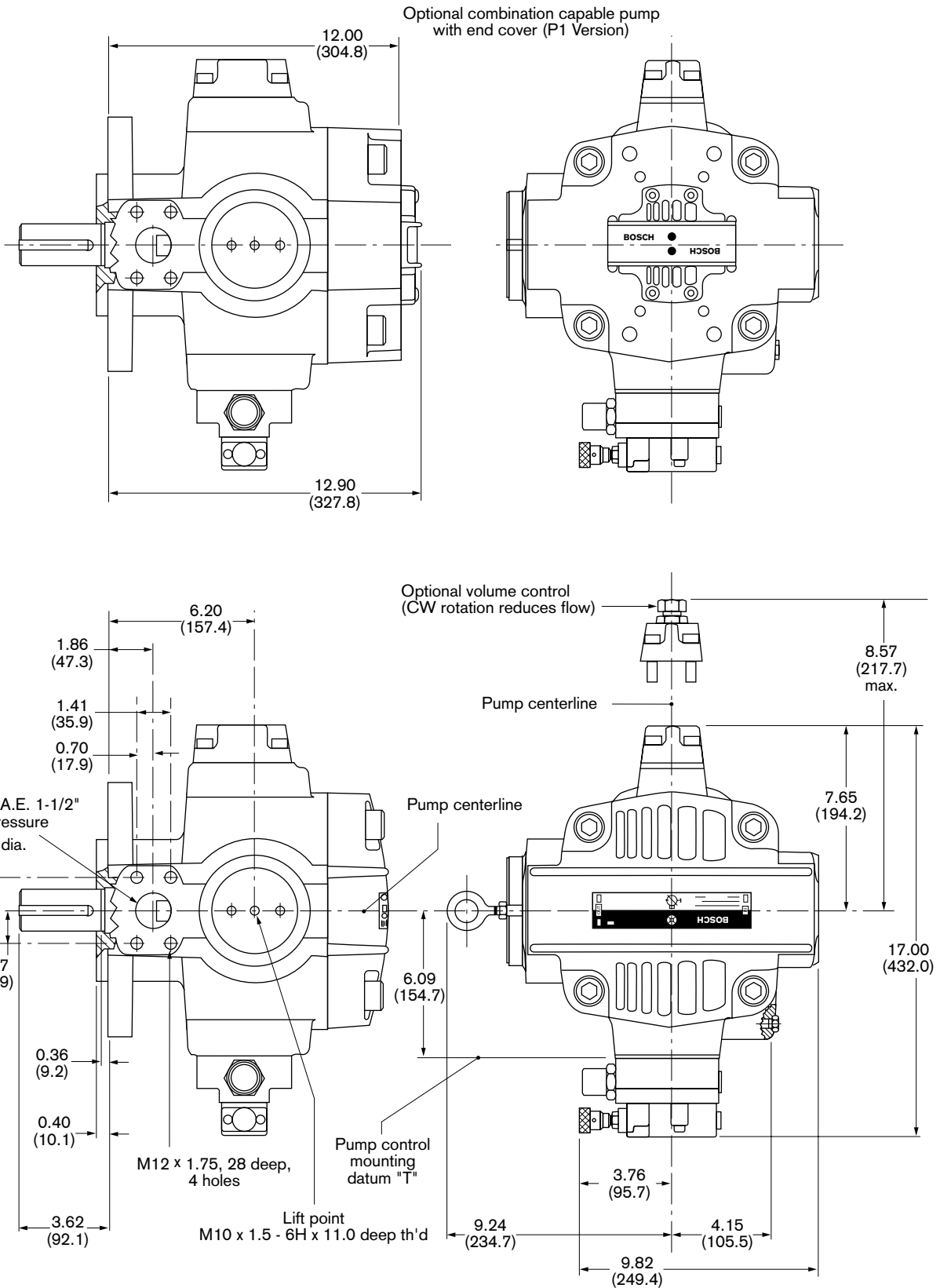
VPV 100/130/164, Single pump, Metric flange, RH rotation



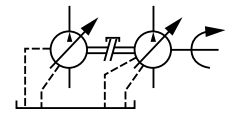
VPV 100/130/164, Single pump, Metric flange, RH rotation (continued)



Inches (millimeters)

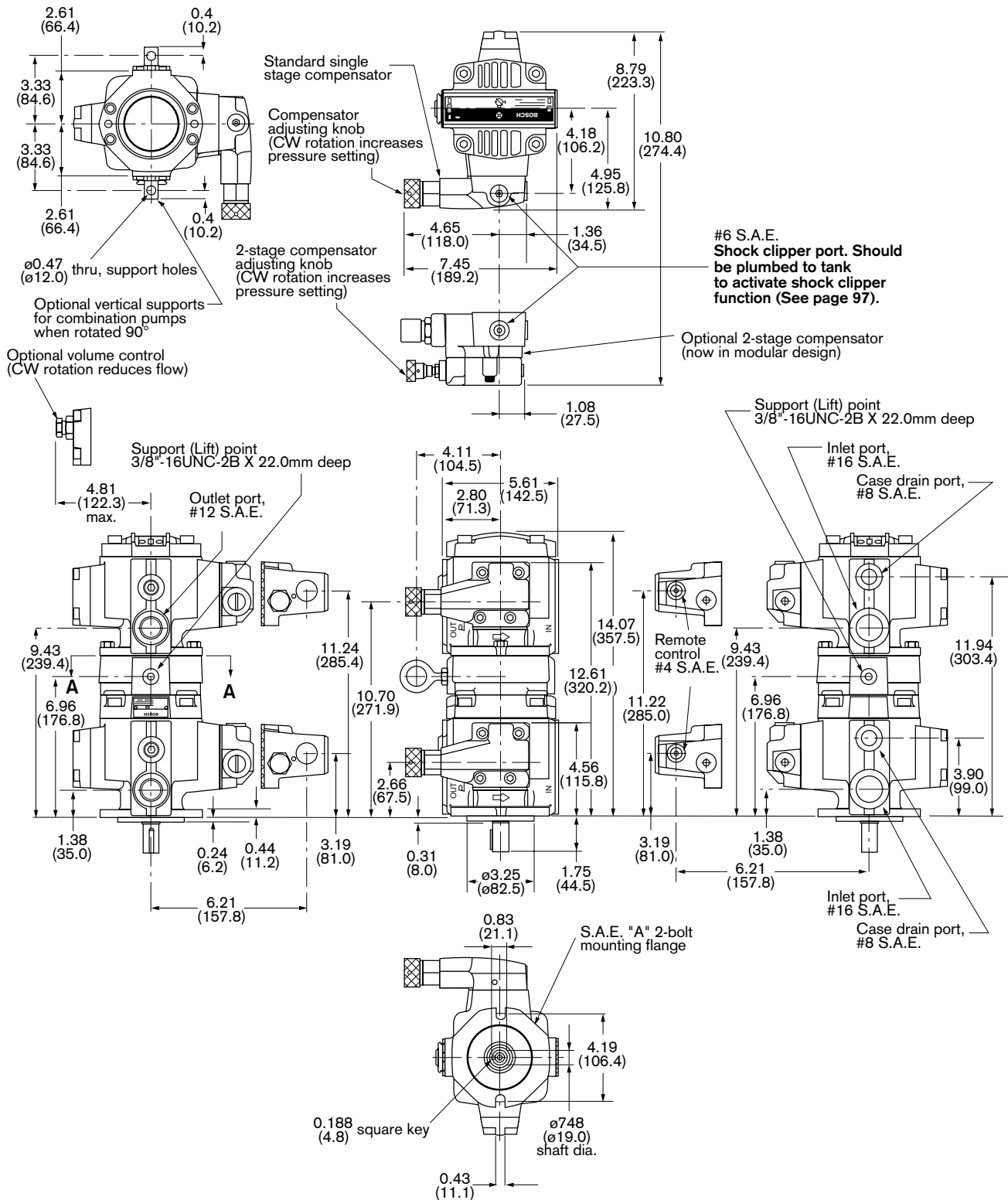


VPV 16, Combination pump, S.A.E. 'A' flange, RH rotation

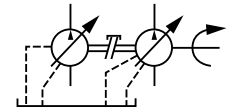


Inches (millimeters)

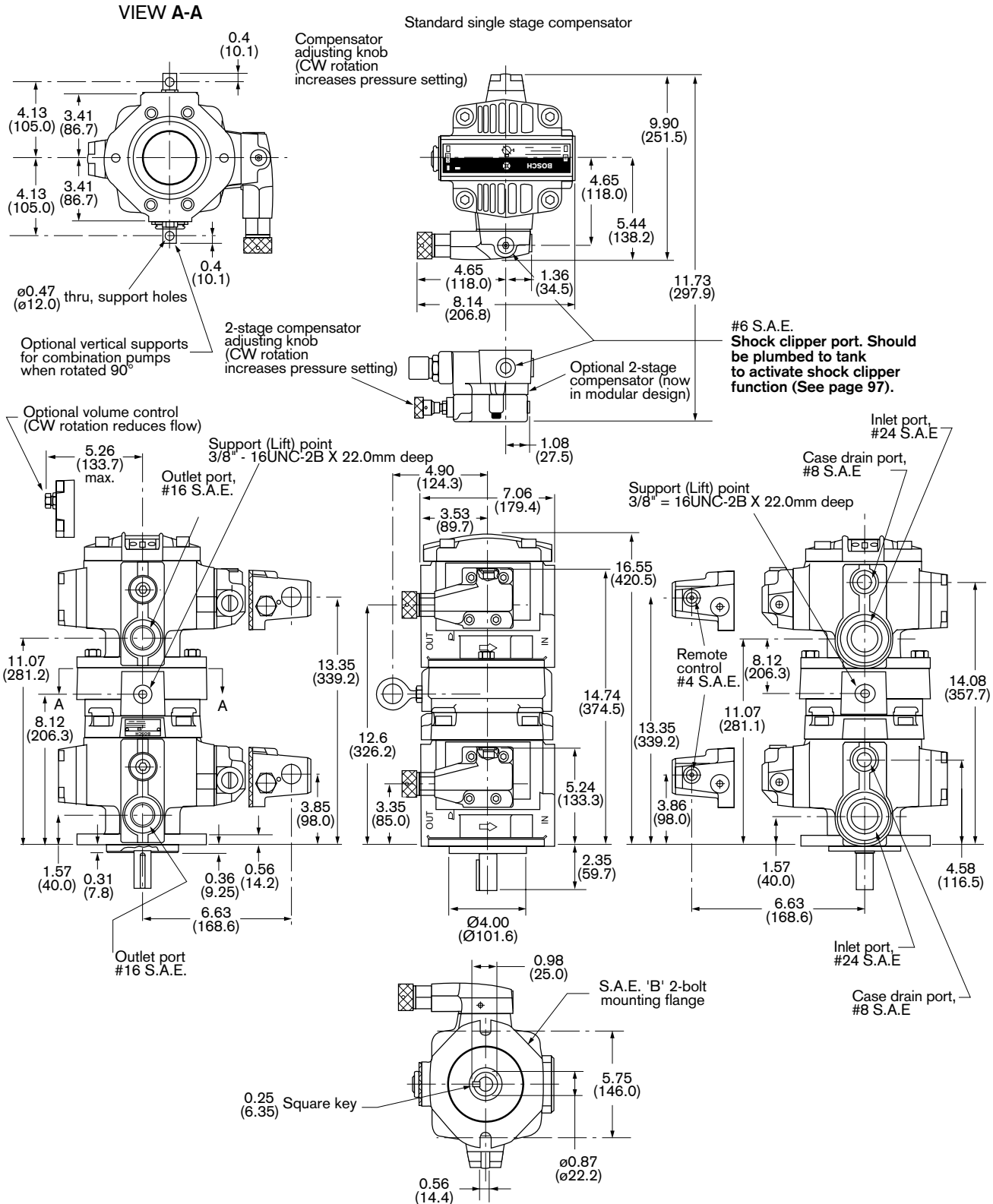
VIEW A-A



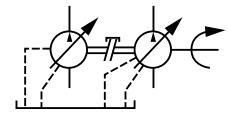
VPV 25/32, Combination pump, S.A.E. 'B' flange, RH rotation



Inches (millimeters)



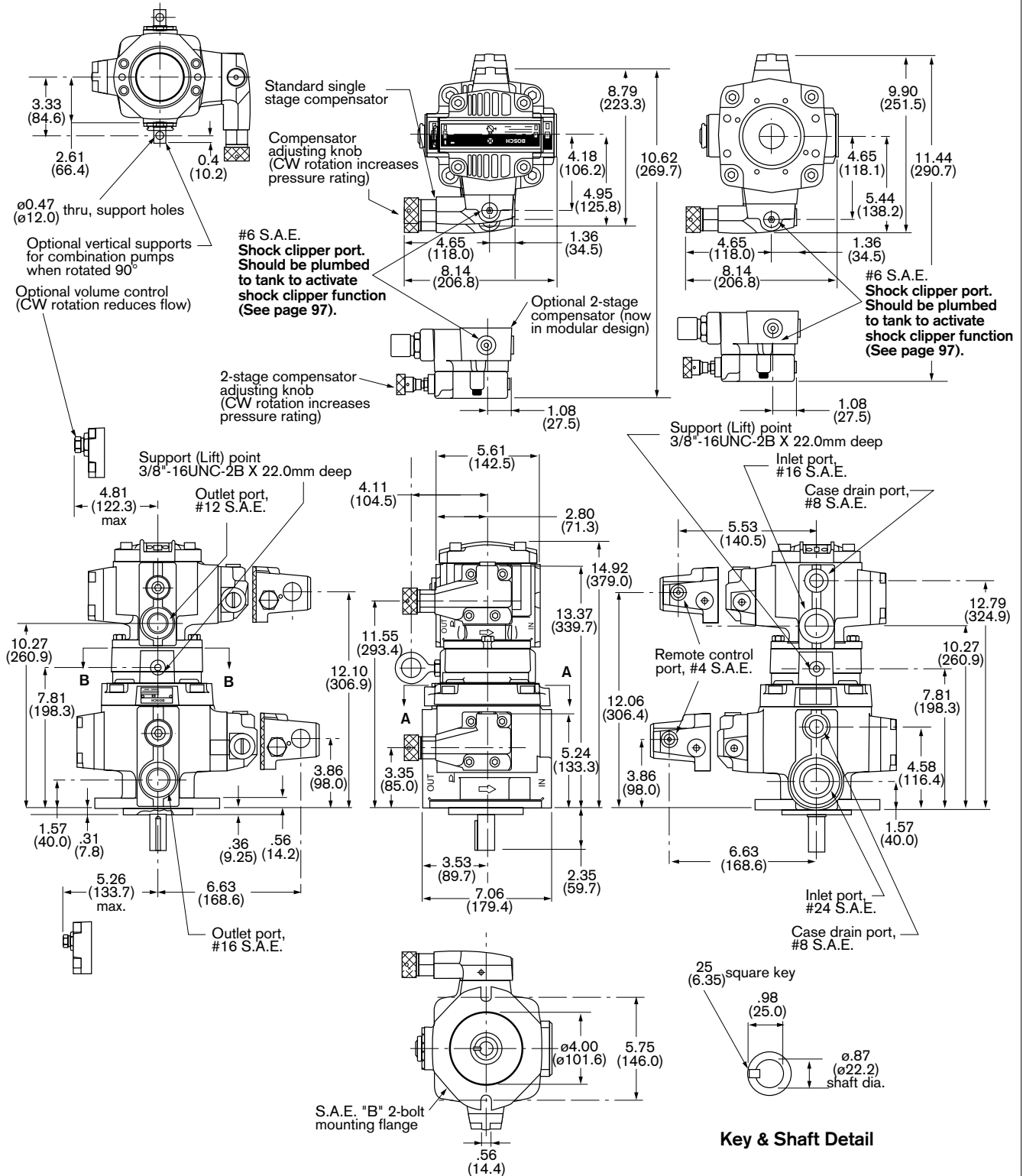
VPV 32/16, Combination pump, S.A.E. 'B' flange, RH rotation



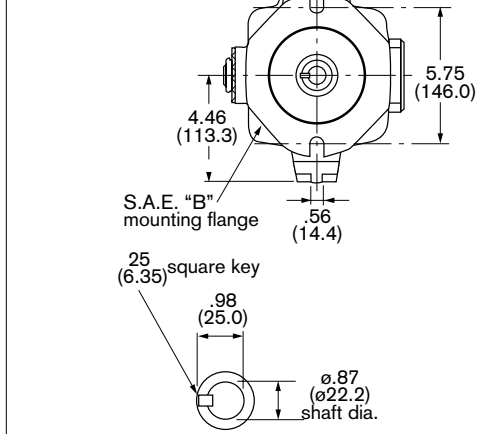
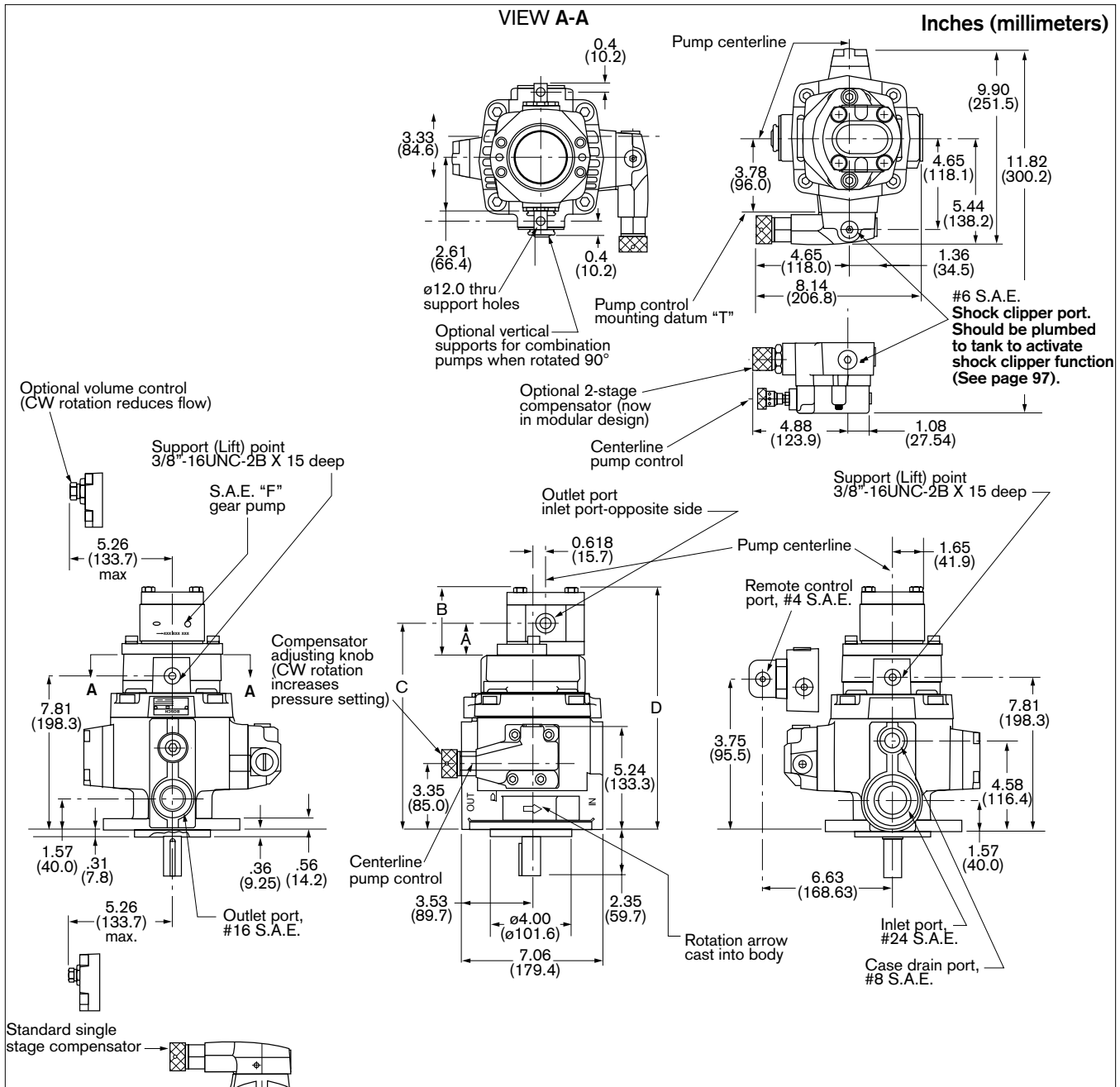
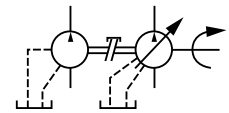
Inches (millimeters)

VIEW B-B

VIEW A-A



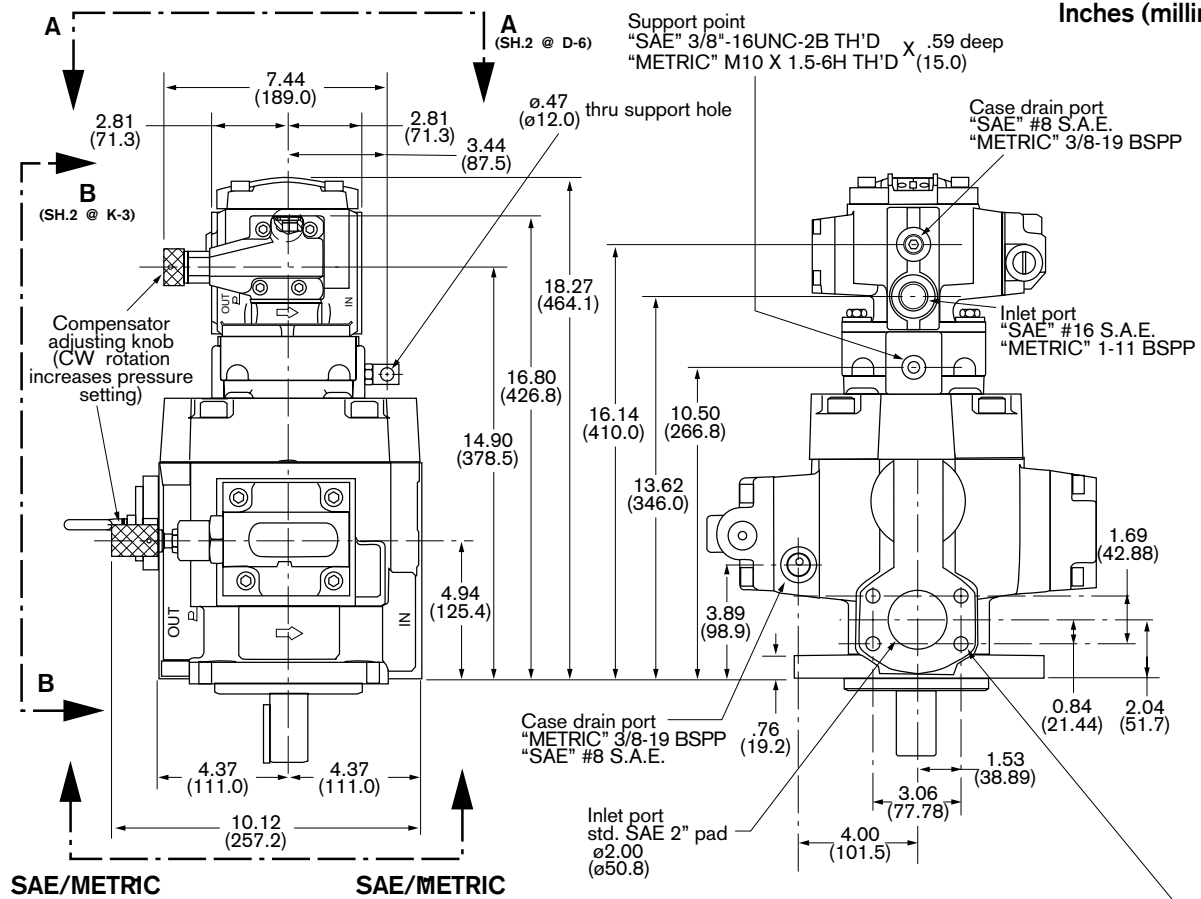
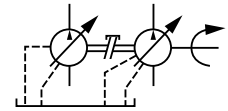
VPV 32/25, Combination pump, S.A.E. to 'F' gear, RH rotation



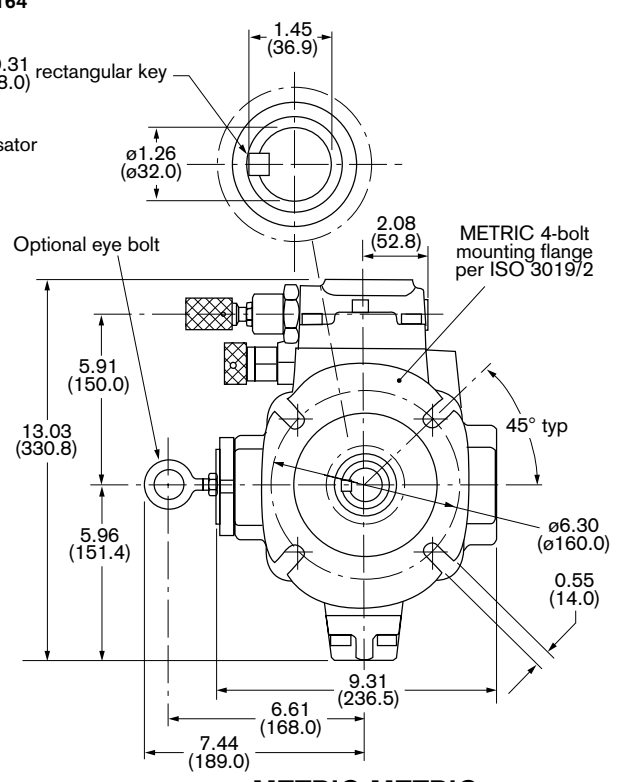
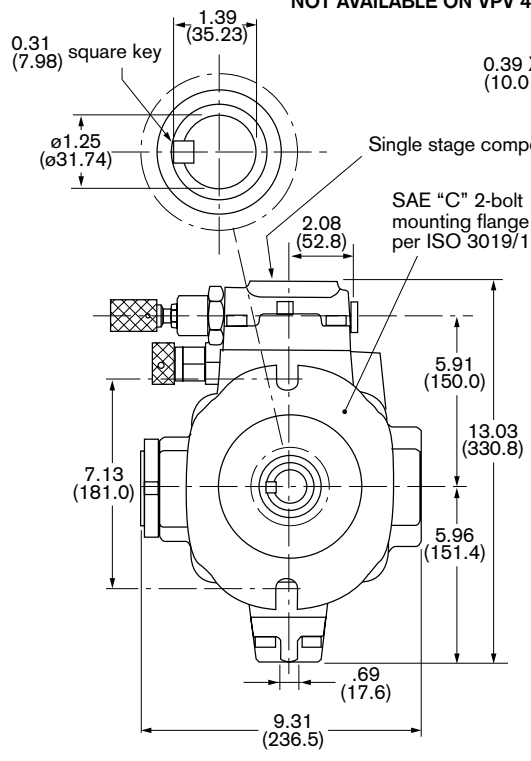
Key & Shaft Detail

Gear Pump Theoretical Displacement	Dimension				Port Size		Total Weight (Vane Pump + Gear Pump)
	A	B	C	D	INLET	OUTLET	
in ³ /rev (cc/rev)	in (mm)	in (mm)	in (mm)	in (mm)			lbs. (Kg)
0.24 (4)	1.571 (39.9)	3.346 (85.0)	10.46 (265.7)	12.24 (311.0)	9/16-18 UNF	9/16-18 UNF	70.0 (31.7)
0.34 (5.5)	1.618 (41.1)	3.445 (87.5)	10.51 (267.0)	12.34 (313.5)	9/16-18 UNF	9/16-18 UNF	70.2 (31.8)
0.49 (8)	1.697 (43.2)	3.606 (91.6)	10.59 (269.0)	12.50 (317.5)	7/8-14 UNF	7/8-14 UNF	70.4 (31.9)
0.67 (11)	1.850 (47.0)	3.803 (96.6)	10.74 (272.8)	12.70 (322.5)	1-1/16-12 UNF	7/8-14 UNF	70.6 (32.0)
0.85 (14)	1.870 (47.5)	4.0 (101.6)	10.76 (273.3)	12.90 (327.7)	1-1/16-12 UNF	7/8-14 UNF	70.8 (32.1)
0.98 (16)	1.870 (47.5)	4.134 (105.0)	10.76 (273.3)	13.03 (331.0)	1-1/16-12 UNF	7/8-14 UNF	70.9 (32.2)
1.16 (19)	1.870 (47.5)	4.330 (110.0)	10.76 (273.3)	13.23 (336.0)	1-1/16-12 UNF	7/8-14 UNF	71.1 (32.3)
1.37 (22.5)	2.169 (55.1)	4.543 (115.4)	11.06 (281.0)	13.44 (341.4)	1-1/16-12 UNF	7/8-14 UNF	71.4 (32.4)

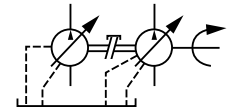
VPV 45/63/80 to VPV 16, S.A.E. & Metric Combination



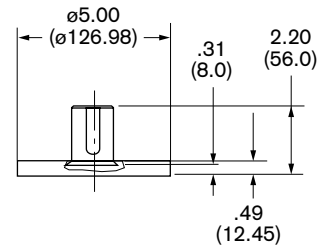
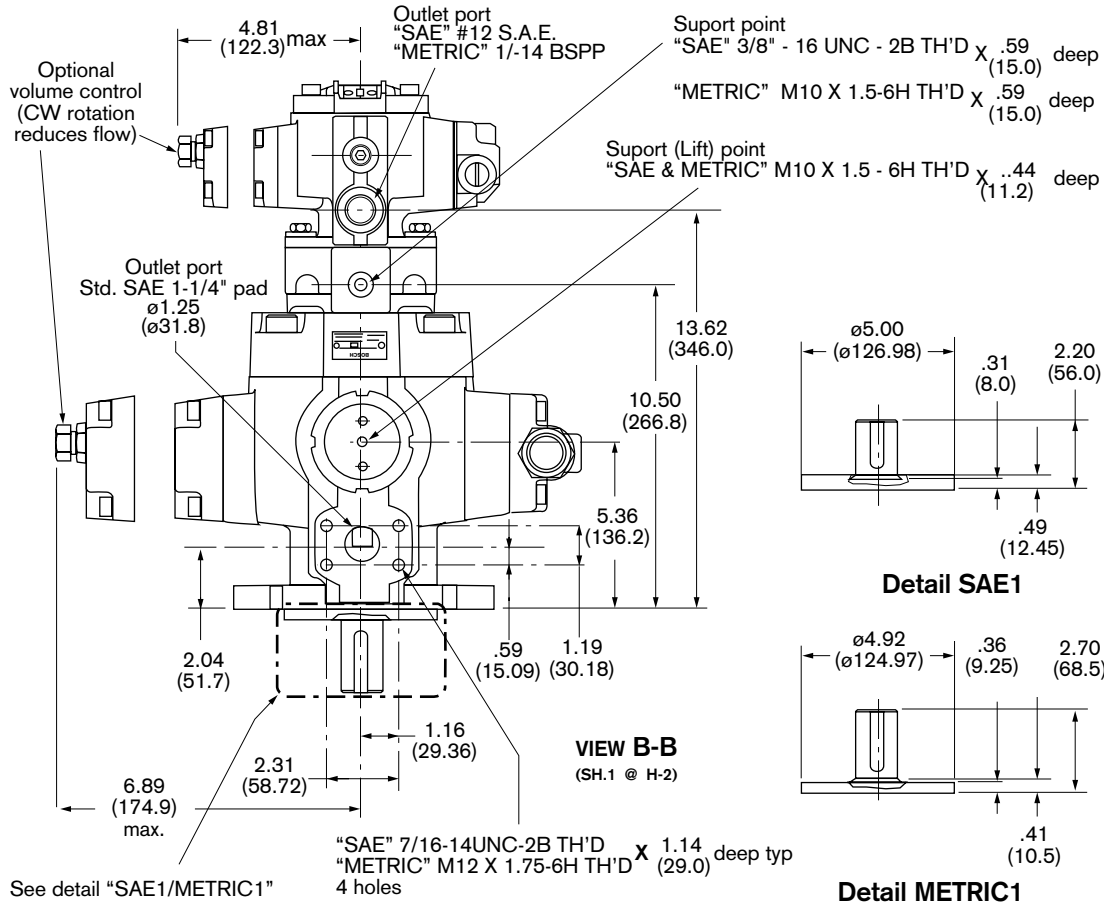
**SINGLE STAGE CONTROL
 NOT AVAILABLE ON VPV 45-164**



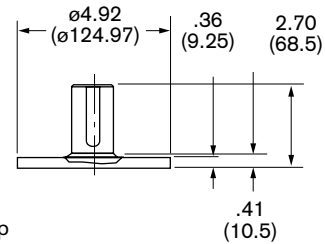
VPV 45/63/80 to VPV 16 (continued)



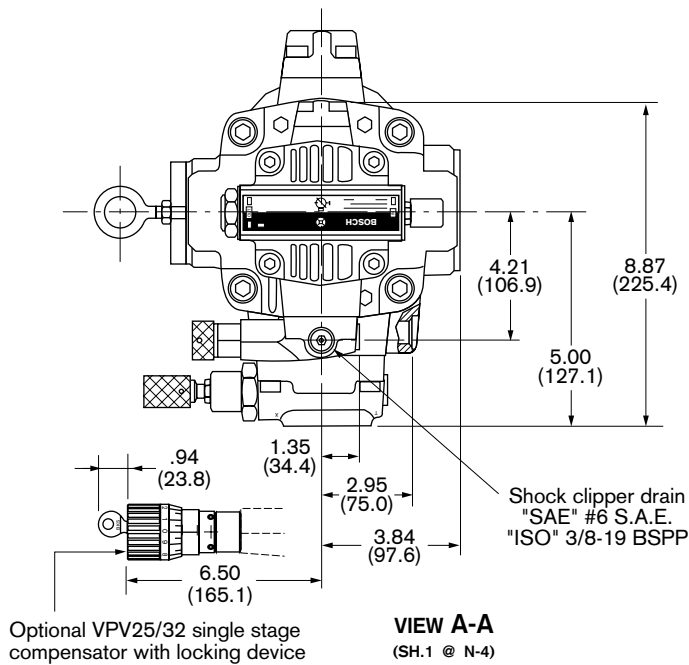
Inches (millimeters)



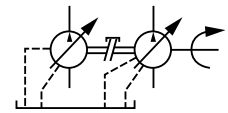
Detail SAE1



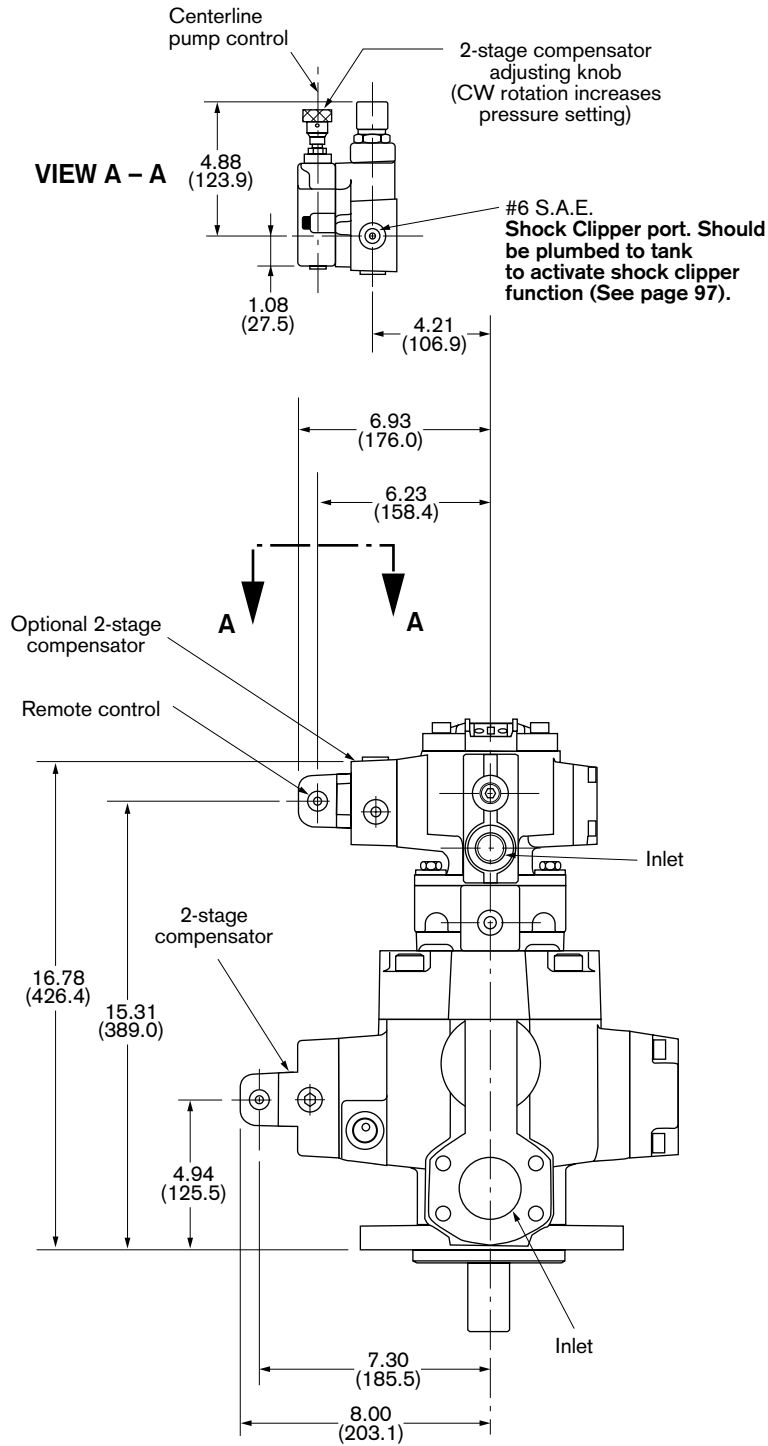
Detail METRIC1



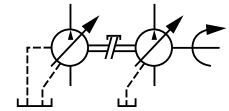
VPV 45/63/80 to VPV 16 (continued)



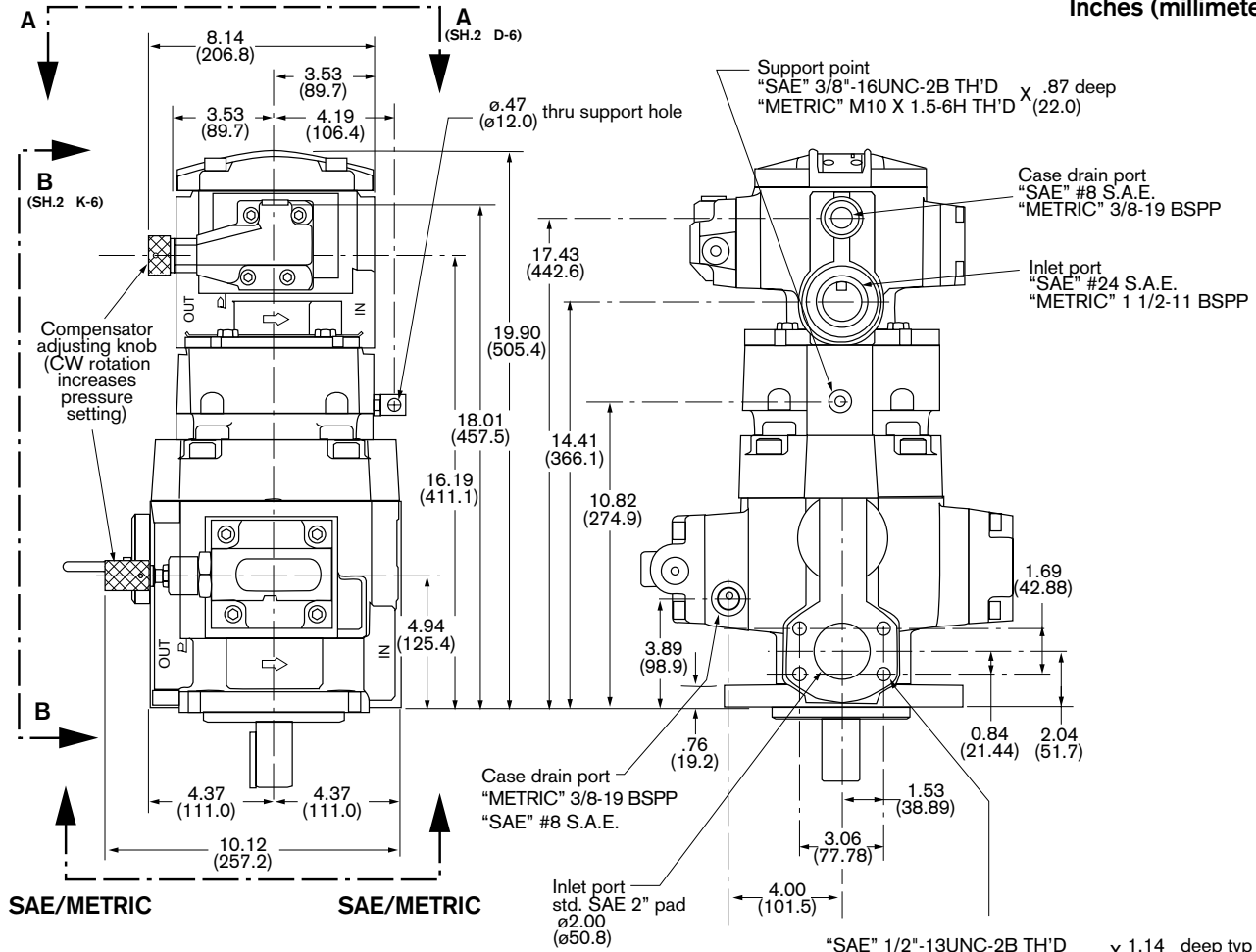
Inches (millimeters)



VPV 45/63/80 to VPV 25/32, S.A.E. & Metric Combination

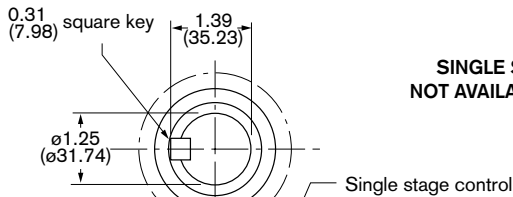


Inches (millimeters)

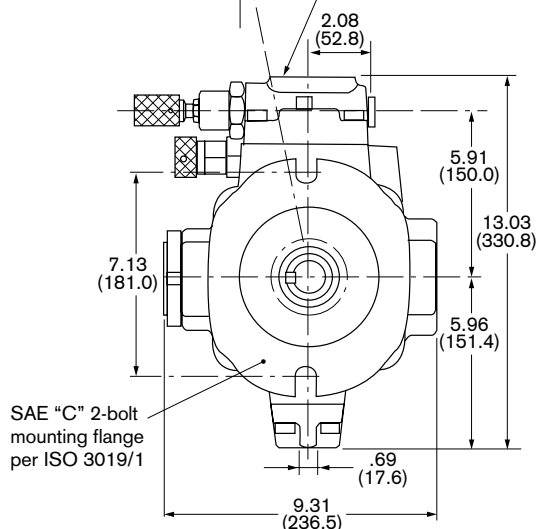
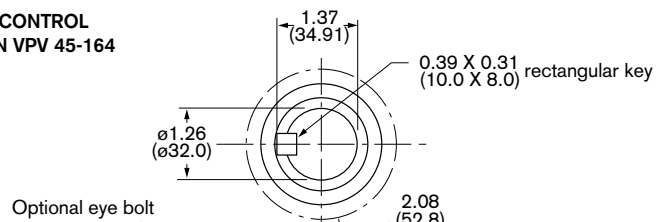


SAE/METRIC

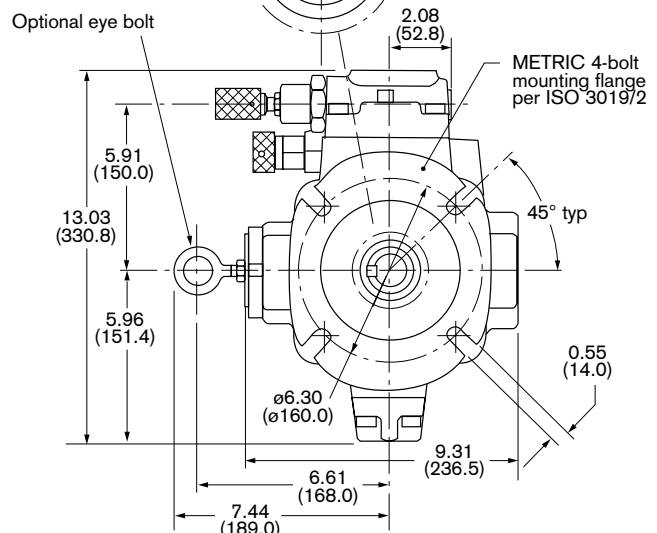
SAE/METRIC



SINGLE STAGE CONTROL
NOT AVAILABLE ON VPV 45-164



DETAIL SAE-SAE



DETAIL METRIC-METRIC

SAE "C" 2-bolt mounting flange per ISO 3019/1

METRIC 4-bolt mounting flange per ISO 3019/2

Optional eye bolt

Compensator adjusting knob (CW rotation increases pressure setting)

Support point
"SAE" 3/8"-16UNC-2B TH'D X .87 deep
"METRIC" M10 X 1.5-6H TH'D (22.0)

Case drain port
"SAE" #8 S.A.E.
"METRIC" 3/8-19 BSPP

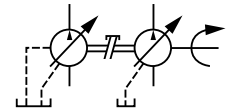
Inlet port
"SAE" #24 S.A.E.
"METRIC" 1 1/2-11 BSPP

Case drain port
"METRIC" 3/8-19 BSPP
"SAE" #8 S.A.E.

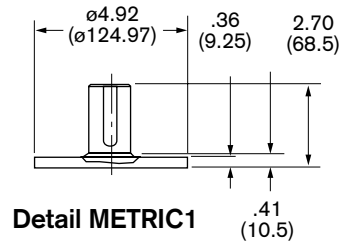
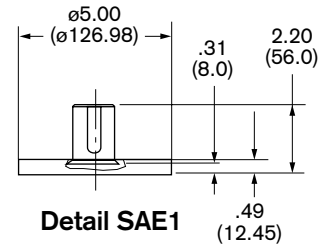
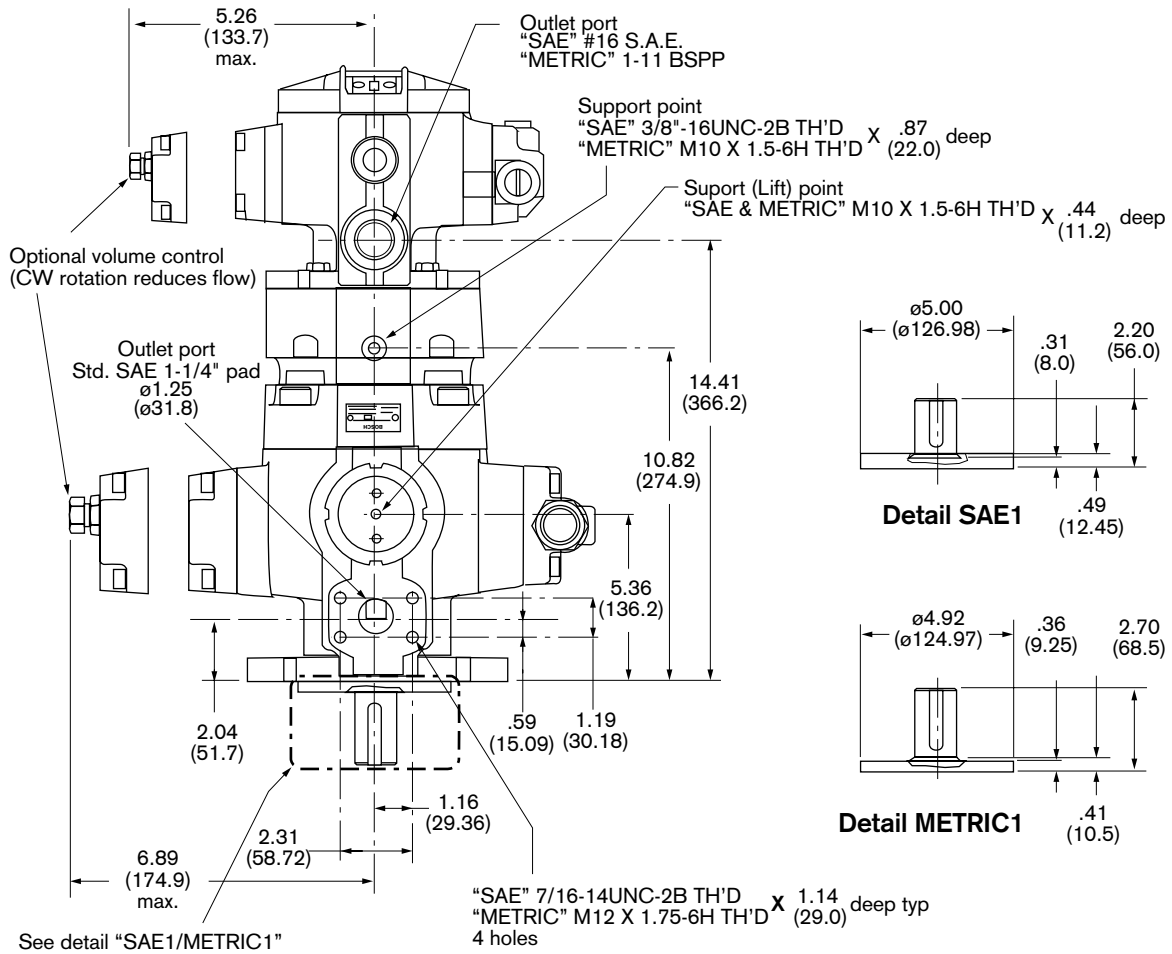
Inlet port
std. SAE 2" pad
ø2.00
(ø50.8)

"SAE" 1/2"-13UNC-2B TH'D X 1.14 deep typ
"METRIC" M12 X 1.75-6H TH'D (29.0)
4 holes

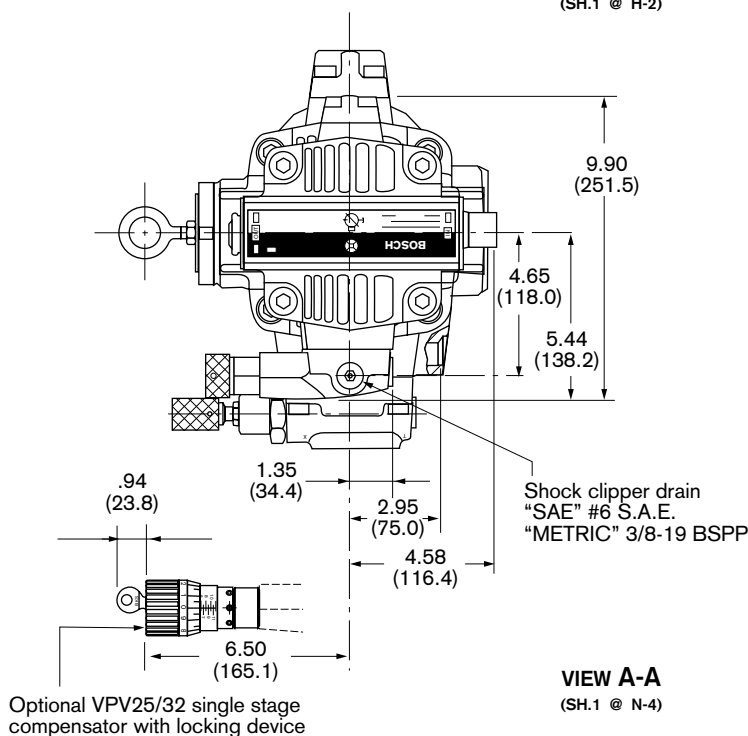
VPV 45/63/80 to VPV 25/32 (continued)



Inches (millimeters)

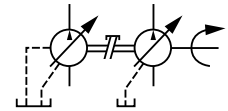


VIEW B-B
(SH.1 @ H-2)

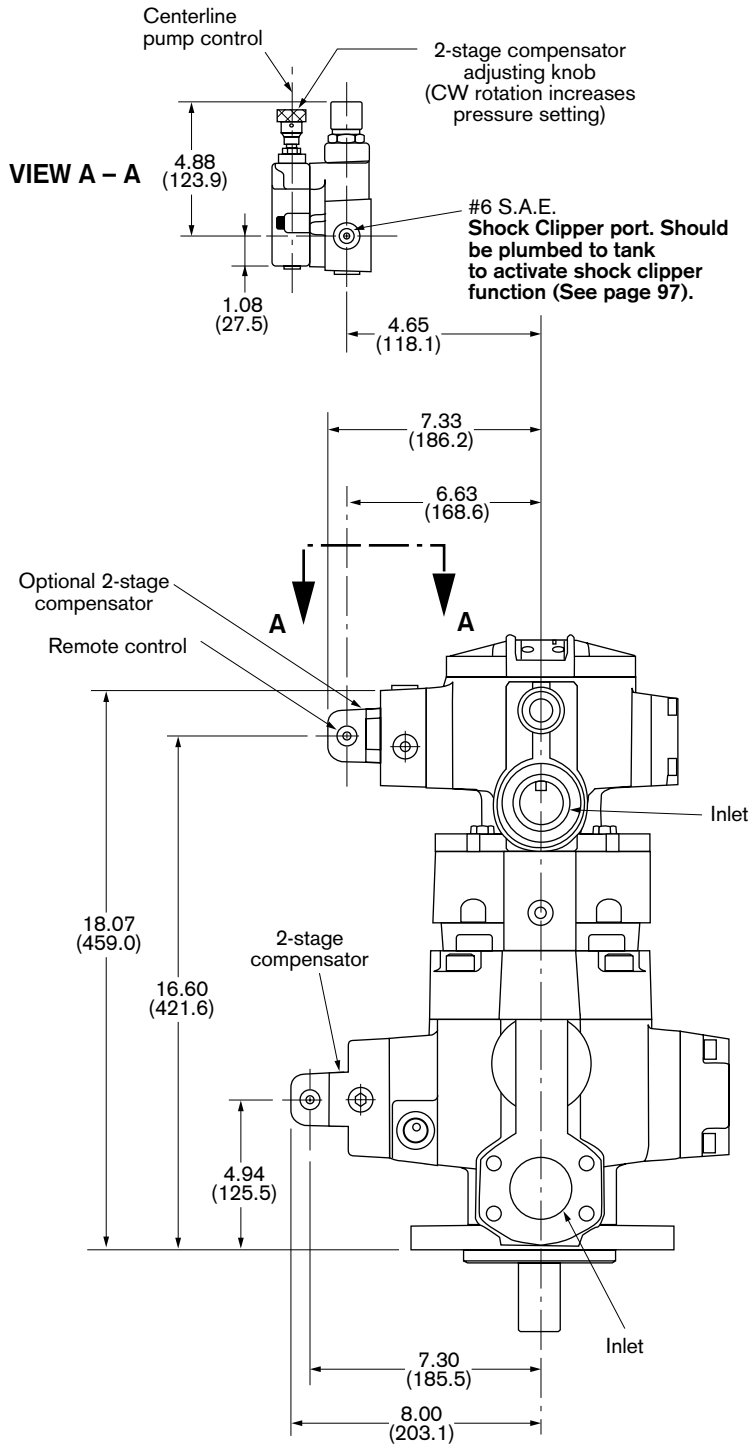


VIEW A-A
(SH.1 @ N-4)

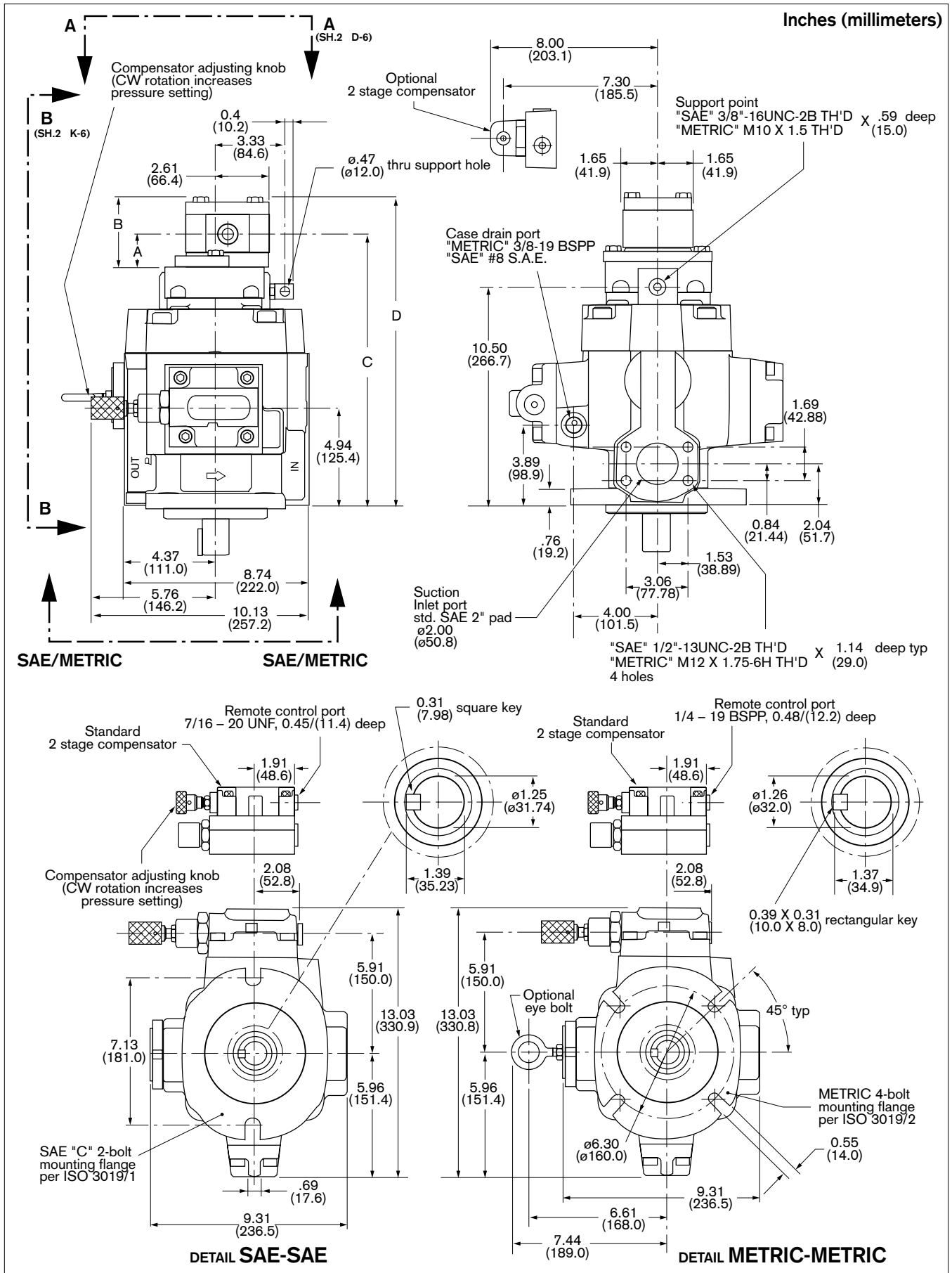
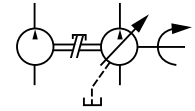
VPV 45/63/80 to VPV 25/32 (continued)



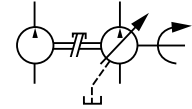
Inches (millimeters)



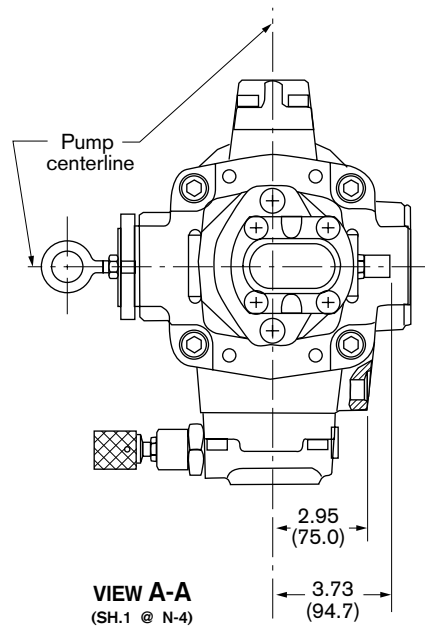
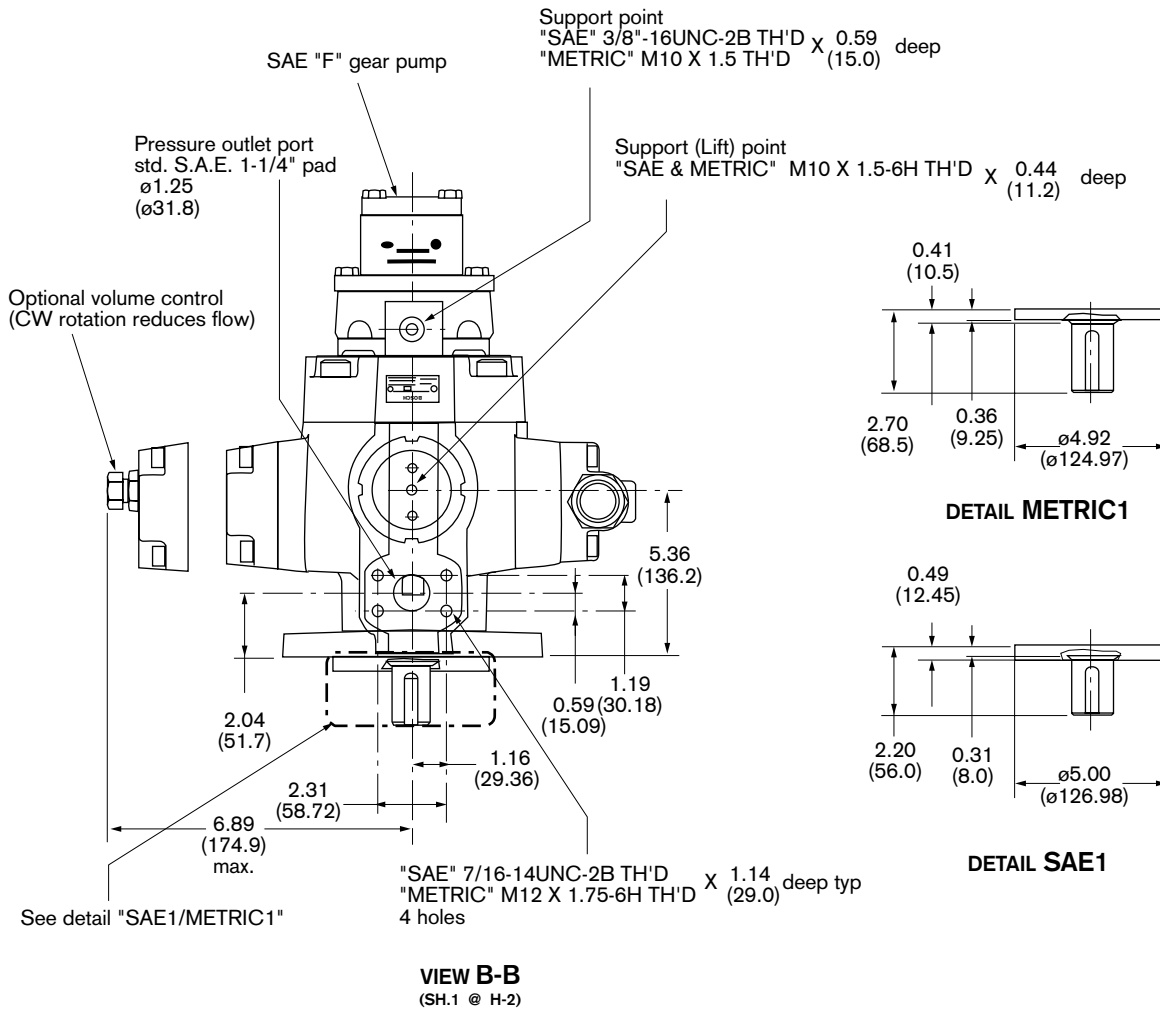
VPV 45/63/80 to an 'F' Gear pump, S.A.E. & Metric Combination



VPV 45/63/80 to an 'F' Gear pump (continued)

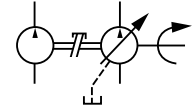


Inches (millimeters)

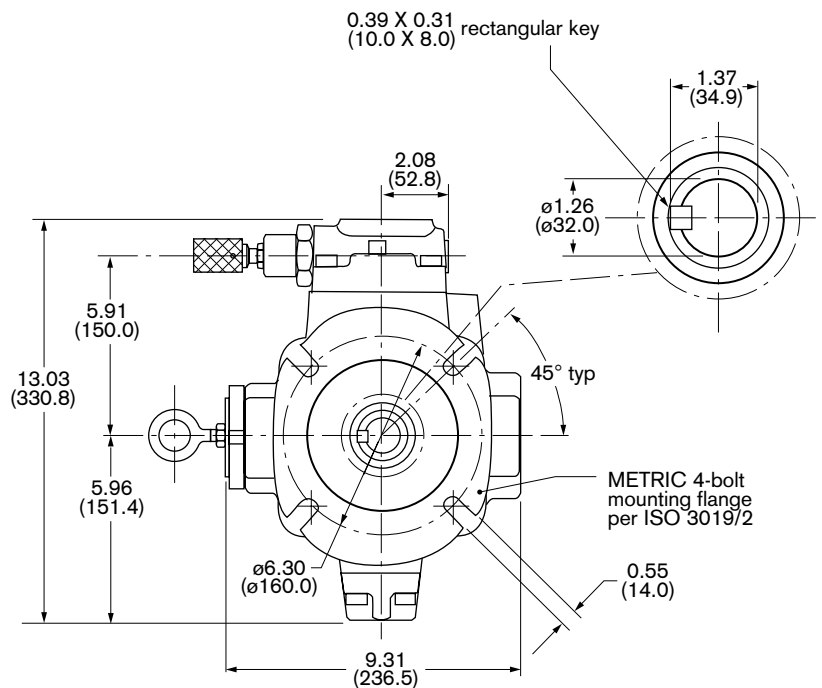
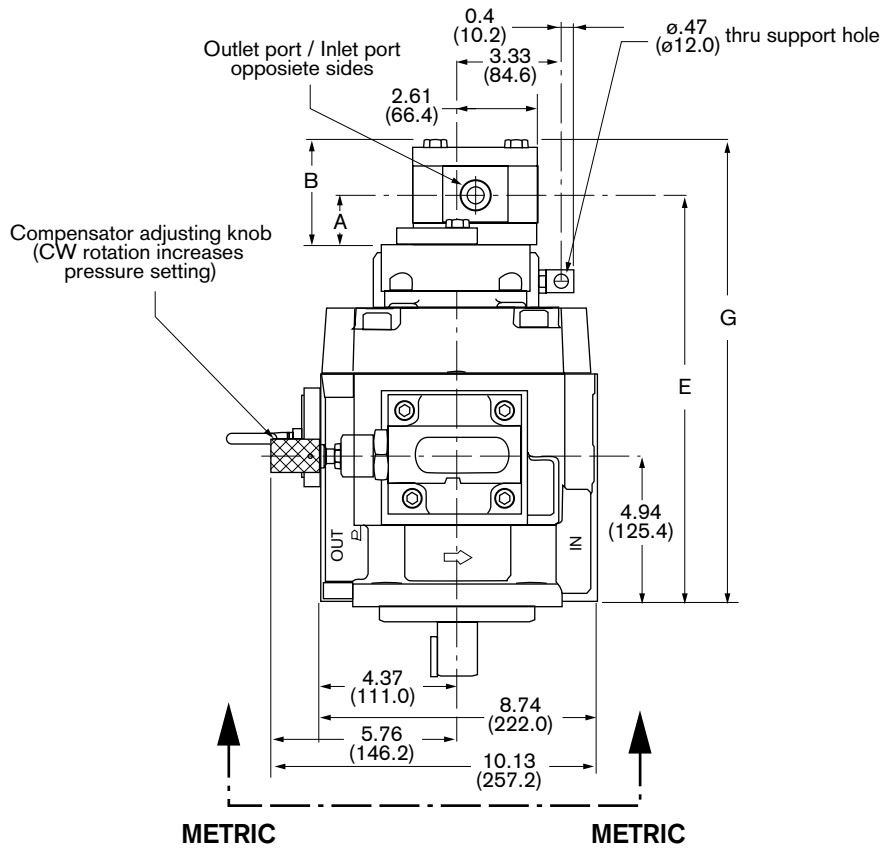


Gear pump Theoretical Displacement	Dimension						Gear Pump Port Sizes		Total Weight (Vane Pump & Gear Pump)
	A	B	C	D	E	F	Inlet	Outlet	
0.24 (4)	1.571 (39.9)	3.346 (85.0)	13.30 (337.8)	15.08 (383.2)	13.56 (344.6)	15.35 (390.0)	9/16-18 UNF	9/16-18 UNF	135 (61.2)
0.34 (5.5)	1.618 (41.1)	3.445 (87.5)	13.35 (339.1)	15.19 (385.7)	13.62 (345.9)	15.45 (392.5)	9/16-18 UNF	9/16-18 UNF	135.2 (61.3)
0.49 (8)	1.697 (43.2)	3.606 (91.6)	13.43 (341.1)	15.34 (389.7)	13.70 (347.9)	15.61 (396.5)	7/8-14 UNF	7/8-14 UNF	135.4 (61.4)
0.67 (11)	1.850 (47.0)	3.803 (96.6)	13.58 (344.9)	15.49 (393.4)	13.85 (351.7)	15.76 (400.2)	1-1/16-12 UN	7/8-14 UNF	135.6 (61.5)
0.85 (14)	1.870 (47.5)	4.0 (101.6)	13.60 (345.4)	15.69 (398.5)	13.87 (352.2)	15.96 (405.3)	1-1/16-12 UN	7/8-14 UNF	135.8 (61.6)
0.98 (16)	1.870 (47.6)	4.134 (105.0)	13.6 (345.6)	15.86 (403.0)	13.87 (352.4)	16.13 (409.8)	1-1/16-12 UN	7/8-14 UNF	135.9 (61.6)
1.16 (19)	1.870 (47.5)	4.330 (110.0)	13.6 (345.5)	16.06 (408.0)	13.86 (352.3)	16.33 (414.8)	1-1/16-12 UN	7/8-14 UNF	136.1 (61.7)
1.37 (22.5)	2.169 (55.1)	4.543 (115.4)	13.90 (353.12)	16.27 (413.4)	14.17 (359.9)	16.54 (420.2)	1-1/16-12 UN	7/8-14 UNF	136.4 (61.9)

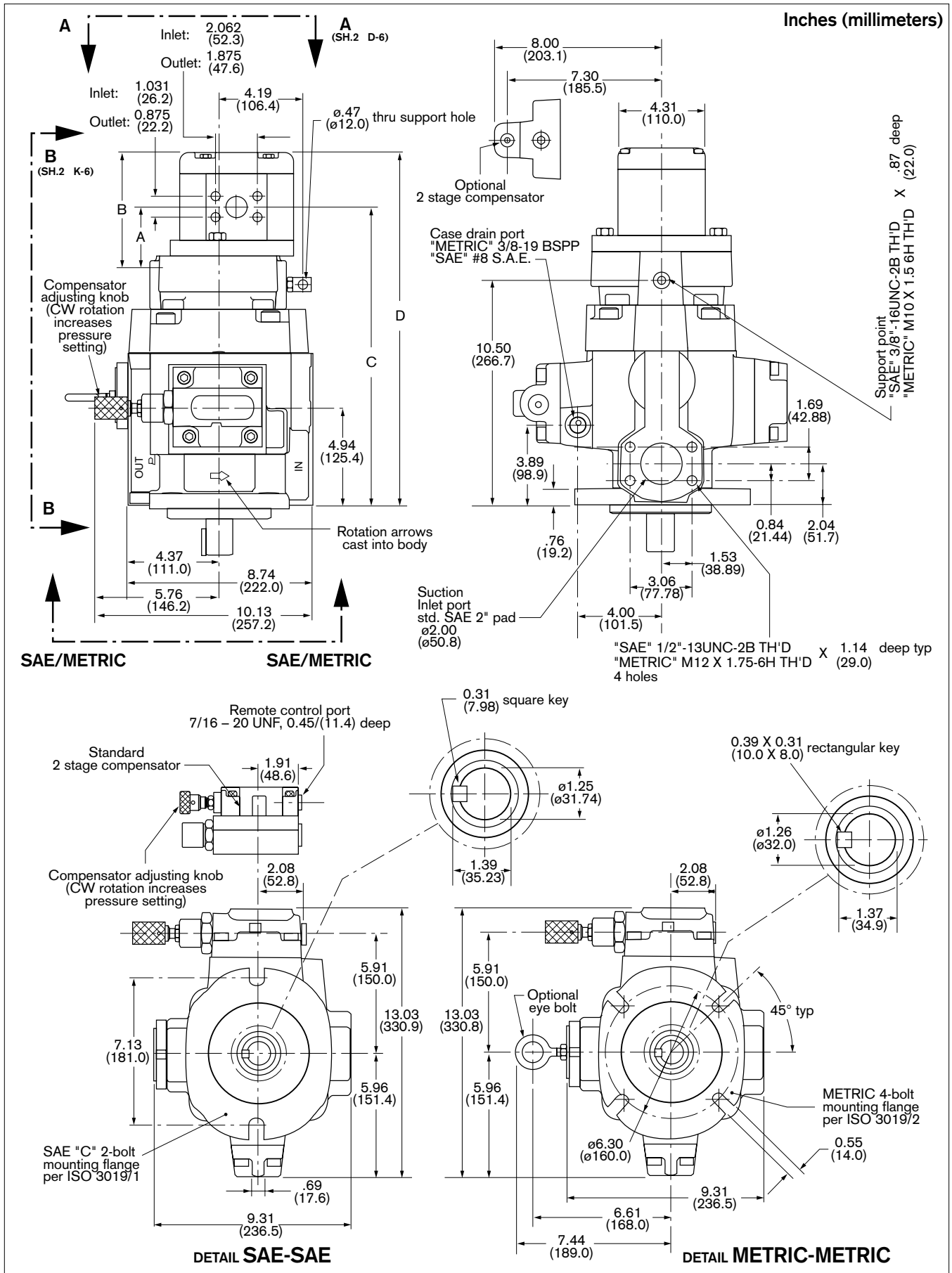
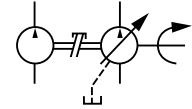
VPV 45/63/80 to an 'F' Gear pump (continued)



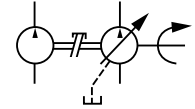
Inches (millimeters)



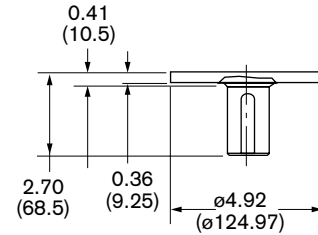
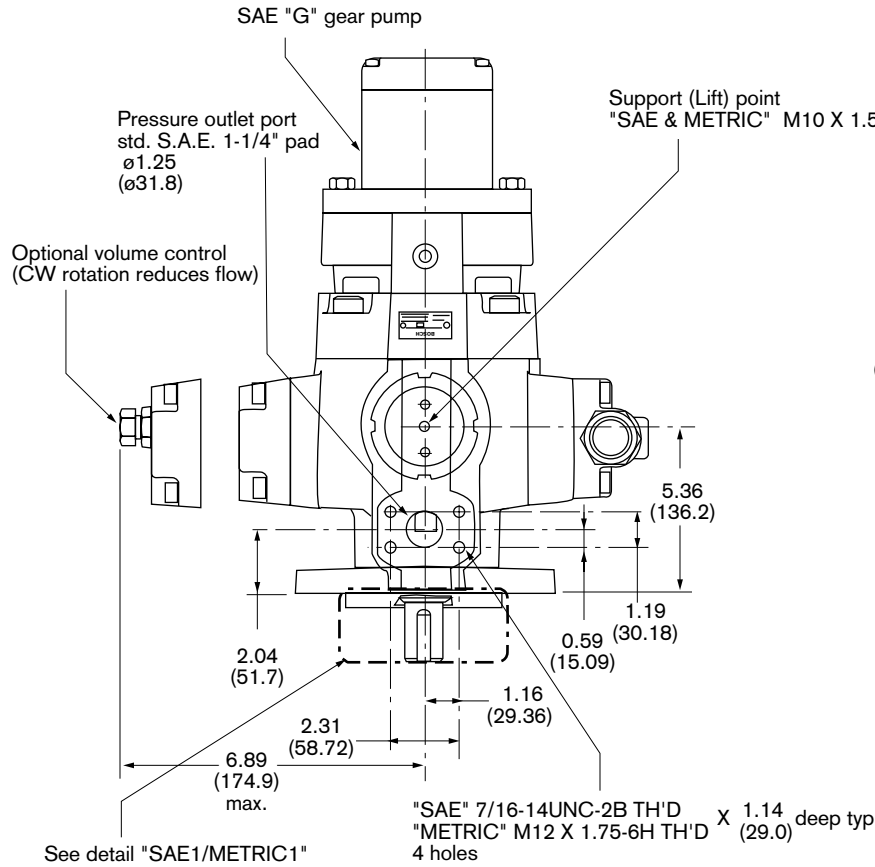
VPV 45/63/80 to an 'G' Gear pump, S.A.E. & Metric Combination



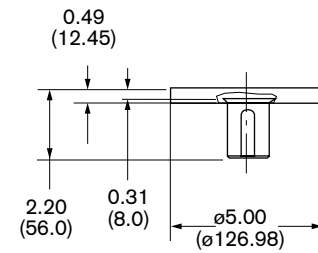
VPV 45/63/80 to an 'G' Gear pump (continued)



Inches (millimeters)

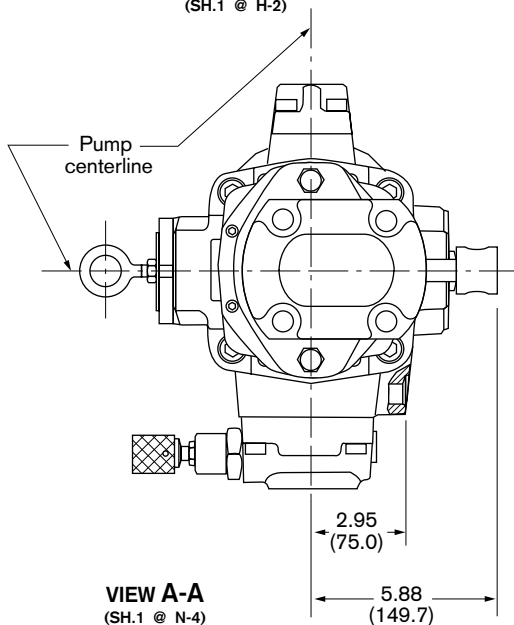


DETAIL METRIC1



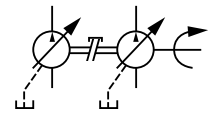
DETAIL SAE1

VIEW B-B
(SH.1 @ H-2)

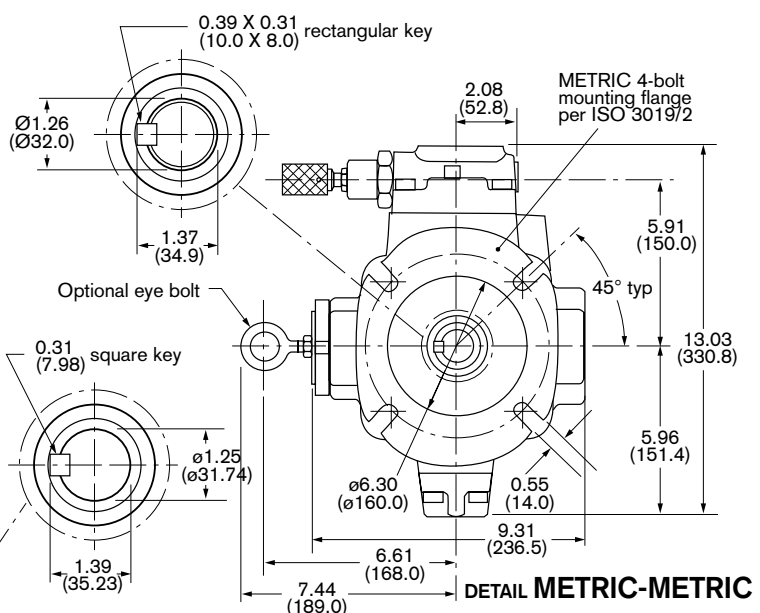
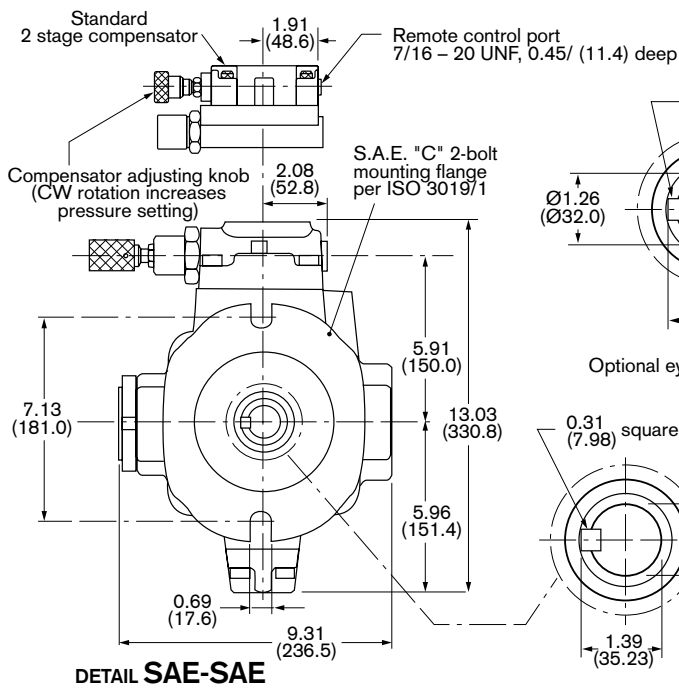
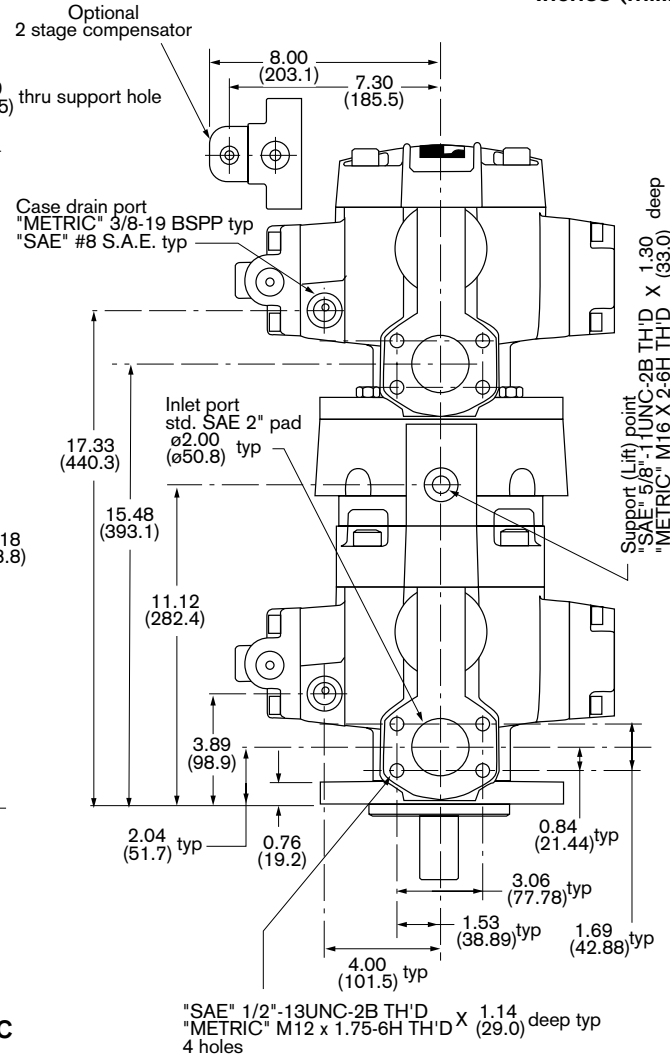
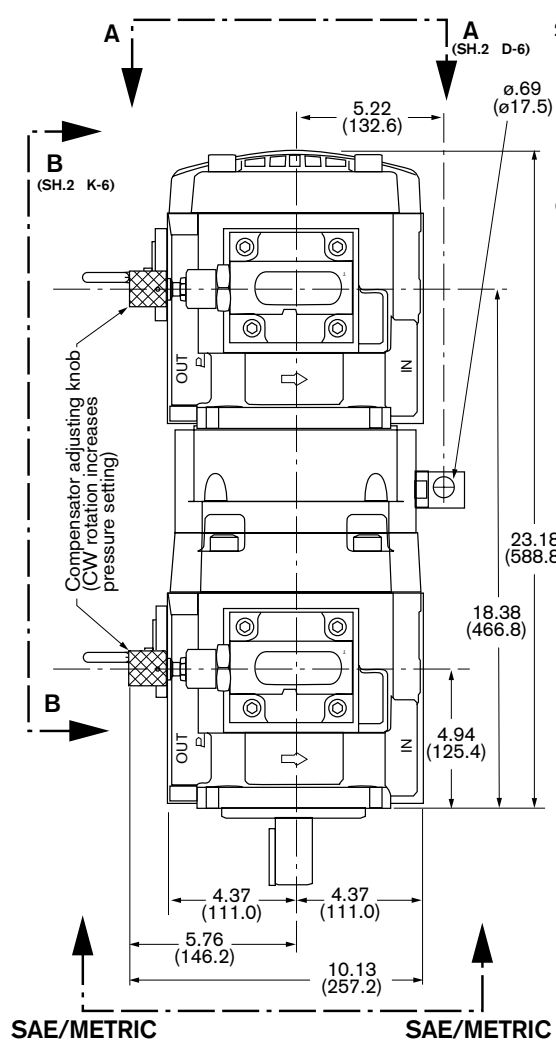


Gear pump Theoretical Displacement	Dimension				Gear Pump Port Sizes		Total Weight (Vane Pump & Gear Pump)
	A	B	C	D	Inlet	Outlet	
1.37 (22.5)	2.40 (61.0)	5.07 (128.5)	14.6 (370.8)	17.26 (438.6)	1" S.A.E. 4 bolt	3/4" S.A.E. 4 bolt	271.4 (123.1)
1.71 (28)	2.48 (63.0)	5.26 (133.7)	14.68 (372.8)	17.45 (443.2)	1" S.A.E. 4 bolt	3/4" S.A.E. 4 bolt	271.8 (123.3)
1.95 (32)	2.54 (64.5)	5.40 (137.2)	14.74 (374.4)	17.59 (446.8)	1" S.A.E. 4 bolt	3/4" S.A.E. 4 bolt	272.3 (123.5)
2.32 (38)	2.62 (66.5)	5.62 (142.6)	14.82 (376.4)	17.81 (452.3)	1" S.A.E. 4 bolt	3/4" S.A.E. 4 bolt	272.6 (123.6)
2.75 (45)	2.74 (69.5)	5.87 (149.2)	14.94 (379.4)	18.06 (458.7)	1" S.A.E. 4 bolt	3/4" S.A.E. 4 bolt	273.1 (123.9)
3.42 (56)	2.95 (75.2)	6.31 (160.2)	15.15 (384.8)	18.5 (469.9)	1" S.A.E. 4 bolt	3/4" S.A.E. 4 bolt	274.1 (124.3)

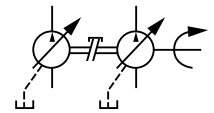
VPV 45/63/80 to VPV 45/63/80, S.A.E. & Metric Combination



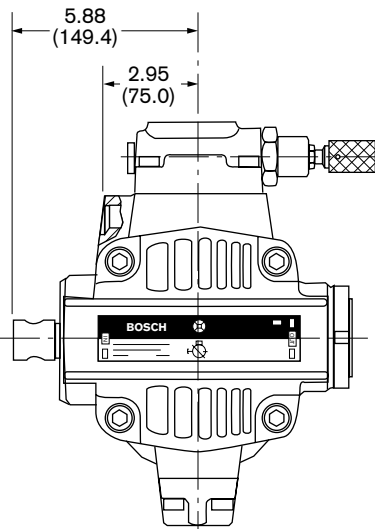
Inches (millimeters)



VPV 45/63/80 to VPV 45/63/80 (continued)



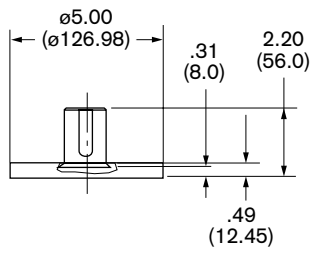
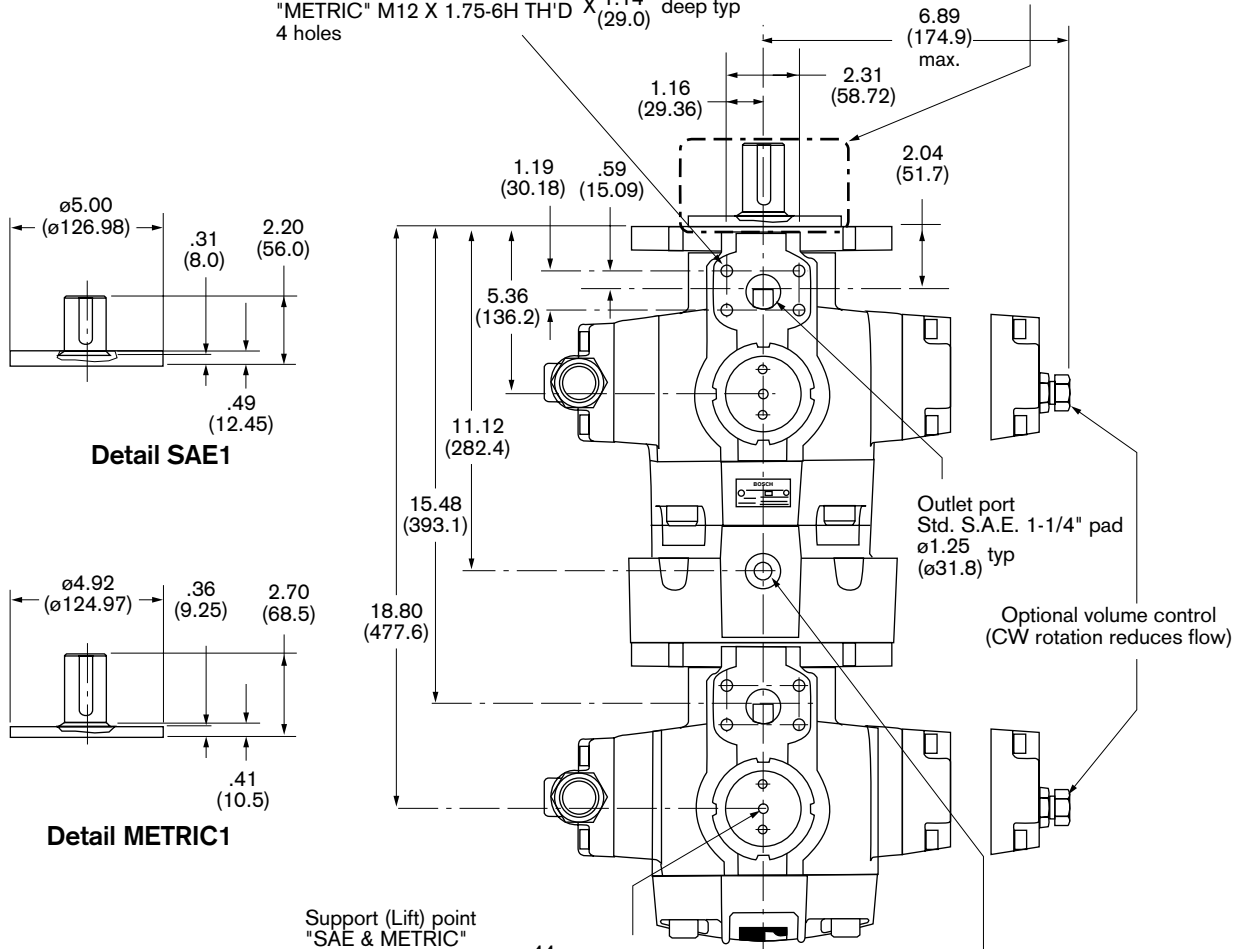
Inches (millimeters)



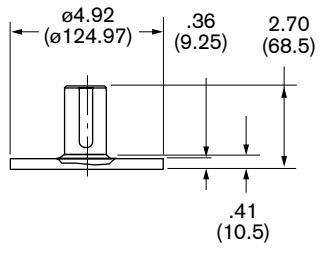
View A-A
(SH.1 @ P-2)

"SAE" 7/16"-14UNC-2B TH'D
"METRIC" M12 X 1.75-6H TH'D X 1.14 deep typ
4 holes

See detail "SAE1/METRIC1"



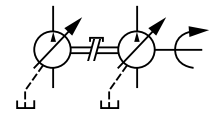
Detail SAE1



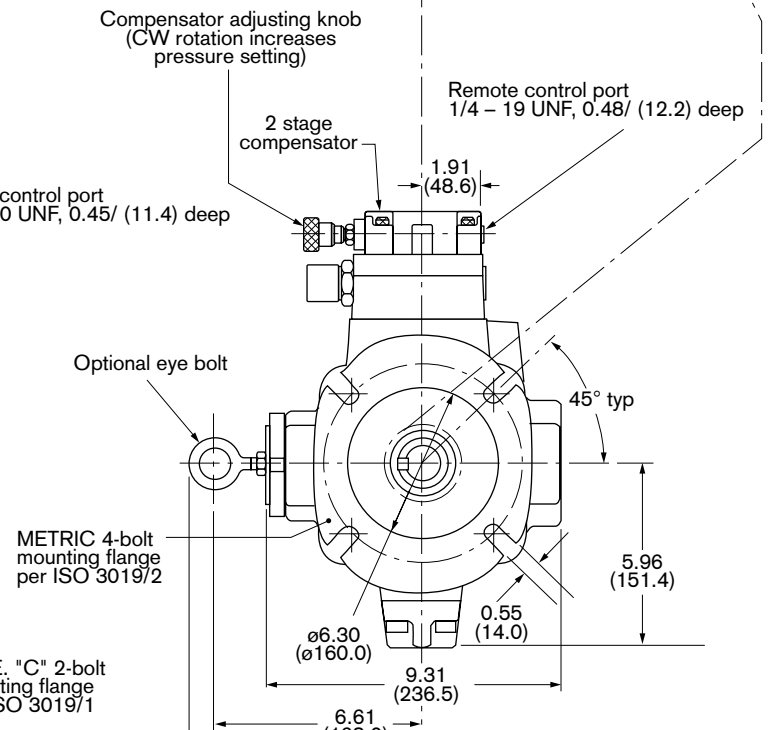
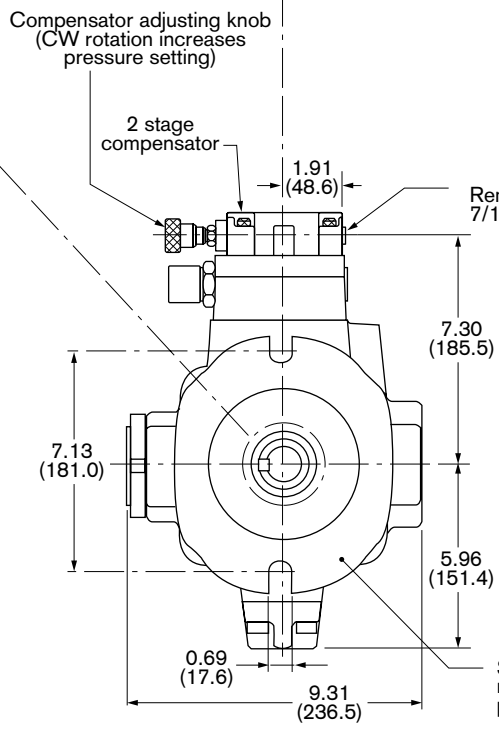
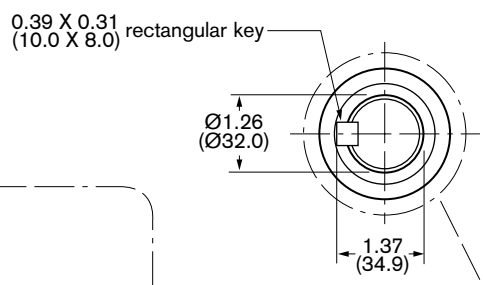
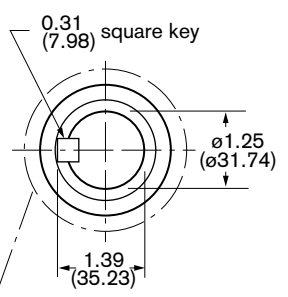
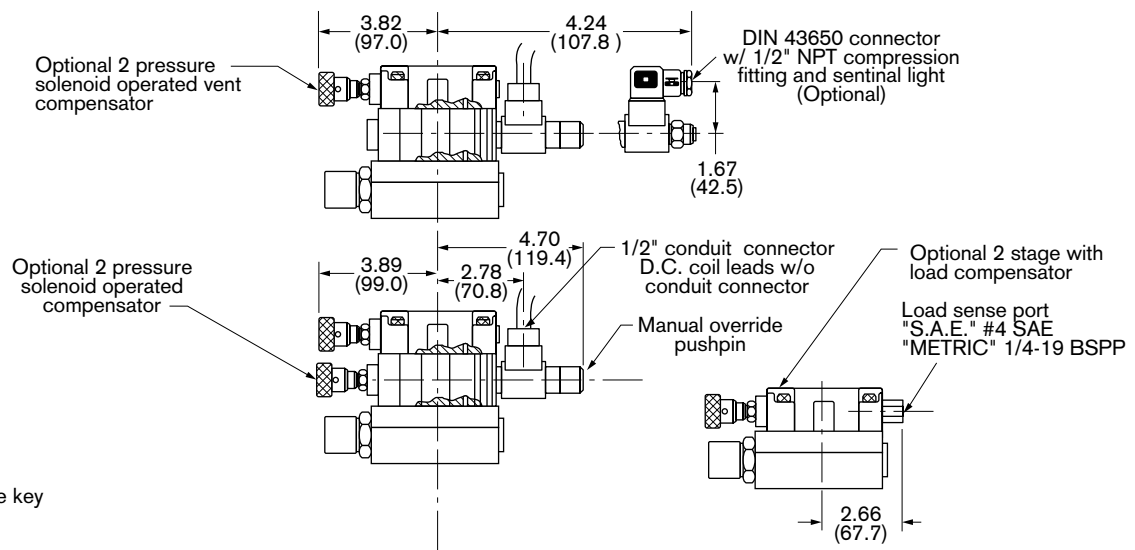
Detail METRIC1

View B-B
(SH.1 @ H-2)

VPV 45/63/80 to VPV 45/63/80 (continued)



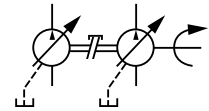
Inches (millimeters)



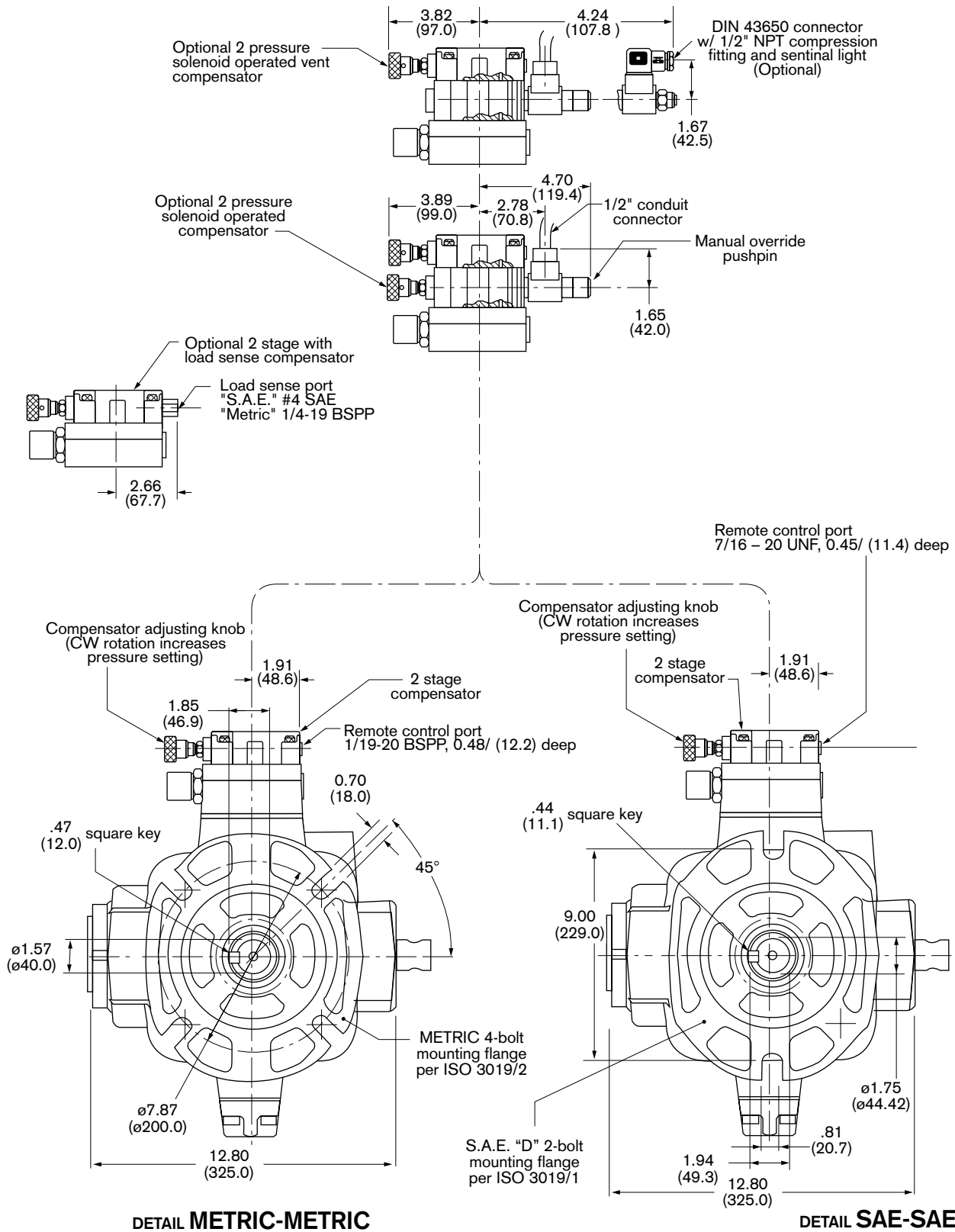
DETAIL SAE-SAE

DETAIL METRIC-METRIC

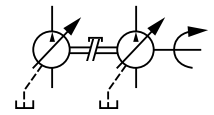
VPV 100/130/164 to VPV 100/130/164, S.A.E. & Metric Combination



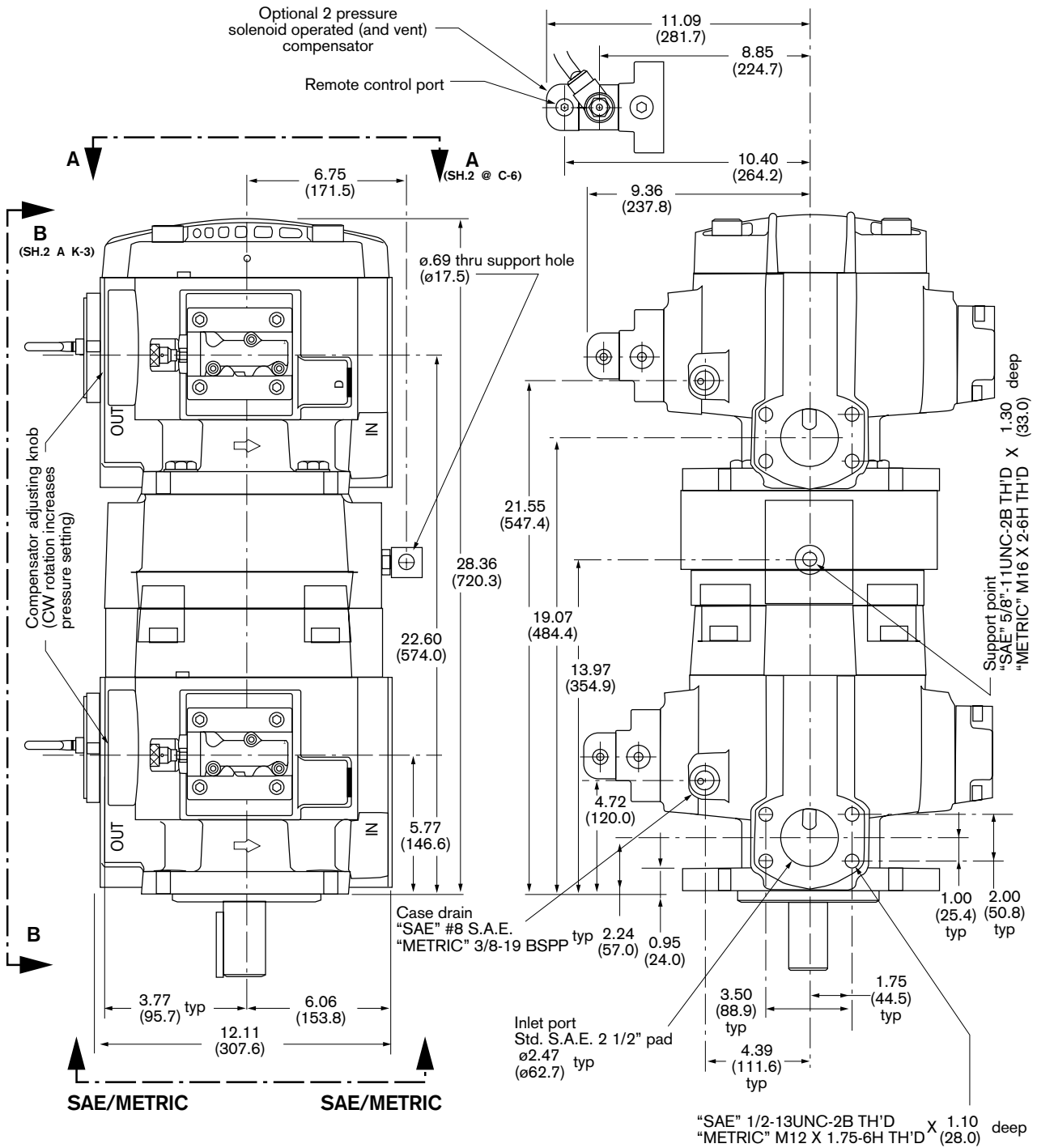
Inches (millimeters)



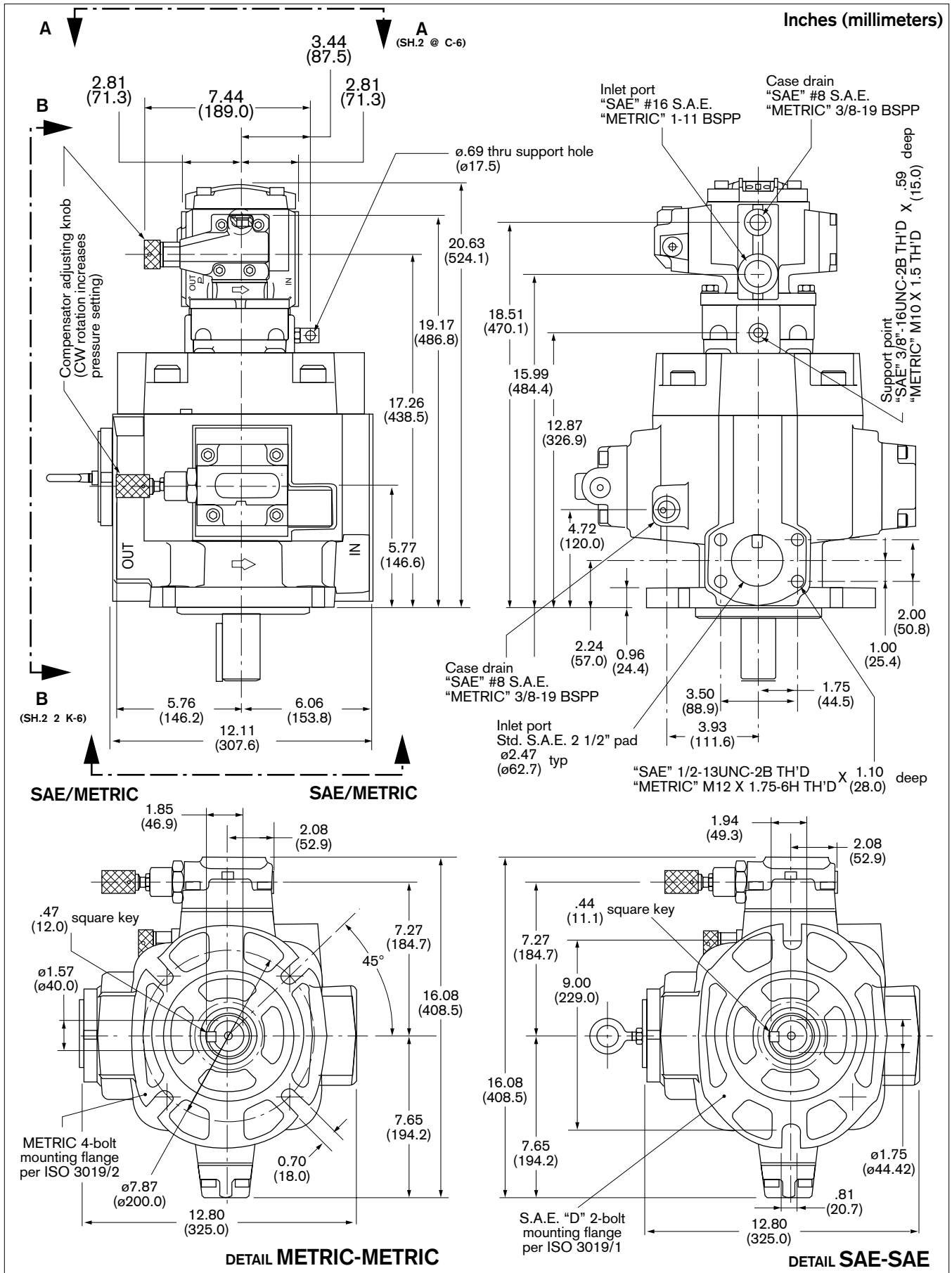
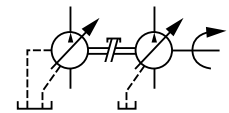
VPV 100/130/164 to VPV 100/130/164 (continued)



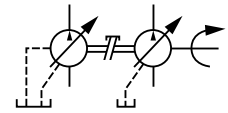
Inches (millimeters)



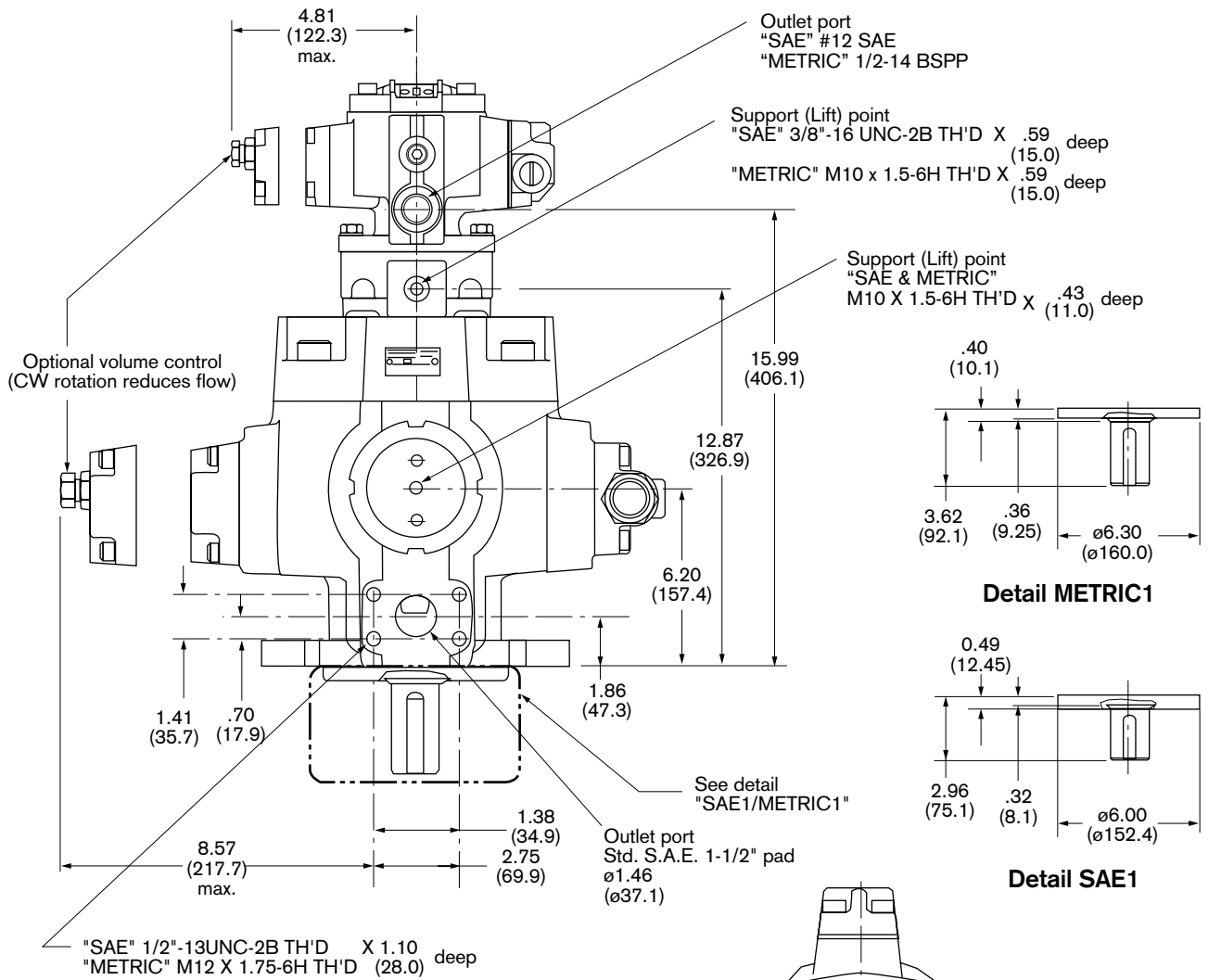
VPV 100/130/164 to VPV 16 S.A.E. & Metric Combination



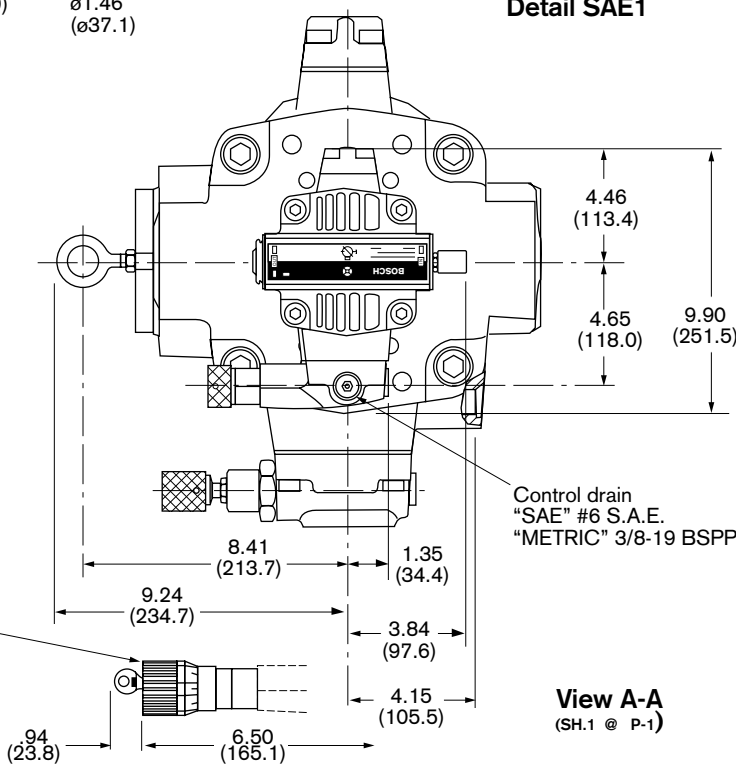
VPV 100/130/164 to VPV 16 (continued)



Inches (millimeters)

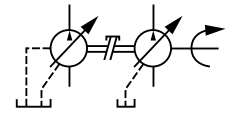


View B-B
(SH.1 @ G-1)

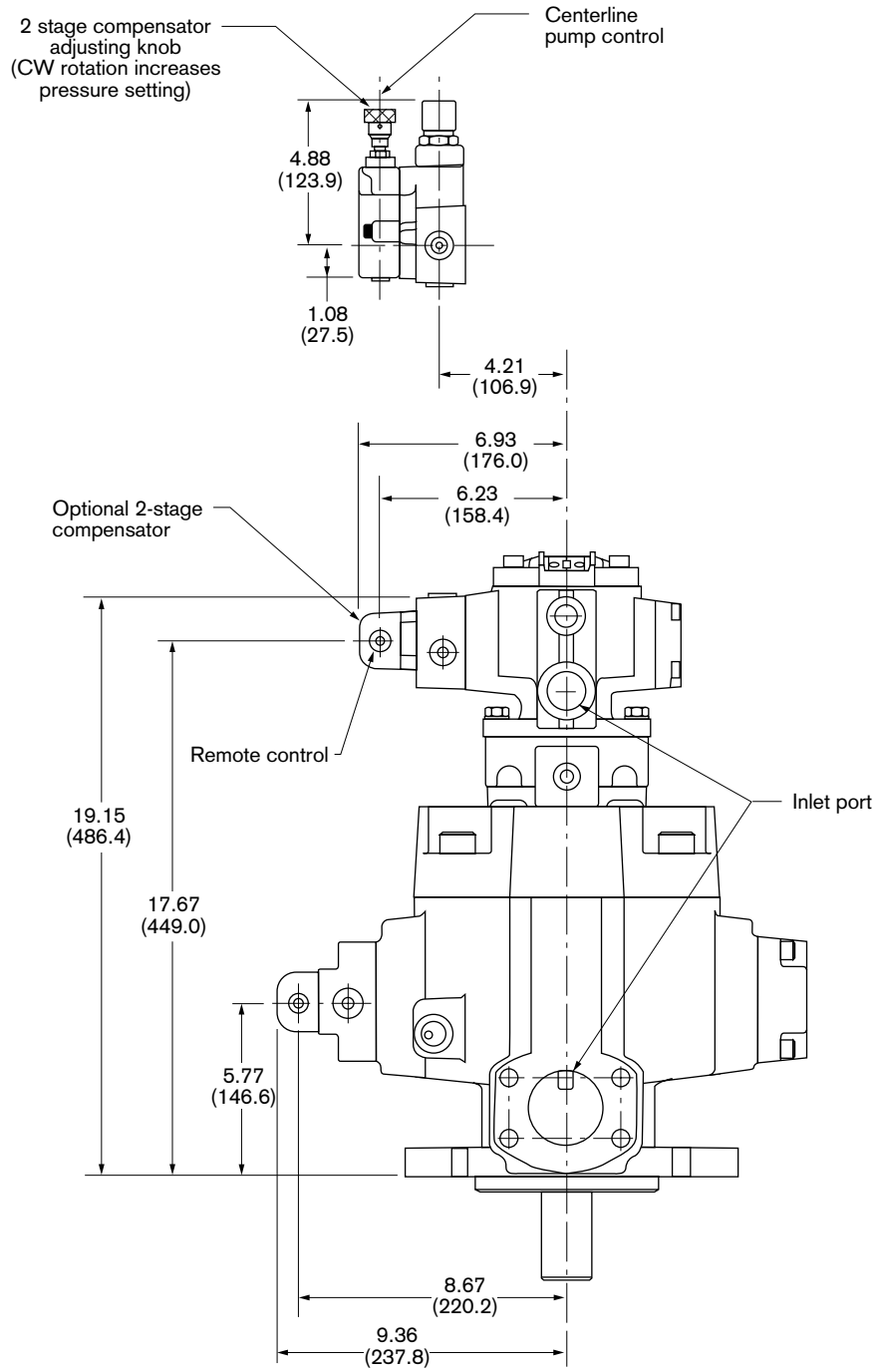


View A-A
(SH.1 @ P-1)

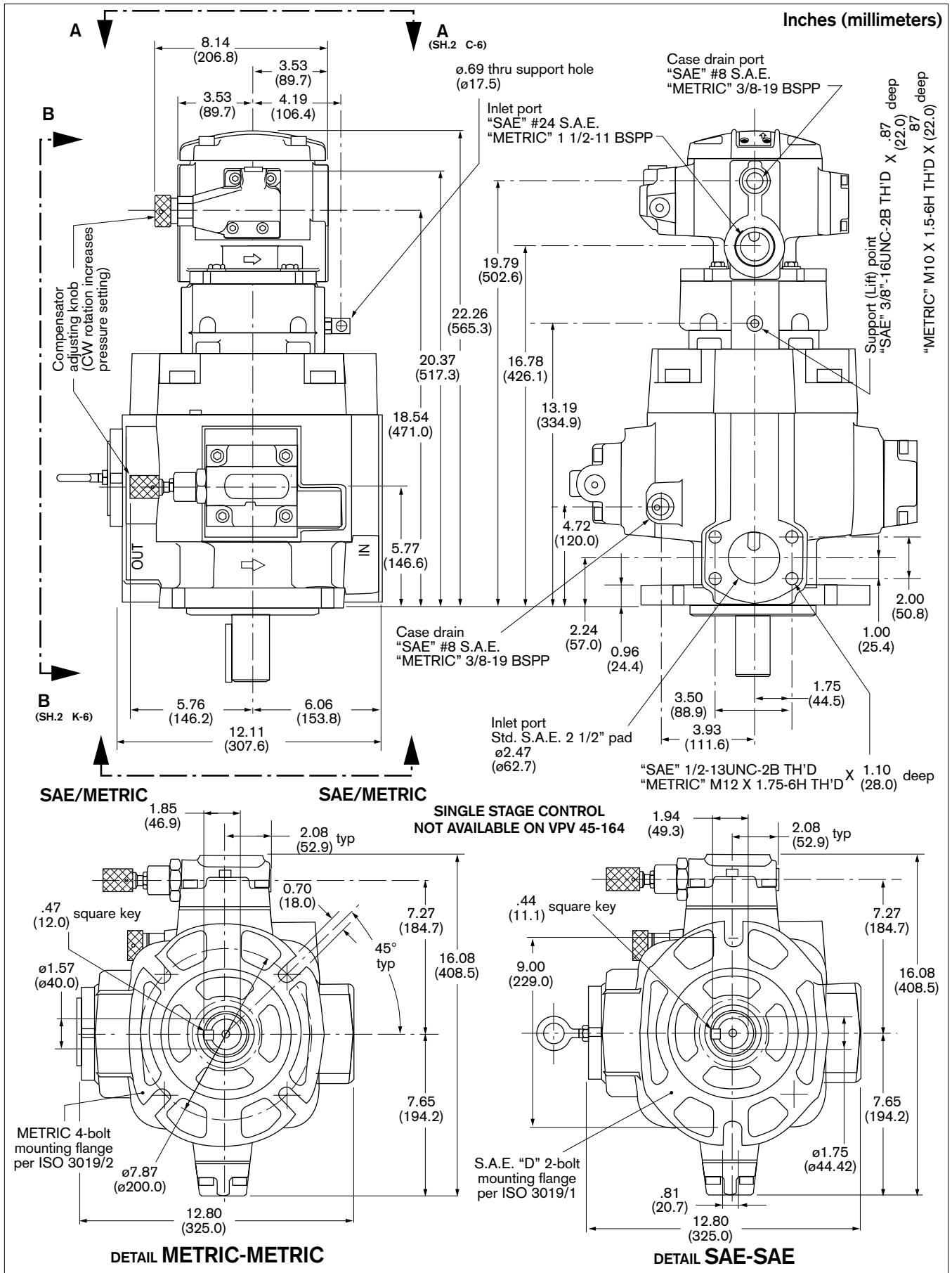
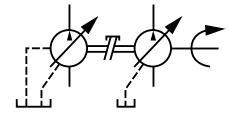
VPV 100/130/164 to VPV 16 (continued)



Inches (millimeters)



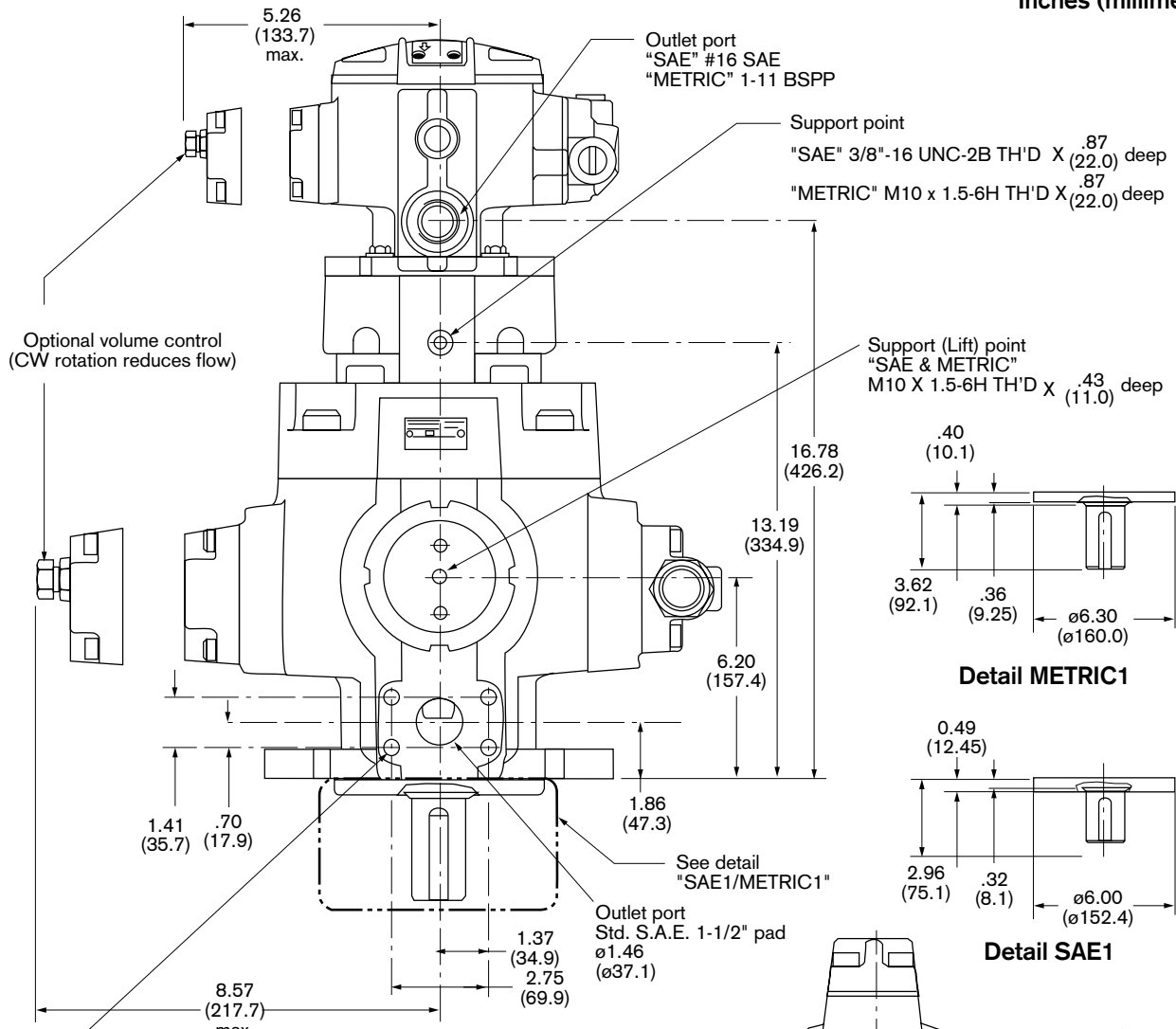
VPV 100/130/164 to VPV 25/32 S.A.E. & Metric Combination



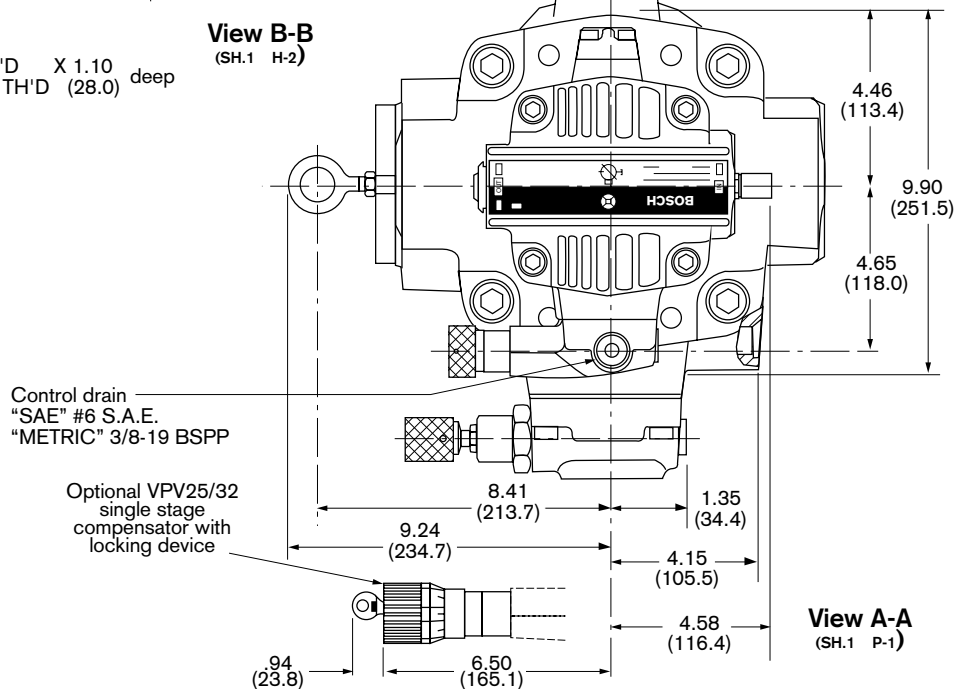
VPV 100/130/164 to VPV 25/32 (continued)



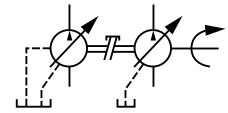
Inches (millimeters)



View B-B
(SH.1 H-2)



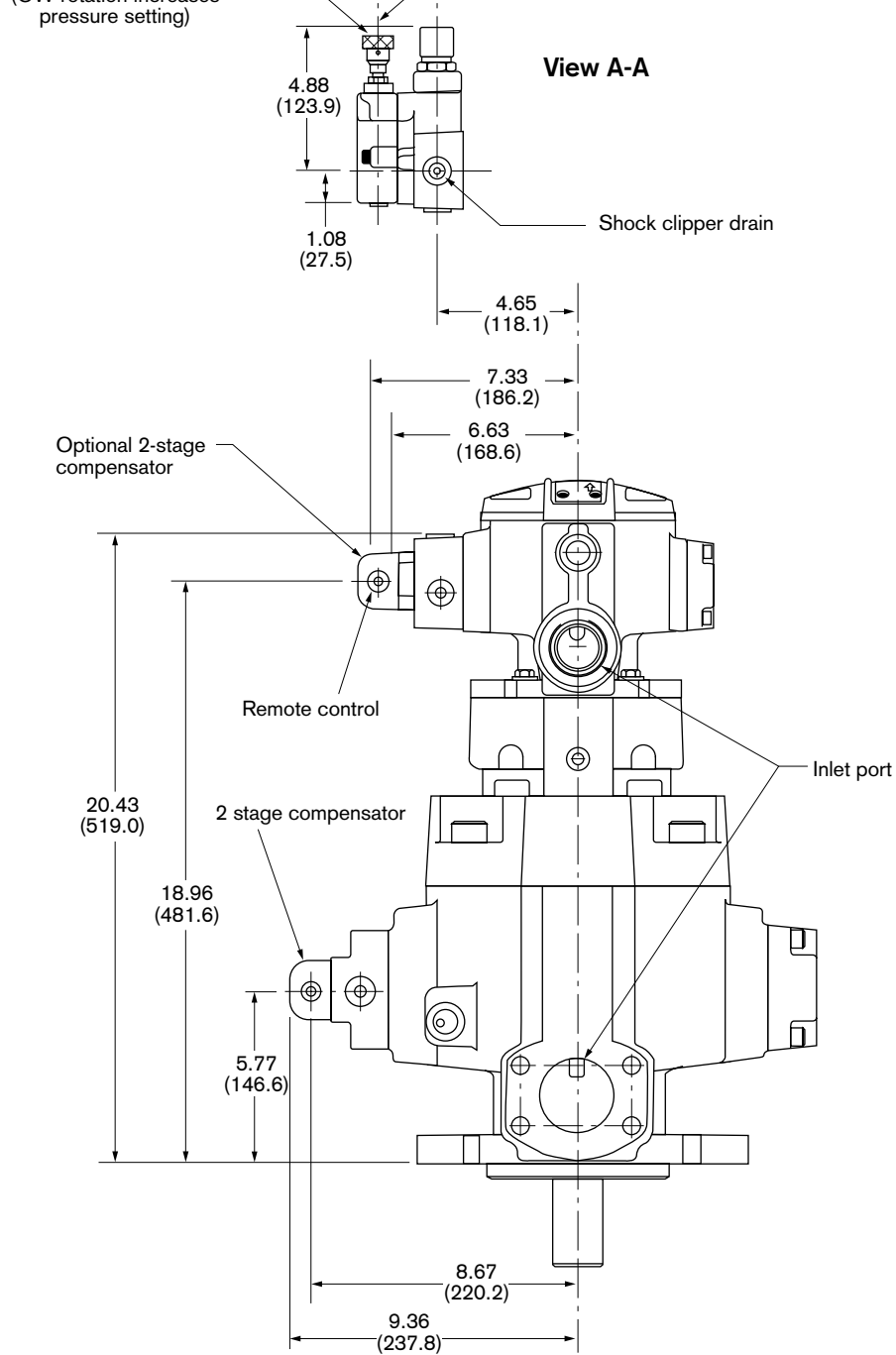
VPV 100/130/164 to VPV 25/32 (continued)



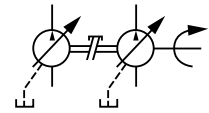
Inches (millimeters)

2 stage compensator
adjusting knob
(CW rotation increases
pressure setting)

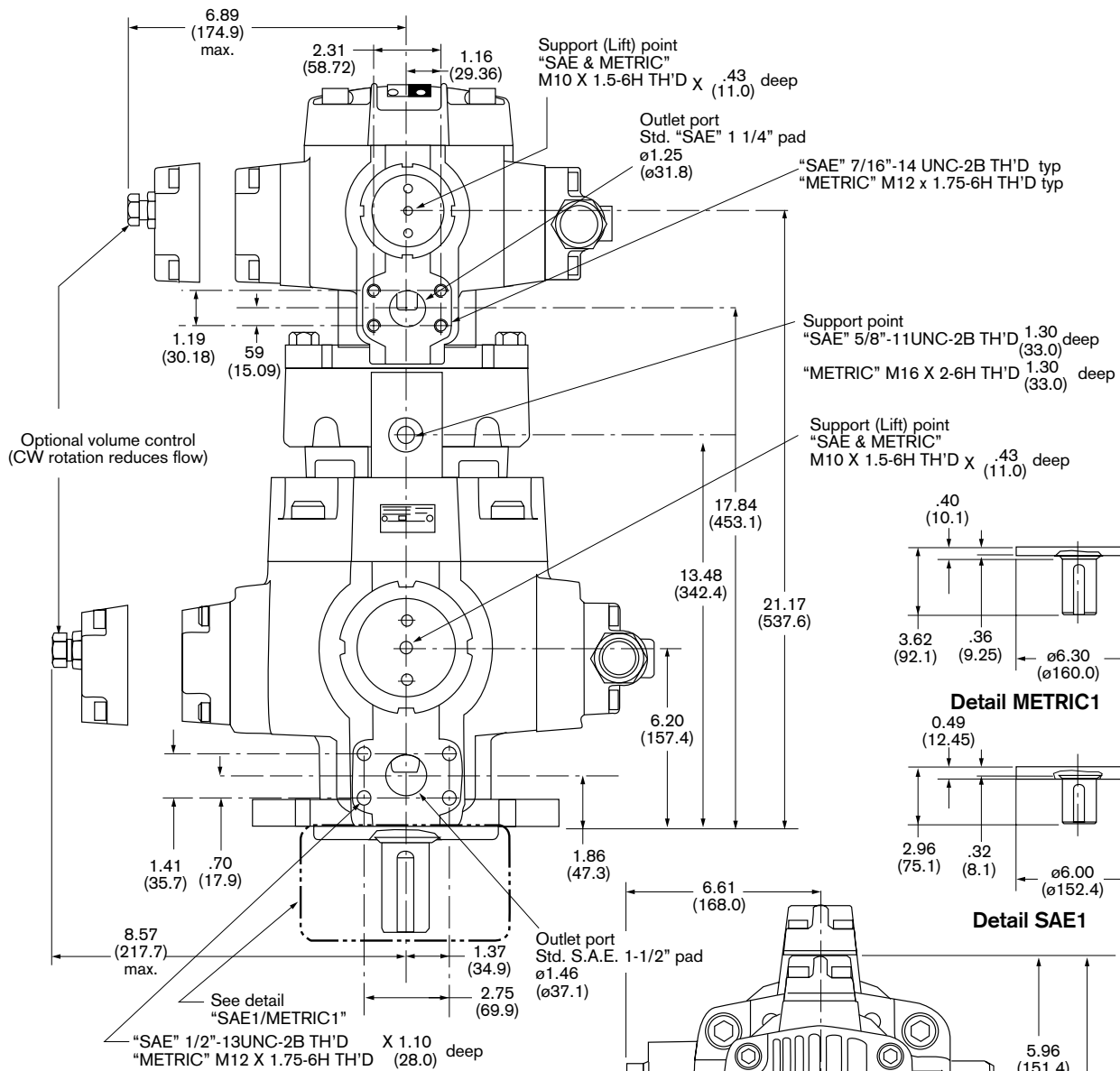
View A-A



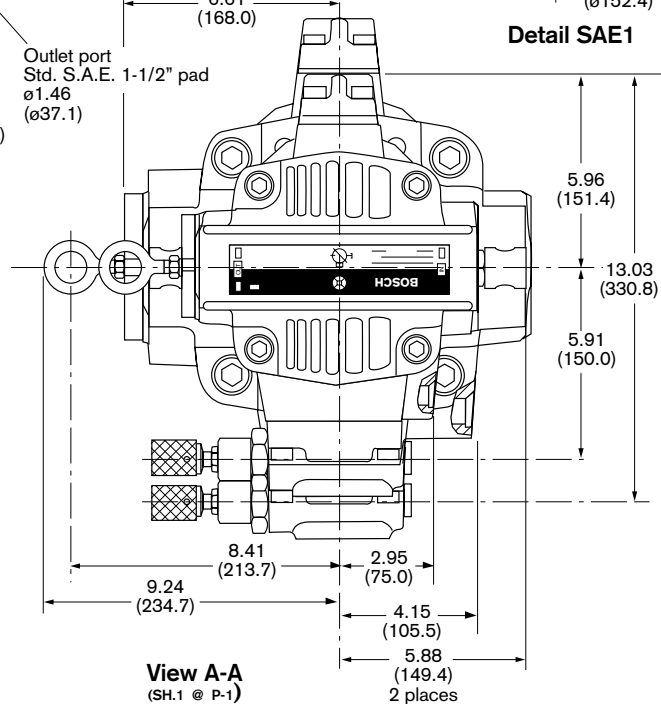
VPV 100/130/164 to VPV 45/63/80 (continued)



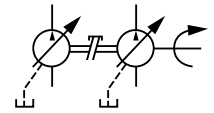
Inches (millimeters)



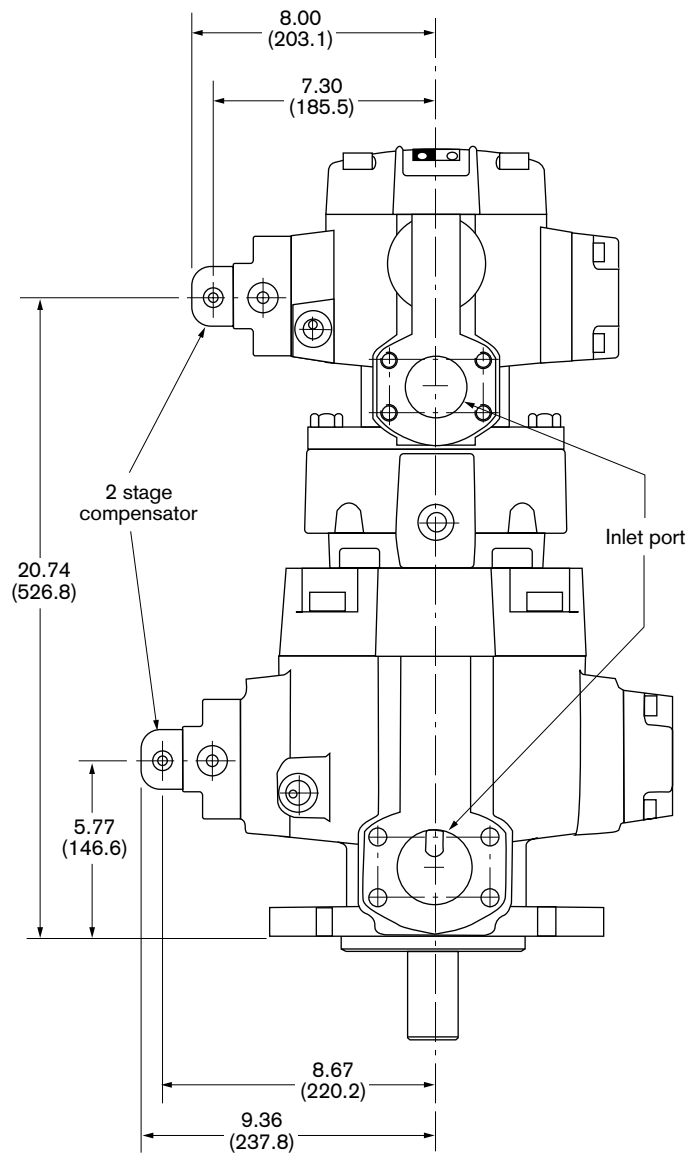
View B-B
(SH.1 @ G-1)



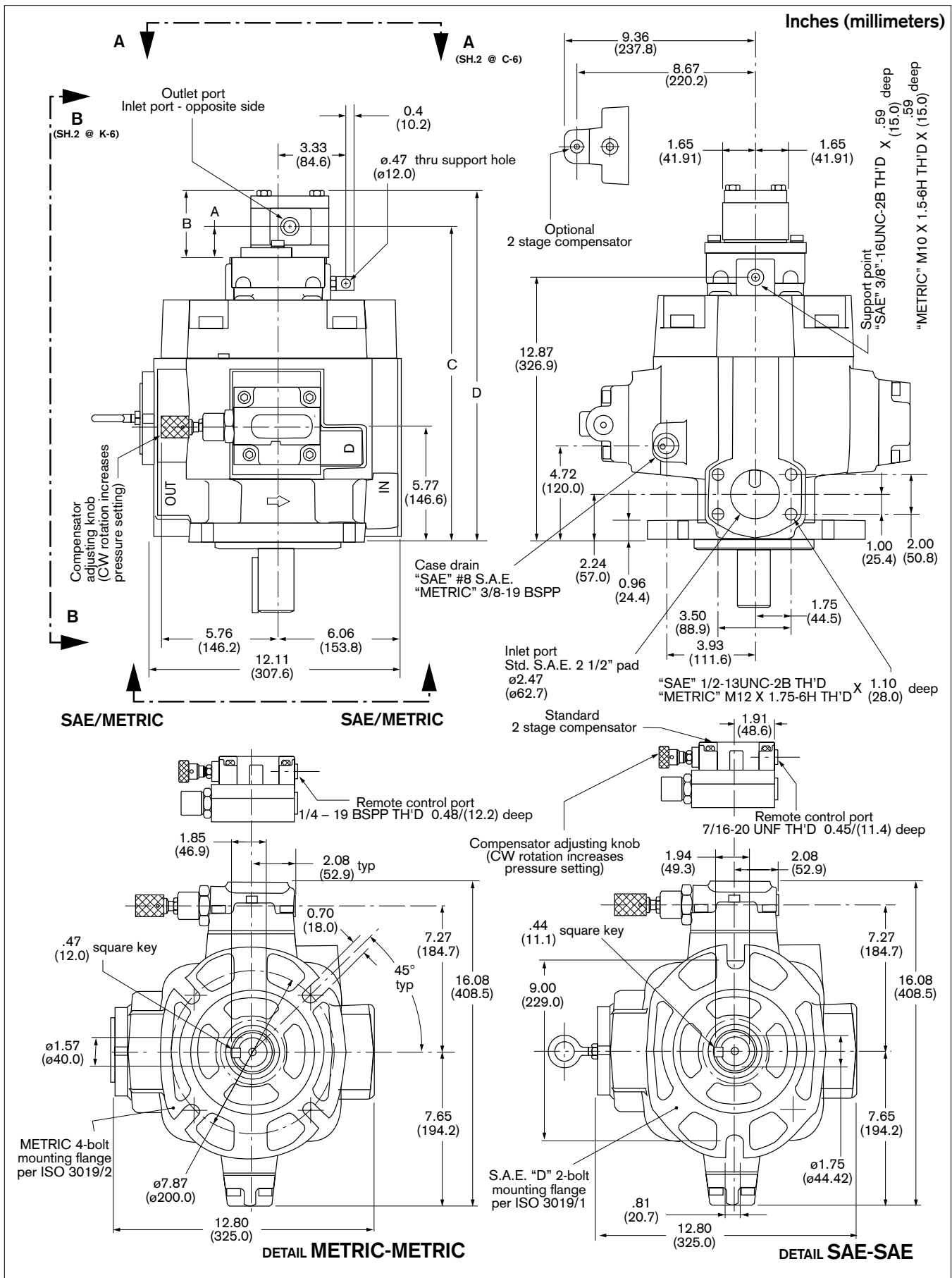
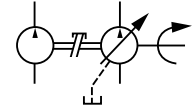
VPV 100/130/164 to VPV 45/63/80 (continued)



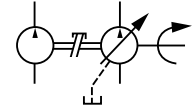
Inches (millimeters)



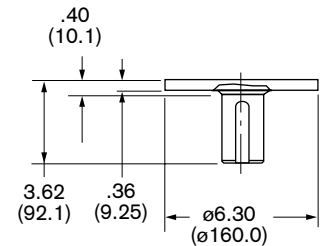
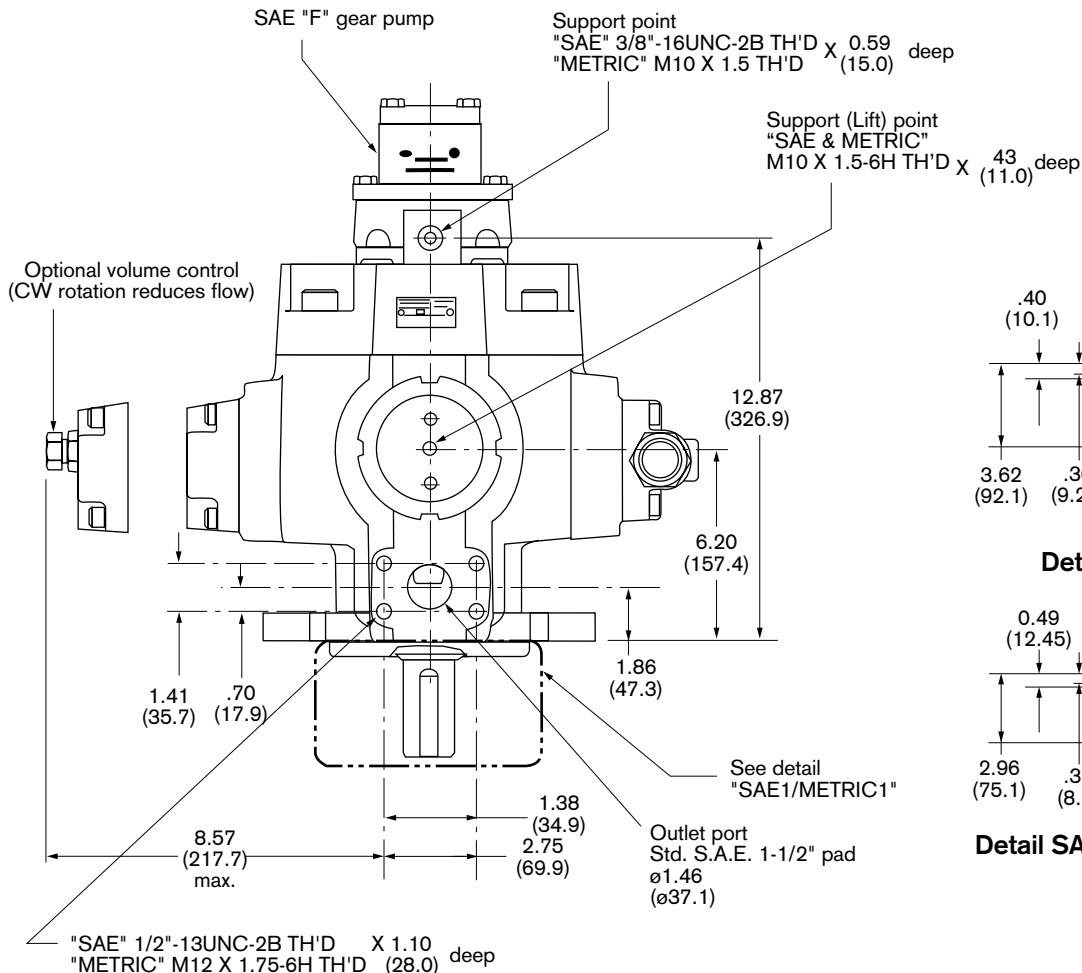
VPV 45/63/80 to an 'F' Gear pump, S.A.E. & Metric Combination



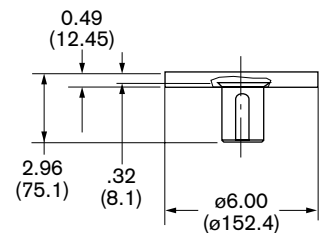
VPV 45/63/80 to an 'F' Gear pump (continued)



Inches (millimeters)



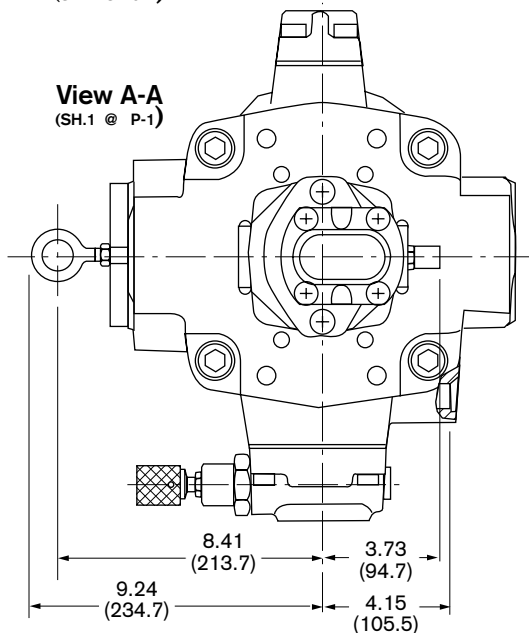
Detail METRIC1



Detail SAE1

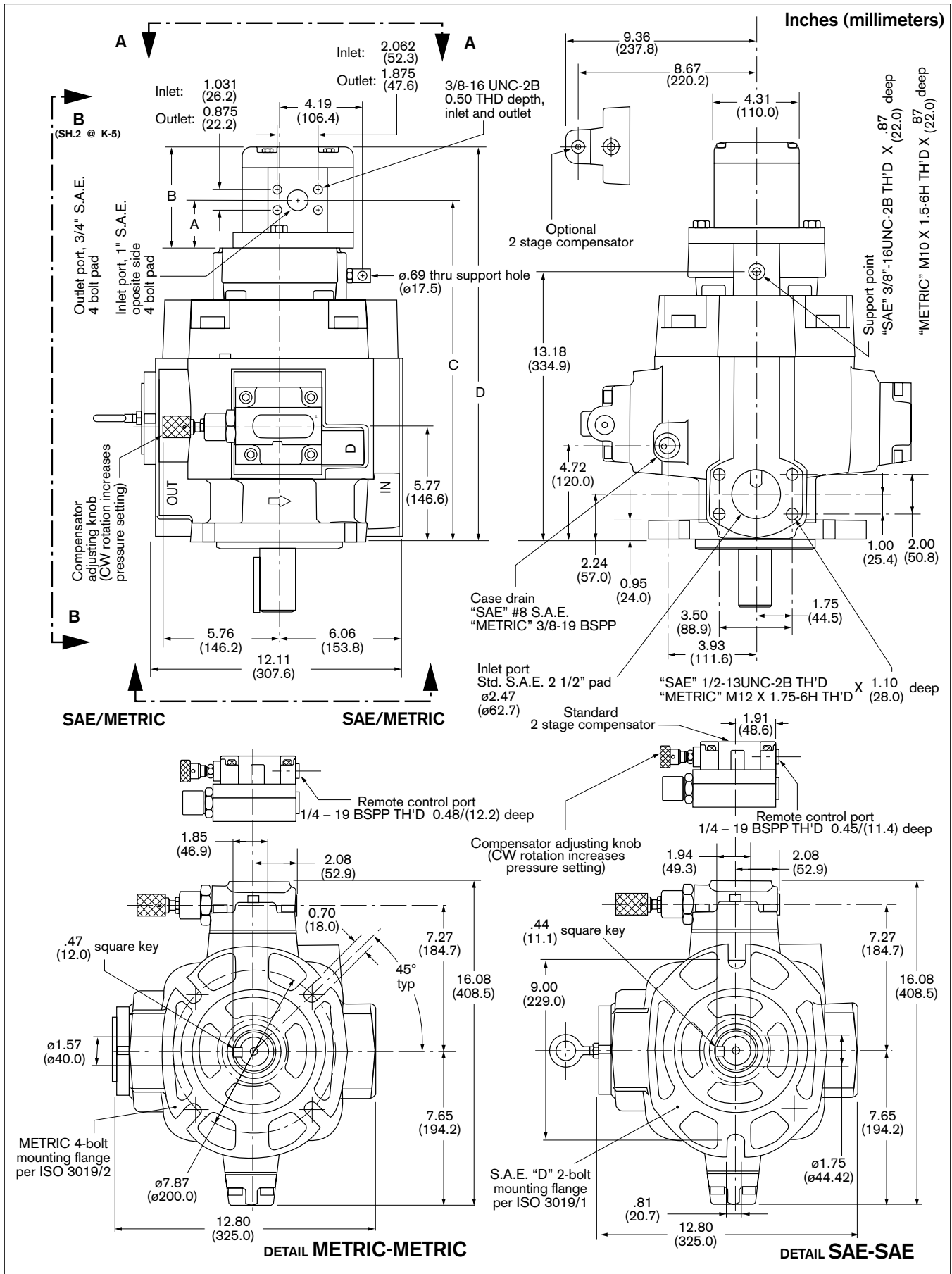
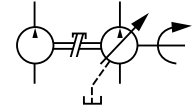
View B-B
(SH.1 @ G-1)

View A-A
(SH.1 @ P-1)



Gear pump Theoretical Displacement	Dimension				Gear Pump Port Sizes		Total Weight (Vane Pump & Gear Pump)
	A	B	C	D	Inlet	Outlet	
0.24 (4)	1.571 (39.9)	3.346 (85.0)	15.66 (397.8)	17.44 (443.2)	9/16-18 UNF	9/16-18 UNF	252 (114.3)
0.34 (5.5)	1.618 (41.1)	3.445 (87.5)	15.71 (399.0)	17.55 (445.8)	9/16-18 UNF	9/16-18 UNF	252.2 (114.4)
0.49 (8)	1.697 (43.2)	3.606 (91.6)	15.79 (401.0)	17.70 (449.6)	7/8-14 UNF	7/8-14 UNF	252.4 (114.5)
0.67 (11)	1.850 (47.0)	3.803 (96.6)	15.94 (404.9)	17.86 (453.3)	1-1/16-12 UN	7/8-14 UNF	252.6 (114.6)
0.85 (14)	1.870 (47.5)	4.0 (101.6)	15.96 (405.4)	18.05 (458.5)	1-1/16-12 UN	7/8-14 UNF	252.8 (114.7)
0.98 (16)	1.870 (47.6)	4.134 (105.0)	15.94 (404.8)	18.22 (463.0)	1-1/16-12 UN	7/8-14 UNF	252.9 (114.7)
1.16 (19)	1.870 (47.5)	4.330 (110.0)	15.96 (405.5)	18.42 (468.0)	1-1/16-12 UN	7/8-14 UNF	253.1 (114.8)
1.37 (22.5)	2.169 (55.1)	4.543 (115.4)	16.26 (41301)	18.63 (473.4)	1-1/16-12 UN	7/8-14 UNF	253.4 (114.9)

VPV 45/63/80 to an 'F' Gear pump (continued)



VPV 45/63/80 to an 'F' Gear pump (continued)

