

TECHNICAL INFORMATION

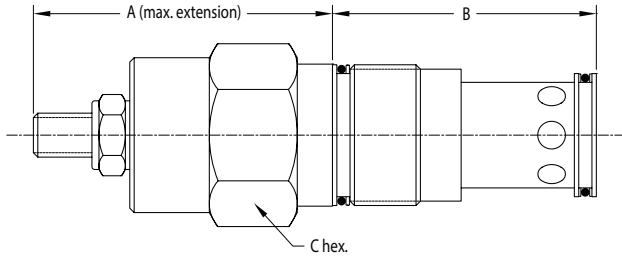
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Relief Valves

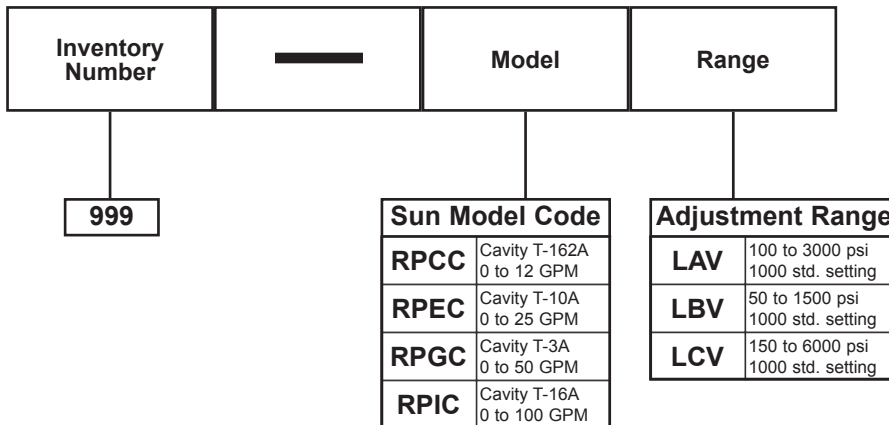


Valve	A max.	B	C hex
RPCC	2.11 [53.6]	1.22 [31.0]	0.75 [19.1]
RPEC	2.00 [50.8]	1.56 [39.7]	0.88 [22.2]
RPGC	2.12 [54.0]	1.88 [47.6]	1.12 [28.6]
RPIC	2.44 [61.9]	2.44 [61.9]	1.25 [31.8]

Sun Valve Application Chart			
Manifolds		Subplates	
*D02P****/S	RPCC-L*V	*D03SPRVS***	RPEC-L*V
*D02S****/S	RPCC-L*V	*D03SPCRS***	RPEC-L*V
*D03P****/S	RPEC-L*V	*D05SPRVS8*	RPEC-L*V
*D03HP****/S	RPGC-L*V	*D05SPCRS8*	RPEC-L*V
*D03S****/S	RPEC-L*V		
*D05P****/S	RPGC-L*V	*D05HSPRVS12*	RPGC-L*V
*D05HP****/S	RPGC-L*V	*D05HSPCRS12*	RPGC-L*V
*D05JP****/S	RPIC-L*V	*D05JSPRVS16*	RPIC-L*V
*D05S02**/S	RPGC-L*V	*D05JSPCRS16*	RPIC-L*V
*D07P****/S	RPGC-L*V	*D07SPRVS12*	RPGC-L*V
*D07HP****/S	RPIC-L*V	*D07HSPRV16*	RPIC-L*V
*D08P****/S	RPGC-L*V	*D08SPRVS16*	RPGC-L*V
*D08HP****/S	RPIC-L*V	*D08SPRVS20*	RPIC-L*V

Note: Any technical or performance questions should be addressed to Sun or one of their authorized distributors.

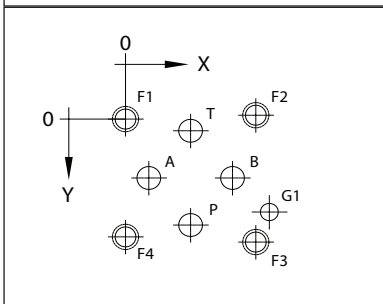
Ordering Information



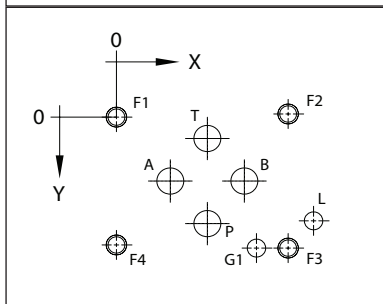
Directional Valve Patterns

These drawings are for reference only. Please consult the appropriate standard when dimensions are critical. Dimensions may vary on our products. It should not be assumed that each hole shown is found on a given product.

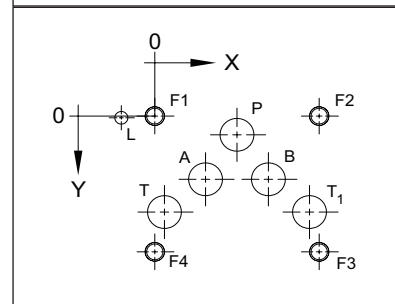
D02 ISO 4401-02-01-0-05
NFPA T3.5.1 R2-2002 D02



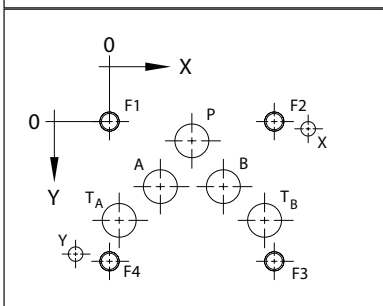
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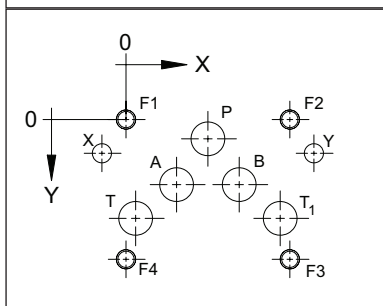
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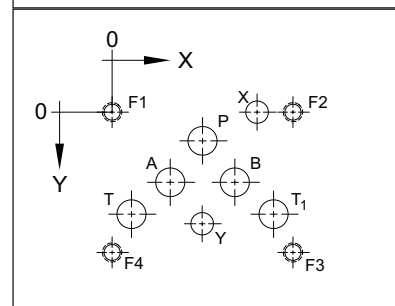
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D05 - Alternative B



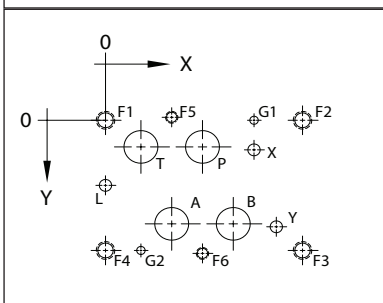
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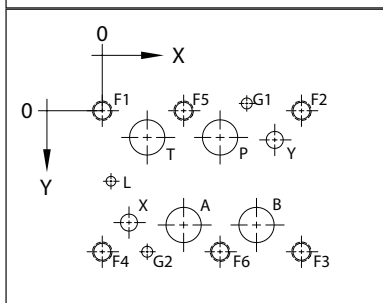
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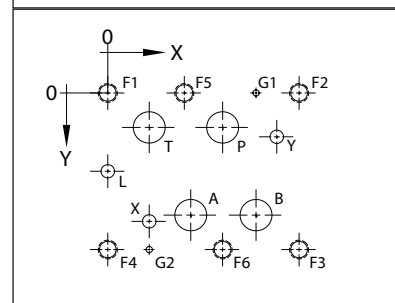
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NFPA T3.5.1 R2-2002 D07



D08 ISO 4401-08-08-0-05
NFPA T3.5.1 R2-2002 D08



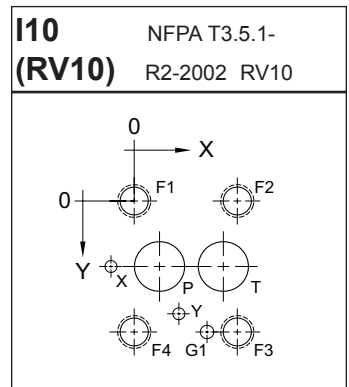
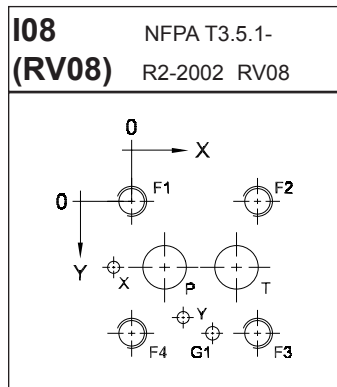
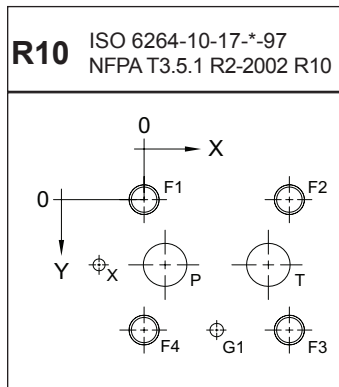
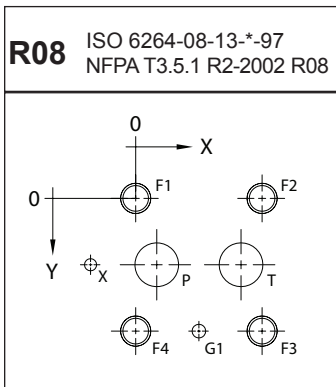
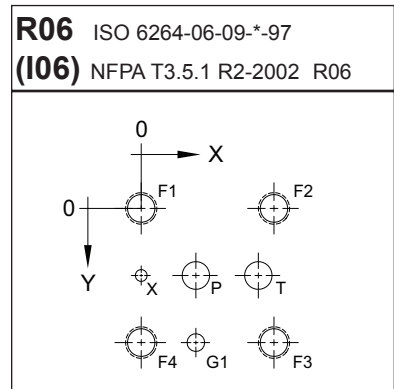
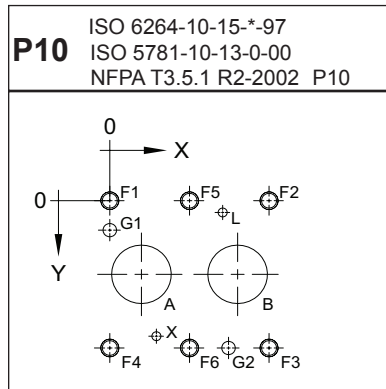
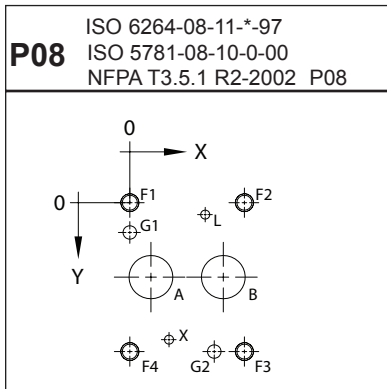
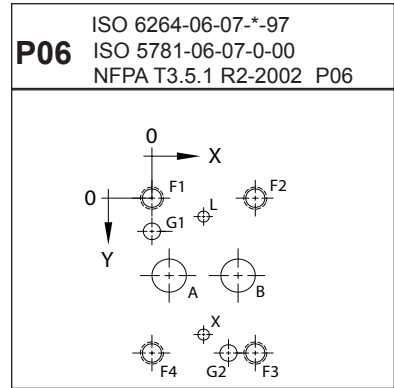
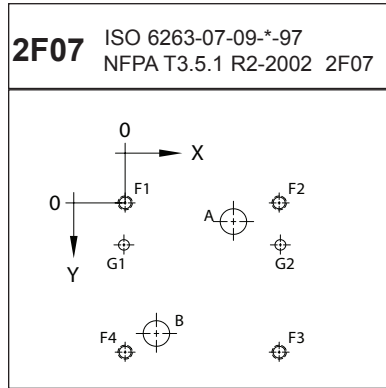
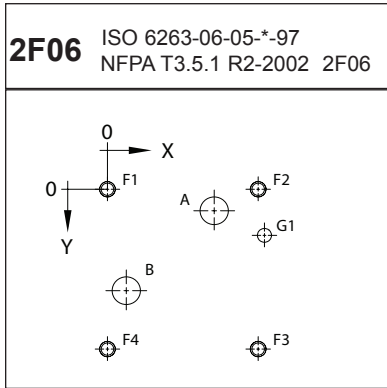
D10 ISO 4401-10-09-0-05
NFPA T3.5.1 R2-2002 D10



Pattern	Axis	P	A	T	T ₁	B	X	Y	L	F1	F2	F3	F4	F5	F6	G1	G2
D02	X	0.472 [12.0]	0.169 [4.3]	0.472 [12.0]	--	0.776 [19.7]	--	--	--	0 [0]	0.945 [24.0]	0.945 [24.0]	0 [0]	--	--	1.043 [26.5]	--
	Y	0.797 [20.25]	0.443 [11.25]	0.089 [2.25]	--	0.443 [11.25]	--	--	--	0 [0]	-0.030 [-0.75]	0.915 [23.25]	0.886 [22.5]	--	--	0.699 [17.75]	--
	φ (max)	0.177 [4.5]	0.177 [4.5]	0.177 [4.5]	--	0.177 [4.5]	--	--	--	--	#10-24 M5	#10-24 M5	#10-24 M5	#10-24 M5	--	--	0.134 [3.4]
D03	X	0.847 [21.5]	0.500 [12.7]	0.847 [21.5]	--	1.189 [30.2]	--	--	1.831 [46.5]	0 [0]	1.595 [40.5]	1.595 [40.5]	0 [0]	--	--	1.299 [33.0]	--
	Y	1.020 [25.9]	0.610 [15.5]	0.201 [5.1]	--	0.610 [15.5]	--	--	0.988 [25.1]	0 [0]	-0.030 [-0.75]	1.250 [31.75]	1.221 [31.0]	--	--	1.250 [31.75]	--
	φ (max)	0.295 [7.5]	0.295 [7.5]	0.295 [7.5]	--	0.295 [7.5]	--	--	0.158 [4.0]	#10-24 M5	#10-24 M5	#10-24 M5	#10-24 M5	--	--	0.158 [4.0]	--
D05	X	1.063 [27.0]	0.658 [16.7]	0.126 [3.2]	2.000 [50.8]	1.469 [37.3]	--	--	-0.433 [-11.0]	0 [0]	2.126 [54.0]	2.126 [54.0]	0 [0]	--	--	--	--
	Y	0.248 [6.3]	0.843 [21.4]	1.280 [32.5]	1.280 [32.5]	0.843 [21.4]	--	--	0.020 [0.5]	0 [0]	0 [0]	1.811 [46.0]	1.811 [46.0]	--	--	--	--
	φ (max)	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	--	--	0.177 [4.5]	.25-20 M6	.25-20 M6	.25-20 M6	.25-20 M6	--	--	--	--
D05H	X	1.063 [27.0]	0.658 [16.7]	0.126 [3.2]	2.000 [50.8]	1.469 [37.3]	2.563 [65.1]	-0.441 [-11.2]	--	0 [0]	2.126 [54.0]	2.126 [54.0]	0 [0]	--	--	--	--
	Y	0.248 [6.3]	0.843 [21.4]	1.280 [32.5]	1.280 [32.5]	0.843 [21.4]	0.095 [2.4]	1.721 [43.7]	--	0 [0]	0 [0]	1.811 [46.0]	1.811 [46.0]	--	--	--	--
	φ (max)	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.189 [4.8]	0.189 [4.8]	--	.25-20 M6	.25-20 M6	.25-20 M6	.25-20 M6	--	--	--	--
D05HE	X	1.063 [27.0]	0.658 [16.7]	0.126 [3.2]	2.000 [50.8]	1.469 [37.3]	-0.315 [-8.0]	2.441 [62.0]	--	0 [0]	2.126 [54.0]	2.126 [54.0]	0 [0]	--	--	--	--
	Y	0.248 [6.3]	0.843 [21.4]	1.280 [32.5]	1.280 [32.5]	0.843 [21.4]	0.433 [11.0]	0.433 [11.0]	--	0 [0]	0 [0]	1.811 [46.0]	1.811 [46.0]	--	--	--	--
	φ (max)	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.248 [6.3]	0.248 [6.3]	--	.25-20 M6	.25-20 M6	.25-20 M6	.25-20 M6	--	--	--	--
D06	X	1.750 [44.45]	1.120 [28.45]	0.380 [9.65]	3.120 [79.25]	2.380 [60.45]	2.811 [71.4]	1.750 [44.45]	--	0 [0]	3.500 [88.9]	3.500 [88.9]	0 [0]	--	--	--	--
	Y	0.561 [14.25]	1.380 [35.05]	2.000 [50.8]	2.000 [50.8]	1.380 [35.05]	0 [0]	2.180 [55.37]	--	0 [0]	0 [0]	2.750 [69.85]	2.750 [69.85]	--	--	--	--
	φ (max)	0.579 [14.7]	0.579 [14.7]	0.579 [14.7]	0.579 [14.7]	0.579 [14.7]	0.441 [11.2]	0.441 [11.2]	--	.38-16 M10	.38-16 M10	.38-16 M10	.38-16 M10	--	--	--	--
D07	X	1.969 [50.0]	1.343 [34.1]	0.721 [18.3]	--	2.595 [65.9]	3.016 [76.6]	3.469 [88.1]	0 [0]	0 [0]	4.000 [101.6]	4.000 [101.6]	0 [0]	1.343 [34.1]	1.969 [50.0]	3.016 [76.6]	0.721 [18.3]
	Y	0.563 [14.3]	2.189 [55.6]	0.563 [14.3]	--	2.189 [55.6]	0.626 [15.9]	2.252 [57.2]	1.374 [34.9]	0 [0]	0 [0]	2.752 [69.9]	2.752 [69.9]	-0.063 [-1.6]	2.815 [71.5]	0 [0]	2.752 [69.9]
	φ (max)	0.689 [17.5]	0.689 [17.5]	0.689 [17.5]	--	0.689 [17.5]	0.248 [6.3]	0.248 [6.3]	0.248 [6.3]	.38-16 M10	.38-16 M10	.38-16 M10	.38-16 M10	.25-20 M6	.25-20 M6	0.158 [4.0]	0.158 [4.0]
D08	X	3.032 [77.0]	2.095 [53.2]	1.158 [29.4]	--	3.969 [100.8]	0.689 [17.5]	4.437 [112.7]	0.221 [5.6]	0 [0]	5.126 [130.2]	5.126 [130.2]	0 [0]	2.095 [53.2]	3.032 [77.0]	3.721 [94.5]	1.158 [29.4]
	Y	0.689 [17.5]	2.937 [74.6]	0.689 [17.5]	--	2.937 [74.6]	2.874 [73.0]	0.748 [19.0]	1.811 [46.0]	0 [0]	0 [0]	3.626 [92.1]	3.626 [92.1]	0 [0]	3.626 [92.1]	-0.189 [-4.8]	3.626 [92.1]
	φ (max)	0.984 [25.0]	0.984 [25.0]	0.984 [25.0]	--	0.984 [25.0]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	.50-13 M12	.50-13 M12	.50-13 M12	.50-13 M12	.50-13 M12	.50-13 M12	0.295 [7.5]	0.295 [7.5]
D10	X	4.500 [114.3]	3.248 [82.5]	1.626 [41.3]	--	5.811 [147.6]	1.626 [41.3]	6.626 [168.3]	0 [0]	0 [0]	7.500 [190.5]	7.500 [190.5]	0 [0]	3.000 [76.2]	4.500 [114.3]	5.457 [138.6]	1.626 [41.3]
	Y	1.378 [35.0]	4.874 [123.8]	1.378 [35.0]	--	4.874 [123.8]	5.126 [130.2]	1.752 [44.5]	3.126 [79.4]	0 [0]	0 [0]	6.252 [158.8]	6.252 [158.8]	0 [0]	6.252 [158.8]	0 [0]	6.252 [158.8]
	φ (max)	1.260 [32.0]	1.260 [32.0]	1.260 [32.0]	--	1.260 [32.0]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	.75-10 M20	.75-10 M20	.75-10 M20	.75-10 M20	.75-10 M20	.75-10 M20	0.295 [7.5]	0.295 [7.5]

Non-Directional Valve Patterns

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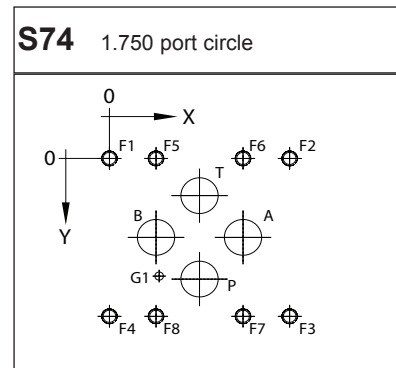
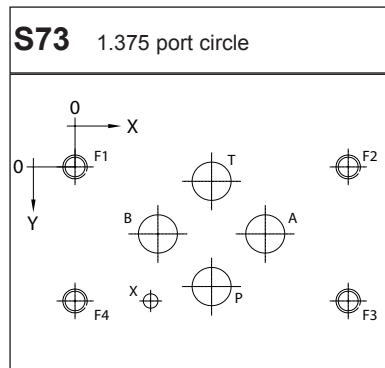
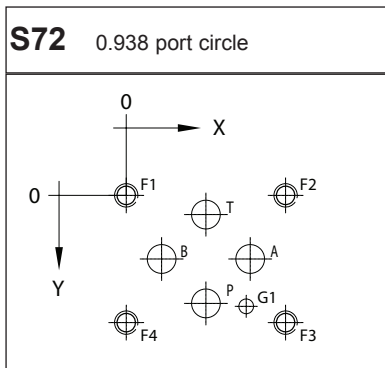
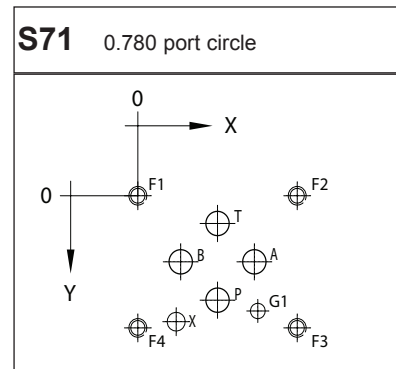
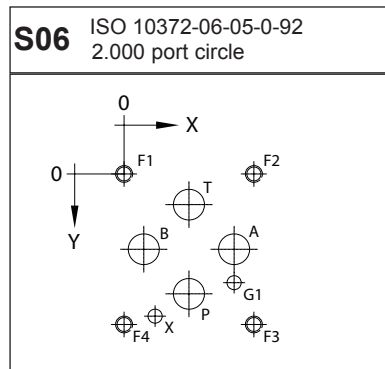
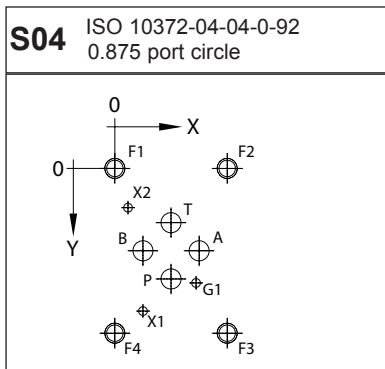
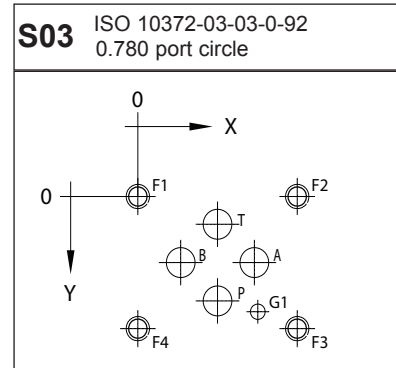
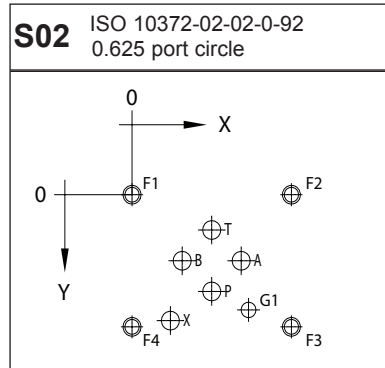
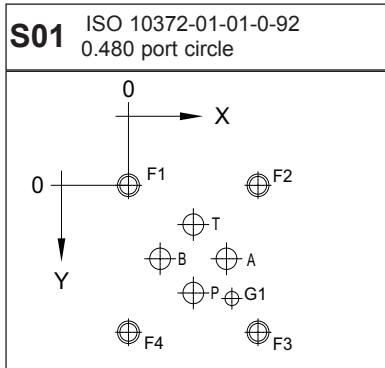


Pattern	Axis	A	B	P	T	X	L	F1	F2	F3	F4	F5	F6	G1	G2
2F06	X	2.126 [54.0]	0.374 [9.5]	--	--	--	--	0 [0]	3.000 [76.2]	3.000 [76.2]	0 [0]	--	--	3.126 [79.4]	--
	Y	0.437 [11.1]	2.063 [52.4]	--	--	--	--	0 [0]	0 [0]	3.252 [82.6]	3.252 [82.6]	--	--	0.937 [23.8]	--
	φ (max)	0.579 [14.7]	0.579 [14.7]	--	--	--	--	.31-18 M8	.31-18 M8	.31-18 M8	.31-18 M8	--	--	0.295 [7.5]	--
2F07	X	2.953 [75.0]	0.811 [20.6]	--	--	--	--	0 [0]	4.000 [101.6]	4.000 [101.6]	0 [0]	--	--	-0.032 [-0.8]	4.032 [102.4]
	Y	0.437 [11.1]	3.406 [86.5]	--	--	--	--	0 [0]	0 [0]	4.000 [101.6]	4.000 [101.6]	--	--	1.126 [28.6]	1.126 [28.6]
	φ (max)	0.689 [17.5]	0.689 [17.5]	--	--	--	--	.38-16 M10	.38-16 M10	.38-16 M10	.38-16 M10	--	--	0.409 [10.4]	0.409 [10.4]
P06	X	0.280 [7.1]	1.406 [35.7]	--	--	0.843 [21.4]	0.843 [21.4]	0 [0]	1.689 [42.9]	1.689 [42.9]	0 [0]	--	--	0 [0]	1.252 [31.8]
	Y	1.311 [33.3]	1.311 [33.3]	--	--	2.311 [58.7]	0.311 [7.9]	0 [0]	0 [0]	2.626 [66.7]	2.626 [66.7]	--	--	0.563 [14.3]	2.626 [66.7]
	φ (max)	0.579 [14.7]	0.579 [14.7]	--	--	0.189 [4.8]	0.189 [4.8]	.38-16 M10	.38-16 M10	.38-16 M10	.38-16 M10	--	--	0.295 [7.5]	0.295 [7.5]
P08	X	0.437 [11.1]	1.937 [49.2]	--	--	0.819 [20.8]	1.563 [39.7]	0 [0]	2.374 [60.3]	2.374 [60.3]	0 [0]	--	--	0 [0]	1.752 [44.5]
	Y	1.563 [39.7]	1.563 [39.7]	--	--	2.874 [73.0]	0.252 [6.4]	0 [0]	0 [0]	3.126 [79.4]	3.126 [79.4]	--	--	0.626 [15.9]	3.126 [79.4]
	φ (max)	0.921 [23.4]	0.921 [23.4]	--	--	0.189 [4.8]	0.189 [4.8]	.38-16 M10	.38-16 M10	.38-16 M10	.38-16 M10	--	--	0.295 [7.5]	0.295 [7.5]
P10	X	0.658 [16.7]	2.658 [67.5]	--	--	0.969 [24.6]	2.347 [59.6]	0 [0]	3.311 [84.1]	3.311 [84.1]	0 [0]	1.658 [42.1]	1.658 [42.1]	0 [0]	2.469 [62.7]
	Y	1.906 [48.4]	1.906 [48.4]	--	--	3.658 [92.9]	0.158 [4.0]	0 [0]	0 [0]	3.811 [96.8]	3.811 [96.8]	0 [0]	3.811 [96.8]	0.843 [21.4]	3.811 [96.8]
	φ (max)	1.260 [32.0]	1.260 [32.0]	--	--	0.189 [4.8]	0.189 [4.8]	.38-16 M10	.38-16 M10	.38-16 M10	.38-16 M10	.38-16 M10	.38-16 M10	0.295 [7.5]	0.295 [7.5]
R06 (I06)	X	--	--	0.870 [22.1]	1.870 [47.5]	0 [0]	--	0 [0]	2.118 [53.8]	2.118 [53.8]	0 [0]	--	--	0.870 [22.1]	--
	Y	--	--	1.059 [26.9]	1.059 [26.9]	1.059 [26.9]	--	0 [0]	0 [0]	2.118 [53.8]	2.118 [53.8]	--	--	2.118 [53.8]	--
	φ (max)	--	--	0.579 [14.7]	0.579 [14.7]	0.189 [4.8]	--	.50-13 M12	.50-13 M12	.50-13 M12	.50-13 M12	--	--	0.295 [7.5]	--
R08	X	--	--	0.437 [11.1]	2.189 [55.6]	-0.937 [-23.8]	--	0 [0]	2.626 [66.7]	2.626 [66.7]	0 [0]	--	--	1.315 [33.4]	--
	Y	--	--	1.378 [35.0]	1.378 [35.0]	1.378 [35.0]	--	0 [0]	0 [0]	2.756 [70.0]	2.756 [70.0]	--	--	2.756 [70.0]	--
	φ (max)	--	--	0.921 [23.4]	0.921 [23.4]	0.248 [6.3]	--	.63-11 M16	.63-11 M16	.63-11 M16	.63-11 M16	--	--	0.295 [7.5]	--
R10	X	--	--	0.500 [12.7]	3.000 [76.2]	-1.252 [-31.8]	--	0 [0]	3.500 [88.9]	3.500 [88.9]	0 [0]	--	--	1.752 [44.5]	--
	Y	--	--	1.626 [41.3]	1.626 [41.3]	1.626 [41.3]	--	0 [0]	0 [0]	3.252 [82.6]	3.252 [82.6]	--	--	3.252 [82.6]	--
	φ (max)	--	--	1.260 [32.0]	1.260 [32.0]	0.248 [6.3]	--	.75-10 M18	.75-10 M18	.75-10 M18	.75-10 M18	--	--	0.295 [7.5]	--
I08 (RV08)	X	--	--	0.689 [17.5]	2.189 [55.6]	-0.374 [-9.5]	1.441 [36.6]	0 [0]	2.626 [66.7]	2.626 [66.7]	0 [0]	--	--	1.689 [42.9]	--
	Y	--	--	1.378 [35.0]	1.378 [35.0]	1.378 [35.0]	2.248 [57.1]	0 [0]	0 [0]	2.756 [70.0]	2.756 [70.0]	--	--	2.756 [70.0]	--
	φ (max)	--	--	0.921 [23.4]	0.921 [23.4]	0.248 [6.3]	0.248 [6.3]	.63-11 M16	.63-11 M16	.63-11 M16	.63-11 M16	--	--	0.295 [7.5]	--
I10 (RV10)	X	--	--	0.563 [14.3]	2.311 [58.7]	-0.626 [-15.9]	1.248 [31.8]	0 [0]	2.626 [66.7]	2.626 [66.7]	0 [0]	--	--	2.000 [50.8]	--
	Y	--	--	1.811 [46.0]	1.811 [46.0]	1.811 [46.0]	3.185 [80.9]	0 [0]	0 [0]	3.626 [92.1]	3.626 [92.1]	--	--	3.626 [92.1]	--
	φ (max)	--	--	1.260 [32.0]	1.260 [32.0]	0.248 [6.3]	0.248 [6.3]	.75-10 M18	.75-10 M18	.75-10 M18	.75-10 M18	--	--	0.295 [7.5]	--

Standard Manifolds
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Servo Valve Patterns

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Servo patterns continued pages 234-239

Pattern	Axis	P	A	T	B	X1	X2	F1	F2	F3	F4	F5	F6	F7	F8	G1
S01	X	0.469 [11.9]	0.709 [18.0]	0.469 [11.9]	0.228 [5.8]	--	--	0 [0]	0.937 [23.8]	0.937 [23.8]	0 [0]	--	--	--	--	0.748 [19.0]
	Y	0.756 [19.2]	0.516 [13.1]	0.276 [7.0]	0.516 [13.1]	--	--	0 [0]	0 [0]	1.032 [26.2]	1.032 [26.2]	--	--	--	--	0.795 [20.2]
	φ (max)	0.150 [3.8]	0.150 [3.8]	0.150 [3.8]	0.150 [3.8]	--	--	#6-32 M4	#6-32 M4	#6-32 M4	#6-32 M4	--	--	--	--	--
S02	X	0.843 [21.4]	1.154 [29.3]	0.843 [21.4]	0.532 [13.5]	0.406 [10.3]	--	0 [0]	1.685 [42.8]	1.685 [42.8]	0 [0]	--	--	--	--	1.232 [31.3]
	Y	0.984 [25.0]	0.673 [17.1]	0.362 [9.2]	0.673 [17.1]	1.283 [32.6]	--	0 [0]	0 [0]	1.347 [34.2]	1.347 [34.2]	--	--	--	--	1.173 [29.8]
	φ (max)	0.197 [5.0]	0.197 [5.0]	0.197 [5.0]	0.197 [5.0]	0.095 [2.4]	--	#10-32 M5	#10-32 M5	#10-32 M5	#10-32 M5	--	--	--	--	--
S03	X	0.843 [21.4]	1.232 [31.3]	0.843 [21.4]	0.453 [11.5]	--	--	0 [0]	1.685 [42.8]	1.685 [42.8]	0 [0]	--	--	--	--	1.232 [31.3]
	Y	1.063 [27.0]	0.673 [17.1]	0.284 [7.2]	0.673 [17.1]	--	--	0 [0]	0 [0]	1.347 [34.2]	1.347 [34.2]	--	--	--	--	1.173 [29.8]
	φ (max)	0.260 [6.6]	0.260 [6.6]	0.260 [6.6]	0.260 [6.6]	--	--	.25-28 M6	.25-28 M6	.25-28 M6	.25-28 M6	--	--	--	--	--
S04	X	0.874 [22.2]	1.311 [33.3]	0.874 [22.2]	0.437 [11.1]	0.437 [11.1]	0.205 [5.2]	0 [0]	1.748 [44.4]	1.748 [44.4]	0 [0]	--	--	--	--	1.264 [32.1]
	Y	1.717 [43.6]	1.280 [32.5]	0.843 [21.4]	1.280 [32.5]	2.217 [56.3]	0.610 [15.5]	0 [0]	0 [0]	2.559 [65.0]	2.559 [65.0]	--	--	--	--	1.780 [45.2]
	φ (max)	0.323 [8.2]	0.323 [8.2]	0.323 [8.2]	0.323 [8.2]	0.197 [5.0]	0.197 [5.0]	.31-18 M8	.31-18 M8	.31-18 M8	.31-18 M8	--	--	--	--	--
S06	X	1.437 [36.5]	2.437 [61.9]	1.437 [36.5]	0.437 [11.1]	0.685 [17.4]	--	0 [0]	2.874 [73.0]	2.874 [73.0]	0 [0]	--	--	--	--	2.437 [61.9]
	Y	2.685 [68.2]	1.685 [42.8]	0.685 [17.4]	1.685 [42.8]	3.189 [81.0]	--	0 [0]	0 [0]	3.370 [85.6]	3.370 [85.6]	--	--	--	--	2.437 [61.9]
	φ (max)	0.630 [16.0]	0.630 [16.0]	0.630 [16.0]	0.630 [16.0]	0.197 [5.0]	--	.38-16 M10	.38-16 M10	.38-16 M10	.38-16 M10	--	--	--	--	--
S71	X	0.843 [21.4]	1.232 [31.2]	0.843 [21.4]	0.453 [11.4]	0.406 [10.3]	--	0 [0]	1.685 [42.8]	1.685 [42.8]	0 [0]	--	--	--	--	1.232 [31.3]
	Y	1.063 [27.0]	0.673 [17.1]	0.284 [7.2]	0.673 [17.1]	1.284 [32.6]	--	0 [0]	0 [0]	1.347 [34.2]	1.347 [34.2]	--	--	--	--	1.173 [29.8]
	φ (max)	0.260 [6.6]	0.260 [6.6]	0.260 [6.6]	0.260 [6.6]	0.095 [2.4]	--	#10-32 M5	#10-32 M5	#10-32 M5	#10-32 M5	--	--	--	--	--
S72	X	0.843 [21.4]	1.311 [33.3]	0.843 [21.4]	0.374 [9.5]	--	--	0 [0]	1.685 [42.8]	1.685 [42.8]	0 [0]	--	--	--	--	1.232 [31.3]
	Y	1.142 [29.0]	0.673 [17.1]	0.205 [5.2]	0.673 [17.1]	--	--	0 [0]	0 [0]	1.347 [34.2]	1.347 [34.2]	--	--	--	--	1.173 [29.8]
	φ (max)	0.315 [8.0]	0.315 [8.0]	0.315 [8.0]	0.315 [8.0]	--	--	.25-20 M6	.25-20 M6	.25-20 M6	.25-20 M6	--	--	--	--	--
S73	X	1.750 [44.5]	2.438 [61.9]	1.750 [44.5]	1.062 [27.0]	0.970 [24.6]	--	0 [0]	3.500 [88.9]	3.500 [88.9]	0 [0]	--	--	--	--	--
	Y	1.563 [39.7]	0.875 [22.3]	0.188 [4.8]	0.875 [22.3]	1.750 [44.5]	--	0 [0]	0 [0]	1.750 [44.5]	1.750 [44.5]	--	--	--	--	--
	φ (max)	0.500 [12.7]	0.500 [12.7]	0.500 [12.7]	0.500 [12.7]	0.094 [2.4]	--	.31-18 M8	.31-18 M8	.31-18 M8	.31-18 M8	--	--	--	--	--
S74	X	1.813 [46.1]	2.688 [68.3]	1.813 [46.1]	0.938 [23.8]	--	--	0 [0]	3.625 [92.1]	3.625 [92.1]	0 [0]	0.938 [23.8]	2.688 [68.3]	2.688 [68.3]	0.938 [23.8]	1.000 [25.4]
	Y	2.531 [64.3]	1.656 [42.1]	0.781 [19.8]	1.656 [42.1]	--	--	0 [0]	0 [0]	3.313 [84.2]	3.313 [84.2]	0 [0]	0 [0]	3.313 [84.2]	3.313 [84.2]	2.469 [62.7]
	φ (max)	0.750 [19.1]	0.750 [19.1]	0.750 [19.1]	0.750 [19.1]	--	--	.31-24 M8	.31-24 M8	.31-24 M8	.31-24 M8	.31-24 M8	.31-24 M8	.31-24 M8	.31-24 M8	.31-24 M8

Standard Manifolds

Cover Plates

Valve Adaptors

Subplates

Servo Valve Subplates

Tapping Plates

Cartridge Valve Cavity Bodies

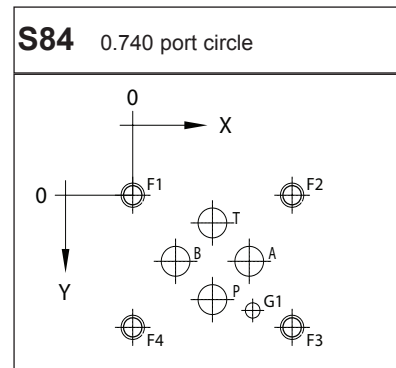
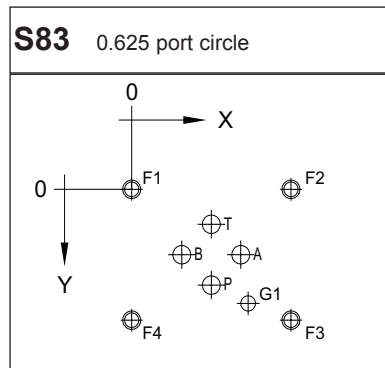
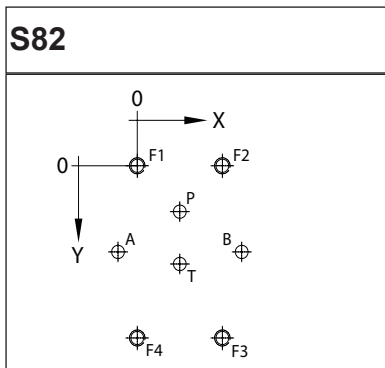
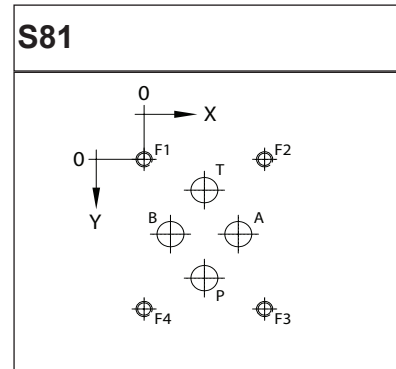
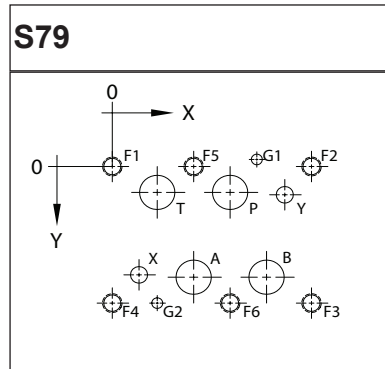
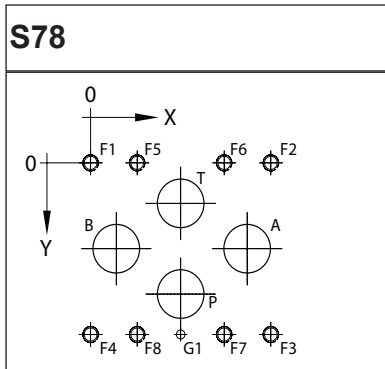
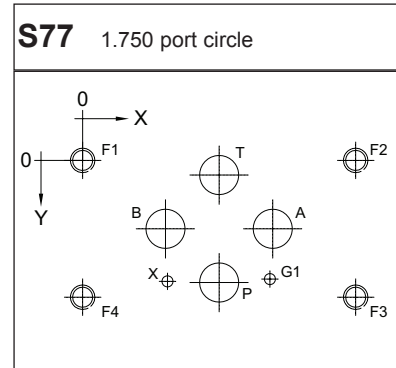
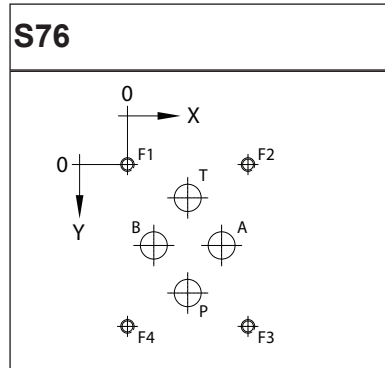
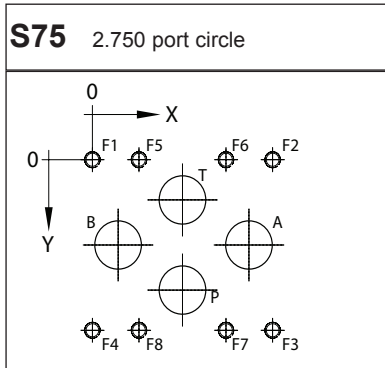
Header and Junction Blocks

Sandwich Modules

Technical Information

Servo Valve Patterns

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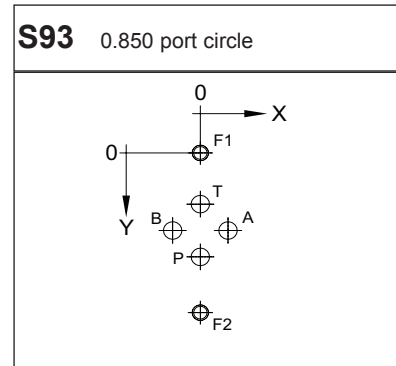
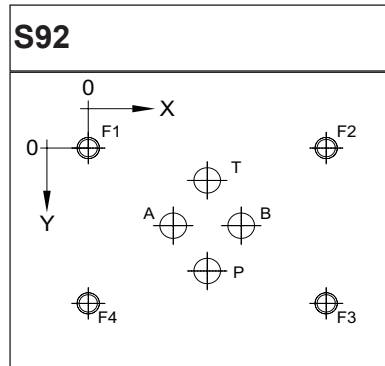
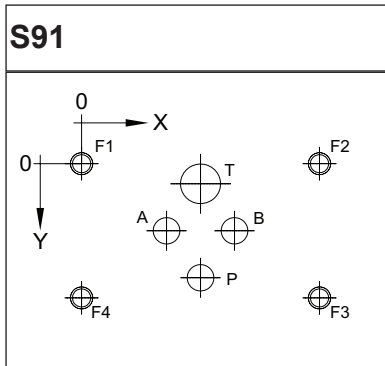
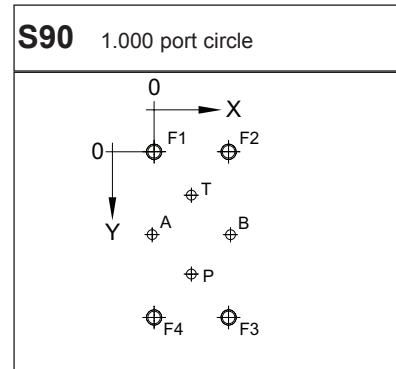
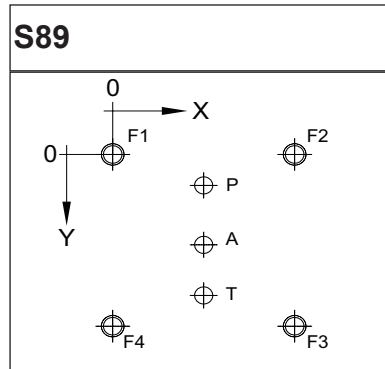
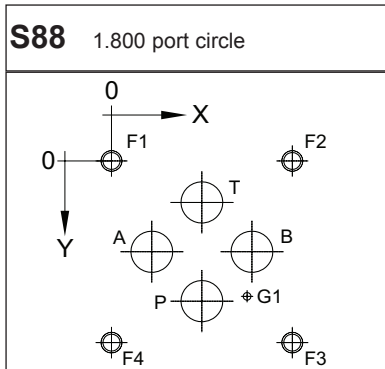
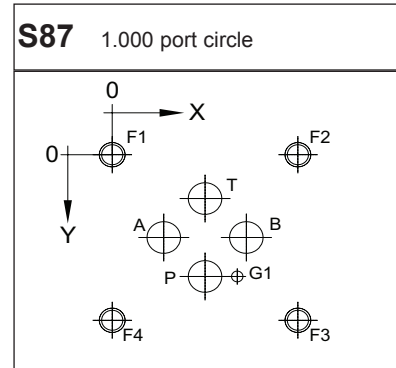
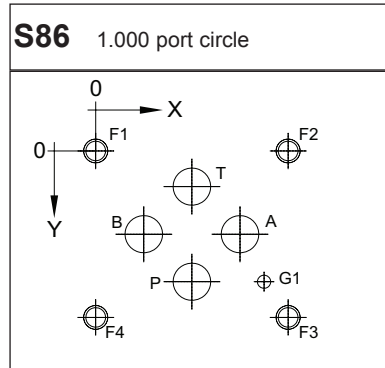
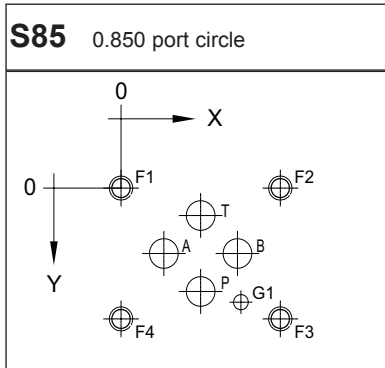
Servo patterns continued pages 236-239

Pattern	Axis	P	A	T	B	X	Y	F1	F2	F3	F4	F5	F6	F7	F8	G1	G2
S75	X	2.000 [50.8]	3.375 [85.7]	2.000 [50.8]	0.625 [15.9]	--	--	0 [0]	4.000 [101.6]	4.000 [101.6]	0 [0]	1.000 [25.4]	3.000 [76.2]	3.000 [76.2]	1.000 [25.4]	--	--
	Y	3.625 [92.1]	2.250 [57.2]	0.875 [22.2]	2.250 [57.2]	--	--	0 [0]	0 [0]	4.500 [114.3]	4.500 [114.3]	0 [0]	0 [0]	4.500 [114.3]	4.500 [114.3]	--	--
	φ (max)	1.000 [25.4]	1.000 [25.4]	1.000 [25.4]	1.000 [25.4]	--	--	.50-13 M12	.50-13 M12	.50-13 M12	.50-13 M12	.50-13 M12	.50-13 M12	.50-13 M12	.50-13 M12	.50-13 M12	--
S76	X	1.120 [28.5]	1.750 [44.5]	1.120 [28.5]	0.490 [12.5]	--	--	0 [0]	2.240 [56.9]	2.240 [56.9]	0 [0]	--	--	--	--	--	--
	Y	2.357 [59.9]	1.483 [37.6]	0.610 [15.5]	1.483 [37.6]	--	--	0 [0]	0 [0]	2.967 [75.4]	2.967 [75.4]	--	--	--	--	--	--
	φ (max)	0.500 [12.7]	0.500 [12.7]	0.500 [12.7]	0.500 [12.7]	--	--	.25-20 M6	.25-20 M6	.25-20 M6	.25-20 M6	--	--	--	--	--	--
S77	X	1.813 [46.0]	2.688 [68.3]	1.813 [46.0]	0.937 [23.8]	1.025 [26.0]	--	0 [0]	3.625 [92.1]	3.625 [92.1]	0 [0]	--	--	--	--	2.625 [66.7]	--
	Y	2.063 [52.4]	1.187 [30.2]	0.312 [7.9]	1.187 [30.2]	2.054 [52.2]	--	0 [0]	0 [0]	2.375 [60.3]	2.375 [60.3]	--	--	--	--	2.000 [50.8]	--
	φ (max)	0.625 [15.9]	0.625 [15.9]	0.625 [15.9]	0.625 [15.9]	0.125 [3.2]	--	.31-18 M8	.31-18 M8	.31-18 M8	.31-18 M8	--	--	--	--	0.157 [4.0]	--
S78	X	2.181 [55.4]	3.741 [95.0]	2.181 [55.4]	0.621 [15.8]	--	--	0 [0]	4.362 [110.8]	4.362 [110.8]	0 [0]	1.241 [31.5]	3.121 [79.3]	3.121 [79.3]	1.241 [31.5]	2.181 [55.4]	--
	Y	3.435 [87.2]	2.310 [58.7]	1.185 [30.1]	2.310 [58.7]	--	--	0 [0]	0 [0]	4.620 [117.3]	4.620 [117.3]	0 [0]	0 [0]	4.620 [117.3]	4.620 [117.3]	4.620 [117.3]	--
	φ (max)	1.125 [28.6]	1.125 [28.6]	1.125 [28.6]	1.125 [28.6]	--	--	.62-11 M16	.62-11 M16	.62-11 M16	.62-11 M16	.62-11 M16	.62-11 M16	.62-11 M16	.62-11 M16	.62-11 M16	0.313 [7.9]
S79	X	3.031 [77.0]	2.094 [53.2]	1.157 [29.4]	3.969 [100.8]	0.689 [17.5]	4.437 [112.7]	0 [0]	5.126 [130.2]	5.126 [130.2]	0 [0]	2.094 [53.2]	3.031 [77.0]	--	--	3.720 [94.5]	1.157 [29.4]
	Y	0.689 [17.5]	2.937 [74.6]	0.689 [17.5]	2.937 [74.6]	2.874 [73.0]	0.748 [19.0]	0 [0]	0 [0]	3.626 [92.1]	3.626 [92.1]	0 [0]	3.626 [92.1]	--	--	-0.189 [-4.8]	3.626 [92.1]
	φ (max)	0.984 [25.0]	0.984 [25.0]	0.984 [25.0]	0.984 [25.0]	0.441 [11.2]	0.441 [11.2]	.44-14 M12	.44-14 M12	.44-14 M12	.44-14 M12	.44-14 M12	.44-14 M12	--	--	0.295 [7.5]	0.295 [7.5]
S81	X	1.120 [28.4]	1.750 [44.5]	1.120 [28.4]	0.490 [12.4]	--	--	0 [0]	2.240 [56.9]	2.240 [56.9]	0 [0]	--	--	--	--	--	--
	Y	2.375 [60.3]	1.500 [38.1]	0.625 [15.9]	1.500 [38.1]	--	--	0 [0]	0 [0]	3.000 [76.2]	3.000 [76.2]	--	--	--	--	--	--
	φ (max)	0.500 [12.7]	0.500 [12.7]	0.500 [12.7]	0.500 [12.7]	--	--	.31-18 M8	.31-18 M8	.31-18 M8	.31-18 M8	--	--	--	--	--	--
S82	X	0.433 [11.0]	-0.197 [-5.0]	0.433 [11.0]	1.063 [27.0]	--	--	0 [0]	0.866 [22.0]	0.866 [22.0]	0 [0]	--	--	--	--	--	--
	Y	0.449 [11.4]	0.843 [21.4]	0.961 [24.4]	0.843 [21.4]	--	--	0 [0]	0 [0]	1.677 [42.6]	1.677 [42.6]	--	--	--	--	--	--
	φ (max)	0.130 [3.3]	0.130 [3.3]	0.130 [3.3]	0.130 [3.3]	--	--	M4 M4	M4 M4	M4 M4	M4 M4	--	--	--	--	--	--
S83	X	0.843 [21.4]	1.154 [29.3]	0.843 [21.4]	0.531 [13.5]	--	--	0 [0]	1.685 [42.8]	1.685 [42.8]	0 [0]	--	--	--	--	1.232 [31.3]	--
	Y	0.984 [25.0]	0.673 [17.1]	0.358 [9.1]	0.673 [17.1]	--	--	0 [0]	0 [0]	1.347 [34.2]	1.347 [34.2]	--	--	--	--	1.173 [29.8]	--
	φ (max)	0.191 [4.85]	0.191 [4.85]	0.191 [4.85]	0.191 [4.85]	--	--	.25-20 M6	.25-20 M6	.25-20 M6	.25-20 M6	--	--	--	--	0.138 [3.5]	--
S84	X	0.844 [21.4]	1.214 [30.8]	0.844 [21.4]	0.474 [12.0]	--	--	0 [0]	1.685 [42.8]	1.685 [42.8]	0 [0]	--	--	--	--	--	--
	Y	1.042 [26.5]	0.672 [17.1]	0.302 [7.67]	0.672 [17.1]	--	--	0 [0]	0 [0]	1.347 [34.2]	1.347 [34.2]	--	--	--	--	--	--
	φ (max)	0.260 [6.6]	0.260 [6.6]	0.260 [6.6]	0.260 [6.6]	--	--	#10-32 M5	#10-32 M5	#10-32 M5	#10-32 M5	--	--	--	--	--	--

Standard Manifolds
Cover Plates
Valve Adaptors
Subplates
Servo Valve Subplates
Tapping Plates
Cartridge Valve Bodies
Header and Junction Blocks
Sandwich Modules

Servo Valve Patterns

These drawings are for reference only. Please consult the appropriate standard when dimensions are critical. Dimensions may vary on our products. It should not be assumed that each hole shown is found on a given product.



Servo patterns continued pages 238-239

Pattern	Axis	P	A	T	B	X	Y	F1	F2	F3	F4	F5	F6	F7	F8	G1	G2
S85	X	0.843 [21.4]	0.418 [10.6]	0.843 [21.4]	1.268 [32.2]	--	--	0 [0]	1.685 [42.8]	1.685 [42.8]	0 [0]	--	--	--	--	1.232 [31.3]	--
	Y	1.098 [27.9]	0.673 [17.1]	0.248 [6.3]	0.673 [17.1]	--	--	0 [0]	0 [0]	1.347 [34.2]	1.347 [34.2]	--	--	--	--	1.173 [29.8]	--
	φ (max)	0.327 [8.3]	0.327 [8.3]	0.327 [8.3]	0.327 [8.3]	--	--	.25-20 M6	.25-20 M6	.25-20 M6	.25-20 M6	--	--	--	--	--	0.138 [3.5]
S86	X	1.000 [25.4]	1.500 [38.1]	1.000 [25.4]	0.500 [12.7]	--	--	0 [0]	2.000 [50.8]	2.000 [50.8]	0 [0]	--	--	--	--	1.750 [44.5]	--
	Y	1.375 [34.9]	0.875 [22.2]	0.375 [9.5]	0.875 [22.2]	--	--	0 [0]	0 [0]	1.750 [44.5]	1.750 [44.5]	--	--	--	--	1.375 [34.9]	--
	φ (max)	0.390 [9.9]	0.390 [9.9]	0.390 [9.9]	0.390 [9.9]	--	--	.25-20 M6	.25-20 M6	.25-20 M6	.25-20 M6	--	--	--	--	--	0.138 [3.5]
S87	X	1.125 [28.6]	0.625 [15.9]	1.125 [28.6]	1.625 [41.3]	--	--	0 [0]	2.250 [57.2]	2.250 [57.2]	0 [0]	--	--	--	--	1.515 [38.5]	--
	Y	1.563 [39.7]	1.063 [27.0]	0.563 [14.3]	1.063 [27.0]	--	--	0 [0]	0 [0]	2.125 [54.0]	2.125 [54.0]	--	--	--	--	1.563 [39.7]	--
	φ (max)	0.410 [10.4]	0.410 [10.4]	0.410 [10.4]	0.410 [10.4]	--	--	.31-18 M8	.31-18 M8	.31-18 M8	.31-18 M8	--	--	--	--	--	0.138 [3.5]
S88	X	1.625 [41.3]	0.725 [18.4]	2.18 [55.4]	2.525 [64.1]	--	--	0 [0]	3.250 [82.6]	3.250 [82.6]	0 [0]	--	--	--	--	2.438 [61.9]	--
	Y	2.556 [64.9]	1.656 [42.1]	0.756 [19.2]	1.656 [42.1]	--	--	0 [0]	0 [0]	3.313 [84.1]	3.313 [84.1]	--	--	--	--	2.469 [62.7]	--
	φ (max)	0.750 [19.1]	0.750 [19.1]	0.750 [19.1]	0.750 [19.1]	--	--	.38-16 M10	.38-16 M10	.38-16 M10	.38-16 M10	--	--	--	--	--	0.138 [3.5]
S89	X	0.781 [19.8]	0.781 [19.8]	0.781 [19.8]	--	--	--	0 [0]	1.563 [39.7]	1.563 [39.7]	0 [0]	--	--	--	--	--	--
	Y	0.281 [7.1]	0.821 [20.9]	1.281 [32.5]	--	--	--	0 [0]	0 [0]	1.563 [39.7]	1.563 [39.7]	--	--	--	--	--	--
	φ (max)	0.156 [4.0]	0.156 [4.0]	0.156 [4.0]	--	--	--	#10-24 M5	#10-24 M5	#10-24 M5	#10-24 M5	--	--	--	--	--	--
S90	X	0.474 [12.1]	-0.026 [-0.65]	0.474 [12.1]	0.974 [24.8]	--	--	0 [0]	0.949 [24.1]	0.949 [24.1]	0 [0]	--	--	--	--	--	--
	Y	1.549 [39.4]	1.049 [26.7]	0.549 [14.0]	1.049 [26.7]	--	--	0 [0]	0 [0]	2.098 [53.3]	2.098 [53.3]	--	--	--	--	--	--
	φ (max)	0.126 [3.2]	0.126 [3.2]	0.126 [3.2]	0.126 [3.2]	--	--	#10-24 M5	#10-24 M5	#10-24 M5	#10-24 M5	--	--	--	--	--	--
S91	X	0.875 [22.2]	0.625 [15.9]	0.875 [22.2]	1.125 [28.6]	--	--	0 [0]	1.750 [44.5]	1.750 [44.5]	0 [0]	--	--	--	--	--	--
	Y	0.850 [21.6]	0.500 [12.7]	0.150 [3.8]	0.500 [12.7]	--	--	0 [0]	0 [0]	1.000 [25.4]	1.000 [25.4]	--	--	--	--	--	--
	φ (max)	0.188 [4.8]	0.188 [4.8]	0.188 [4.8]	0.188 [4.8]	--	--	#4-40	#4-40	#4-40	#4-40	--	--	--	--	--	--
S92	X	0.875 [22.2]	0.625 [12.7]	0.875 [22.2]	1.125 [28.6]	--	--	0 [0]	1.750 [44.5]	1.750 [44.5]	0 [0]	--	--	--	--	--	--
	Y	0.950 [24.1]	0.600 [15.2]	0.250 [6.4]	0.600 [15.2]	--	--	0 [0]	0 [0]	1.200 [30.5]	1.200 [30.5]	--	--	--	--	--	--
	φ (max)	0.188 [4.8]	0.188 [4.8]	0.188 [4.8]	0.188 [4.8]	--	--	#8-32 M4	#8-32 M4	#8-32 M4	#8-32 M4	--	--	--	--	--	--
S93	X	0 [0]	-0.425 [-10.8]	0 [0]	0.425 [10.8]	--	--	0 [0]	0 [0]	--	--	--	--	--	--	--	--
	Y	1.675 [42.5]	1.250 [31.8]	0.825 [21.0]	1.250 [31.8]	--	--	0 [0]	2.500 [63.5]	--	--	--	--	--	--	--	--
	φ (max)	0.281 [7.1]	0.281 [7.1]	0.281 [7.1]	0.281 [7.1]	--	--	.25-20 M6	.25-20 M6	--	--	--	--	--	--	--	--

Standard Manifolds

Cover Plates

Valve Adaptors

Subplates

Servo Valve Subplates

Tapping Plates

Cartridge Valve Bodies

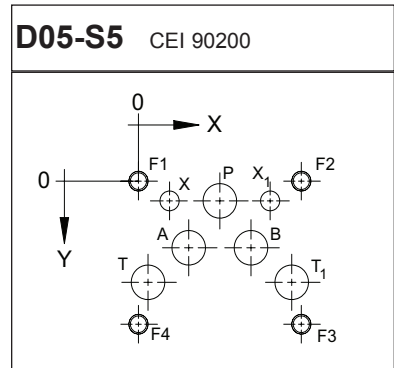
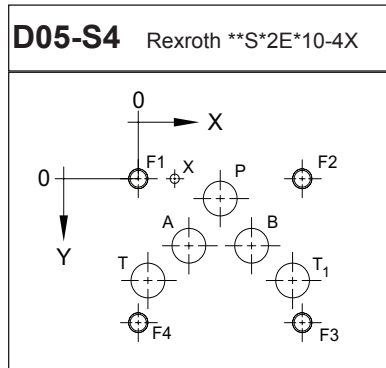
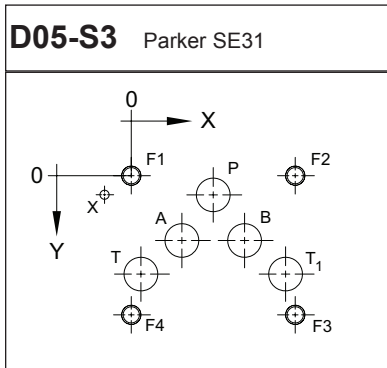
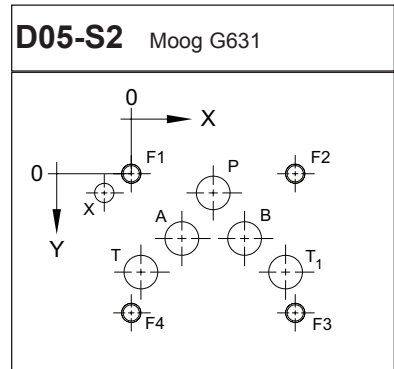
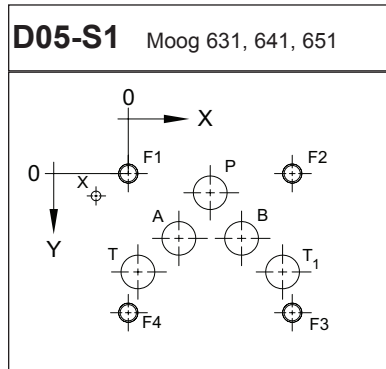
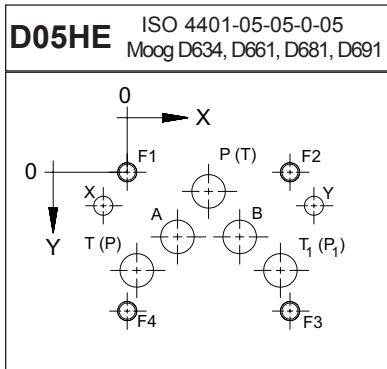
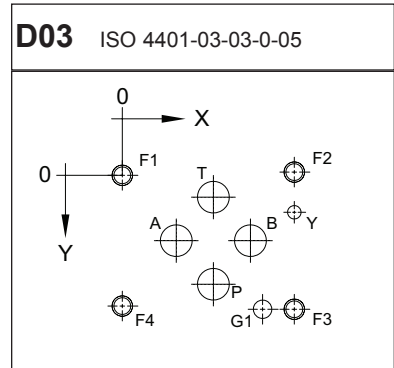
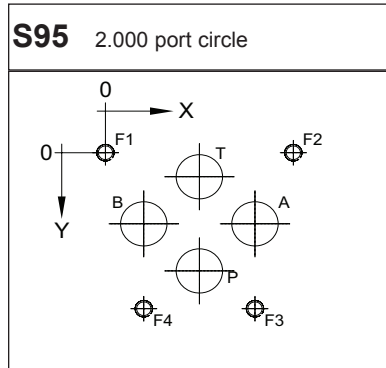
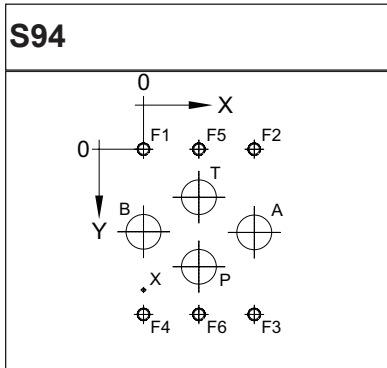
Header and Junction Blocks

Sandwich Modules

Technical Information

Servo Valve Patterns

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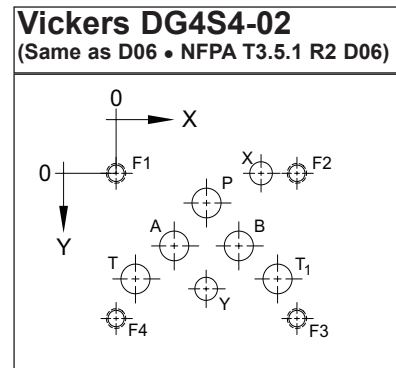
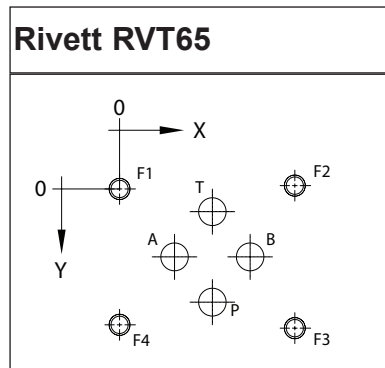
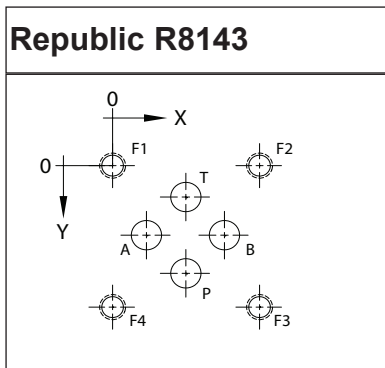
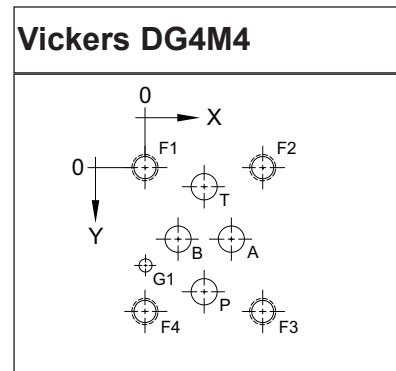
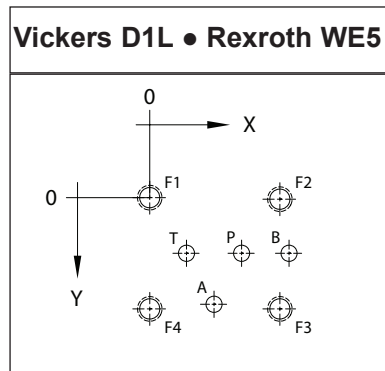
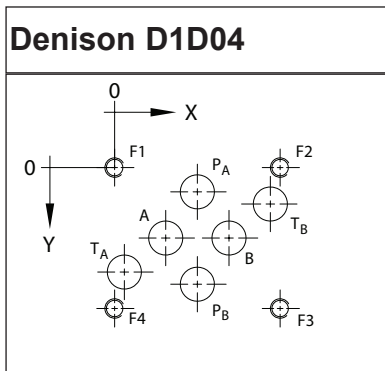
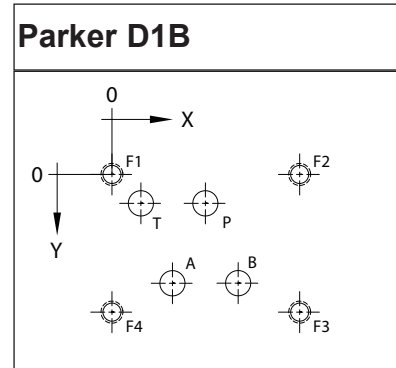
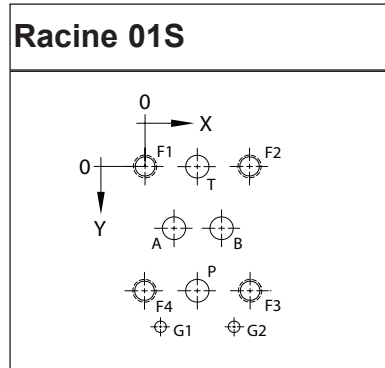
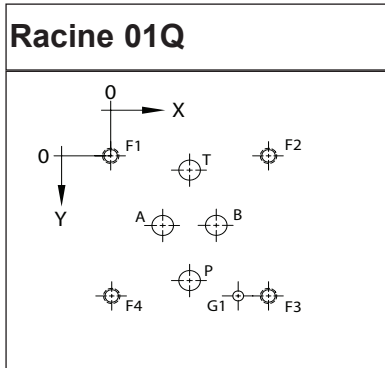


D06, D07, D08, D10: Same as ISO / NFPA directional valve patterns. See pages 228-229 for dimensions.

Pattern	Axis	P	A	T	T ₁	B	X	X ₁	Y	F1	F2	F3	F4	F5	F6	G1	G2
S94	X	1.375 [34.9]	2.750 [69.9]	1.375 [34.9]	--	0 [0]	0 [0]	--	--	0 [0]	2.750 [69.9]	2.750 [69.9]	0 [0]	1.375 [34.9]	1.375 [34.9]	--	--
	Y	2.938 [74.6]	2.063 [52.4]	1.188 [30.2]	--	2.063 [52.4]	3.513 [89.2]	--	--	0 [0]	0 [0]	4.125 [104.8]	4.125 [104.8]	0 [0]	4.125 [104.8]	--	--
	φ (max)	0.865 [22.0]	0.865 [22.0]	0.865 [22.0]	--	0.865 [22.0]	0.094 [2.4]	--	--	.31-18 M8	.31-18 M8	.31-18 M8	.31-18 M8	.31-18 M8	.31-18 M8	--	--
S95	X	1.900 [48.3]	0.900 [22.9]	1.900 [48.3]	--	2.900 [73.7]	--	--	--	0 [0]	3.800 [96.5]	3.025 [76.8]	0.775 [19.7]	--	--	--	--
	Y	2.510 [63.8]	1.510 [38.4]	0.510 [13.0]	--	1.510 [38.4]	--	--	--	0 [0]	0 [0]	3.313 [84.1]	3.313 [84.1]	--	--	--	--
	φ (max)	0.938 [23.8]	0.938 [23.8]	0.938 [23.8]	--	0.938 [23.8]	--	--	--	.38-16 M10	.38-16 M10	.38-16 M10	.38-16 M10	--	--	--	--
D03	X	0.847 [21.5]	0.500 [12.7]	0.847 [21.5]	--	1.189 [30.2]	--	--	1.595 [40.5]	0 [0]	1.595 [40.5]	1.595 [40.5]	0 [0]	--	--	1.299 [33.0]	--
	Y	1.020 [25.9]	0.610 [15.5]	0.201 [5.1]	--	0.610 [15.5]	--	--	0.354 [9.0]	0 [0]	-0.030 [-0.75]	1.250 [31.75]	1.221 [31.0]	--	--	1.250 [31.75]	--
	φ (max)	0.295 [7.5]	0.295 [7.5]	0.295 [7.5]	--	0.295 [7.5]	--	--	0.130 [3.3]	#10-24 M5	#10-24 M5	#10-24 M5	#10-24 M5	--	--	0.158 [4.0]	--
D05HE	X	1.063 [27.0]	0.658 [16.7]	0.126 [3.2]	2.000 [50.8]	1.469 [37.3]	-0.315 [-8.0]	--	2.441 [62.0]	0 [0]	2.126 [54.0]	2.126 [54.0]	0 [0]	--	--	--	--
	Y	0.248 [6.3]	0.843 [21.4]	1.280 [32.5]	1.280 [32.5]	0.843 [21.4]	0.433 [11.0]	--	0.433 [11.0]	0 [0]	0 [0]	1.811 [46.0]	1.811 [46.0]	--	--	--	--
	φ (max)	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.248 [6.3]	--	0.248 [6.3]	.25-20 M6	.25-20 M6	.25-20 M6	.25-20 M6	--	--	--	--
D05-S1	X	1.063 [27.0]	0.658 [16.7]	0.126 [3.2]	2.000 [50.8]	1.469 [37.3]	-0.417 [-10.6]	--	--	0 [0]	2.126 [54.0]	2.126 [54.0]	0 [0]	--	--	--	--
	Y	0.248 [6.3]	0.843 [21.4]	1.280 [32.5]	1.280 [32.5]	0.843 [21.4]	0.291 [7.4]	--	--	0 [0]	0 [0]	1.811 [46.0]	1.811 [46.0]	--	--	--	--
	φ (max)	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.125 [3.2]	--	--	.25-20 M6	.25-20 M6	.25-20 M6	.25-20 M6	--	--	--	--
D05-S2	X	1.063 [27.0]	0.658 [16.7]	0.126 [3.2]	2.000 [50.8]	1.469 [37.3]	-0.354 [-9.0]	--	--	0 [0]	2.126 [54.0]	2.126 [54.0]	0 [0]	--	--	--	--
	Y	0.248 [6.3]	0.843 [21.4]	1.280 [32.5]	1.280 [32.5]	0.843 [21.4]	0.252 [6.4]	--	--	0 [0]	0 [0]	1.811 [46.0]	1.811 [46.0]	--	--	--	--
	φ (max)	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.248 [6.3]	--	--	.25-20 M6	.25-20 M6	.25-20 M6	.25-20 M6	--	--	--	--
D05-S3	X	1.063 [27.0]	0.658 [16.7]	0.126 [3.2]	2.000 [50.8]	1.469 [37.3]	-0.346 [-8.8]	--	--	0 [0]	2.126 [54.0]	2.126 [54.0]	0 [0]	--	--	--	--
	Y	0.248 [6.3]	0.843 [21.4]	1.280 [32.5]	1.280 [32.5]	0.843 [21.4]	0.248 [6.3]	--	--	0 [0]	0 [0]	1.811 [46.0]	1.811 [46.0]	--	--	--	--
	φ (max)	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.118 [3.0]	--	--	.25-20 M6	.25-20 M6	.25-20 M6	.25-20 M6	--	--	--	--
D05-S4	X	1.063 [27.0]	0.658 [16.7]	0.126 [3.2]	2.000 [50.8]	1.469 [37.3]	0.472 [12.0]	--	--	0 [0]	2.126 [54.0]	2.126 [54.0]	0 [0]	--	--	--	--
	Y	0.248 [6.3]	0.843 [21.4]	1.280 [32.5]	1.280 [32.5]	0.843 [21.4]	0 [0]	--	--	0 [0]	0 [0]	1.811 [46.0]	1.811 [46.0]	--	--	--	--
	φ (max)	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.118 [3.0]	--	--	.25-20 M6	.25-20 M6	.25-20 M6	.25-20 M6	--	--	--	--
D05-S5	X	1.063 [27.0]	0.658 [16.7]	0.126 [3.2]	2.000 [50.8]	1.469 [37.3]	0.406 [10.3]	1.719 [43.7]	--	0 [0]	2.126 [54.0]	2.126 [54.0]	0 [0]	--	--	--	--
	Y	0.248 [6.3]	0.843 [21.4]	1.280 [32.5]	1.280 [32.5]	0.843 [21.4]	0.248 [6.3]	0.248 [6.3]	--	0 [0]	0 [0]	1.811 [46.0]	1.811 [46.0]	--	--	--	--
	φ (max)	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.441 [11.2]	0.248 [6.3]	0.248 [6.3]	--	.25-28 M6	.25-28 M6	.25-28 M6	.25-28 M6	--	--	--	--

“Obsolete Valve” Patterns

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Pattern	Axis	P	A	T	T ₁	B	X (P _B)	Y	F1	F2	F3	F4	G1	G2
01Q	X	0.91 [23.0]	0.59 [15.1]	0.91 [23.0]	--	1.22 [31.0]	--	--	0 [0]	1.81 [46.0]	1.81 [46.0]	0 [0]	1.47 [37.3]	--
	Y	1.56 [39.7]	0.88 [22.2]	0.19 [4.9]	--	0.88 [22.3]	--	--	0 [0]	0 [0]	1.75 [44.5]	1.75 [44.5]	1.75 [44.5]	--
	φ (max)	0.25 [6.3]	0.19 [4.8]	0.25 [6.3]	--	0.19 [4.8]	--	--	#10-24 #10-24	#10-24 #10-24	#10-24 #10-24	#10-24 #10-24	0.16 [4.0]	--
01S	X	0.61 [15.5]	0.30 [7.6]	0.61 [15.5]	--	0.92 [23.4]	--	--	0 [0]	1.22 [30.9]	1.22 [30.9]	0 [0]	0.24 [6.1]	0.98 [25.0]
	Y	1.37 [35.0]	0.69 [17.5]	0 [0]	--	0.69 [17.5]	--	--	0 [0]	0 [0]	1.37 [35.0]	1.37 [35.0]	1.75 [44.5]	1.75 [44.5]
	φ (max)	0.25 [6.3]	0.19 [4.8]	0.25 [6.3]	--	0.19 [4.8]	--	--	.25-20 .25-20	.25-20 .25-20	.25-20 .25-20	.25-20 .25-20	0.16 [4.0]	0.16 [4.0]
D1B	X	0.81 [20.6]	0.53 [13.5]	0.25 [6.4]	--	1.09 [27.7]	--	--	0 [0]	1.63 [41.3]	1.63 [41.3]	0 [0]	--	--
	Y	0.25 [6.4]	0.94 [23.8]	0.25 [6.4]	--	0.94 [23.8]	--	--	0 [0]	0 [0]	1.19 [30.2]	1.19 [30.2]	--	--
	φ (max)	0.22 [5.6]	0.22 [5.6]	0.22 [5.6]	--	0.22 [5.6]	--	--	#10-32 #10-32	#10-32 #10-32	#10-32 #10-32	#10-32 #10-32	--	--
D1D04	X	1.06 [27.0]	0.72 [16.3]	0.16 [4.0]	1.97 [50.0]	1.44 [36.5]	1.06 [27.0]	--	0 [0]	2.125 [54.0]	2.125 [54.0]	0 [0]	--	--
	Y	0.34 [8.7]	0.91 [23.0]	1.22 [31.0]	0.59 [15.1]	0.91 [23.0]	1.47 [37.3]	--	0 [0]	0 [0]	1.812 [46.0]	1.812 [46.0]	--	--
	φ (max)	0.38 [9.6]	0.38 [9.6]	0.38 [9.6]	0.38 [9.6]	0.38 [9.6]	0.38 [9.6]	--	.25-20 .25-20	.25-20 .25-20	.25-20 .25-20	.25-20 .25-20	--	--
D1L, WE5	X	0.72 [18.1]	0.51 [12.8]	0.30 [7.4]	--	1.09 [27.6]	--	--	0 [0]	1.02 [25.6]	1.02 [25.6]	0 [0]	--	--
	Y	0.42 [10.9]	0.81 [20.7]	0.42 [10.9]	--	0.42 [10.9]	--	--	0 [0]	0 [0]	0.84 [21.4]	0.84 [21.4]	--	--
	φ (max)	0.13 [3.2]	0.13 [3.2]	0.13 [3.2]	--	0.13 [3.2]	--	--	#10-24 #10-24	#10-24 #10-24	#10-24 #10-24	#10-24 #10-24	--	--
DG4M4	X	0.57 [14.4]	0.82 [20.6]	0.57 [14.4]	--	0.32 [8.1]	--	--	0 [0]	1.13 [28.7]	1.13 [28.7]	0 [0]	0 [0]	--
	Y	1.19 [30.1]	0.69 [17.5]	0.19 [4.8]	--	0.69 [17.5]	--	--	0 [0]	0 [0]	1.37 [34.7]	1.37 [34.7]	0.94 [23.8]	--
	φ (max)	0.25 [6.3]	0.25 [6.3]	0.25 [6.3]	--	0.25 [6.3]	--	--	.25-20 .25-20	.25-20 .25-20	.25-20 .25-20	.25-20 .25-20	0.16 [4.0]	--
R8143	X	1.06 [27.0]	0.50 [12.7]	1.06 [27.0]	--	0.50 [12.7]	--	--	0 [0]	2.13 [54.0]	2.13 [54.0]	0 [0]	--	--
	Y	1.60 [40.6]	1.05 [26.7]	0.48 [12.2]	--	1.05 [26.7]	--	--	0 [0]	0 [0]	2.11 [53.7]	2.11 [53.7]	--	--
	φ (max)	0.44 [11.1]	0.44 [11.1]	0.44 [11.1]	--	0.44 [11.1]	--	--	.38-16 .38-16	.38-16 .38-16	.38-16 .38-16	.38-16 .38-16	--	--
RVT65	X	0.85 [21.5]	0.50 [12.7]	0.85 [21.5]	--	1.19 [30.2]	--	--	0 [0]	1.60 [40.6]	1.60 [40.6]	0 [0]	--	--
	Y	1.09 [27.6]	0.61 [15.7]	0.15 [3.8]	--	0.61 [15.7]	--	--	0 [0]	-0.03 [-0.8]	1.26 [32.0]	1.23 [31.3]	--	--
	φ (max)	0.31 [7.9]	0.31 [7.9]	0.31 [7.9]	--	0.31 [7.9]	--	--	#10-24 #10-24	#10-24 #10-24	#10-24 #10-24	#10-24 #10-24	--	--
DG4S4 -02 (D06)	X	1.750 [44.5]	1.120 [28.5]	0.380 [9.7]	3.120 [79.3]	2.380 [60.5]	2.810 [71.4]	1.75 [44.5]	0 [0]	3.500 [88.9]	3.500 [88.9]	0 [0]	--	--
	Y	0.560 [14.3]	1.380 [35.1]	2.000 [50.8]	2.000 [50.8]	1.380 [35.1]	0 [0]	2.180 [55.4]	0 [0]	0 [0]	2.75 [69.9]	2.75 [69.9]	--	--
	φ (max)	0.580 [14.7]	0.580 [14.7]	0.580 [14.7]	0.580 [14.7]	0.580 [14.7]	0.440 [11.2]	0.440 [11.2]	.38-16 .38-16	.38-16 .38-16	.38-16 .38-16	.38-16 .38-16	--	--

Standard Manifolds

Cover Plates

Valve Adaptors

Subplates

Servo Valve Subplates

Tapping Plates

Cartridge Valve Bodies

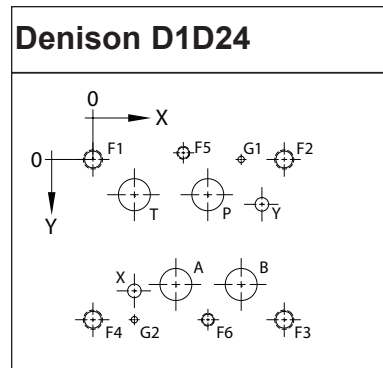
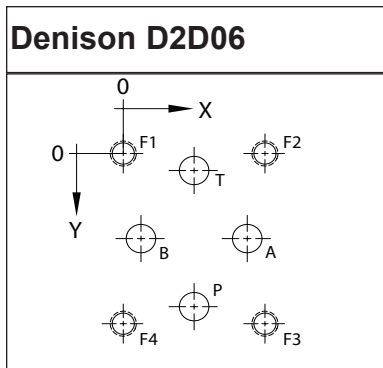
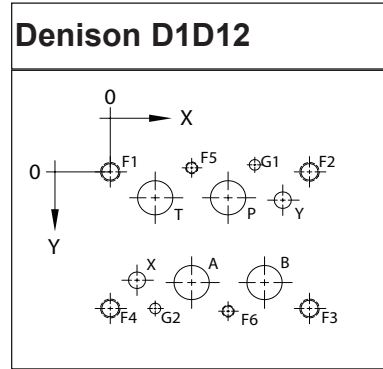
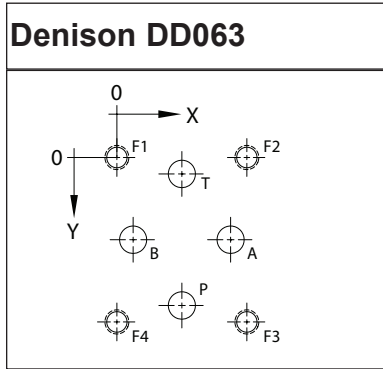
Header and Junction Blocks

Sandwich Modules

Technical Information

“Obsolete Valve” Patterns

These drawings are for reference only. Please consult the appropriate standard when dimensions are critical. Dimensions may vary on our products. It should not be assumed that each hole shown is found on a given product.



Pattern	Axis	P	A	T	B	X	Y	F1	F2	F3	F4	F5	F6	G1	G2
DD063	X	1.50 [38.1]	2.63 [66.7]	1.50 [38.1]	0.38 [9.5]	--	--	0 [0]	3.00 [76.2]	3.00 [76.2]	0 [0]	--	--	--	--
	Y	3.38 [85.7]	1.88 [47.6]	0.38 [9.5]	1.88 [47.6]	--	--	0 [0]	0 [0]	3.75 [95.3]	3.75 [95.3]	--	--	--	--
	φ (max)	0.63 [15.9]	0.63 [15.9]	0.63 [15.9]	0.63 [15.9]	--	--	.50-13 .50-13	.50-13 .50-13	.50-13 .50-13	.50-13 .50-13	--	--	--	--
D1D12	X	3.03 [77.0]	2.09 [53.2]	1.16 [29.4]	3.97 [100.8]	0.69 [17.5]	4.44 [112.7]	0 [0]	5.12 [130.2]	5.12 [130.2]	0 [0]	2.31 [58.7]	3.00 [76.2]	3.72 [94.5]	1.16 [29.4]
	Y	0.69 [17.5]	2.93 [74.6]	0.69 [17.5]	2.93 [74.6]	2.88 [73.0]	0.75 [19.0]	0 [0]	0 [0]	3.62 [92.1]	3.62 [92.1]	-0.09 [-2.4]	3.72 [94.5]	-0.19 [-4.8]	3.62 [92.1]
	φ (max)	0.91 [23.0]	0.91 [23.0]	0.91 [23.0]	0.91 [23.0]	0.44 [11.2]	0.44 [11.2]	.50-13 .50-13	.50-13 .50-13	.50-13 .50-13	.50-13 .50-13	.31-18 .31-18	.31-18 .31-18	0.28 [7.5]	0.28 [7.5]
D2D06	X	1.50 [38.1]	2.63 [66.7]	1.50 [38.1]	0.38 [9.5]	--	--	0 [0]	3.00 [76.2]	3.00 [76.2]	0 [0]	--	--	--	--
	Y	3.38 [85.7]	1.88 [47.6]	0.38 [9.5]	1.88 [47.6]	--	--	0 [0]	0 [0]	3.75 [95.3]	3.75 [95.3]	--	--	--	--
	φ (max)	0.63 [15.9]	0.63 [15.9]	0.63 [15.9]	0.63 [15.9]	--	--	.50-13 .50-13	.50-13 .50-13	.50-13 .50-13	.50-13 .50-13	--	--	--	--
D1D24	X	4.50 [114.3]	3.25 [82.5]	1.63 [41.3]	5.81 [147.6]	1.63 [41.3]	6.63 [168.3]	0 [0]	7.50 [190.5]	7.50 [190.5]	0 [0]	3.50 [76.2]	4.50 [114.3]	5.81 [138.6]	1.62 [41.3]
	Y	1.38 [35.0]	4.87 [123.8]	1.38 [35]	4.87 [123.8]	5.13 [130.2]	1.75 [44.5]	0 [0]	0 [0]	6.25 [158.8]	6.25 [158.8]	-0.31 [-7.9]	6.25 [158.8]	0 [0]	6.25 [158.8]
	φ (max)	1.25 [32.0]	1.25 [32.0]	1.25 [32.0]	1.25 [32.0]	0.44 [11.2]	0.44 [11.2]	.75-10 .75-10	.75-10 .75-10	.75-10 .75-10	.75-10 .75-10	.50-13 .50-13	.50-13 .50-13	0.28 [7.5]	0.28 [7.5]

Materials

Daman offers a wide range of material choices to meet most pressure rating, application, environment, and cost requirements. While the vast majority of products that we build have criteria that are best served by 6061-T6511 aluminum or 65-45-12 ductile iron, we also frequently review requests for custom products in other grades of aluminum and ductile iron, as well as stainless steel, carbon steel, and other advanced materials.

Aluminum

6061-T651 - Used in our entire aluminum standard product line and ninety-nine percent of our custom aluminum products. Items built from extruded bar are -T6511 temper and items built from plate are -T651 temper.

2024-T351 - Used for a small number of custom parts when specified. Usually it is chosen over 6061 when improved material strength is needed. The majority of what we purchase is plate.

7075-T351 - Used for a small number of custom parts when specified. Usually it is chosen over 6061 when improved material strength is needed. The majority of what we purchase is plate.

Ductile

65-45-12 - Used in our entire ductile standard product line and nearly all of our custom ductile products.

80-55-06 - Used for a very small number of custom parts. Usually it is chosen over 65-45-12 when improved material strength is needed.

Ductile Iron versus Carbon Steel

65-45-12 ductile iron has several qualities that make it the preferred material choice for applications of 5000 PSI maximum operating pressure. The main advantage over carbon steel is a grain structure that allows for ease of manufacturing, uniform corrosion resistance, consistent material quality, and improved dampening characteristics.

Stainless Steel

Stainless steel manifolds are often found in washdown, semiconductor, oil and gas, marine, and other offshore applications. Stainless steel is corrosion resistant, and is very durable. Most Daman standard products can be produced in stainless steel and we are continuously expanding our stainless machining capabilities. All Daman stainless steel standard parts are passivated. Contact us with any stainless steel standard or custom opportunity.

Other Materials

Daman custom product designs include industry common steels such as 1018 and 11L17. Daman has experience manufacturing custom products from many other materials including brass. Contact us to discuss your material requirements.

Tips For Material Selection

Material selection requires the consideration of several hydraulic system characteristics such as pressure, application duty cycle, and environmental atmosphere. Working pressure should be considered in accordance with ISO 4413 to determine appropriate material type. The characteristics below are common considerations for aluminum or ductile alloy.

Hydraulic System Characteristics

- The most obvious hydraulic criteria for material selection is system operating pressure. We rate nearly all of our 6061-T6 aluminum standard products, and all Daman-designed custom parts for 3000 PSI maximum operating pressure, with a 3:1 safety factor.
- We rate nearly all of our 65-45-12 ductile standard products, and all Daman-designed ductile custom parts for 5000 PSI maximum operating pressure, with a 3:1 safety factor.
- This rating is set based on the assumption that the system is properly designed, assembled, and maintained for its application and environment, and that it is used in an average duty cycle application.
- Customer designs must be reviewed for wall thickness integrity prior to assigning a Daman pressure rating. Following are some examples of hydraulic system characteristics that may necessitate overriding pressure rating as the determining factor in material selection.

Design

- High velocities
- Proper valve use
- Water and fluid

Application

- High duty cycle
- Shock and spike
- Layout

Environment

- Caustic solutions

Surface Treatments

Surface finish treatments for a manifold or related product are for improved cosmetic appearance, corrosion resistance, improved paint adhesion, or increased surface hardness. The type of material and the purpose for the coating can determine which coating to use. Below are general overviews of anodizing and electroless nickel. The following page specifies our processes as well as ordering information.

Surface Treatments Overview

Anodize

Application: Aluminum parts

- Sulfuric acid anodizing is applied utilizing a 10% to 20% sulfuric acid bath at 60°F to 80°F. Electrical current (2 to 9 amps per sq. ft.) is passed through the solution to the positively charged aluminum part (Anode). A reaction takes place on the surface of the aluminum part that changes the aluminum to aluminum oxide. Aluminum oxide in this form is a crystalline structure that is practically nonconductive. The reaction will continue, and the film will grow, until its dielectric properties do not allow electrical current to continue to pass through the film. This process produces a nearly clear oxide coating which is usually less than 0.001” thick. The coating is then sealed to improve corrosion protection or colorfastness when dyed.
- Specifically this coating is referred to as sulfuric anodize, clear anodize, or Type II anodize.
- A dye may be used to add color to the process. Common available colors are black, red, or blue.
- Anodizing provides good corrosion protection in mild environments and minimum wear protection.

Electroless Nickel

Application: Ductile iron parts

- The deposition of the nickel is autocatalytic. This means that the nickel is deposited on the substrate material without the use of external electrical current. Electroless nickel is applied by submerging the part in a well-agitated bath which operates between 180 and 190 degrees F.
- An extensive cleaning process to remove all dirt, oils and oxides prior to plating is often more involved than the plating process itself. This ensures good adhesion of the nickel to the ductile substrate.
- Phosphorus is present in all electroless nickel. The higher the level, the better the corrosion resistance.
- ROHS compliant.
- Free of cadmium, lead, chrome.
- Professional appearance.
- Excellent results in industrial applications, mining, and railroad applications.
- Not suitable for applications where a specific salt spray hours rating is required.



Coatings Available For Daman Standard Product Lines

Anodizing options available for all catalogued aluminum parts:

"-BA" added to the end of the part number for black anodize.

"-CA" added to the end of the part number for clear anodize.

Electroless nickel option available for all catalogued ductile parts:

"-EN" added to the end of the part number for electroless nickel.

"-BA" Coating: 6061-T6 Aluminum with Black Anodize

Process used conforms to MIL-A-8625F Type II, Class 2

- Dyed black.
- Nickel acetate sealed.
- Anodic thickness varies from approximately 0.0002 - 0.0008 based on machined features.
- Sample salt spray testing had acceptable performance at 96 hrs.
- One or more mounting holes may be unanodized due to racking requirements.

"-CA" Coating: 6061-T6 Aluminum with Clear Anodize

Process used conforms to MIL-A-8625F Type II, Class 1

- No added color; appearance is of matte aluminum.
- Nickel acetate sealed.
- Anodic thickness varies from approximately 0.0002 - 0.0008 based on machined features.
- Sample salt spray testing had acceptable performance at 96 hrs.
- One or more mounting holes may be unanodized due to racking requirements.

"-EN" Coating: D-65-45-12 Ductile Iron with Electroless Nickel Coating

Process used conforms to MIL C26074, AMS 2404, ASTM B1733

- NOTE: Thickness supplied is less than A, B or C definition, therefore no defined salt spray hour rating (Coating thickness is 0.0002 - 0.0004 inch).
- Chemically applied completely uniform deposit thickness.
- High Phosphorus - 10-13 weight %.
- Uniform thickness; excellent hardness; resistant to scratches, strikes and chemicals.
- Meets or exceeds adhesion testing in ASTM B571.

Performance of surface treatments varies by application and environment. No specific corrosion resistance is warranted.