

MA series motors

CHARACTERISTICS OF THE MA SERIES MOTORS (SAE)

Motor model	Displacement		Continuous max. speed (1)	Intermittent max. speed (1)	Max. flow absorbed		Torque		Torque at 350 bar (5100 psi)		Theoretical maximal power at 5800 psi 400 bar		Max. allowable pressure continuous / peak		Weight (kg)	
	cu.in/rev	cc/rev			gpm	l/mn	lbf.ft/psi	N.m/bar	lbf.ft	N.m	HP	kW	psi	bar	lbs	Kg
MA 10	0.62	10.2	8000	8800	21.6	82	0.0082	0.16	42	57	72.9	54.4	5800 / 6525	400 / 450	14.3	6.5
MA 12	0.73	12.0	8000	8800	25.4	96	0.0097	0.19	49	67	85.7	64	5800 / 6525	400 / 450	14.3	6.5
MA 18	1.10	18.0	8000	8800	38.0	144	0.0145	0.29	74	100	128.7	96	5800 / 6525	400 / 450	14.3	6.5
MA 25	1.52	24.9	6300	6900	41.4	157	0.0201	0.40	102	139	140.1	104.5	5800 / 6525	400 / 450	25	11.5
MA 32	1.96	32.1	6300	6900	53.4	202	0.0259	0.51	132	179	180.7	134.8	5800 / 6525	400 / 450	25	11.5
MA 41	2.51	41.1	5600	6200	60.8	230	0.0331	0.65	169	229	205.6	153.4	5800 / 6525	400 / 450	25	11.5
MA 45	2.77	45.4	5000	5500	60.0	227	0.0366	0.72	187	253	202.8	151.3	5800 / 6525	400 / 450	40	18
MA 50	3.07	50.3	5000	5500	66.4	252	0.0405	0.80	207	280	224.7	167.6	5800 / 6525	400 / 450	40	18
MA 63	3.84	63.0	5000	5500	83.2	315	0.0508	1.00	259	351	281.5	210	5800 / 6525	400 / 450	40	18
MA 80	4.91	80.4	4500	5000	95.6	362	0.0648	1.28	330	448	323.3	241.2	5800 / 6525	400 / 450	51	23
MA 90	5.49	90.0	4500	5000	107.0	405	0.0725	1.43	370	501	361.9	270	5800 / 6525	400 / 450	51	23
MA 108R	6.61	108.3	3400	4500	97.3	368	0.0872	1.72	445	603	329	245.4	5800 / 6525	400 / 450	77	35
MA 125	7.65	125.4	3400	4500	112.6	426	0.1010	2.00	515	699	381	284.2	5800 / 6525	400 / 450	77	35
MA 160	9.76	160.0	3600	4000	152.2	576	0.1289	2.55	657	891	514.7	384	5800 / 6525	400 / 450	107	48.5
MA 180	11.02	180.6	3600	4000	171.8	650	0.1455	2.87	742	1006	581	433.4	5800 / 6525	400 / 450	107	48.5

(1) For higher speeds, please contact us.

► Acceptable forces applied to motor shaft

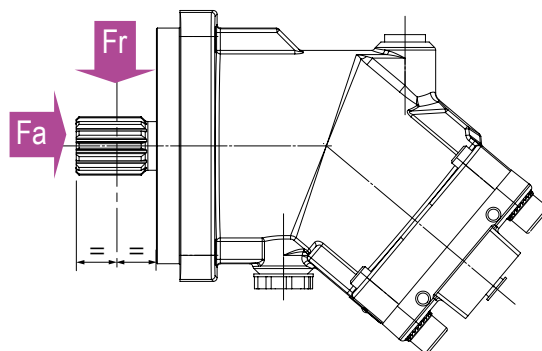
Motor model		10	12	18	25	32	41	45	50	63	80	90	108 R	125	160	180
Fr	lbf	528	630	900	1350	1462.5	1574	1462.5	1686	2023	2360	2473	2812	3262	4050	4500
	N	2350	2800	4000	6000	6500	7000	6500	7500	9000	10500	11000	12500	14500	18000	20000
Fa	lbf/psi	0.19	0.23	0.31	0.42	0.46	0.62	0.62	0.62	0.77	0.93	1.03	1.24	1.33	1.32	1.47
	N/psi (N/bar) *	0.83 (12)	1.03 (15)	1.37 (20)	1.86 (27)	2.06 (30)	2.75 (40)	2.75 (40)	2.75 (40)	3.44 (50)	4.14 (60)	4.62 (67)	5.52 (80)	5.93 (86)	5.86 (85)	6.55 (95)

Fr: radial force measured at mid point of length of shaft.

Fa: axial force which tends to push the shaft inwards.

* Differential pressure between A and B.

For other forces, please contact us.



Order code system of MA series motors

MA	...	C	..	..	U2	.	.	..	..
01	02	03	04	05	06	07	08	09	10

To obtain the code for your motor, complete the different parameters 02, 04, 05, 07, 08, 09 and 10 in the table on the left according to the options you require (see table below).

Motor																	
01	Motor																MA

Displacement																	
02		10	12	18	25	32	41	45	50	63	80	90	108R	125	160	180	

Mounting flange					
03		SAE B 2 bolts	SAE C 4 bolts	SAE D 4 bolts	C

Shaft																	
04	Splined SAE J498b	13 T 16/32 DP SAE B	13 T 16/32 DP SAE B	13 T 16/32 DP SAE B	14 T 12/24 DP SAE C	14 T 12/24 DP SAE C	14 T 12/24 DP SAE C	14 T 12/24 DP SAE C	14 T 12/24 DP SAE C	14 T 12/24 DP SAE C	14 T 12/24 DP SAE C	14 T 12/24 DP SAE C	13 T 8/16 DP SAE D	13 T 8/16 DP SAE D	13 T 8/16 DP SAE D	13 T 8/16 DP SAE D	S1
			—	—	—	—	—	—	—	—	—	17 T 12/24 DP SAE CC	17 T 12/24 DP SAE CC	—	—	—	S2
		—	—	—	—	—	—	—	—	—	—	21 T 16/32 DP	21 T 16/32 DP	—	—	—	S3
	DIN 6885	—	—	—	—	—	—	—	—	—	—	—	—	—	Ø50 mm	Ø50 mm	D1
	Keyed SAE J744	Ø1"	Ø1"	Ø1"	Ø1 1/4"	Ø1 1/4"	Ø1 1/4"	Ø1 1/4"	Ø1 1/4"	Ø1 1/4"	Ø1 1/2"	Ø1 1/2"	Ø1 3/4"	Ø1 3/4"	—	—	K1
		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	K2

Inlet ports A and B																	
05	SAE flange ports	Bottom	0	—	—	—	—	•	•	•	•	•	•	•	•	•	L0
		Rear	0	—	—	—	•	•	•	•	•	•	•	•	•	•	M0
		Side	0	—	—	—	•	•	•	•	•	•	•	•	•	•	N0
			1	—	—	—	•	•	•	•	•	•	•	•	•	•	N1
	Threaded	Side	0	•	•	•	•	•	•	—	—	—	—	—	—	—	Q0
			1	—	—	—	•	•	•	—	—	—	—	—	—	—	Q1
		Rear	0	•	•	•	•	•	•	—	—	—	—	—	—	—	P0

0 = Without suitability for valves
1 = Compatible with flushing valve

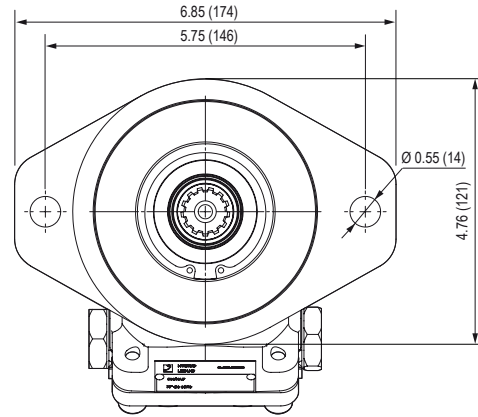
Drain ports T1 and T2																	
06		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	U2

Suitable for use of speed sensor																	
07	Yes	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	1
	No	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	0

Speed sensor																	
08	Yes	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	1
	No	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	0

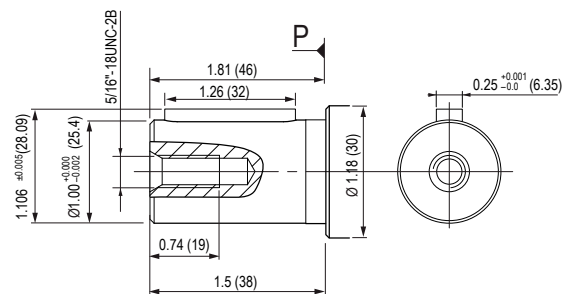
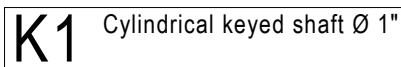
Valves																	
09	Without	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	SV
	With flushing valve	—	—	—	•	•	•	•	•	•	•	•	•	•	•	•	VB

Low temperature option																	
10	Yes (NBR)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	N
	No (FKM)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	F

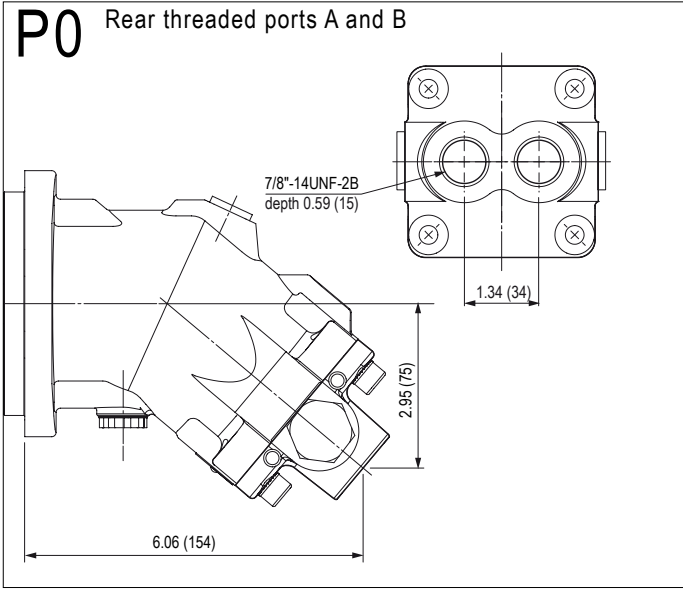
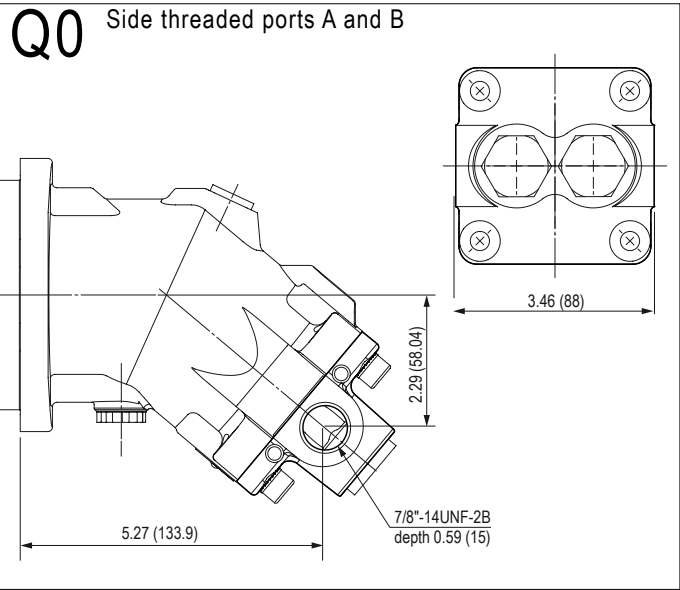


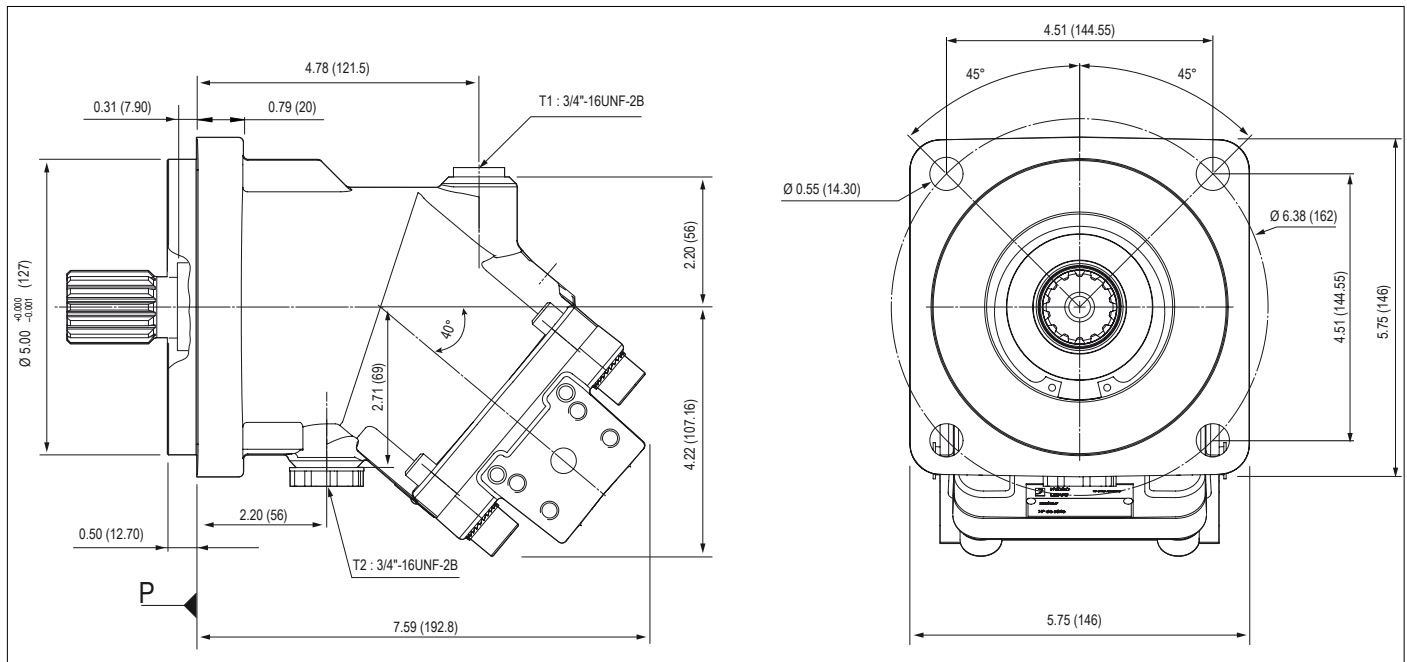
► Shaft end

S1 Splined shaft 13T 16/32DP 7/8"



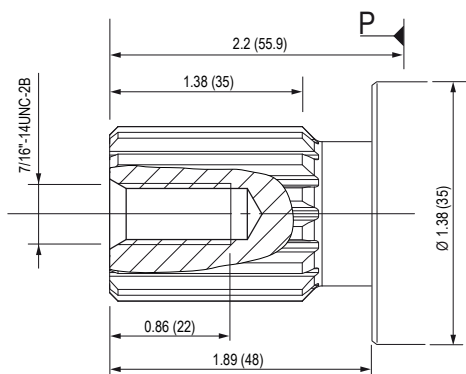
► Inlet ports



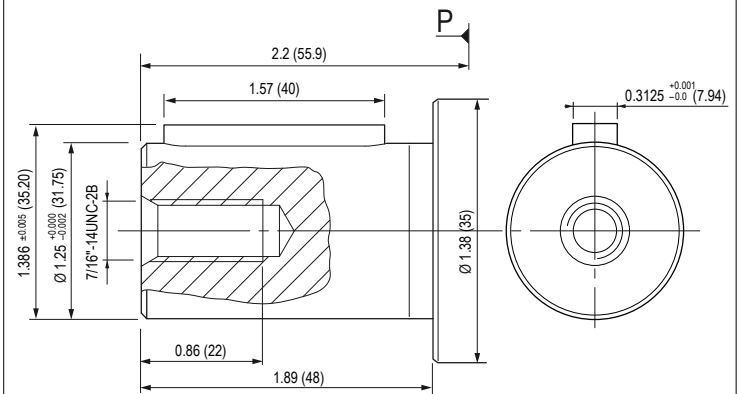


► Shaft end

S1 Splined shaft 14T 12/24DP 1¼"

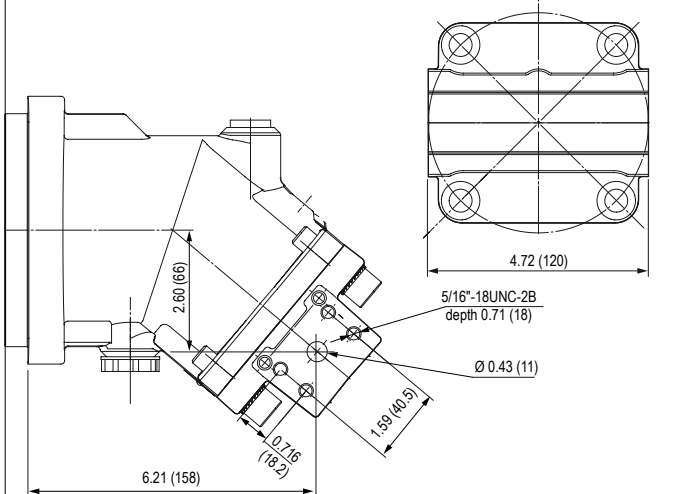


K1 Cylindrical keyed shaft $\varnothing 1\frac{1}{4}$ "

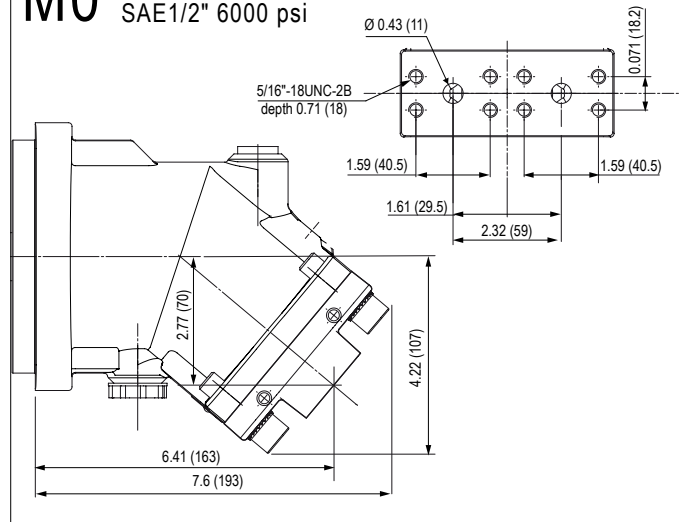


► Shaft end

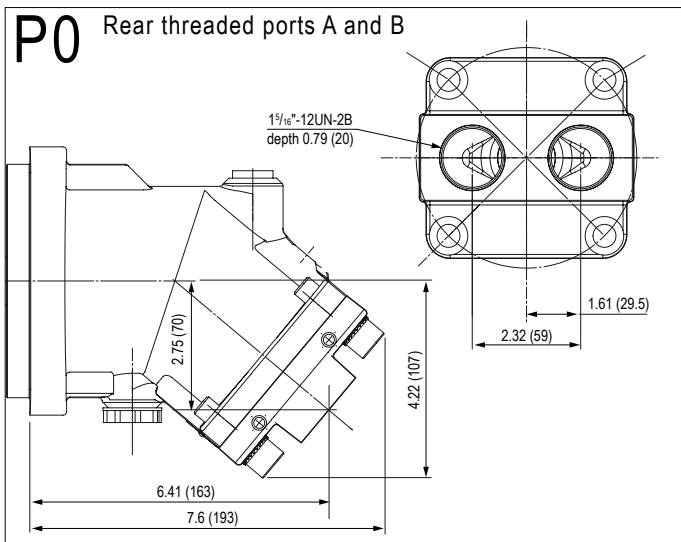
N0 or N1 Side SAE flange ports A and B
SAE 1/2" 6000 psi



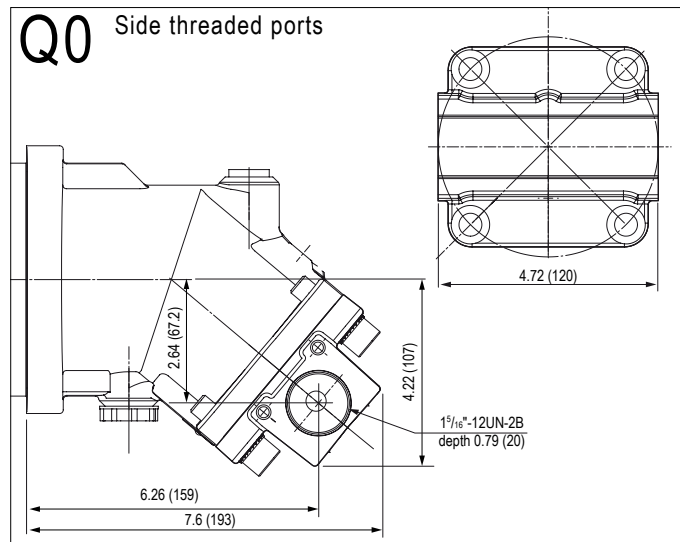
M0 Rear SAE flange ports A and B
SAE 1/2" 6000 psi



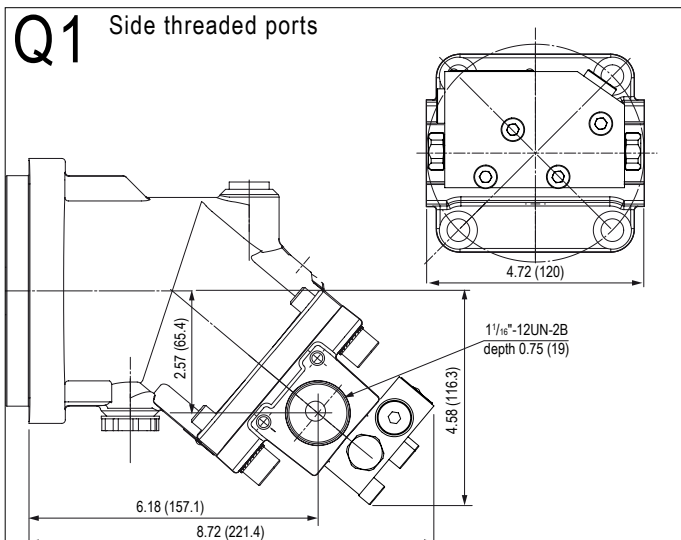
P0 Rear threaded ports A and B

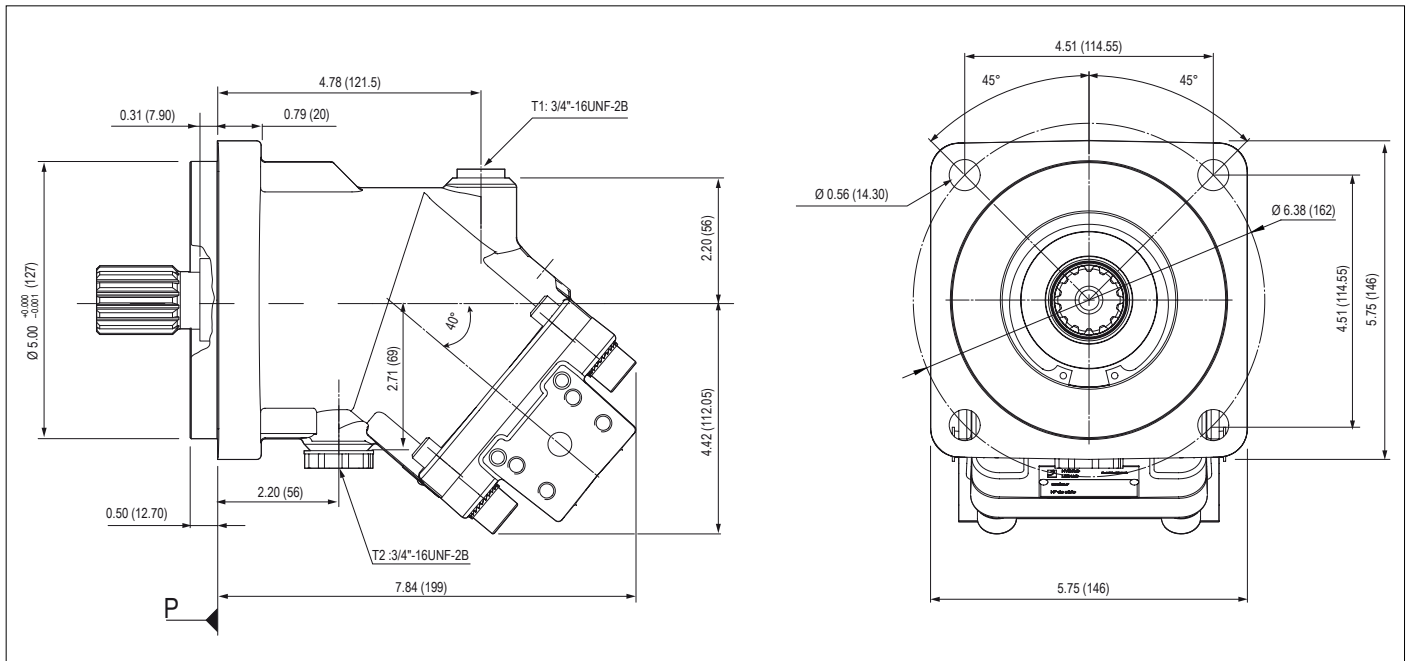


Q0 Side threaded ports

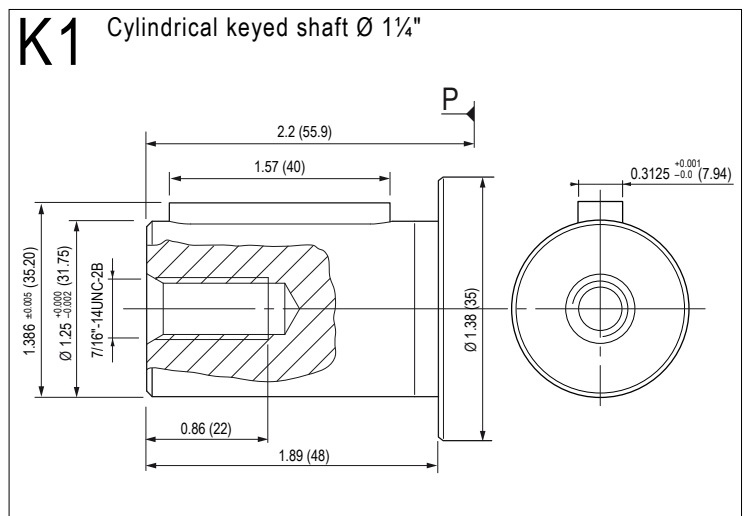
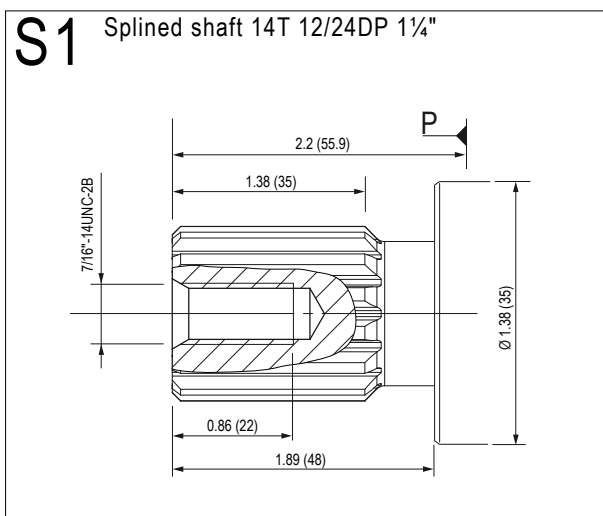


Q1 Side threaded ports



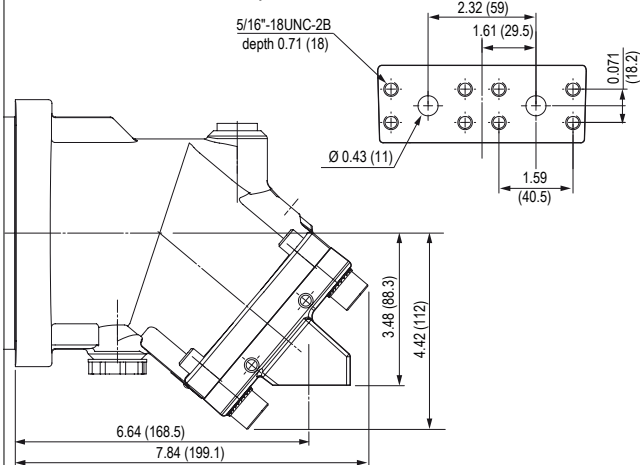


► Shaft end

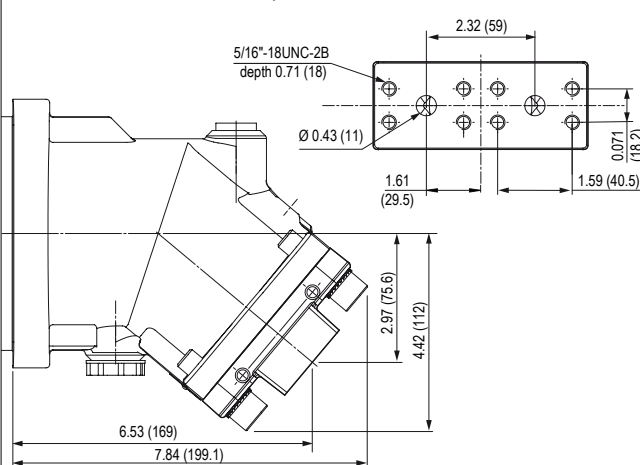


► Inlet ports

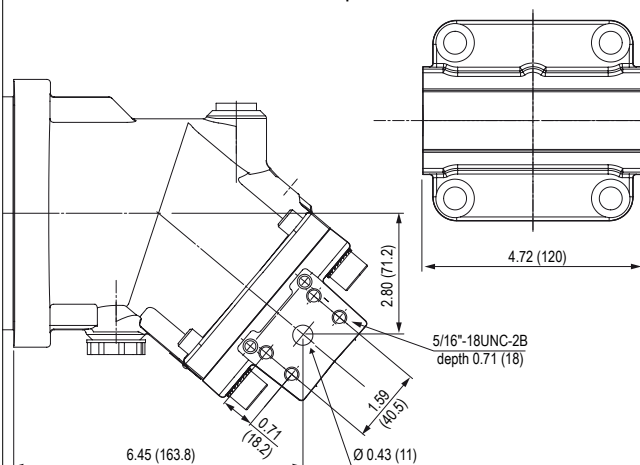
L0 SAE flange ports, bottom SAE 1/2" 6000 psi



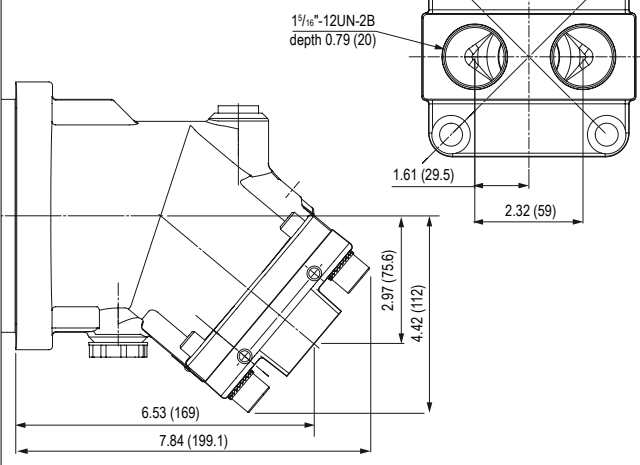
M0 Rear flange ports SAE 1/2" 6000 psi



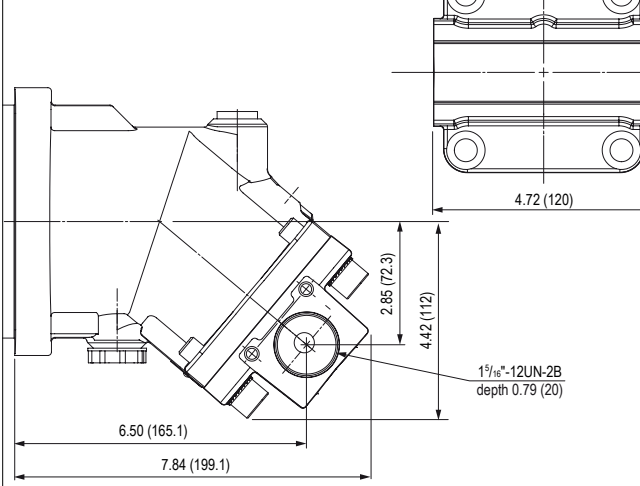
N0 or N1 Side flange ports A and B SAE 1/2" 6000 psi



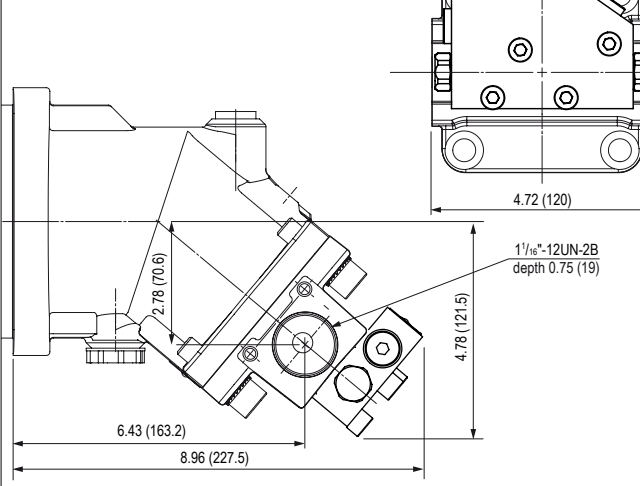
P0 Rear threaded ports

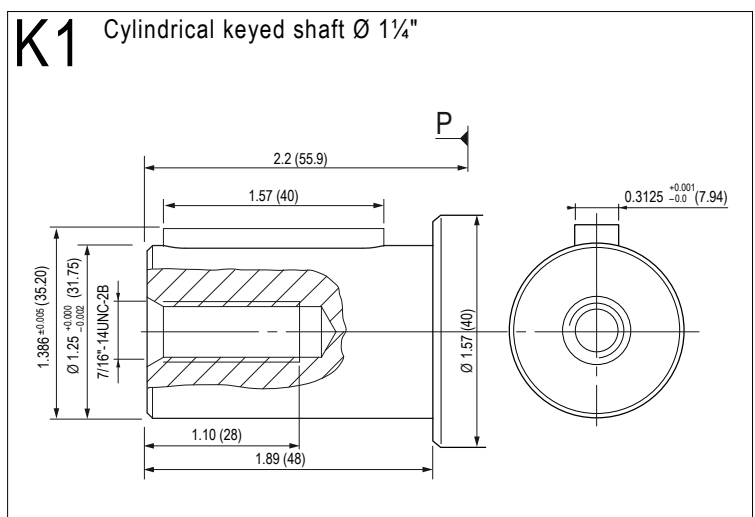


Q0 Side threaded ports A and B

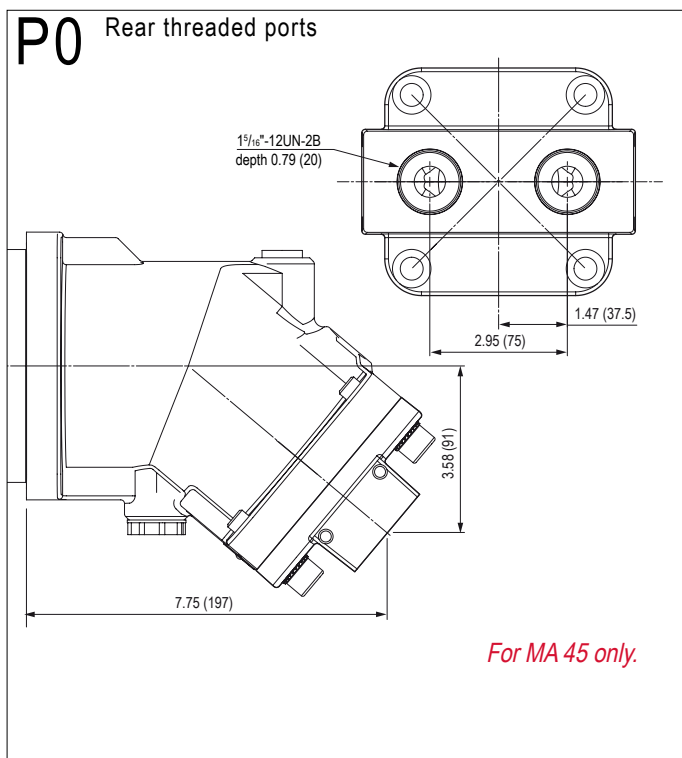
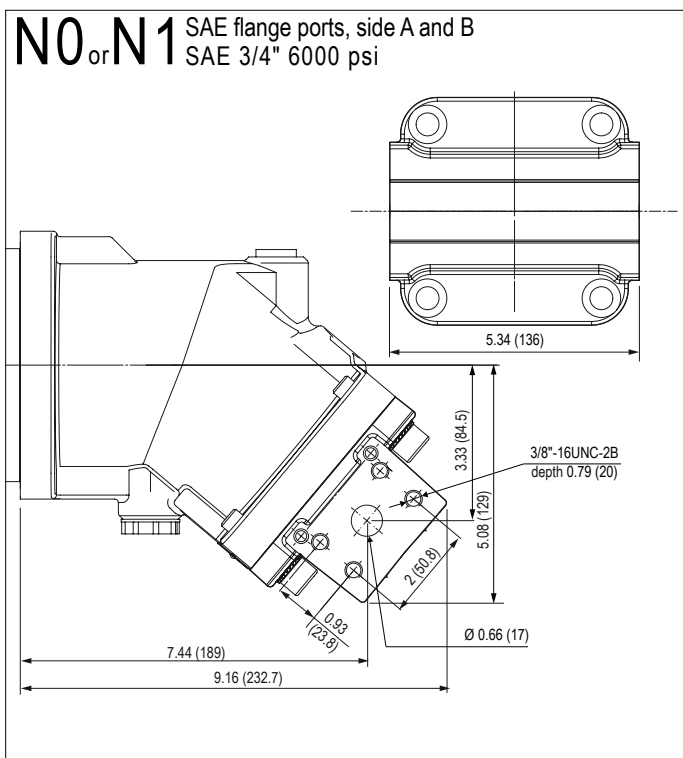
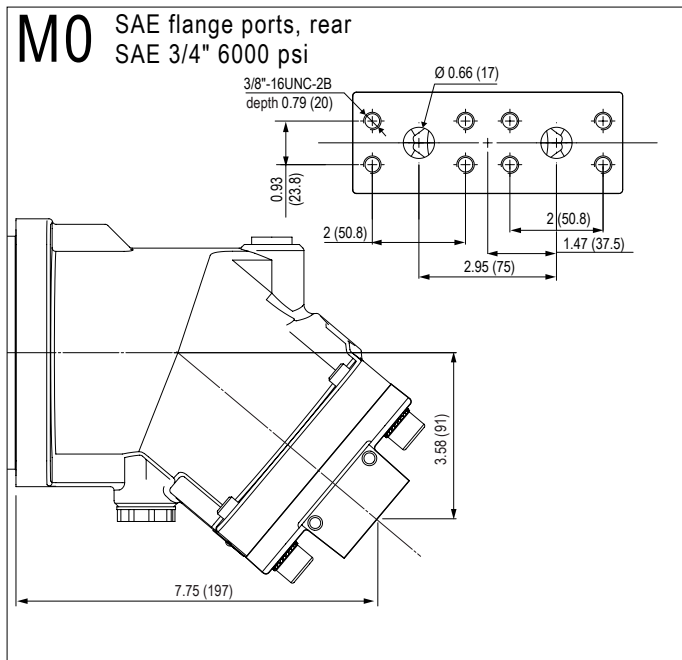
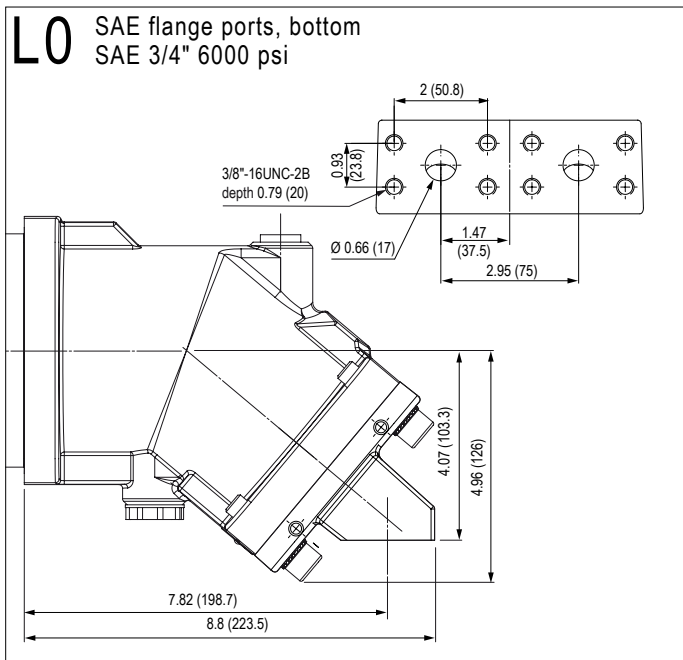


Q1 Side threaded ports A and B + valve





► Inlet ports





Technical drawing of a 1/2-14 UNC-2B hex bolt and a hexagonal nut. The drawing includes a side view of the bolt and a top view of the nut. Dimensions are given in inches and millimeters.

Bolt Dimensions:

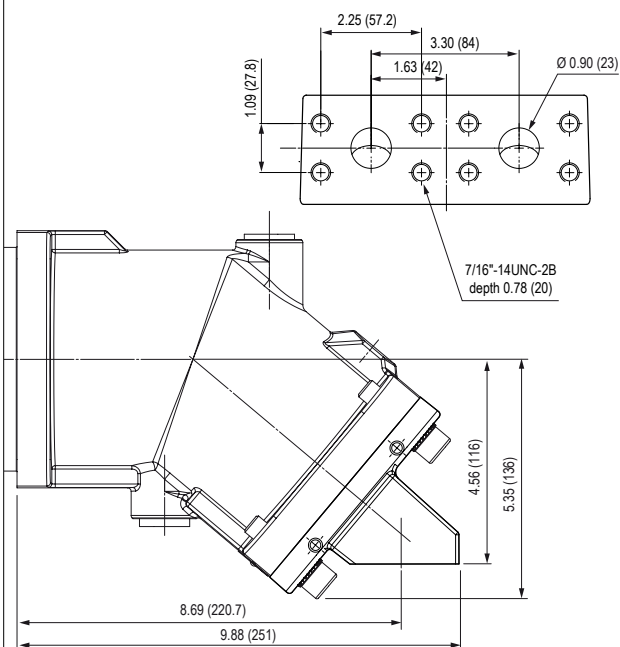
- Total Length: 2.44 (61.9)
- Head Diameter: 1.664 $^{+0.001}_{-0.002}$ (42.26)
- Head Height: 0.150 $^{+0.00}_{-0.002}$ (38.10)
- Thread Length: 1.10 (28)
- Total Length (including head): 2.13 (54)
- Thread Specification: 7/16"-14UNC-2B

Nut Dimensions:

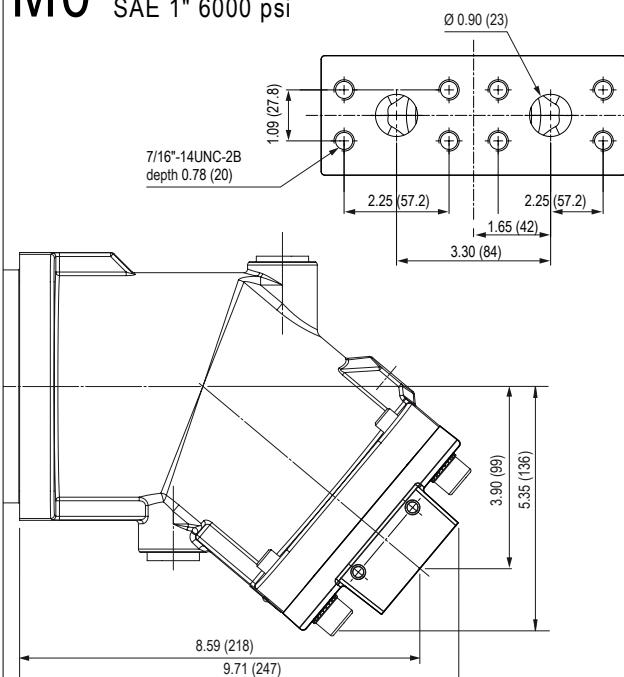
- Height: 0.3780 $^{+0.001}_{-0.0}$ (9.52)
- Major Diameter: 1.77 (45)

► Inlet ports

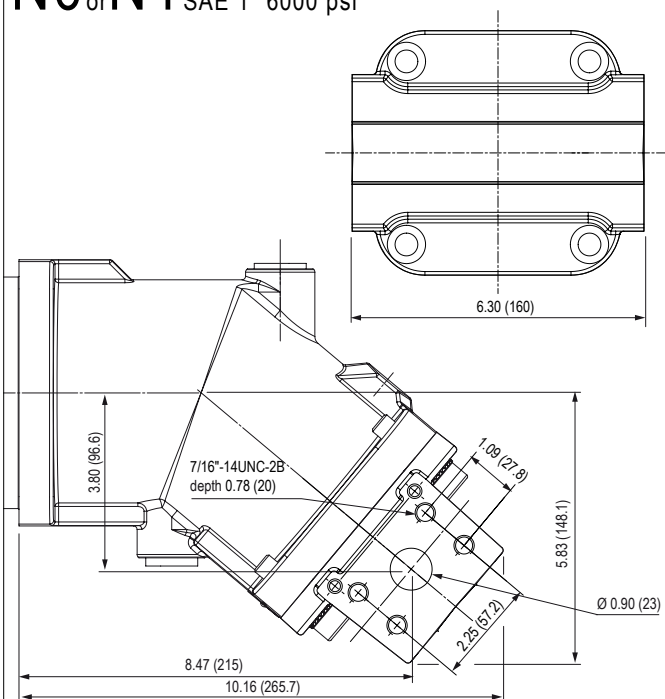
L0 SAE flange ports, bottom SAE 1" 6000 psi

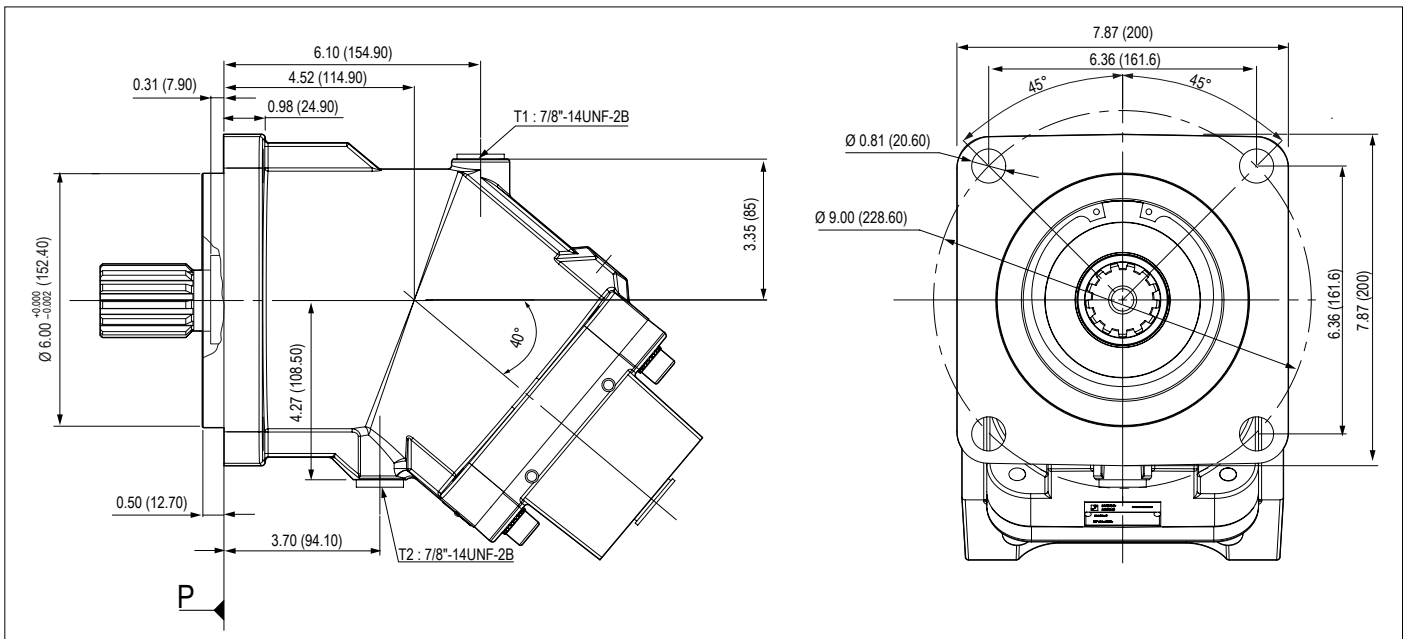


M0 SAE flange ports, rear SAE 1" 6000 psi



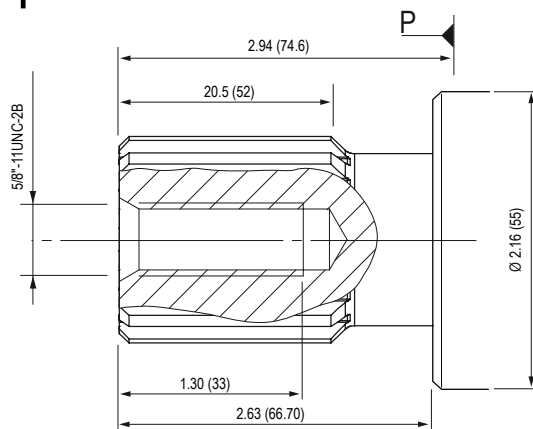
N0 or N1 SAE flange ports, side A and B SAE 1" 6000 psi



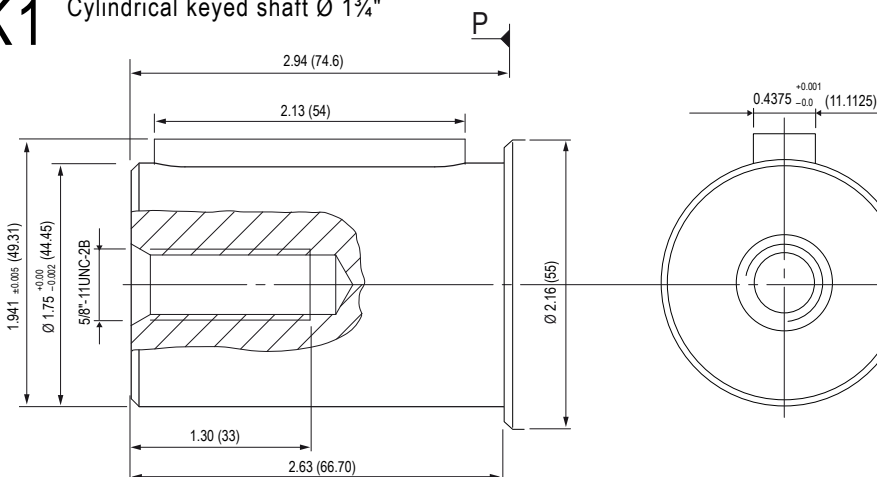


► Shaft end

S1 Splined shaft 13T 8/16DP 1 3/4"



K1 Cylindrical keyed shaft Ø 1 3/4"



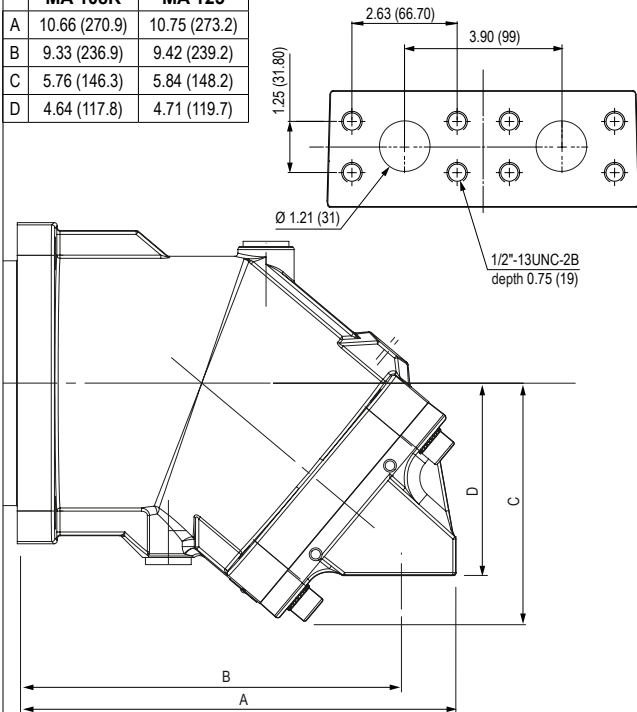
Dimensions in inches (mm) are given only as an indication.

MA 108 R - 125

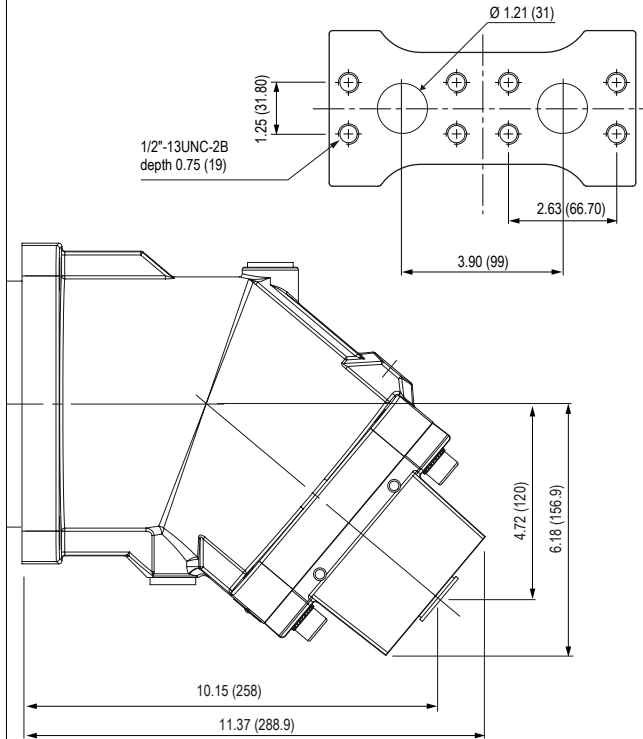
► Inlet ports

L0 SAE flange ports, rear SAE 1 1/4" 6000 psi

	MA 108R	MA 125
A	10.66 (270.9)	10.75 (273.2)
B	9.33 (236.9)	9.42 (239.2)
C	5.76 (146.3)	5.84 (148.2)
D	4.64 (117.8)	4.71 (119.7)

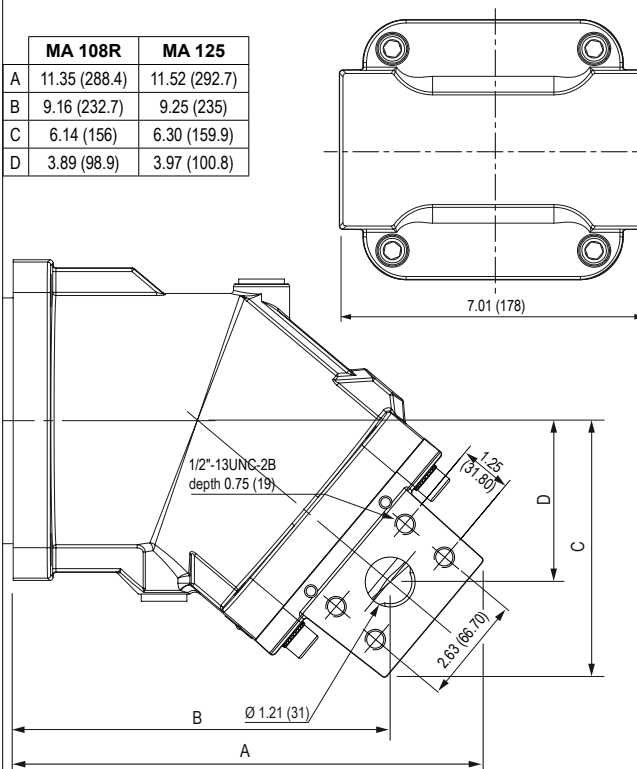


M0 SAE flange ports, bottom SAE 1 1/4" 6000 psi

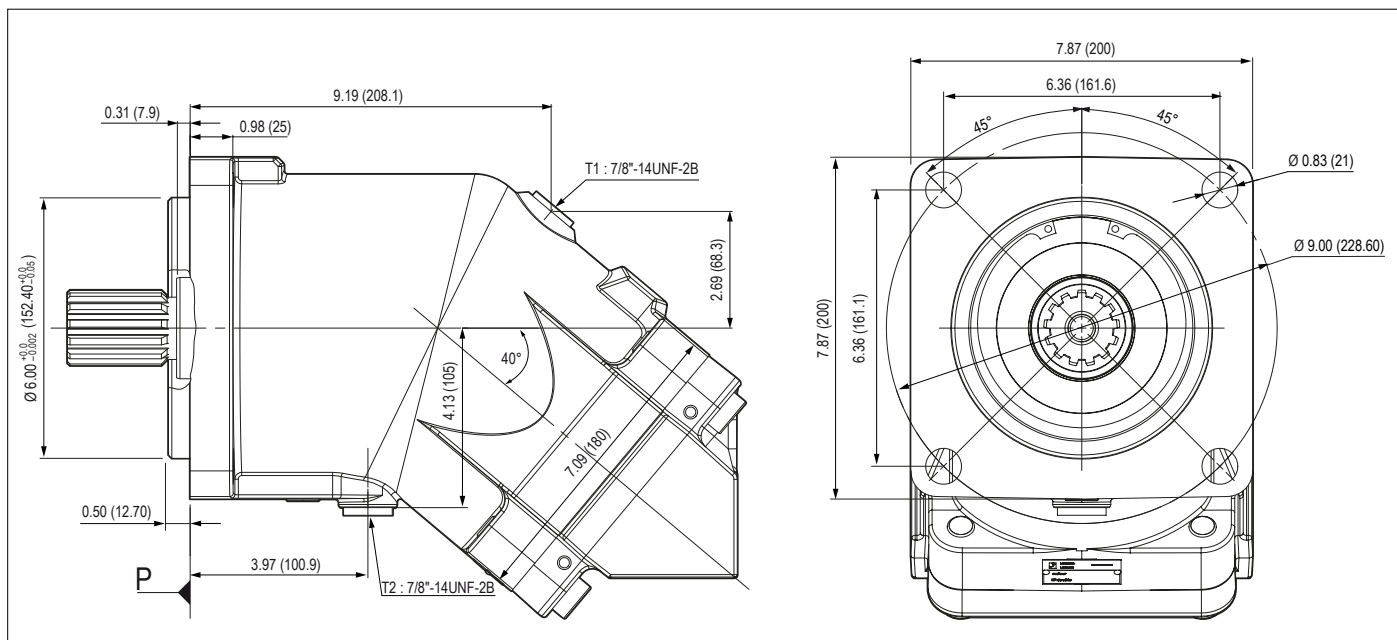


N0 or N1 SAE flange ports, side A and B SAE 1 1/4" 6000 psi

	MA 108R	MA 125
A	11.35 (288.4)	11.52 (292.7)
B	9.16 (232.7)	9.25 (235)
C	6.14 (156)	6.30 (159.9)
D	3.89 (98.9)	3.97 (100.8)

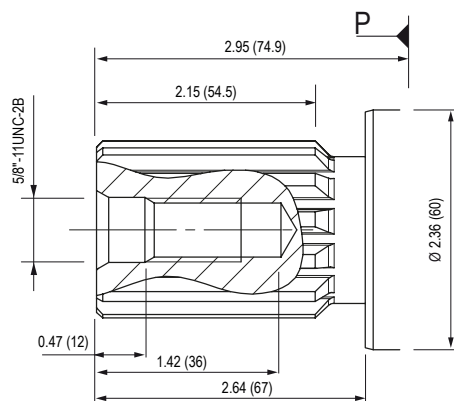


Dimensions in inches (mm) are given only as an indication.

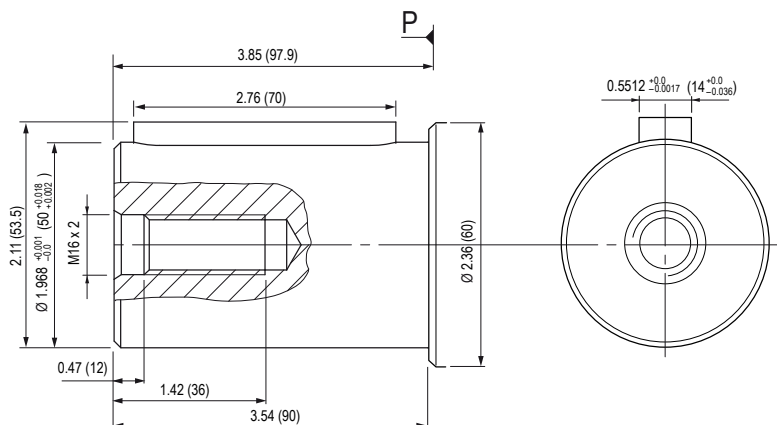


► Shaft end

S1 Splined shaft 13T 8/16DP 1 3/4"

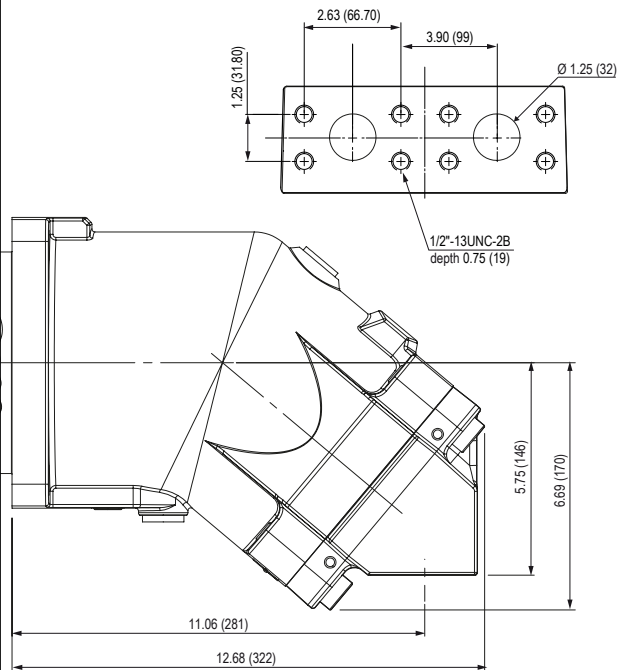


D1 Cylindrical keyed shaft Ø 50 DIN 6885 AS 14 x 9 x 70 mm

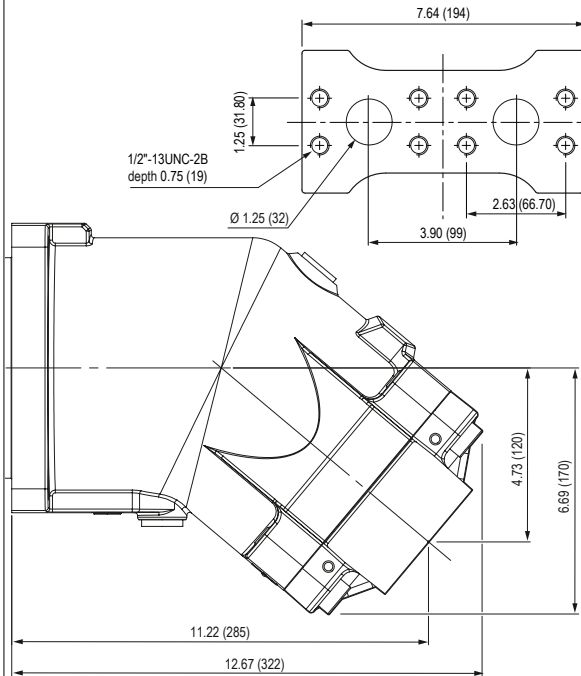


► Inlet ports

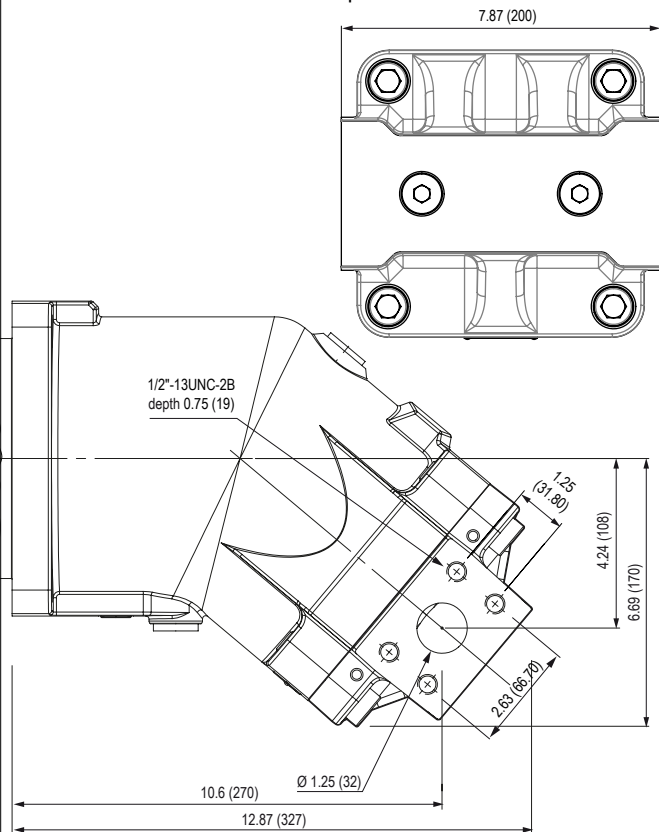
L0 SAE flange ports, bottom
SAE 1 1/4" 6000 psi



M0 SAE flange ports, rear
SAE 1 1/4" 6000 psi



N0 or N1 SAE flange ports, side A and B
SAE 1 1/4" 6000 psi



Dimensions in inches (mm) are given only as an indication.