

Technical Information

The Ultimate In Performance From A Small Frame Motor

Parker's TE Series motor provides all that could be expected of a general purpose motor and more. Patented 60:40 spline geometry provides drivetrain strength for severe applications. Roller vanes and sealed orbit commutation assure high volumetric efficiency and smooth low speed operation. Cooling fluid flow across splines and seals mean long, trouble free life.



Options

- All Common 1 inch, 25mm or 7/8 inch 13 Tooth Shafts
- SAE A 2 Bolt, 4 Bolt Magneto or 4 Bolt Mounting
- Wheel Mount
- SAE O-Ring, NPTF, Manifold or BSPF Porting
- Front or Rear Porting
- Speed Sensor
- External Cross - Over Relief Valve Package
- Free Running Rotor Set
- Reverse Timed Manifold
- Corrosion Resistance

Features

- **Roller Vane Power Element** — For High Volumetric Efficiency and Long Life
- **Orbiting Commutator** — For Accurate Timing, Smooth Low Speed Operation
- **Full Flow Spline Lubrication** — For Extended Spline Life
- **High Pressure Shaft Seal** — For High Back Pressure Operation Without External Drain Lines
- **High Flow Shaft Seal Cooling** — For Long Seal Life
- **60:40 Spline Geometry** — For Superior Powertrain Strength, Long Life

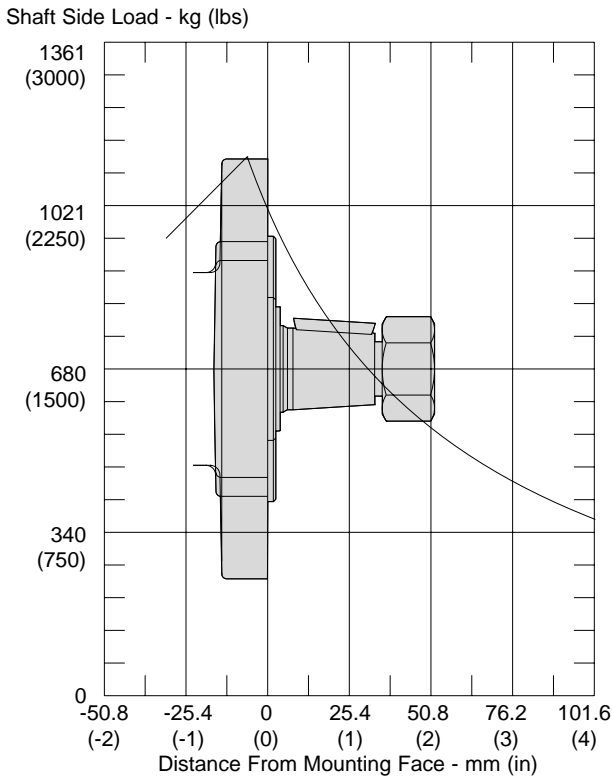
TE Specifications

Code		0045	0050	0065	0080	0100	0130	0165	0195	0230	0260	0295	0330	0365	0390
Displacement	cc/rev	45	50	66	82	98	130	163	196	228	261	293	326	370	392
	(cu in/rev)	(2.7)	(3.0)	(4.0)	(5.0)	(6.0)	(8.0)	(10.0)	(11.9)	(13.9)	(15.9)	(17.9)	(20.0)	(22.6)	(24.0)
Maximum Speed (rpm) @ Maximum Continuous Flow		805	640	654	546	456	344	274	230	247	215	192	171	146	143
Pressure Differential Maximum Continuous	bar	137.9	137.9	137.9	137.9	137.9	137.9	137.9	137.9	120.7	113.8	106.9	100.0	91.4	86.2
	(psid)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(2000)	(1750)	(1650)	(1550)	(1450)	(1325)	(1250)
Maximum Intermittent	bar	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	148.3	137.9	127.6	117.2	108.6	103.4
	(psid)	(2750)	(2750)	(2750)	(2750)	(2750)	(2750)	(2750)	(2750)	(2400)	(2250)	(2100)	(1950)	(1825)	(1750)
Max. Torque @ Max. Continuous Pressure	nm	70.5	88.7	122.0	153.5	183.5	248.7	308.7	379.6	370.2	402.3	427.5	443.6	467.6	444.6
	(lb-in)	(624)	(785)	(1080)	(1359)	(1624)	(2201)	(2732)	(3360)	(3277)	(3561)	(3784)	(3926)	(4139)	(3935)
Max. Torque @ Max. Intermittent Pressure	nm	90.0	112.8	154.2	194.1	231.9	313.6	389.4	476.9	461.0	492.9	515.6	523.2	558.6	538.7
	(lb-in)	(797)	(998)	(1365)	(1718)	(2053)	(2776)	(3447)	(4221)	(4080)	(4363)	(4564)	(4631)	(4944)	(4768)

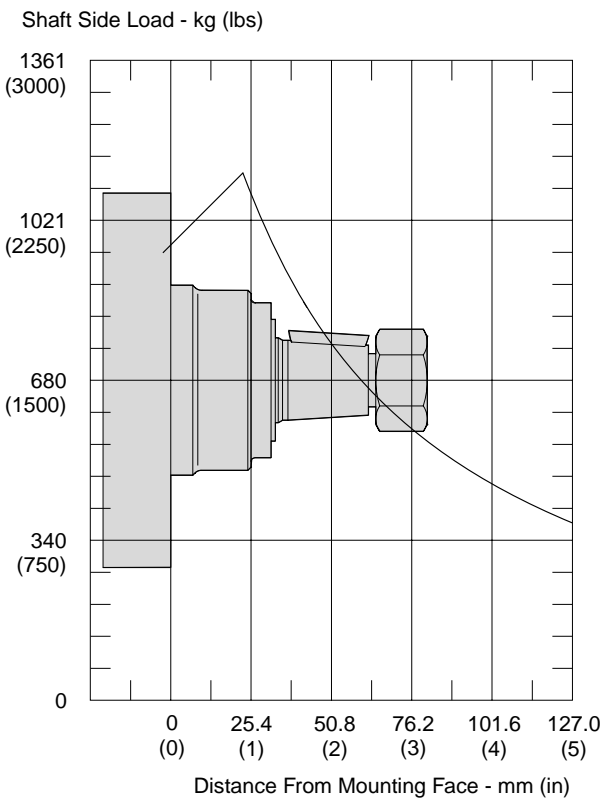


Technical Information

Maximum Side Load Capacity  
Flange Mount

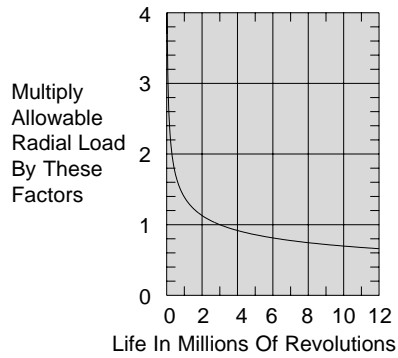


Wheel Mount





Application of the above uni-directional radial loads will result in a B-10 life of 3 million revolutions. For B-10 life at other radial loads, apply the factors from the curve at top of next column.

B-10 Life Factors



Performance Data

Continuous / Intermittent\* Operation

-  = Continuous
-  = Intermittent\*

\*Intermittent operation is defined as less than 10% of each minute.

Performance data based on testing using 10W40 oil with a viscosity of 200 SUS at 54° C (130° F.)

Performance data is typical. Actual data may vary slightly from one production motor to another.

Low Speed High Torque Motors  
TE Series

Performance Data

Code 0045

45 cc / rev

	PRESSURE (BAR)				
	34.5	69.0	103.4	137.9	172.4
1.9	13.7 41	30.7 35	48.0 28	65.4 22	83.0 14
3.8	14.2 86	31.9 79	49.7 72	67.7 65	85.5 56
7.6	14.5 176	32.5 168	51.1 161	69.9 152	89.0 141
11.4	14.2 266	32.4 257	51.2 249	70.0 239	89.1 227
15.1	13.9 356	32.2 346	51.3 337	70.5 326	89.9 313
18.9	13.4 446	31.7 435	51.0 425	70.5 413	90.0 398
26.5	11.9 625	30.5 613	49.7 601	69.5 587	89.6 570
34.1	10.6 805	29.3 791	48.6 777	68.4 761	88.6 742

Flow (LPM)

TORQUE (nm) 68.4  
SPEED (RPM) 761

Code 0050

50 cc / rev

	PRESSURE (BAR)				
	34.5	69.0	103.4	137.9	172.4
1.9	16.5 32	36.9 23	58.3 13	79.7 6	
3.8	18.0 69	39.0 60	60.7 50	82.1 41	103.3 25
7.6	19.2 146	41.1 136	63.6 124	86.3 113	108.6 94
11.4	18.9 225	41.0 214	63.8 203	86.8 191	109.5 172
15.1	19.1 294	41.5 282	64.9 271	88.6 260	112.2 241
18.9	18.6 363	41.2 349	64.9 339	88.7 327	112.8 307
26.5	17.6 501	40.3 485	64.2 474	88.4 460	112.6 440
34.1	15.9 640	38.6 621	62.7 609	87.1 594	111.6 572
45.4	12.9 835	35.8 813	60.0 802	84.5 786	109.1 766

Flow (LPM)

Code 0065

65 cc / rev

	PRESSURE (BAR)				
	34.5	69.0	103.4	137.9	172.4
1.9	24.9 24	54.3 17	83.9 11	113.4 3	
3.8	26.2 52	56.3 45	86.2 38	115.8 31	145.0 23
7.6	27.0 109	57.8 102	89.1 94	120.4 85	150.9 75
11.4	26.9 167	57.8 159	89.3 151	120.7 141	151.4 130
15.1	26.8 224	58.1 215	89.8 207	121.8 197	153.3 185
18.9	26.3 279	57.7 271	89.7 262	122.0 252	154.2 240
26.5	24.4 386	56.2 376	88.5 366	121.1 356	153.8 343
34.1	22.0 494	53.9 483	86.3 472	119.1 460	152.2 446
45.4	17.2 654	49.1 641	81.8 629	114.9 617	148.5 601
56.8	11.5 802	43.8 789	87.7 676	109.5 763	142.9 748

Flow (LPM)

Code 0080

80 cc / rev

	PRESSURE (BAR)				
	34.5	69.0	103.4	137.9	172.4
1.9	29.5 17	65.0 8			
3.8	31.2 39	67.3 30	103.7 23	140.7 13	178.8 2
7.6	32.8 85	71.3 76	110.0 68	148.0 56	183.3 42
11.4	32.9 131	71.5 122	110.5 113	149.0 101	186.9 86
15.1	33.1 177	72.5 167	112.4 158	152.2 146	190.5 130
18.9	32.8 223	72.4 213	112.9 203	153.5 191	193.5 174
26.5	30.8 316	71.0 304	111.7 293	152.9 280	194.1 262
34.1	28.1 408	68.1 396	109.1 384	150.7 370	192.4 350
45.4	22.3 546	62.3 533	103.5 519	145.4 504	187.7 483
56.8	15.4 686	55.8 670	96.8 655	138.5 638	181.0 615

Flow (LPM)

TORQUE (nm) 138.5  
SPEED (RPM) 638

Code 0100

100 cc / rev

	PRESSURE (BAR)				
	34.5	69.0	103.4	137.9	172.4
1.9	35.6 14	77.6 7			
3.8	37.5 33	80.2 26	122.4 18	165.0 9	
7.6	39.3 71	84.8 64	130.2 55	174.1 45	214.5 33
11.4	39.5 109	85.4 102	131.1 92	175.8 83	219.6 69
15.1	39.9 147	86.8 140	133.9 130	180.3 120	224.8 106
18.9	39.4 186	87.1 178	135.2 168	183.3 158	229.6 143
26.5	37.3 263	85.8 254	134.6 244	183.5 232	231.9 217
34.1	34.1 340	82.6 330	131.8 319	181.4 307	230.7 292
45.4	27.5 456	75.8 444	125.5 433	175.7 420	225.7 403
56.8	19.9 572	68.5 558	117.7 546	167.7 533	217.8 514

Flow (LPM)

Low Speed High Torque Motors  
TE Series

Performance Data

Code 0130

130 cc / rev

	PRESSURE (BAR)				
	34.5	69.0	103.4	137.9	172.4
1.9	50.3 12	108.7 10	168.1 7	228.0 3	
3.8	52.4 27	112.5 24	172.3 21	231.7 17	291.1 10
7.6	54.5 55	116.6 53	179.0 49	241.3 44	302.0 36
11.4	54.6 84	117.2 81	180.1 77	242.9 72	304.1 64
15.1	54.6 113	118.7 110	182.9 105	246.7 100	309.7 91
18.9	54.0 142	118.6 138	183.6 133	248.7 128	313.3 119
26.5	50.8 200	116.3 195	182.2 190	248.0 183	313.6 174
34.1	46.8 257	112.2 252	178.4 247	244.7 239	311.3 229
45.4	38.2 344	103.4 338	169.8 331	236.8 323	304.1 312
56.8	28.5 431	93.4 424	159.1 416	225.5 407	292.8 395

Flow (LPM)

TORQUE (nm) 225.5  
SPEED (RPM) 407

Code 0165

165 cc / rev

	PRESSURE (BAR)				
	34.5	69.0	103.4	137.9	172.4
1.9	62.4 9	132.8 7	204.8 4	277.6 3	
3.8	64.9 21	137.0 18	209.7 16	282.3 12	355.9 8
7.6	67.4 44	142.7 41	219.0 38	295.3 33	370.1 28
11.4	67.8 67	143.8 64	220.9 60	297.6 55	372.7 49
15.1	68.1 90	146.8 87	225.6 83	304.0 78	380.5 71
18.9	67.4 113	147.1 109	227.7 105	308.1 100	387.1 93
26.5	64.3 159	145.3 155	227.0 150	308.7 144	389.4 137
34.1	59.1 205	140.5 201	223.2 195	305.8 189	387.5 181
45.4	48.5 274	130.2 269	213.5 263	297.1 256	380.2 247
56.8	35.7 344	117.4 338	199.9 331	282.5 323	366.5 313

Flow (LPM)

Code 0195

195 cc / rev

	PRESSURE (BAR)				
	34.5	69.0	103.4	137.9	172.4
1.9	80.2 8	171.6 7	264.8 5	359.5 3	
3.8	83.2 18	176.0 16	269.7 14	363.9 12	457.8 8
7.6	85.6 37	180.3 35	276.2 33	373.1 30	468.2 25
11.4	85.6 56	181.2 54	277.8 51	374.5 48	470.0 42
15.1	85.5 75	182.8 73	280.4 70	378.0 67	474.4 60
18.9	84.4 95	182.5 92	281.1 89	379.6 85	476.9 78
26.5	79.7 133	179.2 130	278.7 127	377.7 122	475.6 115
34.1	73.0 172	172.6 169	272.8 165	372.8 160	471.5 151
45.4	59.9 230	159.1 226	260.2 221	361.2 215	461.6 206
56.8	44.5 288	143.8 283	242.6 278	342.0 272	442.4 261

Flow (LPM)

TORQUE (nm) 342.0  
SPEED (RPM) 272

Code 0230

230 cc / rev

	PRESSURE (BAR)					
	34.5	69.0	103.4	120.7	137.9	148.3
1.9	86.0 7	189.0 6	295.3 5	349.6 4	404.9 3	438.2 3
3.8	89.4 15	193.4 14	299.4 13	353.4 12	408.4 11	441.9 10
7.6	92.5 32	199.3 30	308.0 29	362.4 28	417.1 26	450.2 25
11.4	92.5 48	200.1 47	309.2 45	364.5 44	420.1 42	453.7 41
15.1	92.8 65	201.9 63	312.4 61	367.9 60	423.7 58	457.5 57
18.9	91.3 81	201.8 79	313.7 77	370.2 76	426.8 74	461.0 73
26.5	87.0 114	198.4 112	311.3 109	367.7 108	424.8 106	459.0 105
34.1	79.7 147	192.0 145	306.2 142	363.3 140	420.7 138	455.1 137
45.4	65.6 197	178.7 194	293.2 191	350.6 189	408.6 186	443.6 185
56.8	45.2 247	159.2 243	275.3 239	333.2 237	391.6 235	426.7 233
75.7	7.2 329	118.9 325	233.5 321	291.5 319	350.2 316	386.1 314

Flow (LPM)



Low Speed High Torque Motors  
TE Series

Performance Data

Code 0260

260 cc / rev

	PRESSURE (BAR)				
	34.5	69.0	103.4	113.8	137.9
1.9	102.6 7	221.6 6	344.4 6	381.9 6	468.8 5
3.8	106.0 14	226.6 13	350.1 13	387.9 12	474.9 12
7.6	109.7 28	232.6 27	357.6 26	395.5 26	483.7 24
11.4	109.4 43	233.3 42	358.9 40	397.0 39	485.6 38
15.1	109.6 57	235.1 56	361.9 54	400.1 53	489.5 51
18.9	108.1 71	235.5 70	363.7 68	402.3 67	492.9 65
26.5	102.5 100	231.5 98	361.3 96	400.2 95	491.5 92
34.1	94.6 129	224.3 127	355.1 124	394.2 123	485.7 119
45.4	78.2 172	208.3 169	340.7 166	380.4 164	473.4 160
56.8	55.2 215	186.1 212	319.7 208	360.2 206	454.9 202
75.7	14.6 287	141.8 283	273.2 279	313.3 277	408.0 272

Flow (LPM)

TORQUE (nm) 313.3  
SPEED (RPM) 277

Code 0330

330 cc / rev

	PRESSURE (BAR)			
	34.5	69.0	100.0	117.2
1.9	133.8 5	283.2 5	420.5 4	496.4 4
3.8	137.6 11	289.0 10	426.2 9	501.6 9
7.6	142.1 22	297.4 21	436.9 20	514.6 19
11.4	141.3 34	297.5 32	438.2 31	516.3 30
15.1	141.1 45	299.3 44	441.6 42	520.7 41
18.9	138.9 57	299.2 55	443.6 53	523.2 51
26.5	131.3 80	293.7 78	440.4 75	521.3 73
34.1	120.2 103	284.5 100	432.6 98	514.1 95
45.4	98.9 137	263.6 135	413.2 131	495.1 129
56.8	70.2 171	235.1 169	386.4 165	469.9 162
75.7	18.4 229	178.1 226	324.8 222	406.7 218

Flow (LPM)

TORQUE (nm) 324.8  
SPEED (RPM) 222

Code 0365

370 cc / rev

	PRESSURE (BAR)			
	34.5	69.0	91.4	108.6
1.9	157.4 5	332.4 4	449.0 4	540.2 3
3.8	163.1 10	339.5 9	456.0 8	545.9 8
7.6	168.8 20	349.1 19	466.7 18	557.1 17
11.4	167.8 30	348.2 29	466.0 28	556.7 27
15.1	166.9 40	349.0 39	467.6 37	558.6 36
18.9	164.0 50	347.4 49	466.6 47	557.7 46
26.5	154.9 70	340.0 69	459.9 67	551.3 65
34.1	142.4 90	327.5 89	414.5 87	540.5 85
45.4	113.2 121	300.3 119	422.2 117	515.2 114
56.8	79.1 151	266.1 149	387.7 146	481.4 144
75.7	17.2 201	200.7 199	320.6 196	412.3 193

Flow (LPM)

Code 0295

295 cc / rev

	PRESSURE (BAR)				
	34.5	69.0	103.4	106.9	127.6
1.9	114.6 6	250.4 5	390.1 4	404.0 4	487.8 3
3.8	118.7 12	256.5 11	396.4 10	410.5 10	493.9 9
7.6	122.9 25	263.7 24	406.7 22	421.1 22	506.8 21
11.4	122.6 38	264.1 36	408.0 35	422.4 34	508.5 33
15.1	122.6 50	265.8 49	411.1 47	425.8 47	512.8 45
18.9	121.1 63	265.7 62	412.8 60	427.5 59	515.6 58
26.5	115.1 89	261.1 87	409.4 85	424.2 84	513.5 82
34.1	106.1 115	252.7 113	402.3 110	417.2 110	507.4 107
45.4	87.7 153	234.3 151	384.5 148	399.6 147	490.8 145
56.8	61.6 192	209.4 189	359.7 186	375.0 185	466.7 182
75.7	14.2 256	159.1 253	304.7 249	319.3 249	408.0 246

Flow (LPM)

Code 0390

390 cc / rev

	PRESSURE (BAR)			
	34.5	69.0	86.2	103.4
1.9	149.8 4	326.4 3	416.0 2	507.8 2
3.8	155.9 9	331.5 7	420.7 7	511.7 6
7.6	163.0 18	342.8 17	433.8 15	525.6 14
11.4	162.9 28	344.5 26	436.2 25	528.6 23
15.1	164.3 37	348.4 36	441.2 34	534.4 33
30.3	163.5 47	350.7 45	444.6 44	538.7 42
26.5	157.4 66	348.0 64	443.2 62	538.3 61
34.1	146.5 85	340.4 83	437.0 81	533.3 80
45.4	122.9 114	318.4 112	416.4 110	514.1 108
56.8	90.0 143	286.9 140	385.7 138	484.5 136
75.7	29.8 191	226.6 188	325.4 186	423.6 184

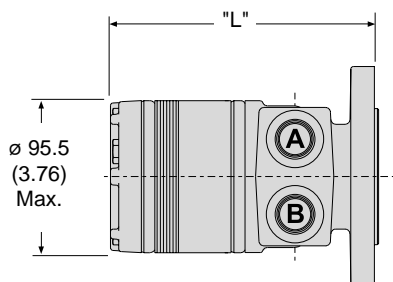
Flow (LPM)



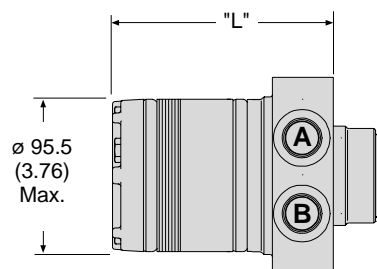
Dimensional Data

Dimensions

Inch equivalents for metric dimensions are shown in (\*\*)



Flange Mount



Wheel Mount

Standard Rotation:

(As viewed from shaft end)

Front Ports - Pressurize "A" to turn **Clockwise**, "B" to turn **Counterclockwise**.

Rear Ports - Pressurize "A" to turn **Counterclockwise**, "B" to turn **Clockwise**.

Length "L" and Weight

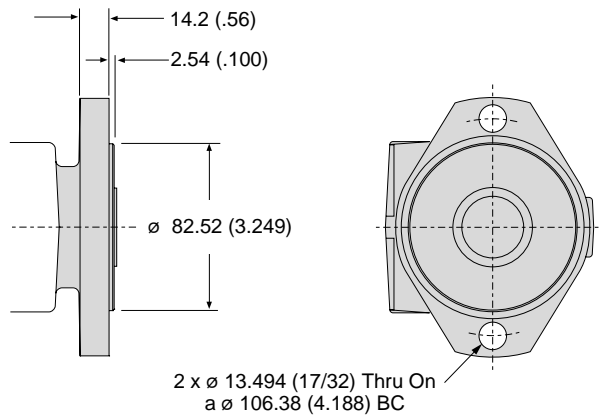
Displacement, Code	0045	0050	0065	0080	0100	0130	0165	0195	0230	0260	0295	0330	0365	0390	
<b>SAE "A" Mount</b>															
Length "L"	mm (inches)	136 (5.36)	138 (5.42)	141 (5.54)	144 (5.67)	147 (5.79)	154 (6.04)	160 (6.29)	166 (6.54)	173 (6.79)	179 (7.04)	185 (7.29)	195 (7.54)	200 (7.88)	205 (8.04)
Weight	kg (lb)	6.09 (13.4)	6.17 (13.6)	6.30 (13.9)	6.44 (14.2)	6.51 (14.4)	6.82 (15.0)	7.08 (15.6)	7.37 (16.2)	7.56 (16.7)	7.86 (17.3)	8.02 (17.7)	8.34 (18.4)	8.71 (19.2)	8.84 (19.5)
<b>4 Bolt</b>															
Length "L"	mm (inches)	136 (5.36)	138 (5.42)	141 (5.54)	144 (5.67)	147 (5.79)	154 (6.04)	160 (6.29)	166 (6.54)	173 (6.79)	179 (7.04)	185 (7.29)	195 (7.54)	200 (7.88)	205 (8.05)
Weight	kg (lb)	5.66 (12.5)	5.74 (12.7)	5.88 (13.0)	6.01 (13.3)	6.08 (13.4)	6.40 (14.1)	6.65 (14.7)	6.94 (15.3)	7.14 (15.7)	7.43 (16.4)	7.60 (16.7)	7.92 (17.5)	8.30 (18.3)	8.42 (18.6)
<b>Magneto Mount</b>															
Length "L"	mm (inches)	136 (5.36)	138 (5.42)	141 (5.55)	144 (5.67)	147 (5.80)	154 (6.05)	160 (6.30)	166 (6.55)	173 (6.80)	179 (7.05)	185 (7.30)	195 (7.55)	200 (7.88)	205 (8.05)
Weight	kg (lb)	6.35 (14.0)	6.44 (14.2)	6.58 (14.5)	6.71 (14.8)	6.80 (15.0)	7.08 (15.6)	7.35 (16.2)	7.62 (16.8)	7.85 (17.3)	8.12 (17.9)	8.30 (18.3)	8.62 (19.0)	8.98 (19.8)	9.12 (20.1)
<b>Wheel Mount</b>															
Length "L"	mm (inches)	107 (4.21)	109 (4.27)	112 (4.39)	115 (4.52)	118 (4.64)	124 (4.89)	131 (5.14)	137 (5.39)	143 (5.64)	150 (5.89)	156 (6.14)	162 (6.39)	171 (6.73)	175 (6.89)
Weight	kg (lb)	6.80 (15.0)	6.87 (15.2)	7.01 (15.5)	7.14 (15.8)	7.22 (15.9)	7.53 (16.6)	7.79 (17.2)	8.07 (17.8)	8.27 (18.2)	8.57 (18.9)	8.73 (19.2)	9.05 (20.0)	9.43 (20.8)	9.55 (21.1)

Dimensional Data

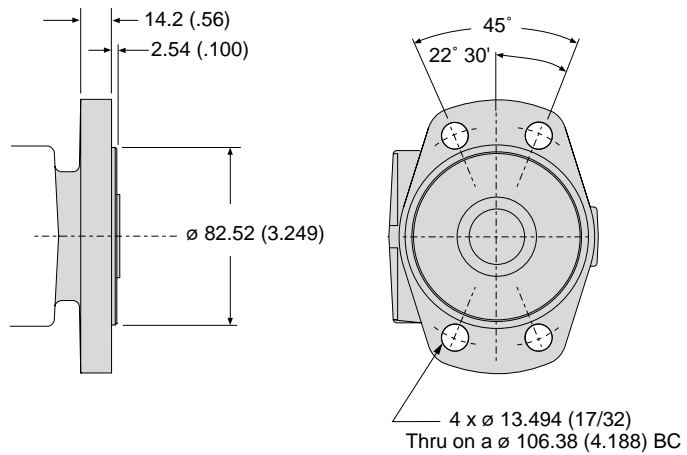
Mounting

Inch equivalents for metric dimensions are shown in (\*\*)

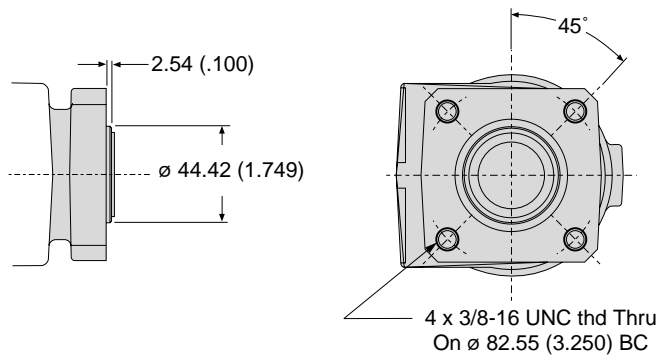
SAE A 2 Bolt



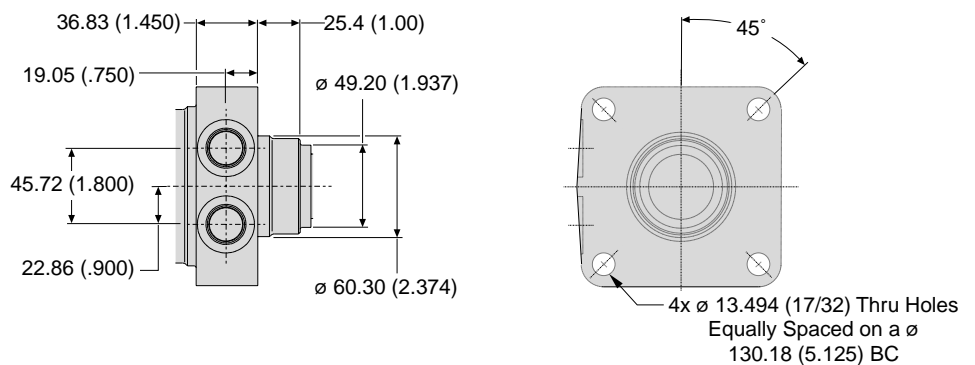
Magneto



4 Bolt



Wheel Mount





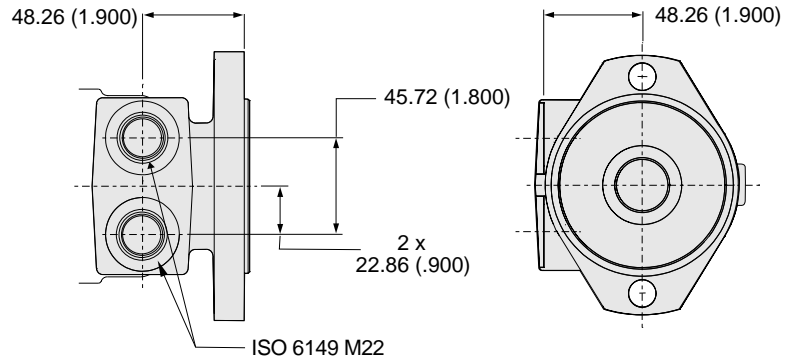
Low Speed High Torque Motors  
TE Series

Dimensional Data

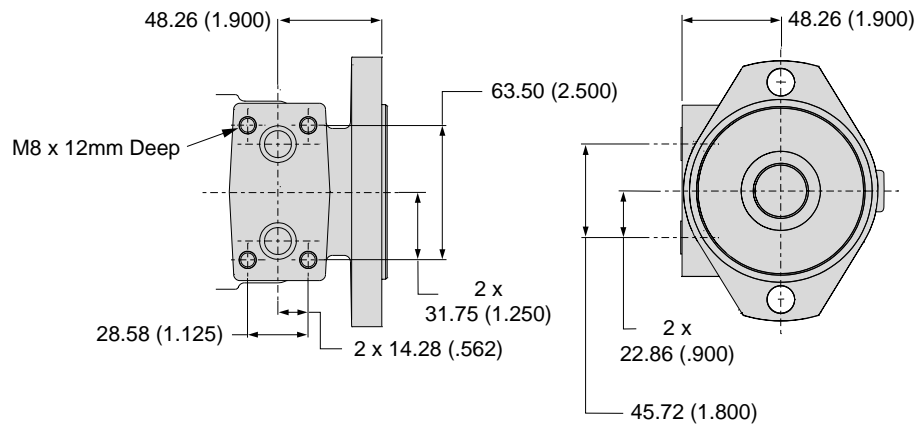
Porting

Inch equivalents for metric dimensions are shown in (\*\*)

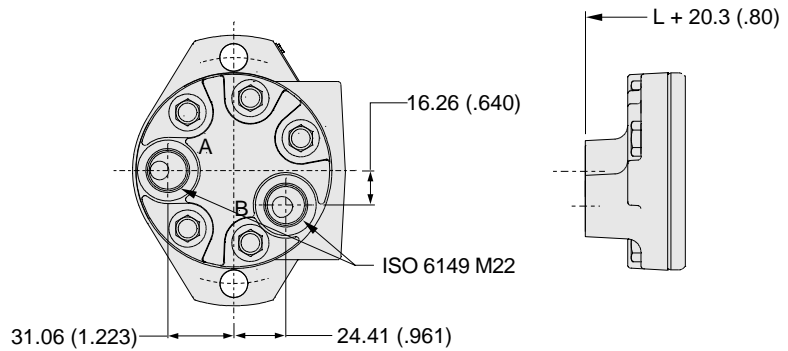
ISO 6149



Manifold



Rear, ISO 6149

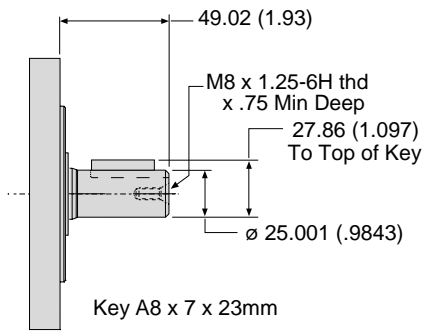




Dimensional Data

Shaft

Inch equivalents for metric dimensions are shown in (\*\*)



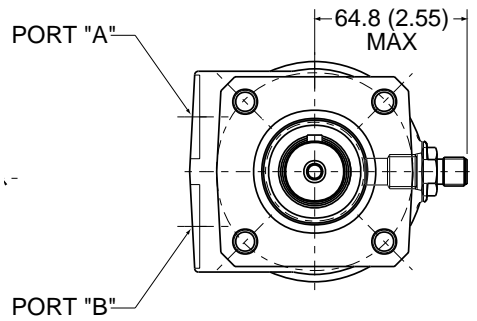
25mm Keyed

7/8" 13 Tooth Spline

Speed Sensor

An Economical Sensor for Speed Readout

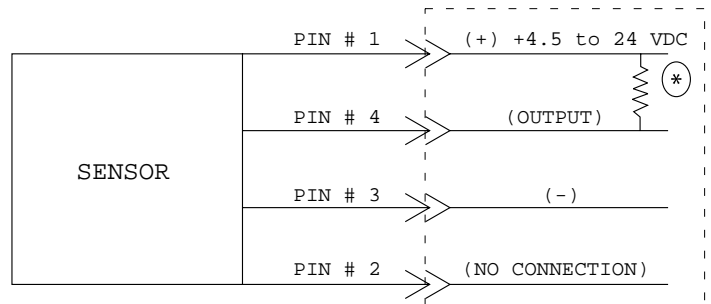
This rugged, weather resistant design is ideal for industrial and mobile applications. Applications include salt/sand/fertilizer spreader drives, conveyer drives and injection molder compression drives. The sensor is a hall-effect type, which when externally powered outputs 30 square wave digital pulses per coupling shaft revolution. The connector is a user friendly universally available 4 pin polarized M12 connector allowing for simplified field service. The integrated design does not effect the side load capacity or performance of the Torqlink™.



Speed Sensor  
Part Number  
455069

Features

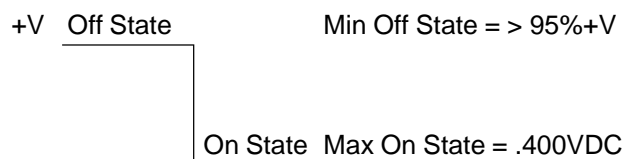
- Operating Voltage Range ..... 4.5 to 24 VDC
- Operating Temperature ..... -40° C to 104° C  
..... (-40° F to 220° F)
- Operating Frequency Range ..... 0 to 10 KHz
- Maximum Sink Current ..... 20 mA
- Connection ..... 4 Pin Polarized  
..... M12 Connector
- Sensor Output ..... 30 Pulses per Revolution which can be doubled electronically.
- Output is NPN Open Collector



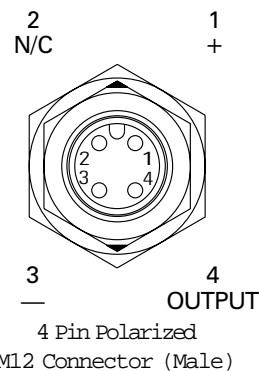
Pull-up Resistor Value Formula  
(for 1/4 Watt, 5% Tolerance)

$$\frac{V \text{ Supply (4.5-24 VDC)}}{\text{Desired Sink Current (0-20 mA } \pm 20\%)} = \text{Resistor Value (K - Ohms)}$$

On State Current: 5 mA  
Higher wattage resistor will be needed for higher sink current.



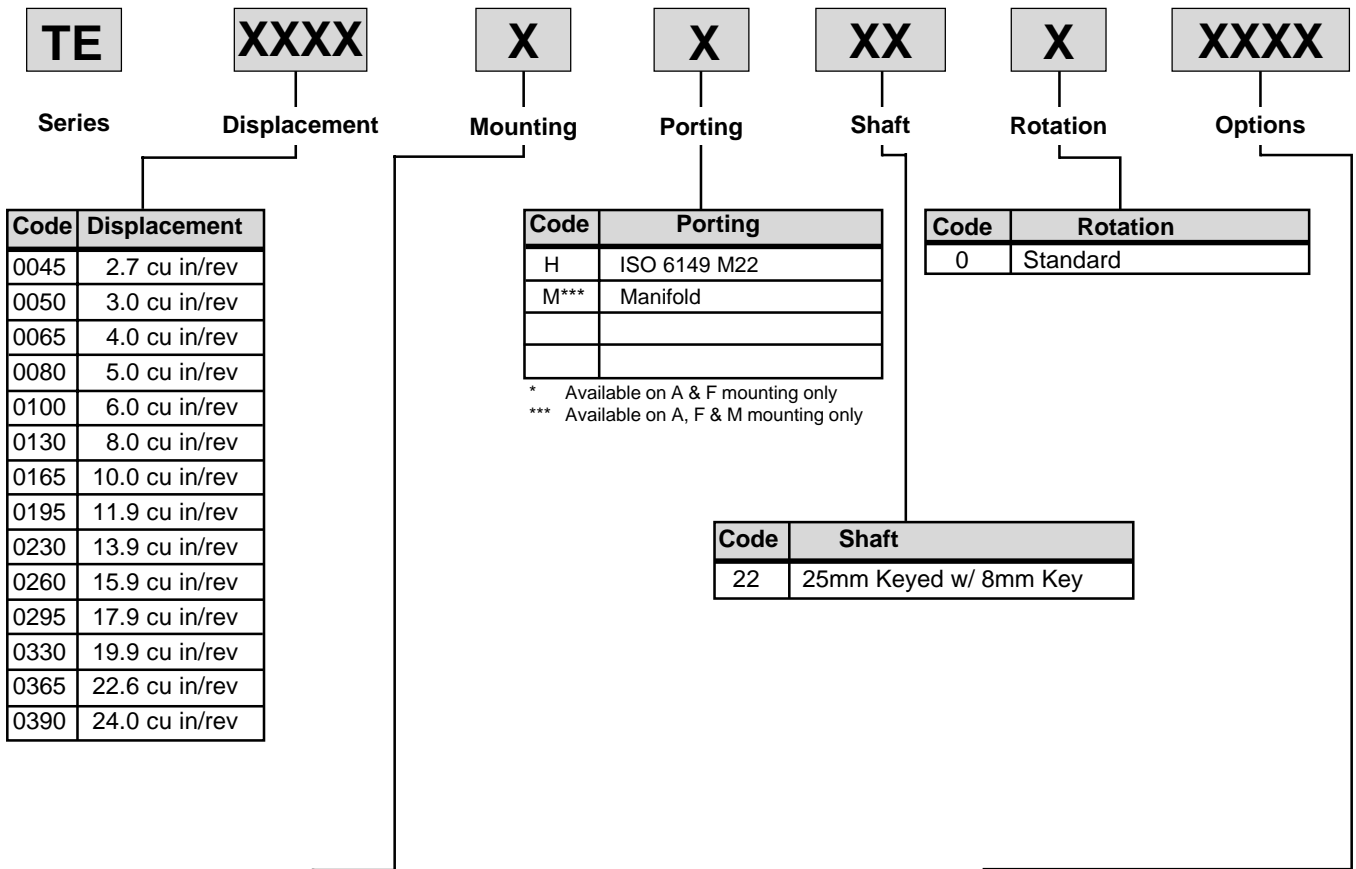
0V



**Cable is *not* supplied by factory.**

# Low Speed High Torque Motors TE Series

## Ordering Information



Code	Displacement
0045	2.7 cu in/rev
0050	3.0 cu in/rev
0065	4.0 cu in/rev
0080	5.0 cu in/rev
0100	6.0 cu in/rev
0130	8.0 cu in/rev
0165	10.0 cu in/rev
0195	11.9 cu in/rev
0230	13.9 cu in/rev
0260	15.9 cu in/rev
0295	17.9 cu in/rev
0330	19.9 cu in/rev
0365	22.6 cu in/rev
0390	24.0 cu in/rev

Code	Porting
H	ISO 6149 M22
M***	Manifold

\* Available on A & F mounting only  
 \*\*\* Available on A, F & M mounting only

Code	Rotation
0	Standard

Code	Shaft
22	25mm Keyed w/ 8mm Key

Code	Mounting
A	SAE "A" 2 Bolt
F	4 Bolt
M	Magneto
N	Midmount
U	Wheel

Code	Options
AAAA	Black Paint
AAAB	No Paint
AAAC	Double Paint
AAAF	Castle Nut, Black Paint
AABP	Castle Nut, No Paint
AAAG	Viton Seals, Black Paint
AAAH	Viton Seals, No Paint
AAAJ	Vespel Commutator Seal, Black Paint
AAFG	Vespel Commutator Seal, No Paint
AABJ*	Free Running Rotorset, Black Paint
AABK*	Free Running Rotorset, No Paint
AABL*	Free Running Rotorset, No Commutator Seal, Black Paint
AABM*	Free Running Rotorset, No Commutator Seal, No Paint
AAFC	White Epoxy Paint
AAHD	White Epoxy Paint, Viton Seals
AAJV	Bidirectional Shuttle (3:30), Black Paint
FSAB	Internal Speed Sensor, No Paint
FSAA	Internal Speed Sensor, Black Paint
HAAA**	External Relief Valve (1894-1), Black Paint
HAAB**	External Relief Valve (1894-1), No Paint
HAAC**	External Relief Valve (1894-1), No Paint, Viton Seals

\* Not applicable to TE0365 or TE0390 displacements

\*\* Available only with porting code "M"

Notes

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