

Disc Valve Hydraulic Motors
Series Delta

10.2014



inspired hydraulics.

Delta Series
Highlights



Features:

- Excellent reliability with time proven Char-Lynn components
- Proven disc valve technology with the highest efficiencies in its class
- Leak resistant motor with the front bearing protecting the shaft seal
- Torque up to 11,100 lb-in intermittent duty / Flow up to 30 GPM intermittent
- 12 displacements available from 6.9 to 46 CID
- Shaft sizes up to 1-5/8 inch
- 3-1/4 inch front pilot and 5 inch rear pilot

Benefits:

- Perfect replacement for Parker® TFTG and White™ RE motors
- Lowest no load pressure drop which leads to longer life and lower temperature operation
- Highest overall efficiency: more available HP to the system than competitive motors
- The highest side load capacity with 4,500 lbs at 3" from the wheel mount face

Description

This wheel motor is the latest addition to the Char Lynn product line. The Delta motor provides torques up to 11,100 in-lbs. Eaton has packed this motor with many "best in class" features: the optimized geroler profile ensures smooth operation; the disc valve technology has the best performance and the bearing capacity is the highest in the industry for very demanding applications.

Delta Series

Geroler Element	12 Displacements
Flow l/min [GPM]	75 [20] Continuous** 115 [30] Intermittent*
Speed RPM	668 Cont.** 831 Inter.*
Pressure bar [PSI]	205 [3000] Cont.** 275 [4000] Inter.*
Torque Nm [lb-in]	1039 [9200] Cont**. 1253 [11100] Inter.*

Applications:

- Scissor Lift
- Boom Lift
- Industrial Sweeper
- Mower

Parker is a registered trademark of Parker Intangibles LLC.

White is a trademark of White Drive Products, Inc.

** Continuous— (Cont.) Continuous rating, motor may be run continuously at these ratings.

* Intermittent— (Inter.) Intermittent operation, 10% of every minute.



Boom Lift



Sweeper



Mower



Delta Series

Performance Data

Motors run with high efficiency in all areas designated with a number for torque and speed. For best motor life select a motor to run with a torque and speed range shown in the light shaded area.

Performance data is typical at 120 SUS. Actual data may vary slightly from unit to unit in production.

	Continuous
	Intermittent
	No operation

113 cm³/r [6.9 in³/r]
Δ Pressure Bar [PSI]

	17	34	52	69	86	103	121	138	155	172	190	207	224	241	259	276
	250	500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000	3250	3500	3750	4000
2	204	450	686	915	1140	1355	1593	1814	2018	2197	2349	2573	2776	2975	3182	3362
7.6	23	51	77	103	129	153	180	205	228	248	265	290	313	336	359	380
	65	64	63	62	60	60	59	57	56	55	56	54	52	48	49	44
4	210	457	706	950	1194	1436	1677	1906	2129	2351	2571	2790	3010	3231	3454	3660
15	24	52	80	107	135	162	189	215	240	265	290	315	340	367	390	413
	132	131	130	129	128	127	126	125	123	122	120	118	115	113	112	110
6	196	445	696	942	1186	1432	1674	1914	2144	2367	2587	2805	3027	3252	3476	3695
23	22	50	79	106	134	162	189	216	242	267	292	317	342	367	392	417
	199	196	196	195	193	192	191	190	189	185	183	182	180	177	174	172
8	176	425	677	921	1168	1420	1666	1906	2152	2386	2616	2834	3051	3265	3481	3697
30	20	48	76	104	132	160	188	215	243	269	295	320	344	369	393	417
	266	264	263	261	261	259	257	255	252	250	248	246	244	244	241	237
10	160	407	659	901	1149	1398	1650	1894	2134	2370	2601	2823	3044	3258	3457	3654
38	18	46	74	102	130	158	186	214	241	268	294	319	344	368	390	413
	333	333	329	326	324	323	321	320	318	314	312	309	306	303	301	295
12	134	382	632	876	1122	1372	1621	1868	2111	2353	2589	2821	3046	3270	3479	3680
45	15	43	71	99	127	155	183	211	238	266	292	319	344	369	393	415
	399	398	396	393	392	389	387	386	383	381	377	374	372	370	367	364
14	111	357	608	855	1102	1350	1599	1847	2090	2330	2569	2800	3024	3250	3455	3614
53	13	40	69	97	124	152	181	208	236	263	290	316	341	367	390	408
	466	465	462	460	457	455	453	451	449	446	442	438	436	433	429	415
16	81	325	577	822	1071	1321	1572	1817	2063	2307	2549	2781	3011	3237	3436	3578
61	9	37	65	93	121	149	177	205	233	260	288	314	340	365	388	404
	533	532	529	527	524	522	520	517	516	513	509	506	503	500	496	477
18	48	295	543	790	1036	1283	1535	1781	2027	2271	2512	2751	2984	3214	3431	3597
68	5	33	61	89	117	145	173	201	229	256	284	311	337	363	387	406
	601	600	597	593	591	587	586	583	581	577	573	570	568	564	559	542
20	14	263	510	758	1005	1249	1499	1746	1988	2231	2474	2712	2945	3176	3395	3597
76	2	30	58	86	113	141	169	197	224	252	279	306	332	359	383	406
	668	666	664	661	658	654	652	649	646	644	640	637	634	630	628	621
22		228	477	725	972	1218	1468	1712	1957	2201	2447	2686	2917	3149	3350	3523
83		26	54	82	110	138	166	193	221	249	276	303	329	355	378	398
		733	731	728	724	721	718	715	713	710	705	704	700	697	688	664
25		170	416	663	913	1153	1402	1646	1891	2136	2382	2622	2856	3081	3273	3452
95		19	47	75	103	130	158	186	214	242	269	296	322	348	369	390
		831	829	827	825	821	818	815	812	809	805	803	800	794	776	745

170 } Torque lb-in
19 } Nm
831 } Speed RPM

146 cm³/r [8.9 in³/r]
Δ Pressure Bar [PSI]

	17	34	52	69	86	103	121	138	155	172	190	207	224	241	259	276
	250	500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000	3250	3500	3750	4000
2	288	596	907	1184	1445	1718	1992	2247	2537	2810	3039	3290	3595	3846	3996	4265
7.6	32	67	102	134	163	194	225	254	286	317	343	371	406	434	451	482
	50	48	46	42	44	43	40	39	38	37	36	34	32	31	25	28
4	289	619	947	1267	1593	1914	2227	2482	2755	3042	3295	3615	3916	4135	4456	4680
15	33	70	107	143	180	216	251	280	311	343	372	408	442	467	503	528
	102	100	98	96	95	94	93	91	88	84	81	79	76	74	70	75
6	275	604	934	1259	1588	1908	2232	2552	2869	3181	3497	3800	4102	4397	4680	4950
23	31	68	105	142	179	215	252	288	324	359	395	429	463	496	528	559
	154	151	149	148	146	145	144	143	141	137	135	133	130	128	125	123
8	256	580	909	1235	1566	1887	2209	2528	2845	3160	3475	3783	4091	4397	4692	4984
30	29	66	103	139	177	213	249	285	321	357	392	427	462	496	530	563
	206	204	201	200	198	198	196	195	190	187	185	182	179	179	176	173
10	227	553	879	1204	1535	1861	2184	2504	2820	3133	3447	3757	4061	4369	4667	4963
38	26	62	99	136	173	210	247	283	318	354	389	424	459	493	527	560
	258	256	253	251	250	249	248	246	241	238	236	233	231	229	228	225
12	199	521	850	1172	1501	1825	2148	2469	2780	3091	3402	3714	4017	4324	4627	4922
45	23	59	96	132	170	206	243	279	314	349	384	419	454	488	522	556
	310	308	305	303	301	300	299	297	292	290	287	284	282	281	278	276
14	157	480	809	1130	1458	1784	2104	2426	2743	3057	3369	3679	3983	4291	4593	4892
53	18	54	91	128	165	201	238	274	310	345	380	415	450	484	519	552
	362	360	356	354	353	352	351	346	344	341	339	337	335	332	331	329
16	132	457	780	1102	1429	1753	2081	2397	2714	3025	3335	3645	3947	4255	4558	4857
61	15	52	88	124	161	198	235	271	306	342	377	412	446	480	515	548
	414	412	408	406	405	403	402	398	395	392	389	387	384	382	380	377
18	98	414	742	1065	1390	1715	2039	2360	2675	2986	3295	3605	3906	4213	4518	4817
68	11	47	84	120	157	194	230	266	302	337	372	407	441	476	510	544
	467	465	461	459	457	456	453	450	447	444	442	439	437	435	432	430
20	42	373	700	1020	1347	1670	1989	2308	2628	2944	3255	3568	3866	4172	4475	4774
76	5	42	79	115	152	189	225	261	297	332	368	403	436	471	505	539
	519	517	514	511	509	507	505	500	498	495	492	489	488	485	484	482
22	16	328	659	978	1306	1628	1950	2268	2586	2900	3211	3522	3823	4128	4429	4732
83	2	37	74	110	147	184	220	256	292	327	362	398	432	466	500	534
	571	569	565	562	559	559	555	552	549	546	544	541	538	536	534	531
25		253	576	899	1221	1544	1864	2179	2500	2811	3120	3433	3736	4036	4337	4639
95		29	65	102	138	174	210	246	282	317	352	388	422	456	490	524
		647	645	641	639	637	633	629	626	624	621	618	616	613	612	609
30		114	429	755	1076	1400	1725	2047	2368	2687	3003	3323	3635	3942	4249	4554
114		13	48	85	122	158	195	231	267	303	339	375	410	445	480	514
		778	777	773	770	765	759	756	753	749	746	744	742	740	737	735



Delta Series Performance Data

198 cm³/r [12.1 in³/r]

Δ Pressure Bar [PSI]

	17 250	34 500	52 750	69 1000	86 1250	103 1500	121 1750	138 2000	155 2250	172 2500	190 2750	207 3000	224 3250	241 3500	259 3750	276 4000
2	313 35 36	732 83 35	1113 126 34	1480 167 32	1870 211 31	2249 254 30	2668 301 29	3059 345 27	3447 389 27	3822 432 26	4189 473 24	4544 513 22	4875 550 21	5194 586 18	5508 622 17	5948 671 18
4	367 41 75	809 91 74	1228 139 72	1640 185 71	2038 230 69	2437 275 68	2844 321 67	3234 365 65	3623 409 63	4010 453 62	4398 497 61	4779 540 58	5164 583 56	5545 626 56	5917 668 54	6275 708 52
6	365 41 112	799 90 111	1231 139 110	1654 187 109	2066 233 107	2473 279 106	2878 325 104	3270 369 102	3665 414 101	4056 458 99	4446 502 98	4833 546 96	5215 589 95	5598 632 93	5975 671 91	6347 717 89
8	343 39 151	782 88 150	1219 138 149	1648 186 147	2069 234 146	2484 280 145	2898 327 143	3300 373 142	3702 418 140	4093 462 138	4482 506 135	4865 549 133	5237 591 131	5607 633 131	5976 675 129	6349 717 127
10	322 36 190	759 86 188	1201 136 187	1633 184 186	2063 233 185	2483 280 182	2904 328 181	3316 374 178	3726 421 177	4125 466 174	4515 510 173	4904 554 171	5290 597 169	5672 640 168	6048 683 166	6421 725 164
12	283 32 229	719 81 227	1158 131 226	1590 180 224	2020 228 223	2448 276 221	2868 324 220	3279 370 218	3691 417 216	4096 462 215	4492 507 212	4883 551 211	5265 594 209	5644 637 207	6015 679 205	6385 721 202
14	238 27 267	671 76 266	1110 125 264	1538 174 262	1970 222 261	2396 271 259	2816 318 257	3228 364 255	3644 411 253	4050 457 251	4451 503 249	4846 547 246	5231 591 244	5613 634 242	5982 675 240	6357 718 238
16	191 22 305	625 71 304	1063 120 303	1493 169 301	1923 217 300	2345 265 298	2768 312 296	3182 359 295	3596 406 293	4003 452 291	4403 497 289	4801 542 287	5191 591 285	5576 630 284	5947 671 281	6316 713 279
18	139 16 342	567 64 341	1006 114 340	1438 162 339	1871 211 337	2299 260 335	2720 307 333	3133 354 331	3547 400 330	3956 447 328	4359 492 326	4760 537 324	5128 579 322	5492 620 321	5871 663 319	6247 705 317
20	99 11 382	457 52 380	886 100 378	1315 148 377	1745 197 375	2168 245 373	2590 292 371	3006 339 369	3418 386 366	3822 432 364	4224 477 362	4622 522 359	5018 567 358	5418 612 356	5816 657 354	6208 701 352
22	15 2 420	383 43 417	810 91 416	1243 140 415	1676 189 413	2096 237 411	2520 284 409	2938 332 407	3351 378 405	3759 424 403	4161 470 401	4558 515 399	4953 559 397	5339 603 395	5722 646 392	6095 688 390
25	272 31 476	700 79 475	1131 128 474	1559 176 472	1985 224 470	2408 272 468	2823 319 466	3231 365 465	3639 411 463	4042 456 461	4443 501 459	4842 547 457	5239 590 455	5617 634 453	5992 677 450	
30	163 18 516	600 68 506	1037 117 506	1474 166 494	1902 215 487	2315 261 484	2723 307 482	3134 354 480	3536 399 478	3933 444 476	4338 490 474	4737 535 472	5125 579 471	5516 623 471	5899 666 471	

163 } Torque lb-in
18 } Nm
516 } Speed RPM

234 cm³/r [14.3 in³/r]

Δ Pressure Bar [PSI]

	17 250	34 500	52 750	69 1000	86 1250	103 1500	121 1750	138 2000	155 2250	172 2500	190 2750	207 3000	224 3250	241 3500	259 3750	276 4000
2	470 53 31	971 110 30	1457 164 30	1921 217 29	2414 273 26	2877 325 25	3348 378 25	3821 431 25	4275 483 24	4730 534 23	5164 583 22	5630 636 21	6097 677 19	6646 728 19	7217 775 19	7815 803 15
4	468 53 64	988 112 62	1504 170 61	1989 225 60	2482 280 59	2964 335 58	3447 389 57	3916 442 56	4384 495 55	4843 547 55	5302 599 54	5763 651 54	6213 701 52	6668 753 51	7113 803 50	7543 852 48
6	449 51 96	966 109 95	1484 168 93	1980 224 92	2470 279 92	2953 333 91	3445 389 90	3922 443 89	4397 496 88	4851 548 88	5304 599 88	5750 649 87	6197 700 86	6643 750 86	7085 805 84	7524 849 83
8	416 47 129	931 105 128	1446 163 125	1954 221 124	2458 277 123	2948 333 123	3438 388 121	3909 441 121	4381 495 121	4835 546 120	5280 596 119	5714 645 119	6150 694 119	6584 743 118	7015 792 117	7445 841 116
10	380 43 161	896 107 160	1410 159 158	1917 216 157	2425 274 156	2919 330 155	3412 385 154	3890 439 153	4373 494 153	4831 545 152	5280 596 151	5716 645 150	6148 694 149	6586 744 148	7017 792 147	7452 841 146
12	341 39 194	856 97 193	1366 154 191	1876 212 190	2384 269 189	2880 325 188	3370 380 187	3843 434 186	4319 488 185	4782 540 185	5229 590 184	5665 640 183	6102 689 182	6537 738 181	6962 786 180	7392 835 178
14	290 33 226	804 91 225	1312 148 224	1813 205 222	2320 262 221	2821 318 220	3315 374 219	3793 428 218	4268 482 217	4732 534 216	5181 585 215	5623 636 215	6057 684 214	6485 732 212	6907 780 211	7327 827 209
16	239 27 258	743 84 258	1249 141 257	1756 198 255	2264 256 254	2759 312 253	3255 367 252	3735 422 251	4207 475 251	4669 527 250	5122 578 249	5568 629 247	6004 678 246	6432 726 245	6845 773 244	7268 820 242
18	176 20 291	688 78 291	1187 134 289	1694 191 287	2203 249 286	2698 305 285	3195 361 284	3676 415 283	4146 468 282	4603 520 281	5055 571 279	5497 621 278	5930 669 277	6358 718 276	6774 765 275	7194 812 275
20	108 12 323	614 69 323	1121 127 322	1623 183 320	2124 240 319	2620 296 317	3118 352 317	3603 407 316	4077 460 316	4541 513 314	4990 563 314	5430 613 310	5865 662 310	6301 711 310	6720 759 309	7139 806 309
22	28 3 355	535 60 355	1081 122 355	1582 179 352	2082 235 351	2579 291 350	3071 347 349	3550 401 348	4018 454 345	4483 506 343	4943 558 342	5406 610 341	5855 661 341	6300 711 341	6723 759 341	7139 806 341
25	410 46 404	956 108 404	1460 165 401	1959 221 399	2454 277 398	2941 332 397	3419 386 397	3892 439 394	4356 492 392	4806 543 391	5251 593 390	5683 642 390	6117 691 389	6531 737 389	6939 783 389	
30	171 19 485	700 79 485	1297 146 485	1735 196 483	2226 251 481	2718 307 480	3204 362 478	3689 417 476	4162 470 474	4623 522 472	5079 573 472	5519 623 471	5959 673 471	6397 720 471	6871 766 471	



Delta Series Performance Data

252 cm³/r [15.4 in³/r]

Δ Pressure Bar [PSI]

	17 250	34 500	52 750	69 1000	86 1250	103 1500	121 1750	138 2000	155 2250	172 2500	190 2750	207 3000	224 3250	241 3500	259 3750	276 4000
2	485	1011	1520	2032	2564	3059	3569	4065	4561	5085	5589	6054	6536	6891	7388	7872
7.6	55 28	114 27	172 26	229 26	289 25	345 24	403 23	459 23	515 22	574 23	631 23	683 22	738 22	778 19	834 19	889 20
4	504	1062	1609	2145	2684	3213	3744	4263	4780	5294	5804	6311	6811	7305	7787	8236
15	57 59	120 57	182 56	242 56	303 55	363 55	423 54	481 54	540 53	598 53	655 53	712 51	769 51	825 49	879 49	930 47
6	478	1031	1585	2132	2670	3195	3717	4222	4726	5222	5721	6211	6700	7179	7658	8118
23	54 89	116 88	179 86	241 85	301 85	361 84	420 84	477 84	534 84	590 84	646 83	701 82	756 82	810 80	865 78	917 78
8	453	1012	1571	2115	2664	3191	3717	4224	4725	5215	5706	6194	6678	7161	7628	8076
30	51 120	114 118	177 117	239 115	301 114	360 113	420 113	477 112	533 113	589 113	644 113	699 112	754 111	808 110	861 109	912 108
10	398	957	1516	2063	2609	3137	3668	4181	4678	5157	5636	6116	6589	7059	7522	7974
38	45 149	108 148	171 147	233 145	295 144	354 143	414 142	472 142	528 142	582 143	636 142	690 142	744 141	797 140	849 139	900 138
12	370	914	1468	2011	2557	3085	3614	4125	4622	5102	5577	6059	6538	7017	7497	7966
45	42 180	103 179	166 178	227 176	289 174	348 173	408 172	466 172	522 172	576 172	630 172	684 172	738 171	792 171	846 170	899 169
14	290	842	1399	1948	2496	3024	3552	4065	4571	5056	5525	5987	6445	6905	7359	7813
53	33 210	95 209	158 208	220 206	282 205	341 203	401 202	459 201	516 200	571 199	624 199	676 200	728 200	780 200	831 200	882 199
16	239	795	1346	1891	2434	2962	3494	4003	4511	4995	5461	5919	6382	6841	7292	7743
61	27 240	90 240	152 238	213 237	275 235	334 233	395 232	452 231	509 229	564 228	616 229	668 230	720 230	772 230	823 230	874 230
18	157	716	1265	1810	2355	2881	3408	3921	4431	4924	5401	5860	6310	6749	7184	7627
68	18 270	81 270	143 269	204 267	266 265	325 264	385 261	443 261	500 258	556 256	610 256	662 258	712 259	762 260	811 260	861 260
20	96	650	1203	1750	2294	2820	3345	3857	4366	4865	5340	5801	6242	6686	7122	7553
76	11 300	73 300	136 299	198 297	259 295	318 293	378 292	435 289	493 287	549 286	603 286	655 287	705 289	755 290	804 291	853 290
22	26	569	1111	1656	2195	2725	3250	3763	4268	4769	5259	5733	6182	6609	7030	7459
83	3 330	64 330	125 330	187 328	248 327	308 324	367 322	425 320	482 316	538 314	594 313	647 314	698 316	746 318	794 320	842 320
25		425	967	1508	2042	2574	3093	3605	4110	4602	5084	5561	6028	6482	6899	7316
95		48 375	109 375	170 372	231 369	291 366	349 364	407 361	464 358	520 357	574 356	628 356	681 358	732 361	779 364	826 364
30		179	723	1266	1800	2330	2852	3364	3868	4368	4856	5338	5811	6269	6701	7096
114		20 450	82 450	143 450	203 449	263 447	322 443	380 439	437 436	493 436	548 433	603 430	656 431	708 434	757 437	801 438

179
20 } Torque lb-in
450 } Speed RPM

300 cm³/r [18.3 in³/r]

Δ Pressure Bar [PSI]

	17 250	34 500	52 750	69 1000	86 1250	103 1500	121 1750	138 2000	155 2250	172 2500	190 2750	207 3000	224 3250	241 3500	259 3750	276 4000
2	608	1257	1919	2553	3196	3824	4475	5087	5707	6307	6901	7472	8015	8484	8950	9413
7.6	69 24	142 23	217 23	288 22	361 21	432 21	505 21	574 20	644 19	712 18	779 16	844 16	905 15	958 13	1012 11	1063 11
4	612	1283	1940	2587	3227	3856	4483	5094	5693	6293	6881	7462	8024	8574	9113	9629
15	69 50	145 48	219 47	292 46	364 45	435 44	506 44	575 44	643 43	710 42	777 41	842 40	906 40	968 39	1029 38	1087 37
6	570	1248	1906	2547	3178	3800	4420	5025	5619	6203	6773	7345	7899	8449	8992	9525
23	64 76	141 74	215 73	288 71	359 70	429 69	499 68	567 68	634 69	700 68	765 68	829 67	892 66	954 65	1015 64	1075 63
8	540	1210	1871	2522	3152	3781	4404	5008	5607	6186	6749	7319	7879	8433	8977	9512
30	61 101	137 100	211 98	285 96	356 94	427 93	497 92	565 92	633 92	698 93	762 93	826 93	890 93	952 91	1013 91	1074 91
10	496	1161	1825	2471	3110	3733	4352	4968	5574	6157	6721	7274	7811	8356	8887	9416
38	56 126	131 126	206 124	279 122	351 120	421 118	492 115	561 113	629 113	695 113	759 114	821 116	882 118	943 118	1003 117	1063 117
12	443	1108	1768	2418	3059	3688	4307	4918	5526	6114	6681	7239	7786	8338	8876	9411
45	50 151	125 151	200 150	273 148	345 145	416 143	486 141	555 140	624 139	690 139	754 140	817 142	879 144	941 144	1002 144	1062 144
14	387	1034	1701	2346	2985	3610	4227	4839	5452	6050	6622	7184	7723	8269	8816	9362
53	44 177	117 177	192 176	265 173	337 171	408 168	477 166	546 165	615 163	683 163	748 163	811 167	872 169	934 171	995 170	1057 170
16	366	961	1620	2264	2903	3530	4147	4753	5366	5960	6540	7098	7642	8169	8685	9211
61	41 202	109 202	183 201	256 199	328 197	399 195	468 192	537 190	606 189	673 188	738 188	801 189	863 191	922 194	980 196	1040 196
18	291	893	1546	2187	2829	3450	4067	4678	5283	5873	6451	7005	7537	8064	8580	9103
68	33 227	101 227	175 227	247 224	319 222	390 219	459 217	528 215	596 213	663 211	729 212	791 214	851 217	906 220	969 221	1028 221
20	204	797	1444	2094	2736	3361	3974	4585	5184	5775	6353	6907	7448	7974	8489	8992
76	23 252	90 252	163 252	236 251	309 249	380 246	449 243	518 241	585 239	652 238	717 238	780 239	841 242	900 245	958 247	1015 248
22	102	710	1366	2013	2651	3270	3885	4496	5096	5689	6271	6831	7362	7877	8375	8880
83	12 278	80 278	154 278	227 277	299 274	352 272	421 269	489 267	557 265	624 264	690 265	753 266	815 269	873 273	937 275	1003 275
25		553	1208	1851	2489	3114	3726	4335	4930	5523	6108	6670	7220	7763	8298	8877
95		62 316	136 316	209 316	281 313	352 310	421 307	489 303	557 301	624 299	690 298	753 298	815 301	873 306	937 310	991 312
30		233	941	1539	2179	2811	3430	4028	4625	5217	5802	6385	6957	7522	8060	8565
114		26 379	106 379	174 379	246 377	317 374	387 371	455 367	522 365	589 363	655 362	721 361	785 364	849 368	910 374	967 376

Änderungen und Druckfehler vorbehalten · 10.2014 · EN · EATON_Motoren Delta Series



Delta Series

Performance Data

347 cm³/r [21.2 in³/r]

Δ Pressure Bar [PSI]

- Continuous
- Intermittent
- No operation

Flow LPM [GPM]	347 cm ³ /r [21.2 in ³ /r]															
	17	34	52	69	86	103	121	138	155	172	190	207	224	241	259	276
	250	500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000	3250	3500	3750	4000
2	687	1415	2128	2824	3532	4248	4947	5633	6298	6964	7575	8182	8743	9209	9624	10081
7.6	78	160	240	319	399	480	558	636	711	786	855	924	987	1040	1087	1138
4	689	1443	2179	2891	3606	4302	4986	5653	6316	6965	7615	8260	8891	9515	10120	10698
15	78	163	246	326	407	486	563	638	713	786	860	933	1004	1074	1143	1208
6	648	1406	2154	2866	3580	4276	4970	5641	6290	6921	7563	8190	8812	9427	10029	10630
23	64	139	211	282	353	424	493	561	627	692	756	819	881	942	1002	1062
8	606	1356	2105	2825	3545	4241	4943	5621	6274	6899	7522	8144	8768	9388	9998	10598
30	68	153	238	319	400	479	558	635	708	779	849	919	990	1060	1129	1196
10	550	1295	2041	2765	3488	4188	4891	5585	6264	6899	7505	8091	8672	9238	9885	10488
38	62	146	230	312	394	473	552	631	707	779	847	913	979	1048	1116	1184
12	478	1227	1976	2698	3411	4108	4802	5479	6146	6782	7396	7992	8585	9176	9767	10345
45	54	139	223	305	385	464	542	619	694	766	835	902	969	1036	1103	1168
14	409	1151	1896	2624	3344	4048	4742	5418	6083	6722	7339	7939	8511	9142	9738	10318
53	46	130	214	296	378	457	535	612	687	759	829	896	964	1032	1099	1165
16	339	1033	1774	2494	3209	3907	4605	5280	5956	6610	7243	7850	8438	9014	9592	10166
61	38	117	200	282	362	441	520	596	672	746	818	886	953	1018	1083	1148
18	245	943	1676	2401	3113	3809	4500	5175	5837	6477	7107	7711	8308	8895	9466	10040
68	28	106	189	271	351	430	508	584	659	731	802	871	938	1004	1069	1133
20	143	832	1571	2290	3003	3697	4386	5050	5715	6351	6968	7569	8147	8721	9297	9855
76	16	94	177	259	339	417	495	570	645	717	787	855	920	985	1050	1113
22	34	715	1454	2175	2896	3594	4280	4950	5602	6236	6854	7449	8027	8590	9150	9705
83	4	81	164	246	327	406	483	559	632	704	774	841	906	970	1033	1096
25	523	1251	1969	2693	3395	4081	4756	5414	6057	6687	7296	7882	8455	9011	9534	10040
95	59	141	222	304	383	461	537	611	684	755	824	890	957	1017	1076	1133
30	152	1072	1749	2434	3123	3802	4468	5114	5763	6400	7018	7633	8232	8819	9397	9955
114	17	121	197	275	353	429	504	577	651	723	792	862	929	996	1061	1128
	327	327	327	327	327	327	323	319	315	314	313	315	319	323	327	327

152 } Torque lb-in
17 } Nm
327 } Speed RPM

395 cm³/r [24.1 in³/r]




Δ Pressure Bar [PSI]

Flow LPM [GPM]	395 cm ³ /r [24.1 in ³ /r]															
	17	34	52	69	86	103	121	138	155	172	190	207	224	241	259	276
	250	500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000	3250	3500	3750	4000
2	782	1622	2436	3237	4034	4837	5650	6428	7213	7911	8607	9235	9798	10439	11079	11719
7.6	88	183	275	365	455	546	638	726	814	893	972	1043	1106	1172	1238	1306
4	770	1643	2476	3287	4088	4860	5617	6357	7103	7838	8566	9285	9990	10698	11398	12098
15	87	186	280	371	462	549	634	718	802	885	967	1048	1128	1206	1283	1360
6	746	1609	2460	3280	4083	4867	5644	6384	7103	7811	8520	9232	9930	10616	11299	11979
23	84	182	278	370	461	549	637	721	802	882	962	1042	1121	1199	1276	1353
8	699	1561	2430	3249	4062	4852	5638	6398	7126	7820	8506	9198	9884	10565	11242	11915
30	79	176	274	367	459	548	637	722	805	883	960	1038	1116	1193	1270	1347
10	630	1489	2345	3180	4008	4819	5622	6397	7142	7856	8525	9142	9776	10438	11118	11798
38	71	168	265	359	453	544	635	722	806	887	967	1042	1104	1178	1252	1326
12	556	1412	2264	3090	3898	4689	5473	6225	6976	7710	8415	9081	9681	10304	10933	11567
45	63	159	256	349	440	529	618	703	788	870	950	1025	1093	1163	1233	1303
14	469	1325	2178	2999	3819	4611	5391	6137	6867	7581	8270	8942	9598	10234	10855	11471
53	53	150	246	339	431	521	609	693	775	856	934	1010	1084	1155	1226	1297
16	360	1220	2069	2894	3715	4506	5290	6048	6782	7495	8190	8873	9534	10181	10819	11457
61	41	138	234	327	419	509	597	683	766	846	925	1002	1076	1149	1222	1295
18	334	1098	1951	2777	3591	4386	5172	5924	6665	7387	8087	8763	9418	10048	10653	11243
68	38	124	220	314	405	495	584	669	752	834	913	989	1063	1134	1204	1274
20	221	993	1837	2660	3479	4259	5030	5780	6518	7238	7939	8613	9258	9892	10517	11133
76	192	192	192	192	191	189	186	183	181	179	177	178	182	188	194	200
22	115	862	1698	2521	3337	4136	4895	5641	6366	7067	7752	8414	9062	9702	10337	10967
83	13	97	192	285	377	467	553	637	719	798	875	950	1023	1095	1167	1239
25	637	1473	2296	3117	3909	4687	5434	6163	6861	7536	8192	8829	9457	10070	10670	11257
95	240	240	240	240	240	238	235	232	229	227	227	228	233	240	247	254
30	211	1079	1903	2725	3526	4311	5079	5824	6547	7240	7921	8577	9228	9874	10518	11159
114	288	288	288	288	286	283	280	277	274	273	275	280	287	294	301	308



Delta Series Performance Data

470 cm³/r [28.7 in³/r]
Δ Pressure Bar [PSI]

 Continuous
 Intermittent
 No operation

	17	34	52	69	86	103	121	138	155	172	190	207
	250	500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000
2	925	1885	2820	3727	4639	5526	6404	7270	8129	8978	9794	10551
7.6	104	213	318	421	524	624	723	821	918	1014	1106	1191
4	942	1942	2917	3849	4776	5692	6594	7488	8352	9199	10014	10824
15	106	219	329	435	539	643	744	845	943	1039	1131	1222
6	906	1921	2892	3833	4772	5676	6572	7440	8309	9152	9974	10786
23	102	217	327	433	539	641	742	840	938	1033	1126	1218
8	856	1866	2853	3795	4730	5634	6520	7379	8230	9075	9895	10693
30	97	211	322	428	534	636	736	833	929	1025	1117	1207
10	780	1799	2800	3745	4685	5594	6479	7337	8177	9009	9843	10638
38	88	203	316	423	529	632	731	828	923	1017	1111	1201
12	699	1709	2711	3661	4597	5508	6403	7258	8101	8916	9719	10506
45	79	193	306	413	519	622	723	819	915	1007	1097	1186
14	596	1612	2609	3561	4490	5390	6268	7112	7941	8743	9519	10282
53	67	182	295	402	507	608	708	803	897	987	1075	1161
16	467	1486	2490	3440	4371	5268	6152	6992	7810	8601	9370	10118
61	53	168	280	388	493	595	695	789	882	971	1058	1142
18	332	1353	2357	3317	4256	5157	6043	6892	7713	8501	9270	10026
68	37	153	266	375	481	582	682	778	871	960	1047	1132
20	304	1226	2218	3172	4102	4994	5873	6731	7557	8365	9147	9922
76	34	138	250	358	463	564	663	760	853	944	1033	1120
22	137	1059	2048	3004	3945	4840	5727	6576	7399	8198	8967	9715
83	15	120	231	339	445	546	647	742	835	926	1012	1097
25	83	1816	2765	3680	4575	5455	6313	7133	7928	8691	9436	10165
95	94	205	312	415	517	616	713	805	895	981	1065	1152
30	491	1318	2295	3232	4142	5022	5881	6721	7522	8300	9052	9780
114	55	149	259	365	468	567	664	759	849	937	1022	1105
	241	241	241	241	241	240	237	236	233	232	232	227

491 } Torque lb-in
 55 } Nm
 241 } Speed RPM

542 cm³/r [33.1 in³/r]
Δ Pressure Bar [PSI]




	17	34	52	69	86	103	121	138	155	172
	250	500	750	1000	1250	1500	1750	2000	2250	2500
2	1131	2304	3433	4558	5668	6725	7732	8683	9645	10457
7.6	128	260	388	515	640	759	873	980	1089	1181
4	1139	2352	3515	4638	5735	6781	7819	8809	9752	10644
15	129	266	397	524	648	766	883	994	1101	1202
6	1063	2267	3433	4549	5645	6694	7697	8675	9630	10557
23	120	256	388	514	637	756	869	979	1087	1192
8	992	2186	3354	4475	5578	6646	7665	8608	9535	10449
30	112	247	379	505	630	750	865	972	1076	1180
10	897	2090	3259	4378	5482	6555	7602	8578	9482	10343
38	101	236	368	494	619	740	858	968	1071	1168
12	807	1980	3138	4256	5365	6440	7494	8481	9403	10275
45	91	224	354	481	606	727	846	957	1062	1160
14	693	1873	3028	4138	5218	6268	7318	8304	9235	10105
53	78	211	342	467	589	708	826	937	1043	1141
16	554	1732	2882	3993	5083	6107	7118	8089	9032	9928
61	63	196	325	451	574	689	804	913	1020	1121
18	409	1582	2738	3844	4924	5952	6956	7928	8874	9772
68	46	179	309	434	556	672	785	895	1002	1103
20	355	1428	2587	3696	4767	5804	6813	7786	8732	9624
76	40	161	292	417	538	655	769	879	986	1087
22	310	1259	2412	3518	4595	5619	6618	7589	8536	9438
83	35	142	272	397	519	634	747	857	964	1065
25	958	2107	3215	4281	5310	6305	7264	8204	9110	9910
95	108	238	363	483	599	712	820	926	1029	1129
30	521	1599	2696	3769	4804	5809	6776	7705	8617	9513
114	59	181	304	425	542	656	765	870	973	1073
	209	209	209	209	209	208	207	207	205	205



Delta Series

Performance Data

649 cm³/r [39.6 in³/r]
Δ Pressure Bar [PSI]

-  Continuous
-  Intermittent
-  No operation

	17 250	34 500	52 750	69 1000	86 1250	103 1500	121 1750	138 2000	155 2250
2	1365 154	2787 315	4156 469	5488 620	6775 765	7949 897	9102 1028	10174 1149	11100 1253
7.6	10	10	10	9	9	8	7	6	3
4	1326 150	2770 313	4113 464	5400 610	6632 749	7819 883	8973 1013	10030 1132	11015 1244
15	22	22	21	20	21	20	19	19	18
6	1258 142	2663 301	3998 451	5270 595	6521 736	7692 868	8774 991	9808 1107	10809 1220
23	35	34	33	32	32	32	32	32	31
8	1154 130	2558 289	3902 441	5195 587	6455 729	7659 865	8775 991	9770 1103	10708 1209
30	47	46	45	44	44	42	42	43	43
10	1045 118	2442 276	3787 428	5076 573	6331 715	7541 851	8691 981	9685 1093	10573 1194
38	58	58	57	56	55	53	53	54	55
12	928 105	2321 262	3662 413	4939 558	6193 699	7385 834	8536 964	9577 1081	10469 1182
45	70	70	70	68	67	66	65	65	66
14	740 84	2127 240	3469 392	4746 536	5989 676	7188 812	8352 943	9433 1065	10439 1179
53	82	82	82	81	80	79	77	76	76
16	614 69	1990 225	3318 375	4588 518	5795 654	6942 784	8081 912	9154 1033	10141 1145
61	93	93	93	93	92	91	90	89	90
18	448 51	1830 207	3158 356	4414 498	5619 634	6754 763	7853 887	8890 1004	9873 1115
68	105	105	105	105	104	103	102	102	104
20	281 32	1618 183	2944 332	4198 474	5410 611	6551 740	7653 864	8689 981	9676 1092
76	117	117	117	117	117	116	114	114	115
22	276 31	1518 171	2842 321	4099 463	5313 600	6453 728	7554 853	8596 970	9576 1081
83	128	128	128	128	128	128	126	125	126
25		1079 122	2393 270	3646 412	4834 546	5969 674	7071 798	8112 916	9105 1028
95		146	146	146	146	146	145	144	144
30		436 49	1747 197	3013 340	4225 477	5356 605	6454 729	7489 845	8479 957
114		175	175	175	175	175	174	174	175

754 cm³/r [46.0 in³/r]
Δ Pressure Bar [PSI]

8479
957
175 } Torque lb-in
Nm
Speed RPM

	17 250	34 500	52 750	69 1000	86 1250	103 1500	121 1750	138 2000
2	1561 176	3128 353	4605 520	6014 679	7422 838	8721 985	9978 1127	10910 1232
7.6	9	8	8	8	7	7	6	5
4	1548 175	3142 355	4650 525	6029 681	7350 830	8605 971	9785 1105	10892 1230
15	19	18	18	18	18	18	17	17
6	1470 166	3084 348	4608 520	6022 680	7346 829	8555 966	9722 1098	10850 1225
23	30	29	28	27	27	27	27	27
8	1359 153	2975 336	4504 509	5925 669	7263 820	8488 958	9638 1088	10694 1207
30	40	39	38	38	37	36	37	38
10	1240 140	2844 321	4364 493	5815 656	7185 811	8458 955	9603 1084	10584 1195
38	50	50	49	48	47	46	46	47
12	1079 122	2686 303	4207 475	5641 637	7008 791	8248 931	9390 1060	10400 1174
45	60	60	60	59	58	57	57	57
14	932 105	2512 284	4038 456	5477 618	6850 773	8124 917	9274 1047	10286 1161
53	70	70	70	70	69	68	67	67
16	753 85	2328 263	3834 433	5246 592	6577 742	7831 884	8999 1016	10040 1133
61	80	80	80	80	80	79	78	78
18	547 62	2119 239	3632 410	5024 567	6320 714	7551 852	8706 983	9721 1097
68	90	90	90	90	90	90	90	90
20	310 35	1919 217	3430 387	4826 545	6126 692	7339 829	8466 956	9430 1065
76	100	100	100	100	100	100	100	100
22	248 28	1666 188	3172 358	4571 516	5878 664	7102 802	8254 932	9269 1046
83	110	110	110	110	110	110	110	110
25		1261 142	2784 314	4191 473	5504 621	6727 759	7873 889	8911 1006
95		126	126	126	126	126	126	126
30		545 62	2055 232	3474 392	4800 542	6036 681	7175 810	8231 929
114		151	151	151	151	151	151	151



Delta Series

Dimensions

Wheel Mount

Ports

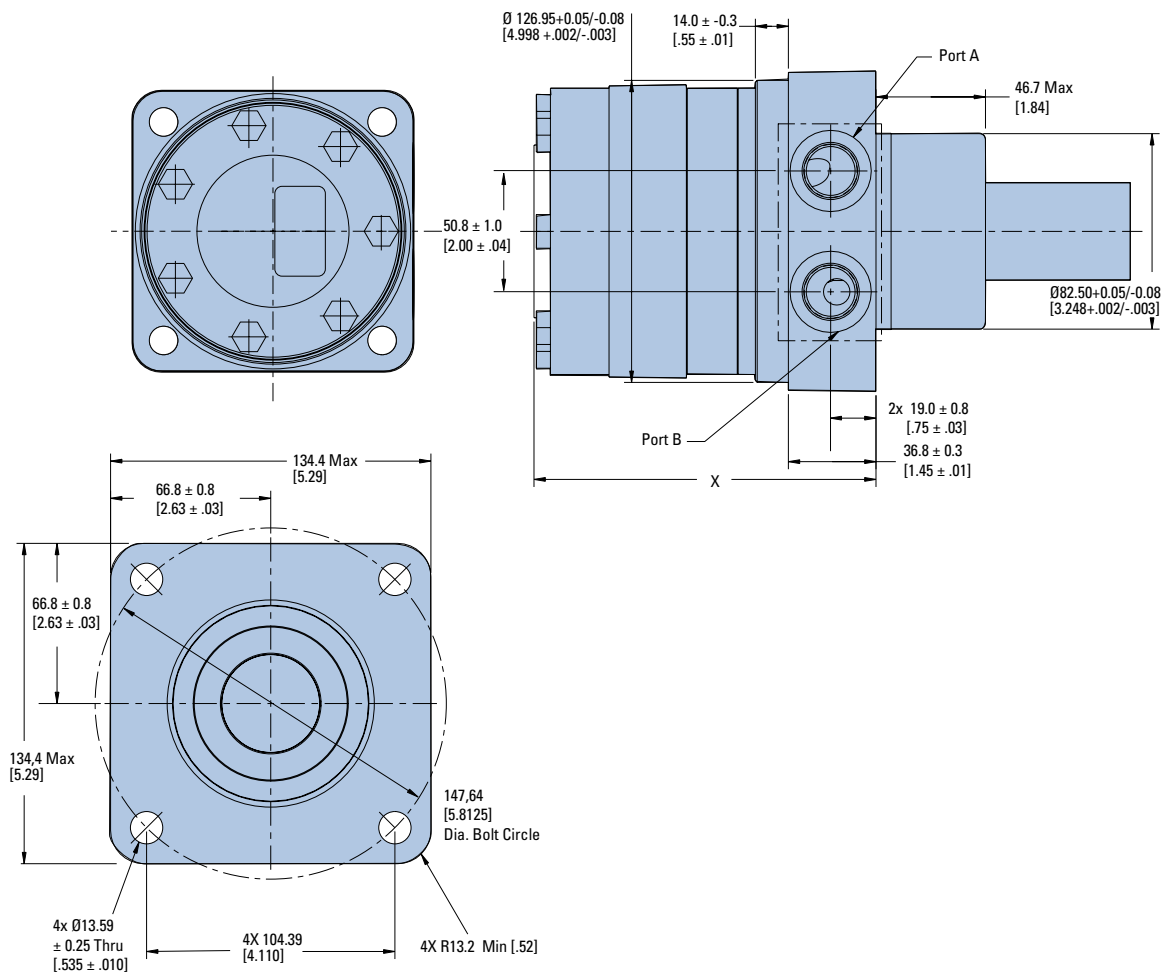
7/8 -14 UNF-2B SAE O-ring Ports

G 1/2 (BSP) Ports

Standard Rotation Viewed from Shaft End

Port A Pressurized — CCW

Port B Pressurized — CW



DISPLACEMENT CODE	X MAX	CODE	MAX
069	130.6 [5.14]	212	156.5 [6.16]
089	135.9 [5.35]	241	162.6 [6.40]
121	144.3 [5.68]	287	172.5 [6.79]
143	150.4 [5.92]	331	181.9 [7.16]
154	153.2 [6.03]	396	195.6 [7.70]
183	150.4 [5.92]	460	209.0 [8.23]



Delta Series

Dimensions

Standard Mount

Ports

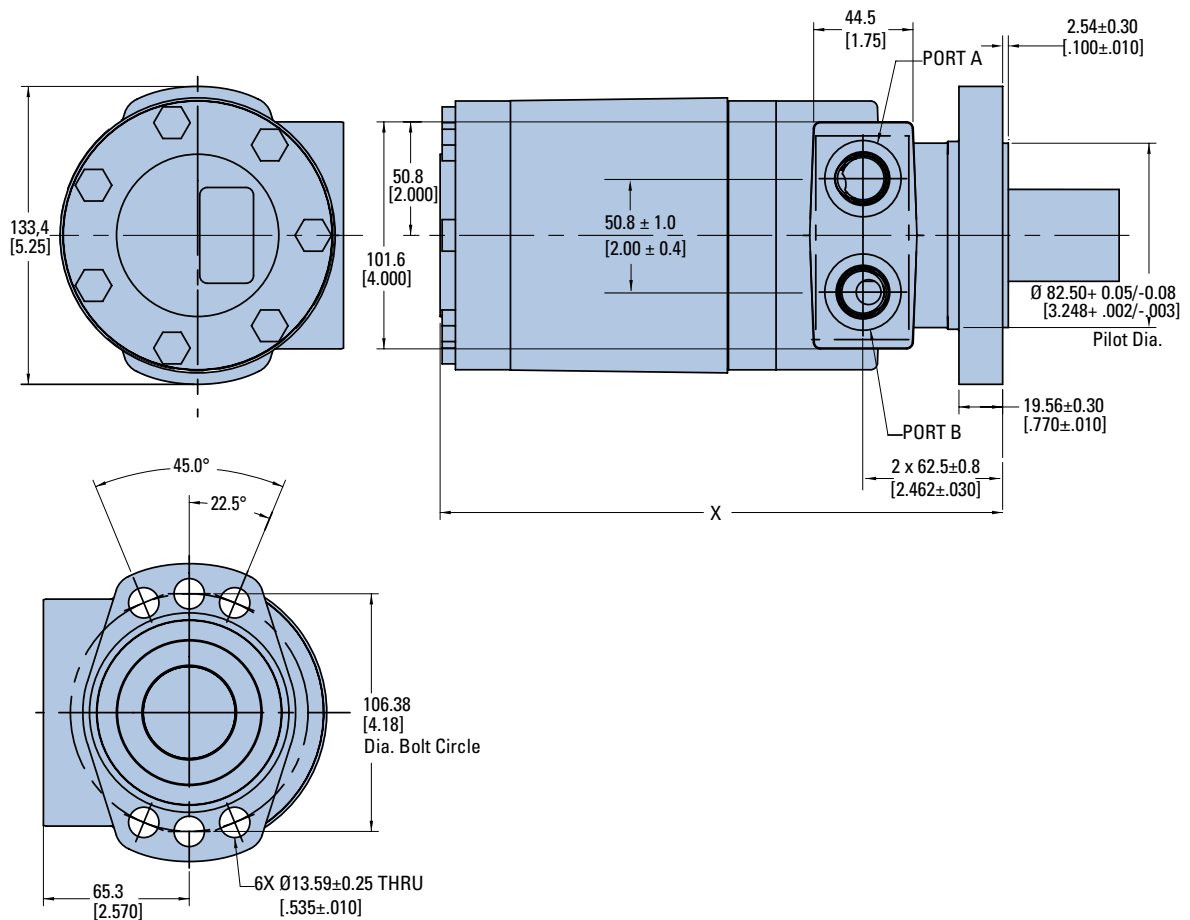
7/8 -14 UNF-2B SAE O-ring Ports

G 1/2 (BSP) Ports

Standard Rotation Viewed from Shaft End

Port A Pressurized — CCW

Port B Pressurized — CW



DISPLACEMENT CODE	X MAX	CODE	MAX
069	173.8 [6.84]	212	199.8 [7.87]
089	179.7 [7.08]	241	206.0 [8.11]
121	187.7 [7.39]	287	215.8 [8.50]
143	193.7 [7.63]	331	225.1 [8.86]
154	196.5 [7.74]	396	238.8 [9.40]
183	193.7 [7.63]	460	252.3 [9.93]

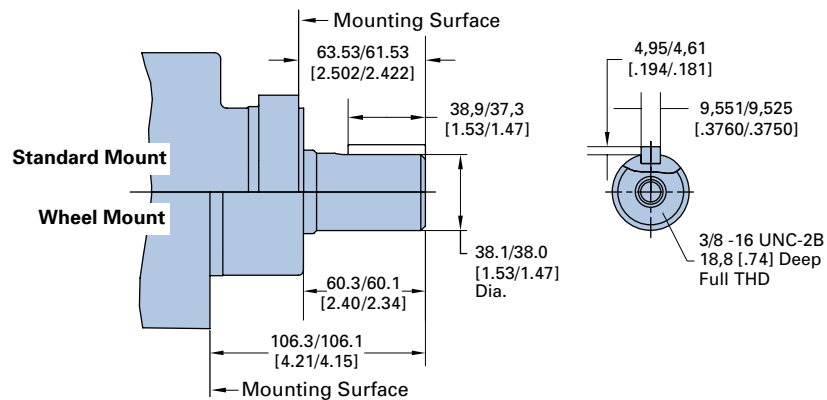


Delta Series

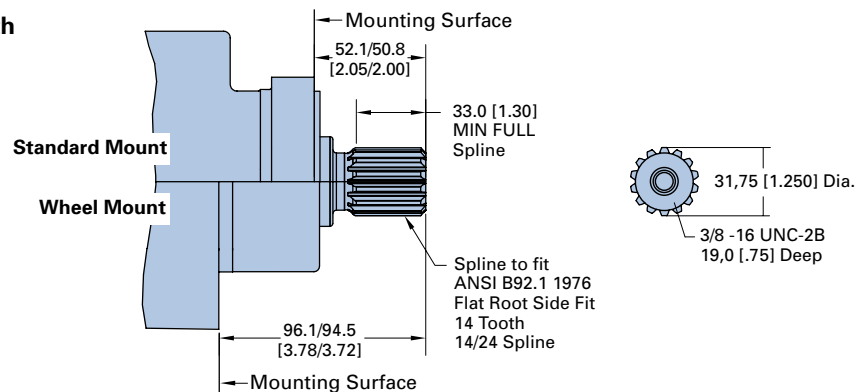
Dimensions

Shafts

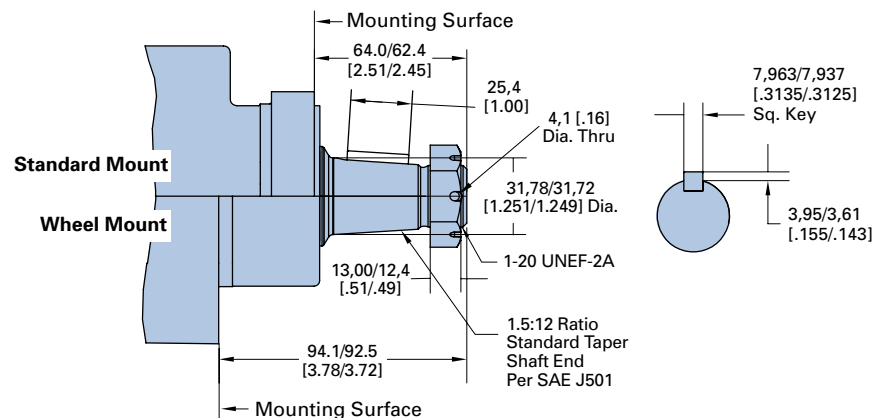
1½ Inch Straight



1½ Inch 14 Tooth Splined



1½ Inch Tapered





Delta Series

Shaft Side Load Capacity

These curves indicate the radial load capacity on the motor shaft(s) at various locations.

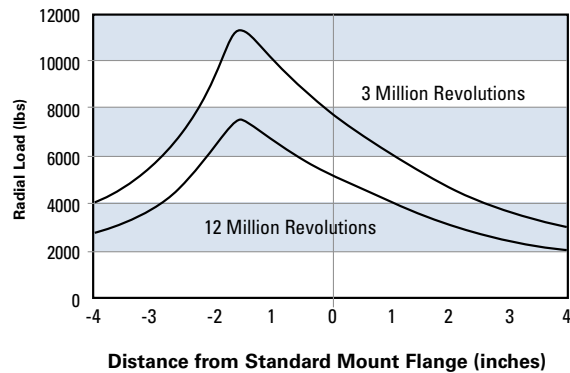
Each curve is based on B 10 bearing life (2000 hours of 12,000,000 shaft revolutions at 100 RPM) at rated output torque.

To determine radial load at speeds other than 100 RPM, multiply the load values given on the bearing curve by the factors in the chart below.

RPM	Multiplication Factor
50	1.23
100	1.00
200	0.81
300	0.72
400	0.66
500	0.62
600	0.58
700	0.56
800	0.54

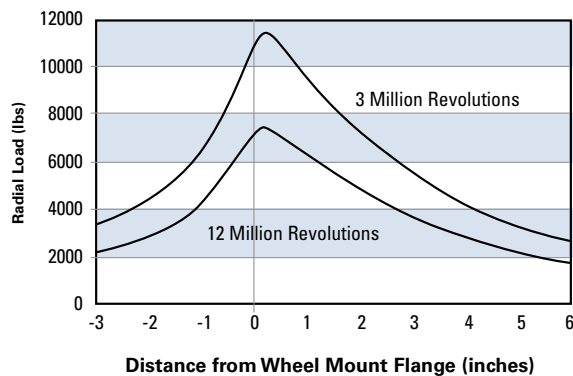
Side Load Chart for Standard Mount

Allowable Radial Load, Delta Motor
L₁₀ Bearing Life per ISO 281



Side Load Chart for Wheel Mount

Allowable Radial Load, Delta Motor
L₁₀ Bearing Life per ISO 281





Delta Series

Product Numbers

Note:

For Delta Series Motors with a configuration **Not Shown** in the charts below contact your Eaton Representative.

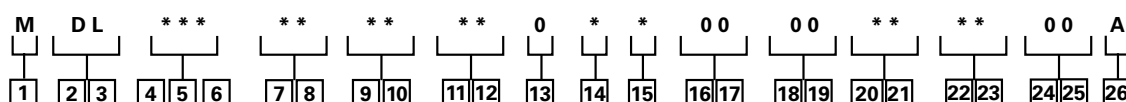
MOUNTING	SHAFT	PORT SIZE	TIMING	DISPLACEMENT cm^3/r [in^3/r] / PRODUCT NUMBER			
				113 [6.9]	146 [8.9]	198 [12.1]	234 [14.3]
Wheel Motor	1-1/4 Inch Tapered	7/8" O-ring	Standard -CCW	184-0005-001	184-0006-001	184-0002-001	184-0001-001
			Standard -CW	184-0025-001	184-0026-001	184-0027-001	184-0028-001
	1-1/2 Inch 17 T Splined	7/8" O-ring	Standard -CCW	184-0013-001	184-0014-001	184-0015-001	184-0016-001
			Standard -CW	184-0037-001	184-0038-001	184-0039-001	184-0040-001
	1-1/4 Inch Tapered	7/8" O-ring	Standard -CCW	252 [15.4]	300 [18.3]	347 [21.2]	395 [24.1]
				184-0003-001	184-0004-001	184-0007-001	184-0008-001
				184-0029-001	184-0030-001	184-0031-001	184-0032-001
				184-0017-001	184-0018-001	184-0019-001	184-0020-001
	1-1/2 Inch 17 T Splined	7/8" O-ring	Standard -CW	184-0041-001	184-0042-001	184-0043-001	184-0044-001
				470 [28.7]	542 [33.1]	649 [39.6]	754 [46.0]
	1-1/4 Inch Tapered	7/8" O-ring	Standard -CCW	184-0009-001	184-0010-001	184-0011-001	184-0012-001
				184-0033-001	184-0034-001	184-0035-001	184-0036-001
184-0021-001				184-0022-001	184-0023-001	184-0024-001	
184-0045-001				184-0046-001	184-0047-001	184-0048-001	



Delta Series

Model Code

The following 26-digit coding system has been developed to identify all of the configuration options for the Delta Low Speed High Torque motor. Use this model code to specify a motor with the desired features. All 26 digits of the code must be present when ordering. You may want to photocopy the matrix below to ensure that each number is entered in the correct box.



1 Product

M – Motor

2, 3 Series

DL – Delta Series

4, 5, 6 Displacement cm³/r [in³/r]

069 – 113 [6.9]
089 – 146 [8.9]
121 – 198 [12.1]
143 – 234 [14.3]
154 – 252 [15.4]
183 – 300 [18.3]
212 – 347 [21.2]
241 – 395 [24.1]
287 – 470 [28.7]
331 – 542 [33.1]
396 – 649 [39.6]
460 – 754 [46.0]

7, 8 Mounting Type

AA – Wheel, 4 Bolt: 82.6 [3.25] Pilot Dia. 13.59 [.535] Dia. Holes On 147.6 [5.81] Dia. Bolt Circle. 127.0 [5.00] Dia. Rear Mount Pilot
AB – Standard, 6 Bolt: 82.6 [3.25] Pilot Dia. 13.59 [.535] Dia. Holes on 106.4 [4.19] Dia. Bolt Circle. .100 [2.54] Pilot Length. Sae A, Magneto
AC – Standard, 6 Bolt: 82.6 [3.25] Pilot Dia. 13.59 [.535] Dia. Holes on 106.4 [4.19] Dia. Bolt Circle. .250 [6.35] Pilot Length. SAE A, Magneto

9, 10 Output Shaft

01 – 38.10 [1.500] Dia. Straight with .375-16 UNC-2B Thread, and 9.52 [.375] Sq x 25.40 [1.000] Straight Key
02 – 31.75 [1.250] Dia. .125:1 Tapered Shaft per SAE J501 with 1.000-20 UNEF-2A Threaded Shaft End and Slotted Hex Nut, 7.938 [.3125] Sq x 25.40 [1.000] Straight Key
03 – 41.30 [1.626] Dia. .125:1 Tapered Shaft per SAE J501 with 1.250-18 UNEF-2A Threaded Shaft End and Slotted Hex Nut, 11.125 [.4380] Sq x 34.04 [1.340] Straight Key
04 – 31.75 [1.250] Dia. Flat Root Side Fit, 14 Tooth, 12/24 DP 30 Deg. Involute Spline with .375-16 UNC-2B Thread in End, 33.0 [1.30] Minimum Full Spline Length
05 – 38.10 [1.500] Dia. Flat Root Side Fit, 17 Tooth, 12/24 DP 30 Deg. Involute Spline, 31.8 [1.25] Minimum Full Spline Length, with .375-16 UNC-2B Thread in End
06 – 38.10 [1.500] Dia. Tapered Shaft per SAE J501 with 1.125-18 UNEF-2A Thread in End, 7.938 [.3125] Sq x 31.75 [1.250] Key

11, 12 Ports

AA – .875-14 UNF-2B SAE O-Ring
AC – G 1/2 BSP Straight Thread

13 Pressure/Flow Option

0 – None

14 Geroler Option

0 – Standard
B – Tight Fitting Geroler

15 Seal Option

0 – Standard
1 – Viton
4 – Seal Guard

16, 17 Accessories

00 – None

18, 19 Special Features (Hardware)

00 – None

20, 21 Special Features (Assembly)

00 – Standard Rotation - CCW
01 – Standard Rotation - CW

22, 23 Paint/Packaging

AA – No Paint, Individual Box
AB – Painted Low Gloss Black, Individual Box
AC – Epoxy Coated (Frost Gray), Individual Box
AE – No Paint, Bulk Box
AF – Painted Low Gloss Black, Bulk Box

24, 25 Customer Identification

00 – None

26 Design Code

A – One (1)

Feature in **bold** are preferred and allow for shorter lead time.