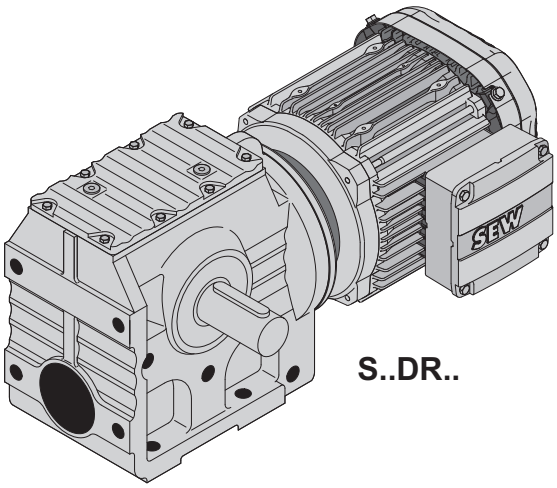
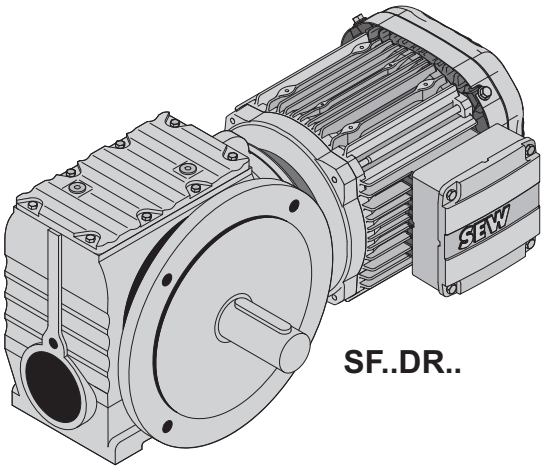
11 Helical-worm gearmotors

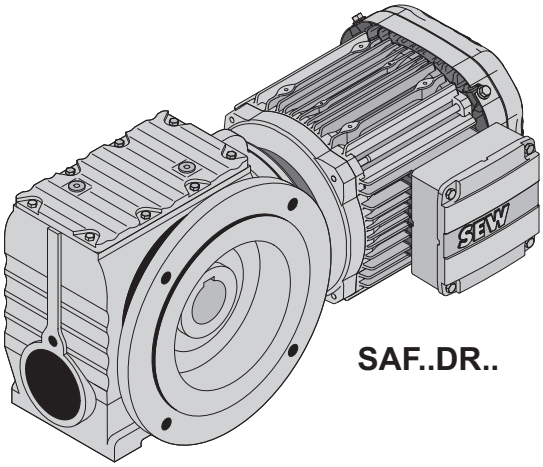
11.1 S.. DRS/DRN.. Designs



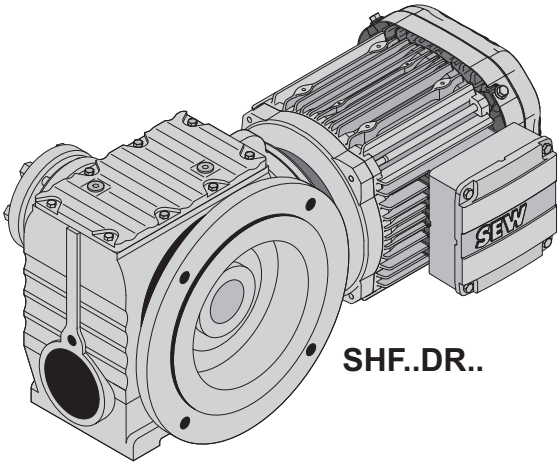
S..DR..



SF..DR..



SAF..DR..



SHF..DR..

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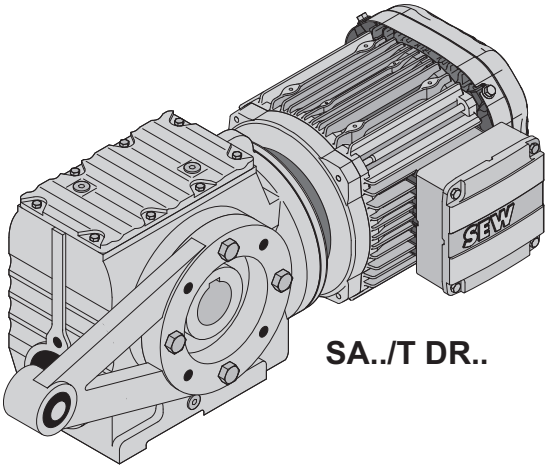
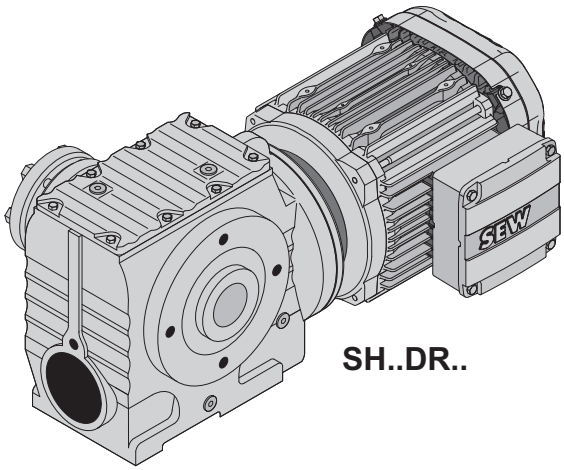
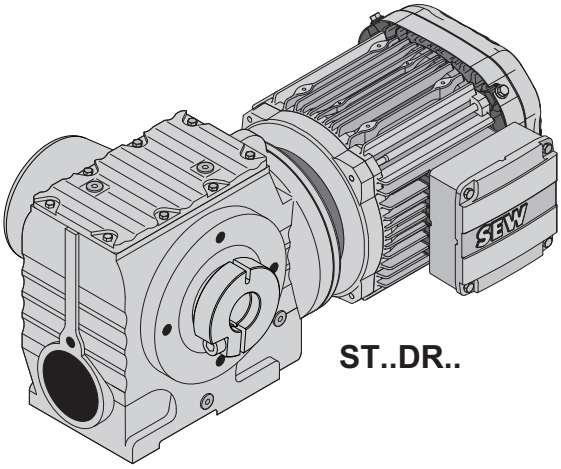
21933480/EN-US – 04/2018



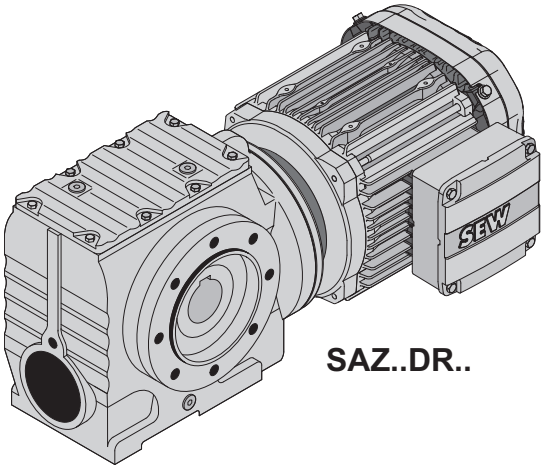
SA../T DR..



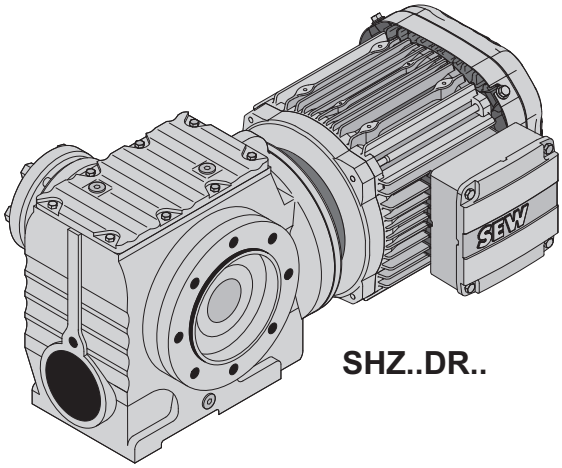
SH..DR..



ST..DR..



SAZ..DR..



SHZ..DR..

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21933480/EN-US – 04/2018

11.2 S.. DRS/DRN.. Possible combinations

S37, n_e=1700 rpm							810 lb-in
n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M DRN90S	DRN90L
					2		
11	800	675	-	157.43			
12	795	675	-	144.40*			
14	765	675	-	122.94			
16	760	675	-	106.00*			
17	750	675	-	98.80*			
20	725	675	-	86.36			
21	725	675	-	80.96			
24	705	675	-	71.44*			
27	695	675	-	63.33			
30	715	675	-	55.93			
32	670	675	-	53.83			
33	705	675	-	51.30*			
39	690	675	-	43.68			
45	670	645	-	37.66			
48	660	630	-	35.10*			
55	645	600	-	30.68			
59	645	580	-	28.76			
67	625	555	-	25.38*			
76	615	530	-	22.50*			
85	440	515	-	19.89			
89	600	495	-	19.13*			
93	430	500	-	18.24*			
109	420	470	-	15.53			
127	415	440	-	13.39			
136	405	430	-	12.48*			
156	395	410	-	10.91			
166	395	395	-	10.23			
188	380	380	-	9.02*			
212	380	360	-	8.00*			
250	360	340	-	6.80*			
269	305	345	-	6.33			
316	300	325	-	5.38			
350	290	310	-	4.86*			
428	280	285	-	3.97			

S37R17, n_e=1700 rpm						810 lb-in
n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M
					2 3	
0.17	810	675	-	10037		
0.20	810	675	-	8654		
0.21	810	675	-	8066		
0.24	810	675	-	7051		
0.28	810	675	-	6079		
0.31	810	675	-	5431		
0.36	810	675	-	4747		
0.41	810	675	-	4155		
0.47	810	675	-	3632		

21933480/EN-US – 04/2018

S37R17, n_e=1700 rpm						810 lb-in
n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M
0.59	810	675	-	2866		
0.69	810	675	-	2471		
0.79	810	675	-	2160		
0.90	810	675	-	1887		
1.0	810	675	-	1665		
1.2	810	675	-	1456		
1.3	810	675	-	1271		
1.5	810	675	-	1121		
1.7	810	675	-	994		
2.0	810	675	-	869		
					2 2	
2.2	810	675	-	774		
2.6	810	675	-	666		
2.9	810	675	-	596		
3.3	810	675	-	521		
3.7	810	675	-	456		
4.3	810	675	-	398		
4.8	810	675	-	351		
5.6	810	675	-	303		
6.4	810	675	-	265		
7.3	810	675	-	232		
8.4	810	675	-	202		
9.5	810	675	-	179		
11	810	675	-	158		
12	810	675	-	144		
14	810	675	-	118		
15	810	675	-	110*		

S47, n_e=1700 rpm								1500 lb-in
n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M DRN90S	DRN90L	DRN100LM DRN100L
						2		
8.5	1500	1200	-	201.00*				
9.2	1480	1200	-	184.80*				
11	1480	1200	-	158.12				
12	1470	1200	-	137.05				
13	1470	1200	-	128.10*				
15	1470	1200	-	110.73				
18	1470	1200	-	94.08*				
20	1470	1200	-	84.00*				
24	1470	1200	-	71.75*				
24	1370	1180	-	69.39				
25	1450	1190	-	67.20*				
27	1370	1140	-	63.80*				
30	1340	1120	-	56.61				
31	1370	1070	-	54.59				
36	1370	1000	-	47.32				
38	1370	970	-	44.22*				
44	1370	910	-	38.23				
52	1370	850	-	32.48*				

21933480/EN-US – 04/2018

S47, n_e=1700 rpm								1500 lb-in
n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M DRN90S	DRN90L	DRN100LM DRN100L
59	1360	810	-	29.00*				
69	1280	770	-	24.77				
73	1250	755	-	23.20*				
84	970	690	-	20.33				
87	1080	735	-	19.54				
96	960	650	-	17.62				
103	960	630	-	16.47*				
119	960	585	-	14.24				
140	960	540	-	12.10*				
157	950	510	-	10.80*				
184	920	480	-	9.23*				
197	880	475	-	8.64*				
234	760	475	-	7.28				
249	690	470	-	6.83				
266	670	465	-	6.40*				
315	575	455	-	5.39				
357	510	450	-	4.76				
425	420	445	-	4.00*				

S47R17, n_e=1700 rpm						1630 lb-in
n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M
					2 3	
0.13	1630	1180	-	12909		
0.15	1630	1180	-	11189		
0.16	1630	1180	-	10374		
0.19	1630	1180	-	8992		
0.22	1630	1180	-	7860		
0.25	1630	1180	-	6887		
0.28	1630	1180	-	6055		
0.32	1630	1180	-	5292		
0.37	1630	1180	-	4637		
0.42	1630	1180	-	4092		
0.47	1630	1170	-	3582		
0.54	1630	1170	-	3131		
0.63	1630	1170	-	2714		
0.70	1630	1170	-	2412		
0.80	1630	1170	-	2131		
0.91	1630	1170	-	1863		
1.0	1630	1170	-	1663		
1.2	1630	1170	-	1435		
1.4	1630	1170	-	1254		
1.5	1630	1170	-	1120		
1.6	1630	1170	-	1083		
1.8	1610	1170	-	956		
					2 2	
1.8	1630	1170	-	965		
2.0	1630	1170	-	865		
2.3	1630	1170	-	750		
2.6	1630	1170	-	655		

S47R17, n_e=1700 rpm						1630 lb-in
n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M
3.0	1630	1170	-	574		
3.4	1630	1170	-	506		
3.9	1630	1170	-	438		
4.4	1630	1170	-	388		
5.1	1630	1170	-	336		
5.8	1630	1170	-	294		
6.6	1630	1180	-	257*		
7.4	1630	1170	-	229		
8.5	1630	1170	-	200		
9.1	1630	1170	-	187		
10	1630	1170	-	165		
11	1630	1170	-	148		
13	1630	1170	-	131		

S57, n_e=1700 rpm								2610 lb-in
n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M DRN90S	DRN90L	DRN100LM DRN100L
						2		
8.5	2610	1600	-	201.00*				
9.2	2610	1600	-	184.80*				
11	2610	1600	-	158.12				
12	2610	1600	-	137.05				
13	2610	1600	-	128.10*				
15	2610	1600	-	110.73				
18	2650	1590	-	94.08*				
20	2520	1620	-	84.00*				
24	2430	1640	-	71.75*				
24	2160	1690	-	69.39				
25	2300	1670	-	67.20*				
27	2160	1690	-	63.80*				
30	1990	1720	-	56.61				
31	2160	1690	-	54.59				
36	2160	1660	-	47.32				
38	2160	1610	-	44.22*				
44	2160	1520	-	38.23				
52	2160	1420	-	32.48*				
59	2160	1350	-	29.00*				
69	1940	1300	-	24.77				
73	1850	1280	-	23.20*				
84	1480	1180	-	20.33				
87	1610	1240	-	19.54				
96	1480	1100	-	17.62				
103	1480	1070	-	16.47*				
119	1490	1000	-	14.24				
140	1490	930	-	12.10*				
157	1490	880	-	10.80*				
184	1310	860	-	9.23*				
197	1240	850	-	8.64*				
234	1070	830	-	7.28				
249	880	850	-	6.83				

21933480/EN-US – 04/2018

S57, n_e=1700 rpm								2610 lb-in
n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M DRN90S	DRN90L	DRN100LM DRN100L
266	860	830	-	6.40*				
315	840	780	-	5.39				
357	740	765	-	4.76				
425	625	740	-	4.00*				

S57R17, n_e=1700 rpm						2910 lb-in
n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M
					2 3	
0.13	2910	1530	-	12909		
0.15	2910	1530	-	11189		
0.16	2910	1530	-	10374		
0.19	2910	1530	-	8992		
0.22	2910	1530	-	7860		
0.25	2910	1530	-	6887		
0.28	2910	1530	-	6055		
0.32	2910	1530	-	5292		
0.37	2910	1530	-	4637		
0.42	2910	1530	-	4092		
0.47	2910	1530	-	3628		
0.54	2650	1590	-	3131		
0.63	2650	1590	-	2714		
0.70	2650	1590	-	2412		
0.80	2650	1590	-	2131		
0.91	2650	1590	-	1863		
1.0	2650	1590	-	1663		
1.2	2650	1590	-	1435		
1.4	2650	1590	-	1254		
1.6	2650	1590	-	1083		
					2 2	
1.8	2650	1590	-	965		
2.0	2650	1590	-	865		
2.3	2650	1590	-	750		
2.6	2650	1590	-	655		
3.0	2650	1590	-	574		
3.4	2650	1590	-	506		
3.9	2650	1590	-	438		
4.4	2650	1590	-	388		
5.1	2650	1590	-	336		
5.8	2650	1590	-	294		
6.3	2650	1590	-	269		
7.4	2650	1590	-	229		
8.3	2650	1590	-	204		
9.1	2650	1590	-	187		
10	2650	1590	-	165		
13	2650	1590	-	131		

21933480/EN-US – 04/2018

S67, n_e=1700 rpm — 4600 lb-in

n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M DRN90S	DRN90L	DRN100LM DRN100L	DRN112M	DRN132S DRN132M
						2				
7.8	4600	1950	-	217.41						
8.9	4600	1950	-	190.11						
9.4	4600	1950	-	180.60*						
11	4600	1950	-	158.45						
13	4600	1950	-	134.40*						
14	4600	1950	-	121.33						
16	4600	1950	-	106.75*						
17	4600	1950	-	100.80*						
20	4600	1950	-	85.83						
22	4510	1970	-	78.00*						
23	4240	2030	-	75.06						
25	4370	2000	-	67.57						
26	4240	1940	-	65.63						
27	4240	1890	-	62.35*						
29	4070	1950	-	58.80*						
31	4240	1790	-	54.70						
37	4240	1660	-	46.40*						
41	4240	1580	-	41.89						
46	4240	1490	-	36.85						
49	4240	1450	-	34.80*						
57	4240	1340	-	29.63						
63	4020	1310	-	26.93						
70	3000	1230	-	24.44						
73	3580	1290	-	23.33						
73	3000	1200	-	23.22*						
83	3000	1120	-	20.37						
84	3180	1270	-	20.30*						
98	3000	1030	-	17.28*						
109	3000	960	-	15.60*						
124	3000	840	-	13.73*						
131	3000	795	-	12.96*						
154	3000	655	-	11.03						
169	2780	700	-	10.03						
196	2470	755	-	8.69						
225	2210	795	-	7.56*						

S67R37, n_e=1700 rpm — 5040 lb-in

n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M DRN90S	DRN90L	DRN100LM DRN100L
					2 3			
0.08	5040	1840	-	21362*				
0.09	5040	1840	-	19594*				
0.09	5040	1840	-	18120*				
0.10	5040	1840	-	16682				
0.12	5040	1840	-	14383				
0.13	5040	1840	-	12774				
0.15	5040	1840	-	11013				
0.18	5040	1840	-	9694*				
0.20	5040	1840	-	8529*				

21933480/EN-US – 04/2018

S67R37, n_e=1700 rpm								5040 lb-in
n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M DRN90S	DRN90L	DRN100LM DRN100L
0.23	5040	1840	-	7455*				
0.26	5040	1840	-	6531				
0.30	5040	1840	-	5759				
0.34	5040	1840	-	4965				
0.39	5040	1840	-	4410				
0.44	5040	1840	-	3880				
0.50	5040	1840	-	3432				
0.58	5040	1840	-	2944*				
0.65	5040	1840	-	2630				
0.75	5040	1840	-	2279				
0.84	5040	1840	-	2014				
0.96	5040	1840	-	1772				
1.1	5040	1840	-	1559				
1.2	5040	1840	-	1363				
1.4	5040	1840	-	1194				
1.6	5040	1840	-	1045				
1.9	5040	1840	-	914				
					2	2		
2.1	5040	1840	-	809				
2.4	5040	1840	-	712				
2.8	5040	1840	-	615				
3.1	5040	1840	-	543				
3.6	5040	1840	-	469				
4.0	5040	1840	-	424				
4.7	5040	1840	-	365				
5.3	5040	1840	-	319				
6.0	5040	1840	-	281				
6.9	5040	1840	-	246				
7.7	5040	1840	-	221				
8.6	5040	1840	-	198				
10	5040	1840	-	168				
11	5040	1840	-	156				

S77, n_e=1700 rpm											11200 lb-in
n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M DRN90S	DRN90L	DRN100LM DRN100L	DRN112M	DRN132S DRN132M	DRN132L DRN160M DRN160L
						2					
6.6	11200	2630	-	256.47							
7.5	11200	2630	-	225.26							
7.9	11200	2630	-	214.00*							
9.0	10900	2690	-	189.09							
11	10700	2730	-	161.60*							
11	10600	2770	-	148.15							
13	10300	2830	-	130.00*							
14	10100	2860	-	123.20*							
16	9820	2930	-	107.83							
18	9640	2950	-	97.14							
20	9290	2820	-	85.22							
23	8930	2700	-	75.20*							
23	9730	2430	-	75.09							

21933480/EN-US – 04/2018

S77, n_e=1700 rpm											11200 lb-in
n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M DRN90S	DRN90L	DRN100LM DRN100L	DRN112M	DRN132S DRN132M	DRN132L DRN160M DRN160L
24	9730	2370	-	71.33							
25	8580	2590	-	66.67							
27	9730	2220	-	63.03							
30	8140	2460	-	56.92							
32	9730	2050	-	53.87							
34	9730	1960	-	49.38							
39	9730	1820	-	43.33							
41	9730	1770	-	41.07							
47	9370	1680	-	35.94							
53	9200	1610	-	32.38							
60	8750	1550	-	28.41							
68	8490	1470	-	25.07							
74	6230	1050	-	22.89							
77	8140	1420	-	22.22							
81	6230	930	-	20.99							
90	7600	1360	-	18.97							
92	6280	735	-	18.42							
97	6280	665	-	17.45							
111	6370	455	-	15.28							
124	6370	325	-	13.76							
141	6410	152	-	12.07							
160	6410	11	-	10.65							
180	5790	161	-	9.44							
211	5080	325	-	8.06							

S77R37, n_e=1700 rpm								11200 lb-in
n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M DRN90S	DRN90L	DRN100LM DRN100L
						2 3		
0.07	11200	2630	-	25493				
0.08	11200	2630	-	21787				
0.09	11200	2630	-	19907				
0.10	11200	2630	-	17013				
0.12	11200	2630	-	14668				
0.13	11200	2630	-	13110				
0.15	11200	2630	-	11569				
0.17	11200	2630	-	9887				
0.19	11200	2630	-	8817				
0.22	11200	2630	-	7735				
0.25	11200	2630	-	6735				
0.29	11200	2630	-	5943				
0.33	11200	2630	-	5214				
0.37	11200	2630	-	4618				
0.43	11200	2630	-	3992				
0.48	11200	2630	-	3540				
0.55	11200	2630	-	3098				
0.62	10900	2690	-	2753				
0.72	10900	2690	-	2374				
0.82	10900	2690	-	2083				
0.94	10900	2690	-	1813				

21933480/EN-US – 04/2018

S77R37, n_e=1700 rpm — 11200 lb-in

n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M DRN90S	DRN90L	DRN100LM DRN100L
0.97	10900	2690	-	1745				
1.1	10900	2690	-	1600				
1.2	10900	2690	-	1404				
1.4	10900	2690	-	1245				
					2	2		
1.5	10900	2690	-	1100				
1.8	10900	2690	-	954				
2.0	10900	2690	-	837				
2.4	10900	2690	-	714				
2.7	10900	2690	-	637				
3.0	10900	2690	-	574				
3.4	10900	2690	-	499				
3.9	10900	2690	-	438				
4.4	10900	2690	-	389				
5.2	10900	2690	-	327				
5.9	10900	2690	-	289				
6.8	10900	2690	-	250				
7.8	10900	2690	-	219				

S87, n_e=1700 rpm — 20100 lb-in

n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DRS71M	DRN80M DRN90S	DRN90L	DRN100LM DRN100L	DRN112M	DRN132S DRN132M	DRN132L DRN160M DRN160L	DRN180M DRN180L
							2					
5.9	20100	6280	-	288.00*								
6.6	19900	6290	-	258.18								
7.6	19500	6310	-	222.40*								
8.4	19300	6320	-	202.96								
9.4	18800	6340	-	180.00*								
11	18200	6370	-	151.30								
12	17800	6380	-	139.05								
14	17300	6410	-	123.48								
15	16800	6430	-	110.40*								
17	16200	6450	-	99.26								
19	13400	6540	-	91.20*								
20	15600	6470	-	86.15								
21	14100	6520	-	81.76								
22	15000	6500	-	77.14								
24	14100	6520	-	70.43								
26	14100	6520	-	64.27								
27	13900	6530	-	64.00*								
30	14100	6520	-	57.00*								
35	14100	6360	-	47.91								
39	14100	6160	-	44.03								
43	14100	5900	-	39.10								
49	14100	5660	-	34.96*								
54	14100	5440	-	31.43								
62	14100	5160	-	27.28								
67	10900	4870	-	25.50*								
70	14100	4950	-	24.43								
79	10900	4550	-	21.43								

21933480/EN-US – 04/2018

S87, n_e=1700 rpm												20100 lb-in
n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DRS71M	DRN80M DRN90S	DRN90L	DRN100LM DRN100L	DRN112M	DRN132S DRN132M	DRN132L DRN160M DRN160L	DRN180M DRN180L
84	12500	4760	-	20.27								
86	10900	4400	-	19.70								
97	10900	4190	-	17.49								
109	10900	4000	-	15.64*								
121	10900	3830	-	14.06								
139	10900	3480	-	12.21								
156	9990	3580	-	10.93								
187	8400	3530	-	9.07								
216	7340	3490	-	7.88								

S87R57, n_e=1700 rpm										22100 lb-in
n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M DRN90S	DRN90L	DRN100LM DRN100L	DRN112M	DRN132S DRN132M
						2 3				
0.07	22100	6180	-	25987						
0.07	22100	6180	-	23940						
0.08	22100	6180	-	20568						
0.09	22100	6180	-	18265						
0.10	22100	6180	-	16774						
0.11	22100	6180	-	14820						
0.13	22100	6180	-	13160						
0.15	22100	6180	-	11200						
0.17	22100	6180	-	9904						
0.20	22100	6180	-	8549						
0.22	22100	6180	-	7643						
0.25	22100	6180	-	6706						
0.29	22100	6180	-	5875						
0.33	22100	6180	-	5187						
0.37	22100	6180	-	4606						
0.44	22100	6180	-	3872						
						2 2				
0.49	22100	6180	-	3475						
0.59	22100	6180	-	2905						
0.66	22100	6180	-	2586						
0.73	22100	6180	-	2335						
0.83	22100	6180	-	2054						
0.93	22100	6180	-	1824						
1.0	22100	6180	-	1631*						
1.3	22100	6180	-	1332						
1.4	22100	6180	-	1191						
1.6	22100	6180	-	1032*						
1.8	22100	6180	-	930						
2.0	22100	6180	-	831						
2.4	22100	6180	-	719						
2.7	22100	6180	-	624						
3.0	22100	6180	-	558						
3.5	22100	6180	-	485						
3.9	21600	6200	-	435						
4.5	21600	6200	-	378						
5.3	21200	6230	-	323						

21933480/EN-US – 04/2018

S87R57, n_e=1700 rpm											22100 lb-in
n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M DRN90S	DRN90L	DRN100LM DRN100L	DRN112M	DRN132S DRN132M	
6.0	21200	6230	-	281							
6.7	17500	6390	-	255							
7.7	17500	6390	-	222							
8.3	17500	6390	-	205							

S97, n_e=1700 rpm													35300 lb-in
n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DRS71M	DRN80M DRN90S	DRN90L	DRN100LM DRN100L	DRN112M	DRN132S DRN132M	DRN132L DRN160M DRN160L	DRN180M DRN180L	DRN200L DRN225S
								2					
5.9	35300	7460	-	286.40*									
6.5	35300	7460	-	262.22									
7.3	35000	7480	-	231.67									
8.7	33900	7530	-	196.52									
9.4	33300	7560	-	180.95									
11	32200	7610	-	161.74									
12	31400	7650	-	145.60*									
13	30400	7700	-	131.85									
15	29500	7740	-	116.92									
16	28400	7780	-	105.71									
19	26700	7850	-	89.60*									
21	28900	7760	-	80.85									
22	25300	7900	-	78.26									
24	29100	7750	-	71.43									
26	23400	7960	-	65.45									
28	29100	7750	-	60.59									
30	29100	7740	-	55.79									
34	29100	7410	-	49.87									
38	29100	7110	-	44.89									
42	28500	6880	-	40.65									
47	27500	6650	-	36.05									
52	26300	6480	-	32.60									
62	24800	6180	-	27.63									
64	23000	5210	-	26.39									
70	23600	5960	-	24.13									
72	23000	4790	-	23.59									
80	22700	4510	-	21.23									
88	22100	4370	-	19.23									
100	21200	4260	-	17.05									
110	20300	4220	-	15.42									
130	19200	4080	-	13.07									
149	17600	4170	-	11.41									
178	14700	4230	-	9.55									
206	12700	4220	-	8.26									

21933480/EN-US – 04/2018

S97R57, n_e=1700 rpm										37100 lb-in
n_a rpm	T_{aMax} lb-in	F_{Ra} lb	$\varphi_{(/R)}$ '	i	DR63S DRS71S DRS71M	DRN80M DRN90S	DRN90L	DRN100LM DRN100L	DRN112M	DRN132S DRN132M
						2 3				
0.05	37100	7360	-	33818						
0.05	37100	7360	-	31154						
0.06	37100	7360	-	27847						
0.07	37100	7360	-	24641						
0.08	37100	7360	-	21537						
0.09	37100	7360	-	18749*						
0.10	37100	7360	-	16233						
0.12	37100	7360	-	14576						
0.13	37100	7360	-	12752						
0.15	37100	7360	-	11267						
0.17	37100	7360	-	10078						
0.20	37100	7360	-	8608						
0.23	37100	7360	-	7554						
0.26	37100	7030	-	6640						
0.29	37100	7030	-	5780*						
0.34	37100	7030	-	4937						
0.38	37100	7030	-	4444						
0.42	37100	7030	-	4017						
0.49	37100	7030	-	3453						
0.55	37100	7030	-	3108						
0.64	37100	7030	-	2654						
0.73	37100	7030	-	2329						
0.82	37100	7030	-	2081						
0.91	37100	7030	-	1860						
1.1	37100	7030	-	1574*						
						2 2				
1.2	37100	7030	-	1394						
1.4	37100	7030	-	1223						
1.6	37100	7030	-	1070						
1.8	37100	7030	-	928						
2.1	37100	7030	-	824						
2.4	37100	7360	-	714						
2.7	37100	7050	-	626*						
3.2	37100	7050	-	538						
3.5	37100	7060	-	484*						
4.0	37100	7070	-	420						
4.5	37100	7070	-	376						
5.2	37100	7080	-	327						
5.9	37100	7090	-	287						
6.7	37100	7100	-	252						
7.8	37100	7100	-	219						
8.3	37100	7110	-	205						

21933480/EN-US – 04/2018

11.3 S.. DRS/DRN.. Selections by HP

P_m = 0.16 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
0.15	32800	11267	7590	1.15		**S**	**97R57**	**DR**	**63S4**	370	830/836
0.17	30300	10078	7700	1.20		**SF**	**97R57**	**DR**	**63S4**	440	831/836
0.20	24800	8608	7920	1.50		**SA**	**97R57**	**DR**	**63S4**	360	832/836
0.22	22000	7554	8010	1.70		**SAF**	**97R57**	**DR**	**63S4**	415	831/836
0.25	18400	6706	6360	1.20							
0.29	16500	5875	6440	1.35		**S**	**87R57**	**DR**	**63S4**	240	824/836
0.32	13400	5187	6550	1.65		**SF**	**87R57**	**DR**	**63S4**	285	825/836
0.36	11900	4606	6590	1.85		**SA**	**87R57**	**DR**	**63S4**	235	826/836
0.43	9860	3872	6650	2.2		**SAF**	**87R57**	**DR**	**63S4**	270	825/836
0.47	9490	3540	2990	1.20							
0.54	8300	3098	3190	1.35							
0.71	9330	2374	3020	1.20							
0.81	8190	2083	3200	1.35		**S**	**77R37**	**DR**	**63S4**	130	818/836
0.93	6890	1813	3370	1.60		**SF**	**77R37**	**DR**	**63S4**	150	819/836
0.96	6510	1745	3410	1.70		**SA**	**77R37**	**DR**	**63S4**	130	820/836
1.1	5970	1600	3470	1.85		**SAF**	**77R37**	**DR**	**63S4**	145	819/836
1.2	5240	1404	3540	2.1							
1.4	4560	1245	3590	2.4							
1.4	4080	1194	2060	1.25		**S**	**67R37**	**DR**	**63S4**	87	812/836
1.6	3730	1045	2120	1.35		**SF**	**67R37**	**DR**	**63S4**	100	813/836
1.8	3200	914	2200	1.55		**SA**	**67R37**	**DR**	**63S4**	89	814/836
						SAF	**67R37**	**DR**	**63S4**	99	813/836
2.1	2940	809	2240	1.70							
2.4	2590	712	2280	1.95							
2.7	2120	615	2330	2.4		**S**	**67R37**	**DR**	**63S4**	86	812/836
3.1	1920	543	2350	2.6		**SF**	**67R37**	**DR**	**63S4**	100	813/836
3.6	1550	469	2370	3.2		**SA**	**67R37**	**DR**	**63S4**	89	814/836
4.0	1410	424	2380	3.6		**SAF**	**67R37**	**DR**	**63S4**	98	813/836
4.6	1320	365	2390	3.8							
2.6	2300	655	1660	1.15							
2.9	2000	574	1720	1.30							
3.3	1740	506	1750	1.50		**S**	**57R17**	**DR**	**63S4**	45	806/836
3.8	1500	438	1780	1.75		**SF**	**57R17**	**DR**	**63S4**	53	807/836
4.3	1310	388	1800	2.0		**SA**	**57R17**	**DR**	**63S4**	44	808/836
5.0	1190	336	1820	2.2		**SAF**	**57R17**	**DR**	**63S4**	51	807/836
5.7	1010	294	1830	2.6							
6.2	990	269	1830	2.7							
3.8	1500	438	1190	1.10							
4.3	1310	388	1210	1.25							
5.0	1180	336	1230	1.40		**S**	**47R17**	**DR**	**63S4**	36	800/836
5.7	1000	294	1250	1.65		**SF**	**47R17**	**DR**	**63S4**	44	801/836
6.5	690	257	1290	2.4		**SA**	**47R17**	**DR**	**63S4**	39	802/836
7.3	830	229	1270	1.95		**SAF**	**47R17**	**DR**	**63S4**	43	801/836
8.4	725	200	1280	2.2							
9.0	680	187	1290	2.4							
8.3	730	202	675	1.10							
9.4	650	179	675	1.25		**S**	**37R17**	**DR**	**63S4**	30	795/836
11	580	158	675	1.40		**SF**	**37R17**	**DR**	**63S4**	33	796/836
12	535	144	675	1.50		**SA**	**37R17**	**DR**	**63S4**	29	797/836
14	435	118	675	1.85		**SAF**	**37R17**	**DR**	**63S4**	33	796/836
15	405	110	675	2.0							
5.5	1050	201.00*	1830	2.5		**S**	**57**	**DR**	**63M6**	38	806
6.0	980	184.80*	1830	2.6		**SF**	**57**	**DR**	**63M6**	47	807
7.0	850	158.12	1840	3.0		**SA**	**57**	**DR**	**63M6**	38	808
8.0	755	137.05	1850	3.5		**SAF**	**57**	**DR**	**63M6**	44	807
5.5	1020	201.00*	1260	1.50							
6.0	940	184.80*	1260	1.60		**S**	**47**	**DR**	**63M6**	30	800
7.0	820	158.12	1280	1.85		**SF**	**47**	**DR**	**63M6**	38	801
8.0	730	137.05	1290	2.1		**SA**	**47**	**DR**	**63M6**	32	802
8.6	690	128.10*	1290	2.2		**SAF**	**47**	**DR**	**63M6**	36	801

21933480/EN-US – 04/2018

P_m = 0.16 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
8.4	705	201.00*	1290	2.1							
9.1	655	184.80*	1290	2.3		**S**	**47**	**DR**	**63S4**	30	800
11	570	158.12	1300	2.6		**SF**	**47**	**DR**	**63S4**	38	801
12	505	137.05	1310	2.9		**SA**	**47**	**DR**	**63S4**	32	802
13	475	128.10*	1310	3.1		**SAF**	**47**	**DR**	**63S4**	36	801
15	415	110.73	1310	3.5							
7.6	730	144.40*	675	1.10							
8.9	635	122.94	675	1.30		**S**	**37**	**DR**	**63M6**	23	795
10	560	106.00*	675	1.45		**SF**	**37**	**DR**	**63M6**	26	796
11	525	98.80*	675	1.55		**SA**	**37**	**DR**	**63M6**	23	797
13	465	86.36	675	1.70		**SAF**	**37**	**DR**	**63M6**	26	796
11	545	157.43	675	1.45							
12	505	144.40*	675	1.55							
14	440	122.94	675	1.75							
16	385	106.00*	675	1.95							
17	360	98.80*	675	2.1							
19	320	86.36	675	2.2							
21	305	80.96	675	2.4							
24	270	71.44*	675	2.6							
27	245	63.33	675	2.8							
30	255	55.93	675	2.8		**S**	**37**	**DR**	**63S4**	23	795
33	235	51.30*	675	3.0		**SF**	**37**	**DR**	**63S4**	26	796
38	205	43.68	675	3.4		**SA**	**37**	**DR**	**63S4**	23	797
45	180	37.66	675	3.8		**SAF**	**37**	**DR**	**63S4**	26	796
48	168	35.10*	675	4.0							
55	148	30.68	675	4.4							
58	139	28.76	675	4.6							
66	124	25.38*	675	5.1							
75	111	22.50*	675	5.6							
84	104	19.89	655	4.2							
92	96	18.24*	640	4.5							
108	82	15.53	610	5.2							

P_m = 0.25 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
						S	**87R57**	**(E)DRS**	**71S4**	245	824/836
0.37	20500	4606	6260	1.10	X	**SF**	**87R57**	**(E)DRS**	**71S4**	290	825/836
0.44	17100	3872	6420	1.30	X	**SA**	**87R57**	**(E)DRS**	**71S4**	240	826/836
						SAF	**87R57**	**(E)DRS**	**71S4**	275	825/836
0.49	16800	3475	6430	1.30	X						
0.59	14100	2905	6520	1.55	X						
0.66	12100	2586	6590	1.85	X	**S**	**87R57**	**(E)DRS**	**71S4**	240	824/836
0.73	10700	2335	6630	2.0	X	**SF**	**87R57**	**(E)DRS**	**71S4**	290	825/836
0.83	9270	2054	6660	2.4	X	**SA**	**87R57**	**(E)DRS**	**71S4**	235	826/836
0.93	8240	1824	6680	2.7	X	**SAF**	**87R57**	**(E)DRS**	**71S4**	270	825/836
1.0	7430	1631	6700	3.0	X						
						S	**77R37**	**(E)DRS**	**71S4**	135	818/836
1.2	8640	1404	3140	1.25	X	**SF**	**77R37**	**(E)DRS**	**71S4**	155	819/836
1.4	7570	1245	3290	1.45	X	**SA**	**77R37**	**(E)DRS**	**71S4**	135	820/836
						SAF	**77R37**	**(E)DRS**	**71S4**	150	819/836
1.6	7140	1100	3340	1.55	X						
1.8	6130	954	3450	1.80	X	**S**	**77R37**	**(E)DRS**	**71S4**	135	818/836
2.0	5380	837	3520	2.0	X	**SF**	**77R37**	**(E)DRS**	**71S4**	155	819/836
2.4	4440	714	3600	2.5	X	**SA**	**77R37**	**(E)DRS**	**71S4**	135	820/836
2.7	3920	637	3600	2.8	X	**SAF**	**77R37**	**(E)DRS**	**71S4**	150	819/836
3.0	3570	574	3600	3.1	X						
2.4	4190	712	2040	1.20	X						
2.8	3510	615	2160	1.45	X	**S**	**67R37**	**(E)DRS**	**71S4**	92	812/836
3.1	3140	543	2210	1.60	X	**SF**	**67R37**	**(E)DRS**	**71S4**	105	813/836
3.6	2610	469	2280	1.95	X	**SA**	**67R37**	**(E)DRS**	**71S4**	94	814/836
4.0	2370	424	2300	2.1	X	**SAF**	**67R37**	**(E)DRS**	**71S4**	105	813/836
4.7	2160	365	2330	2.3	X						

21933480/EN-US – 04/2018

P_m = 0.25 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
3.9	2460	438	1630	1.05	X						
4.4	2170	388	1690	1.20	X						
5.1	1940	336	1730	1.35	X	**S**	**57R17**	**(E)DRS**	**71S4**	50	806/836
5.8	1680	294	1760	1.60	X	**SF**	**57R17**	**(E)DRS**	**71S4**	59	807/836
6.3	1590	269	1770	1.65	X	**SA**	**57R17**	**(E)DRS**	**71S4**	50	808/836
7.4	1370	229	1800	1.95	X	**SAF**	**57R17**	**(E)DRS**	**71S4**	56	807/836
8.3	1230	204	1810	2.1	X						
9.1	1120	187	1820	2.4	X						
5.8	1650	294	1160	1.00							
6.6	1150	257	1240	1.40	X						
7.4	1350	229	1210	1.20	X	**S**	**47R17**	**(E)DRS**	**71S4**	42	800/836
8.5	1180	200	1230	1.40	X	**SF**	**47R17**	**(E)DRS**	**71S4**	50	801/836
9.1	1100	187	1240	1.50	X	**SA**	**47R17**	**(E)DRS**	**71S4**	44	802/836
10	970	165	1250	1.65	X	**SAF**	**47R17**	**(E)DRS**	**71S4**	48	801/836
12	880	148	1270	1.85	X						
13	775	131	1280	2.1	X						
4.9	1930	217.41	2340	2.5		**S**	**67**	**DR**	**63L6**	64	812
5.6	1710	190.11	2360	2.9		**SF**	**67**	**DR**	**63L6**	78	813
5.9	1640	180.60*	2370	3.0		**SA**	**67**	**DR**	**63L6**	66	814
						SAF	**67**	**DR**	**63L6**	76	813
8.5	1130	201.00*	1820	2.3	X	**S**	**57**	**(E)DRS**	**71S4**	44	806
9.2	1050	184.80*	1830	2.5	X	**SF**	**57**	**(E)DRS**	**71S4**	53	807
11	910	158.12	1840	2.9	X	**SA**	**57**	**(E)DRS**	**71S4**	44	808
12	800	137.05	1850	3.2	X	**SAF**	**57**	**(E)DRS**	**71S4**	50	807
5.3	1690	201.00*	1760	1.55		**S**	**57**	**DR**	**63L6**	40	806
5.8	1570	184.80*	1780	1.65		**SF**	**57**	**DR**	**63L6**	48	807
6.8	1370	158.12	1800	1.90		**SA**	**57**	**DR**	**63L6**	39	808
7.8	1210	137.05	1810	2.1		**SAF**	**57**	**DR**	**63L6**	46	807
8.5	1090	201.00*	1250	1.40	X						
9.2	1010	184.80*	1260	1.45	X						
11	880	158.12	1270	1.70	X						
12	780	137.05	1280	1.90	X	**S**	**47**	**(E)DRS**	**71S4**	36	800
13	735	128.10*	1290	2.0	X	**SF**	**47**	**(E)DRS**	**71S4**	44	801
15	645	110.73	1290	2.3	X	**SA**	**47**	**(E)DRS**	**71S4**	38	802
18	560	94.08*	1300	2.6	X	**SAF**	**47**	**(E)DRS**	**71S4**	42	801
20	505	84.00*	1310	2.9	X						
24	440	71.75*	1310	3.4	X						
24	500	69.39	1300	2.7	X						
5.8	1520	184.80*	1200	1.00		**S**	**47**	**DR**	**63L6**	31	800
6.8	1320	158.12	1220	1.15		**SF**	**47**	**DR**	**63L6**	39	801
7.8	1170	137.05	1240	1.30		**SA**	**47**	**DR**	**63L6**	34	802
8.3	1100	128.10*	1250	1.35		**SAF**	**47**	**DR**	**63L6**	38	801
12	785	144.40*	675	1.00	X						
14	680	122.94	675	1.15	X						
16	595	106.00*	675	1.25	X						
17	560	98.80*	675	1.35	X						
20	500	86.36	675	1.45	X						
21	470	80.96	675	1.55	X						
24	420	71.44*	675	1.65	X						
27	380	63.33	675	1.85	X						
30	400	55.93	675	1.80	X						
33	370	51.30*	675	1.90	X						
39	315	43.68	675	2.2	X	**S**	**37**	**(E)DRS**	**71S4**	29	795
45	275	37.66	675	2.4	X	**SF**	**37**	**(E)DRS**	**71S4**	32	796
48	260	35.10*	675	2.5	X	**SA**	**37**	**(E)DRS**	**71S4**	29	797
55	225	30.68	675	2.8	X	**SAF**	**37**	**(E)DRS**	**71S4**	32	796
59	215	28.76	675	3.0	X						
67	192	25.38*	675	3.3	X						
76	171	22.50*	670	3.6	X						
85	161	19.89	630	2.7	X						
93	148	18.24*	615	2.9	X						
109	127	15.53	590	3.3	X						
127	110	13.39	565	3.8	X						
136	103	12.48*	555	4.0	X						
156	90	10.91	535	4.4	X						
166	85	10.23	525	4.7	X						

21933480/EN-US – 04/2018

P_m = 0.33 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
0.59	19100	2905	6330	1.15	X						
0.66	16500	2586	6440	1.35	X						
0.73	14700	2335	6500	1.50	X	**S**	**87R57**	**(E)DRS**	**71S4**	240	824/836
0.83	12800	2054	6570	1.75	X	**SF**	**87R57**	**(E)DRS**	**71S4**	290	825/836
0.93	11300	1824	6610	1.95	X	**SA**	**87R57**	**(E)DRS**	**71S4**	235	826/836
1.0	10200	1631	6640	2.1	X	**SAF**	**87R57**	**(E)DRS**	**71S4**	270	825/836
1.8	6100	930	6720	3.6	X						
1.8	8250	954	3190	1.35	X						
2.0	7240	837	3330	1.50	X	**S**	**77R37**	**(E)DRS**	**71S4**	135	818/836
2.4	6030	714	3460	1.80	X	**SF**	**77R37**	**(E)DRS**	**71S4**	155	819/836
2.7	5340	637	3530	2.0	X	**SA**	**77R37**	**(E)DRS**	**71S4**	135	820/836
3.0	4850	574	3570	2.3	X	**SAF**	**77R37**	**(E)DRS**	**71S4**	150	819/836
3.4	4130	499	3600	2.6	X						
3.1	4250	543	2020	1.20	X						
3.6	3580	469	2150	1.40	X	**S**	**67R37**	**(E)DRS**	**71S4**	92	812/836
4.0	3250	424	2200	1.55	X	**SF**	**67R37**	**(E)DRS**	**71S4**	105	813/836
4.7	2920	365	2240	1.70	X	**SA**	**67R37**	**(E)DRS**	**71S4**	94	814/836
5.3	2520	319	2290	2.0	X	**SAF**	**67R37**	**(E)DRS**	**71S4**	105	813/836
6.1	2200	281	2320	2.3	X						
5.8	2280	294	1670	1.15	X						
6.3	2150	269	1690	1.25	X						
7.4	1840	229	1740	1.45	X	**S**	**57R17**	**(E)DRS**	**71S4**	50	806/836
8.3	1660	204	1770	1.60	X	**SF**	**57R17**	**(E)DRS**	**71S4**	59	807/836
9.1	1520	187	1780	1.75	X	**SA**	**57R17**	**(E)DRS**	**71S4**	50	808/836
10	1340	165	1800	1.95	X	**SAF**	**57R17**	**(E)DRS**	**71S4**	56	807/836
13	1070	131	1830	2.5	X						
5.1	2490	217.41	2290	1.95		**S**	**67**	**DRS**	**71S6**	67	812
5.8	2210	190.11	2320	2.2		**SF**	**67**	**DRS**	**71S6**	82	813
6.1	2110	180.60*	2330	2.3		**SA**	**67**	**DRS**	**71S6**	70	814
6.9	1880	158.45	2350	2.6		**SAF**	**67**	**DRS**	**71S6**	80	813
7.8	1690	217.41	2360	2.7	X						
8.9	1500	190.11	2380	3.0	X						
9.4	1440	180.60*	2380	3.2	X	**S**	**67**	**(E)DRS**	**71S4**	67	812
11	1280	158.45	2390	3.6	X	**SF**	**67**	**(E)DRS**	**71S4**	82	813
13	1100	134.40*	2400	4.2	X	**SA**	**67**	**(E)DRS**	**71S4**	70	814
14	1000	121.33	2400	4.6	X	**SAF**	**67**	**(E)DRS**	**71S4**	80	813
16	890	106.75*	2400	5.1	X						
5.5	2180	201.00*	1690	1.20							
6.0	2020	184.80*	1710	1.30		**S**	**57**	**DRS**	**71S6**	44	806
7.0	1770	158.12	1750	1.45		**SF**	**57**	**DRS**	**71S6**	53	807
8.0	1560	137.05	1780	1.65		**SA**	**57**	**DRS**	**71S6**	44	808
8.6	1470	128.10*	1790	1.75		**SAF**	**57**	**DRS**	**71S6**	50	807
8.5	1490	201.00*	1790	1.75	X						
9.2	1380	184.80*	1800	1.90	X						
11	1210	158.12	1810	2.2	X	**S**	**57**	**(E)DRS**	**71S4**	44	806
12	1060	137.05	1830	2.5	X	**SF**	**57**	**(E)DRS**	**71S4**	53	807
13	1000	128.10*	1830	2.6	X	**SA**	**57**	**(E)DRS**	**71S4**	44	808
15	880	110.73	1840	3.0	X	**SAF**	**57**	**(E)DRS**	**71S4**	50	807
18	760	94.08*	1850	3.5	X						
20	685	84.00*	1850	3.7	X						
8.5	1440	201.00*	1210	1.05	X						
9.2	1340	184.80*	1220	1.10	X						
11	1170	158.12	1240	1.25	X						
12	1030	137.05	1260	1.45	X						
13	970	128.10*	1260	1.50	X						
15	850	110.73	1270	1.75	X	**S**	**47**	**(E)DRS**	**71S4**	36	800
18	740	94.08*	1290	2.0	X	**SF**	**47**	**(E)DRS**	**71S4**	44	801
20	665	84.00*	1290	2.2	X	**SA**	**47**	**(E)DRS**	**71S4**	38	802
24	580	71.75*	1300	2.5	X	**SAF**	**47**	**(E)DRS**	**71S4**	42	801
24	660	69.39	1290	2.1	X						
25	545	67.20*	1300	2.6	X						
27	610	63.80*	1290	2.2	X						
31	525	54.59	1260	2.6	X						
36	460	47.32	1210	3.0	X						

21933480/EN-US – 04/2018

P_m = 0.33 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
485	39	6.80*	375	3.6		**S**	**37**	**DRS**	**71S2**	29	795
521	37	6.33	365	5.8		**SF**	**37**	**DRS**	**71S2**	32	796
613	31	5.38	345	5.6		**SA**	**37**	**DRS**	**71S2**	29	797
678	28	4.86*	335	5.6		**SAF**	**37**	**DRS**	**71S2**	32	796
832	23	3.97	315	5.3							
17	740	98.80*	675	1.00	X						
20	660	86.36	675	1.10	X						
21	620	80.96	675	1.15	X						
24	555	71.44*	675	1.25	X						
27	500	63.33	675	1.40	X						
30	525	55.93	675	1.35	X						
33	485	51.30*	675	1.45	X						
39	420	43.68	675	1.65	X						
45	365	37.66	675	1.85	X						
48	340	35.10*	675	1.95	X						
55	300	30.68	675	2.1	X						
59	280	28.76	675	2.3	X						
67	250	25.38*	675	2.5	X	**S**	**37**	**(E)DRS**	**71S4**	29	795
76	225	22.50*	650	2.7	X	**SF**	**37**	**(E)DRS**	**71S4**	32	796
85	210	19.89	610	2.1	X	**SA**	**37**	**(E)DRS**	**71S4**	29	797
93	196	18.24*	600	2.2	X	**SAF**	**37**	**(E)DRS**	**71S4**	32	796
109	168	15.53	575	2.5	X						
127	145	13.39	550	2.9	X						
136	136	12.48*	540	3.0	X						
156	119	10.91	520	3.3	X						
166	112	10.23	510	3.5	X						
188	99	9.02*	495	3.8	X						
212	88	8.00*	480	4.3	X						
250	75	6.80*	455	4.8	X						
268	71	6.33	445	4.4	X						
316	60	5.38	425	5.0	X						
350	55	4.86*	410	5.3	X						
429	45	3.97	385	6.3	X						

P_m = 0.50 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
0.83	20300	2054	6270	1.10	X	**S**	**87R57**	**(E)DRS**	**71S4**	240	824/836
0.93	18000	1824	6380	1.25	X	**SF**	**87R57**	**(E)DRS**	**71S4**	290	825/836
1.0	16200	1631	6450	1.35	X	**SA**	**87R57**	**(E)DRS**	**71S4**	235	826/836
1.8	9710	930	6650	2.3	X	**SAF**	**87R57**	**(E)DRS**	**71S4**	270	825/836
2.0	8780	831	6670	2.5	X						
2.4	9400	714	3010	1.15	X						
2.7	8350	637	3180	1.30	X	**S**	**77R37**	**(E)DRS**	**71S4**	135	818/836
3.0	7560	574	3290	1.45	X	**SF**	**77R37**	**(E)DRS**	**71S4**	155	819/836
3.4	6500	499	3420	1.70	X	**SA**	**77R37**	**(E)DRS**	**71S4**	135	820/836
3.9	5740	438	3490	1.90	X	**SAF**	**77R37**	**(E)DRS**	**71S4**	150	819/836
4.4	5100	389	3550	2.1	X						
4.7	4530	365	1960	1.10	X	**S**	**67R37**	**(E)DRS**	**71S4**	92	812/836
5.3	3940	319	2080	1.30	X	**SF**	**67R37**	**(E)DRS**	**71S4**	105	813/836
6.1	3460	281	2170	1.45	X	**SA**	**67R37**	**(E)DRS**	**71S4**	94	814/836
6.9	3140	246	2210	1.60	X	**SAF**	**67R37**	**(E)DRS**	**71S4**	105	813/836
4.3	4790	256.47	3570	2.3		**S**	**77**	**DRS**	**71M6**	115	818
4.9	4270	225.26	3600	2.6		**SF**	**77**	**DRS**	**71M6**	140	819
5.1	4070	214.00*	3600	2.8		**SA**	**77**	**DRS**	**71M6**	115	820
						SAF	**77**	**DRS**	**71M6**	130	819
5.1	3770	217.41	2120	1.30		**S**	**67**	**DRS**	**71M6**	70	812
5.8	3350	190.11	2180	1.45		**SF**	**67**	**DRS**	**71M6**	85	813
6.1	3200	180.60*	2200	1.55		**SA**	**67**	**DRS**	**71M6**	73	814
6.9	2850	158.45	2250	1.70		**SAF**	**67**	**DRS**	**71M6**	82	813
7.8	2570	217.41	2280	1.80	X	**S**	**67**	**(E)DRS**	**71S4**	67	812
8.9	2280	190.11	2310	2.0	X	**SF**	**67**	**(E)DRS**	**71S4**	82	813
9.4	2180	180.60*	2320	2.1	X	**SA**	**67**	**(E)DRS**	**71S4**	70	814
11	1940	158.45	2340	2.4	X	**SAF**	**67**	**(E)DRS**	**71S4**	80	813
13	1670	134.40*	2360	2.8	X						

P_m = 0.50 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
14	1520	121.33	2370	3.0	X						
8.0	2360	137.05	1650	1.10							
8.6	2230	128.10*	1680	1.15		**S**	**57**	**DRS**	**71M6**	47	806
9.9	1960	110.73	1720	1.35		**SF**	**57**	**DRS**	**71M6**	55	807
12	1700	94.08*	1760	1.55		**SA**	**57**	**DRS**	**71M6**	46	808
13	1540	84.00*	1780	1.70		**SAF**	**57**	**DRS**	**71M6**	52	807
8.5	2260	201.00*	1670	1.15	X						
9.2	2100	184.80*	1700	1.25	X						
11	1830	158.12	1740	1.40	X						
12	1610	137.05	1770	1.60	X						
13	1520	128.10*	1780	1.70	X	**S**	**57**	**(E)DRS**	**71S4**	44	806
15	1330	110.73	1800	1.95	X	**SF**	**57**	**(E)DRS**	**71S4**	53	807
18	1150	94.08*	1820	2.3	X	**SA**	**57**	**(E)DRS**	**71S4**	44	808
20	1040	84.00*	1830	2.4	X	**SAF**	**57**	**(E)DRS**	**71S4**	50	807
24	900	71.75*	1840	2.7	X						
24	1010	69.39	1830	2.1	X						
25	850	67.20*	1840	2.7	X						
27	940	63.80*	1840	2.3	X						
13	1470	128.10*	1200	1.00	X						
15	1290	110.73	1230	1.15	X						
18	1120	94.08*	1250	1.30	X						
20	1010	84.00*	1260	1.45	X						
24	880	71.75*	1270	1.70	X						
24	1000	69.39	1250	1.35	X						
25	830	67.20*	1280	1.75	X						
27	920	63.80*	1240	1.50	X						
31	800	54.59	1200	1.70	X	**S**	**47**	**(E)DRS**	**71S4**	36	800
36	700	47.32	1160	1.95	X	**SF**	**47**	**(E)DRS**	**71S4**	44	801
38	655	44.22*	1140	2.1	X	**SA**	**47**	**(E)DRS**	**71S4**	38	802
44	570	38.23	1090	2.4	X	**SAF**	**47**	**(E)DRS**	**71S4**	42	801
52	490	32.48*	1050	2.8	X						
59	440	29.00*	1020	3.1	X						
69	380	24.77	970	3.4	X						
73	355	23.20*	960	3.5	X						
84	330	20.33	890	2.9	X						
96	290	17.62	860	3.3	X						
103	270	16.47*	840	3.5	X						
412	70	8.00*	385	2.5							
485	60	6.80*	365	2.4		**S**	**37**	**DRS**	**71S2**	29	795
521	56	6.33	355	3.8		**SF**	**37**	**DRS**	**71S2**	32	796
613	48	5.38	340	3.7		**SA**	**37**	**DRS**	**71S2**	29	797
678	43	4.86*	330	3.7		**SAF**	**37**	**DRS**	**71S2**	32	796
832	35	3.97	310	3.5							
39	635	43.68	675	1.10	X						
45	555	37.66	675	1.20	X						
48	515	35.10*	675	1.30	X						
55	455	30.68	660	1.40	X						
59	430	28.76	650	1.50	X						
67	380	25.38*	635	1.65	X						
76	340	22.50*	615	1.80	X						
85	320	19.89	570	1.35	X						
93	295	18.24*	560	1.45	X						
109	250	15.53	540	1.65	X	**S**	**37**	**(E)DRS**	**71S4**	29	795
127	220	13.39	525	1.90	X	**SF**	**37**	**(E)DRS**	**71S4**	32	796
136	205	12.48*	515	2.0	X	**SA**	**37**	**(E)DRS**	**71S4**	29	797
156	181	10.91	500	2.2	X	**SAF**	**37**	**(E)DRS**	**71S4**	32	796
166	170	10.23	490	2.3	X						
188	151	9.02*	475	2.5	X						
212	134	8.00*	460	2.8	X						
250	114	6.80*	440	3.2	X						
268	107	6.33	430	2.9	X						
316	91	5.38	410	3.3	X						
350	83	4.86*	400	3.5	X						
429	68	3.97	380	4.2	X						

21933480/EN-US – 04/2018

P_m = 0.75 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
1.3	20600	1332	6250	1.05	X						
1.4	18600	1191	6350	1.20	X						
1.6	16200	1032	6450	1.35	X						
1.8	15100	930	6490	1.45	X	**S**	**87R57**	**(E)DRS**	**71M4**	245	824/836
2.0	13600	831	6540	1.60	X	**SF**	**87R57**	**(E)DRS**	**71M4**	290	825/836
2.4	11800	719	6600	1.85	X	**SA**	**87R57**	**(E)DRS**	**71M4**	240	826/836
2.7	10300	624	6640	2.1	X	**SAF**	**87R57**	**(E)DRS**	**71M4**	275	825/836
3.0	9320	558	6660	2.4	X						
3.9	7450	435	6700	2.9	X						
3.9	8860	438	3100	1.25	X						
4.3	7890	389	3250	1.40	X	**S**	**77R37**	**(E)DRS**	**71M4**	135	818/836
5.2	6660	327	3400	1.65	X	**SF**	**77R37**	**(E)DRS**	**71M4**	160	819/836
5.8	6050	289	3460	1.80	X	**SA**	**77R37**	**(E)DRS**	**71M4**	135	820/836
6.8	5220	250	3540	2.1	X	**SAF**	**77R37**	**(E)DRS**	**71M4**	150	819/836
6.9	4810	246	1900	1.05	X	**S**	**67R37**	**(E)DRS**	**71M4**	95	812/836
7.7	4280	221	2020	1.20	X	**SF**	**67R37**	**(E)DRS**	**71M4**	110	813/836
8.6	3920	198	2090	1.30	X	**SA**	**67R37**	**(E)DRS**	**71M4**	97	814/836
10	3350	168	2180	1.50	X	**SAF**	**67R37**	**(E)DRS**	**71M4**	105	813/836
3.9	8350	288.00*	6680	2.5		**S**	**87**	**DRS**	**80S6**	200	824
4.3	7570	258.18	6700	2.8		**SF**	**87**	**DRS**	**80S6**	250	825
5.0	6610	222.40*	6710	3.1		**SA**	**87**	**DRS**	**80S6**	195	826
5.5	6090	202.96	6720	3.4		**SAF**	**87**	**DRS**	**80S6**	230	825
4.4	7070	256.47	3350	1.60							
5.0	6300	225.26	3440	1.80		**S**	**77**	**DRS**	**80S6**	120	818
5.2	6020	214.00*	3470	1.85		**SF**	**77**	**DRS**	**80S6**	145	819
5.9	5380	189.09	3520	2.1		**SA**	**77**	**DRS**	**80S6**	120	820
6.9	4680	161.60*	3580	2.4		**SAF**	**77**	**DRS**	**80S6**	135	819
6.6	4890	256.47	3560	2.3	X						
7.5	4350	225.26	3600	2.6	X	**S**	**77**	**(E)DRS**	**71M4**	115	818
7.9	4160	214.00*	3600	2.7	X	**SF**	**77**	**(E)DRS**	**71M4**	140	819
8.9	3710	189.09	3600	3.0	X	**SA**	**77**	**(E)DRS**	**71M4**	115	820
7.8	3880	217.41	2100	1.20	X	**SAF**	**77**	**(E)DRS**	**71M4**	130	819
8.9	3440	190.11	2170	1.35	X						
9.4	3290	180.60*	2190	1.40	X						
11	2920	158.45	2240	1.55	X						
13	2520	134.40*	2290	1.80	X	**S**	**67**	**(E)DRS**	**71M4**	70	812
14	2300	121.33	2310	2.0	X	**SF**	**67**	**(E)DRS**	**71M4**	85	813
16	2050	106.75*	2340	2.2	X	**SA**	**67**	**(E)DRS**	**71M4**	73	814
17	1940	100.80*	2340	2.4	X	**SAF**	**67**	**(E)DRS**	**71M4**	82	813
20	1680	85.83	2360	2.7	X						
23	1700	75.06	2360	2.5	X						
26	1490	65.63	2370	2.8	X						
12	2510	94.08*	1620	1.05							
13	2270	84.00*	1670	1.15							
16	1970	71.75*	1720	1.30		**S**	**57**	**DRS**	**80S6**	52	806
17	1860	67.20*	1740	1.40		**SF**	**57**	**DRS**	**80S6**	60	807
21	1800	54.59	1750	1.35		**SA**	**57**	**DRS**	**80S6**	51	808
24	1570	47.32	1780	1.50		**SAF**	**57**	**DRS**	**80S6**	57	807
25	1480	44.22*	1790	1.60							
29	1290	38.23	1810	1.85							
12	2430	137.05	1640	1.05	X						
13	2290	128.10*	1670	1.15	X						
15	2010	110.73	1710	1.30	X						
18	1740	94.08*	1760	1.50	X						
20	1570	84.00*	1780	1.60	X						
24	1360	71.75*	1800	1.80	X						
25	1280	67.20*	1810	1.80	X	**S**	**57**	**(E)DRS**	**71M4**	47	806
31	1220	54.59	1810	1.75	X	**SF**	**57**	**(E)DRS**	**71M4**	55	807
36	1070	47.32	1830	2.0	X	**SA**	**57**	**(E)DRS**	**71M4**	46	808
38	1000	44.22*	1830	2.1	X	**SAF**	**57**	**(E)DRS**	**71M4**	52	807
44	870	38.23	1760	2.5	X						
52	750	32.48*	1680	2.9	X						
58	670	29.00*	1630	3.2	X						
68	580	24.77	1560	3.4	X						
73	545	23.20*	1530	3.4	X						
83	505	20.33	1440	2.9	X						

21933480/EN-US – 04/2018

P_m = 0.75 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
24	1320	71.75*	1220	1.10	X						
25	1250	67.20*	1230	1.15	X						
31	1200	54.59	1110	1.15	X						
36	1050	47.32	1080	1.30	X						
38	990	44.22*	1060	1.40	X						
44	860	38.23	1030	1.60	X						
52	740	32.48*	990	1.85	X						
58	665	29.00*	970	2.0	X	**S**	**47**	**(E)DRS**	**71M4**	38	800
68	570	24.77	930	2.2	X	**SF**	**47**	**(E)DRS**	**71M4**	46	801
73	535	23.20*	920	2.3	X	**SA**	**47**	**(E)DRS**	**71M4**	41	802
83	500	20.33	850	1.95	X	**SAF**	**47**	**(E)DRS**	**71M4**	44	801
96	435	17.62	820	2.2	X						
103	410	16.47*	810	2.4	X						
119	355	14.24	780	2.7	X						
140	300	12.10*	745	3.2	X						
156	270	10.80*	725	3.5	X						
183	230	9.23*	695	4.0	X						
59	650	28.76	585	1.00							
67	575	25.38*	575	1.10	X						
75	515	22.50*	565	1.20	X						
88	440	19.13*	550	1.35	X						
109	380	15.53	490	1.10	X						
126	330	13.39	480	1.25	X						
135	310	12.48*	475	1.30	X	**S**	**37**	**(E)DRS**	**71M4**	32	795
155	270	10.91	465	1.45	X	**SF**	**37**	**(E)DRS**	**71M4**	35	796
165	255	10.23	460	1.55	X	**SA**	**37**	**(E)DRS**	**71M4**	31	797
187	225	9.02*	445	1.70	X	**SAF**	**37**	**(E)DRS**	**71M4**	34	796
211	200	8.00*	435	1.90	X						
249	172	6.80*	420	2.1	X						
267	161	6.33	410	1.90	X						
314	138	5.38	395	2.2	X						
347	125	4.86*	385	2.3	X						
426	102	3.97	365	2.8	X						
428	101	8.00*	365	1.75							
503	86	6.80*	350	1.65		**S**	**37**	**DRS**	**71M2**	32	795
540	81	6.33	345	2.6		**SF**	**37**	**DRS**	**71M2**	35	796
635	69	5.38	330	2.6		**SA**	**37**	**DRS**	**71M2**	31	797
703	62	4.86*	320	2.5		**SAF**	**37**	**DRS**	**71M2**	34	796
862	51	3.97	300	2.4							

P_m = 1.0 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
1.4	33700	1223	7540	1.10	X						
1.6	29600	1070	7730	1.25	X						
1.9	25400	928	7890	1.45	X	**S**	**97R57**	**(E)DRN**	**80M4**	385	830/836
2.1	22400	824	7990	1.65	X	**SF**	**97R57**	**(E)DRN**	**80M4**	460	831/836
2.5	16300	714	8160	2.3	X	**SA**	**97R57**	**(E)DRN**	**80M4**	375	832/836
2.8	17100	626	8140	2.2	X	**SAF**	**97R57**	**(E)DRN**	**80M4**	430	831/836
3.2	14700	538	8190	2.5	X						
3.6	13300	484	8220	2.8	X						
1.7	21300	1032	6220	1.05	X						
1.9	19700	930	6300	1.10	X						
2.1	17800	831	6380	1.25	X						
2.4	15500	719	6480	1.45	X						
2.8	13500	624	6550	1.65	X	**S**	**87R57**	**(E)DRN**	**80M4**	255	824/836
3.1	12200	558	6590	1.80	X	**SF**	**87R57**	**(E)DRN**	**80M4**	305	825/836
3.6	10700	485	6630	2.1	X	**SA**	**87R57**	**(E)DRN**	**80M4**	250	826/836
4.0	9790	435	6650	2.2	X	**SAF**	**87R57**	**(E)DRN**	**80M4**	285	825/836
4.6	8580	378	6680	2.5	X						
5.4	7480	323	6700	2.8	X						
6.9	6950	255	6710	2.5	X						
7.9	6090	222	6720	2.9	X						

21933480/EN-US – 04/2018

P_m = 1.0 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
4.5	10200	389	2840	1.05	X	**S**	**77R37**	**(E)DRN**	**80M4**	145	818/836
5.3	8680	327	3130	1.25	X	**SF**	**77R37**	**(E)DRN**	**80M4**	170	819/836
6.1	7840	289	3250	1.40	X	**SA**	**77R37**	**(E)DRN**	**80M4**	145	820/836
7.0	6790	250	3380	1.60	X	**SAF**	**77R37**	**(E)DRN**	**80M4**	160	819/836
8.0	6000	219	3470	1.85	X						
						S	**67R37**	**(E)DRN**	**80M4**	105	812/836
10	4360	168	2000	1.15	X	**SF**	**67R37**	**(E)DRN**	**80M4**	120	813/836
11	4080	156	2060	1.25	X	**SA**	**67R37**	**(E)DRN**	**80M4**	105	814/836
						SAF	**67R37**	**(E)DRN**	**80M4**	115	813/836
4.0	10700	288.00*	6630	2.0							
4.5	9730	258.18	6650	2.2		**S**	**87**	**DRN**	**90S6**	220	824
5.2	8500	222.40*	6680	2.4		**SF**	**87**	**DRN**	**90S6**	265	825
5.7	7820	202.96	6690	2.6		**SA**	**87**	**DRN**	**90S6**	210	826
6.5	7010	180.00*	6710	2.9		**SAF**	**87**	**DRN**	**90S6**	250	825
6.1	7430	288.00*	6700	2.7	X						
6.8	6720	258.18	6710	3.0	X	**S**	**87**	**(E)DRN**	**80M4**	205	824
7.9	5860	222.40*	6730	3.3	X	**SF**	**87**	**(E)DRN**	**80M4**	255	825
8.6	5390	202.96	6730	3.6	X	**SA**	**87**	**(E)DRN**	**80M4**	200	826
						SAF	**87**	**(E)DRN**	**80M4**	235	825
5.2	8100	225.26	3220	1.40							
5.4	7740	214.00*	3270	1.45							
6.2	6930	189.09	3370	1.60							
7.2	6010	161.60*	3470	1.85							
7.9	5560	148.15	3510	2.0		**S**	**77**	**DRN**	**90S6**	140	818
9.0	4940	130.00*	3560	2.3		**SF**	**77**	**DRN**	**90S6**	160	819
9.5	4700	123.20*	3580	2.4		**SA**	**77**	**DRN**	**90S6**	135	820
11	4160	107.83	3600	2.6		**SAF**	**77**	**DRN**	**90S6**	150	819
12	3780	97.14	3600	2.8							
16	3410	75.09	3600	2.9							
16	3250	71.33	3600	3.0							
6.8	6320	256.47	3440	1.80	X						
7.8	5620	225.26	3500	2.0	X						
8.2	5360	214.00*	3530	2.1	X						
9.3	4790	189.09	3570	2.3	X	**S**	**77**	**(E)DRN**	**80M4**	125	818
11	4150	161.60*	3600	2.6	X	**SF**	**77**	**(E)DRN**	**80M4**	150	819
12	3830	148.15	3600	2.8	X	**SA**	**77**	**(E)DRN**	**80M4**	125	820
13	3400	130.00*	3600	3.0	X	**SAF**	**77**	**(E)DRN**	**80M4**	140	819
14	3240	123.20*	3600	3.1	X						
16	2860	107.83	3600	3.4	X						
8.7	4690	134.40*	1930	1.05							
9.6	4280	121.33	2020	1.15							
11	3820	106.75*	2110	1.25							
12	3630	100.80*	2140	1.35							
14	3140	85.83	2210	1.55							
15	2880	78.00*	2250	1.70							
18	2830	65.63	2250	1.65		**S**	**67**	**DRN**	**90S6**	95	812
19	2700	62.35*	2270	1.70		**SF**	**67**	**DRN**	**90S6**	110	813
21	2380	54.70	2300	1.95		**SA**	**67**	**DRN**	**90S6**	97	814
25	2040	46.40*	2310	2.3		**SAF**	**67**	**DRN**	**90S6**	105	813
28	1850	41.89	2250	2.5							
32	1640	36.85	2180	2.8							
33	1550	34.80*	2150	3.0							
48	1170	24.44	1880	2.7							
50	1110	23.22*	1860	2.8							
9.2	4440	190.11	1980	1.05	X						
9.7	4240	180.60*	2030	1.10	X						
11	3780	158.45	2110	1.20	X						
13	3260	134.40*	2200	1.40	X						
14	2970	121.33	2240	1.55	X						
16	2640	106.75*	2280	1.75	X	**S**	**67**	**(E)DRN**	**80M4**	81	812
17	2510	100.80*	2290	1.85	X	**SF**	**67**	**(E)DRN**	**80M4**	95	813
20	2160	85.83	2320	2.1	X	**SA**	**67**	**(E)DRN**	**80M4**	83	814
22	1980	78.00*	2340	2.3	X	**SAF**	**67**	**(E)DRN**	**80M4**	93	813
23	2190	75.06	2320	1.95	X						
27	1930	65.63	2280	2.2	X						
28	1840	62.35*	2250	2.3	X						
32	1620	54.70	2170	2.6	X						
38	1390	46.40*	2080	3.0	X						

21933480/EN-US – 04/2018

P_m = 1.0 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
16	2540	71.75*	1620	1.05							
17	2390	67.20*	1650	1.10							
21	2050	56.61	1710	1.25							
25	2020	47.32	1710	1.20							
26	1900	44.22*	1730	1.25							
30	1650	38.23	1770	1.45							
36	1420	32.48*	1790	1.70		**S**	**57**	**DRN**	**90S6**	70	806
40	1270	29.00*	1750	1.85		**SF**	**57**	**DRN**	**90S6**	78	807
47	1100	24.77	1680	2.2		**SA**	**57**	**DRN**	**90S6**	69	808
50	1030	23.20*	1650	2.3		**SAF**	**57**	**DRN**	**90S6**	76	807
60	870	19.54	1580	2.5							
66	830	17.62	1480	1.80							
71	785	16.47*	1450	1.90							
82	680	14.24	1400	2.2							
96	580	12.10*	1340	2.6							
108	520	10.80*	1300	2.9							
16	2600	110.73	1600	1.00	X						
19	2240	94.08*	1670	1.20	X						
21	2020	84.00*	1710	1.25	X						
24	1750	71.75*	1750	1.40	X						
26	1650	67.20*	1770	1.40	X						
31	1410	56.61	1790	1.40	X						
32	1580	54.59	1780	1.35	X						
37	1380	47.32	1790	1.55	X						
40	1290	44.22*	1760	1.65	X	**S**	**57**	**(E)DRN**	**80M4**	57	806
46	1130	38.23	1690	1.90	X	**SF**	**57**	**(E)DRN**	**80M4**	65	807
54	960	32.48*	1620	2.2	X	**SA**	**57**	**(E)DRN**	**80M4**	56	808
60	860	29.00*	1570	2.5	X	**SAF**	**57**	**(E)DRN**	**80M4**	63	807
71	745	24.77	1510	2.6	X						
75	700	23.20*	1480	2.6	X						
86	650	20.33	1380	2.3	X						
90	595	19.54	1410	2.7	X						
99	565	17.62	1330	2.6	X						
106	530	16.47*	1310	2.8	X						
123	460	14.24	1260	3.2	X						
36	1400	32.48*	1000	1.05							
40	1260	29.00*	980	1.20							
47	1080	24.77	960	1.35							
50	1020	23.20*	940	1.40							
60	870	19.54	910	1.55							
66	830	17.62	820	1.20							
71	780	16.47*	820	1.25		**S**	**47**	**DRN**	**90S6**	61	800
82	680	14.24	800	1.45		**SF**	**47**	**DRN**	**90S6**	69	801
96	580	12.10*	775	1.70		**SA**	**47**	**DRN**	**90S6**	64	802
108	520	10.80*	760	1.90		**SAF**	**47**	**DRN**	**90S6**	68	801
126	445	9.23*	735	2.2							
135	420	8.64*	725	2.3							
160	355	7.28	695	2.7							
170	335	6.83	680	2.5							
182	315	6.40*	670	2.6							
216	265	5.39	640	2.9							
37	1360	47.32	990	1.00	X						
40	1280	44.22*	980	1.05	X						
46	1110	38.23	960	1.25	X						
54	950	32.48*	930	1.45	X						
60	850	29.00*	910	1.60	X						
71	740	24.77	880	1.75	X						
75	695	23.20*	870	1.80	X	**S**	**47**	**(E)DRN**	**80M4**	49	800
86	645	20.33	790	1.50	X	**SF**	**47**	**(E)DRN**	**80M4**	57	801
90	585	19.54	840	1.85	X	**SA**	**47**	**(E)DRN**	**80M4**	51	802
99	560	17.62	770	1.70	X	**SAF**	**47**	**(E)DRN**	**80M4**	55	801
106	525	16.47*	760	1.80	X						
123	455	14.24	740	2.1	X						
145	390	12.10*	710	2.5	X						
162	350	10.80*	695	2.7	X						
190	300	9.23*	665	3.1	X						
203	280	8.64*	655	3.1	X						
241	235	7.28	630	3.2	X						

21933480/EN-US – 04/2018

P_m = 1.0 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
274	210	6.40*	605	3.2	X	**S**	**47**	**(E)DRN**	**80M4**	49	800
325	179	5.39	575	3.2	X	**SF**	**47**	**(E)DRN**	**80M4**	57	801
368	159	4.76	560	3.2	X	**SA**	**47**	**(E)DRN**	**80M4**	51	802
438	134	4.00*	530	3.2	X	**SAF**	**47**	**(E)DRN**	**80M4**	55	801
478	122	7.28	520	1.60							
509	115	6.83	510	2.6		**S**	**47**	**DRN**	**80MS2**	49	800
543	108	6.40*	500	2.5		**SF**	**47**	**DRN**	**80MS2**	57	801
645	91	5.39	475	2.3		**SA**	**47**	**DRN**	**80MS2**	51	802
730	81	4.76	460	2.2		**SAF**	**47**	**DRN**	**80MS2**	55	801
869	68	4.00*	435	2.1							
146	385	8.00*	435	1.10							
171	325	6.80*	425	1.25		**S**	**37**	**DRN**	**90S6**	55	795
184	305	6.33	415	1.30		**SF**	**37**	**DRN**	**90S6**	58	796
216	260	5.38	405	1.45		**SA**	**37**	**DRN**	**90S6**	54	797
240	235	4.86*	395	1.55		**SAF**	**37**	**DRN**	**90S6**	58	796
294	196	3.97	380	1.80							
92	565	19.13*	500	1.05	X						
140	400	12.48*	435	1.00	X						
161	350	10.91	425	1.15	X						
171	325	10.23	425	1.20	X						
194	290	9.02*	415	1.30	X	**S**	**37**	**(E)DRN**	**80M4**	42	795
219	255	8.00*	405	1.45	X	**SF**	**37**	**(E)DRN**	**80M4**	45	796
258	220	6.80*	395	1.65	X	**SA**	**37**	**(E)DRN**	**80M4**	41	797
276	205	6.33	385	1.50	X	**SAF**	**37**	**(E)DRN**	**80M4**	45	796
325	177	5.38	375	1.70	X						
360	161	4.86*	365	1.80	X						
442	131	3.97	350	2.2	X						
511	113	6.80*	340	1.25		**S**	**37**	**DRN**	**80MS2**	42	795
549	106	6.33	330	2.0		**SF**	**37**	**DRN**	**80MS2**	45	796
646	90	5.38	320	1.95		**SA**	**37**	**DRN**	**80MS2**	41	797
715	82	4.86*	310	1.95		**SAF**	**37**	**DRN**	**80MS2**	45	796
877	67	3.97	295	1.85							

P_m = 1.5 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
2.1	33900	824	7530	1.10	X						
2.5	24700	714	7920	1.50	X						
2.8	26000	626	7870	1.45	X	**S**	**97R57**	**(E)DRN**	**90S4**	400	830/836
3.3	22300	538	8000	1.65	X	**SF**	**97R57**	**(E)DRN**	**90S4**	475	831/836
3.6	20100	484	8060	1.85	X	**SA**	**97R57**	**(E)DRN**	**90S4**	390	832/836
4.2	17500	420	8130	2.1	X	**SAF**	**97R57**	**(E)DRN**	**90S4**	445	831/836
4.7	15900	376	8170	2.3	X						
5.4	14000	327	8210	2.6	X						
2.8	20600	624	6260	1.05	X						
3.2	18600	558	6350	1.20	X						
3.6	16300	485	6440	1.35	X						
4.0	14900	435	6500	1.45	X	**S**	**87R57**	**(E)DRN**	**90S4**	270	824/836
4.7	13000	378	6560	1.65	X	**SF**	**87R57**	**(E)DRN**	**90S4**	315	825/836
5.5	11300	323	6610	1.85	X	**SA**	**87R57**	**(E)DRN**	**90S4**	265	826/836
6.3	9990	281	6650	2.1	X	**SAF**	**87R57**	**(E)DRN**	**90S4**	300	825/836
6.9	10500	255	6630	1.65	X						
7.9	9270	222	6660	1.90	X						
8.6	8700	205	6670	2.0	X						
4.1	16500	286.40*	8150	2.2		**S**	**97**	**DRN**	**112M6**	400	830
4.5	15200	262.22	8180	2.4		**SF**	**97**	**DRN**	**112M6**	470	831
5.1	13600	231.67	8210	2.7		**SA**	**97**	**DRN**	**112M6**	385	832
						SAF	**97**	**DRN**	**112M6**	445	831
						S	**87**	**DRN**	**112M6**	270	824
5.3	12500	222.40*	6580	1.65		**SF**	**87**	**DRN**	**112M6**	320	825
5.8	11500	202.96	6600	1.80		**SA**	**87**	**DRN**	**112M6**	265	826
						SAF	**87**	**DRN**	**112M6**	300	825

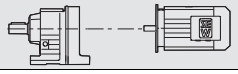
21933480/EN-US – 04/2018

P_m = 1.5 HP

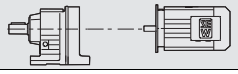
n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
6.1	11000	288.00*	6620	1.80	X						
6.8	10000	258.18	6640	2.0	X	**S**	**87**	**(E)DRN**	**90S4**	220	824
7.9	8740	222.40*	6670	2.2	X	**SF**	**87**	**(E)DRN**	**90S4**	265	825
8.7	8040	202.96	6690	2.4	X	**SA**	**87**	**(E)DRN**	**90S4**	210	826
9.8	7200	180.00*	6700	2.6	X	**SAF**	**87**	**(E)DRN**	**90S4**	250	825
12	6120	151.30	6720	3.0	X						
6.9	9420	256.47	3000	1.20	X						
7.8	8380	225.26	3170	1.35	X						
8.2	8000	214.00*	3230	1.40	X						
9.3	7150	189.09	3340	1.55	X						
11	6200	161.60*	3450	1.75	X						
12	5720	148.15	3490	1.85	X	**S**	**77**	**(E)DRN**	**90S4**	140	818
14	5070	130.00*	3550	2.0	X	**SF**	**77**	**(E)DRN**	**90S4**	160	819
14	4830	123.20*	3570	2.1	X	**SA**	**77**	**(E)DRN**	**90S4**	135	820
16	4270	107.83	3600	2.3	X	**SAF**	**77**	**(E)DRN**	**90S4**	150	819
18	3870	97.14	3540	2.5	X						
21	3420	85.22	3420	2.7	X						
23	3450	75.09	3200	2.8	X						
25	3290	71.33	3160	3.0	X						
15	4430	121.33	1990	1.05	X						
17	3940	106.75*	2080	1.15	X						
17	3740	100.80*	2120	1.25	X						
21	3230	85.83	2200	1.40	X						
23	2960	78.00*	2240	1.50	X						
23	3260	75.06	2180	1.30	X						
27	2880	65.63	2120	1.45	X	**S**	**67**	**(E)DRN**	**90S4**	95	812
28	2740	62.35*	2100	1.55	X	**SF**	**67**	**(E)DRN**	**90S4**	110	813
32	2420	54.70	2040	1.75	X	**SA**	**67**	**(E)DRN**	**90S4**	97	814
38	2070	46.40*	1970	2.0	X	**SAF**	**67**	**(E)DRN**	**90S4**	105	813
42	1880	41.89	1920	2.3	X						
48	1660	36.85	1860	2.5	X						
51	1570	34.80*	1840	2.7	X						
59	1350	29.63	1760	3.1	X						
72	1180	24.44	1610	2.5	X						
76	1120	23.22*	1590	2.7	X						
37	2060	47.32	1660	1.05	X						
40	1930	44.22*	1630	1.10	X						
46	1680	38.23	1590	1.30	X						
54	1440	32.48*	1530	1.50	X						
61	1290	29.00*	1490	1.65	X						
71	1110	24.77	1440	1.75	X						
76	1040	23.20*	1410	1.80	X						
87	960	20.33	1300	1.55	X	**S**	**57**	**(E)DRN**	**90S4**	70	806
90	880	19.54	1350	1.80	X	**SF**	**57**	**(E)DRN**	**90S4**	78	807
100	840	17.62	1260	1.75	X	**SA**	**57**	**(E)DRN**	**90S4**	69	808
107	790	16.47*	1240	1.90	X	**SAF**	**57**	**(E)DRN**	**90S4**	76	807
124	685	14.24	1200	2.2	X						
146	585	12.10*	1150	2.5	X						
163	525	10.80*	1120	2.9	X						
191	450	9.23*	1070	2.9	X						
204	420	8.64*	1050	3.0	X						
258	335	6.83	980	2.6	X						
275	315	6.40*	970	2.7	X						
479	182	7.28	830	2.6							
510	173	6.83	810	2.8		**S**	**57**	**DRN**	**80M2**	57	806
545	162	6.40*	795	2.7		**SF**	**57**	**DRN**	**80M2**	65	807
646	137	5.39	755	2.7		**SA**	**57**	**DRN**	**80M2**	56	808
732	121	4.76	725	2.6		**SAF**	**57**	**DRN**	**80M2**	63	807
871	102	4.00*	685	2.4							

21933480/EN-US – 04/2018

P_m = 1.5 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
61	1280	29.00*	810	1.05	X						
71	1100	24.77	800	1.15	X						
76	1030	23.20*	790	1.20	X						
87	960	20.33	695	1.00	X						
90	870	19.54	770	1.25	X						
100	840	17.62	685	1.15	X						
107	785	16.47*	680	1.20	X						
124	680	14.24	670	1.40	X	**S**	**47**	**(E)DRN**	**90S4**	61	800
146	580	12.10*	655	1.65	X	**SF**	**47**	**(E)DRN**	**90S4**	69	801
163	520	10.80*	640	1.80	X	**SA**	**47**	**(E)DRN**	**90S4**	64	802
191	445	9.23*	620	2.1	X	**SAF**	**47**	**(E)DRN**	**90S4**	68	801
204	420	8.64*	615	2.1	X						
242	355	7.28	590	2.1	X						
258	335	6.83	580	2.0	X						
275	315	6.40*	570	2.1	X						
327	265	5.39	550	2.1	X						
370	235	4.76	535	2.2	X						
440	199	4.00*	510	2.1	X						
479	182	7.28	500	1.05							
510	173	6.83	490	1.75		**S**	**47**	**DRN**	**80M2**	49	800
545	162	6.40*	485	1.70		**SF**	**47**	**DRN**	**80M2**	57	801
646	137	5.39	460	1.55		**SA**	**47**	**DRN**	**80M2**	51	802
732	121	4.76	445	1.45		**SAF**	**47**	**DRN**	**80M2**	55	801
871	102	4.00*	425	1.40							
220	385	8.00*	360	1.00							
259	330	6.80*	355	1.10	X	**S**	**37**	**(E)DRN**	**90S4**	55	795
278	305	6.33	345	1.00	X	**SF**	**37**	**(E)DRN**	**90S4**	58	796
327	260	5.38	340	1.15	X	**SA**	**37**	**(E)DRN**	**90S4**	54	797
362	235	4.86*	335	1.20	X	**SAF**	**37**	**(E)DRN**	**90S4**	58	796
444	196	3.97	320	1.45	X						
550	159	6.33	310	1.35		**S**	**37**	**DRN**	**80M2**	42	795
647	135	5.38	300	1.30		**SF**	**37**	**DRN**	**80M2**	45	796
716	122	4.86*	295	1.30		**SA**	**37**	**DRN**	**80M2**	41	797
879	100	3.97	280	1.25		**SAF**	**37**	**DRN**	**80M2**	45	796

P_m = 2.0 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
2.5	33100	714	7570	1.10	X						
2.8	34800	626	7490	1.05	X						
3.3	29900	538	7720	1.25	X						
3.6	27100	484	7830	1.35	X	**S**	**97R57**	**(E)DRN**	**90L4**	410	830/836
4.2	23500	420	7960	1.60	X	**SF**	**97R57**	**(E)DRN**	**90L4**	480	831/836
4.7	21300	376	8030	1.75	X	**SA**	**97R57**	**(E)DRN**	**90L4**	395	832/836
5.4	18700	327	8100	2.0	X	**SAF**	**97R57**	**(E)DRN**	**90L4**	455	831/836
6.2	16500	287	8150	2.2	X						
7.0	14400	252	8200	2.6	X						
8.1	12500	219	8230	3.0	X						
3.6	22000	485	6180	1.00	X						
4.1	20000	435	6290	1.10	X						
4.7	17600	378	6400	1.25	X	**S**	**87R57**	**(E)DRN**	**90L4**	275	824/836
5.5	15300	323	6490	1.40	X	**SF**	**87R57**	**(E)DRN**	**90L4**	325	825/836
6.3	13400	281	6550	1.60	X	**SA**	**87R57**	**(E)DRN**	**90L4**	270	826/836
6.9	14200	255	6520	1.25	X	**SAF**	**87R57**	**(E)DRN**	**90L4**	305	825/836
8.0	12400	222	6570	1.40	X						
8.6	11600	205	6600	1.50	X						
4.1	22000	286.40*	8010	1.70		**S**	**97**	**DRN**	**112M6**	400	830
4.5	20300	262.22	8060	1.85		**SF**	**97**	**DRN**	**112M6**	470	831
5.1	18100	231.67	8120	2.0		**SA**	**97**	**DRN**	**112M6**	385	832
6.0	15600	196.52	8170	2.4		**SAF**	**97**	**DRN**	**112M6**	445	831
6.2	15200	286.40*	8180	2.3	X	**S**	**97**	**(E)DRN**	**90L4**	355	830
6.7	14000	262.22	8210	2.5	X	**SF**	**97**	**(E)DRN**	**90L4**	425	831
7.6	12500	231.67	8230	2.8	X	**SA**	**97**	**(E)DRN**	**90L4**	340	832
9.0	10700	196.52	8260	3.2	X	**SAF**	**97**	**(E)DRN**	**90L4**	400	831

21933480/EN-US – 04/2018

P_m = 2.0 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
5.3	16800	222.40*	6430	1.25		**S**	**87**	**DRN**	**112M6**	270	824
5.8	15400	202.96	6480	1.35		**SF**	**87**	**DRN**	**112M6**	320	825
6.6	13800	180.00*	6540	1.45		**SA**	**87**	**DRN**	**112M6**	265	826
						SAF	**87**	**DRN**	**112M6**	300	825
6.1	14700	288.00*	6510	1.35	X						
6.8	13300	258.18	6550	1.50	X						
8.0	11600	222.40*	6600	1.70	X						
8.7	10600	202.96	6630	1.80	X						
9.8	9570	180.00*	6660	1.95	X	**S**	**87**	**(E)DRN**	**90L4**	225	824
12	8150	151.30	6690	2.2	X	**SF**	**87**	**(E)DRN**	**90L4**	270	825
13	7530	139.05	6700	2.4	X	**SA**	**87**	**(E)DRN**	**90L4**	220	826
14	6740	123.48	6710	2.6	X	**SAF**	**87**	**(E)DRN**	**90L4**	255	825
16	6060	110.40*	6720	2.8	X						
18	5490	99.26	6730	3.0	X						
19	5690	91.20*	6730	2.4	X						
22	5120	81.76	6730	2.8	X						
8.3	10600	214.00*	2760	1.05	X						
9.3	9510	189.09	2990	1.15	X						
11	8240	161.60*	3200	1.30	X						
12	7610	148.15	3280	1.40	X						
14	6750	130.00*	3390	1.55	X						
14	6420	123.20*	3420	1.60	X						
16	5680	107.83	3470	1.75	X						
18	5150	97.14	3390	1.85	X	**S**	**77**	**(E)DRN**	**90L4**	145	818
21	4560	85.22	3290	2.0	X	**SF**	**77**	**(E)DRN**	**90L4**	165	819
24	4600	75.09	3050	2.1	X	**SA**	**77**	**(E)DRN**	**90L4**	145	820
25	4380	71.33	3020	2.2	X	**SAF**	**77**	**(E)DRN**	**90L4**	160	819
27	3620	66.67	3100	2.4	X						
28	3890	63.03	2930	2.5	X						
31	3110	56.92	2970	2.6	X						
33	3340	53.87	2830	2.9	X						
36	3070	49.38	2770	3.2	X						
41	2710	43.33	2680	3.6	X						
21	4300	85.83	2020	1.05	X						
23	3930	78.00*	2090	1.15	X						
27	3830	65.63	1970	1.10	X						
28	3650	62.35*	1960	1.15	X						
32	3220	54.70	1920	1.30	X						
38	2750	46.40*	1860	1.55	X						
42	2500	41.89	1820	1.70	X						
48	2210	36.85	1780	1.90	X	**S**	**67**	**(E)DRN**	**90L4**	100	812
51	2090	34.80*	1750	2.0	X	**SF**	**67**	**(E)DRN**	**90L4**	115	813
60	1790	29.63	1690	2.4	X	**SA**	**67**	**(E)DRN**	**90L4**	105	814
66	1630	26.93	1660	2.5	X	**SAF**	**67**	**(E)DRN**	**90L4**	115	813
72	1570	24.44	1530	1.90	X						
76	1490	23.22*	1510	2.0	X						
87	1310	20.37	1470	2.3	X						
102	1120	17.28*	1420	2.7	X						
113	1010	15.60*	1390	3.0	X						
129	890	13.73*	1340	3.4	X						
54	1910	32.48*	1440	1.15	X						
61	1720	29.00*	1410	1.25	X						
71	1480	24.77	1370	1.30	X						
76	1390	23.20*	1350	1.35	X						
90	1180	19.54	1300	1.35	X						
100	1120	17.62	1190	1.30	X						
107	1050	16.47*	1170	1.40	X						
124	910	14.24	1140	1.65	X	**S**	**57**	**(E)DRN**	**90L4**	77	806
146	775	12.10*	1100	1.90	X	**SF**	**57**	**(E)DRN**	**90L4**	85	807
164	695	10.80*	1070	2.1	X	**SA**	**57**	**(E)DRN**	**90L4**	76	808
192	595	9.23*	1040	2.2	X	**SAF**	**57**	**(E)DRN**	**90L4**	83	807
205	560	8.64*	1020	2.2	X						
243	470	7.28	980	2.3	X						
259	445	6.83	950	1.95	X						
276	420	6.40*	940	2.1	X						
328	355	5.39	900	2.4	X						
371	310	4.76	870	2.4	X						
442	265	4.00*	830	2.4	X						

21933480/EN-US – 04/2018

P_m = 2.0 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
482	240	7.28	810	2.0							
513	225	6.83	795	2.1		**S**	**57**	**DRN**	**90S2**	70	806
548	210	6.40*	780	2.1		**SF**	**57**	**DRN**	**90S2**	78	807
650	181	5.39	740	2.0		**SA**	**57**	**DRN**	**90S2**	69	808
736	160	4.76	715	1.95		**SAF**	**57**	**DRN**	**90S2**	76	807
876	135	4.00*	680	1.85							
124	910	14.24	600	1.05	X						
146	775	12.10*	595	1.25	X						
164	695	10.80*	590	1.35	X						
192	595	9.23*	580	1.55	X						
205	560	8.64*	575	1.60	X	**S**	**47**	**(E)DRN**	**90L4**	68	800
243	470	7.28	555	1.60	X	**SF**	**47**	**(E)DRN**	**90L4**	76	801
259	445	6.83	545	1.55	X	**SA**	**47**	**(E)DRN**	**90L4**	71	802
276	420	6.40*	540	1.60	X	**SAF**	**47**	**(E)DRN**	**90L4**	75	801
328	355	5.39	520	1.60	X						
371	310	4.76	510	1.65	X						
442	265	4.00*	490	1.60	X						
513	225	6.83	475	1.30							
548	210	6.40*	465	1.30		**S**	**47**	**DRN**	**90S2**	61	800
650	181	5.39	445	1.15		**SF**	**47**	**DRN**	**90S2**	69	801
736	160	4.76	435	1.10		**SA**	**47**	**DRN**	**90S2**	64	802
876	135	4.00*	415	1.05		**SAF**	**47**	**DRN**	**90S2**	68	801
						S	**37**	**(E)DRN**	**90L4**	62	795
						SF	**37**	**(E)DRN**	**90L4**	65	796
446	260	3.97	295	1.10	X	**SA**	**37**	**(E)DRN**	**90L4**	61	797
						SAF	**37**	**(E)DRN**	**90L4**	65	796
						S	**37**	**DRN**	**90S2**	55	795
553	210	6.33	290	1.00		**SF**	**37**	**DRN**	**90S2**	58	796
651	179	5.38	280	1.00		**SA**	**37**	**DRN**	**90S2**	54	797
721	162	4.86*	275	1.00		**SAF**	**37**	**DRN**	**90S2**	58	796

P_m = 3.0 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
4.2	35700	420	7440	1.05	X						
4.7	32300	376	7610	1.15	X						
5.4	28300	327	7780	1.30	X	**S**	**97R57**	**(E)DRN**	**100LM4**	430	830/836
6.1	25000	287	7910	1.50	X	**SF**	**97R57**	**(E)DRN**	**100LM4**	500	831/836
7.0	21900	252	8010	1.70	X	**SA**	**97R57**	**(E)DRN**	**100LM4**	420	832/836
8.1	19100	219	8090	1.95	X	**SAF**	**97R57**	**(E)DRN**	**100LM4**	480	831/836
8.6	18000	205	8120	2.1	X						
						S	**97**	**DRN**	**132S6**	425	830
5.1	27300	231.67	7830	1.35		**SF**	**97**	**DRN**	**132S6**	495	831
6.0	23400	196.52	7960	1.55		**SA**	**97**	**DRN**	**132S6**	410	832
						SAF	**97**	**DRN**	**132S6**	470	831
6.2	22900	286.40*	7980	1.55	X						
6.7	21100	262.22	8040	1.65	X						
7.6	18800	231.67	8100	1.85	X						
9.0	16100	196.52	8160	2.1	X						
9.7	14900	180.95	8190	2.2	X	**S**	**97**	**(E)DRN**	**100LM4**	380	830
11	13400	161.74	8220	2.4	X	**SF**	**97**	**(E)DRN**	**100LM4**	450	831
12	12100	145.60*	8240	2.6	X	**SA**	**97**	**(E)DRN**	**100LM4**	370	832
13	11100	131.85	8260	2.7	X	**SAF**	**97**	**(E)DRN**	**100LM4**	425	831
15	9910	116.92	8270	3.0	X						
17	9000	105.71	8280	3.1	X						
20	7690	89.60*	8300	3.5	X						

21933480/EN-US – 04/2018

P_m = 3.0 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
6.8	20000	258.18	6280	1.00	X						
7.9	17400	222.40*	6400	1.10	X						
8.7	16000	202.96	6460	1.20	X						
9.8	14400	180.00*	6520	1.30	X						
12	12200	151.30	6590	1.50	X						
13	11300	139.05	6610	1.60	X						
14	10100	123.48	6640	1.70	X	**S**	**87**	**(E)DRN**	**100LM4**	250	824
16	9120	110.40*	6670	1.85	X	**SF**	**87**	**(E)DRN**	**100LM4**	300	825
18	8250	99.26	6680	1.95	X	**SA**	**87**	**(E)DRN**	**100LM4**	245	826
20	7220	86.15	6700	2.2	X	**SAF**	**87**	**(E)DRN**	**100LM4**	280	825
22	7700	81.76	6690	1.85	X						
23	6500	77.14	6720	2.3	X						
25	6670	70.43	6710	2.1	X						
27	6110	64.27	6720	2.3	X						
31	5440	57.00*	6730	2.6	X						
14	10100	130.00*	2870	1.00	X						
14	9660	123.20*	2960	1.05	X						
16	8540	107.83	3150	1.15	X						
18	7750	97.14	3110	1.25	X						
21	6850	85.22	3040	1.35	X						
23	6090	75.20*	2970	1.45	X						
26	5440	66.67	2900	1.60	X						
28	5850	63.03	2690	1.65	X						
31	4680	56.92	2800	1.75	X	**S**	**77**	**(E)DRN**	**100LM4**	170	818
33	5030	53.87	2620	1.95	X	**SF**	**77**	**(E)DRN**	**100LM4**	190	819
36	4620	49.38	2580	2.1	X	**SA**	**77**	**(E)DRN**	**100LM4**	170	820
41	4080	43.33	2510	2.4	X	**SAF**	**77**	**(E)DRN**	**100LM4**	185	819
43	3870	41.07	2490	2.5	X						
49	3400	35.94	2420	2.8	X						
54	3070	32.38	2360	3.0	X						
62	2710	28.41	2290	3.2	X						
70	2400	25.07	2220	3.5	X						
77	2250	22.89	2060	2.8	X						
84	2070	20.99	2020	3.0	X						
38	4140	46.40*	1650	1.00	X						
42	3760	41.89	1630	1.15	X						
48	3330	36.85	1610	1.30	X						
51	3150	34.80*	1590	1.35	X						
59	2700	29.63	1550	1.55	X						
65	2460	26.93	1530	1.65	X						
76	2140	23.33	1490	1.65	X	**S**	**67**	**(E)DRN**	**100LM4**	125	812
86	1980	20.37	1340	1.50	X	**SF**	**67**	**(E)DRN**	**100LM4**	140	813
102	1680	17.28*	1310	1.80	X	**SA**	**67**	**(E)DRN**	**100LM4**	130	814
113	1520	15.60*	1280	1.95	X	**SAF**	**67**	**(E)DRN**	**100LM4**	140	813
128	1340	13.73*	1250	2.2	X						
136	1270	12.96*	1240	2.4	X						
160	1080	11.03	1200	2.8	X						
176	990	10.03	1170	2.8	X						
203	860	8.69	1140	2.9	X						
233	750	7.56*	1100	3.0	X						
257	680	13.73*	1070	2.8							
272	640	12.96*	1060	2.7		**S**	**67**	**DRN**	**90L2**	100	812
319	550	11.03	1020	2.7		**SF**	**67**	**DRN**	**90L2**	115	813
352	500	10.03	990	2.7		**SA**	**67**	**DRN**	**90L2**	105	814
406	430	8.69	950	2.5		**SAF**	**67**	**DRN**	**90L2**	115	813
466	375	7.56*	920	2.2							
124	1370	14.24	1030	1.10	X						
146	1170	12.10*	1010	1.30	X						
163	1040	10.80*	990	1.40	X						
191	900	9.23*	960	1.45	X						
204	840	8.64*	950	1.50	X	**S**	**57**	**(E)DRN**	**100LM4**	100	806
242	710	7.28	920	1.50	X	**SF**	**57**	**(E)DRN**	**100LM4**	110	807
258	675	6.83	900	1.30	X	**SA**	**57**	**(E)DRN**	**100LM4**	100	808
275	630	6.40*	890	1.35	X	**SAF**	**57**	**(E)DRN**	**100LM4**	105	807
327	535	5.39	850	1.55	X						
370	470	4.76	830	1.55	X						
440	395	4.00*	795	1.55	X						

21933480/EN-US – 04/2018

P_m = 3.0 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
484	360	7.28	780	1.30							
516	340	6.83	765	1.40		**S**	**57**	**DRN**	**90L2**	77	806
551	315	6.40*	750	1.40		**SF**	**57**	**DRN**	**90L2**	85	807
654	265	5.39	715	1.35		**SA**	**57**	**DRN**	**90L2**	76	808
740	235	4.76	695	1.30		**SAF**	**57**	**DRN**	**90L2**	83	807
881	200	4.00*	660	1.25							
191	890	9.23*	490	1.05	X						
204	840	8.64*	490	1.05	X						
242	710	7.28	490	1.05	X	**S**	**47**	**(E)DRN**	**100LM4**	93	800
258	675	6.83	480	1.00	X	**SF**	**47**	**(E)DRN**	**100LM4**	100	801
275	630	6.40*	475	1.05	X	**SA**	**47**	**(E)DRN**	**100LM4**	95	802
327	530	5.39	470	1.10	X	**SAF**	**47**	**(E)DRN**	**100LM4**	99	801
370	470	4.76	460	1.10	X						
440	395	4.00*	450	1.05	X						

P_m = 4.0 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
6.1	33400	287	7550	1.10	X	**S**	**97R57**	**(E)DRN**	**100L4**	430	830/836
7.0	29300	252	7740	1.25	X	**SF**	**97R57**	**(E)DRN**	**100L4**	500	831/836
8.1	25600	219	7890	1.45	X	**SA**	**97R57**	**(E)DRN**	**100L4**	420	832/836
8.6	24100	205	7940	1.55	X	**SAF**	**97R57**	**(E)DRN**	**100L4**	480	831/836
6.2	30500	286.40*	7690	1.15	X						
6.7	28100	262.22	7790	1.25	X						
7.6	25100	231.67	7910	1.40	X						
9.0	21500	196.52	8020	1.60	X						
9.7	19900	180.95	8070	1.65	X	**S**	**97**	**(E)DRN**	**100L4**	380	830
11	17900	161.74	8120	1.80	X	**SF**	**97**	**(E)DRN**	**100L4**	450	831
12	16200	145.60*	8160	1.95	X	**SA**	**97**	**(E)DRN**	**100L4**	370	832
13	14800	131.85	8190	2.1	X	**SAF**	**97**	**(E)DRN**	**100L4**	425	831
15	13200	116.92	8220	2.2	X						
17	12000	105.71	8240	2.4	X						
20	10200	89.60*	8270	2.6	X						
22	10300	80.85	8270	2.8	X						
9.8	19100	180.00*	6330	1.00							
12	16300	151.30	6450	1.10	X						
13	15000	139.05	6490	1.20	X						
14	13500	123.48	6550	1.30	X						
16	12100	110.40*	6590	1.40	X						
18	11000	99.26	6620	1.50	X						
20	9620	86.15	6650	1.65	X	**S**	**87**	**(E)DRN**	**100L4**	250	824
22	10200	81.76	6640	1.40	X	**SF**	**87**	**(E)DRN**	**100L4**	300	825
23	8660	77.14	6680	1.75	X	**SA**	**87**	**(E)DRN**	**100L4**	245	826
25	8890	70.43	6670	1.60	X	**SAF**	**87**	**(E)DRN**	**100L4**	280	825
27	8140	64.27	6680	1.75	X						
31	7250	57.00*	6700	1.95	X						
37	6120	47.91	6720	2.3	X						
40	5640	44.03	6730	2.5	X						
45	5020	39.10	6720	2.8	X						
50	4510	34.96*	6530	3.1	X						
21	9140	85.22	2790	1.00	X						
23	8120	75.20*	2740	1.10	X						
26	7250	66.67	2700	1.20	X						
28	7790	63.03	2440	1.25	X						
31	6240	56.92	2630	1.30	X						
33	6700	53.87	2410	1.45	X	**S**	**77**	**(E)DRN**	**100L4**	170	818
36	6160	49.38	2380	1.60	X	**SF**	**77**	**(E)DRN**	**100L4**	190	819
41	5430	43.33	2340	1.80	X	**SA**	**77**	**(E)DRN**	**100L4**	170	820
43	5160	41.07	2320	1.90	X	**SAF**	**77**	**(E)DRN**	**100L4**	185	819
49	4540	35.94	2270	2.1	X						
54	4100	32.38	2230	2.2	X						
62	3610	28.41	2180	2.4	X						
70	3190	25.07	2120	2.6	X						
77	3010	22.89	1930	2.1	X						

21933480/EN-US – 04/2018

P_m = 4.0 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
84	2760	20.99	1900	2.2	X						
96	2430	18.42	1860	2.6	X						
101	2300	17.45	1840	2.7	X	**S**	**77**	**(E)DRN**	**100L4**	170	818
115	2020	15.28	1790	3.1	X	**SF**	**77**	**(E)DRN**	**100L4**	190	819
128	1820	13.76	1750	3.5	X	**SA**	**77**	**(E)DRN**	**100L4**	170	820
146	1600	12.07	1700	4.0	X	**SAF**	**77**	**(E)DRN**	**100L4**	185	819
165	1420	10.65	1650	4.5	X						
51	4200	34.80*	1430	1.00	X						
60	3600	29.63	1410	1.20	X						
65	3280	26.93	1400	1.25	X						
76	2850	23.33	1380	1.25	X						
87	2630	20.37	1200	1.15	X						
102	2240	17.28*	1190	1.35	X	**S**	**67**	**(E)DRN**	**100L4**	125	812
113	2030	15.60*	1180	1.50	X	**SF**	**67**	**(E)DRN**	**100L4**	140	813
128	1790	13.73*	1160	1.70	X	**SA**	**67**	**(E)DRN**	**100L4**	130	814
136	1690	12.96*	1150	1.75	X	**SAF**	**67**	**(E)DRN**	**100L4**	140	813
160	1450	11.03	1130	2.1	X						
176	1320	10.03	1110	2.1	X						
203	1140	8.69	1080	2.2	X						
233	1000	7.56*	1050	2.2	X						
256	910	13.73*	1030	2.1							
271	860	12.96*	1020	2.0		**S**	**67**	**DRN**	**100LM2**	125	812
319	735	11.03	980	2.0		**SF**	**67**	**DRN**	**100LM2**	140	813
351	665	10.03	960	2.0		**SA**	**67**	**DRN**	**100LM2**	130	814
405	580	8.69	920	1.90		**SAF**	**67**	**DRN**	**100LM2**	140	813
465	505	7.56*	890	1.65							
163	1390	10.80*	900	1.05	X						
191	1190	9.23*	890	1.10	X						
204	1120	8.64*	880	1.10	X	**S**	**57**	**(E)DRN**	**100L4**	100	806
242	950	7.28	860	1.15	X	**SF**	**57**	**(E)DRN**	**100L4**	110	807
275	840	6.40*	830	1.05	X	**SA**	**57**	**(E)DRN**	**100L4**	100	808
327	710	5.39	810	1.20	X	**SAF**	**57**	**(E)DRN**	**100L4**	105	807
370	630	4.76	790	1.20	X						
441	530	4.00*	760	1.20	X						
407	570	8.64*	780	1.05							
483	480	7.28	750	1.00		**S**	**57**	**DRN**	**100LM2**	100	806
515	455	6.83	735	1.05		**SF**	**57**	**DRN**	**100LM2**	110	807
550	425	6.40*	725	1.05		**SA**	**57**	**DRN**	**100LM2**	100	808
652	360	5.39	695	1.00		**SAF**	**57**	**DRN**	**100LM2**	105	807
739	315	4.76	675	0.95							

P_m = 5.0 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
7.0	36900	252	7230	1.00	X	**S**	**97R57**	**(E)DRN**	**100L4**	430	830/836
8.0	32200	219	7610	1.15	X	**SF**	**97R57**	**(E)DRN**	**100L4**	500	831/836
8.6	30300	205	7700	1.20	X	**SA**	**97R57**	**(E)DRN**	**100L4**	420	832/836
						SAF	**97R57**	**(E)DRN**	**100L4**	480	831/836
6.7	35300	262.22	7460	1.00	X						
7.6	31400	231.67	7650	1.10	X						
8.9	27000	196.52	7840	1.25	X						
9.7	24900	180.95	7910	1.35	X						
11	22400	161.74	7990	1.45	X						
12	20300	145.60*	8060	1.55	X	**S**	**97**	**(E)DRN**	**100L4**	380	830
13	18500	131.85	8110	1.65	X	**SF**	**97**	**(E)DRN**	**100L4**	450	831
15	16500	116.92	8150	1.80	X	**SA**	**97**	**(E)DRN**	**100L4**	370	832
17	15000	105.71	8190	1.90	X	**SAF**	**97**	**(E)DRN**	**100L4**	425	831
20	12800	89.60*	8230	2.1	X						
22	12900	80.85	8220	2.2	X						
25	11500	71.43	8250	2.5	X						
29	9820	60.59	8270	3.0	X						

21933480/EN-US – 04/2018

P_m = 5.0 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
14	16900	123.48	6420	1.00	X						
16	15200	110.40*	6490	1.10	X						
18	13700	99.26	6540	1.20	X						
20	12000	86.15	6590	1.30	X						
22	12800	81.76	6560	1.10	X						
23	10800	77.14	6620	1.40	X						
25	11100	70.43	6610	1.25	X	**S**	**87**	**(E)DRN**	**100L4**	250	824
27	10200	64.27	6640	1.40	X	**SF**	**87**	**(E)DRN**	**100L4**	300	825
31	9080	57.00*	6660	1.55	X	**SA**	**87**	**(E)DRN**	**100L4**	245	826
37	7680	47.91	6690	1.85	X	**SAF**	**87**	**(E)DRN**	**100L4**	280	825
40	7070	44.03	6700	2.0	X						
45	6300	39.10	6600	2.2	X						
50	5650	34.96*	6430	2.5	X						
56	5090	31.43	6260	2.8	X						
69	4240	25.50*	5780	2.6	X						
28	9770	63.03	2190	1.00	X						
31	7830	56.92	2460	1.05	X						
33	8400	53.87	2190	1.15	X						
36	7730	49.38	2190	1.25	X						
41	6810	43.33	2170	1.45	X						
43	6470	41.07	2160	1.50	X						
49	5690	35.94	2130	1.65	X						
54	5140	32.38	2100	1.80	X	**S**	**77**	**(E)DRN**	**100L4**	170	818
62	4520	28.41	2060	1.95	X	**SF**	**77**	**(E)DRN**	**100L4**	190	819
70	4010	25.07	2020	2.1	X	**SA**	**77**	**(E)DRN**	**100L4**	170	820
77	3770	22.89	1800	1.65	X	**SAF**	**77**	**(E)DRN**	**100L4**	185	819
84	3460	20.99	1780	1.80	X						
95	3050	18.42	1750	2.1	X						
101	2890	17.45	1740	2.2	X						
115	2540	15.28	1700	2.5	X						
128	2290	13.76	1670	2.8	X						
146	2010	12.07	1630	3.2	X						
165	1780	10.65	1590	3.6	X						
230	1280	15.28	1480	3.6							
255	1160	13.76	1440	3.7		**S**	**77**	**DRN**	**100L2**	170	818
291	1010	12.07	1400	3.6		**SF**	**77**	**DRN**	**100L2**	190	819
329	900	10.65	1350	3.6		**SA**	**77**	**DRN**	**100L2**	170	820
371	795	9.44	1310	3.5		**SAF**	**77**	**DRN**	**100L2**	185	819
435	680	8.06	1260	3.4							
65	4110	26.93	1280	1.00							
75	3580	23.33	1270	1.00	X						
102	2810	17.28*	1080	1.05	X						
113	2550	15.60*	1080	1.20	X	**S**	**67**	**(E)DRN**	**100L4**	125	812
128	2250	13.73*	1070	1.35	X	**SF**	**67**	**(E)DRN**	**100L4**	140	813
136	2120	12.96*	1070	1.40	X	**SA**	**67**	**(E)DRN**	**100L4**	130	814
159	1810	11.03	1050	1.65	X	**SAF**	**67**	**(E)DRN**	**100L4**	140	813
175	1650	10.03	1040	1.70	X						
202	1430	8.69	1020	1.70	X						
233	1250	7.56*	1000	1.75	X						
256	1140	13.73*	980	1.65							
271	1070	12.96*	970	1.65		**S**	**67**	**DRN**	**100L2**	125	812
318	920	11.03	940	1.60		**SF**	**67**	**DRN**	**100L2**	140	813
350	830	10.03	920	1.60		**SA**	**67**	**DRN**	**100L2**	130	814
404	725	8.69	900	1.50		**SAF**	**67**	**DRN**	**100L2**	140	813
464	630	7.56*	870	1.35							

P_m = 5.4 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
						S	**97R57**	**(E)DRN**	**112M4**	455	830/836
8.1	34600	219	7490	1.05	X	**SF**	**97R57**	**(E)DRN**	**112M4**	520	831/836
8.6	32600	205	7600	1.15	X	**SA**	**97R57**	**(E)DRN**	**112M4**	440	832/836
						SAF	**97R57**	**(E)DRN**	**112M4**	500	831/836

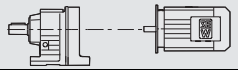
21933480/EN-US – 04/2018

P_m = 5.4 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
7.6	33700	231.67	7540	1.05	X						
9.0	28900	196.52	7760	1.15	X						
9.8	26800	180.95	7840	1.25	X						
11	24100	161.74	7940	1.35	X						
12	21800	145.60*	8010	1.45	X						
13	19900	131.85	8070	1.55	X	**S**	**97**	**(E)DRN**	**112M4**	400	830
15	17700	116.92	8120	1.65	X	**SF**	**97**	**(E)DRN**	**112M4**	470	831
17	16100	105.71	8160	1.75	X	**SA**	**97**	**(E)DRN**	**112M4**	385	832
20	13700	89.60*	8210	1.95	X	**SAF**	**97**	**(E)DRN**	**112M4**	445	831
22	13900	80.85	8210	2.1	X						
25	12300	71.43	8240	2.4	X						
29	10500	60.59	8260	2.8	X						
32	9730	55.79	8280	3.0	X						
16	16300	110.40*	6450	1.05	X						
18	14800	99.26	6500	1.10	X						
21	12900	86.15	6560	1.20	X						
23	11600	77.14	6600	1.30	X						
25	11900	70.43	6590	1.20	X						
28	10900	64.27	6620	1.30	X						
31	9750	57.00*	6650	1.45	X	**S**	**87**	**(E)DRN**	**112M4**	270	824
37	8240	47.91	6680	1.70	X	**SF**	**87**	**(E)DRN**	**112M4**	320	825
40	7590	44.03	6690	1.85	X	**SA**	**87**	**(E)DRN**	**112M4**	265	826
45	6760	39.10	6540	2.1	X	**SAF**	**87**	**(E)DRN**	**112M4**	300	825
51	6060	34.96*	6380	2.3	X						
56	5470	31.43	6210	2.6	X						
65	4760	27.28	6000	3.0	X						
69	4560	25.50*	5720	2.4	X						
83	3840	21.43	5500	2.9	X						
33	9020	53.87	2110	1.10	X						
36	8300	49.38	2110	1.15	X						
41	7310	43.33	2100	1.35	X						
43	6940	41.07	2090	1.40	X						
49	6100	35.94	2070	1.55	X						
55	5520	32.38	2050	1.65	X						
62	4860	28.41	2010	1.80	X						
71	4300	25.07	1980	1.95	X	**S**	**77**	**(E)DRN**	**112M4**	190	818
77	4050	22.89	1740	1.55	X	**SF**	**77**	**(E)DRN**	**112M4**	210	819
84	3720	20.99	1730	1.70	X	**SA**	**77**	**(E)DRN**	**112M4**	190	820
96	3270	18.42	1710	1.90	X	**SAF**	**77**	**(E)DRN**	**112M4**	205	819
101	3100	17.45	1700	2.0	X						
116	2720	15.28	1670	2.3	X						
129	2460	13.76	1640	2.6	X						
147	2160	12.07	1600	3.0	X						
166	1910	10.65	1570	3.4	X						
187	1690	9.44	1530	3.4	X						
219	1450	8.06	1480	3.5	X						
233	1370	15.28	1460	3.4							
258	1230	13.76	1420	3.4		**S**	**77**	**DRN**	**112M2**	190	818
294	1080	12.07	1380	3.4		**SF**	**77**	**DRN**	**112M2**	210	819
333	960	10.65	1340	3.4		**SA**	**77**	**DRN**	**112M2**	190	820
376	850	9.44	1300	3.3		**SAF**	**77**	**DRN**	**112M2**	205	819
440	725	8.06	1240	3.2							
102	3020	17.28*	1030	1.00							
113	2730	15.60*	1040	1.10	X						
129	2410	13.73*	1040	1.25	X	**S**	**67**	**(E)DRN**	**112M4**	145	812
136	2280	12.96*	1030	1.30	X	**SF**	**67**	**(E)DRN**	**112M4**	160	813
160	1950	11.03	1020	1.55	X	**SA**	**67**	**(E)DRN**	**112M4**	150	814
176	1770	10.03	1010	1.55	X	**SAF**	**67**	**(E)DRN**	**112M4**	160	813
204	1540	8.69	1000	1.60	X						
234	1340	7.56*	980	1.65	X						
259	1210	13.73*	960	1.55							
274	1150	12.96*	950	1.55		**S**	**67**	**DRN**	**112M2**	145	812
322	980	11.03	930	1.50		**SF**	**67**	**DRN**	**112M2**	160	813
354	890	10.03	910	1.50		**SA**	**67**	**DRN**	**112M2**	150	814
409	775	8.69	880	1.40		**SAF**	**67**	**DRN**	**112M2**	160	813
470	675	7.56*	850	1.25							

21933480/EN-US – 04/2018

P_m = 7.5 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
12	30400	145.60*	7700	1.05	X						
13	27600	131.85	7810	1.10	X						
15	24700	116.92	7920	1.20	X						
17	22400	105.71	8000	1.25	X						
20	19100	89.60*	8090	1.40	X	**S**	**97**	**(E)DRN**	**132S4**	425	830
23	16800	78.26	8150	1.50	X	**SF**	**97**	**(E)DRN**	**132S4**	495	831
25	17100	71.43	8140	1.70	X	**SA**	**97**	**(E)DRN**	**132S4**	410	832
27	14100	65.45	8200	1.65	X	**SAF**	**97**	**(E)DRN**	**132S4**	470	831
29	14600	60.59	8190	2.0	X						
32	13500	55.79	8220	2.2	X						
35	12100	49.87	8240	2.4	X						
39	10900	44.89	8260	2.7	X						
43	9920	40.65	8260	2.9	X						
28	13500	64.00*	6550	1.05	X						
31	13500	57.00*	6540	1.05	X						
37	11400	47.91	6540	1.25	X						
40	10500	44.03	6440	1.35	X						
45	9400	39.10	6290	1.50	X						
51	8430	34.96*	6150	1.70	X						
56	7600	31.43	6010	1.85	X	**S**	**87**	**(E)DRN**	**132S4**	295	824
65	6610	27.28	5830	2.1	X	**SF**	**87**	**(E)DRN**	**132S4**	345	825
69	6330	25.50*	5490	1.75	X	**SA**	**87**	**(E)DRN**	**132S4**	290	826
82	5340	21.43	5300	2.0	X	**SAF**	**87**	**(E)DRN**	**132S4**	325	825
90	4910	19.70	5210	2.2	X						
101	4370	17.49	5070	2.5	X						
113	3920	15.64*	4950	2.8	X						
126	3530	14.06	4830	3.1	X						
145	3070	12.21	4670	3.6	X						
162	2750	10.93	4550	3.6	X						
43	9650	41.07	1750	1.00	X						
49	8480	35.94	1770	1.10	X						
55	7670	32.38	1780	1.20	X						
62	6750	28.41	1780	1.30	X						
71	5980	25.07	1770	1.40	X						
80	5310	22.22	1750	1.55	X						
93	4550	18.97	1720	1.65	X	**S**	**77**	**(E)DRN**	**132S4**	215	818
96	4550	18.42	1490	1.40	X	**SF**	**77**	**(E)DRN**	**132S4**	235	819
101	4310	17.45	1490	1.45	X	**SA**	**77**	**(E)DRN**	**132S4**	215	820
116	3780	15.28	1480	1.70	X	**SAF**	**77**	**(E)DRN**	**132S4**	230	819
128	3420	13.76	1470	1.85	X						
146	3000	12.07	1460	2.1	X						
166	2650	10.65	1440	2.4	X						
187	2360	9.44	1410	2.5	X						
219	2020	8.06	1380	2.5	X						
258	1720	13.76	1340	2.5		**S**	**77**	**DRN**	**132S2**	215	818
294	1510	12.07	1310	2.4		**SF**	**77**	**DRN**	**132S2**	235	819
333	1330	10.65	1270	2.4		**SA**	**77**	**DRN**	**132S2**	215	820
375	1180	9.44	1240	2.4		**SAF**	**77**	**DRN**	**132S2**	230	819
439	1010	8.06	1200	2.3							
160	2710	11.03	810	1.10	X	**S**	**67**	**(E)DRN**	**132S4**	170	812
176	2460	10.03	860	1.15	X	**SF**	**67**	**(E)DRN**	**132S4**	185	813
204	2140	8.69	880	1.15	X	**SA**	**67**	**(E)DRN**	**132S4**	175	814
234	1870	7.56*	870	1.20	X	**SAF**	**67**	**(E)DRN**	**132S4**	185	813
258	1690	13.73*	870	1.10		**S**	**67**	**DRN**	**132S2**	170	812
273	1600	12.96*	860	1.10		**SF**	**67**	**DRN**	**132S2**	185	813
321	1360	11.03	850	1.10		**SA**	**67**	**DRN**	**132S2**	175	814
353	1240	10.03	840	1.05		**SAF**	**67**	**DRN**	**132S2**	185	813
408	1080	8.69	820	1.00							

21933480/EN-US – 04/2018

P_m = 10.0 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
20	25400	89.60*	7890	1.05	X						
23	22300	78.26	8000	1.15	X						
25	22800	71.43	7980	1.30	X						
27	18800	65.45	8100	1.25	X						
29	19400	60.59	8080	1.50	X						
32	17900	55.79	8120	1.60	X						
36	16100	49.87	8160	1.80	X	**S**	**97**	**(E)DRN**	**132M4**	465	830
40	14500	44.89	8160	2.0	X	**SF**	**97**	**(E)DRN**	**132M4**	540	831
44	13100	40.65	8000	2.2	X	**SA**	**97**	**(E)DRN**	**132M4**	450	832
49	11700	36.05	7790	2.4	X	**SAF**	**97**	**(E)DRN**	**132M4**	510	831
54	10600	32.60	7620	2.5	X						
67	8830	26.39	6960	2.6	X						
75	7910	23.59	6800	2.9	X						
84	7130	21.23	6650	3.2	X						
92	6460	19.23	6500	3.4	X						
40	14000	44.03	6100	1.00	X						
45	12400	39.10	5980	1.15	X						
51	11200	34.96*	5870	1.25	X						
56	10100	31.43	5760	1.40	X						
65	8790	27.28	5610	1.60	X						
70	8420	25.50*	5200	1.30	X						
83	7100	21.43	5060	1.55	X	**S**	**87**	**(E)DRN**	**132M4**	335	824
90	6530	19.70	4990	1.70	X	**SF**	**87**	**(E)DRN**	**132M4**	380	825
101	5810	17.49	4880	1.90	X	**SA**	**87**	**(E)DRN**	**132M4**	330	826
113	5210	15.64*	4770	2.1	X	**SAF**	**87**	**(E)DRN**	**132M4**	365	825
126	4690	14.06	4670	2.3	X						
145	4080	12.21	4530	2.7	X						
162	3650	10.93	4420	2.7	X						
196	3040	9.07	4240	2.8	X						
225	2640	7.88	4100	2.8	X						
227	2620	15.64*	4090	2.6							
252	2360	14.06	3990	2.5		**S**	**87**	**DRN**	**132S2**	295	824
290	2050	12.21	3850	2.3		**SF**	**87**	**DRN**	**132S2**	345	825
324	1840	10.93	3740	2.1		**SA**	**87**	**DRN**	**132S2**	290	826
391	1530	9.07	3570	1.45		**SAF**	**87**	**DRN**	**132S2**	325	825
450	1330	7.88	3440	1.35							
62	8970	28.41	1490	1.00							
71	7950	25.07	1520	1.05	X						
80	7060	22.22	1530	1.15	X						
93	6050	18.97	1530	1.25	X						
96	6040	18.42	840	1.05	X	**S**	**77**	**(E)DRN**	**132M4**	255	818
102	5730	17.45	910	1.10	X	**SF**	**77**	**(E)DRN**	**132M4**	275	819
116	5030	15.28	1060	1.25	X	**SA**	**77**	**(E)DRN**	**132M4**	255	820
129	4540	13.76	1160	1.40	X	**SAF**	**77**	**(E)DRN**	**132M4**	270	819
147	3990	12.07	1270	1.60	X						
167	3530	10.65	1280	1.80	X						
188	3130	9.44	1280	1.85	X						
220	2680	8.06	1260	1.90	X						
232	2540	15.28	1260	1.85							
258	2290	13.76	1240	1.85		**S**	**77**	**DRN**	**132S2**	215	818
294	2010	12.07	1220	1.80		**SF**	**77**	**DRN**	**132S2**	235	819
333	1780	10.65	1200	1.80		**SA**	**77**	**DRN**	**132S2**	215	820
375	1580	9.44	1170	1.75		**SAF**	**77**	**DRN**	**132S2**	230	819
440	1350	8.06	1140	1.70							

21933480/EN-US – 04/2018

P_m = 12.3 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
27	23100	65.45	7970	1.00	X						
32	22000	55.79	8010	1.30	X						
36	19800	49.87	8050	1.45	X						
40	17800	44.89	7900	1.65	X						
44	16200	40.65	7760	1.75	X						
49	14400	36.05	7580	1.90	X						
54	13000	32.60	7430	2.0	X	**S**	**97**	**(E)DRN**	**132L4**	480	830
67	10800	26.39	6740	2.1	X	**SF**	**97**	**(E)DRN**	**132L4**	550	831
75	9720	23.59	6600	2.4	X	**SA**	**97**	**(E)DRN**	**132L4**	470	832
84	8760	21.23	6470	2.6	X	**SAF**	**97**	**(E)DRN**	**132L4**	530	831
92	7950	19.23	6340	2.8	X						
104	7060	17.05	6180	3.0	X						
115	6390	15.42	6050	3.2	X						
136	5420	13.07	5830	3.5	X						
156	4740	11.41	5650	3.7	X						
51	13700	34.96*	5620	1.05	X						
56	12400	31.43	5540	1.15	X						
65	10800	27.28	5410	1.30	X						
73	9700	24.43	5310	1.45	X						
88	8070	20.27	5130	1.55	X						
90	8030	19.70	4780	1.35	X	**S**	**87**	**(E)DRN**	**132L4**	355	824
101	7150	17.49	4700	1.55	X	**SF**	**87**	**(E)DRN**	**132L4**	400	825
113	6400	15.64*	4610	1.70	X	**SA**	**87**	**(E)DRN**	**132L4**	345	826
126	5760	14.06	4530	1.90	X	**SAF**	**87**	**(E)DRN**	**132L4**	385	825
145	5010	12.21	4410	2.2	X						
162	4490	10.93	4310	2.2	X						
196	3730	9.07	4140	2.2	X						
225	3250	7.88	4020	2.3	X						
94	7440	18.97	1360	1.00	X						
129	5580	13.76	685	1.15	X	**S**	**77**	**(E)DRN**	**132L4**	275	818
147	4910	12.07	840	1.30	X	**SF**	**77**	**(E)DRN**	**132L4**	295	819
167	4340	10.65	960	1.50	X	**SA**	**77**	**(E)DRN**	**132L4**	270	820
188	3850	9.44	1060	1.50	X	**SAF**	**77**	**(E)DRN**	**132L4**	285	819
220	3300	8.06	1160	1.55	X						

21933480/EN-US – 04/2018

P_m = 15.0 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
32	26900	55.79	7810	1.10	X						
36	24100	49.87	7700	1.20	X						
40	21700	44.89	7590	1.35	X						
44	19700	40.65	7480	1.45	X						
49	17500	36.05	7330	1.55	X						
54	15900	32.60	7200	1.65	X	**S**	**97**	**(E)DRN**	**160M4**	550	830
67	13200	26.39	6480	1.75	X	**SF**	**97**	**(E)DRN**	**160M4**	630	831
75	11800	23.59	6370	1.95	X	**SA**	**97**	**(E)DRN**	**160M4**	540	832
84	10600	21.23	6260	2.1	X	**SAF**	**97**	**(E)DRN**	**160M4**	600	831
92	9690	19.23	6150	2.3	X						
104	8600	17.05	6010	2.5	X						
115	7790	15.42	5900	2.6	X						
136	6610	13.07	5700	2.9	X						
156	5780	11.41	5530	3.1	X						
65	13100	27.28	5180	1.05	X						
73	11800	24.43	5100	1.20	X						
88	9840	20.27	4960	1.30	X						
90	9790	19.70	4550	1.10	X						
102	8710	17.49	4490	1.25	X	**S**	**87**	**(E)DRN**	**160M4**	425	824
114	7800	15.64*	4420	1.40	X	**SF**	**87**	**(E)DRN**	**160M4**	470	825
126	7030	14.06	4360	1.55	X	**SA**	**87**	**(E)DRN**	**160M4**	420	826
146	6110	12.21	4260	1.80	X	**SAF**	**87**	**(E)DRN**	**160M4**	455	825
163	5480	10.93	4180	1.80	X						
196	4550	9.07	4040	1.85	X						
225	3960	7.88	3920	1.85	X						
147	5980	12.07	350	1.05	X	**S**	**77**	**(E)DRN**	**160M4**	345	818
167	5290	10.65	525	1.20	X	**SF**	**77**	**(E)DRN**	**160M4**	365	819
188	4700	9.44	665	1.25	X	**SA**	**77**	**(E)DRN**	**160M4**	340	820
220	4020	8.06	820	1.25	X	**SAF**	**77**	**(E)DRN**	**160M4**	355	819

P_m = 20 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
40	29000	44.89	7020	1.00	X						
44	26300	40.65	6960	1.10	X						
49	23400	36.05	6870	1.20	X						
55	21200	32.60	6790	1.25	X						
67	17600	26.39	5990	1.30	X						
75	15700	23.59	5930	1.45	X	**S**	**97**	**(E)DRN**	**160L4**	590	830
84	14200	21.23	5870	1.60	X	**SF**	**97**	**(E)DRN**	**160L4**	660	831
92	12900	19.23	5800	1.70	X	**SA**	**97**	**(E)DRN**	**160L4**	580	832
104	11400	17.05	5700	1.85	X	**SAF**	**97**	**(E)DRN**	**160L4**	630	831
115	10300	15.42	5610	1.95	X						
136	8810	13.07	5460	2.2	X						
156	7700	11.41	5320	2.3	X						
186	6450	9.55	5140	2.3	X						
215	5590	8.26	4990	2.3	X						
114	10400	15.64*	4080	1.05	X						
126	9360	14.06	4050	1.15	X	**S**	**87**	**(E)DRN**	**160L4**	460	824
146	8140	12.21	3990	1.35	X	**SF**	**87**	**(E)DRN**	**160L4**	510	825
163	7300	10.93	3940	1.35	X	**SA**	**87**	**(E)DRN**	**160L4**	455	826
196	6070	9.07	3830	1.40	X	**SAF**	**87**	**(E)DRN**	**160L4**	490	825
225	5280	7.88	3750	1.40	X						

21933480/EN-US – 04/2018

P_m = 25 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
55	26400	32.60	6370	1.00	X						
64	22400	27.63	6270	1.10	X						
74	19600	24.13	6170	1.20	X						
84	17700	21.23	5480	1.30	X	**S**	**97**	**(E)DRN**	**180M4**	640	830
93	16100	19.23	5440	1.35	X	**SF**	**97**	**(E)DRN**	**180M4**	710	831
104	14300	17.05	5390	1.50	X	**SA**	**97**	**(E)DRN**	**180M4**	630	832
116	12900	15.42	5330	1.55	X	**SAF**	**97**	**(E)DRN**	**180M4**	680	831
136	10900	13.07	5220	1.75	X						
156	9610	11.41	5110	1.85	X						
187	8050	9.55	4960	1.85	X						
216	6970	8.26	4830	1.85	X						
146	10100	12.21	3710	1.10	X	**S**	**87**	**(E)DRN**	**180M4**	510	824
163	9110	10.93	3690	1.10	X	**SF**	**87**	**(E)DRN**	**180M4**	550	825
196	7570	9.07	3630	1.10	X	**SA**	**87**	**(E)DRN**	**180M4**	500	826
226	6590	7.88	3570	1.10	X	**SAF**	**87**	**(E)DRN**	**180M4**	540	825

P_m = 30 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
74	23600	24.13	5870	1.00	X						
84	21300	21.23	4800	1.05	X						
93	19300	19.23	5090	1.15	X						
104	17100	17.05	5070	1.25	X	**S**	**97**	**(E)DRN**	**180L4**	670	830
116	15500	15.42	5050	1.30	X	**SF**	**97**	**(E)DRN**	**180L4**	740	831
136	13100	13.07	4980	1.45	X	**SA**	**97**	**(E)DRN**	**180L4**	660	832
156	11500	11.41	4900	1.55	X	**SAF**	**97**	**(E)DRN**	**180L4**	720	831
187	9660	9.55	4790	1.55	X						
216	8370	8.26	4680	1.50	X						

P_m = 40 HP

n_a rpm	T_a lb-in	i ratio	F_{Ra} [1] lb	SEW SF f_B	HazLoc -NA®					m lbs	
136	17500	13.07	4460	1.10	X	**S**	**97**	**(E)DRN**	**200L4**	910	830
156	15300	11.41	4480	1.15	X	**SF**	**97**	**(E)DRN**	**200L4**	980	831
187	12800	9.55	4440	1.15	X	**SA**	**97**	**(E)DRN**	**200L4**	900	832
216	11100	8.26	4380	1.15	X	**SAF**	**97**	**(E)DRN**	**200L4**	960	831

21933480/EN-US – 04/2018

11.4 S.. R.. DRS/DRN.. Selections by torque / low output speed

$T_{a\ max}$ = 810 lb-in

n_a rpm	i	F_{Ra} [1] lb					m lbs	
0.17	10037	675						
0.19	8654	675						
0.21	8066	675						
0.24	7051	675						
0.28	6079	675						
0.31	5431	675						
0.35	4747	675						
0.40	4155	675	**S**	**37R17**	**DR**	**63S4**	30	795/836
0.46	3632	675	**SF**	**37R17**	**DR**	**63S4**	33	796/836
0.59	2866	675	**SA**	**37R17**	**DR**	**63S4**	30	797/836
0.68	2471	675	**SAF**	**37R17**	**DR**	**63S4**	33	796/836
0.78	2160	675						
0.89	1887	675						
1.0	1665	675						
1.1	1456	675						
1.3	1271	675						
1.5	1121	675						
1.7	994	675						
1.9	869	675						
2.2	774	675						
2.5	666	675						
2.8	596	675						
3.2	521	675	**S**	**37R17**	**DR**	**63S4**	30	795/836
3.7	456	675	**SF**	**37R17**	**DR**	**63S4**	33	796/836
4.2	398	675	**SA**	**37R17**	**DR**	**63S4**	29	797/836
4.8	351	675	**SAF**	**37R17**	**DR**	**63S4**	33	796/836
5.5	303	675						
6.3	265	675						
7.2	232	675						
8.4	202	675						
9.5	179	675	**S**	**37R17**	**DRS**	**71S4**	35	795/836
11	158	675	**SF**	**37R17**	**DRS**	**71S4**	38	796/836
12	144	675	**SA**	**37R17**	**DRS**	**71S4**	35	797/836
14	118	675	**SAF**	**37R17**	**DRS**	**71S4**	38	796/836
15	110	675						

$T_{a\ max}$ = 1610 lb-in

n_a rpm	i	F_{Ra} [1] lb					m lbs	
			S	**47R17**	**DR**	**63S4**	37	800/836
			SF	**47R17**	**DR**	**63S4**	45	801/836
1.8	956	1170	**SA**	**47R17**	**DR**	**63S4**	39	802/836
			SAF	**47R17**	**DR**	**63S4**	43	801/836

21933480/EN-US – 04/2018

$T_{a\ max}$ = 1630 lb-in

n_a rpm	i	F_{Ra} [1] lb					m lbs	
0.13	12909	1180						
0.15	11189	1180						
0.16	10374	1180						
0.19	8992	1180						
0.21	7860	1180						
0.24	6887	1180						
0.28	6055	1180						
0.32	5292	1180						
0.36	4637	1180	**S**	**47R17**	**DR**	**63S4**	37	800/836
0.41	4092	1180	**SF**	**47R17**	**DR**	**63S4**	45	801/836
0.47	3582	1170	**SA**	**47R17**	**DR**	**63S4**	39	802/836
0.54	3131	1170	**SAF**	**47R17**	**DR**	**63S4**	43	801/836
0.62	2714	1170						
0.70	2412	1170						
0.79	2131	1170						
0.90	1863	1170						
1.0	1663	1170						
1.2	1435	1170						
1.3	1254	1170						
1.5	1120	1170						
1.6	1083	1170						
1.7	965	1170						
1.9	865	1170	**S**	**47R17**	**DR**	**63S4**	36	800/836
2.2	750	1170	**SF**	**47R17**	**DR**	**63S4**	44	801/836
2.6	655	1170	**SA**	**47R17**	**DR**	**63S4**	39	802/836
2.9	574	1170	**SAF**	**47R17**	**DR**	**63S4**	43	801/836
3.3	506	1170						
3.9	438	1170						
4.4	388	1170						
5.1	336	1170						
5.8	294	1170	**S**	**47R17**	**DRS**	**71S4**	42	800/836
6.6	257	1180	**SF**	**47R17**	**DRS**	**71S4**	50	801/836
7.4	229	1170	**SA**	**47R17**	**DRS**	**71S4**	44	802/836
8.5	200	1170	**SAF**	**47R17**	**DRS**	**71S4**	48	801/836
9.1	187	1170						
10	165	1170						
12	148	1170						
13	131	1170						

$T_{a\ max}$ = 2650 lb-in

n_a rpm	i	F_{Ra} [1] lb					m lbs	
0.54	3131	1590						
0.62	2714	1590						
0.70	2412	1590						
0.79	2131	1590	**S**	**57R17**	**DR**	**63S4**	45	806/836
0.90	1863	1590	**SF**	**57R17**	**DR**	**63S4**	54	807/836
1.0	1663	1590	**SA**	**57R17**	**DR**	**63S4**	45	808/836
1.2	1435	1590	**SAF**	**57R17**	**DR**	**63S4**	51	807/836
1.3	1254	1590						
1.6	1083	1590						
1.7	965	1590	**S**	**57R17**	**DR**	**63S4**	45	806/836
1.9	865	1590	**SF**	**57R17**	**DR**	**63S4**	53	807/836
2.2	750	1590	**SA**	**57R17**	**DR**	**63S4**	44	808/836
			SAF	**57R17**	**DR**	**63S4**	51	807/836

$T_{a\ max}$ = 2650 lb-in

n_a rpm	i	F_{Ra} [1] lb					m lbs	
2.6	655	1590						
3.0	574	1590						
3.4	506	1590	**S**	**57R17**	**DRS**	**71S4**	50	806/836
3.9	438	1590	**SF**	**57R17**	**DRS**	**71S4**	59	807/836
4.4	388	1590	**SA**	**57R17**	**DRS**	**71S4**	50	808/836
5.1	336	1590	**SAF**	**57R17**	**DRS**	**71S4**	56	807/836
5.8	294	1590						
6.3	269	1590						
7.4	229	1590						
8.3	204	1590	**S**	**57R17**	**DRS**	**71M4**	53	806/836
9.0	187	1590	**SF**	**57R17**	**DRS**	**71M4**	61	807/836
10	165	1590	**SA**	**57R17**	**DRS**	**71M4**	53	808/836
			SAF	**57R17**	**DRS**	**71M4**	59	807/836
13	131	1590	**S**	**57R17**	**DRN**	**80M4**	63	806/836
			SF	**57R17**	**DRN**	**80M4**	71	807/836
			SA	**57R17**	**DRN**	**80M4**	62	808/836
			SAF	**57R17**	**DRN**	**80M4**	69	807/836

$T_{a\ max}$ = 2910 lb-in

n_a rpm	i	F_{Ra} [1] lb					m lbs	
0.13	12909	1530						
0.15	11189	1530						
0.16	10374	1530						
0.19	8992	1530	**S**	**57R17**	**DR**	**63S4**	45	806/836
0.21	7860	1530	**SF**	**57R17**	**DR**	**63S4**	54	807/836
0.24	6887	1530	**SA**	**57R17**	**DR**	**63S4**	45	808/836
0.28	6055	1530	**SAF**	**57R17**	**DR**	**63S4**	51	807/836
0.32	5292	1530						
0.36	4637	1530						
0.41	4092	1530						
0.46	3628	1530						

$T_{a\ max}$ = 5040 lb-in

n_a rpm	i	F_{Ra} [1] lb					m lbs	
0.08	21362	1840						
0.09	19594	1840						
0.09	18120	1840						
0.10	16682	1840						
0.12	14383	1840						
0.13	12774	1840						
0.15	11013	1840						
0.17	9694	1840						
0.20	8529	1840						
0.23	7455	1840	**S**	**67R37**	**DR**	**63S4**	87	812/836
0.26	6531	1840	**SF**	**67R37**	**DR**	**63S4**	100	813/836
0.29	5759	1840	**SA**	**67R37**	**DR**	**63S4**	89	814/836
0.34	4965	1840	**SAF**	**67R37**	**DR**	**63S4**	99	813/836
0.38	4410	1840						
0.43	3880	1840						
0.49	3432	1840						
0.57	2944	1840						
0.64	2630	1840						
0.74	2279	1840						
0.83	2014	1840						
0.95	1772	1840						
1.1	1559	1840						
1.2	1363	1840						
1.4	1194	1840	**S**	**67R37**	**DRS**	**71S4**	93	812/836
1.6	1045	1840	**SF**	**67R37**	**DRS**	**71S4**	105	813/836
1.9	914	1840	**SA**	**67R37**	**DRS**	**71S4**	95	814/836
			SAF	**67R37**	**DRS**	**71S4**	105	813/836

21933480/EN-US – 04/2018

$T_{a\ max}$ = 5040 lb-in

n_a rpm	i	F_{Ra} [1] lb					m lbs	
2.1	809	1840						
2.4	712	1840	**S**	**67R37**	**DRS**	**71S4**	92	812/836
2.8	615	1840	**SF**	**67R37**	**DRS**	**71S4**	105	813/836
3.1	543	1840	**SA**	**67R37**	**DRS**	**71S4**	94	814/836
3.6	469	1840	**SAF**	**67R37**	**DRS**	**71S4**	105	813/836
4.0	424	1840						
			S	**67R37**	**DRS**	**71M4**	95	812/836
4.6	365	1840	**SF**	**67R37**	**DRS**	**71M4**	110	813/836
5.3	319	1840	**SA**	**67R37**	**DRS**	**71M4**	97	814/836
6.0	281	1840	**SAF**	**67R37**	**DRS**	**71M4**	105	813/836
			S	**67R37**	**DRN**	**80M4**	105	812/836
7.1	246	1840	**SF**	**67R37**	**DRN**	**80M4**	120	813/836
7.9	221	1840	**SA**	**67R37**	**DRN**	**80M4**	105	814/836
8.9	198	1840	**SAF**	**67R37**	**DRN**	**80M4**	115	813/836
			S	**67R37**	**DRN**	**90S4**	120	812/836
10	168	1840	**SF**	**67R37**	**DRN**	**90S4**	130	813/836
11	156	1840	**SA**	**67R37**	**DRN**	**90S4**	120	814/836
			SAF	**67R37**	**DRN**	**90S4**	130	813/836

$T_{a\ max}$ = 10900 lb-in

n_a rpm	i	F_{Ra} [1] lb					m lbs	
			S	**77R37**	**DR**	**63S4**	130	818/836
0.61	2753	2690	**SF**	**77R37**	**DR**	**63S4**	150	819/836
			SA	**77R37**	**DR**	**63S4**	130	820/836
			SAF	**77R37**	**DR**	**63S4**	145	819/836
0.72	2374	2690						
0.82	2083	2690						
0.94	1813	2690	**S**	**77R37**	**DRS**	**71S4**	135	818/836
0.97	1745	2690	**SF**	**77R37**	**DRS**	**71S4**	155	819/836
1.1	1600	2690	**SA**	**77R37**	**DRS**	**71S4**	135	820/836
1.2	1404	2690	**SAF**	**77R37**	**DRS**	**71S4**	150	819/836
1.4	1245	2690						
			S	**77R37**	**DRS**	**71S4**	135	818/836
1.6	1100	2690	**SF**	**77R37**	**DRS**	**71S4**	155	819/836
1.8	954	2690	**SA**	**77R37**	**DRS**	**71S4**	135	820/836
2.0	837	2690	**SAF**	**77R37**	**DRS**	**71S4**	150	819/836
			S	**77R37**	**DRS**	**71M4**	135	818/836
2.4	714	2690	**SF**	**77R37**	**DRS**	**71M4**	160	819/836
2.6	637	2690	**SA**	**77R37**	**DRS**	**71M4**	135	820/836
2.9	574	2690	**SAF**	**77R37**	**DRS**	**71M4**	150	819/836
			S	**77R37**	**DRN**	**80M4**	145	818/836
3.5	499	2690	**SF**	**77R37**	**DRN**	**80M4**	170	819/836
4.0	438	2690	**SA**	**77R37**	**DRN**	**80M4**	145	820/836
			SAF	**77R37**	**DRN**	**80M4**	160	819/836
			S	**77R37**	**DRN**	**90S4**	160	818/836
4.5	389	2690	**SF**	**77R37**	**DRN**	**90S4**	180	819/836
5.4	327	2690	**SA**	**77R37**	**DRN**	**90S4**	160	820/836
6.1	289	2690	**SAF**	**77R37**	**DRN**	**90S4**	175	819/836
			S	**77R37**	**DRN**	**90L4**	165	818/836
7.1	250	2690	**SF**	**77R37**	**DRN**	**90L4**	190	819/836
8.1	219	2690	**SA**	**77R37**	**DRN**	**90L4**	165	820/836
			SAF	**77R37**	**DRN**	**90L4**	180	819/836

21933480/EN-US – 04/2018

$T_{a\ max}$ = 11200 lb-in

n_a rpm	i	F_{Ra} [1] lb					m lbs	
0.07	25493	2630						
0.08	21787	2630						
0.08	19907	2630						
0.10	17013	2630						
0.11	14668	2630						
0.13	13110	2630						
0.15	11569	2630	**S**	**77R37**	**DR**	**63S4**	130	818/836
0.17	9887	2630	**SF**	**77R37**	**DR**	**63S4**	150	819/836
0.19	8817	2630	**SA**	**77R37**	**DR**	**63S4**	130	820/836
0.22	7735	2630	**SAF**	**77R37**	**DR**	**63S4**	145	819/836
0.25	6735	2630						
0.28	5943	2630						
0.32	5214	2630						
0.36	4618	2630						
0.42	3992	2630						
			S	**77R37**	**DRS**	**71S4**	135	818/836
0.48	3540	2630	**SF**	**77R37**	**DRS**	**71S4**	155	819/836
0.55	3098	2630	**SA**	**77R37**	**DRS**	**71S4**	135	820/836
			SAF	**77R37**	**DRS**	**71S4**	150	819/836

$T_{a\ max}$ = 17500 lb-in

n_a rpm	i	F_{Ra} [1] lb					m lbs	
6.9	255	6390	**S**	**87R57**	**DRN**	**100LM4**	300	824/836
7.9	222	6390	**SF**	**87R57**	**DRN**	**100LM4**	350	825/836
8.6	205	6390	**SA**	**87R57**	**DRN**	**100LM4**	295	826/836
			SAF	**87R57**	**DRN**	**100LM4**	330	825/836

$T_{a\ max}$ = 21200 lb-in

n_a rpm	i	F_{Ra} [1] lb					m lbs	
			S	**87R57**	**DRN**	**100LM4**	300	824/836
5.5	323	6230	**SF**	**87R57**	**DRN**	**100LM4**	350	825/836
			SA	**87R57**	**DRN**	**100LM4**	295	826/836
			SAF	**87R57**	**DRN**	**100LM4**	330	825/836
			S	**87R57**	**DRN**	**100L4**	300	824/836
6.3	281	6230	**SF**	**87R57**	**DRN**	**100L4**	350	825/836
			SA	**87R57**	**DRN**	**100L4**	295	826/836
			SAF	**87R57**	**DRN**	**100L4**	330	825/836

$T_{a\ max}$ = 21600 lb-in

n_a rpm	i	F_{Ra} [1] lb					m lbs	
			S	**87R57**	**DRN**	**100LM4**	300	824/836
4.1	435	6200	**SF**	**87R57**	**DRN**	**100LM4**	350	825/836
4.7	378	6200	**SA**	**87R57**	**DRN**	**100LM4**	295	826/836
			SAF	**87R57**	**DRN**	**100LM4**	330	825/836

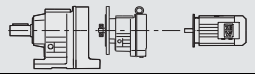
21933480/EN-US – 04/2018

$T_{a\ max}$ = 22100 lb-in

n_a rpm	i	F_{Ra} [1] lb					m lbs	
0.06	25987	6180						
0.07	23940	6180						
0.08	20568	6180						
0.09	18265	6180	**S**	**87R57**	**DR**	**63S4**	240	824/836
0.10	16774	6180	**SF**	**87R57**	**DR**	**63S4**	285	825/836
0.11	14820	6180	**SA**	**87R57**	**DR**	**63S4**	235	826/836
0.13	13160	6180	**SAF**	**87R57**	**DR**	**63S4**	270	825/836
0.15	11200	6180						
0.17	9904	6180						
0.20	8549	6180						
0.22	7643	6180						
0.25	6706	6180						
0.29	5875	6180	**S**	**87R57**	**DRS**	**71S4**	245	824/836
0.33	5187	6180	**SF**	**87R57**	**DRS**	**71S4**	290	825/836
0.37	4606	6180	**SA**	**87R57**	**DRS**	**71S4**	240	826/836
0.44	3872	6180	**SAF**	**87R57**	**DRS**	**71S4**	275	825/836
0.49	3475	6180	**S**	**87R57**	**DRS**	**71S4**	240	824/836
0.59	2905	6180	**SF**	**87R57**	**DRS**	**71S4**	290	825/836
0.66	2586	6180	**SA**	**87R57**	**DRS**	**71S4**	235	826/836
0.73	2335	6180	**SAF**	**87R57**	**DRS**	**71S4**	270	825/836
0.82	2054	6180	**S**	**87R57**	**DRS**	**71M4**	245	824/836
0.93	1824	6180	**SF**	**87R57**	**DRS**	**71M4**	290	825/836
1.0	1631	6180	**SA**	**87R57**	**DRS**	**71M4**	240	826/836
			SAF	**87R57**	**DRS**	**71M4**	275	825/836
			S	**87R57**	**DRN**	**80M4**	255	824/836
1.3	1332	6180	**SF**	**87R57**	**DRN**	**80M4**	305	825/836
1.5	1191	6180	**SA**	**87R57**	**DRN**	**80M4**	250	826/836
			SAF	**87R57**	**DRN**	**80M4**	285	825/836
1.7	1032	6180	**S**	**87R57**	**DRN**	**90S4**	270	824/836
1.9	930	6180	**SF**	**87R57**	**DRN**	**90S4**	315	825/836
2.1	831	6180	**SA**	**87R57**	**DRN**	**90S4**	265	826/836
2.5	719	6180	**SAF**	**87R57**	**DRN**	**90S4**	300	825/836
			S	**87R57**	**DRN**	**90L4**	275	824/836
2.8	624	6180	**SF**	**87R57**	**DRN**	**90L4**	325	825/836
3.2	558	6180	**SA**	**87R57**	**DRN**	**90L4**	270	826/836
			SAF	**87R57**	**DRN**	**90L4**	305	825/836
			S	**87R57**	**DRN**	**100LM4**	300	824/836
3.6	485	6180	**SF**	**87R57**	**DRN**	**100LM4**	350	825/836
			SA	**87R57**	**DRN**	**100LM4**	295	826/836
			SAF	**87R57**	**DRN**	**100LM4**	330	825/836

$T_{a\ max}$ = 37100 lb-in

n_a rpm	i	F_{Ra} [1] lb					m lbs	
0.05	33818	7360						
0.05	31154	7360						
0.06	27847	7360						
0.07	24641	7360	**S**	**97R57**	**DR**	**63S4**	370	830/836
0.08	21537	7360	**SF**	**97R57**	**DR**	**63S4**	440	831/836
0.09	18749	7360	**SA**	**97R57**	**DR**	**63S4**	360	832/836
0.10	16233	7360	**SAF**	**97R57**	**DR**	**63S4**	415	831/836
0.12	14576	7360						
0.13	12752	7360						
0.15	11267	7360						
0.17	10078	7360						
0.20	8608	7360						
0.23	7554	7360						
0.26	6640	7080	**S**	**97R57**	**DRS**	**71S4**	375	830/836
0.29	5780	7080	**SF**	**97R57**	**DRS**	**71S4**	445	831/836
0.34	4937	7080	**SA**	**97R57**	**DRS**	**71S4**	365	832/836
0.38	4444	7080	**SAF**	**97R57**	**DRS**	**71S4**	420	831/836
0.42	4017	7080						
0.49	3453	7080						
0.55	3108	7080						

$T_{a\ max}$ = 37100 lb-in								
n_a rpm	i	F_{Ra} [1] lb					m lbs	
0.64	2654	7080	**S**	**97R57**	**DRS**	**71M4**	380	830/836
0.73	2329	7080	**SF**	**97R57**	**DRS**	**71M4**	450	831/836
0.81	2081	7080	**SA**	**97R57**	**DRS**	**71M4**	365	832/836
0.91	1860	7080	**SAF**	**97R57**	**DRS**	**71M4**	425	831/836
1.1	1574	7080	**S**	**97R57**	**DRN**	**80M4**	390	830/836
			SF	**97R57**	**DRN**	**80M4**	460	831/836
			SA	**97R57**	**DRN**	**80M4**	375	832/836
			SAF	**97R57**	**DRN**	**80M4**	435	831/836
1.3	1394	7080	**S**	**97R57**	**DRN**	**80M4**	385	830/836
			SF	**97R57**	**DRN**	**80M4**	460	831/836
			SA	**97R57**	**DRN**	**80M4**	375	832/836
			SAF	**97R57**	**DRN**	**80M4**	430	831/836
1.4	1223	7080	**S**	**97R57**	**DRN**	**90S4**	400	830/836
1.6	1070	7080	**SF**	**97R57**	**DRN**	**90S4**	475	831/836
1.9	928	7080	**SA**	**97R57**	**DRN**	**90S4**	390	832/836
			SAF	**97R57**	**DRN**	**90S4**	445	831/836
2.1	824	7080	**S**	**97R57**	**DRN**	**90L4**	410	830/836
			SF	**97R57**	**DRN**	**90L4**	480	831/836
			SA	**97R57**	**DRN**	**90L4**	395	832/836
			SAF	**97R57**	**DRN**	**90L4**	455	831/836
2.5	714	7360	**S**	**97R57**	**DRN**	**100LM4**	430	830/836
2.8	626	7100	**SF**	**97R57**	**DRN**	**100LM4**	500	831/836
3.3	538	7110	**SA**	**97R57**	**DRN**	**100LM4**	420	832/836
3.6	484	7110	**SAF**	**97R57**	**DRN**	**100LM4**	480	831/836
4.2	420	7120	**S**	**97R57**	**DRN**	**100L4**	430	830/836
4.7	376	7130	**SF**	**97R57**	**DRN**	**100L4**	500	831/836
5.4	327	7130	**SA**	**97R57**	**DRN**	**100L4**	420	832/836
6.1	287	7140	**SAF**	**97R57**	**DRN**	**100L4**	480	831/836
7.0	252	7150	**S**	**97R57**	**DRN**	**112M4**	455	830/836
			SF	**97R57**	**DRN**	**112M4**	520	831/836
			SA	**97R57**	**DRN**	**112M4**	440	832/836
			SAF	**97R57**	**DRN**	**112M4**	500	831/836
8.1	219	7150	**S**	**97R57**	**DRN**	**132S4**	480	830/836
8.6	205	7160	**SF**	**97R57**	**DRN**	**132S4**	550	831/836
			SA	**97R57**	**DRN**	**132S4**	465	832/836
			SAF	**97R57**	**DRN**	**132S4**	520	831/836

21933480/EN-US – 04/2018

11.5 Mechanical ratings S. SF. SA. SAF37

3400 – 2800 rpm

S37

i ratio	Worm ratio/ # starts	n_e = 3400 rpm				n_e = 3200 rpm				n_e = 2800 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
157.43	38/1	**22**	690	0.42	57	**20**	710	0.40	57	**18**	725	0.36	57
144.40		**24**	675	0.44	58	**22**	690	0.42	58	**19**	710	0.38	57
122.94		**28**	655	0.50	58	**26**	665	0.47	58	**23**	690	0.43	58
106.00		**32**	630	0.55	59	**30**	635	0.52	59	**26**	675	0.48	59
98.80		**34**	620	0.58	59	**32**	635	0.55	59	**28**	665	0.51	59
86.36		**39**	600	0.63	60	**37**	610	0.60	60	**32**	635	0.55	60
80.96		**42**	585	0.66	60	**40**	600	0.63	60	**35**	635	0.58	60
71.44		**48**	485	0.63	58	**45**	565	0.67	60	**39**	620	0.63	61
63.33		**54**	325	0.55	51	**51**	450	0.63	57	**44**	595	0.68	61
53.83		**63**	255	0.52	49	**59**	285	0.54	50	**52**	470	0.66	59
55.93	27/2	**61**	620	0.78	77	**57**	630	0.75	76	**50**	635	0.67	76
51.30		**66**	600	0.82	77	**62**	620	0.80	77	**55**	635	0.72	76
43.68		**78**	585	0.94	77	**73**	595	0.90	77	**64**	620	0.82	77
37.66		**90**	565	1.0	78	**85**	575	0.99	78	**74**	600	0.91	78
35.10		**97**	550	1.1	78	**91**	565	1.0	78	**80**	585	0.95	78
30.68		**111**	540	1.2	78	**104**	550	1.2	78	**91**	565	1.0	78
28.76		**118**	515	1.2	78	**111**	540	1.2	78	**97**	565	1.1	78
25.38		**134**	415	1.2	77	**126**	470	1.2	78	**110**	550	1.2	79
22.50		**151**	275	0.93	71	**142**	380	1.1	76	**124**	505	1.3	79
19.13		**178**	210	0.87	69	**167**	240	0.90	70	**146**	390	1.2	77
19.89	24/5	**171**	370	1.2	86	**161**	380	1.1	86	**141**	390	1.0	86
18.24		**186**	365	1.2	86	**175**	370	1.2	86	**154**	390	1.1	86
15.53		**219**	345	1.3	86	**206**	355	1.3	86	**180**	370	1.2	86
13.39		**254**	325	1.5	86	**239**	345	1.5	86	**209**	365	1.3	86
12.48		**272**	325	1.6	86	**256**	335	1.6	86	**224**	355	2.0	86
10.91		**312**	310	1.7	86	**293**	320	1.7	86	**257**	345	1.6	87
10.23		**332**	310	1.9	87	**313**	320	1.9	87	**274**	335	1.7	87
9.02		**377**	275	1.9	86	**355**	300	2.0	87	**310**	320	1.7	87
8.00		**425**	175	1.5	82	**400**	255	1.9	86	**350**	310	2.0	87
6.80		**500**	140	1.3	81	**471**	160	1.5	82	**412**	255	1.9	86
6.33		**537**	210	2.1	87	**506**	240	2.1	88	**442**	285	2.3	88
5.38		**632**	175	2.0	87	**595**	195	2.1	87	**520**	230	2.1	88
4.86		**700**	160	2.0	87	**658**	170	2.0	87	**576**	210	2.3	88
3.97		**856**	125	2.0	86	**806**	135	2.0	87	**705**	170	2.1	88

All values reflect mechanical limits. Shaded area indicates additional thermal limitations where P_{emax} = 1.5 HP for continuous use.

21933480/EN-US – 04/2018

2200 – 1400 rpm

S37

i ratio	Worm ratio/ # starts	n_e = 2200 rpm				n_e = 1700 rpm				n_e = 1400 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
157.43	38/1	**14**	770	0.31	56	**11**	805	0.25	54	**8.9**	815	0.21	53
144.40		**15**	760	0.32	56	**12**	795	0.27	55	**9.7**	815	0.23	54
122.94		**18**	735	0.36	57	**14**	770	0.30	56	**11**	805	0.27	55
106.00		**21**	715	0.40	58	**16**	760	0.34	57	**13**	780	0.30	56
98.80		**22**	710	0.43	58	**17**	750	0.36	57	**14**	770	0.31	56
86.36		**25**	690	0.47	59	**20**	725	0.39	58	**16**	760	0.34	57
80.96		**27**	680	0.50	60	**21**	725	0.42	59	**17**	750	0.36	58
71.44		**31**	665	0.54	60	**24**	710	0.44	60	**20**	745	0.39	59
63.33		**35**	645	0.59	61	**27**	700	0.50	60	**22**	725	0.43	60
53.83		**41**	610	0.64	62	**32**	675	0.55	61	**26**	710	0.48	61
55.93	27/2	**39**	680	0.56	75	**30**	715	0.47	74	**25**	715	0.39	73
51.30		**43**	675	0.60	76	**33**	710	0.50	75	**27**	715	0.42	74
43.68		**50**	655	0.68	76	**39**	690	0.56	76	**32**	715	0.48	75
37.66		**58**	635	0.76	77	**45**	675	0.63	76	**37**	700	0.55	76
35.10		**63**	630	0.80	77	**48**	665	0.67	77	**40**	690	0.58	76
30.68		**72**	620	0.90	78	**55**	645	0.74	77	**46**	675	0.63	76
28.76		**76**	600	0.94	78	**59**	645	0.78	77	**49**	665	0.67	77
25.38		**87**	595	1.0	79	**67**	630	0.86	78	**55**	655	0.74	77
22.50		**98**	585	1.1	79	**76**	620	0.94	79	**62**	645	0.82	78
19.13		**115**	560	1.3	80	**89**	600	1.1	79	**73**	630	0.93	79
19.89	24/5	**111**	425	0.87	85	**85**	445	0.71	85	**70**	460	0.62	84
18.24		**121**	415	0.94	85	**93**	435	0.75	85	**77**	460	0.67	84
15.53		**142**	400	1.0	86	**109**	425	0.86	85	**90**	445	0.75	85
13.39		**164**	390	1.2	86	**127**	415	0.98	86	**105**	435	0.84	85
12.48		**176**	380	1.2	86	**136**	405	1.0	86	**112**	425	0.89	86
10.91		**202**	370	1.3	87	**156**	400	1.1	86	**128**	425	1.0	86
10.23		**215**	365	1.5	87	**166**	400	1.2	87	**137**	415	0.78	86
9.02		**244**	355	1.6	87	**188**	380	1.3	87	**155**	405	1.2	87
8.00		**275**	345	1.7	87	**213**	380	1.5	87	**175**	400	1.3	87
6.80		**324**	325	1.9	88	**250**	365	1.6	88	**206**	380	1.5	87
6.33		**348**	310	2.0	88	**269**	310	1.5	88	**221**	310	1.2	87
5.38		**409**	300	2.3	88	**316**	300	1.7	88	**260**	300	1.5	88
4.86		**453**	285	2.3	89	**350**	290	1.7	88	**288**	290	1.5	88
3.97		**554**	230	2.3	88	**428**	285	2.1	89	**353**	285	1.7	88

All values reflect mechanical limits. Shaded area indicates additional thermal limitations where P_{emax} = 1.5 HP for continuous use.

21933480/EN-US – 04/2018

1100 – 700 rpm

S37

i ratio	Worm ratio/ # starts	n_e = 1100 rpm				n_e = 900 rpm				n_e = 700 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
157.43	38/1	**7.0**	815	0.17	52	**5.7**	815	0.15	50	**4.4**	815	0.12	49
144.40		**7.6**	815	0.19	52	**6.2**	815	0.16	51	**4.8**	815	0.12	50
122.94		**8.9**	815	0.21	54	**7.3**	815	0.19	52	**5.7**	815	0.15	51
106.00		**10**	815	0.24	55	**8.5**	815	0.20	53	**6.6**	815	0.16	52
98.80		**11**	815	0.25	55	**9.1**	815	0.21	54	**7.1**	815	0.17	52
86.36		**13**	795	0.28	56	**10**	815	0.24	55	**8.1**	815	0.20	53
80.96		**14**	790	0.30	57	**11**	815	0.25	55	**8.6**	815	0.21	54
71.44		**15**	770	0.32	57	**13**	805	0.28	56	**9.8**	815	0.23	55
63.33		**17**	760	0.36	58	**14**	790	0.31	57	**11**	815	0.25	56
53.83		**20**	745	0.40	60	**17**	770	0.35	58	**13**	805	0.30	57
55.93	27/2	**20**	770	0.34	72	**16**	805	0.28	71	**13**	815	0.23	70
51.30		**21**	770	0.36	73	**18**	795	0.31	72	**14**	815	0.25	71
43.68		**25**	745	0.40	74	**21**	770	0.35	73	**16**	815	0.30	71
37.66		**29**	725	0.46	75	**24**	760	0.39	74	**19**	790	0.32	72
35.10		**31**	725	0.48	75	**26**	745	0.42	74	**20**	780	0.34	73
30.68		**36**	710	0.54	76	**29**	725	0.46	75	**23**	770	0.38	74
28.76		**38**	700	0.56	76	**31**	725	0.48	75	**24**	760	0.40	74
25.38		**43**	690	0.62	77	**35**	715	0.54	76	**28**	745	0.44	75
22.50		**49**	680	0.68	77	**40**	700	0.58	76	**31**	725	0.48	75
19.13		**58**	665	0.78	78	**47**	690	0.67	77	**37**	715	0.55	76
19.89	24/5	**55**	485	0.51	83	**45**	515	0.44	83	**35**	530	0.36	82
18.24		**60**	480	0.55	84	**49**	495	0.47	83	**38**	530	0.39	82
15.53		**71**	470	0.63	84	**58**	485	0.54	84	**45**	515	0.44	83
13.39		**82**	460	0.71	85	**67**	480	0.60	84	**52**	495	0.50	83
12.48		**88**	450	0.74	85	**72**	470	0.63	84	**56**	485	0.52	84
10.91		**101**	445	0.83	86	**82**	460	0.71	85	**64**	480	0.58	84
10.23		**108**	435	0.86	86	**88**	450	0.74	85	**68**	480	0.62	84
9.02		**122**	425	0.95	86	**100**	445	0.82	86	**78**	470	0.68	85
8.00		**138**	415	1.0	87	**113**	435	0.90	86	**88**	460	0.75	85
6.80		**162**	405	1.2	87	**132**	425	1.0	87	**103**	450	0.86	86
6.33		**174**	400	1.3	87	**142**	400	1.0	87	**111**	400	0.82	86
5.38		**204**	380	1.4	88	**167**	380	1.2	87	**130**	380	0.91	87
4.86		**226**	370	1.5	88	**185**	370	1.2	88	**144**	370	0.98	87
3.97		**277**	355	1.8	88	**227**	355	1.4	88	**176**	355	1.1	88

21933480/EN-US – 04/2018

500 - 10 rpm

S37

i ratio	Worm ratio/ # starts	n_e = 500 rpm				n_e = 250 rpm				n_e = 10 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
157.43	38/1	**3.2**	815	0.08	47	**1.6**	815	0.04	46	**0.06**	815	0.00	26
144.40		**3.5**	815	0.09	48	**1.7**	815	0.05	46	**0.07**	815	0.00	27
122.94		**4.1**	815	0.11	49	**2.0**	815	0.06	46	**0.08**	815	0.00	29
106.00		**4.7**	815	0.12	50	**2.4**	815	0.07	47	**0.09**	815	0.00	30
98.80		**5.1**	815	0.13	50	**2.5**	815	0.07	47	**0.10**	815	0.00	31
86.36		**5.8**	815	0.15	51	**2.9**	815	0.08	47	**0.12**	815	0.00	32
80.96		**6.2**	815	0.16	51	**3.1**	815	0.08	47	**0.12**	815	0.00	33
71.44		**7.0**	815	0.17	52	**3.5**	815	0.09	48	**0.14**	815	0.00	35
63.33		**7.9**	815	0.19	53	**3.9**	815	0.11	49	**0.16**	815	0.00	37
53.83		**9.3**	815	0.21	55	**4.6**	815	0.12	50	**0.19**	815	0.00	39
55.93	27/2	**8.9**	815	0.17	69	**4.5**	815	0.08	67	**0.18**	815	0.00	48
51.30		**9.7**	815	0.19	69	**4.9**	815	0.09	67	**0.19**	815	0.00	49
43.68		**11**	815	0.21	70	**5.7**	815	0.11	67	**0.23**	815	0.00	51
37.66		**13**	815	0.24	71	**6.6**	815	0.13	67	**0.27**	815	0.00	53
35.10		**14**	815	0.25	71	**7.1**	815	0.13	68	**0.28**	815	0.00	54
30.68		**16**	815	0.30	72	**8.1**	815	0.15	68	**0.33**	815	0.00	56
28.76		**17**	805	0.31	72	**8.7**	815	0.16	69	**0.35**	815	0.00	57
25.38		**20**	790	0.34	73	**9.9**	815	0.19	69	**0.39**	815	0.00	59
22.50		**22**	770	0.38	74	**11**	815	0.20	70	**0.44**	815	0.00	61
19.13		**26**	750	0.42	75	**13**	815	0.24	71	**0.52**	815	0.00	62
19.89	24/5	**25**	600	0.30	81	**13**	635	0.16	79	**0.50**	635	0.00	65
18.24		**27**	585	0.31	81	**14**	635	0.17	79	**0.55**	635	0.00	66
15.53		**32**	560	0.35	82	**16**	635	0.20	79	**0.64**	635	0.00	68
13.39		**37**	540	0.39	82	**19**	635	0.24	80	**0.75**	635	0.00	71
12.48		**40**	520	0.40	82	**20**	635	0.25	80	**0.80**	635	0.00	72
10.91		**46**	515	0.46	83	**23**	630	0.28	81	**0.92**	630	0.00	73
10.23		**49**	505	0.47	83	**24**	620	0.30	81	**0.98**	620	0.00	73
9.02		**55**	495	0.52	84	**28**	585	0.32	81	**1.1**	585	0.00	74
8.00		**63**	485	0.58	84	**31**	560	0.34	82	**1.2**	560	0.00	74
6.80		**74**	480	0.66	85	**37**	540	0.39	82	**1.5**	540	0.00	75
6.33		**79**	400	0.59	85	**39**	400	0.31	83	**1.6**	400	0.00	80
5.38		**93**	380	0.66	86	**46**	380	0.34	83	**1.9**	380	0.00	80
4.86		**103**	370	0.71	86	**51**	370	0.36	84	**2.1**	370	0.00	80
3.97		**126**	355	0.82	87	**63**	355	0.42	84	**2.5**	355	0.00	80

21933480/EN-US – 04/2018

11.6 Mechanical ratings S. SF. SA. SAF47

3400 – 2800 rpm

S47

i ratio	Worm ratio/ # starts	n_e = 3400 rpm				n_e = 3200 rpm				n_e = 2800 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
201.00		**17**	1330	0.59	60	**16**	1330	0.56	60	**14**	1330	0.50	59
184.80		**18**	1330	0.64	60	**17**	1330	0.60	60	**15**	1330	0.54	59
158.12		**22**	1330	0.74	61	**20**	1330	0.70	61	**18**	1330	0.62	60
137.05		**25**	1330	0.84	62	**23**	1330	0.79	62	**20**	1330	0.70	61
128.10		**27**	1330	0.90	63	**25**	1330	0.84	62	**22**	1330	0.75	62
110.73	42/1	**31**	1220	0.94	63	**29**	1310	0.95	63	**25**	1330	0.84	63
94.08		**36**	1000	0.93	62	**34**	1090	0.94	63	**30**	1290	0.97	63
84.00		**40**	840	0.89	61	**38**	945	0.93	62	**33**	1150	0.95	63
71.75		**47**	515	0.74	53	**45**	725	0.86	60	**39**	945	0.94	63
67.20		**51**	470	0.72	52	**48**	600	0.80	57	**42**	875	0.93	62
56.61		**60**	355	0.68	49	**57**	405	0.71	51	**49**	665	0.87	60
69.39		**49**	1240	1.2	79	**46**	1240	1.2	78	**40**	1240	1.0	78
63.80		**53**	1240	1.3	79	**50**	1240	1.2	79	**44**	1240	1.1	78
54.59		**62**	1240	1.5	80	**59**	1240	1.5	79	**51**	1240	1.3	79
47.32		**72**	1230	1.7	80	**68**	1240	1.6	80	**59**	1240	1.5	80
44.22		**77**	1140	1.7	80	**72**	1230	1.7	80	**63**	1240	1.6	80
38.23	29/2	**89**	990	1.7	80	**84**	1060	1.7	80	**73**	1230	1.7	80
32.48		**105**	805	1.7	79	**99**	885	1.7	80	**86**	1035	1.7	80
29.00		**117**	675	1.6	78	**110**	760	1.7	79	**97**	920	1.7	80
24.77		**137**	415	1.3	72	**129**	585	1.6	77	**113**	770	1.7	80
23.20		**147**	370	1.2	71	**138**	480	1.3	75	**121**	700	1.7	79
19.54		**174**	285	1.1	69	**164**	325	1.2	71	**143**	520	1.5	77
20.33		**167**	885	2.7	88	**157**	885	2.5	88	**138**	885	2.1	88
17.62		**193**	860	3.0	88	**182**	885	3.0	88	**159**	885	2.5	88
16.47		**206**	795	3.0	88	**194**	860	3.0	88	**170**	885	2.7	88
14.24		**239**	690	3.0	88	**225**	735	3.0	88	**197**	860	3.1	88
12.10		**281**	560	2.8	88	**264**	610	3.0	88	**231**	725	3.0	88
10.80		**315**	470	2.7	87	**296**	530	2.8	88	**259**	635	3.0	88
9.23	27/5	**368**	285	2.0	83	**347**	400	2.5	86	**303**	530	3.0	88
8.64		**394**	255	2.0	82	**370**	325	2.3	85	**324**	485	2.8	88
7.28		**467**	195	1.7	81	**440**	220	1.9	82	**385**	365	2.5	86
6.83		**498**	300	2.7	87	**469**	325	2.7	88	**410**	400	3.0	88
6.40		**531**	275	2.7	87	**500**	300	2.7	87	**438**	370	3.0	88
5.39		**631**	210	2.4	86	**594**	240	2.5	87	**519**	300	2.8	88
4.76		**714**	175	2.4	85	**672**	205	2.5	86	**588**	255	2.7	87
4.00		**850**	140	2.3	85	**800**	160	2.4	85	**700**	205	2.5	87

All values reflect mechanical limits. Shaded area indicates additional thermal limitations where P_{emax} = 2.0 HP for continuous use.

21933480/EN-US – 04/2018

2200 – 1400 rpm

S47

i ratio	Worm ratio/ # starts	n_e = 2200 rpm				n_e = 1700 rpm				n_e = 1400 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
201.00		**11**	1480	0.44	58	**8.5**	1505	0.36	56	**7.0**	1505	0.31	55
184.80		**12**	1480	0.48	58	**9.2**	1485	0.39	57	**7.6**	1505	0.32	56
158.12		**14**	1480	0.55	60	**11**	1485	0.44	58	**8.9**	1505	0.38	57
137.05		**16**	1460	0.62	60	**12**	1480	0.50	59	**10**	1485	0.42	58
128.10		**17**	1460	0.66	61	**13**	1480	0.52	59	**11**	1485	0.44	58
110.73	42/1	**20**	1460	0.74	62	**15**	1480	0.59	61	**13**	1485	0.51	59
94.08		**23**	1460	0.86	63	**18**	1480	0.68	62	**15**	1485	0.58	60
84.00		**26**	1435	0.94	64	**20**	1480	0.76	62	**17**	1480	0.64	61
71.75		**31**	1285	0.98	64	**24**	1480	0.87	63	**20**	1480	0.74	62
67.20		**33**	1210	0.98	64	**25**	1450	0.91	64	**21**	1480	0.78	63
56.61		**39**	1020	0.98	64	**30**	1345	0.99	65	**25**	1460	0.90	64
69.39		**32**	1370	0.90	77	**24**	1370	0.70	76	**20**	1370	0.59	75
63.80		**34**	1370	0.97	77	**27**	1370	0.76	76	**22**	1370	0.63	75
54.59		**40**	1370	1.1	78	**31**	1370	0.89	77	**26**	1370	0.74	76
47.32		**46**	1370	1.3	79	**36**	1370	1.0	78	**30**	1370	0.84	77
44.22		**50**	1370	1.3	79	**38**	1370	1.1	78	**32**	1370	0.90	77
38.23	29/2	**58**	1370	1.6	80	**44**	1370	1.2	79	**37**	1370	1.0	78
32.48		**68**	1290	1.7	80	**52**	1370	1.5	80	**43**	1370	1.2	79
29.00		**76**	1210	1.7	81	**59**	1365	1.6	80	**48**	1370	1.3	79
24.77		**89**	1035	1.7	81	**69**	1285	1.7	81	**57**	1370	1.5	80
23.20		**95**	980	1.9	81	**73**	1255	1.7	81	**60**	1345	1.6	80
19.54		**113**	815	1.7	81	**87**	1090	1.9	81	**72**	1275	1.7	81
20.33		**108**	965	1.9	87	**84**	975	1.5	87	**69**	975	1.2	86
17.62		**125**	955	2.1	88	**96**	965	1.7	87	**79**	975	1.5	86
16.47		**134**	955	2.3	88	**103**	965	1.9	87	**85**	975	1.5	87
14.24		**154**	955	2.7	88	**119**	965	2.1	88	**98**	975	1.7	87
12.10		**182**	930	3.1	89	**140**	965	2.4	88	**116**	965	2.0	88
10.80		**204**	840	3.1	89	**157**	955	2.7	88	**130**	965	2.3	88
9.23		**238**	725	3.1	89	**184**	930	3.1	89	**152**	965	2.7	88
8.64	27/5	**255**	680	3.1	89	**197**	885	3.1	89	**162**	965	2.8	88
7.28		**302**	565	3.1	89	**234**	760	3.2	89	**192**	910	3.1	89
6.83		**322**	550	3.2	89	**249**	690	3.1	89	**205**	690	2.5	89
6.40		**344**	515	3.2	89	**266**	675	3.2	89	**219**	675	2.7	89
5.39		**408**	425	3.1	89	**315**	575	3.2	89	**260**	655	3.1	89
4.76		**462**	370	3.1	89	**357**	515	3.2	89	**294**	635	3.4	90
4.00		**550**	300	3.0	88	**425**	425	3.2	89	**350**	540	3.4	90

All values reflect mechanical limits. Shaded area indicates additional thermal limitations where P_{emax} = 2.0 HP for continuous use.

21933480/EN-US – 04/2018

1100 – 700 rpm

S47

i ratio	Worm ratio/ # starts	n_e = 1100 rpm				n_e = 900 rpm				n_e = 700 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
201.00		**5.5**	1560	0.25	53	**4.5**	1595	0.21	52	**3.5**	1635	0.17	51
184.80		**6.0**	1540	0.27	54	**4.9**	1575	0.23	53	**3.8**	1620	0.19	51
158.12		**7.0**	1520	0.31	55	**5.7**	1560	0.27	54	**4.4**	1595	0.21	52
137.05		**8.0**	1515	0.35	56	**6.6**	1520	0.30	55	**5.1**	1575	0.24	53
128.10		**8.6**	1515	0.36	57	**7.0**	1520	0.31	55	**5.5**	1560	0.25	54
110.73	42/1	**9.9**	1495	0.40	58	**8.1**	1515	0.35	56	**6.3**	1540	0.28	55
94.08		**12**	1495	0.47	59	**9.6**	1515	0.40	57	**7.4**	1520	0.32	56
84.00		**13**	1495	0.52	60	**11**	1495	0.43	58	**8.3**	1515	0.35	57
71.75		**15**	1495	0.60	61	**13**	1495	0.50	60	**9.8**	1515	0.40	58
67.20		**16**	1495	0.63	61	**13**	1495	0.54	60	**10**	1515	0.43	58
56.61		**19**	1495	0.74	63	**16**	1495	0.62	61	**12**	1515	0.50	60
69.39		**16**	1530	0.52	74	**13**	1560	0.44	73	**10**	1595	0.36	71
63.80		**17**	1530	0.56	74	**14**	1550	0.47	73	**11**	1595	0.39	72
54.59		**20**	1515	0.64	75	**16**	1530	0.54	74	**13**	1560	0.44	73
47.32		**23**	1515	0.74	76	**19**	1530	0.62	75	**15**	1550	0.50	73
44.22		**25**	1515	0.78	76	**20**	1515	0.66	75	**16**	1550	0.52	74
38.23	29/2	**29**	1495	0.89	77	**24**	1515	0.75	76	**18**	1530	0.59	75
32.48		**34**	1495	1.0	78	**28**	1515	0.87	77	**22**	1515	0.68	75
29.00		**38**	1505	1.2	78	**31**	1515	0.97	77	**24**	1515	0.76	76
24.77		**44**	1495	1.3	79	**36**	1505	1.1	78	**28**	1515	0.89	77
23.20		**47**	1450	1.3	79	**39**	1505	1.2	79	**30**	1515	0.94	77
19.54		**56**	1365	1.5	80	**46**	1460	1.3	79	**36**	1505	1.1	78
20.33		**54**	990	1.0	85	**44**	1010	0.84	84	**34**	1025	0.67	83
17.62		**62**	990	1.2	86	**51**	1000	0.95	85	**40**	1020	0.76	84
16.47		**67**	990	1.2	86	**55**	1000	1.0	85	**43**	1010	0.80	84
14.24		**77**	980	1.3	86	**63**	990	1.2	86	**49**	1000	0.93	85
12.10		**91**	980	1.6	87	**74**	980	1.3	86	**58**	1000	1.1	85
10.80		**102**	980	1.9	87	**83**	980	1.5	87	**65**	990	1.2	86
9.23	27/5	**119**	975	2.1	88	**98**	980	1.7	87	**76**	990	1.3	86
8.64		**127**	965	2.3	88	**104**	980	1.9	87	**81**	990	1.5	87
7.28		**151**	965	2.7	88	**124**	980	2.1	88	**96**	980	1.7	87
6.83		**161**	840	2.4	89	**132**	840	2.0	88	**102**	840	1.6	88
6.40		**172**	825	2.5	89	**141**	825	2.1	88	**109**	825	1.6	88
5.39		**204**	790	2.8	89	**167**	790	2.4	89	**130**	790	1.9	88
4.76		**231**	770	3.2	89	**189**	770	2.5	89	**147**	770	2.0	89
4.00		**275**	690	3.4	90	**225**	745	3.0	89	**175**	745	2.3	89

All values reflect mechanical limits. Shaded area indicates additional thermal limitations where P_{emax} = 2.0 HP for continuous use.

21933480/EN-US – 04/2018

500 – 10 rpm

S47

i ratio	Worm ratio/ # starts	n_e = 500 rpm				n_e = 250 rpm				n_e = 10 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
201.00		**2.5**	1635	0.13	49	**1.2**	1635	0.07	48	**0.05**	1635	0.00	32
184.80		**2.7**	1635	0.15	49	**1.4**	1635	0.07	48	**0.05**	1635	0.00	32
158.12		**3.2**	1635	0.16	50	**1.6**	1635	0.08	48	**0.06**	1635	0.00	35
137.05		**3.6**	1635	0.19	51	**1.8**	1635	0.09	48	**0.07**	1635	0.00	37
128.10		**3.9**	1620	0.20	51	**2.0**	1635	0.11	48	**0.08**	1635	0.00	38
110.73	42/1	**4.5**	1600	0.21	52	**2.3**	1635	0.12	49	**0.09**	1635	0.00	40
94.08		**5.3**	1575	0.25	54	**2.7**	1635	0.13	49	**0.11**	1635	0.00	42
84.00		**6.0**	1560	0.27	54	**3.0**	1635	0.16	50	**0.12**	1635	0.00	43
71.75		**7.0**	1540	0.31	56	**3.5**	1635	0.17	51	**0.14**	1635	0.00	44
67.20		**7.4**	1520	0.32	56	**3.7**	1635	0.19	51	**0.15**	1635	0.00	44
56.61		**8.8**	1520	0.38	57	**4.4**	1600	0.21	53	**0.18**	1600	0.00	45
69.39		**7.2**	1635	0.27	70	**3.6**	1635	0.13	68	**0.14**	1635	0.00	56
63.80		**7.8**	1635	0.30	70	**3.9**	1635	0.15	68	**0.16**	1635	0.00	57
54.59		**9.2**	1635	0.34	71	**4.6**	1635	0.17	68	**0.18**	1635	0.00	60
47.32		**11**	1600	0.38	72	**5.3**	1635	0.20	68	**0.21**	1635	0.00	61
44.22		**11**	1595	0.40	72	**5.7**	1635	0.21	69	**0.23**	1635	0.00	62
38.23	29/2	**13**	1575	0.44	73	**6.5**	1635	0.24	69	**0.26**	1635	0.00	63
32.48		**15**	1540	0.51	74	**7.7**	1635	0.28	70	**0.31**	1635	0.00	64
29.00		**17**	1540	0.56	74	**8.6**	1635	0.32	71	**0.34**	1635	0.00	65
24.77		**20**	1520	0.64	75	**10**	1620	0.36	71	**0.40**	1620	0.00	66
23.20		**22**	1520	0.68	76	**11**	1600	0.38	72	**0.43**	1600	0.00	66
19.54		**26**	1520	0.80	77	**13**	1575	0.44	73	**0.51**	1575	0.00	67
20.33		**25**	1095	0.52	82	**12**	1390	0.34	80	**0.49**	1390	0.00	75
17.62		**28**	1060	0.58	83	**14**	1320	0.38	80	**0.57**	1320	0.00	76
16.47		**30**	1045	0.60	83	**15**	1285	0.39	81	**0.61**	1285	0.00	76
14.24		**35**	1025	0.68	84	**18**	1220	0.42	81	**0.70**	1220	0.00	77
12.10		**41**	1020	0.79	84	**21**	1160	0.47	82	**0.83**	1160	0.00	77
10.80		**46**	1010	0.87	85	**23**	1125	0.50	82	**0.93**	1125	0.00	77
9.23	27/5	**54**	1000	1.0	85	**27**	1070	0.55	83	**1.1**	1070	0.00	78
8.64		**58**	1000	1.1	86	**29**	1060	0.59	83	**1.2**	1060	0.00	78
7.28		**69**	990	1.2	86	**34**	1035	0.67	84	**1.4**	1035	0.00	78
6.83		**73**	840	1.1	87	**37**	840	0.58	84	**1.5**	840	0.00	81
6.40		**78**	825	1.2	87	**39**	825	0.60	85	**1.6**	825	0.00	81
5.39		**93**	790	1.3	87	**46**	790	0.68	85	**1.9**	790	0.00	81
4.76		**105**	770	1.5	88	**53**	770	0.75	86	**2.1**	770	0.00	81
4.00		**125**	745	1.7	88	**63**	745	0.86	86	**2.5**	745	0.00	81

21933480/EN-US – 04/2018

11.7 Mechanical ratings S. SF. SA. SAF57

3400 – 2800 rpm

S57

i ratio	Worm ratio/ # starts	n_e = 3400 rpm				n_e = 3200 rpm				n_e = 2800 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
201.00		**17**	2390	1.0	64	**16**	2390	0.95	63	**14**	2390	0.84	62
184.80		**18**	2390	1.1	64	**17**	2390	1.0	64	**15**	2390	0.91	63
158.12		**22**	2390	1.2	65	**20**	2390	1.2	65	**18**	2390	1.0	64
137.05		**25**	2255	1.3	66	**23**	2390	1.3	66	**20**	2390	1.2	65
128.10		**27**	2170	1.3	66	**25**	2255	1.3	66	**22**	2390	1.3	65
110.73	42/1	**31**	1905	1.3	67	**29**	2035	1.3	67	**25**	2255	1.3	66
94.08		**36**	1630	1.3	67	**34**	1735	1.3	67	**30**	1990	1.5	67
84.00		**40**	1460	1.3	67	**38**	1550	1.3	67	**33**	1770	1.3	67
71.75		**47**	1230	1.3	67	**45**	1320	1.3	67	**39**	1540	1.5	67
67.20		**51**	1135	1.3	66	**48**	1230	1.3	67	**42**	1450	1.5	67
56.61		**60**	910	1.3	65	**57**	1010	1.3	66	**49**	1220	1.5	67
69.39		**49**	1945	1.9	81	**46**	1945	1.7	80	**40**	1945	1.6	80
63.80		**53**	1945	2.0	81	**50**	1945	1.9	81	**44**	1945	1.7	80
54.59		**62**	1945	2.4	81	**59**	1945	2.3	81	**51**	1945	2.0	81
47.32		**72**	1860	2.5	82	**68**	1945	2.5	82	**59**	1945	2.3	81
44.22		**77**	1745	2.5	82	**72**	1815	2.5	82	**63**	1945	2.4	81
38.23	29/2	**89**	1540	2.7	82	**84**	1630	2.7	82	**73**	1815	2.5	82
32.48		**105**	1310	2.7	82	**99**	1390	2.7	82	**86**	1595	2.7	82
29.00		**117**	1160	2.7	82	**110**	1250	2.7	82	**97**	1435	2.7	82
24.77		**137**	980	2.5	82	**129**	1060	2.7	82	**113**	1230	2.7	82
23.20		**147**	905	2.5	82	**138**	980	2.7	82	**121**	1160	2.7	82
19.54		**174**	715	2.4	81	**164**	795	2.5	82	**143**	965	2.7	82
20.33		**167**	1415	4.3	89	**157**	1415	4.0	89	**138**	1415	3.5	88
17.62		**193**	1240	4.3	89	**182**	1320	4.3	89	**159**	1415	4.0	89
16.47		**206**	1170	4.3	89	**194**	1240	4.3	89	**170**	1400	4.3	89
14.24		**239**	1025	4.3	89	**225**	1090	4.3	89	**197**	1230	4.3	89
12.10		**281**	875	4.4	89	**264**	930	4.4	89	**231**	1070	4.4	89
10.80		**315**	780	4.4	89	**296**	830	4.4	89	**259**	955	4.4	89
9.23	27/5	**368**	645	4.3	89	**347**	700	4.3	89	**303**	825	4.4	89
8.64		**394**	600	4.3	89	**370**	655	4.3	89	**324**	770	4.4	89
7.28		**467**	480	4.0	88	**440**	530	4.2	89	**385**	635	4.3	89
6.83		**498**	480	4.3	89	**469**	515	4.3	89	**410**	610	4.4	90
6.40		**531**	445	4.2	89	**500**	480	4.3	89	**438**	565	4.4	89
5.39		**631**	365	4.2	89	**594**	390	4.2	89	**519**	470	4.3	89
4.76		**714**	310	4.0	88	**672**	335	4.0	89	**588**	405	4.3	89
4.00		**850**	250	3.8	88	**800**	275	3.9	88	**700**	335	4.2	89

All values reflect mechanical limits. Shaded area indicates additional thermal limitations where P_{emax} = 4.0 HP for continuous use.

21933480/EN-US – 04/2018

2200 – 1400 rpm

S57

i ratio	Worm ratio/ # starts	n_e = 2200 rpm				n_e = 1700 rpm				n_e = 1400 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
201.00		**11**	2610	0.74	61	**8.5**	2610	0.59	59	**7.0**	2610	0.50	58
184.80		**12**	2610	0.80	62	**9.2**	2610	0.64	60	**7.6**	2610	0.54	58
158.12		**14**	2610	0.93	63	**11**	2610	0.74	61	**8.9**	2610	0.62	60
137.05		**16**	2610	1.0	64	**12**	2610	0.83	62	**10**	2610	0.70	61
128.10		**17**	2610	1.1	64	**13**	2610	0.89	62	**11**	2610	0.74	61
110.73	42/1	**20**	2565	1.2	65	**15**	2610	1.0	63	**13**	2610	0.84	62
94.08		**23**	2435	1.3	66	**18**	2655	1.2	65	**15**	2610	0.98	63
84.00		**26**	2215	1.3	67	**20**	2520	1.2	65	**17**	2610	1.1	64
71.75		**31**	1945	1.5	67	**24**	2435	1.3	66	**20**	2565	1.2	65
67.20		**33**	1860	1.5	67	**25**	2300	1.3	67	**21**	2520	1.3	65
56.61		**39**	1585	1.5	68	**30**	1990	1.5	67	**25**	2345	1.3	67
69.39		**32**	2170	1.3	79	**24**	2170	1.1	77	**20**	2170	0.91	76
63.80		**34**	2170	1.5	79	**27**	2170	1.2	78	**22**	2170	0.98	77
54.59		**40**	2170	1.7	80	**31**	2170	1.3	79	**26**	2170	1.1	78
47.32		**46**	2170	2.0	81	**36**	2170	1.6	79	**30**	2170	1.3	79
44.22		**50**	2170	2.1	81	**38**	2170	1.6	80	**32**	2170	1.3	79
38.23	29/2	**58**	2170	2.4	81	**44**	2170	1.9	80	**37**	2170	1.6	80
32.48		**68**	1990	2.5	82	**52**	2170	2.3	81	**43**	2170	1.9	80
29.00		**76**	1770	2.5	82	**59**	2170	2.4	81	**48**	2170	2.0	81
24.77		**89**	1565	2.7	82	**69**	1945	2.5	82	**57**	2170	2.4	81
23.20		**95**	1480	2.7	83	**73**	1860	2.7	82	**60**	2170	2.5	82
19.54		**113**	1265	2.7	83	**87**	1620	2.7	83	**72**	1905	2.7	82
20.33		**108**	1485	3.0	88	**84**	1485	2.3	87	**69**	1485	1.9	87
17.62		**125**	1485	3.4	88	**96**	1485	2.5	88	**79**	1485	2.1	87
16.47		**134**	1495	3.6	88	**103**	1485	2.8	88	**85**	1485	2.3	87
14.24		**154**	1495	4.2	89	**119**	1495	3.2	88	**98**	1495	2.7	88
12.10		**182**	1330	4.3	89	**140**	1495	3.8	89	**116**	1495	3.1	88
10.80		**204**	1205	4.3	89	**157**	1495	4.2	89	**130**	1495	3.5	88
9.23		**238**	1055	4.4	89	**184**	1320	4.3	89	**152**	1495	4.0	89
8.64	27/5	**255**	990	4.4	89	**197**	1250	4.4	89	**162**	1470	4.3	89
7.28		**302**	850	4.6	90	**234**	1080	4.4	90	**192**	1290	4.4	89
6.83		**322**	805	4.6	90	**249**	885	3.9	90	**205**	885	3.2	89
6.40		**344**	750	4.6	90	**266**	865	4.0	90	**219**	865	3.4	89
5.39		**408**	635	4.6	90	**315**	840	4.7	90	**260**	840	3.9	90
4.76		**462**	560	4.6	90	**357**	745	4.7	90	**294**	825	4.3	90
4.00		**550**	470	4.6	90	**425**	630	4.7	90	**350**	780	4.8	90

All values reflect mechanical limits. Shaded area indicates additional thermal limitations where P_{emax} = 4.0 HP for continuous use.

21933480/EN-US – 04/2018

1100 – 700 rpm

S57

i ratio	Worm ratio/ # starts	n_e = 1100 rpm				n_e = 900 rpm				n_e = 700 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
201.00		**5.5**	2610	0.40	56	**4.5**	2660	0.35	55	**3.5**	2740	0.28	53
184.80		**6.0**	2610	0.43	57	**4.9**	2660	0.38	55	**3.8**	2700	0.31	54
158.12		**7.0**	2610	0.50	58	**5.7**	2610	0.42	56	**4.4**	2660	0.34	55
137.05		**8.0**	2610	0.56	59	**6.6**	2610	0.47	57	**5.1**	2660	0.39	56
128.10		**8.6**	2610	0.60	59	**7.0**	2610	0.50	58	**5.5**	2610	0.40	56
110.73	42/1	**9.9**	2610	0.68	61	**8.1**	2610	0.58	59	**6.3**	2610	0.46	57
94.08		**12**	2610	0.79	62	**9.6**	2610	0.66	60	**7.4**	2610	0.52	58
84.00		**13**	2610	0.87	63	**11**	2610	0.72	61	**8.3**	2610	0.58	59
71.75		**15**	2610	0.99	64	**13**	2610	0.83	62	**9.8**	2610	0.67	61
67.20		**16**	2660	1.1	64	**13**	2610	0.89	63	**10**	2610	0.71	61
56.61		**19**	2570	1.2	65	**16**	2660	1.0	64	**12**	2610	0.82	62
69.39		**16**	2390	0.80	75	**13**	2390	0.66	74	**10**	2390	0.52	73
63.80		**17**	2390	0.86	76	**14**	2390	0.71	75	**11**	2390	0.56	73
54.59		**20**	2390	0.99	77	**16**	2390	0.83	75	**13**	2390	0.66	74
47.32		**23**	2390	1.1	77	**19**	2390	0.94	76	**15**	2390	0.75	75
44.22		**25**	2390	1.2	78	**20**	2390	1.0	77	**16**	2390	0.79	75
38.23	29/2	**29**	2390	1.3	79	**24**	2390	1.2	77	**18**	2390	0.91	76
32.48		**34**	2390	1.6	79	**28**	2390	1.3	78	**22**	2390	1.1	77
29.00		**38**	2390	1.7	80	**31**	2390	1.5	79	**24**	2390	1.2	78
24.77		**44**	2390	2.1	81	**36**	2390	1.7	80	**28**	2390	1.3	78
23.20		**47**	2390	2.3	81	**39**	2390	1.9	80	**30**	2390	1.5	79
19.54		**56**	2210	2.4	81	**46**	2390	2.1	81	**36**	2390	1.7	80
20.33		**54**	1490	1.5	86	**44**	1500	1.2	85	**34**	1520	0.99	84
17.62		**62**	1500	1.7	86	**51**	1500	1.5	86	**40**	1500	1.1	85
16.47		**67**	1490	1.9	87	**55**	1490	1.5	86	**43**	1500	1.2	85
14.24		**77**	1490	2.1	87	**63**	1490	1.7	86	**49**	1500	1.3	86
12.10		**91**	1500	2.4	88	**74**	1500	2.0	87	**58**	1500	1.6	86
10.80		**102**	1500	2.8	88	**83**	1500	2.3	87	**65**	1500	1.7	87
9.23	27/5	**119**	1500	3.2	88	**98**	1490	2.7	88	**76**	1490	2.0	87
8.64		**127**	1500	3.5	88	**104**	1500	2.8	88	**81**	1490	2.1	87
7.28		**151**	1500	4.0	89	**124**	1500	3.4	88	**96**	1500	2.5	88
6.83		**161**	1060	3.1	89	**132**	1060	2.5	89	**102**	1060	2.0	88
6.4		**172**	1040	3.2	89	**141**	1040	2.5	89	**109**	1040	2.0	88
5.39		**204**	980	3.6	90	**167**	980	3.0	89	**130**	980	2.3	89
4.76		**231**	955	3.9	90	**189**	955	3.2	90	**147**	955	2.5	89
4.00		**275**	910	4.4	90	**225**	910	3.6	90	**175**	910	2.8	89

21933480/EN-US – 04/2018

500 – 10 rpm

S57												
i ratio	Worm ratio/ # starts	n_e = 500 rpm				n_e = 250 rpm				n_e = 10 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
201.00		**2.5**	2920	0.23	51	**1.2**	2920	0.12	49	**0.05**	2920	0.00	42
184.80		**2.7**	2920	0.24	51	**1.4**	2920	0.13	49	**0.05**	2920	0.00	43
158.12		**3.2**	2790	0.27	52	**1.6**	2920	0.15	49	**0.06**	2920	0.00	44
137.05		**3.6**	2740	0.30	53	**1.8**	2920	0.17	50	**0.07**	2920	0.00	45
128.10		**3.9**	2700	0.31	54	**2.0**	2920	0.19	50	**0.08**	2920	0.00	46
110.73	42/1	**4.5**	2660	0.35	55	**2.3**	2920	0.20	51	**0.09**	2920	0.00	46
94.08		**5.3**	2660	0.40	56	**2.7**	2920	0.24	51	**0.11**	2920	0.00	47
84.00		**6.0**	2610	0.43	57	**3.0**	2880	0.25	52	**0.12**	2880	0.00	47
71.75		**7.0**	2610	0.50	58	**3.5**	2740	0.28	53	**0.14**	2740	0.00	48
67.20		**7.4**	2610	0.52	58	**3.7**	2740	0.31	54	**0.15**	2740	0.00	48
56.61		**8.8**	2610	0.62	60	**4.4**	2660	0.34	55	**0.18**	2660	0.00	48
69.39		**7.2**	2660	0.43	71	**3.6**	2660	0.23	68	**0.14**	2660	0.00	63
63.80		**7.8**	2660	0.46	71	**3.9**	2660	0.24	68	**0.16**	2660	0.00	64
54.59		**9.2**	2660	0.54	72	**4.6**	2660	0.28	69	**0.18**	2660	0.00	65
47.32		**11**	2660	0.60	73	**5.3**	2660	0.32	70	**0.21**	2660	0.00	66
44.22		**11**	2660	0.64	74	**5.7**	2660	0.34	70	**0.23**	2660	0.00	66
38.23	29/2	**13**	2610	0.72	74	**6.5**	2660	0.39	71	**0.26**	2660	0.00	67
32.48		**15**	2610	0.84	75	**7.7**	2660	0.46	71	**0.31**	2660	0.00	67
29.00		**17**	2610	0.94	76	**8.6**	2660	0.51	72	**0.34**	2660	0.00	67
24.77		**20**	2610	1.1	77	**10**	2660	0.58	73	**0.40**	2660	0.00	68
23.20		**22**	2610	1.2	77	**11**	2660	0.62	73	**0.43**	2660	0.00	68
19.54		**26**	2610	1.3	78	**13**	2610	0.71	74	**0.51**	2610	0.00	68
20.33		**25**	1600	0.75	83	**12**	1900	0.47	80	**0.49**	1900	0.00	77
17.62		**28**	1550	0.83	83	**14**	1860	0.52	81	**0.57**	1860	0.00	77
16.47		**30**	1540	0.89	84	**15**	1810	0.54	81	**0.61**	1810	0.00	78
14.24		**35**	1520	1.0	84	**18**	1750	0.60	81	**0.70**	1750	0.00	78
12.10		**41**	1500	1.2	85	**21**	1660	0.66	82	**0.83**	1660	0.00	78
10.80		**46**	1500	1.3	85	**23**	1630	0.72	83	**0.93**	1630	0.00	78
9.23	27/5	**54**	1500	1.5	86	**27**	1570	0.80	83	**1.1**	1570	0.00	79
8.64		**58**	1500	1.6	86	**29**	1550	0.86	83	**1.2**	1550	0.00	79
7.28		**69**	1500	1.9	87	**34**	1520	0.98	84	**1.4**	1520	0.00	79
6.83		**73**	1060	1.5	87	**37**	1060	0.72	85	**1.5**	1060	0.00	81
6.40		**78**	1040	1.5	87	**39**	1040	0.75	85	**1.6**	1040	0.00	81
5.39		**93**	980	1.6	88	**46**	980	0.84	86	**1.9**	980	0.00	81
4.76		**105**	955	1.9	88	**53**	955	0.93	86	**2.1**	955	0.00	81
4.00		**125**	910	2.0	89	**63**	910	1.0	87	**2.5**	910	0.00	81

21933480/EN-US – 04/2018

11.8 Mechanical ratings S. SF. SA. SAF67

3400 – 2800 rpm

S67

i ratio	Worm ratio/ # starts	n_e = 3400 rpm				n_e = 3200 rpm				n_e = 2800 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
217.41	42/1	**16**	4120	1.6	66	**15**	4120	1.5	66	**13**	4120	1.3	65
190.11		**18**	4120	1.7	67	**17**	4120	1.6	67	**15**	4120	1.5	66
180.60		**19**	4120	1.9	67	**18**	4120	1.7	67	**16**	4120	1.5	66
158.45		**21**	4120	2.0	68	**20**	4120	2.0	68	**18**	4120	1.7	67
134.40		**25**	4120	2.4	69	**24**	4120	2.3	68	**21**	4120	2.0	68
121.33		**28**	4030	2.5	69	**26**	4120	2.5	69	**23**	4120	2.1	68
106.75		**32**	3580	2.7	69	**30**	3810	2.7	69	**26**	4120	2.5	69
100.80		**34**	3360	2.5	69	**32**	3630	2.7	69	**28**	4120	2.7	69
85.83		**40**	2830	2.5	69	**37**	3050	2.5	69	**33**	3540	2.7	70
78.00		**44**	2520	2.5	69	**41**	2740	2.5	69	**36**	3230	2.7	70
67.57		**50**	2080	2.4	67	**47**	2300	2.5	68	**41**	2790	2.7	69
58.80		**58**	1630	2.3	65	**54**	1900	2.4	67	**48**	2390	2.5	69
75.06	29/2	**45**	3850	3.4	82	**43**	3850	3.2	82	**37**	3850	2.8	81
65.63		**52**	3850	3.9	82	**49**	3850	3.6	82	**43**	3850	3.2	82
62.35		**55**	3850	4.0	83	**51**	3850	3.8	82	**45**	3850	3.4	82
54.70		**62**	3850	4.6	83	**59**	3850	4.3	83	**51**	3850	3.8	83
46.40		**73**	3500	4.8	83	**69**	3670	4.8	83	**60**	3850	4.4	83
41.89		**81**	3140	4.8	83	**76**	3360	4.8	83	**67**	3810	4.8	83
36.85		**92**	2740	4.8	83	**87**	2960	4.8	84	**76**	3360	4.8	84
34.80		**98**	2610	4.8	83	**92**	2790	4.8	84	**80**	3230	5.0	84
29.63		**115**	2210	4.8	83	**108**	2390	5.0	83	**94**	2740	5.0	84
26.93		**126**	1950	4.7	83	**119**	2120	4.8	83	**104**	2480	4.8	84
23.33		**146**	1610	4.6	82	**137**	1770	4.7	83	**120**	2170	5.0	84
20.30		**167**	1250	4.2	81	**158**	1450	4.4	82	**138**	1810	4.8	83
24.44	27/5	**139**	2790	6.8	90	**131**	2790	6.4	90	**115**	2790	5.6	89
23.22		**146**	2790	7.2	90	**138**	2790	6.8	90	**121**	2790	5.9	90
20.37		**167**	2790	8.2	90	**157**	2790	7.8	90	**137**	2790	6.7	90
17.28		**197**	2390	8.3	90	**185**	2570	8.3	90	**162**	2790	7.9	90
15.60		**218**	2170	8.3	90	**205**	2300	8.3	90	**179**	2610	8.2	90
13.73		**248**	1900	8.3	90	**233**	2040	8.3	90	**204**	2350	8.4	90
12.96		**262**	1770	8.2	90	**247**	1900	8.2	90	**216**	2210	8.4	90
11.03		**308**	1500	8.2	90	**290**	1620	8.3	90	**254**	1900	8.4	90
10.03		**339**	1340	8.0	90	**319**	1450	8.2	90	**279**	1720	8.4	90
8.69		**391**	1100	7.6	89	**368**	1210	7.9	90	**322**	1470	8.3	90
7.56		**450**	840	6.8	88	**423**	990	7.5	89	**370**	1250	8.2	90

All values reflect mechanical limits. Shaded area indicates additional thermal limitations where P_{emax} =7.5 HP for continuous use.

21933480/EN-US – 04/2018

2200 – 1400 rpm

S67

i ratio	Worm ratio/ # starts	n_e = 2200 rpm				n_e = 1700 rpm				n_e = 1400 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
217.41	42/1	**10**	4600	1.2	64	**7.8**	4600	0.93	62	**6.4**	4600	0.78	61
190.11		**12**	4600	1.3	65	**8.9**	4600	1.0	63	**7.4**	4600	0.87	62
180.60		**12**	4600	1.3	65	**9.4**	4600	1.1	63	**7.8**	4600	0.91	62
158.45		**14**	4600	1.5	66	**11**	4600	1.2	64	**8.8**	4600	1.0	63
134.40		**16**	4600	1.7	67	**13**	4600	1.5	65	**10**	4600	1.2	64
121.33		**18**	4600	2.0	68	**14**	4600	1.6	66	**12**	4600	1.3	65
106.75		**21**	4600	2.1	68	**16**	4600	1.7	67	**13**	4600	1.5	66
100.80		**22**	4510	2.3	69	**17**	4600	1.9	67	**14**	4600	1.5	66
85.83		**26**	4340	2.5	69	**20**	4600	2.1	68	**16**	4600	1.7	67
78.00		**28**	4120	2.7	70	**22**	4510	2.3	69	**18**	4600	1.9	68
67.57		**33**	3630	2.7	70	**25**	4380	2.5	69	**21**	4600	2.1	69
58.80		**37**	3190	2.7	70	**29**	4070	2.7	70	**24**	4430	2.4	69
75.06	29/2	**29**	4250	2.4	81	**23**	4250	1.9	79	**19**	4250	1.6	79
65.63		**34**	4250	2.8	81	**26**	4250	2.1	80	**21**	4250	1.9	79
62.35		**35**	4250	3.0	81	**27**	4250	2.3	80	**22**	4250	1.9	79
54.70		**40**	4250	3.4	82	**31**	4250	2.5	81	**26**	4250	2.1	80
46.40		**47**	4250	3.9	82	**37**	4250	3.1	82	**30**	4250	2.5	81
41.89		**53**	4250	4.3	83	**41**	4250	3.4	82	**33**	4250	2.8	81
36.85		**60**	4200	4.8	83	**46**	4250	3.8	82	**38**	4250	3.1	82
34.80		**63**	3980	4.8	83	**49**	4250	4.0	83	**40**	4250	3.4	82
29.63		**74**	3500	5.0	84	**57**	4250	4.7	83	**47**	4250	3.9	83
26.93		**82**	3190	5.0	84	**63**	4030	4.8	83	**52**	4250	4.3	83
23.33		**94**	2830	5.1	84	**73**	3580	5.0	84	**60**	4250	4.8	83
20.30		**108**	2480	5.1	84	**84**	3190	5.1	84	**69**	3760	5.0	84
24.44	27/5	**90**	3010	4.8	89	**70**	3010	3.8	88	**57**	3010	3.1	88
23.22		**95**	3010	5.1	89	**73**	3010	3.9	89	**60**	3010	3.2	88
20.37		**108**	3010	5.8	89	**83**	3010	4.4	89	**69**	3010	3.8	88
17.28		**127**	3010	6.7	90	**98**	3010	5.2	89	**81**	3010	4.3	89
15.60		**141**	3010	7.5	90	**109**	3010	5.8	89	**90**	3010	4.8	89
13.73		**160**	2920	8.2	90	**124**	3010	6.6	90	**102**	3010	5.5	89
12.96		**170**	2790	8.3	90	**131**	3010	7.0	90	**108**	3010	5.8	89
11.03		**199**	2430	8.4	90	**154**	3010	8.2	90	**127**	3010	6.7	90
10.03		**219**	2210	8.4	91	**169**	2790	8.3	90	**140**	3010	7.4	90
8.69		**253**	1950	8.6	91	**196**	2480	8.4	91	**161**	2960	8.4	90
7.56		**291**	1700	8.7	91	**225**	2210	8.7	91	**185**	2610	8.4	91

All values reflect mechanical limits. Shaded area indicates additional thermal limitations where P_{emax} =7.5 HP for continuous use.

21933480/EN-US – 04/2018

1100 – 700 rpm

S67

i ratio	Worm ratio/ # starts	n_e = 1100 rpm				n_e = 900 rpm				n_e = 700 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
217.41	42/1	**5.1**	4910	0.67	59	**4.1**	4960	0.56	58	**3.2**	5040	0.46	56
190.11		**5.8**	4910	0.75	60	**4.7**	4960	0.63	59	**3.7**	5000	0.51	57
180.60		**6.1**	4910	0.79	61	**5.0**	4910	0.66	59	**3.9**	5000	0.54	57
158.45		**6.9**	4870	0.87	62	**5.7**	4910	0.74	60	**4.4**	4960	0.59	58
134.40		**8.2**	4870	1.0	63	**6.7**	4870	0.84	61	**5.2**	4910	0.68	60
121.33		**9.1**	4870	1.1	63	**7.4**	4870	0.93	62	**5.8**	4910	0.75	60
106.75		**10**	4870	1.2	64	**8.4**	4870	1.0	63	**6.6**	4910	0.83	61
100.80		**11**	4870	1.3	65	**8.9**	4870	1.1	63	**6.9**	4910	0.89	62
85.83		**13**	4870	1.5	66	**10**	4870	1.3	64	**8.2**	4870	1.0	63
78.00		**14**	4870	1.6	66	**12**	4870	1.3	65	**9.0**	4870	1.1	63
67.57		**16**	4870	1.9	67	**13**	4870	1.6	66	**10**	4870	1.2	64
58.80		**19**	4690	2.0	68	**15**	4870	1.7	67	**12**	4870	1.3	65
75.06	29/2	**15**	4650	1.3	77	**12**	4650	1.2	76	**9.3**	4650	0.91	75
65.63		**17**	4650	1.6	78	**14**	4650	1.3	77	**11**	4650	1.0	76
62.35		**18**	4650	1.6	78	**14**	4650	1.3	77	**11**	4650	1.1	76
54.70		**20**	4650	1.9	79	**16**	4650	1.6	78	**13**	4650	1.2	77
46.40		**24**	4650	2.1	80	**19**	4650	1.9	79	**15**	4650	1.5	78
41.89		**26**	4650	2.4	80	**21**	4650	2.0	79	**17**	4650	1.6	78
36.85		**30**	4650	2.7	81	**24**	4650	2.3	80	**19**	4650	1.7	79
34.80		**32**	4650	2.8	81	**26**	4650	2.4	80	**20**	4650	1.9	79
29.63		**37**	4650	3.4	82	**30**	4650	2.8	81	**24**	4650	2.1	80
26.93		**41**	4650	3.6	82	**33**	4650	3.1	81	**26**	4650	2.4	80
23.33		**47**	4650	4.2	83	**39**	4650	3.5	82	**30**	4650	2.7	81
20.30		**54**	4600	4.7	83	**44**	4650	4.0	82	**34**	4650	3.1	81
24.44	27/5	**45**	3140	2.5	87	**37**	3190	2.1	87	**29**	3230	1.7	86
23.22		**47**	3140	2.7	87	**39**	3190	2.3	87	**30**	3230	1.7	86
20.37		**54**	3140	3.1	88	**44**	3140	2.5	87	**34**	3230	2.0	86
17.28		**64**	3140	3.6	88	**52**	3140	3.0	88	**41**	3190	2.4	87
15.60		**71**	3100	3.9	88	**58**	3140	3.2	88	**45**	3140	2.5	87
13.73		**80**	3100	4.4	89	**66**	3140	3.8	88	**51**	3140	3.0	88
12.96		**85**	3100	4.7	89	**69**	3100	3.9	88	**54**	3140	3.1	88
11.03		**100**	3100	5.5	89	**82**	3100	4.6	89	**63**	3140	3.6	88
10.03		**110**	3050	5.9	90	**90**	3100	5.0	89	**70**	3140	3.9	88
8.69		**127**	3050	6.8	90	**104**	3100	5.6	89	**81**	3100	4.4	89
7.56		**146**	3050	7.8	90	**119**	3050	6.4	90	**93**	3100	5.1	89

All values reflect mechanical limits. Shaded area indicates additional thermal limitations where P_{emax} =7.5 HP for continuous use.

21933480/EN-US – 04/2018

500 – 10 rpm

S67

i ratio	Worm ratio/ # starts	n_e = 500 rpm				n_e = 250 rpm				n_e = 10 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
217.41	42/1	**2.3**	5040	0.34	54	**1.1**	5040	0.17	51	**0.05**	5040	0.00	47
190.11		**2.6**	5040	0.39	55	**1.3**	5040	0.20	51	**0.05**	5040	0.00	48
180.60		**2.8**	5040	0.40	55	**1.4**	5040	0.21	51	**0.06**	5040	0.00	48
158.45		**3.2**	5040	0.46	56	**1.6**	5040	0.24	52	**0.06**	5040	0.00	49
134.40		**3.7**	5000	0.51	57	**1.9**	5040	0.28	53	**0.07**	5040	0.00	50
121.33		**4.1**	4960	0.56	58	**2.1**	5040	0.31	53	**0.08**	5040	0.00	50
106.75		**4.7**	4960	0.63	59	**2.3**	5040	0.35	54	**0.09**	5040	0.00	50
100.80		**5.0**	4960	0.66	59	**2.5**	5040	0.36	55	**0.10**	5040	0.00	50
85.83		**5.8**	4910	0.75	60	**2.9**	5040	0.42	56	**0.12**	5040	0.00	51
78.00		**6.4**	4910	0.82	61	**3.2**	5040	0.46	56	**0.13**	5040	0.00	51
67.57		**7.4**	4910	0.93	62	**3.7**	5000	0.51	57	**0.15**	5000	0.00	51
58.80		**8.5**	4870	1.0	63	**4.3**	4960	0.58	58	**0.17**	4960	0.00	51
75.06	29/2	**6.7**	5040	0.72	73	**3.3**	5040	0.38	70	**0.13**	5040	0.00	68
65.63		**7.6**	5040	0.82	74	**3.8**	5040	0.43	71	**0.15**	5040	0.00	68
62.35		**8.0**	5040	0.86	74	**4.0**	5040	0.46	71	**0.16**	5040	0.00	69
54.70		**9.1**	5040	0.98	75	**4.6**	5040	0.51	71	**0.18**	5040	0.00	69
46.40		**11**	5040	1.1	76	**5.4**	5040	0.59	72	**0.22**	5040	0.00	69
41.89		**12**	5040	1.2	76	**6.0**	5040	0.66	73	**0.24**	5040	0.00	69
36.85		**14**	5040	1.5	77	**6.8**	5040	0.74	73	**0.27**	5040	0.00	69
34.80		**14**	5040	1.5	77	**7.2**	5040	0.78	74	**0.29**	5040	0.00	69
29.63		**17**	5000	1.7	78	**8.4**	5040	0.91	75	**0.34**	5040	0.00	70
26.93		**19**	5000	1.9	79	**9.3**	5040	0.99	75	**0.37**	5040	0.00	70
23.33		**21**	5000	2.1	79	**11**	5040	1.1	76	**0.43**	5040	0.00	70
20.30		**25**	5000	2.4	80	**12**	5040	1.3	77	**0.49**	5040	0.00	70
24.44	27/5	**20**	3230	1.2	85	**10**	3140	0.62	82	**0.41**	3140	0.03	80
23.22		**22**	3230	1.3	85	**11**	3140	0.66	82	**0.43**	3140	0.00	80
20.37		**25**	3360	1.5	85	**12**	3230	0.76	83	**0.49**	3230	0.00	80
17.28		**29**	3230	1.7	86	**14**	3850	1.1	83	**0.58**	3850	0.00	81
15.60		**32**	3230	1.9	86	**16**	3810	1.2	84	**0.64**	3810	0.00	81
13.73		**36**	3230	2.1	87	**18**	3670	1.3	84	**0.73**	3670	0.00	81
12.96		**39**	3190	2.3	87	**19**	3630	1.3	84	**0.77**	3630	0.00	81
11.03		**45**	3140	2.5	87	**23**	3450	1.5	85	**0.91**	3450	0.00	81
10.03		**50**	3140	2.8	88	**25**	3360	1.6	85	**1.0**	3360	0.00	81
8.69		**58**	3140	3.2	88	**29**	3270	1.7	86	**1.2**	3270	0.08	81
7.56		**66**	3140	3.8	88	**33**	3230	2.0	86	**1.3**	3230	0.08	81

21933480/EN-US – 04/2018

11.9 Mechanical ratings S. SF. SA. SAF77

3400 – 2800 rpm

S77

i ratio	Worm ratio/ # starts	n_e = 3400 rpm				n_e = 3200 rpm				n_e = 2800 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
256.47	40/1	**13**	10270	3.1	71	**12**	10270	2.8	71	**11**	10270	2.5	70
225.26		**15**	10000	3.4	72	**14**	10180	3.2	71	**12**	10270	2.8	71
214.00		**16**	9820	3.5	72	**15**	10090	3.4	71	**13**	10270	3.0	71
189.09		**18**	9560	3.8	72	**17**	9740	3.6	72	**15**	10090	3.4	71
161.60		**21**	9200	4.2	73	**20**	9290	4.0	73	**17**	9650	3.6	72
148.15		**23**	8940	4.4	73	**22**	9120	4.3	73	**19**	9470	3.9	73
130.00		**26**	8580	4.8	74	**25**	8760	4.7	74	**22**	9120	4.3	73
123.20		**28**	8410	5.0	74	**26**	8580	4.8	74	**23**	8940	4.4	73
107.83		**32**	7970	5.4	74	**30**	8140	5.2	74	**26**	8580	4.8	74
97.14		**35**	7610	5.6	75	**33**	7790	5.5	74	**29**	8230	5.1	74
85.22		**40**	6810	5.8	75	**38**	7260	5.8	75	**33**	7790	5.5	75
75.20		**45**	5970	5.8	74	**43**	6420	5.8	75	**37**	7350	5.8	75
66.67		**51**	5180	5.6	74	**48**	5620	5.8	75	**42**	6590	5.9	75
56.92		**60**	4290	5.5	73	**56**	4690	5.6	74	**49**	5620	5.9	75
75.09	40/3	**45**	9030	7.5	86	**43**	9030	7.1	86	**37**	9030	6.2	86
71.33		**48**	9030	7.9	87	**45**	9030	7.4	86	**39**	9030	6.6	86
63.03		**54**	9030	8.9	87	**51**	9030	8.3	87	**44**	9030	7.4	86
53.87		**63**	8670	9.9	87	**59**	8850	9.5	87	**52**	9030	8.6	87
49.38		**69**	8410	10.5	87	**65**	8580	10.1	87	**57**	8940	9.3	87
43.33		**78**	8050	11.4	88	**74**	8230	11.0	88	**65**	8580	10.1	87
41.07		**83**	7970	11.9	88	**78**	8050	11.4	88	**68**	8410	10.5	87
35.94		**95**	7080	12.1	88	**89**	7520	12.1	88	**78**	8050	11.4	88
32.38		**105**	6420	12.2	88	**99**	6810	12.2	88	**86**	7790	12.2	88
28.41		**120**	5620	12.2	88	**113**	6020	12.2	88	**99**	6900	12.2	88
25.07		**136**	4960	12.2	88	**128**	5310	12.2	88	**112**	6150	12.3	88
22.22		**153**	4290	11.9	88	**144**	4650	12.1	88	**126**	5440	12.3	88
18.97		**179**	3500	11.4	87	**169**	3890	11.9	88	**148**	4600	12.2	88
22.89	34/6	**149**	5220	13.4	91	**140**	5220	12.7	91	**122**	5220	11.1	91
20.99		**162**	5220	14.6	92	**152**	5220	13.8	92	**133**	5220	12.1	91
18.42		**185**	5220	16.6	92	**174**	5220	15.7	92	**152**	5220	13.8	92
17.45		**195**	5220	17.6	92	**183**	5220	16.6	92	**160**	5220	14.5	92
15.28		**223**	4690	18.1	92	**209**	4960	18.0	92	**183**	5220	16.5	92
13.76		**247**	4250	18.1	92	**233**	4470	18.0	92	**203**	5180	18.2	92
12.07		**282**	3670	17.8	92	**265**	3940	18.0	92	**232**	4560	18.2	92
10.65		**319**	3230	17.8	92	**300**	3450	18.0	92	**263**	4030	18.2	92
9.44		**360**	2790	17.4	92	**339**	3050	17.8	92	**297**	3580	18.4	92
8.06		**422**	2300	16.9	91	**397**	2520	17.3	92	**347**	3010	18.1	92

All values reflect mechanical limits. Shaded area indicates additional thermal limitations where P_{emax} =12.3 HP for continuous use.

2200 – 1400 rpm

S77

i ratio	Worm ratio/ # starts	n_e = 2200 rpm				n_e = 1700 rpm				n_e = 1400 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
256.47		**8.6**	11150	2.1	69	**6.6**	11240	1.7	67	**5.5**	11240	1.5	66
225.26		**9.8**	10890	2.4	69	**7.5**	11240	2.0	68	**6.2**	11240	1.6	67
214.00		**10**	10800	2.5	70	**7.9**	11240	2.1	68	**6.5**	11240	1.7	67
189.09		**12**	10620	2.8	70	**9.0**	10970	2.3	69	**7.4**	11240	2.0	68
161.60		**14**	10270	3.1	71	**11**	10800	2.5	70	**8.7**	11150	2.3	69
148.15		**15**	10090	3.4	72	**11**	10620	2.8	70	**9.4**	10970	2.4	69
130.00	40/1	**17**	9740	3.6	72	**13**	10350	3.1	71	**11**	10710	2.5	70
123.20		**18**	9560	3.8	73	**14**	10180	3.1	71	**11**	10620	2.7	70
107.83		**20**	9200	4.0	73	**16**	9820	3.4	72	**13**	10350	3.0	71
97.14		**23**	8940	4.4	74	**18**	9650	3.8	73	**14**	10090	3.2	72
85.22		**26**	8580	4.7	74	**20**	9290	4.0	73	**16**	9740	3.5	72
75.20		**29**	8140	5.1	74	**23**	8940	4.3	74	**19**	9470	3.9	73
66.67		**33**	7790	5.5	75	**25**	8580	4.7	74	**21**	9200	4.2	73
56.92		**39**	7350	6.0	75	**30**	8140	5.2	75	**25**	8760	4.6	74
75.09		**29**	9740	5.4	85	**23**	9740	4.2	84	**19**	9740	3.5	83
71.33		**31**	9740	5.6	85	**24**	9740	4.3	85	**20**	9740	3.6	84
63.03		**35**	9740	6.3	86	**27**	9740	5.0	85	**22**	9740	4.0	84
53.87		**41**	9740	7.4	86	**32**	9740	5.8	86	**26**	9740	4.7	85
49.38		**45**	9560	7.8	87	**34**	9740	6.2	86	**28**	9740	5.1	85
43.33		**51**	9290	8.6	87	**39**	9740	7.0	86	**32**	9740	5.8	86
41.07	40/3	**54**	9120	8.9	87	**41**	9740	7.4	86	**34**	9740	6.2	86
35.94		**61**	8670	9.7	87	**47**	9380	8.2	87	**39**	9740	7.0	86
32.38		**68**	8500	10.5	88	**53**	9200	8.9	87	**43**	9650	7.6	87
28.41		**77**	8140	11.4	88	**60**	8760	9.5	87	**49**	9290	8.3	87
25.07		**88**	7700	12.2	88	**68**	8500	10.5	88	**56**	9030	9.1	87
22.22		**99**	6990	12.5	88	**77**	8140	11.3	88	**63**	8670	9.9	87
18.97		**116**	6020	12.6	88	**90**	7610	12.3	88	**74**	8230	11.0	88
22.89		**96**	6280	10.6	91	**74**	6240	8.2	90	**61**	6240	6.7	90
20.99		**105**	6280	11.5	91	**81**	6240	8.9	91	**67**	6240	7.4	90
18.42		**119**	6370	13.3	91	**92**	6280	10.2	91	**76**	6240	8.3	90
17.45		**126**	6370	13.9	91	**97**	6280	10.7	91	**80**	6280	8.9	91
15.28		**144**	6370	16.0	92	**111**	6370	12.3	91	**92**	6280	10.1	91
13.76	34/6	**160**	6420	17.7	92	**124**	6370	13.7	91	**102**	6280	11.1	91
12.07		**182**	5750	18.1	92	**141**	6420	15.7	92	**116**	6370	12.9	91
10.65		**207**	5130	18.2	92	**160**	6420	17.7	92	**131**	6370	14.5	92
9.44		**233**	4600	18.5	92	**180**	5800	18.0	92	**148**	6420	16.5	92
8.06		**273**	3940	18.5	92	**211**	5090	18.5	92	**174**	6020	18.1	92

All values reflect mechanical limits. Shaded area indicates additional thermal limitations where P_{emax} =12.3 HP for continuous use.

21933480/EN-US – 04/2018

1100 – 700 rpm

S77

i ratio	Worm ratio/ # starts	n_e = 1100 rpm				n_e = 900 rpm				n_e = 700 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
256.47		**4.3**	11240	1.2	64	**3.5**	11240	1.0	63	**2.7**	11240	0.80	61
225.26		**4.9**	11240	1.3	65	**4.0**	11240	1.1	63	**3.1**	11240	0.90	62
214.00		**5.1**	11240	1.3	65	**4.2**	11240	1.2	64	**3.3**	11240	0.94	62
189.09		**5.8**	11240	1.6	66	**4.8**	11240	1.3	65	**3.7**	11240	1.0	63
161.60		**6.8**	11240	1.7	67	**5.6**	11240	1.5	66	**4.3**	11240	1.2	64
148.15		**7.4**	11240	2.0	68	**6.1**	11240	1.6	66	**4.7**	11240	1.3	65
130.00	40/1	**8.5**	11150	2.1	69	**6.9**	11240	1.9	67	**5.4**	11240	1.5	66
123.20		**8.9**	11060	2.3	69	**7.3**	11240	1.9	68	**5.7**	11240	1.5	66
107.83		**10**	10800	2.5	70	**8.3**	11150	2.1	69	**6.5**	11240	1.7	67
97.14		**11**	10620	2.7	70	**9.3**	11060	2.4	69	**7.2**	11240	1.9	68
85.22		**13**	10350	3.0	71	**11**	10800	2.5	70	**8.2**	11240	2.1	69
75.20		**15**	10090	3.2	72	**12**	10530	2.8	71	**9.3**	11060	2.4	69
66.67		**16**	9820	3.5	72	**13**	10270	3.1	71	**10**	10800	2.5	70
56.92		**19**	9380	3.9	73	**16**	9910	3.5	72	**12**	10530	3.0	71
75.09		**15**	9910	2.8	83	**12**	10000	2.3	82	**9.3**	10350	1.9	81
71.33		**15**	9910	3.0	83	**13**	10000	2.4	82	**9.8**	9910	1.9	81
63.03		**17**	9910	3.4	83	**14**	9910	2.7	82	**11**	10000	2.1	81
53.87		**20**	9910	3.9	84	**17**	9910	3.2	83	**13**	9910	2.5	82
49.38		**22**	9910	4.2	84	**18**	9910	3.5	83	**14**	9910	2.7	82
43.33		**25**	10000	4.7	85	**21**	9910	3.9	84	**16**	9910	3.1	83
41.07	40/3	**27**	10000	5.0	85	**22**	9910	4.2	84	**17**	9910	3.2	83
35.94		**31**	10180	5.8	85	**25**	10000	4.7	85	**19**	9910	3.6	84
32.38		**34**	10000	6.3	86	**28**	10000	5.2	85	**22**	9910	4.0	84
28.41		**39**	9820	7.0	86	**32**	10180	6.0	86	**25**	10000	4.6	85
25.07		**44**	9560	7.6	87	**36**	9910	6.6	86	**28**	10000	5.2	85
22.22		**50**	9290	8.4	87	**41**	9740	7.2	86	**32**	10180	5.9	86
18.97		**58**	8940	9.4	87	**47**	9380	8.2	87	**37**	9910	6.7	86
22.89		**48**	6150	5.2	89	**39**	6150	4.3	89	**31**	6240	3.5	88
20.99		**52**	6240	5.8	90	**43**	6150	4.7	89	**33**	6240	3.8	88
18.42		**60**	6200	6.6	90	**49**	6200	5.4	89	**38**	6200	4.2	89
17.45		**63**	6200	6.8	90	**52**	6200	5.6	90	**40**	6200	4.4	89
15.28	34/6	**72**	6280	7.9	90	**59**	6200	6.4	90	**46**	6200	5.1	89
13.76		**80**	6280	8.9	91	**65**	6200	7.1	90	**51**	6200	5.6	90
12.07		**91**	6280	10.1	91	**75**	6280	8.2	90	**58**	6200	6.3	90
10.65		**103**	6330	11.4	91	**85**	6280	9.3	91	**66**	6280	7.2	90
9.44		**117**	6370	12.9	91	**95**	6330	10.5	91	**74**	6280	8.2	90
8.06		**136**	6420	15.2	92	**112**	6370	12.3	91	**87**	6280	9.5	91

All values reflect mechanical limits. Shaded area indicates additional thermal limitations where P_{emax} =12.3 HP for continuous use.

21933480/EN-US – 04/2018

500 – 10 rpm

S77

i ratio	Worm ratio/ # starts	n_e = 500 rpm				n_e = 250 rpm				n_e = 10 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
256.47		**1.9**	11240	0.59	59	**0.97**	11240	0.31	56	**0.04**	11240	0.00	54
225.26		**2.2**	11240	0.66	60	**1.1**	11240	0.35	56	**0.04**	11240	0.00	55
214.00		**2.3**	11240	0.70	60	**1.2**	11240	0.38	56	**0.05**	11240	0.00	55
189.09		**2.6**	11240	0.78	61	**1.3**	11240	0.42	57	**0.05**	11240	0.00	55
161.60		**3.1**	11240	0.90	62	**1.5**	11240	0.48	58	**0.06**	11240	0.00	55
148.15		**3.4**	11240	0.97	62	**1.7**	11240	0.52	58	**0.07**	11240	0.00	55
130.00	40/1	**3.8**	11240	1.1	63	**1.9**	11240	0.58	59	**0.08**	11240	0.00	55
123.20		**4.1**	11240	1.1	64	**2.0**	11240	0.62	59	**0.08**	11240	0.00	55
107.83		**4.6**	11240	1.3	65	**2.3**	11240	0.68	60	**0.09**	11240	0.00	56
97.14		**5.1**	11240	1.3	65	**2.6**	11240	0.75	61	**0.10**	11240	0.00	56
85.22		**5.9**	11240	1.6	66	**2.9**	11240	0.84	62	**0.12**	11240	0.00	56
75.20		**6.6**	11240	1.7	67	**3.3**	11240	0.95	62	**0.13**	11240	0.00	56
66.67		**7.5**	11240	2.0	68	**3.7**	11240	1.1	63	**0.15**	11240	0.00	56
56.92		**8.8**	11150	2.3	69	**4.4**	11240	1.2	64	**0.18**	11240	0.00	56
75.09		**6.7**	10270	1.3	79	**3.3**	9910	0.68	76	**0.13**	9910	0.00	75
71.33		**7.0**	9820	1.3	79	**3.5**	9380	0.68	77	**0.14**	9380	0.00	75
63.03		**7.9**	10890	1.7	80	**4.0**	10620	0.87	77	**0.16**	10620	0.00	76
53.87		**9.3**	10440	1.9	81	**4.6**	10970	1.0	78	**0.19**	10970	0.00	76
49.38		**10**	10270	2.0	81	**5.1**	10970	1.1	78	**0.20**	10970	0.00	76
43.33		**12**	9910	2.3	82	**5.8**	10970	1.3	79	**0.23**	10970	0.00	76
41.07	40/3	**12**	9910	2.3	82	**6.1**	10970	1.3	79	**0.24**	10970	0.00	76
35.94		**14**	9910	2.7	82	**7.0**	10970	1.5	79	**0.28**	10970	0.00	76
32.38		**15**	9910	3.0	83	**7.7**	10970	1.7	80	**0.31**	10970	0.07	76
28.41		**18**	9910	3.4	83	**8.8**	10530	1.9	80	**0.35**	10530	0.08	76
25.07		**20**	9910	3.8	84	**10**	10350	2.0	81	**0.40**	10350	0.08	76
22.22		**23**	10000	4.3	84	**11**	10000	2.1	81	**0.45**	10000	0.09	76
18.97		**26**	10000	5.0	85	**13**	9910	2.5	82	**0.53**	9910	0.11	76
22.89		**22**	6110	2.4	87	**11**	5970	1.2	85	**0.44**	5970	0.00	83
20.99		**24**	6420	2.8	87	**12**	6550	1.5	85	**0.48**	6550	0.00	83
18.42		**27**	6240	3.1	88	**14**	7350	1.9	86	**0.54**	7350	0.08	83
17.45		**29**	6240	3.2	88	**14**	7170	1.9	86	**0.57**	7170	0.08	83
15.28		**33**	6240	3.6	88	**16**	6950	2.1	86	**0.65**	6950	0.08	83
13.76	34/6	**36**	6150	4.0	89	**18**	6810	2.3	87	**0.73**	6810	0.09	83
12.07		**41**	6150	4.6	89	**21**	6640	2.5	87	**0.83**	6640	0.11	83
10.65		**47**	6150	5.1	89	**23**	6420	2.7	87	**0.94**	6420	0.12	83
9.44		**53**	6240	5.9	90	**26**	6240	3.0	88	**1.1**	6240	0.12	83
8.06		**62**	6240	6.8	90	**31**	6240	3.5	88	**1.2**	6240	0.15	83

21933480/EN-US – 04/2018

11.10 Mechanical ratings S. SF. SA. SAF87

3400 – 2800 rpm

S87

i ratio	Worm ratio/ # starts	n_e = 3400 rpm				n_e = 3200 rpm				n_e = 2800 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
288.00		**12**	17970	4.6	74	**11**	18320	4.4	73	**9.7**	18320	3.9	73
258.18		**13**	17610	5.0	74	**12**	17790	4.7	74	**11**	18320	4.3	73
222.40		**15**	16900	5.5	75	**14**	17260	5.4	74	**13**	17790	4.8	74
202.96		**17**	16370	5.8	75	**16**	16730	5.6	75	**14**	17430	5.1	74
180.00		**19**	15930	6.3	75	**18**	16200	6.0	75	**16**	16900	5.6	75
151.30		**22**	14960	7.1	75	**21**	15310	6.8	75	**19**	15930	6.2	75
139.05	40/1	**24**	14430	7.4	76	**23**	14870	7.2	76	**20**	15580	6.6	75
123.48		**28**	13890	8.0	76	**26**	14160	7.6	76	**23**	14960	7.1	76
110.40		**31**	12660	8.2	76	**29**	13630	8.3	76	**25**	14340	7.6	76
99.26		**34**	11150	8.0	75	**32**	12210	8.3	76	**28**	13720	8.0	76
86.15		**39**	9120	7.8	74	**37**	10180	8.0	75	**33**	12300	8.3	76
77.14		**44**	7350	7.1	72	**41**	8580	7.6	74	**36**	10800	8.2	76
64.00		**53**	4430	5.8	65	**50**	5490	6.3	68	**44**	8500	7.9	75
91.20		**37**	13010	8.9	88	**35**	13010	8.3	87	**31**	13010	7.2	87
81.76		**42**	13010	9.8	88	**39**	13010	9.3	88	**34**	13010	8.0	87
70.43		**48**	13010	11.3	88	**45**	13010	10.6	88	**40**	13010	9.4	88
64.27		**53**	13010	12.3	88	**50**	13010	11.7	88	**44**	13010	10.2	88
57.00		**60**	13010	13.9	88	**56**	13010	13.1	88	**49**	13010	11.5	88
47.91		**71**	13010	16.5	89	**67**	13010	15.6	89	**58**	13010	13.7	88
44.03	38/3	**77**	13010	18.0	89	**73**	13010	16.9	89	**64**	13010	14.8	89
39.10		**87**	11510	17.8	89	**82**	12390	18.1	89	**72**	13010	16.6	89
34.96		**97**	10090	17.6	89	**92**	10970	18.0	89	**80**	12740	18.2	89
31.43		**108**	8850	17.2	88	**102**	9650	17.6	89	**89**	11420	18.1	89
27.28		**125**	7170	16.2	88	**117**	8050	17.0	88	**103**	9820	18.0	89
24.43		**139**	5840	14.9	87	**131**	6860	16.2	88	**115**	8500	17.4	89
20.27		**168**	3500	11.3	82	**158**	4340	12.9	84	**138**	6680	16.6	88
25.50		**133**	8760	20	92	**125**	8760	18.9	92	**110**	8760	16.6	92
21.43		**159**	8760	24	92	**149**	8760	23	92	**131**	8760	19.7	92
19.70		**173**	8760	25	92	**162**	8760	25	92	**142**	8760	21	92
17.49		**194**	7700	25	92	**183**	8230	25	92	**160**	8760	24	92
15.64		**217**	6730	25	92	**205**	7350	25	92	**179**	8500	25	92
14.06	34/6	**242**	5840	24	92	**228**	6420	25	92	**199**	7610	25	92
12.21		**278**	4780	23	91	**262**	5350	24	92	**229**	6460	25	92
10.93		**311**	3890	21	90	**293**	4510	23	91	**256**	5710	25	92
9.07		**375**	2260	15.4	87	**353**	2880	18.1	89	**309**	4430	24	92
7.88		**431**	1770	14.1	86	**406**	2040	15.2	87	**355**	3320	21	90

All values reflect mechanical limits. Shaded area indicates additional thermal limitations where P_{emax} =20 HP for continuous use.

21933480/EN-US – 04/2018

2200 – 1400 rpm

S87

i ratio	Worm ratio/ # starts	n_e = 2200 rpm				n_e = 1700 rpm				n_e = 1400 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
288.00		**7.6**	19560	3.4	71	**5.9**	20180	2.7	70	**4.9**	20180	2.3	69
258.18		**8.5**	19200	3.6	72	**6.6**	20000	3.0	71	**5.4**	20180	2.5	69
222.40		**9.9**	18850	4.0	73	**7.6**	19560	3.4	71	**6.3**	20180	2.8	70
202.96		**11**	18410	4.3	73	**8.4**	19380	3.6	72	**6.9**	20000	3.1	71
180.00		**12**	17880	4.7	74	**9.4**	18850	3.9	73	**7.8**	19560	3.4	72
151.30		**15**	17170	5.4	75	**11**	18230	4.4	74	**9.3**	19030	3.9	73
139.05	40/1	**16**	16640	5.6	75	**12**	17880	4.7	74	**10**	18590	4.0	73
123.48		**18**	16110	6.0	75	**14**	17350	5.1	74	**11**	18230	4.4	74
110.40		**20**	15660	6.6	76	**15**	16820	5.5	75	**13**	17700	4.8	74
99.26		**22**	15050	7.0	76	**17**	16280	5.9	75	**14**	17350	5.2	75
86.15		**26**	14340	7.6	76	**20**	15660	6.4	76	**16**	16640	5.8	75
77.14		**29**	13630	8.0	76	**22**	15050	7.0	76	**18**	16110	6.2	76
64.00		**34**	12040	8.6	77	**27**	13980	7.6	77	**22**	15050	6.8	76
91.20		**24**	13630	6.0	87	**19**	13450	4.7	86	**15**	13360	3.9	85
81.76		**27**	14160	7.0	87	**21**	14160	5.4	86	**17**	14160	4.6	86
70.43		**31**	14160	8.0	87	**24**	14160	6.3	87	**20**	14160	5.2	86
64.27		**34**	14160	8.9	88	**26**	14160	6.8	87	**22**	14160	5.6	86
57.00		**39**	14160	9.9	88	**30**	14160	7.6	87	**25**	14160	6.4	87
47.91		**46**	14160	11.7	88	**35**	14160	9.1	88	**29**	14160	7.5	87
44.03	38/3	**50**	14160	12.7	88	**39**	14160	9.9	88	**32**	14160	8.2	87
39.10		**56**	14160	14.2	89	**43**	14160	11.1	88	**36**	14160	9.1	88
34.96		**63**	14160	16.0	89	**49**	14160	12.3	88	**40**	14160	10.2	88
31.43		**70**	14160	17.7	89	**54**	14160	13.7	89	**45**	14160	11.4	88
27.28		**81**	12830	18.4	89	**62**	14160	15.7	89	**51**	14160	13.0	89
24.43		**90**	11590	18.5	89	**70**	14160	17.6	89	**57**	14160	14.5	89
20.27		**109**	9560	18.5	89	**84**	12570	18.8	89	**69**	14160	17.4	89
25.50		**86**	10970	16.4	92	**67**	10970	12.7	91	**55**	10970	10.5	91
21.43		**103**	10970	19.4	92	**79**	10970	15.0	92	**65**	10970	12.5	91
19.70		**112**	10970	21	92	**86**	10970	16.4	92	**71**	10970	13.5	91
17.49		**126**	10970	24	92	**97**	10970	18.4	92	**80**	10970	15.2	92
15.64	34/6	**141**	10890	27	92	**109**	10970	21	92	**90**	10970	17.0	92
14.06		**156**	9820	27	92	**121**	10970	23	92	**100**	10970	18.9	92
12.21		**180**	8580	27	93	**139**	10970	27	92	**115**	10970	22	92
10.93		**201**	7700	27	93	**156**	10000	27	93	**128**	10970	24	92
9.07		**243**	6370	27	92	**187**	8410	27	93	**154**	10090	27	93
7.88		**279**	5350	25	92	**216**	7350	27	93	**178**	8940	27	93

All values reflect mechanical limits. Shaded area indicates additional thermal limitations where P_{emax} =20 HP for continuous use.

21933480/EN-US – 04/2018

1100 – 700 rpm

S87

i ratio	Worm ratio/ # starts	n_e = 1100 rpm				n_e = 900 rpm				n_e = 700 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
288.00		**3.8**	21240	1.9	67	**3.1**	21680	1.6	66	**2.4**	21950	1.3	64
258.18		**4.3**	21060	2.1	68	**3.5**	21510	1.7	67	**2.7**	21860	1.5	65
222.40		**4.9**	20800	2.4	69	**4.0**	21240	2.0	68	**3.1**	21680	1.6	66
202.96		**5.4**	20620	2.5	70	**4.4**	21060	2.1	68	**3.4**	21510	1.7	67
180.00		**6.1**	20180	2.8	70	**5.0**	20800	2.4	69	**3.9**	21240	1.9	68
151.30		**7.3**	19820	3.2	71	**5.9**	20440	2.7	70	**4.6**	20800	2.3	69
139.05	40/1	**7.9**	19380	3.4	72	**6.5**	20000	3.0	71	**5.0**	20620	2.4	69
123.48		**8.9**	19030	3.8	73	**7.3**	19820	3.2	71	**5.7**	20440	2.7	70
110.40		**10**	18670	4.0	73	**8.2**	19380	3.5	72	**6.3**	20180	2.8	71
99.26		**11**	18320	4.4	74	**9.1**	19030	3.8	73	**7.1**	19820	3.1	71
86.15		**13**	17700	4.8	74	**10**	18500	4.2	73	**8.1**	19380	3.5	72
77.14		**14**	17170	5.2	75	**12**	18050	4.6	74	**9.1**	19030	3.8	73
64.00		**17**	16280	5.9	76	**14**	17350	5.2	75	**11**	18320	4.3	74
91.20		**12**	13190	3.0	84	**9.9**	13100	2.4	83	**7.7**	12920	1.9	82
81.76		**13**	15580	3.9	85	**11**	15580	3.2	84	**8.6**	15580	2.5	83
70.43		**16**	15580	4.6	85	**13**	15580	3.8	85	**9.9**	15580	3.0	83
64.27		**17**	15580	5.0	86	**14**	15580	4.0	85	**11**	15580	3.2	84
57.00		**19**	15580	5.5	86	**16**	15580	4.6	85	**12**	15580	3.6	84
47.91		**23**	15580	6.6	87	**19**	15580	5.4	86	**15**	15580	4.3	85
44.03	38/3	**25**	15580	7.1	87	**20**	15580	5.9	86	**16**	15580	4.6	85
39.10		**28**	15580	8.0	87	**23**	15580	6.6	87	**18**	15580	5.2	86
34.96		**31**	15580	8.9	88	**26**	15580	7.4	87	**20**	15580	5.8	86
31.43		**35**	15580	9.9	88	**29**	15580	8.2	87	**22**	15580	6.3	87
27.28		**40**	15580	11.3	88	**33**	15580	9.3	88	**26**	15580	7.2	87
24.43		**45**	15580	12.6	88	**37**	15580	10.3	88	**29**	15580	8.0	87
20.27		**54**	15580	15.2	89	**44**	15580	12.5	88	**35**	15580	9.7	88
25.50		**43**	11860	9.0	90	**35**	11860	7.4	90	**27**	11860	5.8	89
21.43		**51**	11860	10.6	91	**42**	11860	8.7	90	**33**	11860	6.8	90
19.70		**56**	11860	11.5	91	**46**	11860	9.5	91	**36**	11860	7.4	90
17.49		**63**	11860	13.0	91	**51**	11860	10.6	91	**40**	11860	8.3	90
15.64	34/6	**70**	11860	14.5	92	**58**	11860	11.9	91	**45**	11860	9.3	91
14.06		**78**	11860	16.1	92	**64**	11860	13.1	91	**50**	11860	10.3	91
12.21		**90**	11860	18.5	92	**74**	11860	15.2	92	**57**	11860	11.8	91
10.93		**101**	11860	21	92	**82**	11860	16.9	92	**64**	11860	13.1	91
9.07		**121**	11860	25	92	**99**	11860	20	92	**77**	11860	15.8	92
7.88		**140**	11150	27	93	**114**	11860	23	92	**89**	11860	18.2	92

All values reflect mechanical limits. Shaded area indicates additional thermal limitations where P_{emax} =20 HP for continuous use.

21933480/EN-US – 04/2018

500 – 10 rpm

S87

i ratio	Worm ratio/ # starts	n_e = 500 rpm				n_e = 250 rpm				n_e = 10 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
288.00		**1.7**	22130	0.98	62	**0.87**	22130	0.51	59	**0.03**	22130	0.00	58
258.18		**1.9**	22130	1.1	63	**0.97**	22130	0.58	59	**0.04**	22130	0.00	58
222.40		**2.2**	22130	1.2	64	**1.1**	22130	0.66	60	**0.04**	22130	0.00	59
202.96		**2.5**	21950	1.3	64	**1.2**	22130	0.71	61	**0.05**	22130	0.00	59
180.00		**2.8**	21950	1.5	65	**1.4**	22130	0.80	61	**0.06**	22130	0.00	59
151.30		**3.3**	21510	1.7	67	**1.7**	22130	0.94	62	**0.07**	22130	0.00	59
139.05	40/1	**3.6**	21510	1.9	67	**1.8**	22130	1.0	63	**0.07**	22130	0.00	59
123.48		**4.0**	21240	2.0	68	**2.0**	22130	1.1	63	**0.08**	22130	0.00	59
110.40		**4.5**	21060	2.1	69	**2.3**	22130	1.2	64	**0.09**	22130	0.00	59
99.26		**5.0**	20620	2.4	69	**2.5**	21860	1.3	65	**0.10**	21860	0.00	59
86.15		**5.8**	20440	2.7	70	**2.9**	21680	1.5	66	**0.12**	21680	0.07	59
77.14		**6.5**	20000	3.0	71	**3.2**	21510	1.6	66	**0.13**	21510	0.08	59
64.00		**7.8**	19650	3.4	72	**3.9**	21240	2.0	68	**0.16**	21240	0.09	59
91.20		**5.5**	12830	1.3	81	**2.7**	12300	0.68	79	**0.11**	12300	0.00	78
81.76		**6.1**	17350	2.0	82	**3.1**	16640	1.0	79	**0.12**	16640	0.00	78
70.43		**7.1**	17520	2.4	82	**3.5**	17520	1.2	80	**0.14**	17520	0.00	79
64.27		**7.8**	17520	2.7	83	**3.9**	17520	1.3	80	**0.16**	17520	0.00	79
57.00		**8.8**	17520	3.0	83	**4.4**	17520	1.5	80	**0.18**	17520	0.00	79
47.91		**10**	17520	3.5	84	**5.2**	17520	1.7	81	**0.21**	17520	0.08	79
44.03	38/3	**11**	17520	3.8	84	**5.7**	17520	1.9	81	**0.23**	17520	0.08	79
39.10		**13**	17520	4.2	85	**6.4**	17520	2.1	82	**0.26**	17520	0.09	79
34.96		**14**	17520	4.7	85	**7.2**	17520	2.4	82	**0.29**	17520	0.11	79
31.43		**16**	17520	5.2	85	**8.0**	17520	2.7	83	**0.32**	17520	0.11	79
27.28		**18**	17520	5.9	86	**9.2**	17520	3.1	83	**0.37**	17520	0.13	79
24.43		**20**	17520	6.6	86	**10**	17520	3.4	84	**0.41**	17520	0.15	79
20.27		**25**	17520	7.9	87	**12**	17520	4.0	85	**0.49**	17520	0.17	79
25.50		**20**	12660	4.4	88	**9.8**	12300	2.1	87	**0.39**	12300	0.09	85
21.43		**23**	12570	5.2	89	**12**	13360	2.8	87	**0.47**	13360	0.12	85
19.70		**25**	12480	5.6	89	**13**	13890	3.2	87	**0.51**	13890	0.13	85
17.49		**29**	12300	6.2	89	**14**	13890	3.6	88	**0.57**	13890	0.15	85
15.64	34/6	**32**	12300	7.0	90	**16**	13630	3.9	88	**0.64**	13630	0.16	85
14.06		**36**	12300	7.6	90	**18**	13360	4.3	88	**0.71**	13360	0.17	85
12.21		**41**	12300	8.9	90	**20**	12920	4.7	89	**0.82**	12920	0.20	85
10.93		**46**	12300	9.8	91	**23**	12660	5.2	89	**0.91**	12660	0.21	85
9.07		**55**	12480	11.9	91	**28**	12300	6.0	89	**1.1**	12300	0.25	85
7.88		**63**	12480	13.8	91	**32**	12300	6.8	90	**1.3**	12300	0.30	85

21933480/EN-US – 04/2018

11.11 Mechanical ratings S. SF. SA. SAF97

3400 – 2800 rpm

S97

i ratio	Worm ratio/ # starts	n_e = 3400 rpm				n_e = 3200 rpm				n_e = 2800 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
286.40		**12**	31150	7.8	76	**11**	31770	7.5	76	**9.8**	32750	6.7	75
262.22		**13**	30530	8.3	76	**12**	31150	7.9	76	**11**	32130	7.2	75
231.67		**15**	29290	9.0	76	**14**	29910	8.6	76	**12**	31150	7.9	76
196.52		**17**	27610	9.9	77	**16**	28410	9.7	76	**14**	29650	8.9	76
180.95		**19**	26820	10.5	77	**18**	27610	10.1	77	**15**	28760	9.3	76
161.74		**21**	25750	11.1	77	**20**	26280	10.7	77	**17**	27610	9.9	77
145.60	40/1	**23**	24430	11.8	77	**22**	25220	11.4	77	**19**	26550	10.6	77
131.85		**26**	23540	12.6	77	**24**	24250	12.2	77	**21**	25490	11.1	77
116.92		**29**	20530	12.5	76	**27**	22570	12.7	77	**24**	24250	11.9	77
105.71		**32**	17520	11.9	75	**30**	19560	12.3	76	**26**	23280	12.7	77
89.60		**38**	11330	9.8	70	**36**	14780	11.4	74	**31**	19560	12.6	77
78.26		**43**	8140	8.6	65	**41**	9200	9.0	67	**36**	15660	11.8	75
65.45		**52**	5970	7.9	63	**49**	6860	8.3	64	**43**	9120	9.1	68
80.85		**42**	27880	21	89	**40**	27880	19.6	89	**35**	27880	17.2	89
71.43		**48**	27350	23	90	**45**	27880	22	89	**39**	27880	19.4	89
60.59		**56**	25750	25	90	**53**	26280	25	90	**46**	27610	23	90
55.79		**61**	24960	27	90	**57**	25490	25	90	**50**	26820	24	90
49.87		**68**	23980	30	90	**64**	24430	28	90	**56**	25750	25	90
44.89	37/3	**76**	21510	28	90	**71**	23280	30	90	**62**	24690	27	90
40.65		**84**	19200	28	90	**79**	20800	30	90	**69**	23720	28	90
36.05		**94**	16200	27	89	**89**	17880	28	89	**78**	21240	30	90
32.60		**104**	13810	25	89	**98**	15580	27	89	**86**	19030	30	90
27.63		**123**	8940	20	86	**116**	11680	24	88	**101**	15400	28	89
24.13		**141**	6420	17.3	83	**133**	7260	18.2	84	**116**	12300	25	88
26.39		**129**	15490	34	93	**121**	15490	32	93	**106**	15490	28	93
23.59		**144**	15490	38	93	**136**	15490	36	93	**119**	15490	31	93
21.23		**160**	15490	43	93	**151**	15490	40	93	**132**	15490	35	93
19.23		**177**	13720	42	93	**166**	14870	42	93	**146**	15490	39	93
17.05	35/6	**199**	11680	40	93	**188**	12830	42	93	**164**	15310	43	93
15.42		**220**	9820	38	92	**208**	11150	40	93	**182**	13630	42	93
13.07		**260**	6420	30	90	**245**	8320	35	92	**214**	10970	40	93
11.41		**298**	4560	25	88	**280**	5180	25	89	**245**	8850	38	92
9.55		**356**	3320	22	87	**335**	3850	23	87	**293**	5130	27	89
8.26		**412**	2570	19.7	85	**387**	2960	21	86	**339**	4030	25	88

All values reflect mechanical limits. Shaded area indicates additional thermal limitations where P_{emax} =30 HP for continuous use.

21933480/EN-US – 04/2018

2200 – 1400 rpm

S97

i ratio	Worm ratio/ # starts	n_e = 2200 rpm				n_e = 1700 rpm				n_e = 1400 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
286.40		**7.7**	34690	5.6	74	**5.9**	35400	4.6	73	**4.9**	35400	3.9	72
262.22		**8.4**	33980	6.0	75	**6.5**	35400	5.0	73	**5.3**	35400	4.2	72
231.67		**9.5**	33360	6.7	75	**7.3**	35050	5.5	74	**6.0**	35400	4.7	73
196.52		**11**	31680	7.4	76	**8.7**	33980	6.3	75	**7.1**	35400	5.4	74
180.95		**12**	31060	7.9	76	**9.4**	33360	6.6	75	**7.7**	34690	5.8	74
161.74		**14**	30180	8.6	76	**11**	32300	7.1	76	**8.7**	33980	6.3	75
145.60	40/1	**15**	28940	9.1	77	**12**	31420	7.6	76	**9.6**	33010	6.7	75
131.85		**17**	28050	9.7	77	**13**	30440	8.2	76	**11**	32300	7.2	76
116.92		**19**	26730	10.3	77	**15**	29560	8.9	77	**12**	31060	7.8	76
105.71		**21**	25930	11.1	77	**16**	28410	9.4	77	**13**	30440	8.3	76
89.60		**25**	24160	12.2	77	**19**	26730	10.5	77	**16**	28670	9.3	77
78.26		**28**	22480	12.9	78	**22**	25400	11.3	78	**18**	27260	10.1	77
65.45		**34**	18760	13.0	77	**26**	23450	12.3	78	**21**	25670	11.1	78
80.85		**27**	29210	14.2	89	**21**	28940	11.0	88	**17**	28590	9.0	88
71.43		**31**	29210	16.1	89	**24**	29210	12.5	88	**20**	29210	10.3	88
60.59		**36**	29210	18.9	89	**28**	29210	14.6	89	**23**	29210	12.1	88
55.79		**39**	28940	20	89	**30**	29210	15.8	89	**25**	29210	13.1	88
49.87		**44**	28050	22	90	**34**	29210	17.7	89	**28**	29210	14.6	89
44.89	37/3	**49**	26990	23	90	**38**	29210	19.6	89	**31**	29210	16.2	89
40.65		**54**	26110	25	90	**42**	28590	21	90	**34**	29210	17.8	89
36.05		**61**	24870	27	90	**47**	27520	23	90	**39**	29210	20	89
32.60		**67**	23900	28	90	**52**	26370	24	90	**43**	28320	21	90
27.63		**80**	21150	30	90	**62**	24870	27	90	**51**	26640	24	90
24.13		**91**	18230	30	90	**70**	23630	30	90	**58**	25400	25	90
26.39		**83**	22570	32	93	**64**	23010	25	93	**53**	23010	21	92
23.59		**93**	21680	35	93	**72**	23010	28	93	**59**	23010	23	93
21.23		**104**	21060	38	93	**80**	22740	31	93	**66**	23010	25	93
19.23		**114**	20180	39	93	**88**	22130	34	93	**73**	23010	28	93
17.05	35/6	**129**	19200	42	93	**100**	21240	36	93	**82**	22740	32	93
15.42		**143**	18050	44	93	**110**	20360	38	93	**91**	21860	34	93
13.07		**168**	15220	43	93	**130**	19200	43	93	**107**	20620	38	93
11.41		**193**	13100	43	93	**149**	17700	44	93	**123**	19560	40	93
9.55		**230**	10620	42	93	**178**	14780	44	93	**147**	18050	44	94
8.26		**266**	8670	40	93	**206**	12740	44	93	**169**	15660	46	94

All values reflect mechanical limits. Shaded area indicates additional thermal limitations where P_{emax} =30 HP for continuous use.

21933480/EN-US – 04/2018

1100 – 700 rpm

S97

i ratio	Worm ratio/ # starts	n_e = 1100 rpm				n_e = 900 rpm				n_e = 700 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
286.40		**3.8**	37170	3.2	70	**3.1**	37170	2.7	69	**2.4**	37170	2.1	68
262.22		**4.2**	37170	3.5	71	**3.4**	37170	3.0	70	**2.7**	37170	2.3	68
231.67		**4.7**	37170	3.9	72	**3.9**	37170	3.2	70	**3.0**	37170	2.5	69
196.52		**5.6**	36820	4.6	73	**4.6**	37170	3.8	71	**3.6**	37170	3.0	70
180.95		**6.1**	36460	4.8	73	**5.0**	37170	4.0	72	**3.9**	37170	3.2	70
161.74		**6.8**	35670	5.2	74	**5.6**	36820	4.4	73	**4.3**	37170	3.6	71
145.60	40/1	**7.6**	34960	5.6	74	**6.2**	36110	4.8	73	**4.8**	37170	3.9	72
131.85		**8.3**	34340	6.0	75	**6.8**	35670	5.2	74	**5.3**	37170	4.3	72
116.92		**9.4**	33280	6.6	75	**7.7**	34600	5.6	74	**6.0**	36460	4.7	73
105.71		**10**	32300	7.1	76	**8.5**	33980	6.2	75	**6.6**	35670	5.1	74
89.60		**12**	30980	7.9	76	**10**	32660	6.8	76	**7.8**	34600	5.8	75
78.26		**14**	29820	8.7	77	**12**	31680	7.6	76	**8.9**	33630	6.3	75
65.45		**17**	28050	9.7	77	**14**	30090	8.6	77	**11**	32300	7.2	76
80.85		**14**	28590	7.1	87	**11**	28320	5.8	86	**8.7**	28050	4.6	85
71.43		**15**	31860	9.0	87	**13**	31860	7.4	87	**9.8**	31860	5.8	86
60.59		**18**	31860	10.5	88	**15**	31860	8.6	87	**12**	31860	6.7	86
55.79		**20**	31860	11.4	88	**16**	31860	9.4	87	**13**	31860	7.4	87
49.87		**22**	31860	12.6	88	**18**	31860	10.5	88	**14**	31860	8.2	87
44.89	37/3	**25**	31860	13.9	88	**20**	31860	11.5	88	**16**	31860	9.0	87
40.65		**27**	31860	15.4	89	**22**	31860	12.7	88	**17**	31860	9.9	88
36.05		**31**	31240	17.0	89	**25**	31860	14.2	89	**19**	31860	11.1	88
32.60		**34**	30270	18.1	89	**28**	31860	15.7	89	**21**	31860	12.3	88
27.63		**40**	28850	20	90	**33**	30620	17.7	89	**25**	31860	14.5	89
24.13		**46**	27700	22	90	**37**	29380	19.4	89	**29**	31510	16.4	89
26.39		**42**	23450	16.9	92	**34**	23190	13.7	92	**27**	23190	10.7	91
23.59		**47**	23450	18.8	92	**38**	23450	15.4	92	**30**	23190	11.9	91
21.23		**52**	23450	21	92	**42**	23450	17.2	92	**33**	23190	13.3	92
19.23		**57**	23450	23	93	**47**	23450	18.9	92	**36**	23190	14.6	92
17.05		**65**	23630	25	93	**53**	23450	21	92	**41**	23450	16.6	92
15.42	35/6	**71**	23630	28	93	**58**	23450	23	93	**45**	23450	18.4	92
13.07		**84**	22480	32	93	**69**	23630	28	93	**54**	23450	22	92
11.41		**96**	21420	35	93	**79**	22920	31	93	**61**	23450	25	93
9.55		**115**	20180	39	93	**94**	21590	35	93	**73**	23450	30	93
8.26		**133**	18940	43	94	**109**	20530	38	93	**85**	22480	32	93

All values reflect mechanical limits. Shaded area indicates additional thermal limitations where P_{emax} =30 HP for continuous use.

21933480/EN-US – 04/2018

500 – 10 rpm

S97

i ratio	Worm ratio/ # starts	n_e = 500 rpm				n_e = 250 rpm				n_e = 10 rpm			
		n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %	n_a rpm	T_{aMax} lb-in	P_e HP	η %
286.40		**1.7**	37170	1.6	65	**0.87**	37170	0.83	62	**0.03**	37170	0.00	60
262.22		**1.9**	37170	1.7	66	**0.95**	37170	0.91	62	**0.04**	37170	0.00	60
231.67		**2.2**	37170	1.9	67	**1.1**	37170	1.0	63	**0.04**	37170	0.00	60
196.52		**2.5**	37170	2.1	68	**1.3**	37170	1.2	64	**0.05**	37170	0.00	60
180.95		**2.8**	37170	2.4	68	**1.4**	37170	1.3	64	**0.06**	37170	0.00	60
161.74		**3.1**	37170	2.7	69	**1.5**	37170	1.5	65	**0.06**	37170	0.00	60
145.60	40/1	**3.4**	37170	3.0	70	**1.7**	37170	1.6	65	**0.07**	37170	0.07	60
131.85		**3.8**	37170	3.2	70	**1.9**	37170	1.7	66	**0.08**	37170	0.08	60
116.92		**4.3**	37170	3.5	71	**2.1**	37170	1.9	67	**0.09**	37170	0.08	60
105.71		**4.7**	37170	3.9	72	**2.4**	37170	2.0	67	**0.09**	37170	0.09	60
89.60		**5.6**	36820	4.4	73	**2.8**	37170	2.4	69	**0.11**	37170	0.11	60
78.26		**6.4**	36110	5.0	74	**3.2**	37170	2.7	69	**0.13**	37170	0.12	60
65.45		**7.6**	34600	5.6	75	**3.8**	37170	3.2	70	**0.15**	37170	0.15	60
80.85		**6.2**	27520	3.2	84	**3.1**	26640	1.6	82	**0.12**	26640	0.00	80
71.43		**7.0**	37170	4.8	85	**3.5**	36820	2.5	82	**0.14**	36820	0.11	81
60.59		**8.3**	37170	5.8	85	**4.1**	36110	2.8	83	**0.17**	36110	0.12	81
55.79		**9.0**	37170	6.2	86	**4.5**	37170	3.2	83	**0.18**	37170	0.13	81
49.87		**10**	37170	6.8	86	**5.0**	37170	3.5	83	**0.20**	37170	0.15	81
44.89	37/3	**11**	36820	7.5	86	**5.6**	37170	3.9	84	**0.22**	37170	0.16	81
40.65		**12**	36460	8.2	87	**6.2**	37170	4.3	84	**0.25**	37170	0.17	81
36.05		**14**	36110	9.1	87	**6.9**	37170	4.8	85	**0.28**	37170	0.20	81
32.60		**15**	35310	9.8	87	**7.7**	37170	5.4	85	**0.31**	37170	0.23	81
27.63		**18**	34600	11.3	88	**9.0**	37170	6.3	86	**0.36**	37170	0.27	81
24.13		**21**	33630	12.5	88	**10**	37170	7.1	86	**0.41**	37170	0.31	81
26.39		**19**	22920	7.6	90	**9.5**	22480	3.8	89	**0.38**	22480	0.16	87
23.59		**21**	22920	8.4	91	**11**	22480	4.3	89	**0.42**	22480	0.17	87
21.23		**24**	22920	9.4	91	**12**	22740	4.8	89	**0.47**	22740	0.20	87
19.23		**26**	23190	10.5	91	**13**	22740	5.2	89	**0.52**	22740	0.21	87
17.05		**29**	23190	11.8	91	**15**	22740	5.9	90	**0.59**	22740	0.24	87
15.42	35/6	**32**	23190	13.0	92	**16**	22740	6.4	90	**0.65**	22740	0.27	87
13.07		**38**	23450	15.6	92	**19**	22920	7.6	90	**0.77**	22920	0.32	87
11.41		**44**	23450	17.7	92	**22**	22920	8.9	91	**0.88**	22920	0.36	87
9.55		**52**	23450	21	92	**26**	23190	10.6	91	**1.0**	23190	0.44	87
8.26		**61**	23450	24	93	**30**	23190	12.2	91	**1.2**	23190	0.51	87

21933480/EN-US – 04/2018

11.12 S.. DRS/DRN.. Dimensions

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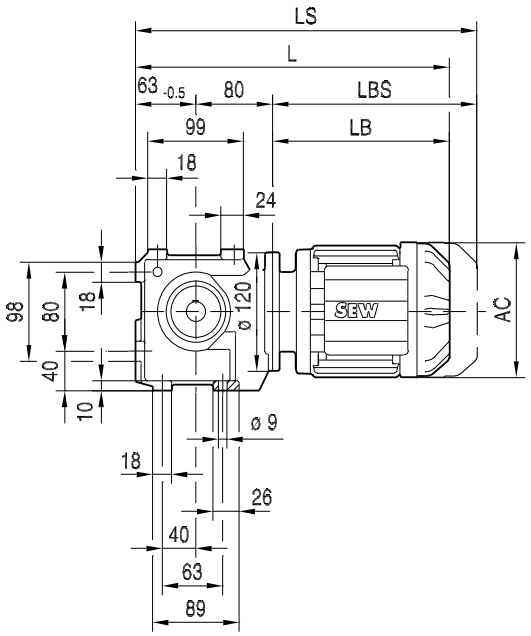
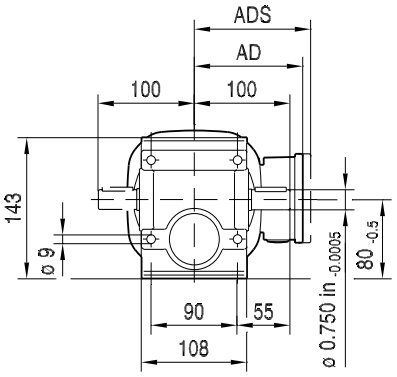
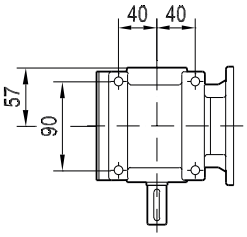
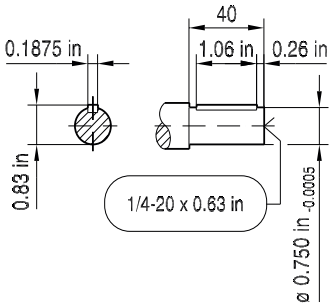
S37..









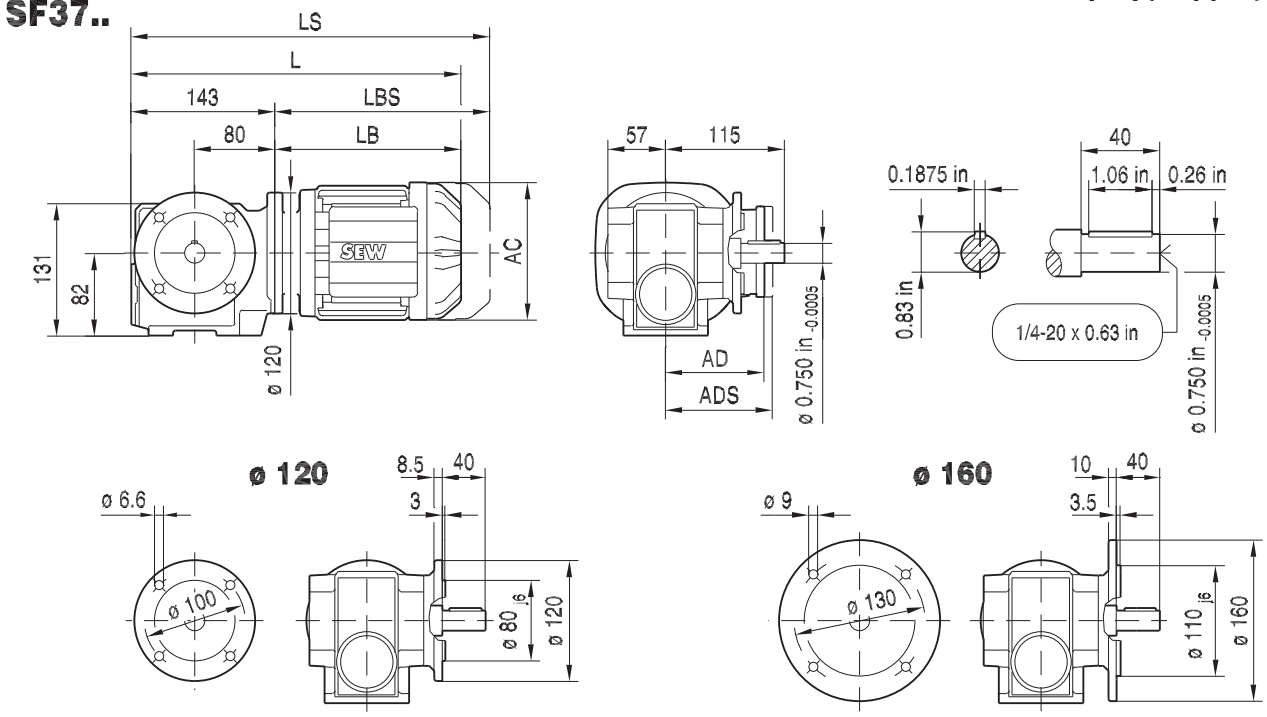
(→ 163)	DR63..	DRS71S	DRS71M	DRN80MS	DRN80M	DRN90S	DRN90L
AC	132	139	139	156	156	179	179
AD	105	119	119	128	128	140	140
ADS	105	129	129	139	139	150	150
L	329	340	365	392	420	421	453
LS	384	408	433	473	501	515	547
LB	191	202	227	254	282	283	315
LBS	246	270	295	335	363	377	409

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 837. For tolerances, see page 163.

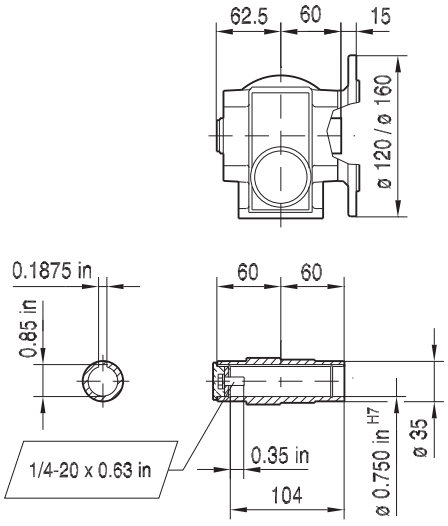
21933480/EN-US – 04/2018

02 094 00 16

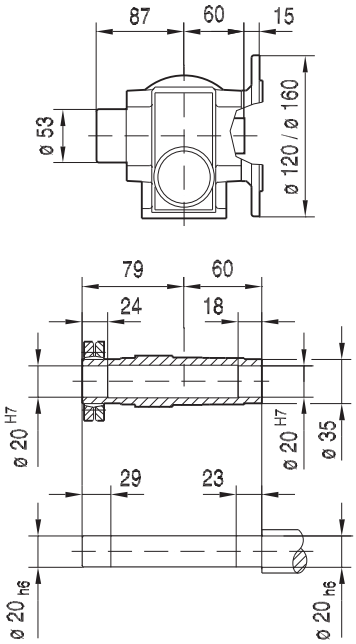
SF37..



SAF37..



SHF37..



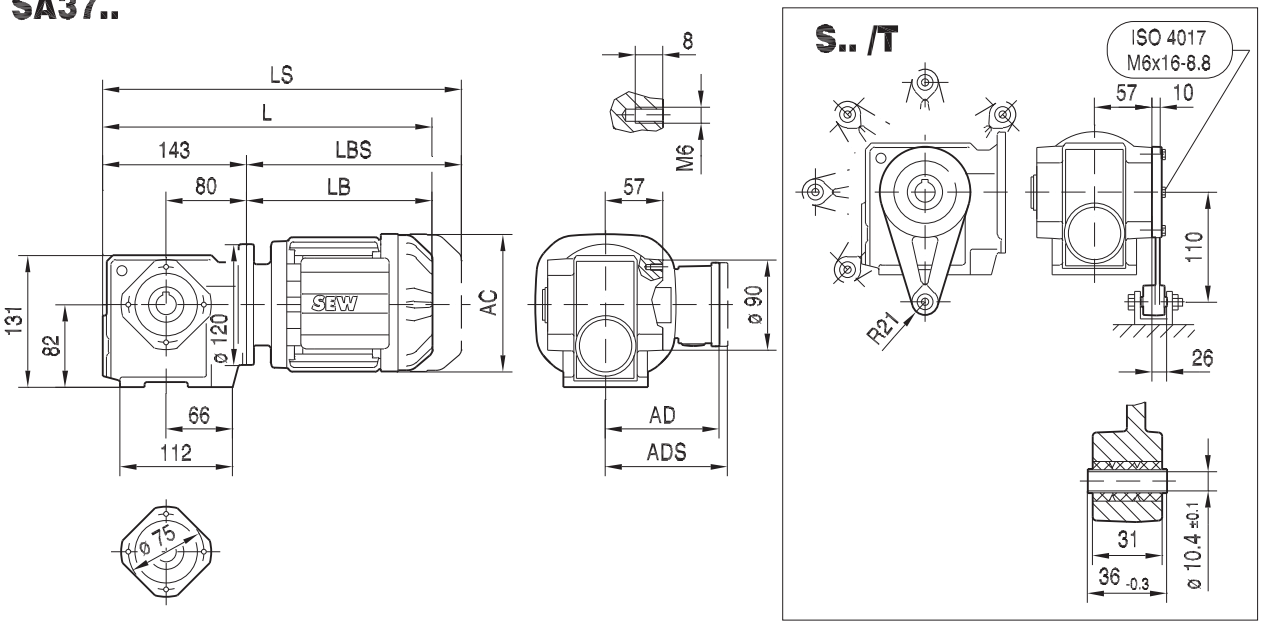
(→ 163)	DR63..	DRS71S	DRS71M	DRN80MS	DRN80M	DRN90S	DRN90L
AC	132	139	139	156	156	179	179
AD	105	119	119	128	128	140	140
ADS	105	129	129	139	139	150	150
L	329	340	365	392	420	421	453
LS	384	408	433	473	501	515	547
LB	191	202	227	254	282	283	315
LBS	246	270	295	335	363	377	409

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 837. For tolerances, see page 163.

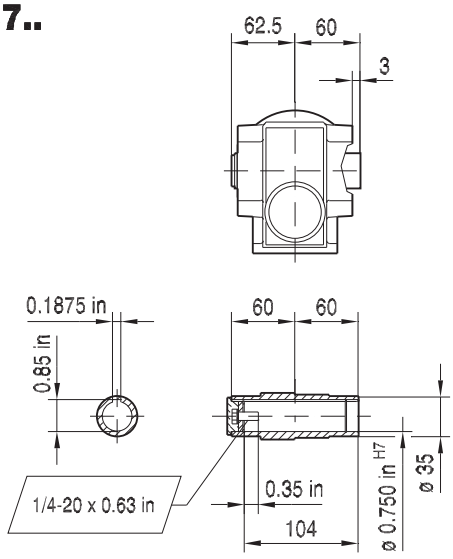
21933480/EN-US – 04/2018

02 095 00 16

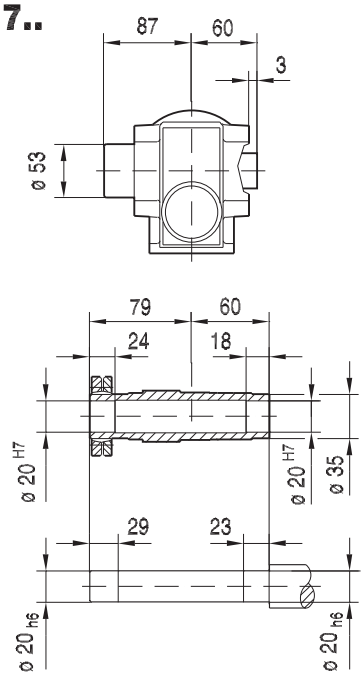
SA37..



SA37..



SH37..



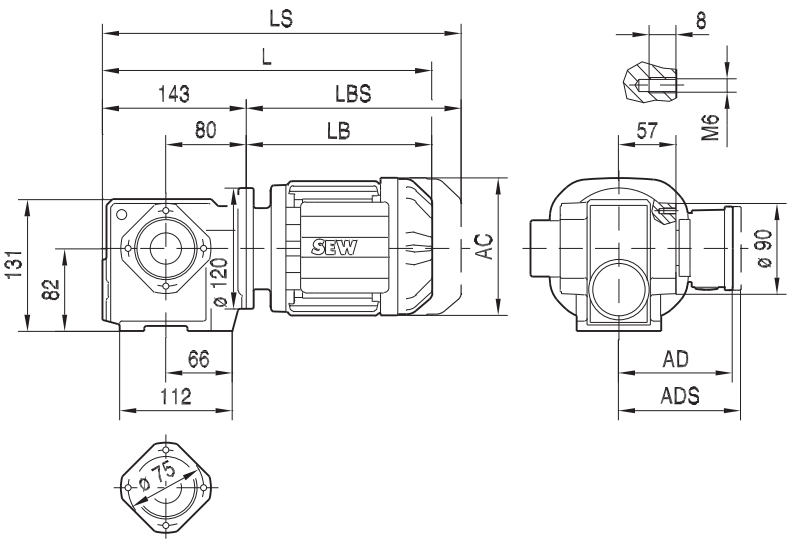
(→ 🗎 163)	DR63..	DRS71S	DRS71M	DRN80MS	DRN80M	DRN90S	DRN90L
AC	132	139	139	156	156	179	179
AD	105	119	119	128	128	140	140
ADS	105	129	129	139	139	150	150
L	329	340	365	392	420	421	453
LS	384	408	433	473	501	515	547
LB	191	202	227	254	282	283	315
LBS	246	270	295	335	363	377	409

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 839. For tolerances, see page 163.

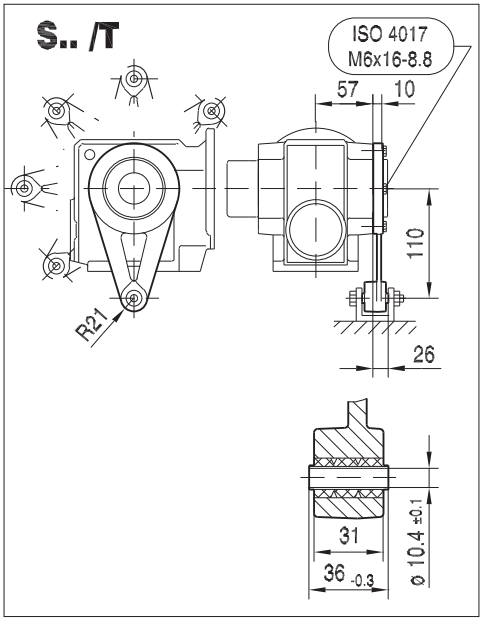
21933480/EN-US – 04/2018

02 096 00 16

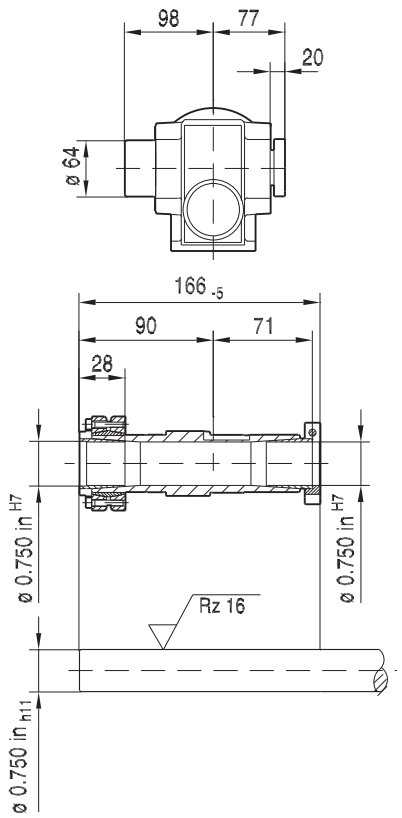
ST37..



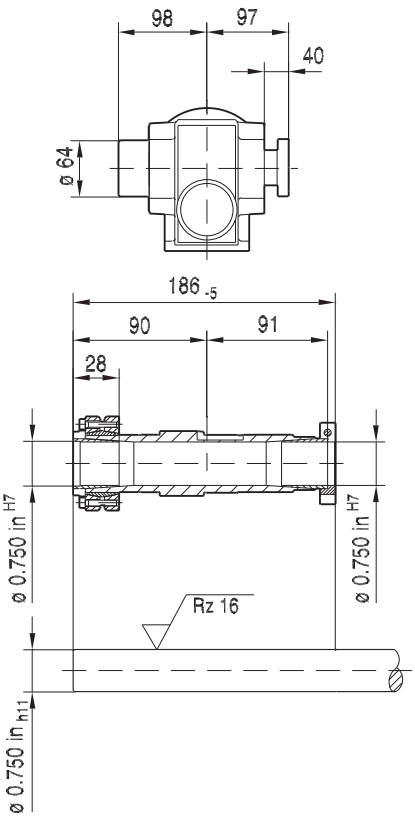
S.. /T



NON-Symmetrical



Symmetrical



(→ 🗎 163)	DR63..	DRS71S	DRS71M	DRN80MS	DRN80M	DRN90S	DRN90L
AC	132	139	139	156	156	179	179
AD	105	119	119	128	128	140	140
ADS	105	129	129	139	139	150	150
L	329	340	365	392	420	421	453
LS	384	408	433	473	501	515	547
LB	191	202	227	254	282	283	315
LBS	246	270	295	335	363	377	409

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 841. For tolerances, see page 163.

21933480/EN-US – 04/2018

STF37..

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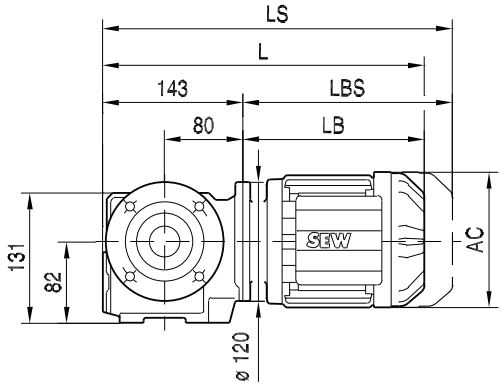

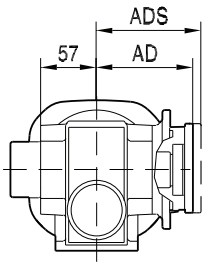

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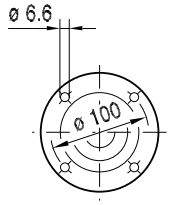
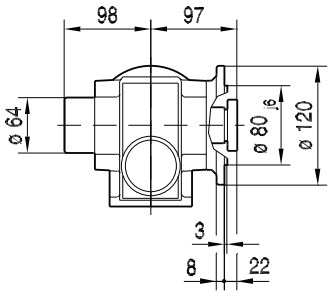
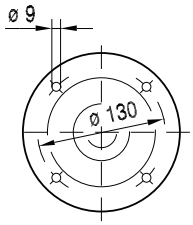
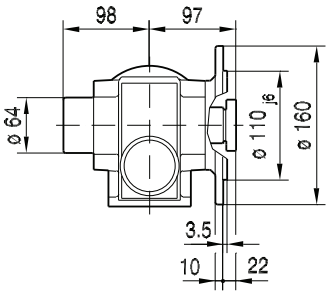
ø 120

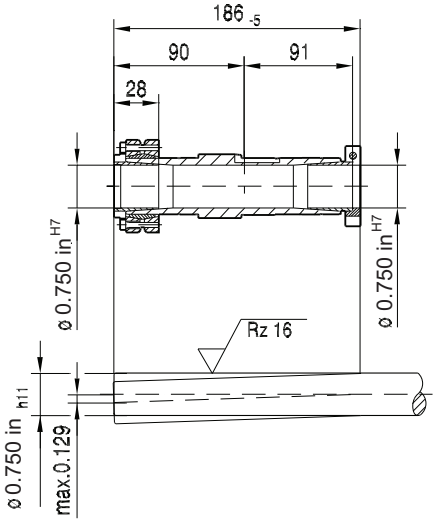




ø 160







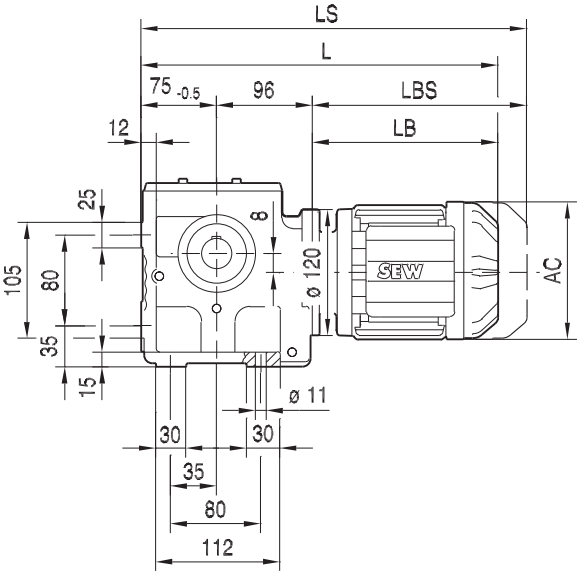
(→ 🗎 163)	DR63..	DRS71S	DRS71M	DRN80MS	DRN80M	DRN90S	DRN90L
AC	132	139	139	156	156	179	179
AD	105	119	119	128	128	140	140
ADS	105	129	129	139	139	150	150
L	329	340	365	392	420	421	453
LS	384	408	433	473	501	515	547
LB	191	202	227	254	282	283	315
LBS	246	270	295	335	363	377	409

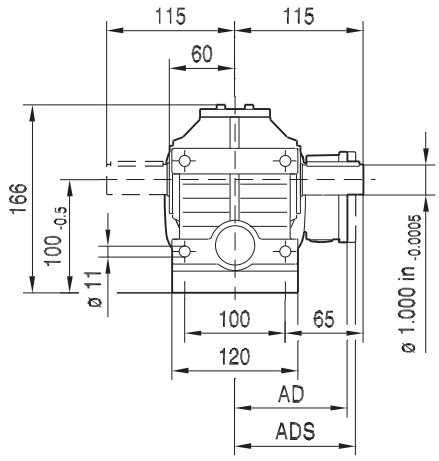
Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 841. For tolerances, see page 163.

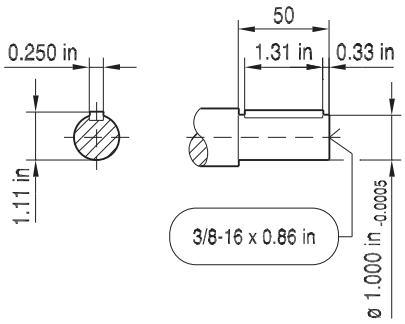
21933480/EN-US – 04/2018

02 097 00 16

S47..







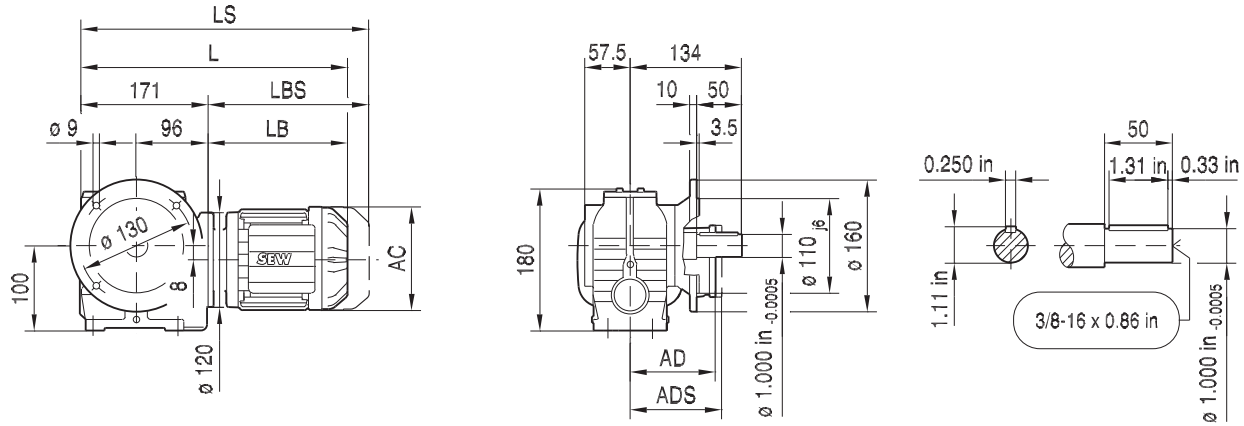
(→ 🗎 163)	DR63..	DRS71S	DRS71M	DRN80MS	DRN80M	DRN90S	DRN90L	DRN100L/LM
AC	132	139	139	156	156	179	179	197
AD	105	119	119	128	128	140	140	157
ADS	105	129	129	139	139	150	150	158
L	362	373	398	425	453	454	486	535
LS	417	441	466	506	534	548	580	629
LB	191	202	227	254	282	283	315	364
LBS	246	270	295	335	363	377	409	458

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 837. For tolerances, see page 163.

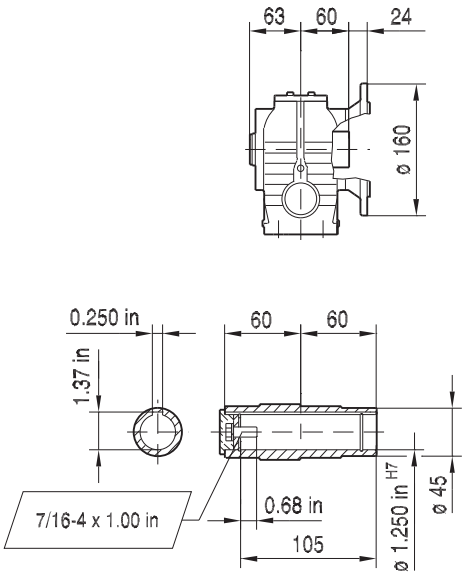
21933480/EN-US – 04/2018

02 098 00 16

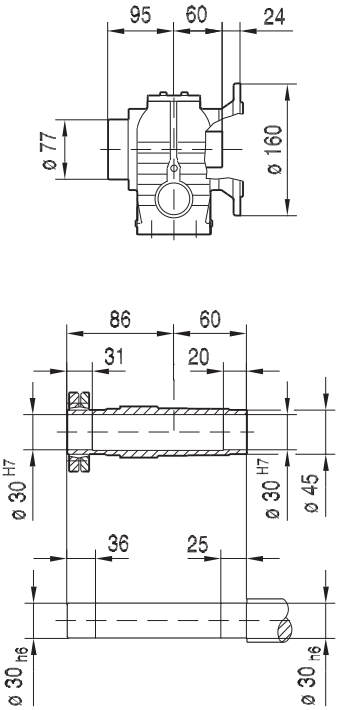
SF47..



SAF47..



SHF47..



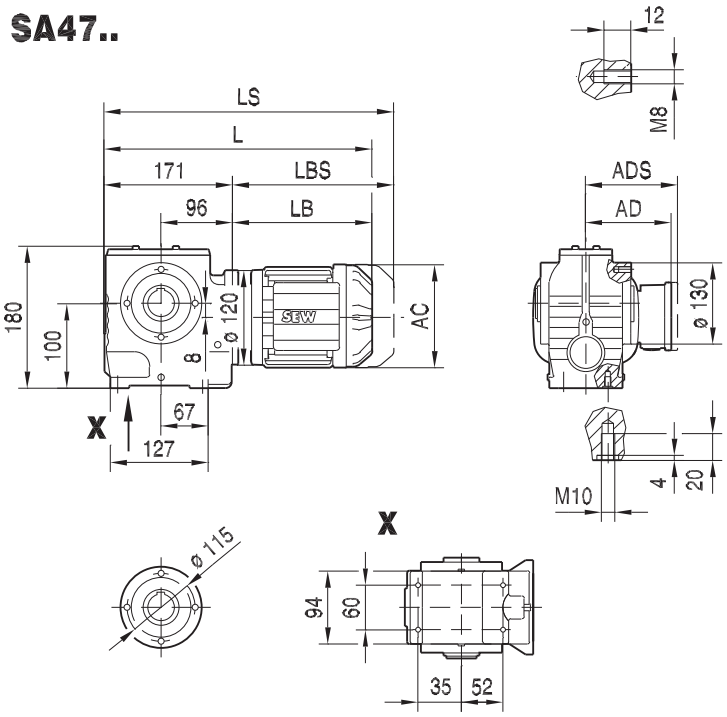
(→ 163)	DR63..	DRS71S	DRS71M	DRN80MS	DRN80M	DRN90S	DRN90L	DRN100L/LM
AC	132	139	139	156	156	179	179	197
AD	105	119	119	128	128	140	140	157
ADS	105	129	129	139	139	150	150	158
L	362	373	398	425	453	454	486	535
LS	417	441	466	506	534	548	580	629
LB	191	202	227	254	282	283	315	364
LBS	246	270	295	335	363	377	409	458

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 837. For tolerances, see page 163.

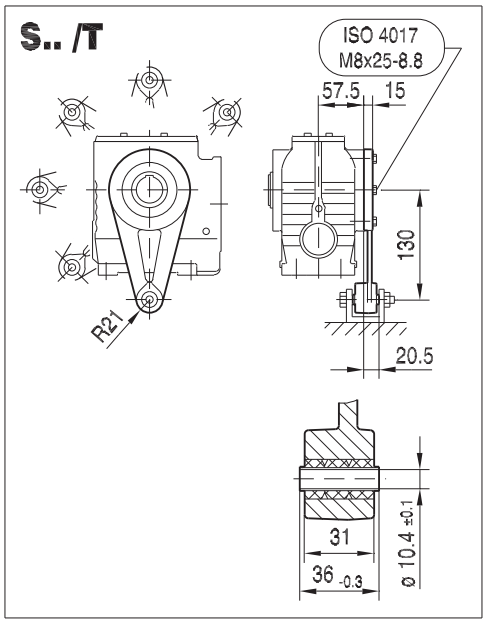
21933480/EN-US – 04/2018

02 099 00 16

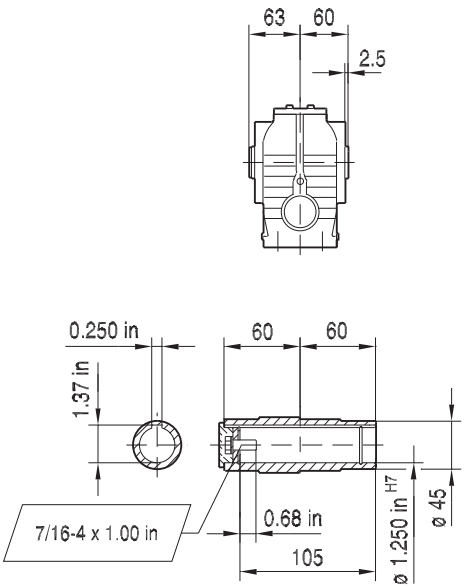
SA47..



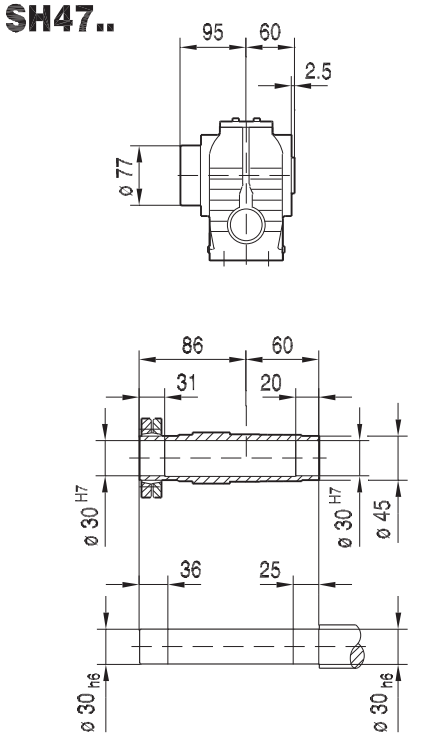
S.. /T



SA47..



SH47..



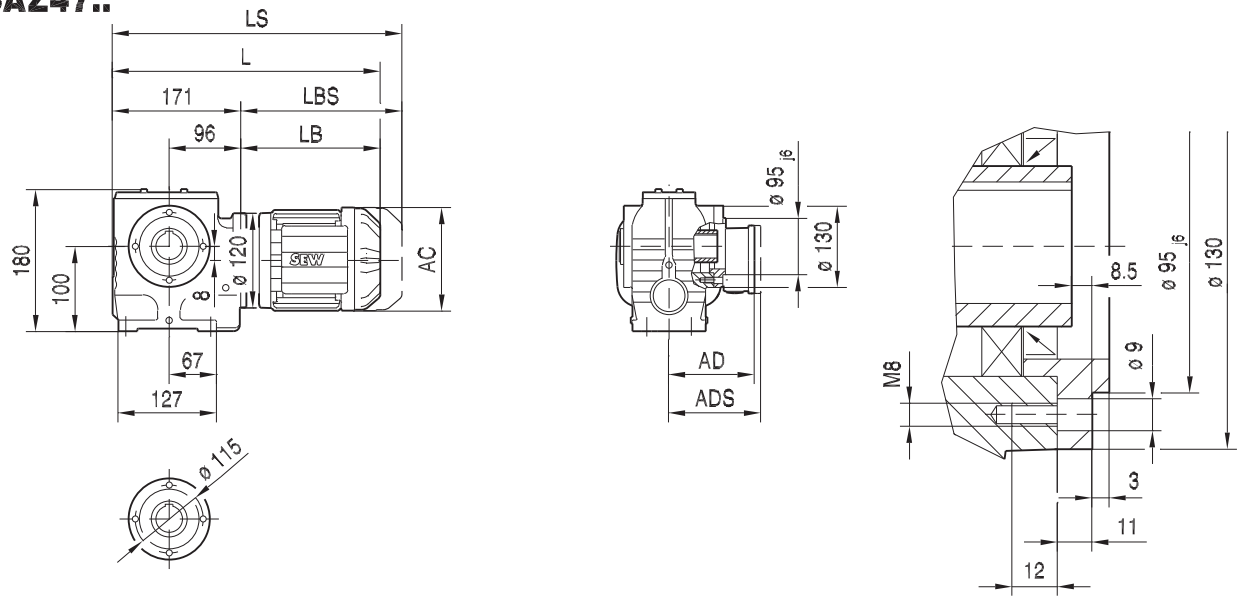
(→ 163)	DR63..	DRS71S	DRS71M	DRN80MS	DRN80M	DRN90S	DRN90L	DRN100L/LM
AC	132	139	139	156	156	179	179	197
AD	105	119	119	128	128	140	140	157
ADS	105	129	129	139	139	150	150	158
L	362	373	398	425	453	454	486	535
LS	417	441	466	506	534	548	580	629
LB	191	202	227	254	282	283	315	364
LBS	246	270	295	335	363	377	409	458

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 839. For tolerances, see page 163.

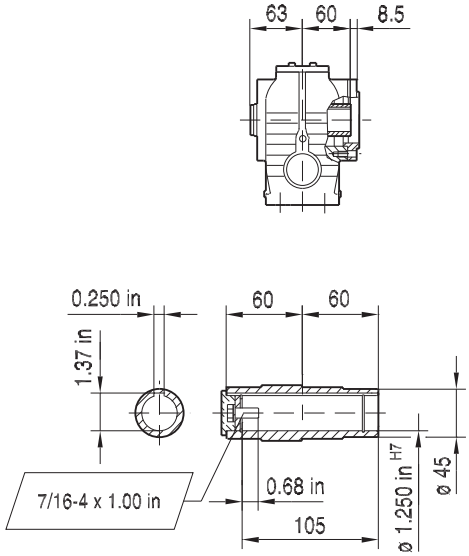
21933480/EN-US – 04/2018

02 100 00 16

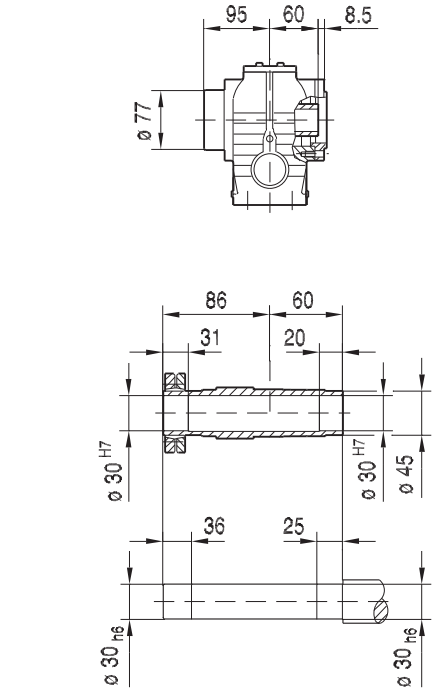
SAZ47..



SAZ47..



SHZ47..

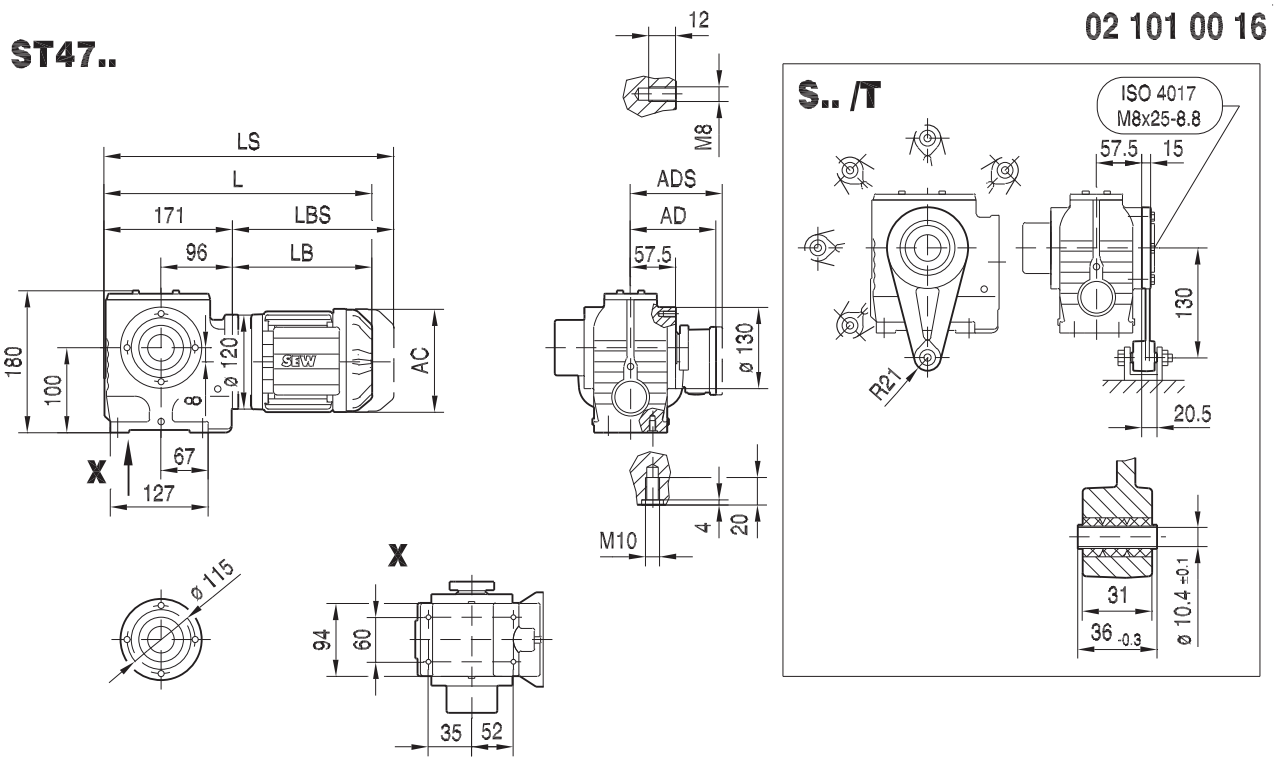


(→ 🗎 163)	DR63..	DRS71S	DRS71M	DRN80MS	DRN80M	DRN90S	DRN90L	DRN100L/LM
AC	132	139	139	156	156	179	179	197
AD	105	119	119	128	128	140	140	157
ADS	105	129	129	139	139	150	150	158
L	362	373	398	425	453	454	486	535
LS	417	441	466	506	534	548	580	629
LB	191	202	227	254	282	283	315	364
LBS	246	270	295	335	363	377	409	458

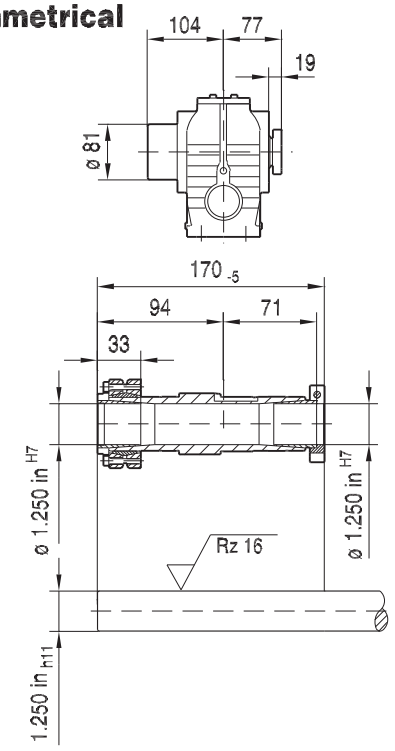
Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 839. For tolerances, see page 163.

21933480/EN-US – 04/2018

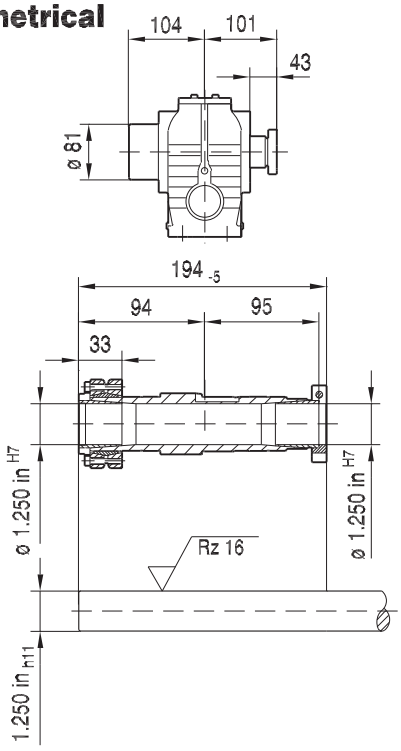
ST47..



NON-Symmetrical



Symmetrical



(→ 🗎 163)	DR63..	DRS71S	DRS71M	DRN80MS	DRN80M	DRN90S	DRN90L	DRN100L/LM
AC	132	139	139	156	156	179	179	197
AD	105	119	119	128	128	140	140	157
ADS	105	129	129	139	139	150	150	158
L	362	373	398	425	453	454	486	535
LS	417	441	466	506	534	548	580	629
LB	191	202	227	254	282	283	315	364
LBS	246	270	295	335	363	377	409	458

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 841. For tolerances, see page 163.

21933480/EN-US – 04/2018

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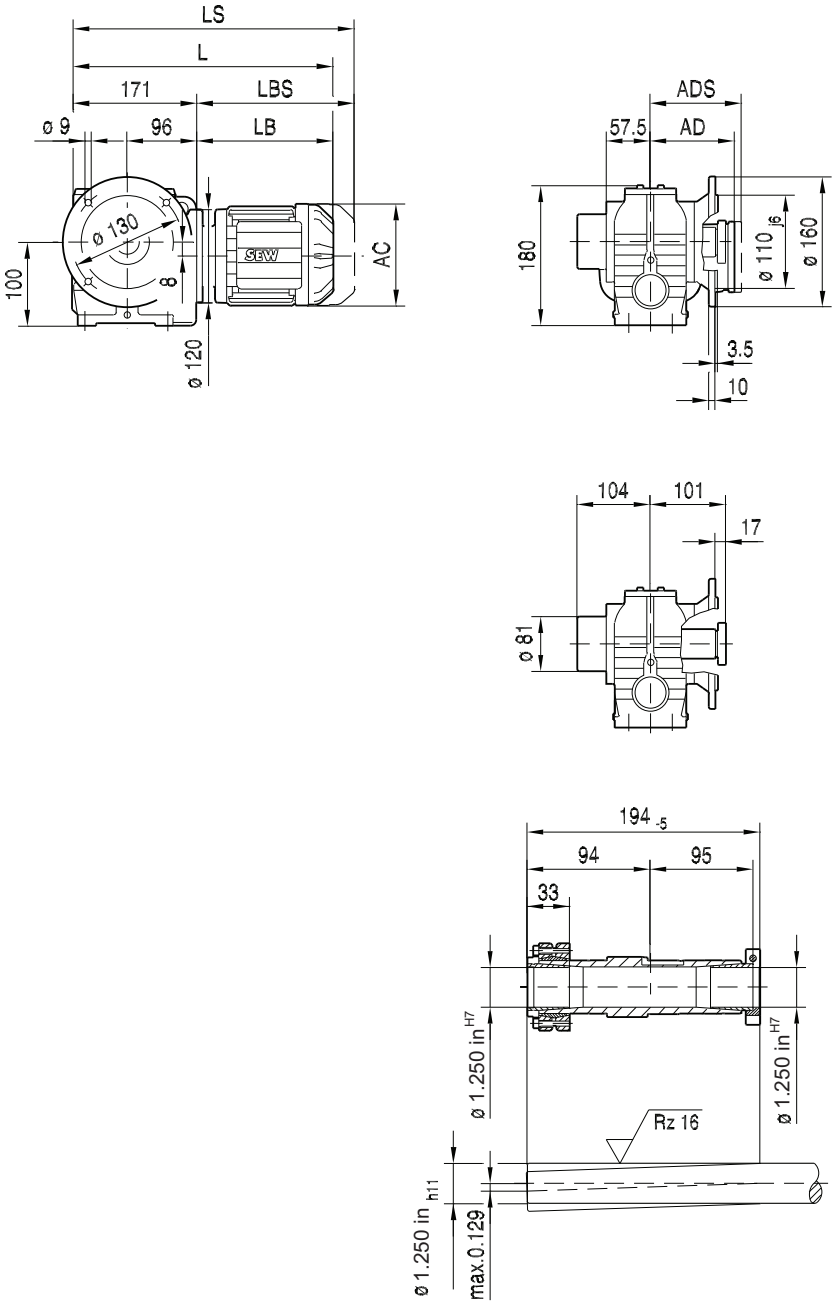
STF47..



(→ 🗎 163)	DR63..	DRS71S	DRS71M	DRN80MS	DRN80M	DRN90S	DRN90L	DRN100L/LM
AC	132	139	139	156	156	179	179	197
AD	105	119	119	128	128	140	140	157
ADS	105	129	129	139	139	150	150	158
L	362	373	398	425	453	454	486	535
LS	417	441	466	506	534	548	580	629
LB	191	202	227	254	282	283	315	364
LBS	246	270	295	335	363	377	409	458

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 841. For tolerances, see page 163.

21933480/EN-US – 04/2018

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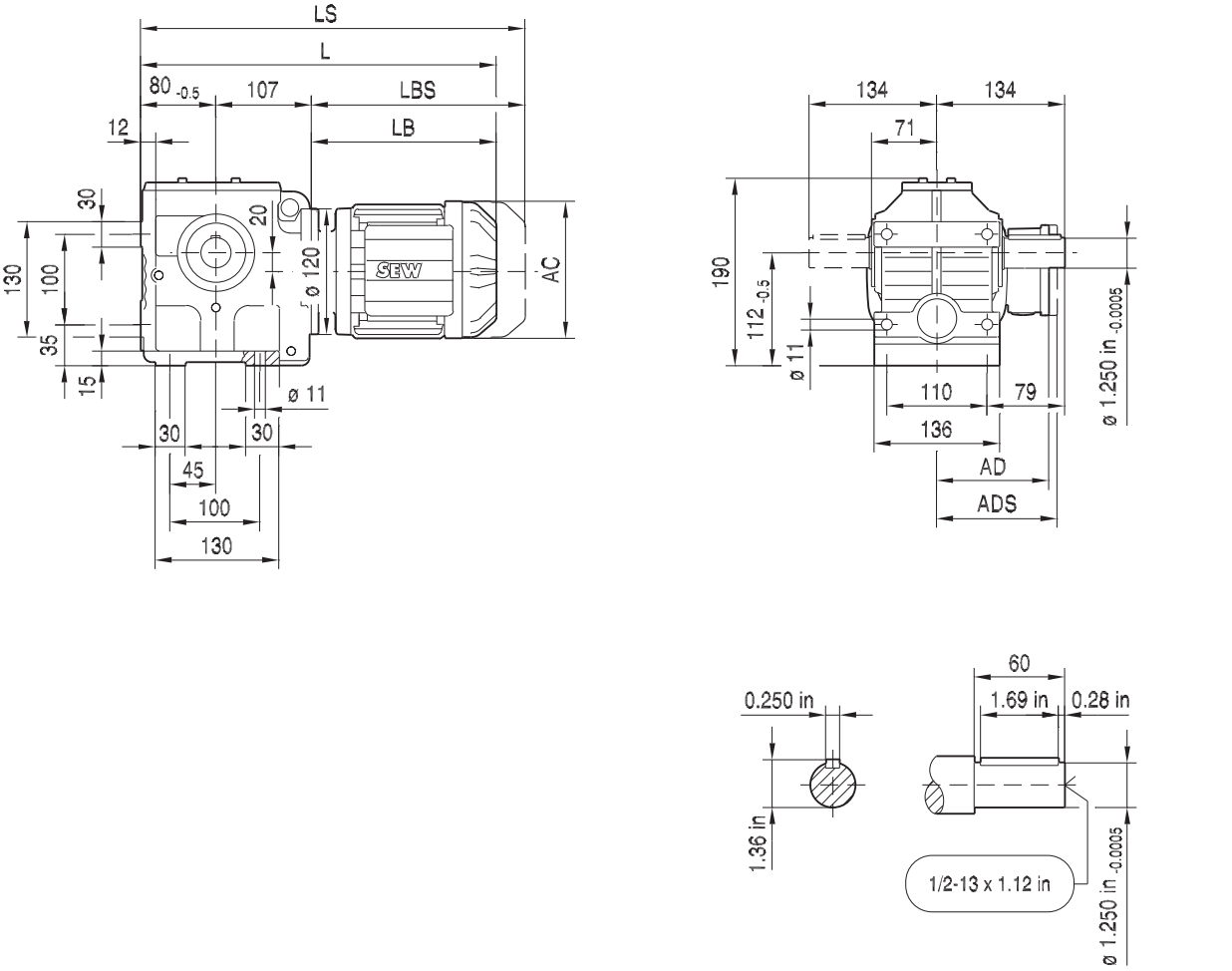
S57..



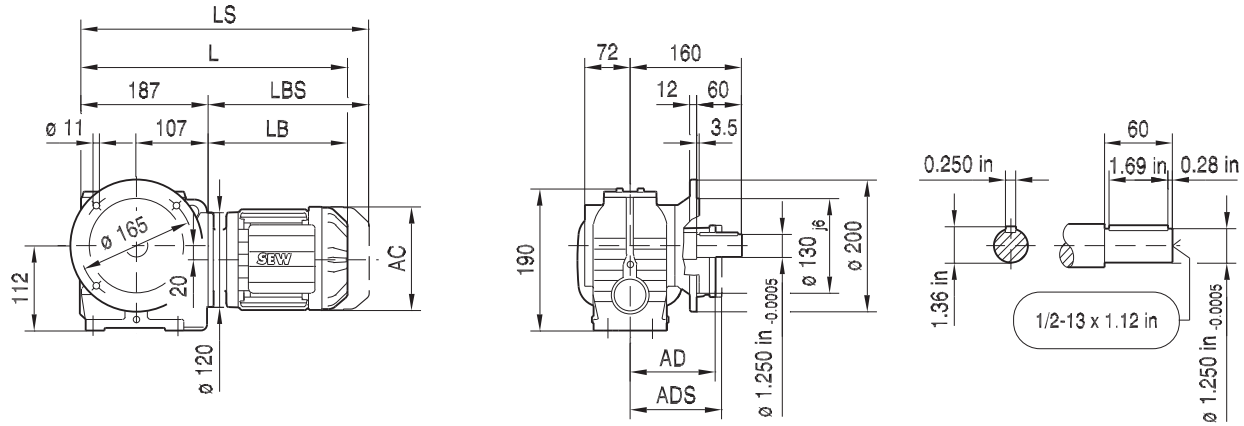
(→ 🗎 163)	DR63..	DRS71S	DRS71M	DRN80M	DRN90S	DRN90L	DRN100LS	DRN100L/LM
AC	132	139	139	156	179	179	197	197
AD	105	119	119	128	140	140	157	157
ADS	105	129	129	139	150	150	158	158
L	378	389	414	469	470	502	501	551
LS	433	457	482	550	564	596	595	645
LB	191	202	227	282	283	315	314	364
LBS	246	270	295	363	377	409	408	458

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 837. For tolerances, see page 163.

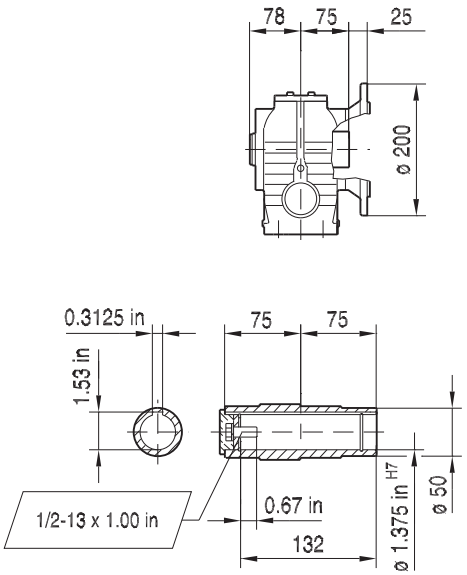
21933480/EN-US – 04/2018

02 103 00 16

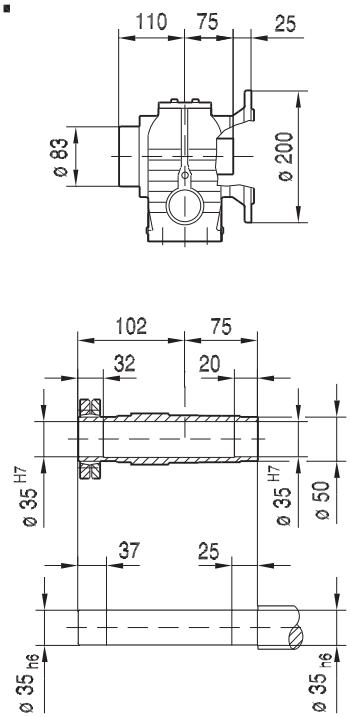
SF57..



SAF57..



SHF57..



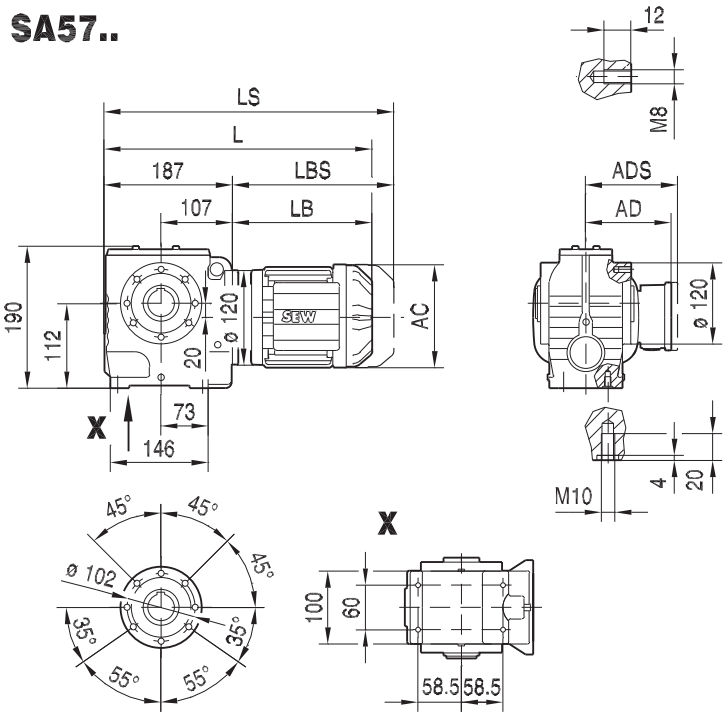
(→ 🗎 163)	DR63..	DRS71S	DRS71M	DRN80M	DRN90S	DRN90L	DRN100L/LM
AC	132	139	139	156	179	179	197
AD	105	119	119	128	140	140	157
ADS	105	129	129	139	150	150	158
L	378	389	414	469	470	502	551
LS	433	457	482	550	564	596	645
LB	191	202	227	282	283	315	364
LBS	246	270	295	363	377	409	458

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 837. For tolerances, see page 163.

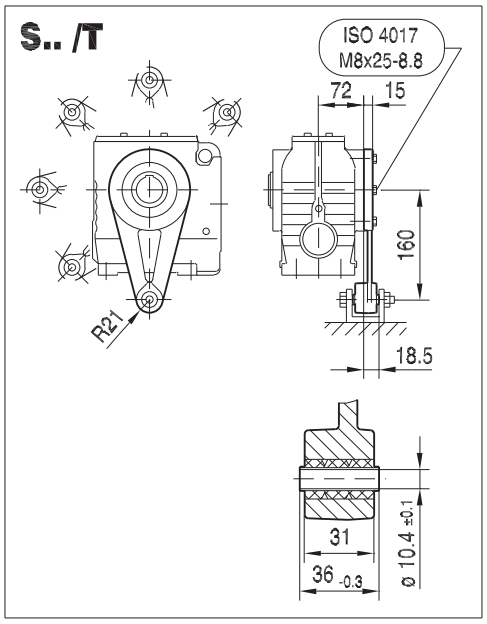
21933480/EN-US – 04/2018

02 104 00 16

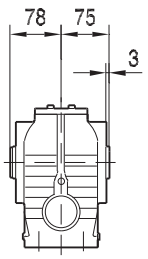
SA57..

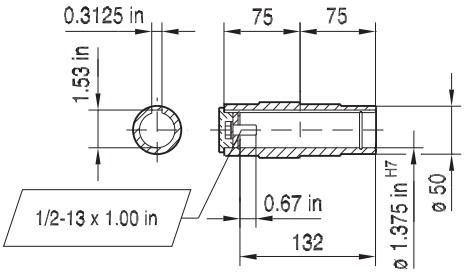


S.. /T

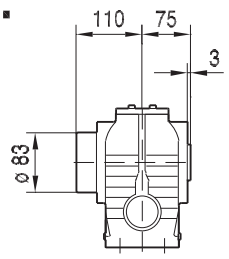


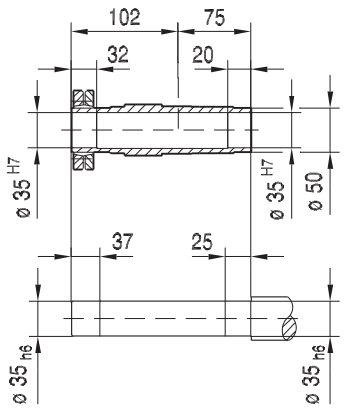
SA57..





SH57..





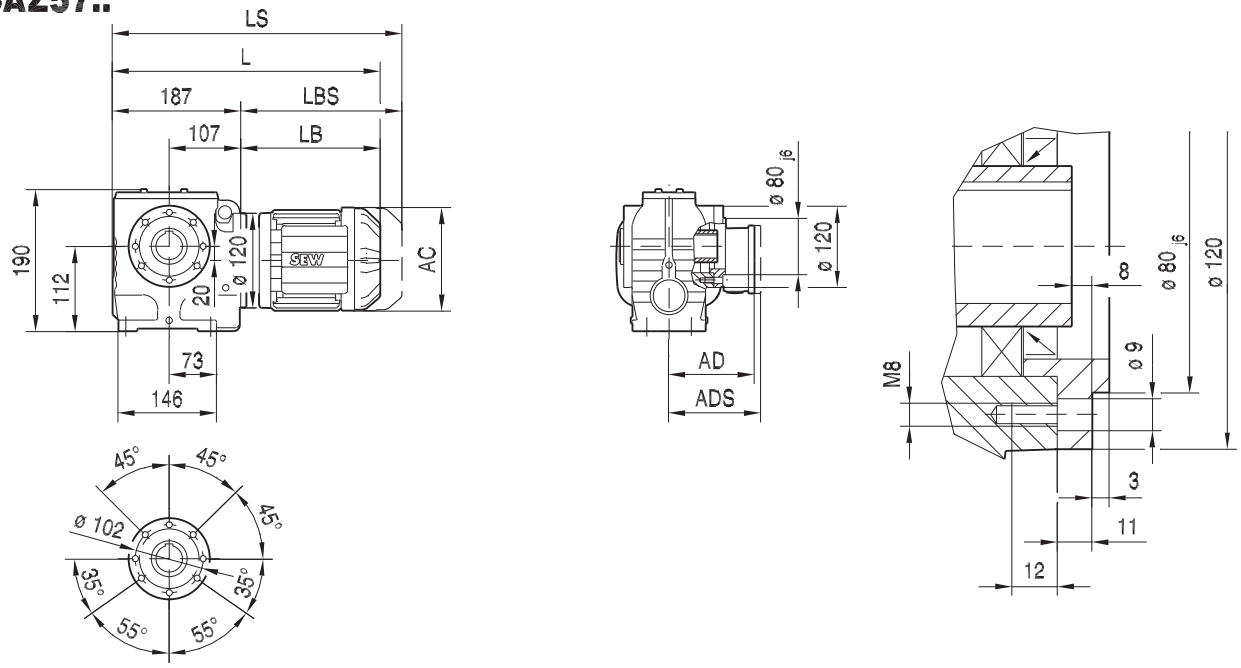
(→ 163)	DR63..	DRS71S	DRS71M	DRN80M	DRN90S	DRN90L	DRN100L/LM
AC	132	139	139	156	179	179	197
AD	105	119	119	128	140	140	157
ADS	105	129	129	139	150	150	158
L	378	389	414	469	470	502	551
LS	433	457	482	550	564	596	645
LB	191	202	227	282	283	315	364
LBS	246	270	295	363	377	409	458

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 839. For tolerances, see page 163.

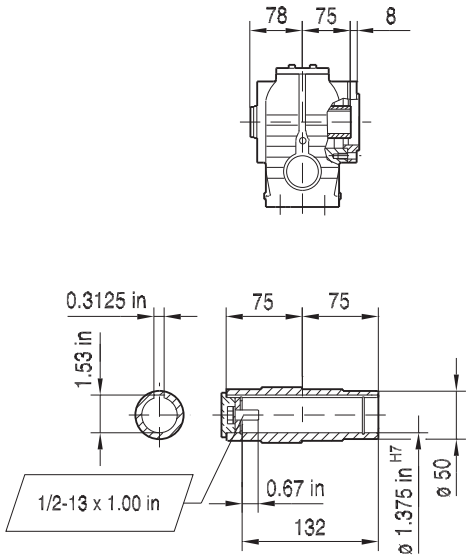
21933480/EN-US – 04/2018

02 105 00 16

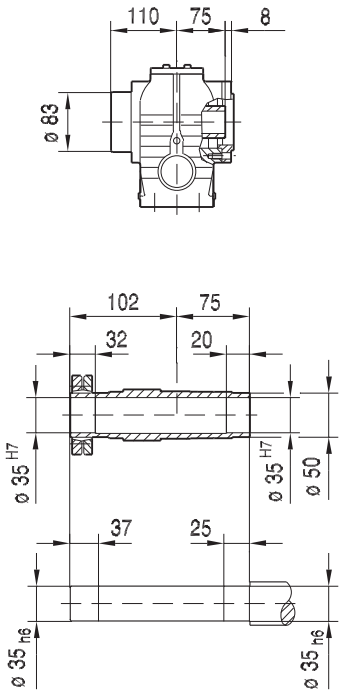
SAZ57..



SAZ57..



SHZ57..

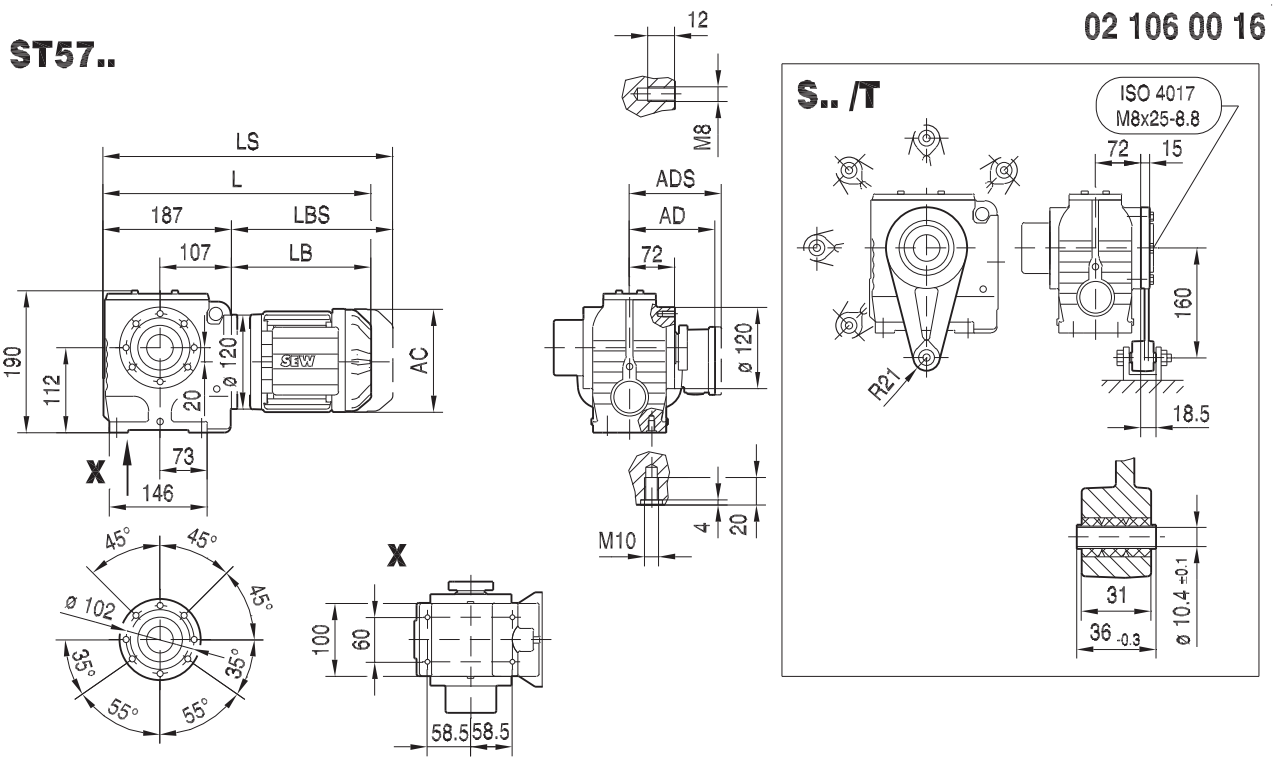


(→ 163)	DR63..	DRS71S	DRS71M	DRN80M	DRN90S	DRN90L	DRN100L/LM
AC	132	139	139	156	179	179	197
AD	105	119	119	128	140	140	157
ADS	105	129	129	139	150	150	158
L	378	389	414	469	470	502	551
LS	433	457	482	550	564	596	645
LB	191	202	227	282	283	315	364
LBS	246	270	295	363	377	409	458

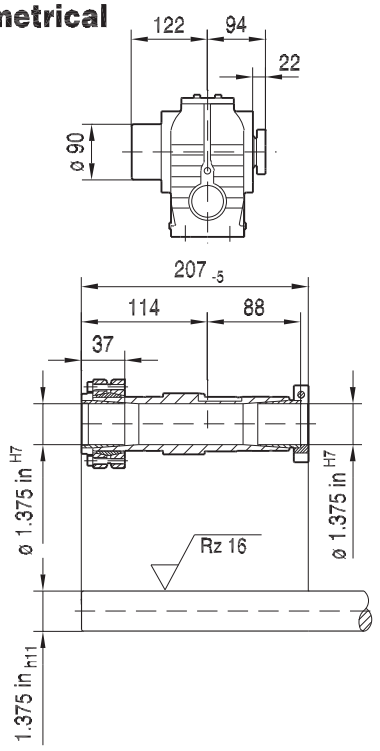
Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 839. For tolerances, see page 163.

21933480/EN-US – 04/2018

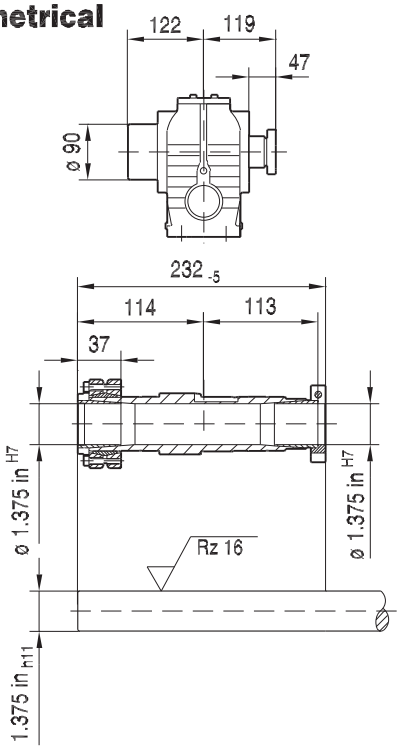
ST57..



NON-Symmetrical



Symmetrical



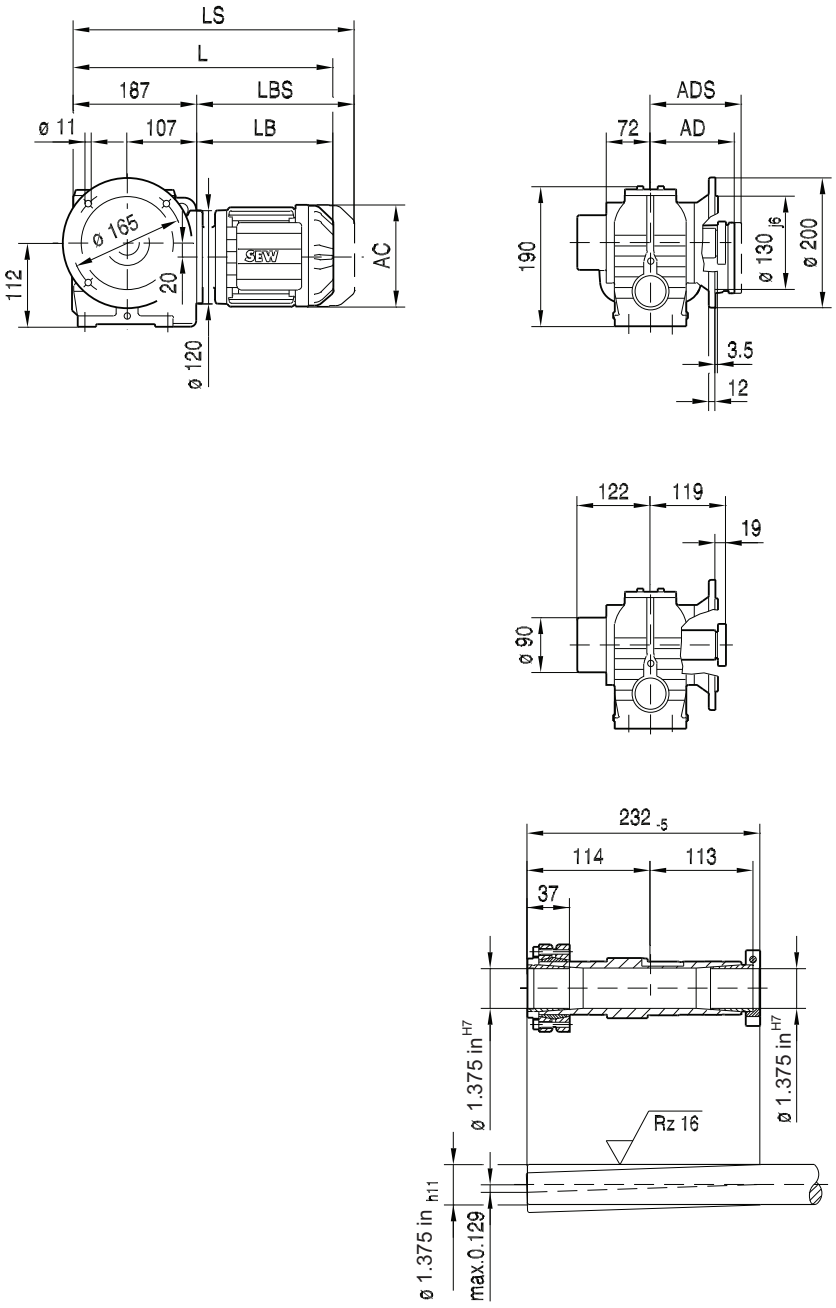
(→ 163)	DR63..	DRS71S	DRS71M	DRN80M	DRN90S	DRN90L	DRN100L/LM
AC	132	139	139	156	179	179	197
AD	105	119	119	128	140	140	157
ADS	105	129	129	139	150	150	158
L	378	389	414	469	470	502	551
LS	433	457	482	550	564	596	645
LB	191	202	227	282	283	315	364
LBS	246	270	295	363	377	409	458

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 841. For tolerances, see page 163.

21933480/EN-US – 04/2018

02 003 02 13 US

STF57..



(→ 🗎 163)	DR63..	DRS71S	DRS71M	DRN80M	DRN90S	DRN90L	DRN100L/LM
AC	132	139	139	156	179	179	197
AD	105	119	119	128	140	140	157
ADS	105	129	129	139	150	150	158
L	378	389	414	469	470	502	551
LS	433	457	482	550	564	596	645
LB	191	202	227	282	283	315	364
LBS	246	270	295	363	377	409	458

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 841. For tolerances, see page 163.

21933480/EN-US – 04/2018

02 107 00 16

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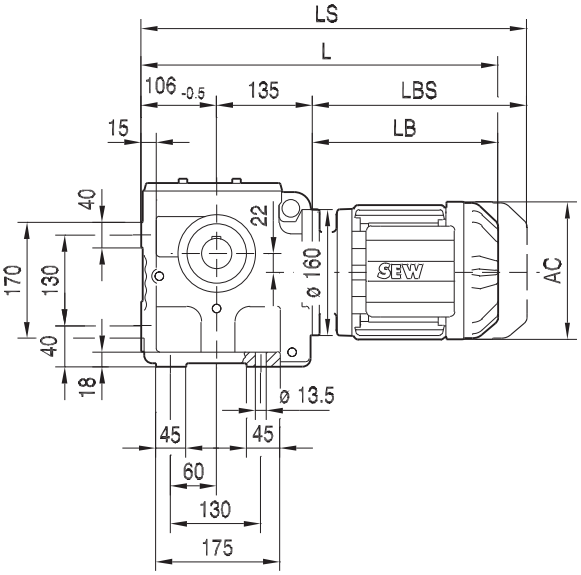

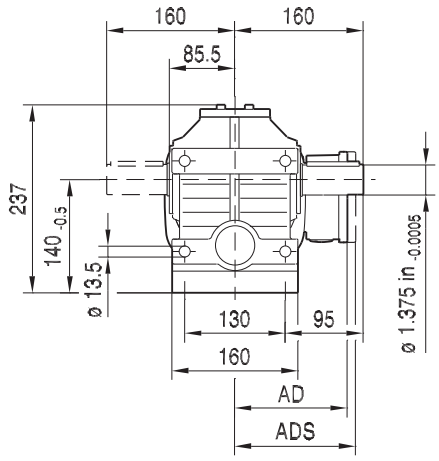

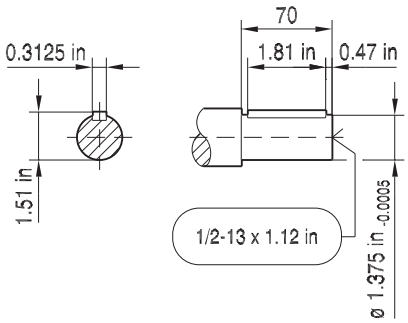

(→ 🗎 163)	DR63..	DRS71S	DRS71M	DRN80M	DRN90S	DRN90L	DRN100L/LM	DRN112M	DRN132S
AC	132	139	139	156	179	179	197	221	221
AD	105	119	119	128	140	140	157	170	170
ADS	105	129	129	139	150	150	158	172	172
L	426	437	462	516	518	550	596	627	681
LS	481	505	530	597	611	643	690	739	793
LB	185	196	221	275	277	309	355	386	440
LBS	240	264	289	356	370	402	449	498	552

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 837. For tolerances, see page 163.

21933480/EN-US – 04/2018

02 108 00 16

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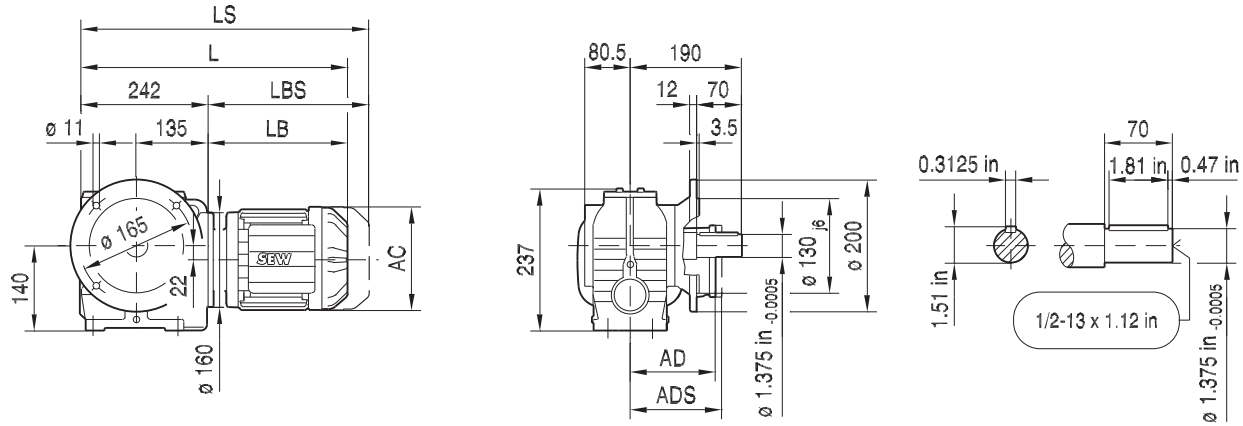

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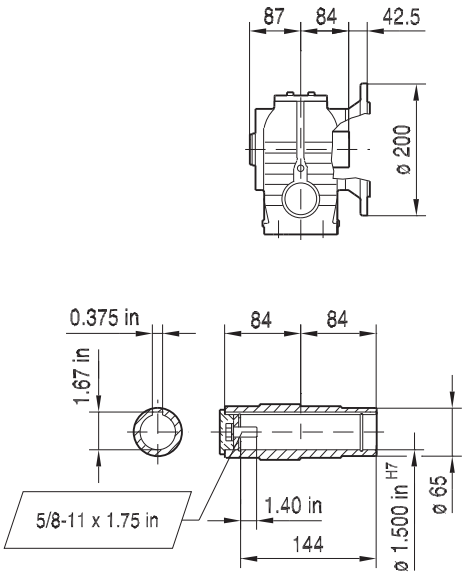

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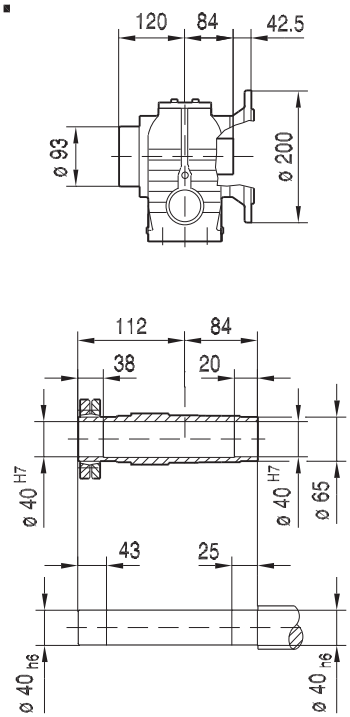

(→ 163)	DR63..	DRS71S	DRS71M	DRN80M	DRN90S	DRN90L	DRN100L/LM	DRN112M	DRN132S
AC	132	139	139	156	179	179	197	221	221
AD	105	119	119	128	140	140	157	170	170
ADS	105	129	129	139	150	150	158	172	172
L	427	438	463	517	519	551	597	628	682
LS	482	506	531	598	612	644	691	740	794
LB	185	196	221	275	277	309	355	386	440
LBS	240	264	289	356	370	402	449	498	552

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 837. For tolerances, see page 163.

21933480/EN-US – 04/2018

02 109 00 16

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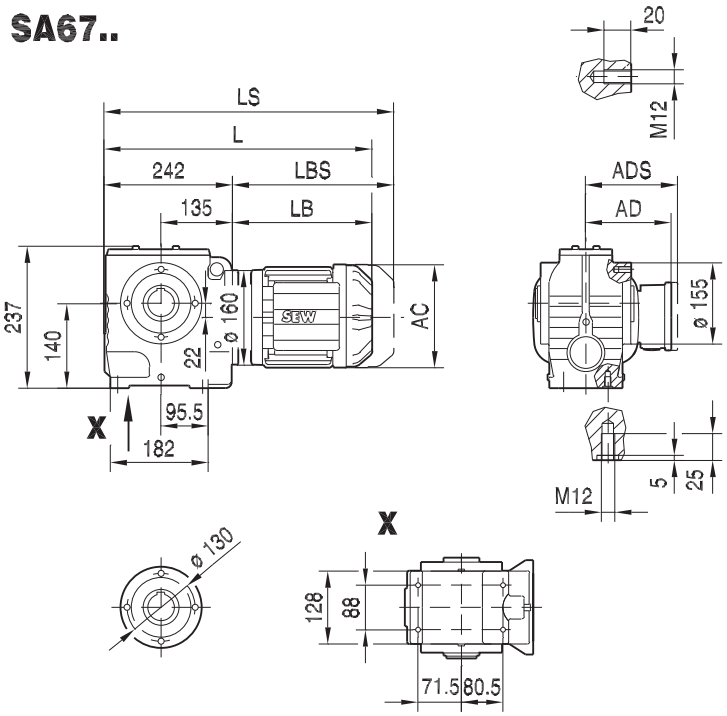

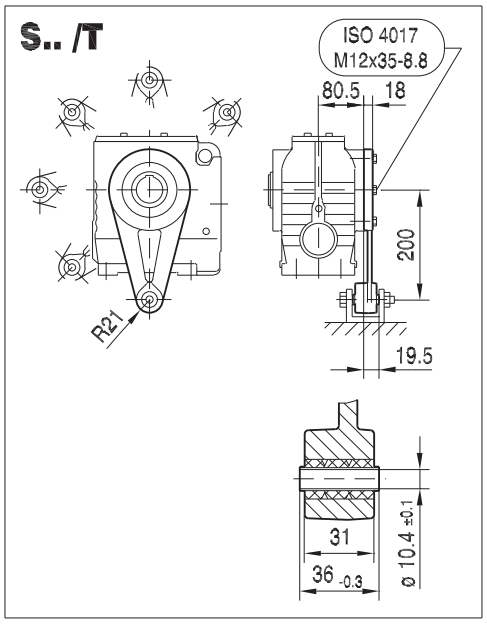

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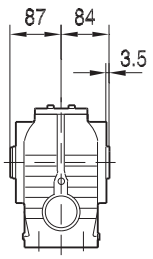

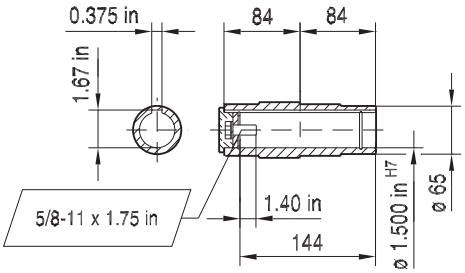

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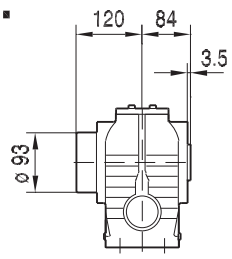

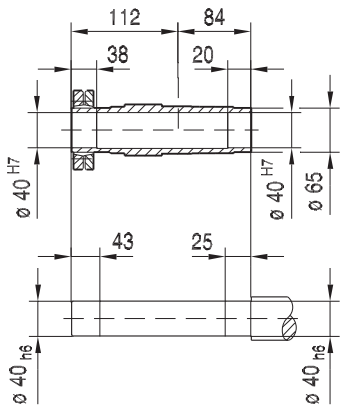

(→ 163)	DR63..	DRS71S	DRS71M	DRN80M	DRN90S	DRN90L	DRN100L/LM	DRN112M	DRN132S
AC	132	139	139	156	179	179	197	221	221
AD	105	119	119	128	140	140	157	170	170
ADS	105	129	129	139	150	150	158	172	172
L	427	438	463	517	519	551	597	628	682
LS	482	506	531	598	612	644	691	740	794
LB	185	196	221	275	277	309	355	386	440
LBS	240	264	289	356	370	402	449	498	552

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 839. For tolerances, see page 163.

21933480/EN-US – 04/2018

02 110 00 16

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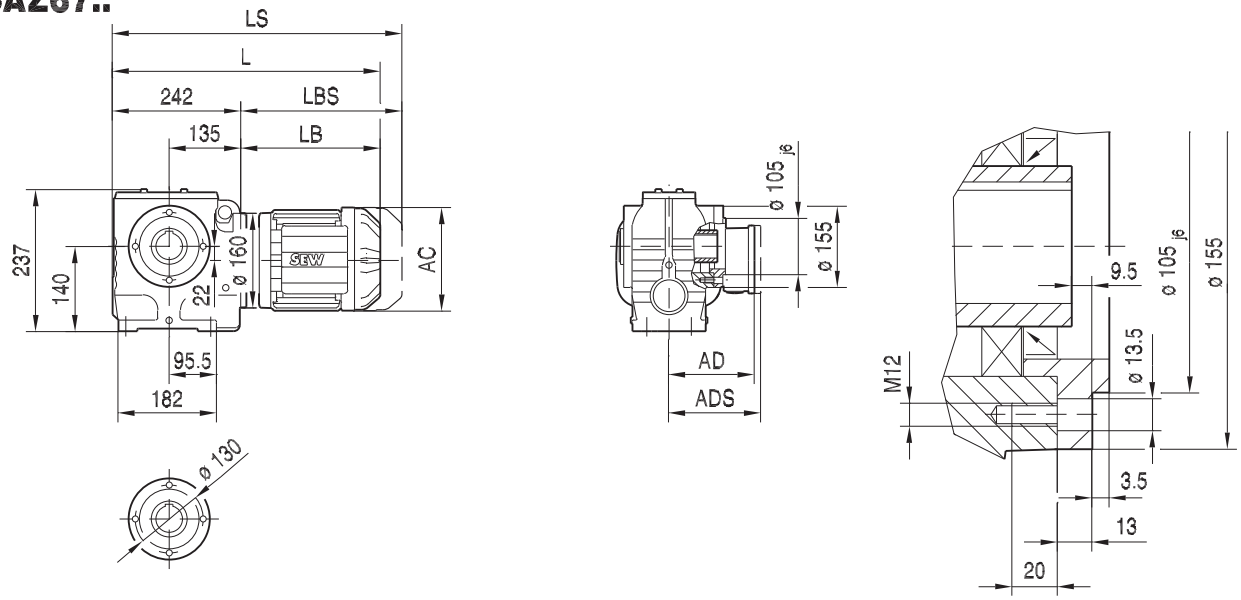

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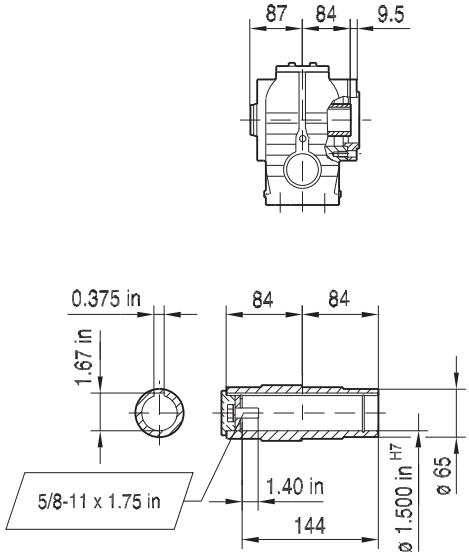

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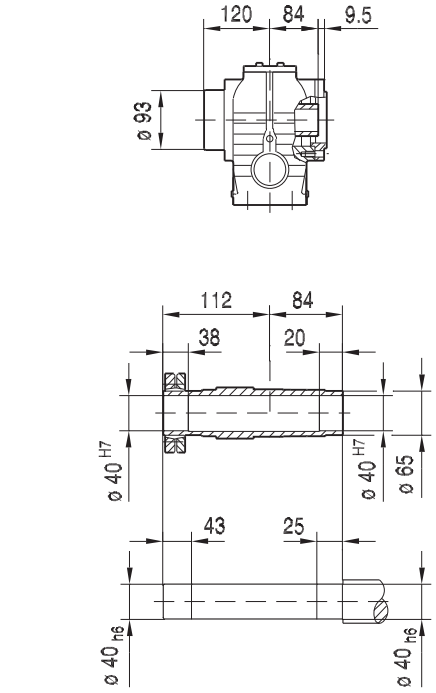

(→ 🗎 163)	DR63..	DRS71S	DRS71M	DRN80M	DRN90S	DRN90L	DRN100L/LM	DRN112M	DRN132S
AC	132	139	139	156	179	179	197	221	221
AD	105	119	119	128	140	140	157	170	170
ADS	105	129	129	139	150	150	158	172	172
L	427	438	463	517	519	551	597	628	682
LS	482	506	531	598	612	644	691	740	794
LB	185	196	221	275	277	309	355	386	440
LBS	240	264	289	356	370	402	449	498	552

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 839. For tolerances, see page 163.

21933480/EN-US – 04/2018

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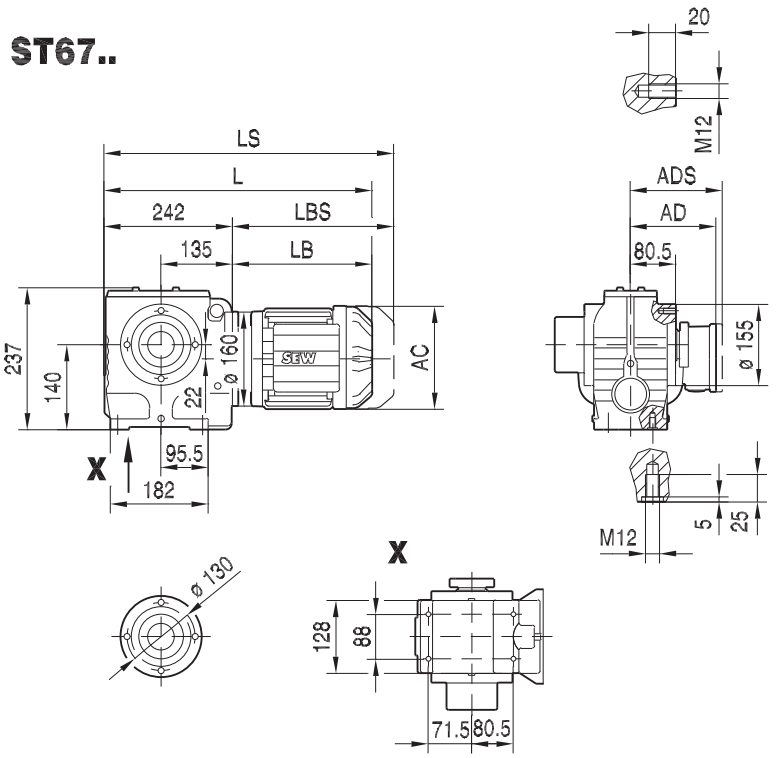

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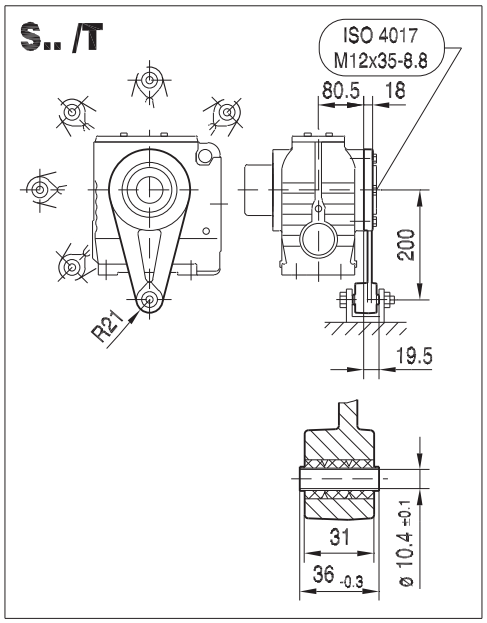
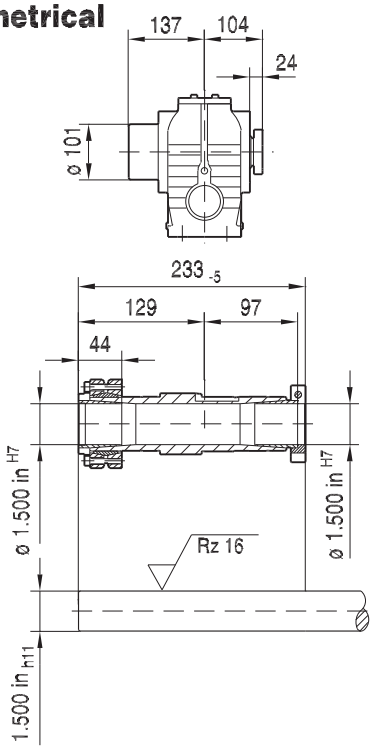
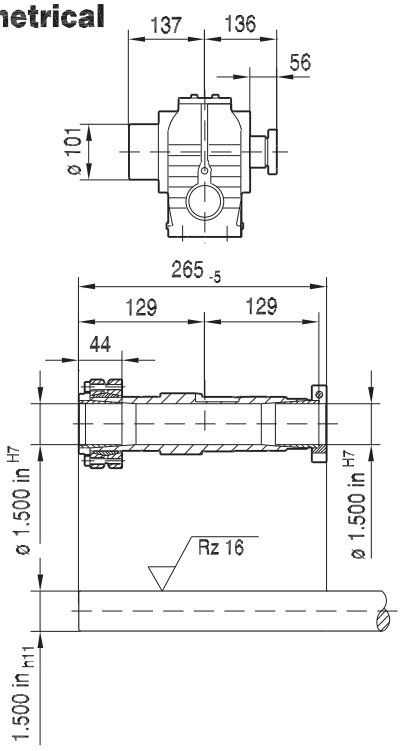


NON-Symmetrical



Symmetrical



(→ 🗎 163)	DR63..	DRS71S	DRS71M	DRN80M	DRN90S	DRN90L	DRN100L/LM	DRN112M	DRN132S
AC	132	139	139	156	179	179	197	221	221
AD	105	119	119	128	140	140	157	170	170
ADS	105	129	129	139	150	150	158	172	172
L	427	438	463	517	519	551	597	628	682
LS	482	506	531	598	612	644	691	740	794
LB	185	196	221	275	277	309	355	386	440
LBS	240	264	289	356	370	402	449	498	552

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 841. For tolerances, see page 163.

21933480/EN-US – 04/2018

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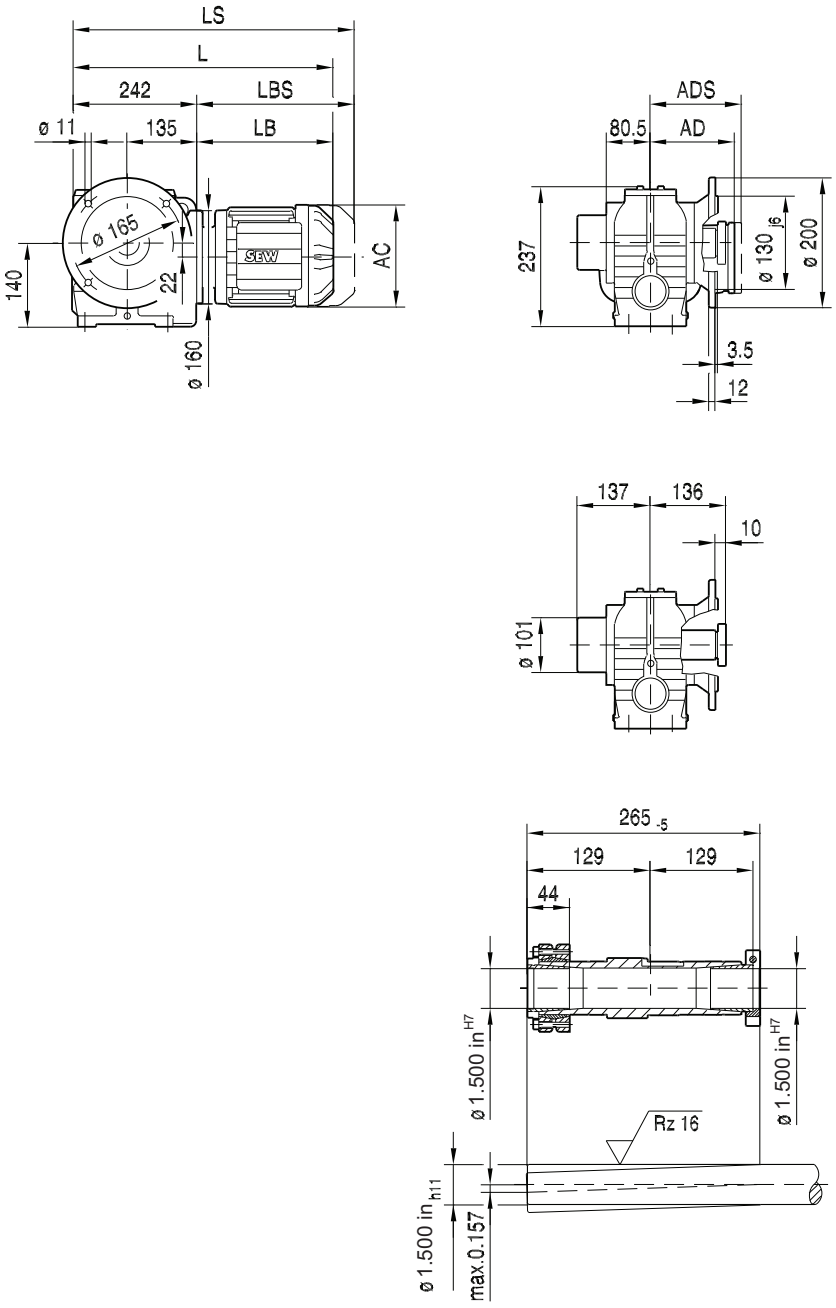

(→ 🗎 163)	DR63..	DRS71S	DRS71M	DRN80M	DRN90S	DRN90L	DRN100L/LM	DRN112M	DRN132S
AC	132	139	139	156	179	179	197	221	221
AD	105	119	119	128	140	140	157	170	170
ADS	105	129	129	139	150	150	158	172	172
L	427	438	463	517	519	551	597	628	682
LS	482	506	531	598	612	644	691	740	794
LB	185	196	221	275	277	309	355	386	440
LBS	240	264	289	356	370	402	449	498	552

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 841. For tolerances, see page 163.

21933480/EN-US – 04/2018

02 112 00 16

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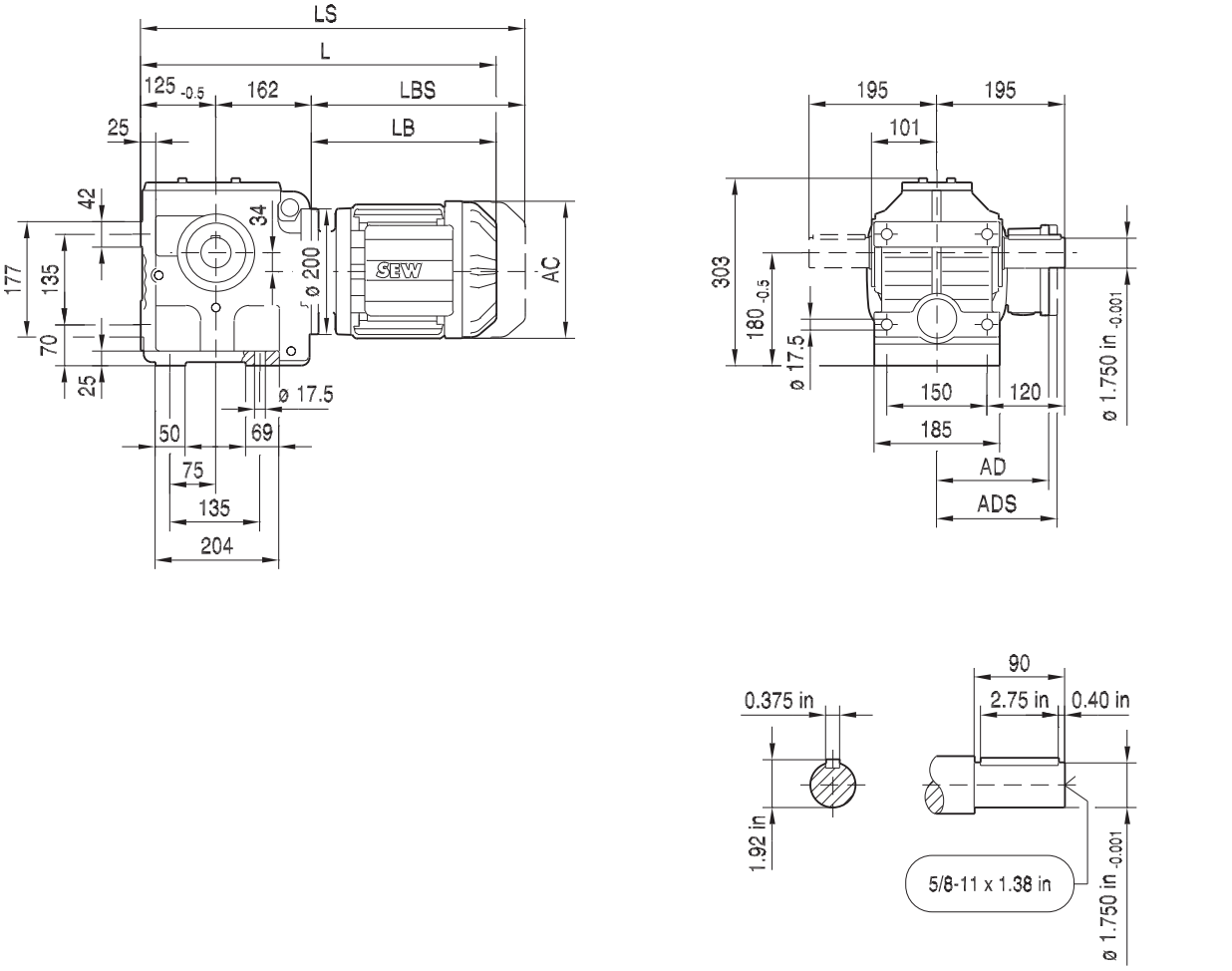

(→ 🗎 163)	DRN80M	DRN90S	DRN90L	DRN100L/LM	DRN112M	DRN132S	DRN132M	DRN132L	DRN160
AC	156	179	179	197	221	221	261	261	314
AD	128	140	140	157	170	170	228	228	253
ADS	139	150	150	158	172	172	228	228	253
L	555	557	589	635	666	716	734	760	826
LS	636	650	682	729	778	828	872	897	1015
LB	268	270	302	348	379	429	447	473	539
LBS	349	363	395	442	491	541	585	610	728

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 837. For tolerances, see page 163.

21933480/EN-US – 04/2018

02 113 00 16

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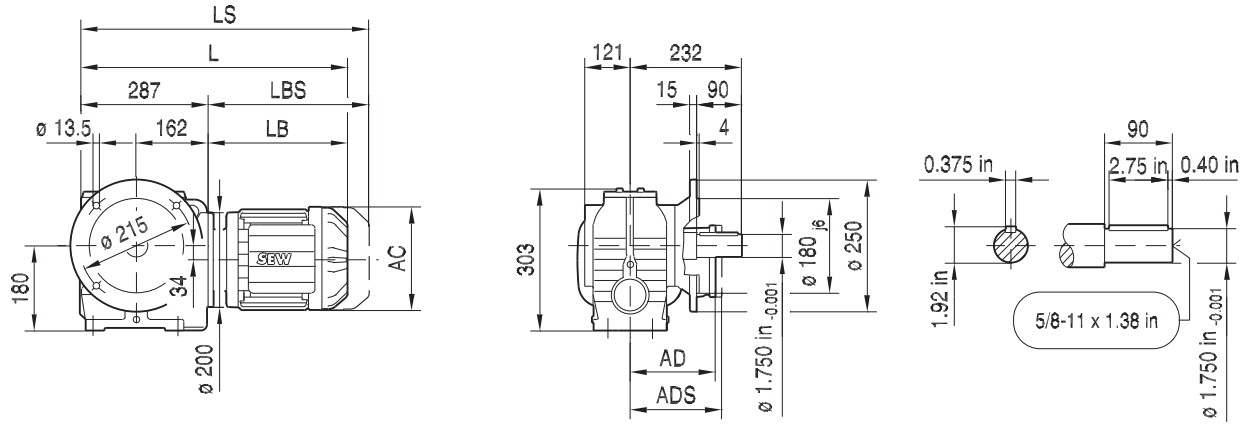

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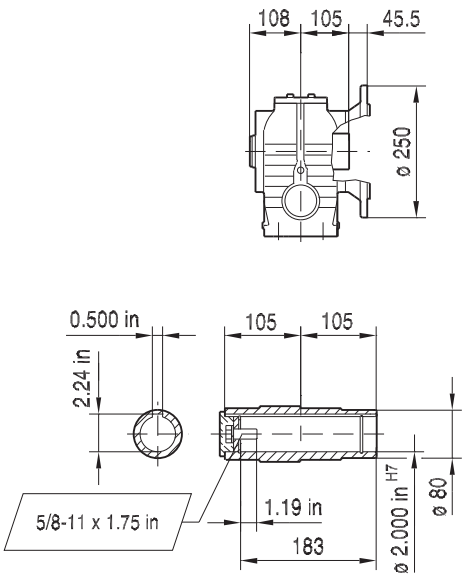

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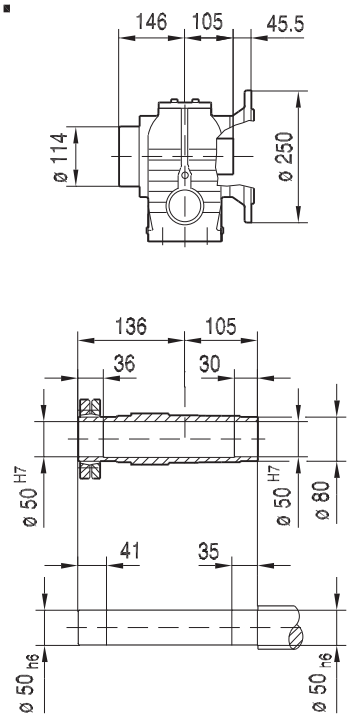

(→ 🗎 163)	DRN80M	DRN90S	DRN90L	DRN100L/LM	DRN112M	DRN132S	DRN132M	DRN132L	DRN160
AC	156	179	179	197	221	221	261	261	314
AD	128	140	140	157	170	170	228	228	253
ADS	139	150	150	158	172	172	228	228	253
L	555	557	589	635	666	716	734	760	826
LS	636	650	682	729	778	828	872	897	1015
LB	268	270	302	348	379	429	447	473	539
LBS	349	363	395	442	491	541	585	610	728

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 837. For tolerances, see page 163.

21933480/EN-US – 04/2018

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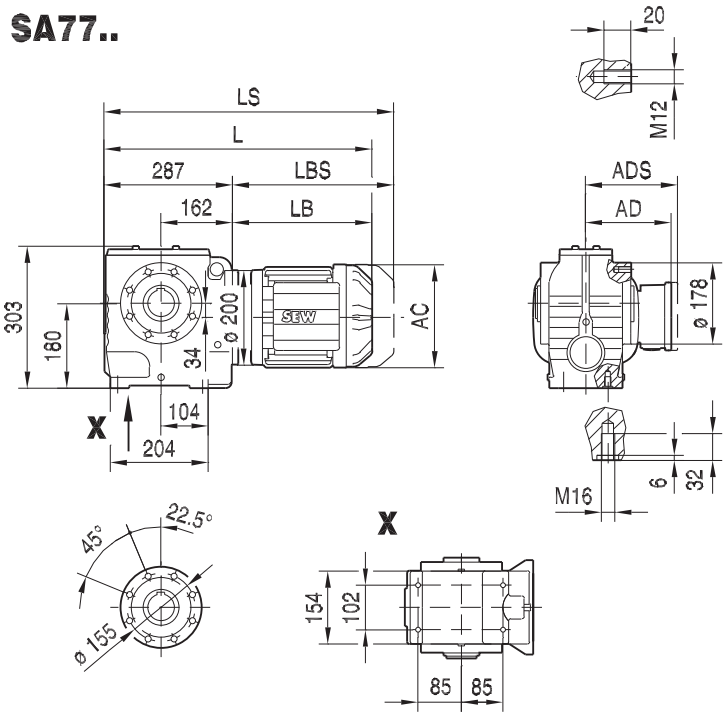

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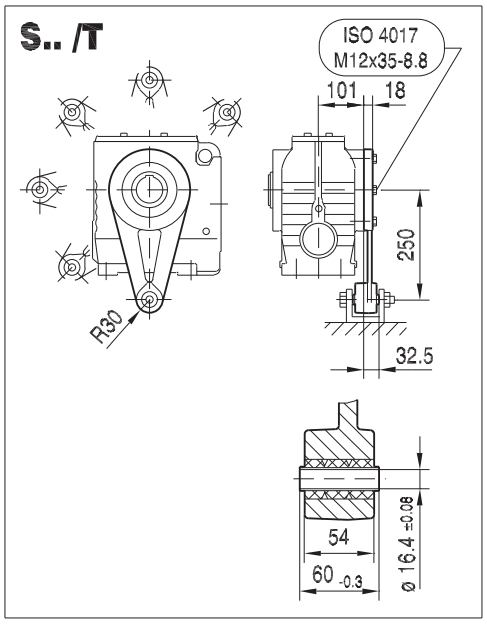

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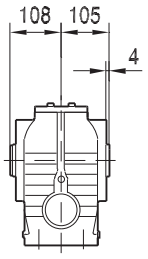

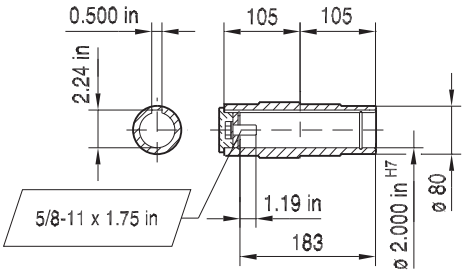

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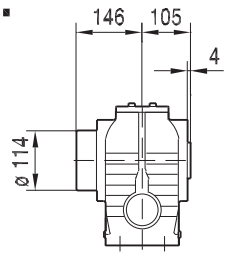

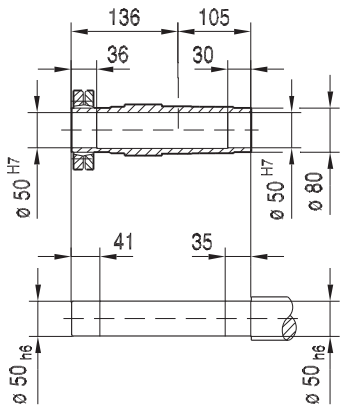

(→ 163)	DRN80M	DRN90S	DRN90L	DRN100L/LM	DRN112M	DRN132S	DRN132M	DRN132L	DRN160
AC	156	179	179	197	221	221	261	261	314
AD	128	140	140	157	170	170	228	228	253
ADS	139	150	150	158	172	172	228	228	253
L	555	557	589	635	666	716	734	760	826
LS	636	650	682	729	778	828	872	897	1015
LB	268	270	302	348	379	429	447	473	539
LBS	349	363	395	442	491	541	585	610	728

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 839. For tolerances, see page 163.

21933480/EN-US – 04/2018

02 115 00 16

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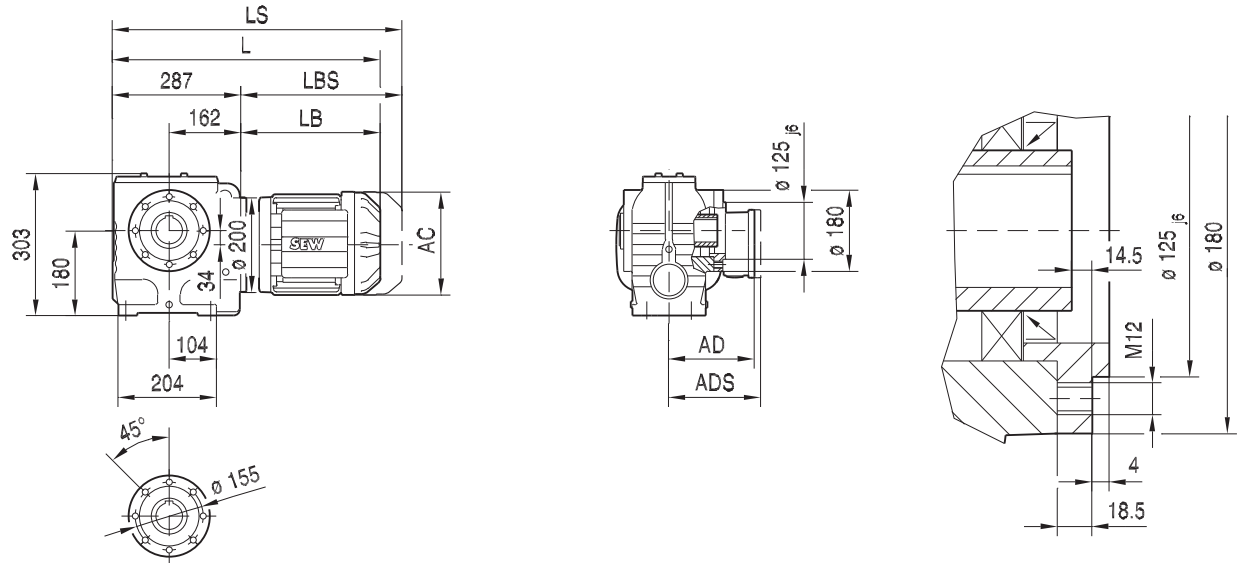

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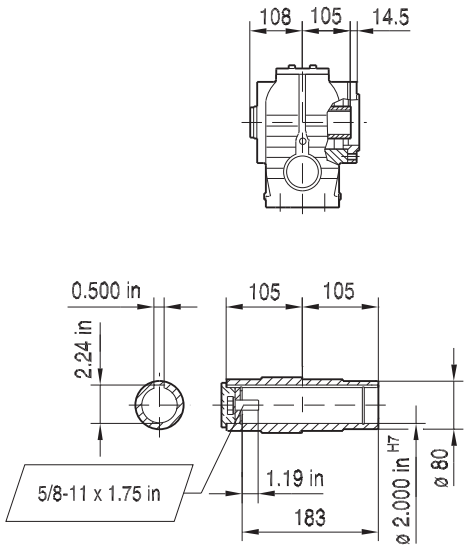

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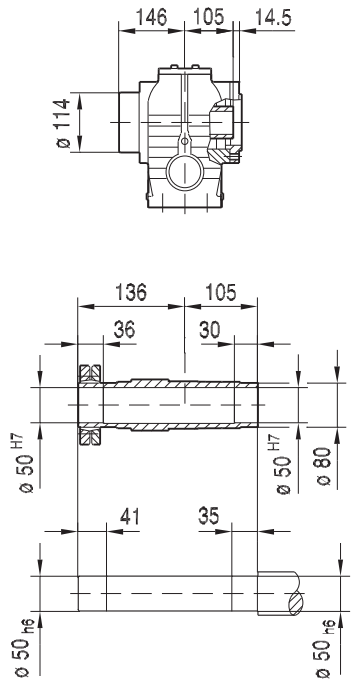
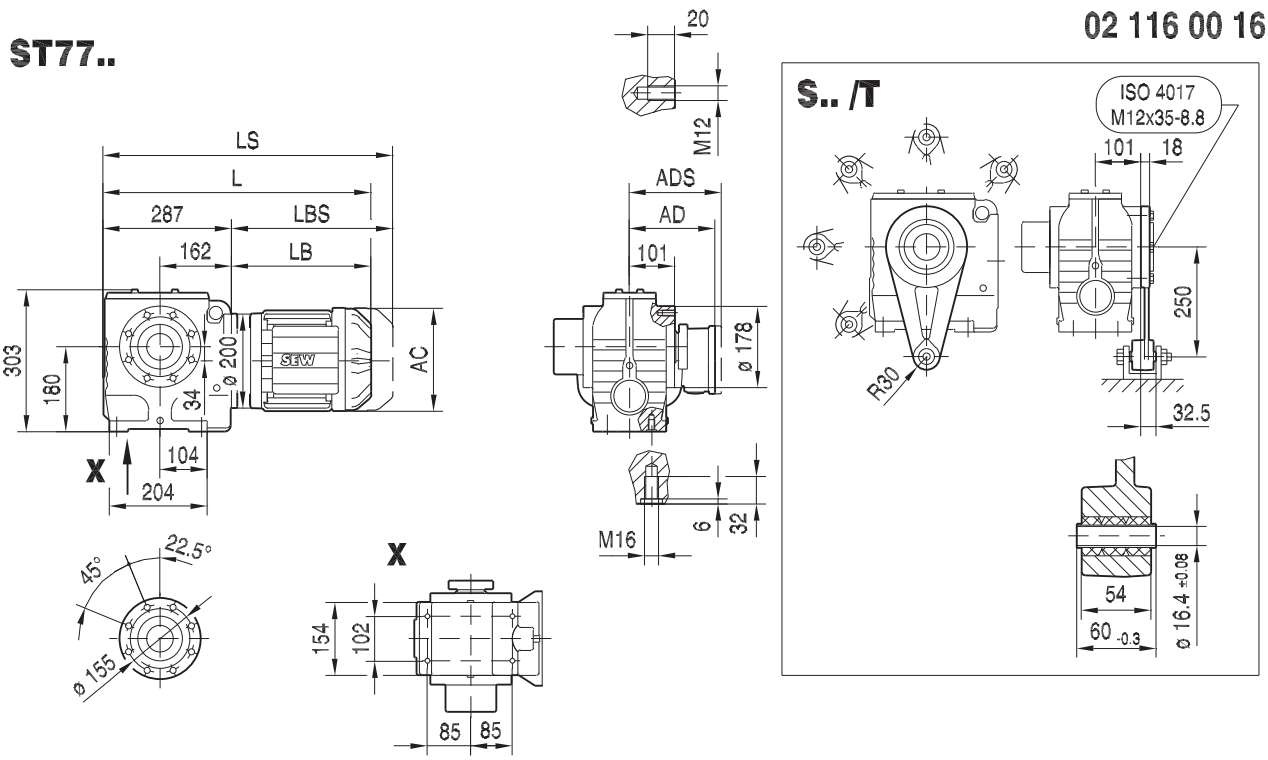
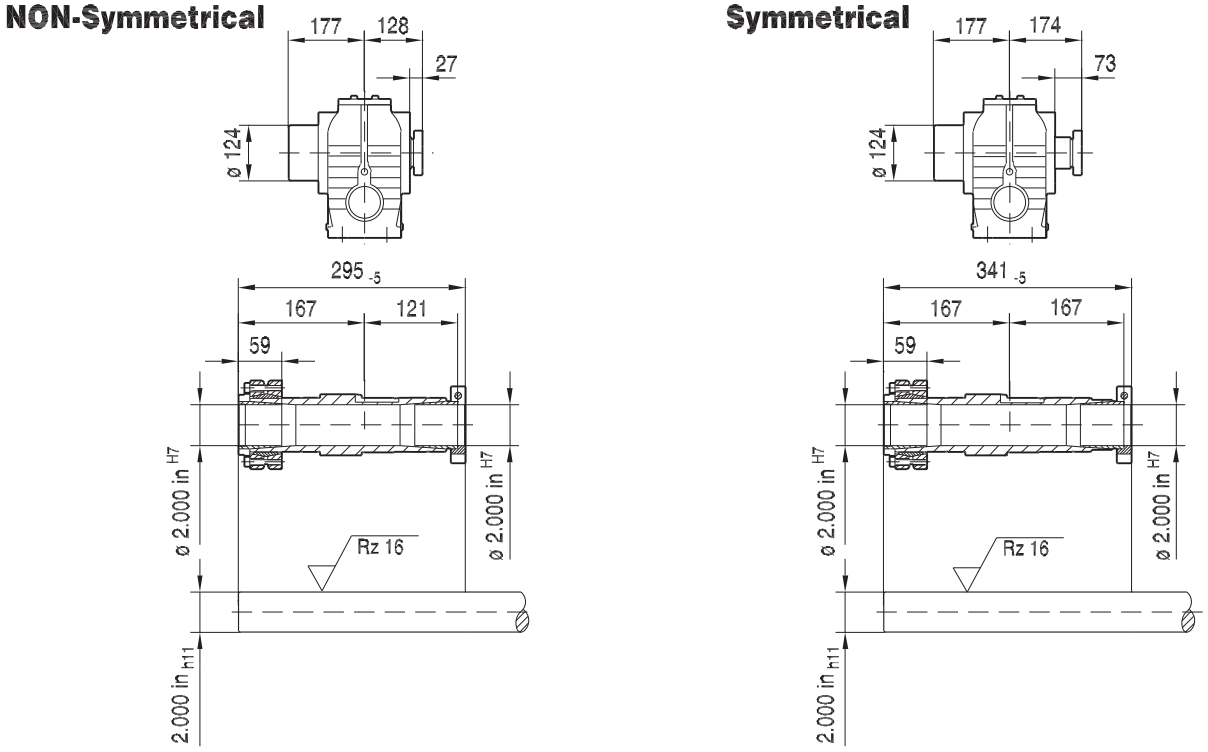


(→ 🗎 163)	DRN80M	DRN90S	DRN90L	DRN100L/LM	DRN112M	DRN132S	DRN132M	DRN132L	DRN160
AC	156	179	179	197	221	221	261	261	314
AD	128	140	140	157	170	170	228	228	253
ADS	139	150	150	158	172	172	228	228	253
L	555	557	589	635	666	716	734	760	826
LS	636	650	682	729	778	828	872	897	1015
LB	268	270	302	348	379	429	447	473	539
LBS	349	363	395	442	491	541	585	610	728

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 839. For tolerances, see page 163.

21933480/EN-US – 04/2018





(→ 🗎 163)	DRN80M	DRN90S	DRN90L	DRN100L/LM	DRN112M	DRN132S	DRN132M	DRN132L	DRN160
AC	156	179	179	197	221	221	261	261	314
AD	128	140	140	157	170	170	228	228	253
ADS	139	150	150	158	172	172	228	228	253
L	555	557	589	635	666	716	734	760	826
LS	636	650	682	729	778	828	872	897	1015
LB	268	270	302	348	379	429	447	473	539
LBS	349	363	395	442	491	541	585	610	728

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 841. For tolerances, see page 163.

21933480/EN-US – 04/2018

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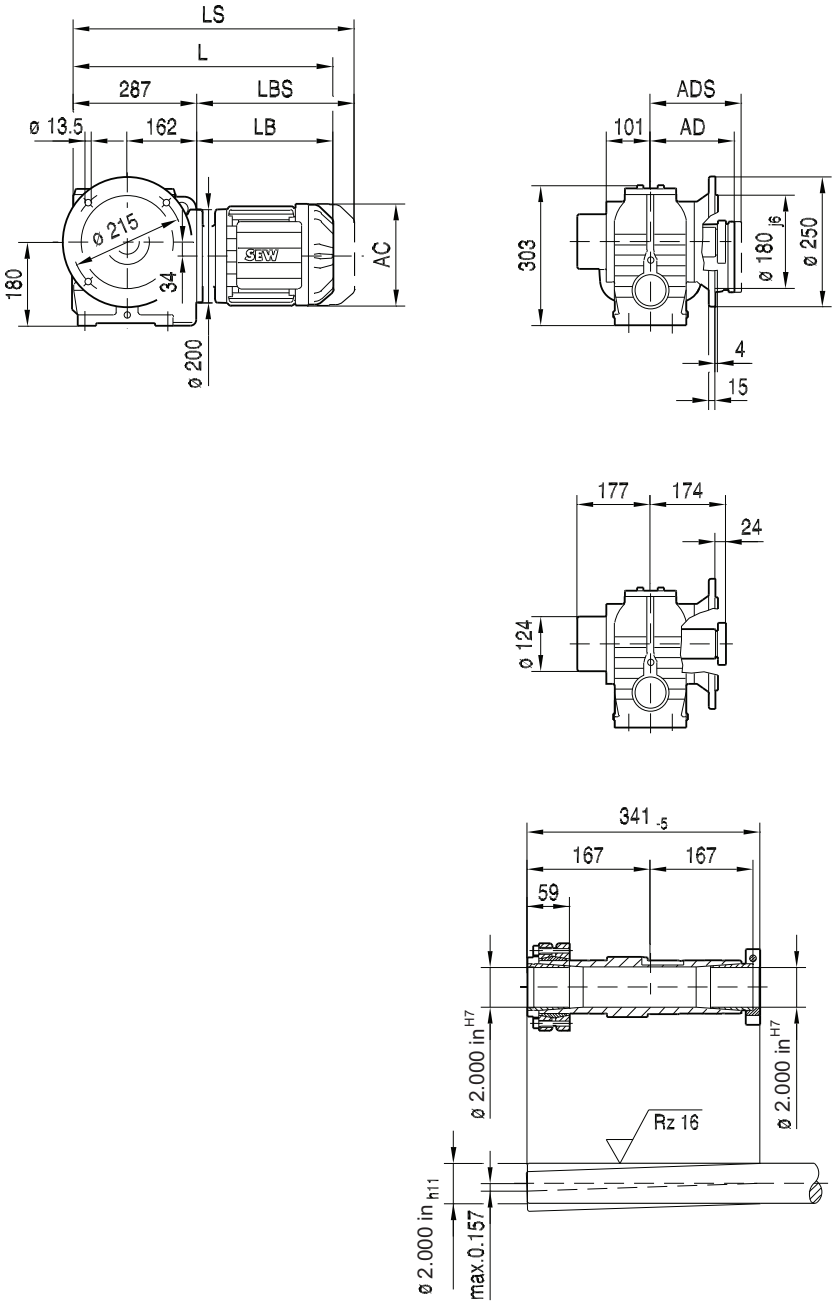

(→ 163)	DRN80M	DRN90S	DRN90L	DRN100L/LM	DRN112M	DRN132S	DRN132M	DRN132L	DRN160
AC	156	179	179	197	221	221	261	261	314
AD	128	140	140	157	170	170	228	228	253
ADS	139	150	150	158	172	172	228	228	253
L	555	557	589	635	666	716	734	760	826
LS	636	650	682	729	778	828	872	897	1015
LB	268	270	302	348	379	429	447	473	539
LBS	349	363	395	442	491	541	585	610	728

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 841. For tolerances, see page 163.

21933480/EN-US – 04/2018

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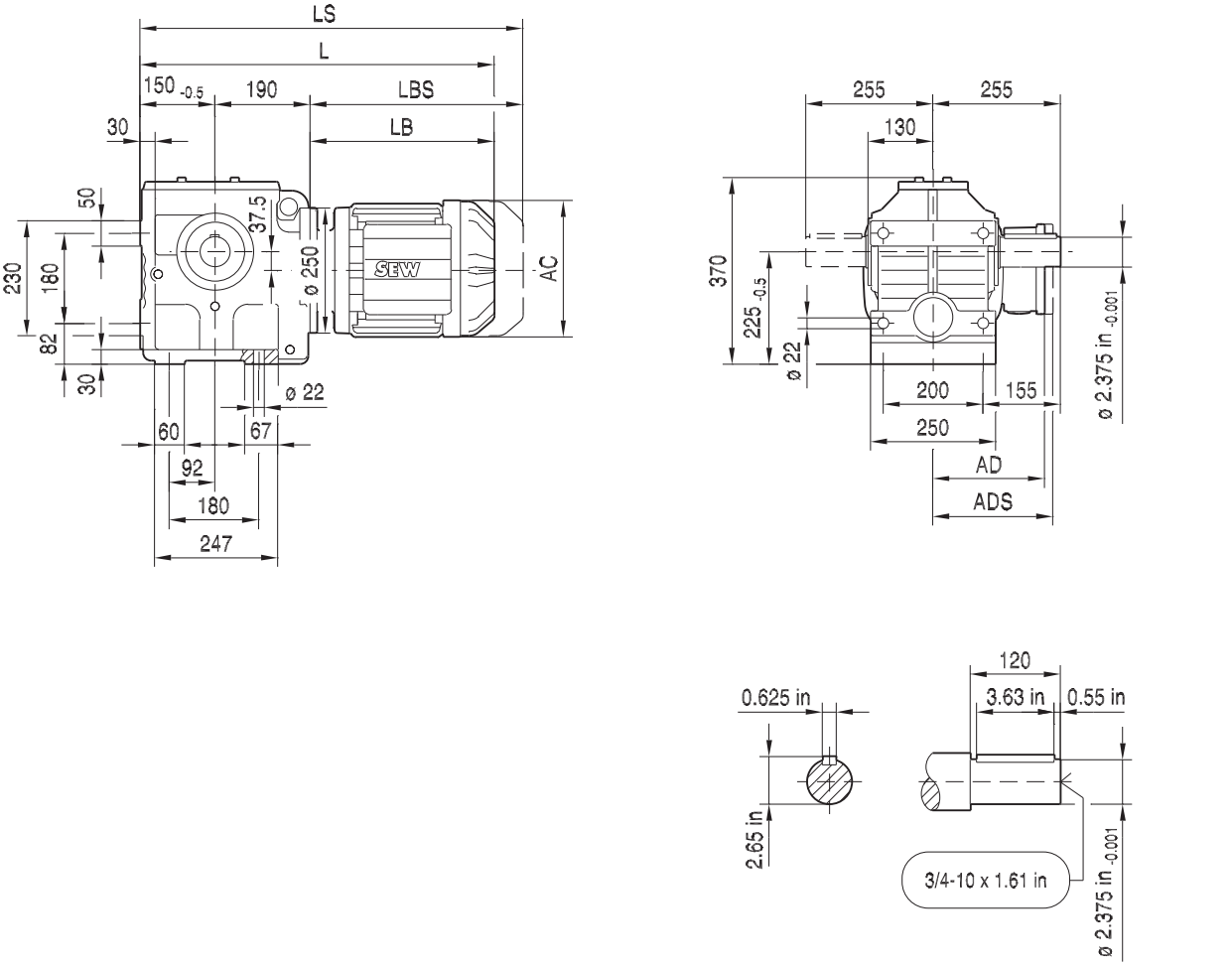
S87..



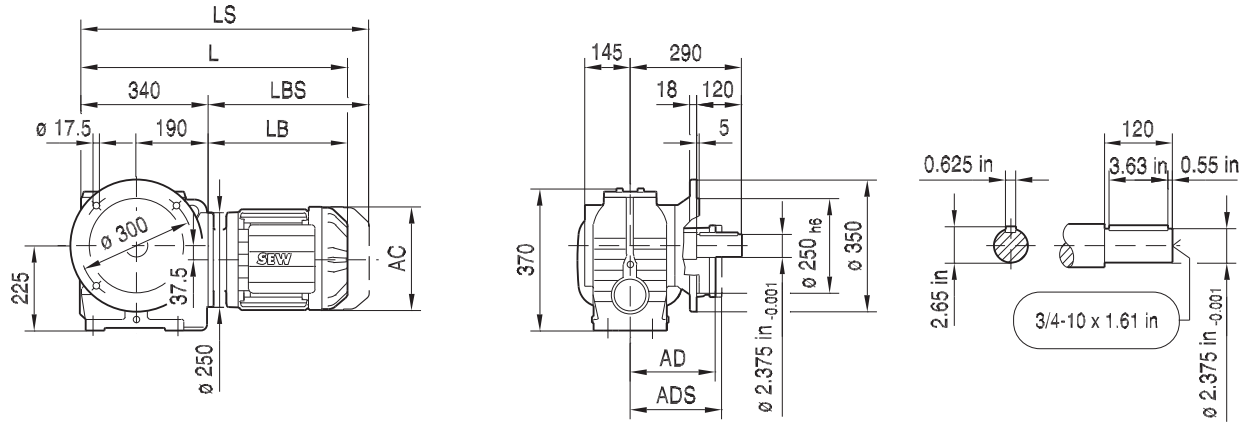
(→ 📄 163)	DRN90S	DRN90L	DRN100L/LM	DRN112M	DRN132S	DRN132M	DRN132L	DRN160	DRN180
AC	179	179	197	221	221	261	261	314	357
AD	140	140	157	170	170	228	228	253	268
ADS	150	150	158	172	172	228	228	253	268
L	605	637	683	714	764	782	808	874	897
LS	698	730	777	826	876	920	945	1063	1086
LB	265	297	343	374	424	442	468	534	557
LBS	358	390	437	486	536	580	605	723	746

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 837. For tolerances, see page 163.

21933480/EN-US – 04/2018

02 118 00 16

SF87..



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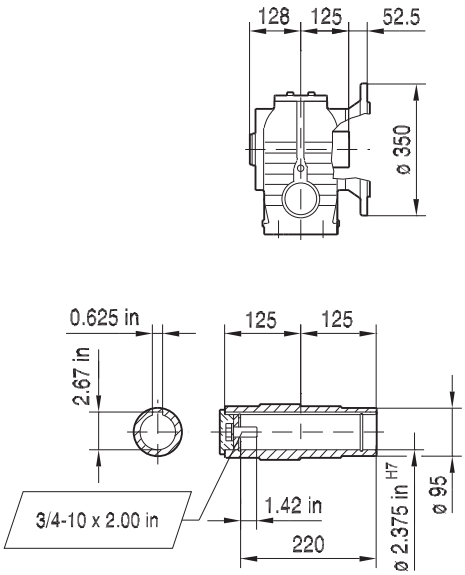

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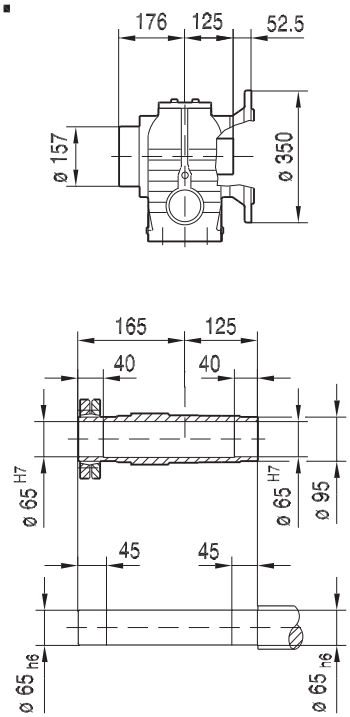


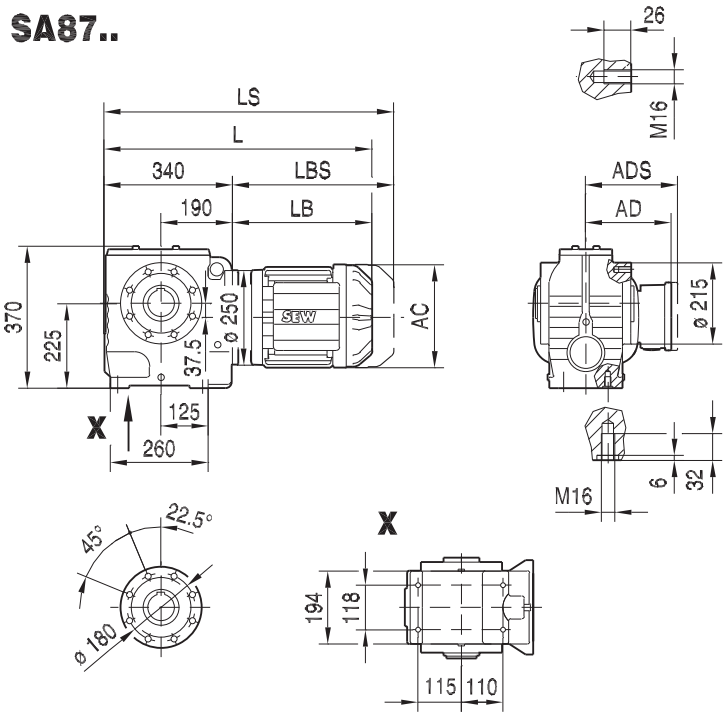
(→ 🗎 163)	DRN90S	DRN90L	DRN100L/LM	DRN112M	DRN132S	DRN132M	DRN132L	DRN160	DRN180
AC	179	179	197	221	221	261	261	314	357
AD	140	140	157	170	170	228	228	253	268
ADS	150	150	158	172	172	228	228	253	268
L	605	637	683	714	764	782	808	874	897
LS	698	730	777	826	876	920	945	1063	1086
LB	265	297	343	374	424	442	468	534	557
LBS	358	390	437	486	536	580	605	723	746

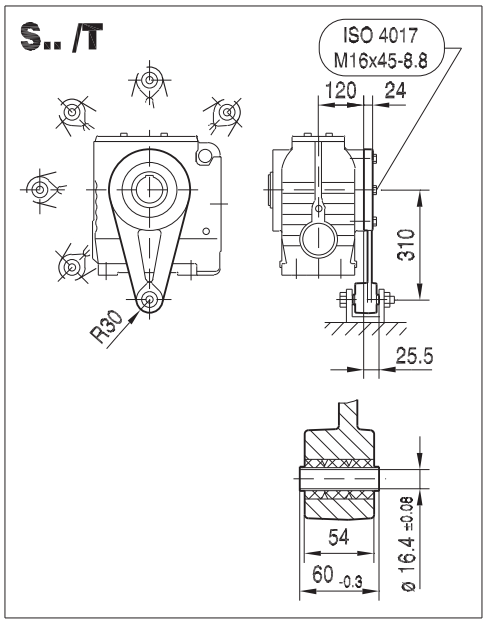
Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 837. For tolerances, see page 163.

21933480/EN-US – 04/2018

02 119 00 16

SA87..





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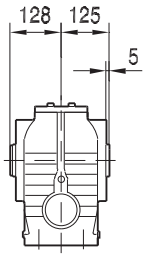

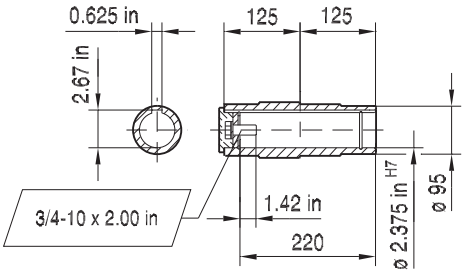

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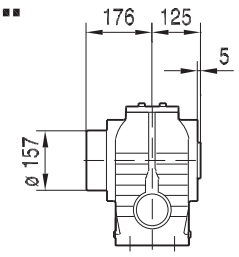
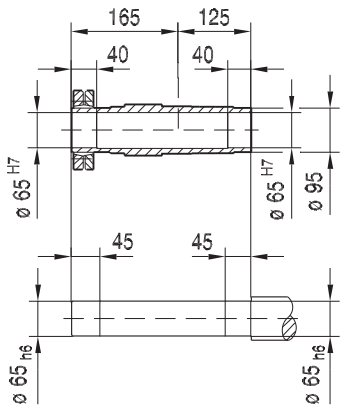




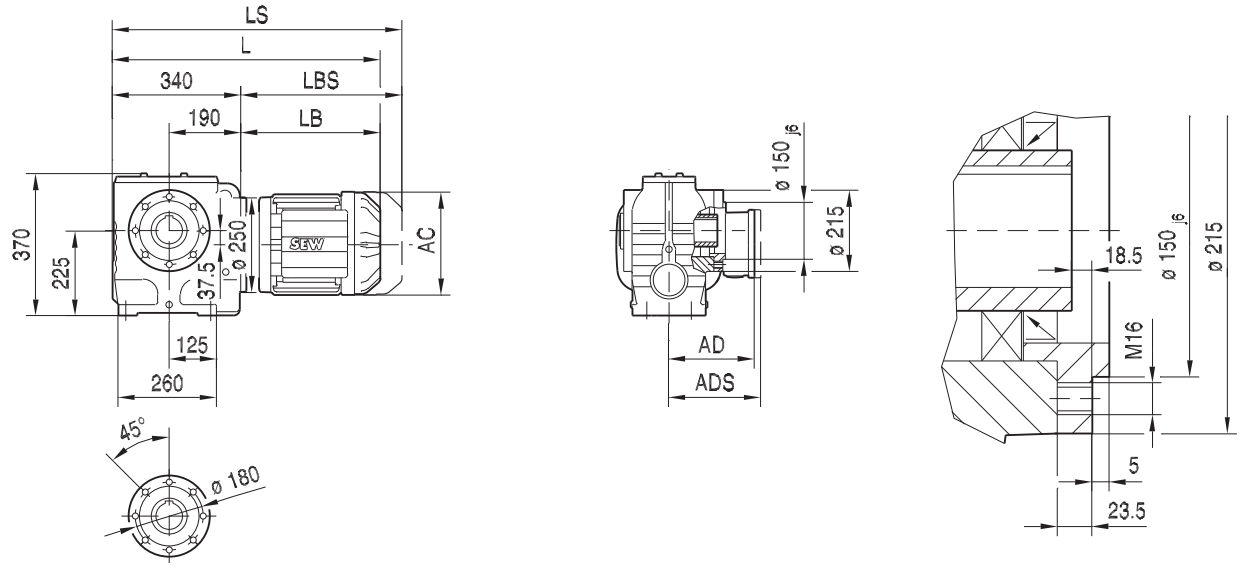
(→ 163)	DRN90S	DRN90L	DRN100L/LM	DRN112M	DRN132S	DRN132M	DRN132L	DRN160	DRN180
AC	179	179	197	221	221	261	261	314	357
AD	140	140	157	170	170	228	228	253	268
ADS	150	150	158	172	172	228	228	253	268
L	605	637	683	714	764	782	808	874	897
LS	698	730	777	826	876	920	945	1063	1086
LB	265	297	343	374	424	442	468	534	557
LBS	358	390	437	486	536	580	605	723	746

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 839. For tolerances, see page 163.

21933480/EN-US – 04/2018

02 120 00 16

SAZ87..



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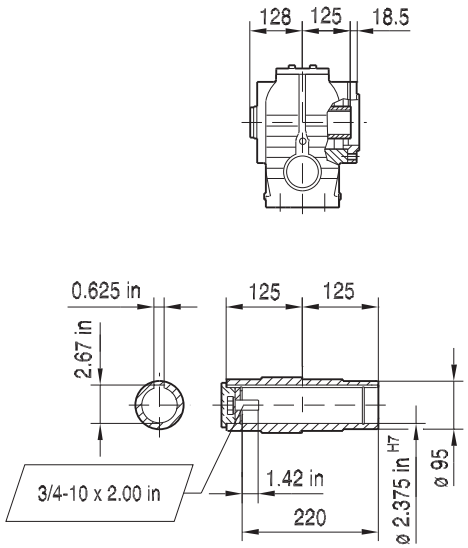

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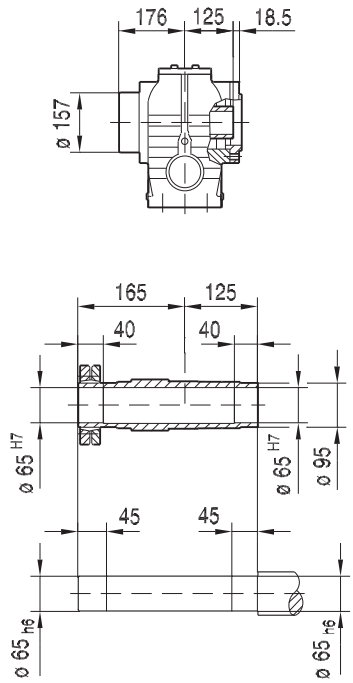
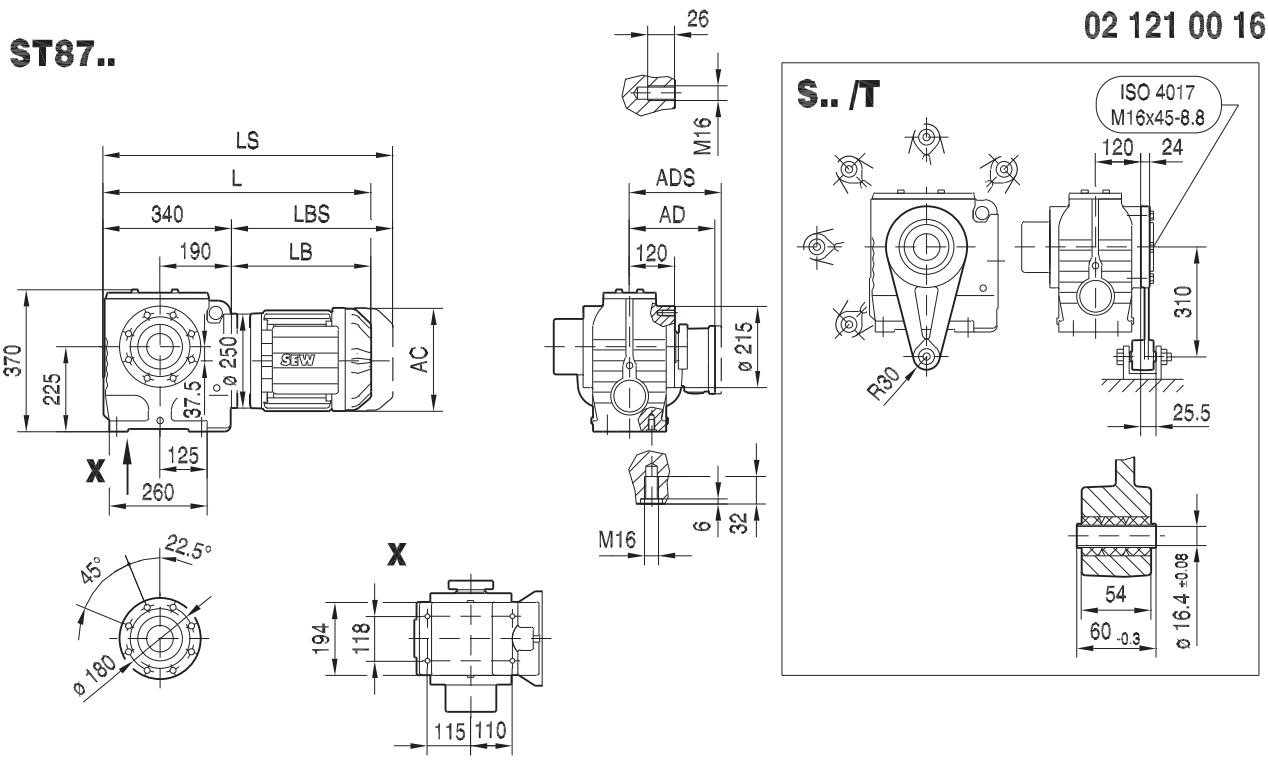
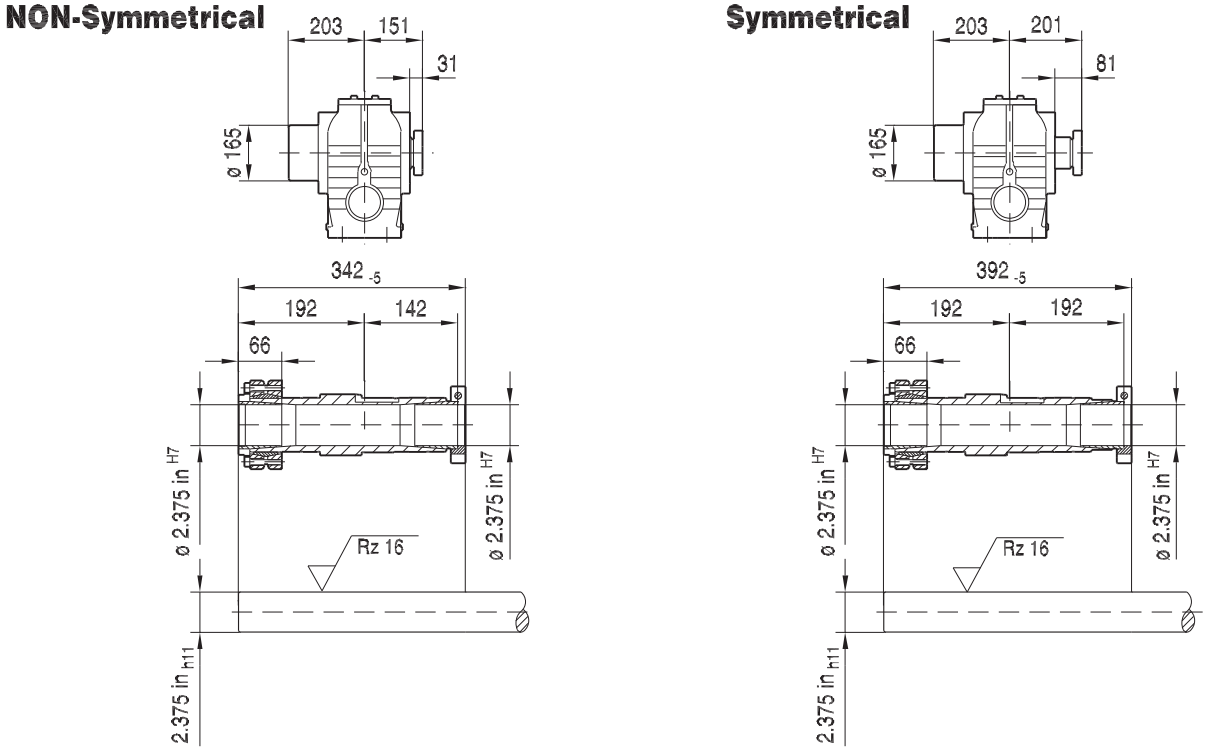


(→ 🗎 163)	DRN90S	DRN90L	DRN100L/LM	DRN112M	DRN132S	DRN132M	DRN132L	DRN160	DRN180
AC	179	179	197	221	221	261	261	314	357
AD	140	140	157	170	170	228	228	253	268
ADS	150	150	158	172	172	228	228	253	268
L	605	637	683	714	764	782	808	874	897
LS	698	730	777	826	876	920	945	1063	1086
LB	265	297	343	374	424	442	468	534	557
LBS	358	390	437	486	536	580	605	723	746

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 839. For tolerances, see page 163.

21933480/EN-US – 04/2018





(→ 🗎 163)	DRN90S	DRN90L	DRN100L/LM	DRN112M	DRN132S	DRN132M	DRN132L	DRN160	DRN180
AC	179	179	197	221	221	261	261	314	357
AD	140	140	157	170	170	228	228	253	268
ADS	150	150	158	172	172	228	228	253	268
L	605	637	683	714	764	782	808	874	897
LS	698	730	777	826	876	920	945	1063	1086
LB	265	297	343	374	424	442	468	534	557
LBS	358	390	437	486	536	580	605	723	746

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 841. For tolerances, see page 163.

21933480/EN-US – 04/2018

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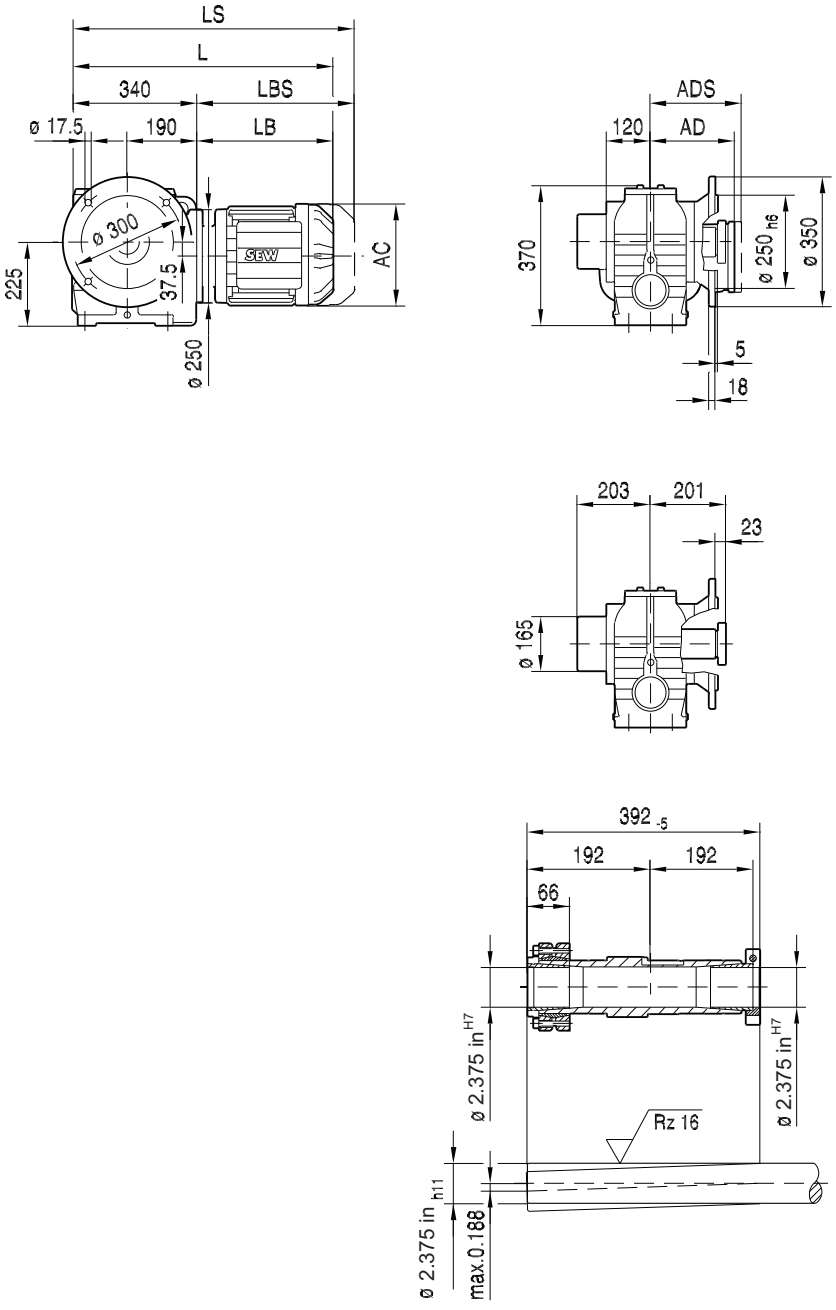


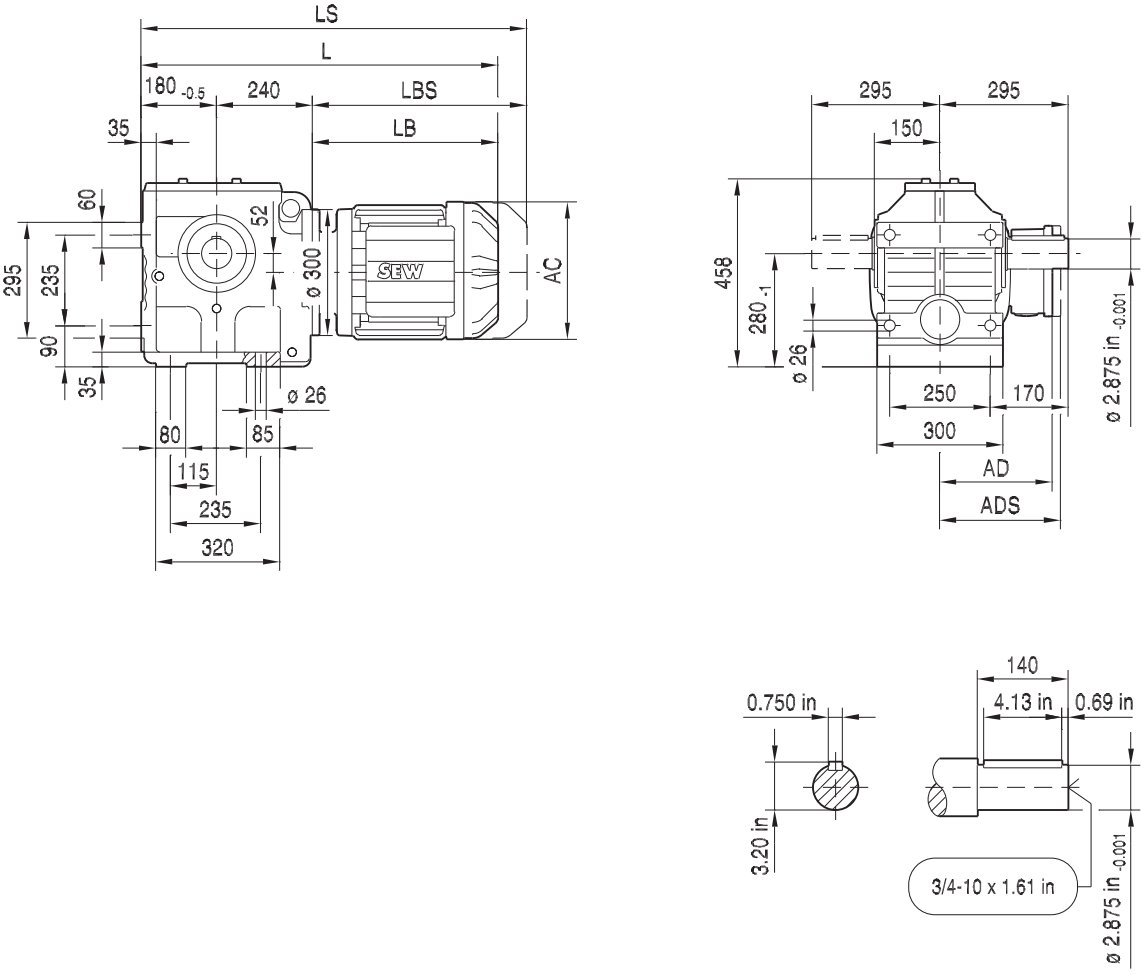
(→ 🗎 163)	DRN90S	DRN90L	DRN100L/LM	DRN112M	DRN132S	DRN132M	DRN132L	DRN160	DRN180
AC	179	179	197	221	221	261	261	314	357
AD	140	140	157	170	170	228	228	253	268
ADS	150	150	158	172	172	228	228	253	268
L	605	637	683	714	764	782	808	874	897
LS	698	730	777	826	876	920	945	1063	1086
LB	265	297	343	374	424	442	468	534	557
LBS	358	390	437	486	536	580	605	723	746

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 841. For tolerances, see page 163.

21933480/EN-US – 04/2018

02 122 00 16

S97..



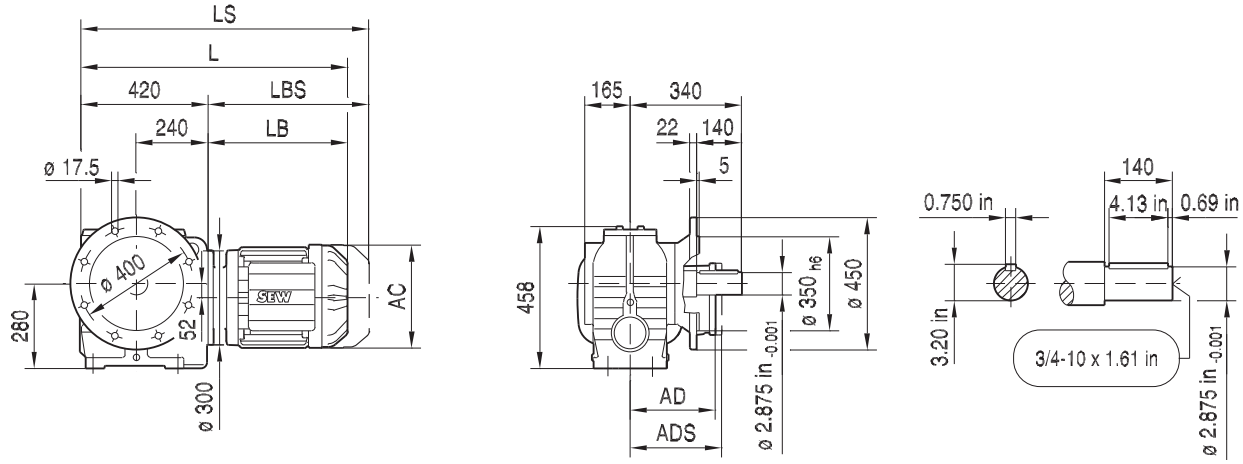
(→ 🗎 163)	DRN90L	DRN100L/LM	DRN112M	DRN132S	DRN132M	DRN132L	DRN160	DRN180	DRN200L
AC	179	197	221	221	261	261	314	357	394
AD	140	157	170	170	228	228	253	268	283
ADS	150	158	172	172	228	228	253	268	283
L	712	758	789	839	857	883	949	972	1082
LS	805	852	901	951	995	1020	1138	1161	1287
LB	292	338	369	419	437	463	529	552	662
LBS	385	432	481	531	575	600	718	741	867

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 837. For tolerances, see page 163.

21933480/EN-US – 04/2018

02 123 00 16

SF97..



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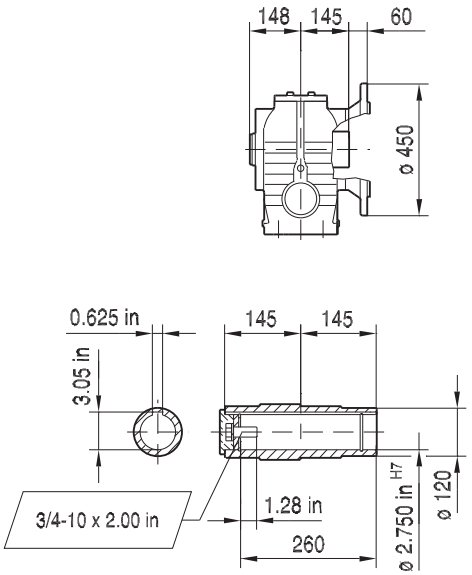

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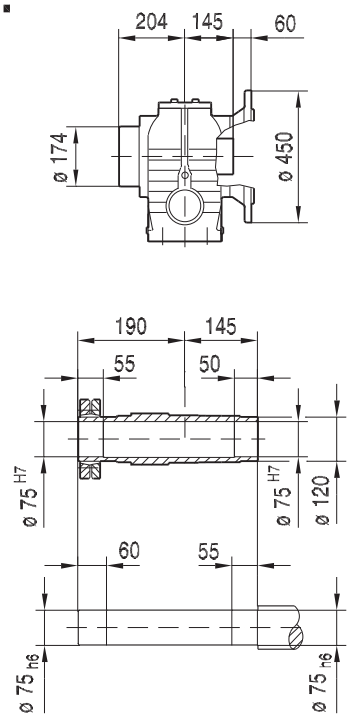


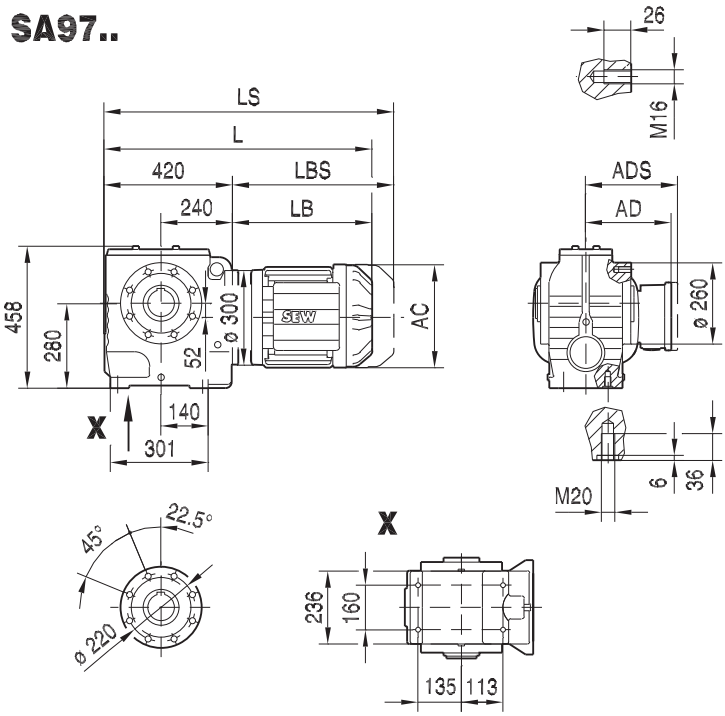
(→ 🗎 163)	DRN90L	DRN100L/LM	DRN112M	DRN132S	DRN132M	DRN132L	DRN160	DRN180	DRN200L
AC	179	197	221	221	261	261	314	357	394
AD	140	157	170	170	228	228	253	268	283
ADS	150	158	172	172	228	228	253	268	283
L	712	758	789	839	857	883	949	972	1082
LS	805	852	901	951	995	1020	1138	1161	1287
LB	292	338	369	419	437	463	529	552	662
LBS	385	432	481	531	575	600	718	741	867

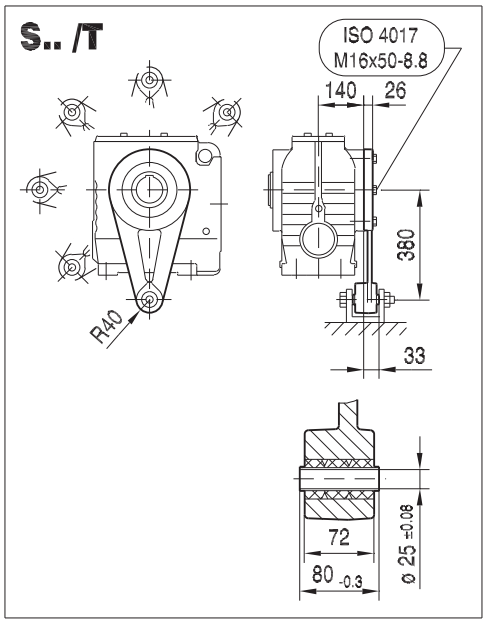
Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 837. For tolerances, see page 163.

21933480/EN-US – 04/2018

02 124 00 16

SA97..





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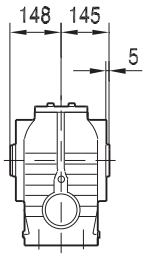

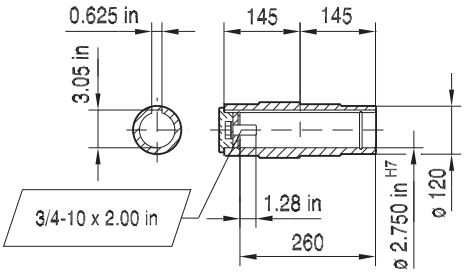

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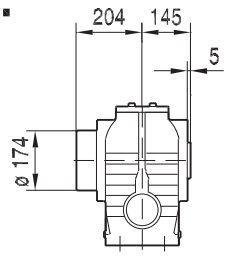
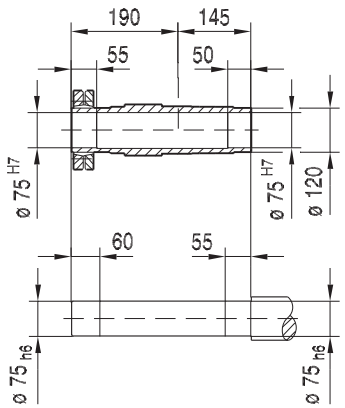




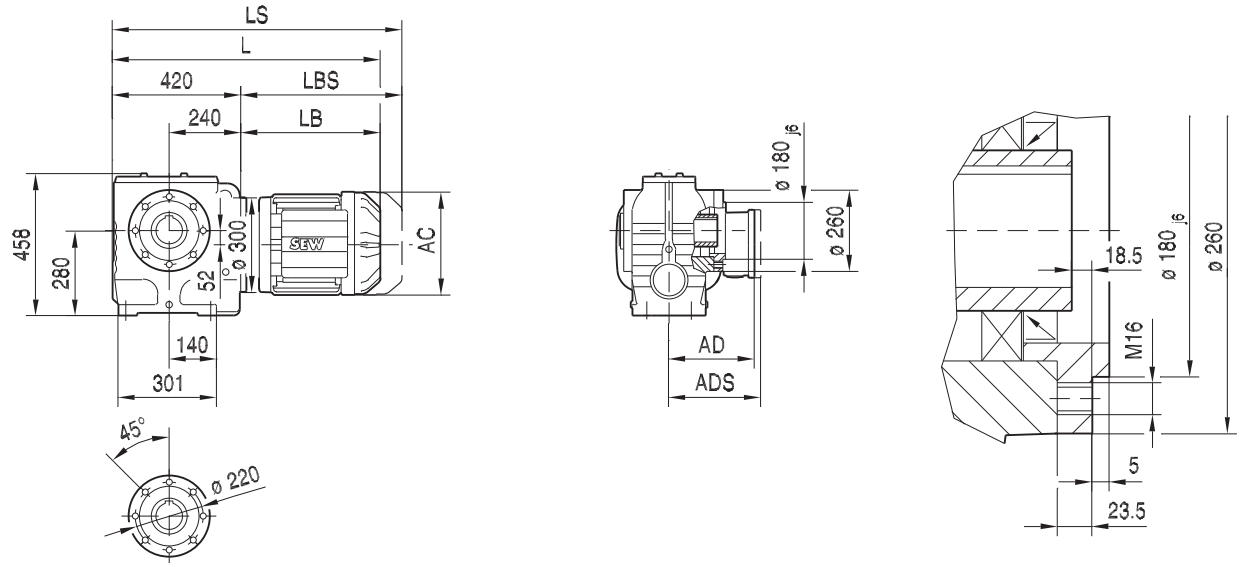
(→ 🗎 163)	DRN90L	DRN100L/LM	DRN112M	DRN132S	DRN132M	DRN132L	DRN160	DRN180	DRN200L
AC	179	197	221	221	261	261	314	357	394
AD	140	157	170	170	228	228	253	268	283
ADS	150	158	172	172	228	228	253	268	283
L	712	758	789	839	857	883	949	972	1082
LS	805	852	901	951	995	1020	1138	1161	1287
LB	292	338	369	419	437	463	529	552	662
LBS	385	432	481	531	575	600	718	741	867

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 839. For tolerances, see page 163.

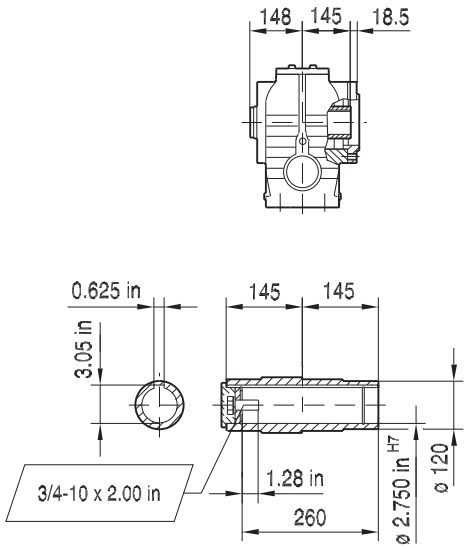
21933480/EN-US – 04/2018

02 125 00 16

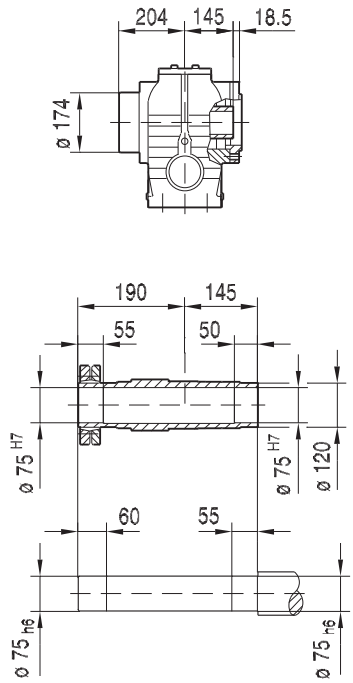
SAZ97..



SAZ97..



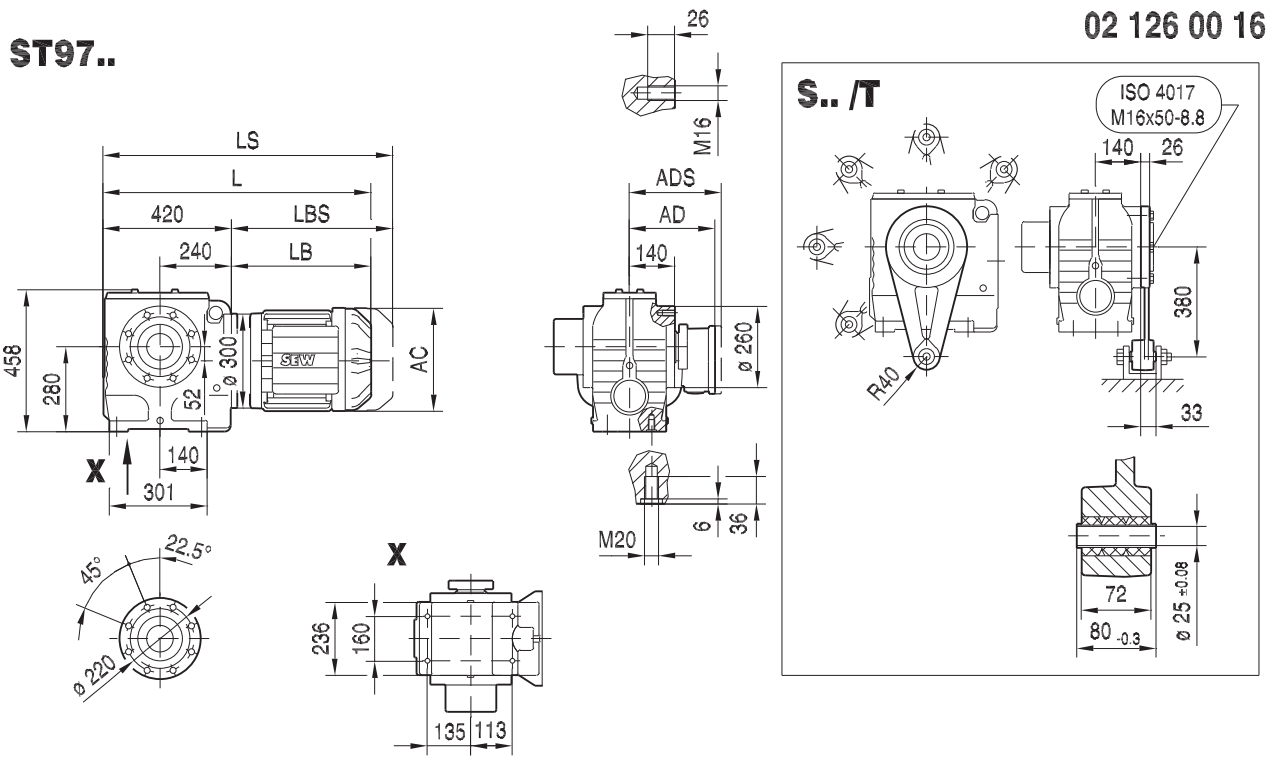
SHZ97..

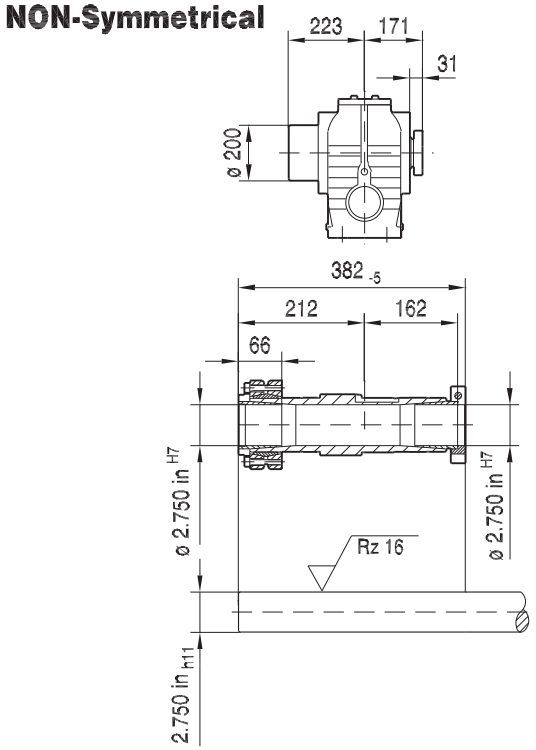


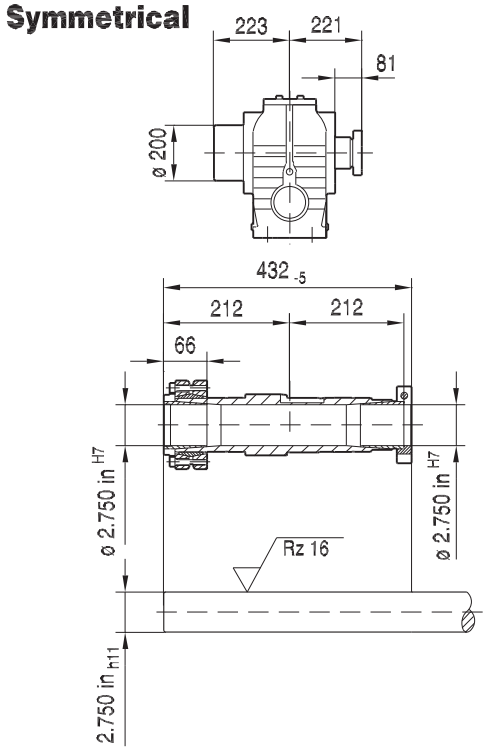
(→ 163)	DRN90L	DRN100L/LM	DRN112M	DRN132S	DRN132M	DRN132L	DRN160	DRN180	DRN200L
AC	179	197	221	221	261	261	314	357	394
AD	140	157	170	170	228	228	253	268	283
ADS	150	158	172	172	228	228	253	268	283
L	712	758	789	839	857	883	949	972	1082
LS	805	852	901	951	995	1020	1138	1161	1287
LB	292	338	369	419	437	463	529	552	662
LBS	385	432	481	531	575	600	718	741	867

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 839. For tolerances, see page 163.

21933480/EN-US – 04/2018







(→ 🗎 163)	DRN90L	DRN100L/LM	DRN112M	DRN132S	DRN132M	DRN132L	DRN160	DRN180	DRN200L
AC	179	197	221	221	261	261	314	357	394
AD	140	157	170	170	228	228	253	268	283
ADS	150	158	172	172	228	228	253	268	283
L	712	758	789	839	857	883	949	972	1082
LS	805	852	901	951	995	1020	1138	1161	1287
LB	292	338	369	419	437	463	529	552	662
LBS	385	432	481	531	575	600	718	741	867

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 841. For tolerances, see page 163.

21933480/EN-US – 04/2018

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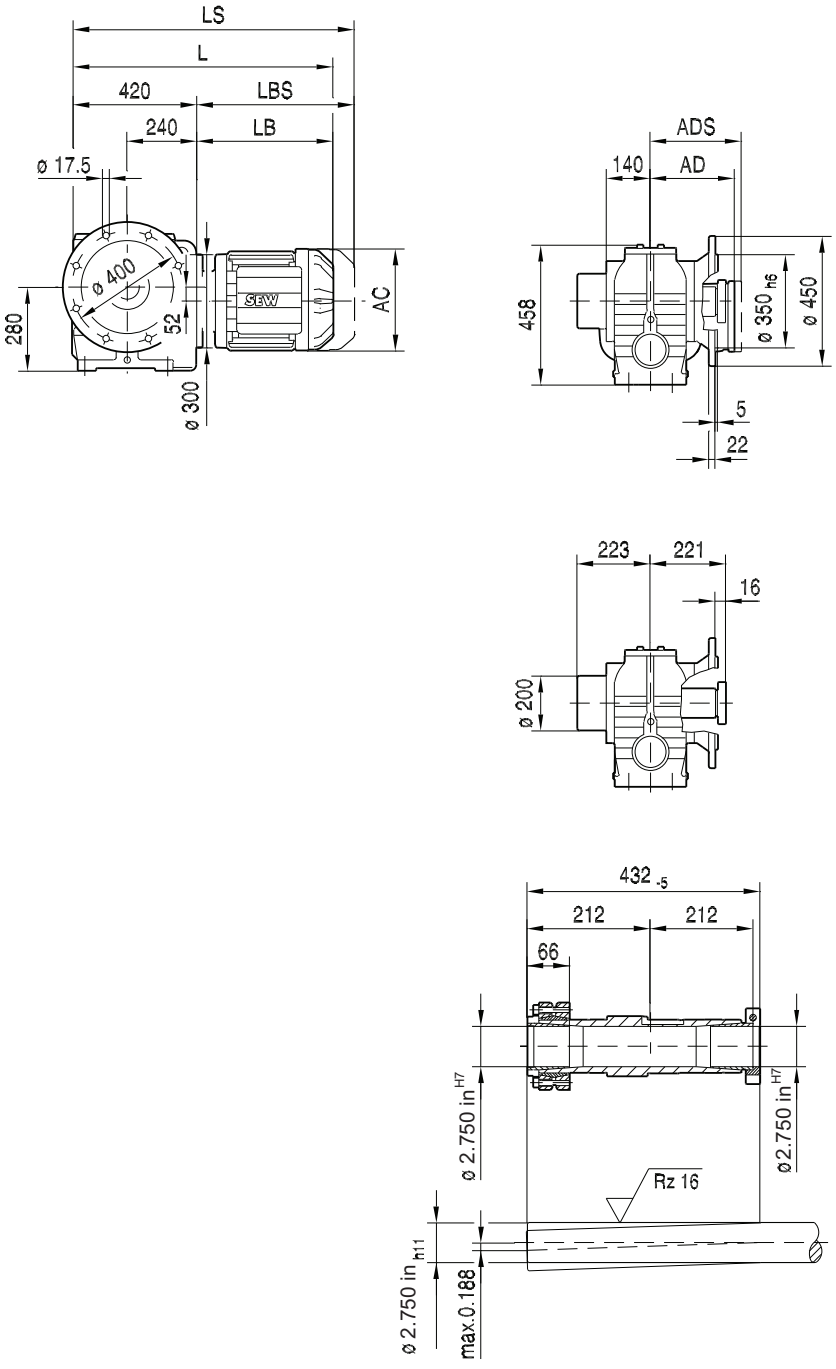


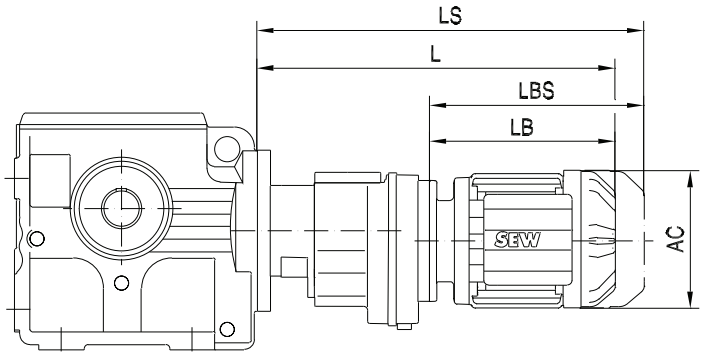
(→ 🗎 163)	DRN90L	DRN100L/LM	DRN112M	DRN132S	DRN132M	DRN132L	DRN160	DRN180	DRN200L
AC	179	197	221	221	261	261	314	357	394
AD	140	157	170	170	228	228	253	268	283
ADS	150	158	172	172	228	228	253	268	283
L	712	758	789	839	857	883	949	972	1082
LS	805	852	901	951	995	1020	1138	1161	1287
LB	292	338	369	419	437	463	529	552	662
LBS	385	432	481	531	575	600	718	741	867

Dimensions in mm unless noted as inch. For all available output shaft diameters, see page 841. For tolerances, see page 163.

21933480/EN-US – 04/2018

11.13 S.. R.. DRS/DRN.. Compound dimensions

02 080 00 06



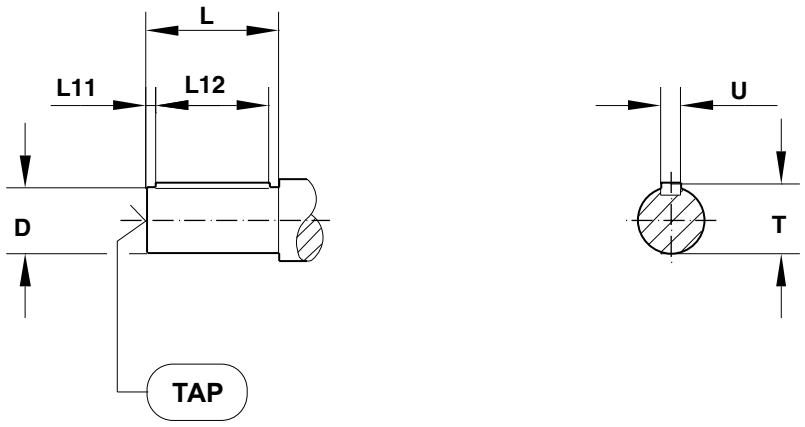
All dimensions shown in mm.

Gear	Motor	AC	L	LS	LB	LBS
S..37R17	**DR63**	132	324	379	149	204
	DRS71S	139	335	403	160	228
S..47R17	**DR63**	132	324	379	149	204
	DRS71S	139	335	403	160	228
S..57R17	**DR63**	132	324	379	149	204
	DRS71S	139	335	403	160	228
	DRS71M	139	360	428	185	253
	DRN80M	156	410	491	235	316
S..67R37	**DR63**	132	356	411	191	246
	DRS71S	139	367	434	202	269
	DRS71M	139	392	459	227	294
	DRN80M	156	446	527	281	362
	DRN90S	179	448	541	283	376
S..77R37	**DR63**	132	348	403	191	246
	DRS71S	139	359	426	202	269
	DRS71M	139	384	451	227	294
	DRN80M	156	438	519	281	362
	DRN90S	179	440	533	283	376
	DRN90L	179	472	565	315	408
S..87R57	**DR63**	132	412	467	185	240
	DRS71S	139	423	491	196	264
	DRS71M	139	448	516	221	289
	DRN80M	156	502	583	275	356
	DRN90S	179	504	597	277	370
	DRN90L	179	536	629	309	402
	DRN100L	197	583	676	355	448
	DRN100LM	197	583	676	355	448
S..97R57	**DR63**	132	407	462	185	240
	DRS71S	139	418	486	196	264
	DRS71M	139	443	511	221	289
	DRN80M	156	497	578	275	356
	DRN90S	179	499	592	277	370
	DRN90L	179	531	624	309	402
	DRN100L	197	578	671	355	448
	DRN100LM	197	578	671	355	448
	DRN112M	221	608	720	386	498
	DRN132S	221	662	774	440	552

21933480/EN-US – 04/2018

11.14 Output shaft sizes

11.14.1 Solid Shafts – Inch

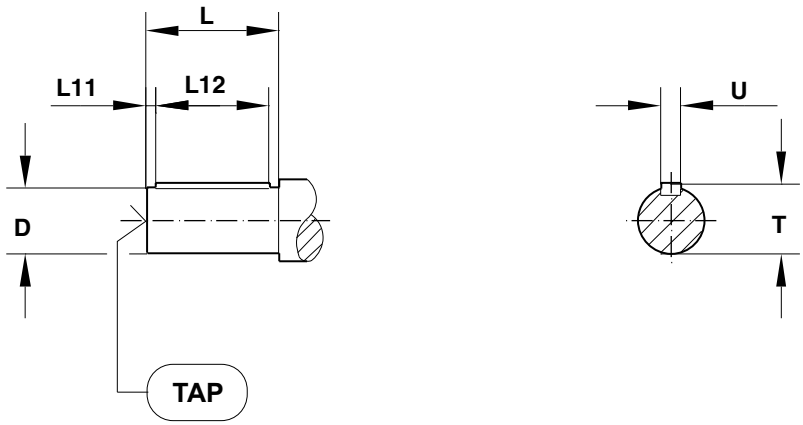


Model	All dimensions in inches						
	D	T	U	L[1]	L11	L12	TAP
S..37	0.75	0.83	3/16	1.57	0.25	1-1/16	1/4 - 20 x 0.63
S..47	1	1.11	1/4	1.97	0.32	1-5/16	3/8 - 16 x 0.87
S..57	1.25	1.36	1/4	2.36	0.26	1-11/16	1/2 - 13 x 1.12
S..67	1.375	1.51	5/16	2.76	0.43	1-13/16	1/2 - 13 x 1.12
S..77	1.75	1.92	3/8	3.54	0.38	2-3/4	5/8 - 11 x 1.38
S..87	2.375	2.65	5/8	4.72	0.51	3-5/8	3/4 - 10 x 1.61
S..97	2.875	3.2	3/4	5.51	0.67	4-1/8	3/4 - 10 x 1.61

[1]Longer shafts to match obsolete gear unit designs (ie: SF60, SF62) are available for flanged units.

21933480/EN-US – 04/2018

11.14.2 Solid Shafts – Metric

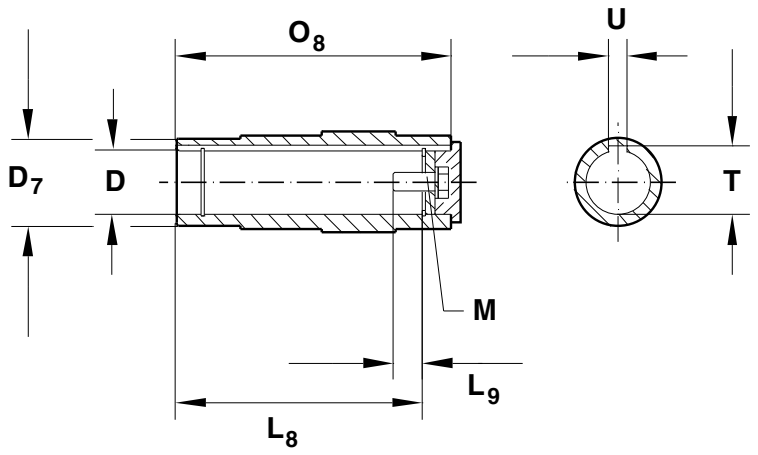


Model	All dimensions in mm						
	D	T	U	L[1]	L11	L12	TAP
S..37	20	22.5	6	40	4	32	M6 x 16
S..47	25	28	8	50	5	40	M10 x 22
S..57	30	33	8	60	3.5	50	M10 x 22
S..67	35	38	10	70	7	56	M12 x 28
S..77	45	48.5	14	90	5	80	M16 x 36
S..87	60	64	18	120	5	110	M20 x 42
S..97	70	74.5	20	140	7.5	125	M20 x 42

[1] Longer shafts to match obsolete gear unit designs (ie: SF60, SF62) are available for flanged units.

21933480/EN-US – 04/2018

11.14.3 Hollow Shaft – Inch

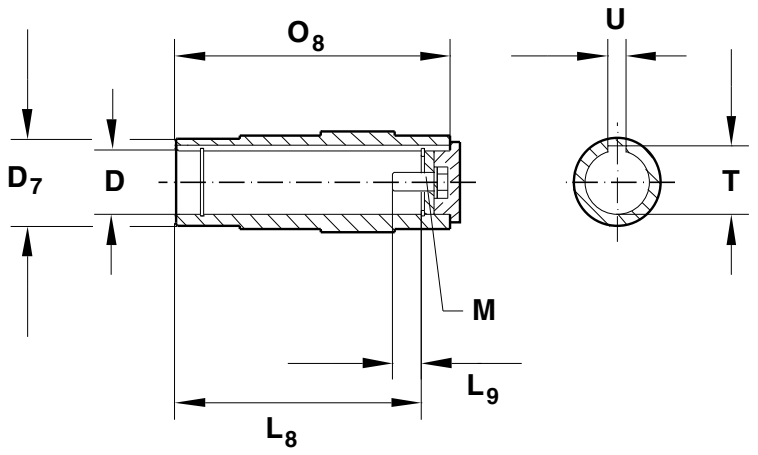


Note:
To aid in the future removal of your machine's solid shaft from a hollow shaft gear unit, please see SEW-EURODRIVE design recommendations on page 121.

Model	All dimensions in inch							
	D	D7	O8	T	U	L8	L9	M
SA..37	0.75	1.38	4.72	0.84	3/16	4.09	0.37	1/4 - 20 x 5/8
SA..47	1.25	1.77	4.72	1.37	1/4	4.13	0.67	7/16 - 14 x 1
SA..57	1.1875	1.97	5.91	1.30	1/4	5.20	0.67	3/8 - 16 x 1
	1.25	1.97	5.91	1.37	1/4	5.20	0.67	7/16 - 14 x 1
	1.375	1.97	5.91	1.52	5/16	5.20	0.65	1/2 - 13 x 1
	1.4375	1.97	5.91	1.61	3/8	5.20	0.65	5/8 - 11 x 1-3/4
SA..67	1.25	2.56	6.61	1.37	1/4	5.67	0.67	7/16 - 14 x 1
	1.50	2.56	6.61	1.67	3/8	5.67	1.36	5/8 - 11 x 1-3/4
SA..77	2.00	3.15	8.27	2.22	1/2	7.20	1.16	5/8 - 11 x 1-3/4
SA..87	2.375	3.74	9.84	2.65	5/8	8.66	1.37	3/4 - 10 x 2
SA..97	2.75	4.72	11.42	3.03	5/8	10.23	1.24	3/4 - 10 x 2

21933480/EN-US – 04/2018

11.14.4 Hollow Shaft – Metric



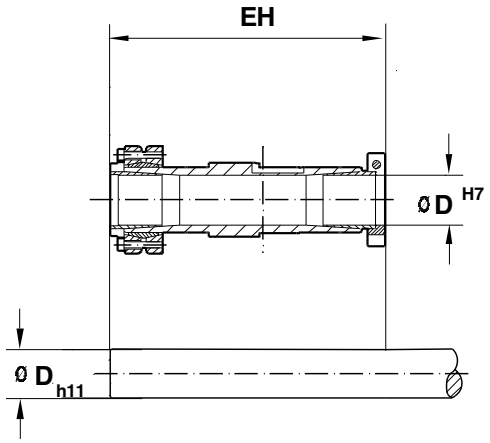
Note:
To aid in the future removal of your machine's solid shaft from a hollow shaft gear unit, please see SEW-EURODRIVE design recommendations on page 121.

Model	All dimensions in mm							
	D	D7	O8	T	U	L8	L9	M
SA..37	20	35	120	22.8	6	104	8	M6 x 16
SA..47	25	45	120	28.3	8	105	17	M10 x 25
	30	45	120	33.3	8	105	17	M10 x 25
SA..57	30	50	150	33.3	8	132	17	M10 x 25
	35	50	150	38.3	10	132	22	M12 x 30
SA..67	40	65	168	43.3	12	144	29	M16 x 40
	45	65	168	48.3	14	144	29	M16 x 40
SA..77	50	80	210	53.8	14	183	32	M16 x 45
	60	80	210	64.4	18	180	37	M20 x 50
SA..87	60	95	250	64.4	18	220	36	M20 x 50
	70	95	250	74.9	20	220	34	M20 x 50
SA..97	70	120	290	74.9	20	260	34	M20 x 50
	90	120	290	95.4	25	255	41	M24 x 60

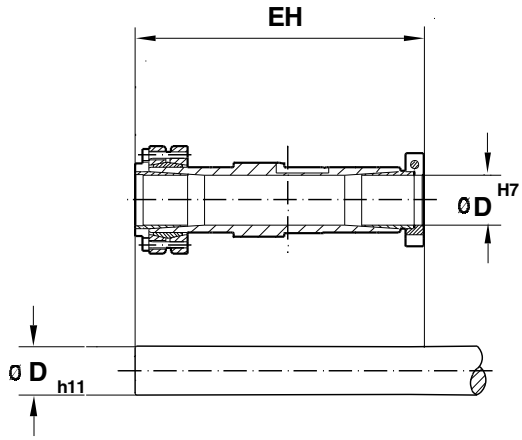
21933480/EN-US – 04/2018

11.14.5 TorqLOC® keyless hollow shaft

NON-Symmetrical



Symmetrical



Model	D (in) Inch Bores					D (mm) Metric Bores				EH (in)	
										NON Symmetrical	Symmetrical
ST37	0.625	0.6875	0.75	-	-	16	19	20		6.54	7.33
ST47	1.00	1.1875	1.25	-	-	25	30	-	-	6.69	7.63
ST57	1.1875	1.25	1.375	1.4375	-	30	35	-	-	8.15	9.13
ST67	1.375	1.4375	1.50	1.625	1.6875	35	38	40	-	9.17	10.43
ST77	1.625	1.6875	1.75	1.9375	2.00	40	45	50	51	11.61	13.34
ST87	1.9375	2.00	2.375	2.4375	-	50	51	60	65	13.50	15.47
ST97	2.4375	2.75	2.9375	-	-	60	62	70	75	15.00	16.97

21933480/EN-US – 04/2018