

APG Installation and Maintenance

The summary information provided below is not intended to give complete information on installation, lubrication and maintenance. Complete details can be found in the instruction manual and lubrication tag provided with each unit.

INSTALLATION

Proper installation of DODGE APG will insure reliable service and maximum life. Key items to minimize possible failures include:

Gear Case Mounting-To insure uniform pressure mount gear case on flat surface. Use uniform torque when mounting bolts are tightened.

Shaft Overhung Loads-Excessive overhung loads due to over tightening of belts or chains can result in broken shafts and reduce bearing life or failure.

Couplings-Improper coupling alignment can result in excessive stresses on gear unit shaft and bearings.

Shock Loads-Excessive shock loads can also result in damaging stresses on shafting and bearings. See selection procedure, pages D1-4 & D1-5 for correct service factors.

VISUAL INSPECTION

In addition to lubrication and installation, regular inspection to insure tightness of bolts and screws, correct alignment of shaft couplings, no major oil leaks, no excessive heating and no unusual vibration or noises will guarantee maximum performance and life of your DODGE APG product.

MAINTENANCE SUMMARY FOR DODGE APG

Lubricant provided by the factory will operate (with no change required) up to one year in service. No initial oil change is required. This is one of the performance benefits provided by synthesized lubricant. As long as recommended lubricants are used, the once per year oil change should be continued for the life of the product. At each oil change, fittings provided should be greased using recommended lubricant. An installation and maintenance manual showing required oil levels for various mounting positions, and recommended lubricants is provided with each unit.

APG Lubrication

The correct amount of oil is important to the performance of DODGE APG. Each DODGE APG unit has a red oil level plug which indicates the proper oil level for a given mounting position. Changes in the mounting position will require relocation of the level plug and adding or draining lubricant to insure proper amount of lubricant. Check the oil level plug location diagrams in the installation and maintenance manual shipped with each reducer.

Proper lubrication of DODGE APG is extremely important if long trouble free operation is to be expected. Proper lubrication consists of:

1. Use of proper type and grade of lubricant.
2. Maintenance of correct oil level.
3. Drain, flush, and refill at the required intervals.

The DODGE APG is filled at the factory with synthesized oil to the correct level for the specified mounting position.

The following table lists the typical lubricant supplied in the APG reducer and the approximate amount of lubricant supplied in the standard floor mounted reducers.

LUBRICANT CAPACITIES

FACTORY LUBE	GEAR SIZE	VOLUME QUARTS	VOLUME GALLONS	QUANTITY OF LUBE	PART NUMBER
MOBIL SHC-634 AGMA7 ISO460	S2A	0.4	0.1	1	411709-66-AE
	S3A	0.75	0.188	1	
	S4A	0.68	0.17	1	
	S5A	1.75	0.438	2	
	S6A	2.5	0.625	3	
	S7A	6.75	1.688	2	
	S8A	10	2.5	3	411709-66-AF
	D1A	0.4	0.1	1	411709-66-AE
	D2A	0.75	0.188	1	411709-66-AE
	D3A	1.25	0.313	1	
	D4A	1.63	0.408	2	411709-66-AE
	D5A	3.25	0.813	1	411709-66-AF
	D6A	5.5	1.375	2	
	D7A	14	3.5	4	
	D8A	19	4.75	5	
	T1A	0.4	0.1	1	411709-66-AE
	T2A	0.75	0.18	1	
	T3A	1.25	0.313	2	
	T4A	1.63	0.408	2	
	T5A	3.25	0.813	1	411709-66-AF
	T6A	5.5	1.375	2	
	T7A	14	3.5	4	
	T8A	19	4.75	5	

NOTE:

Mountings other than standard floor mounted reducers can require as much as two to three times the amount of lubricant shown for the standard assembly. Contact application engineering at 812-376-1100 for proper amounts.

* 411709-66-AE IS A QUART

* 411709-66-AF IS A GALLON

APG Thermal HP Ratings *

When the horsepower rating in the selection table appears in the shaded area, compare the actual HP required (without service factor) with the thermal HP capacity by referring to the tables below. The thermal HP capacity ratings are based upon an ambient temperature of 100° F and 100% duration of operation per hour. If other than 100° F ambient temp. and 100% duration of operation per hour, use the thermal factor chart and apply that value to the following formula:

$$\text{Equivalent Thermal HP Capacity} = \text{Thermal HP Rating} \times \text{Thermal Factor}$$

If the demand HP exceeds the equivalent thermal HP capacity, a larger unit will be required.

Thermal HP Capacities, 100° F Amb.

HIGH SPEED SHAFT RPM	RED.	NOMINAL RATIO	LOW SPEED SHAFT RPM	BASIC GEARCASE			
				SIZE 3	SIZE 4	SIZE 5	SIZE 6
				1.22	2951	18	20
3600	SINGLE	1.50	2400		21	26	27
		1.84	1957		21	28	29
		2.25	1600		22	29	32
		2.76	1304			31	34
		3.38	1065			32	36
	4.13	872			33	38	
	5.06	711				41	
	DOUBLE	4.13	872	18	18	21	22
		5.06	711	18	19	22	23
		6.20	581	18	20	24	26
7.59		474		21	27	27	
9.30		387		21	28	29	
11.40		316		22	29	32	
14.00	258			31	34		
17.10	211			32	36		
20.90	172			33	38		
25.60	141				41		

Thermal HP Capacities, 100 F Amb.

HIGH SPEED SHAFT RPM	RED.	NOMINAL RATIO	LOW SPEED SHAFT RPM	BASIC GEARCASE				
				SIZE 4	SIZE 5	SIZE 6	SIZE 7	SIZE 8
				1.22	2049	23	32	36
2500	Single	1.50	1667	23	33	38	56	60
		1.84	1359		34	40	60	63
		2.25	1111		35	41	64	67
		2.76	906			42	68	71
		3.38	740			44	73	80
	Double	4.13	605				78	87
		5.06	494					92
		4.13	609	21	28	30	50	NA
		5.06	494	22	30	32	51	NA
		6.20	403	23	32	36	52	56
7.59		329	23	33	38	56	60	
9.30	269		34	40	60	63		
11.4	219		35	41	64	67		
14.00	179			42	68	71		
17.10	146			44	73	80		
20.90	120				78	87		
25.60	99					92		

* Units not thermally limited meet 120° F Ambient and 100% duration condition. Size 1 and 2 reducers are not thermally limited.

Thermal Factors for Ambient Temperatures

AMBIENT TEMP. °F	DURATION OF OPERATION PER HOUR				
	100%	80%	60%	40%	20%
0	2.01	2.52	3.01	3.52	4.02
20	1.81	2.27	2.71	3.16	3.61
40	1.60	2.00	2.41	2.80	3.20
60	1.41	1.76	2.11	2.46	2.82
80	1.20	1.51	1.81	2.11	2.41
100	1.00	1.25	1.50	1.75	2.00
120	.81	1.01	1.20	1.41	1.61

Thermal HP Capacities, 100° F Amb.

HIGH SPEED SHAFT RPM	RED.	NOMINAL RATIO	LOW SPEED SHAFT RPM	BASIC GEARCASE				
				SIZE 4	SIZE 5	SIZE 6	SIZE 7	SIZE 8
				1.22	1430			
1750	Single	1.50	1170		34	41	66	67
		1.84	950		36	43	75	75
		2.25	780			45	75	80
		2.76	640			47	79	87
		3.38	520				81	91
	4.13	420					95	
	Double	4.13	420	22	31	40	60	NA
		5.06	350	23	32	40	61	NA
		6.20	280		34	41	66	67
		7.59	230		35	43	75	75
9.30		190			45	75	80	
11.40		150			47	79	87	
14.00	125				81	91		
17.10	100					95		
20.90	84					100		

Thermal HP Capacities, 100° F Amb.

HIGH SPEED SHAFT RPM	RED.	NOMINAL RATIO	LOW SPEED SHAFT RPM	BASIC GEARCASE			
				SIZE 5	SIZE 6	SIZE 7	SIZE 8
				1.22	1172		
1460	Single	1.50	953	37	44	73	80
		1.84	777		46	76	84
		2.25	636		48	81	91
		2.76	519			82	95
		3.38	432				100
	Double	4.13	354	34	39	66	NA
		5.06	289	35	42	69	NA
		6.20	231	37	44	73	80
		7.59	188		46	76	84
		9.30	154		48	81	91
11.40		126			82	96	
14.00	103				100		
17.10	85				104		

Thermal HP Capacities, 100° F Amb.

HIGH SPEED SHAFT RPM	RED.	NOMINAL RATIO	LOW SPEED SHAFT RPM	BASIC GEARCASE		
				SIZE 6	SIZE 7	SIZE 8
				1.22	959	
1170	Single	1.50	780	44	78	88
		1.84	636		81	92
		2.25	520		83	96
		2.76	424			100
						103
	Double	4.13	283	39	73	NA
		5.06	231	42	76	NA
		6.20	189	44	78	88
		7.59	154	47	81	92
		9.30	126		83	96
11.40		103			100	
14.00	84			103		

APG

APG

LOAD LOCATION FACTORS - LOW SPEED SHAFTS Load Location Factors for Low Speed Shafts (Output)

MASTER XL

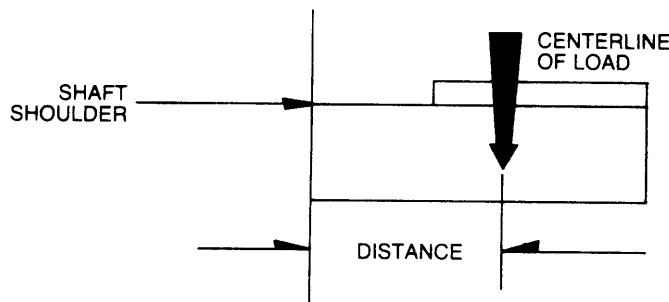
Distance in Inches	Basic Gearcase Size					
	2		3		4	
	Single	D & T	Single	D & T	Single	D & T
0.50	-	-	-	-	-	-
0.75	0.868	0.803	-	-	-	-
1.00	1.000	0.934	.895	.792	.895	.720
1.25	1.132	1.066	1.000	.896	1.000	.813
1.50	1.263	1.197	1.105	1.000	1.105	.907
1.75	1.395	1.328	1.210	1.104	1.210	1.000
2.00	-	1.459	1.315	1.208	1.315	1.093
2.25	-	-	1.420	1.313	1.420	1.187
2.50	-	-	-	1.417	-	1.280
2.75	-	-	-	1.521	-	1.373
3.00	-	-	-	-	-	1.466

Distance in Inches	Basic Gearcase Size							
	5		6		7		8	
	Single	D & T	Single	D & T	Single	D & T	Single	D & T
1.00	.833	.643	.768	.600	.699	.530	.619	.638
1.25	.917	.723	.834	.667	.759	.587	.670	.686
1.50	1.000	.802	.901	.733	.819	.644	.721	.734
1.75	1.083	.881	.967	.800	.880	.701	.772	.783
2.00	1.167	.960	1.033	.867	.940	.758	.822	.831
2.25	1.250	1.040	1.099	.933	1.000	.815	.873	.879
2.50	1.333	1.119	1.166	1.000	1.060	.872	.924	.928
2.75	1.417	1.198	1.232	1.067	1.120	.929	.975	.976
3.00	-	1.277	1.298	1.133	1.181	.986	1.025	1.024
3.50	-	1.436	1.430	1.267	1.301	1.100	1.127	1.121
4.00	-	1.594	-	1.400	1.422	1.215	1.228	1.217
4.50	-	-	-	1.533	1.542	1.329	1.330	1.314
5.00	-	-	-	-	-	1.443	1.431	1.411
5.50	-	-	-	-	-	1.557	1.533	1.507
6.00	-	-	-	-	-	-	-	1.604
6.50	-	-	-	-	-	-	-	1.700
7.00	-	-	-	-	-	-	-	1.797

MOTO DRIVE

ULTIMA

In order to minimize overhung load and increase bearing life, load centerline should be located as close to the shaft shoulder as possible.



For applications where OHL exceeds cataloged values contact application engineering at (812) 376-1100 or use the reducer selection tables to select the next larger size gearcase.

APG

LOAD LOCATION FACTORS - HIGH SPEED SHAFTS

Load Location Factors for High Speed Shafts (Input)

Distance in Inches	Basic Gearcase Size					
	3	4	5	6	7	8
0.50	-	-	-	-	-	-
0.75	.923	.862	-	-	-	-
1.00	1.077	1.000	.889	.805	.715	.719
1.25	1.231	1.138	1.000	.902	.796	.782
1.50	1.385	1.276	1.111	1.000	.878	.844
1.75	1.538	1.414	1.222	1.098	.959	.906
2.00	-	1.552	1.333	1.195	1.041	.969
2.25	-	-	1.444	1.293	1.122	1.031
2.50	-	-	1.556	1.391	1.204	1.094
2.75	-	-	-	1.488	1.285	1.156
3.00	-	-	-	1.586	1.367	1.218
3.50	-	-	-	-	1.530	1.343
4.00	-	-	-	-	-	1.468

APG Gearmotor Weights *

FOOT MOUNT

HP	SIZE																		
	3			4			5			6			7			8			
	S	D	T	S	D	T	S	D	T	S	D	T	S	D	T	S	D	T	
1/3			82																
1/2			82			97													
3/4			82			97			172										
1	57	76	82			97			172										
1-1/2	62	81	87			102			177			240							
2	72	91	97	80	103	112			187			250							
3	86	105		94	117	126	135	184	201			264							
5	90	109		98	121		139	188	205			268							
7-1/2	161	179		168	192		207	256	273	239	314	336			578				838
10	202	221		210	233		244	293		276	351	373			619				879
15				243	266		277	326		309	384	406	461	600	652				912
20				325	349		360	409		392	467		539	678	730				990
25							476	524		508	582		655	794	846	735	1039		1106
30							476	524		508	582		655	794	846	735	1039		1106
40										646	721		796	935		875	1180		1247
50										646	721		796	935		875	1180		1247
60										895	969		1046	1184		1125	1429		1497
75										895	969		1046	1184		1125	1429		1497

FLANGE MOUNT

HP	SIZE											
	3			4			5			6		
	S	D	T	S	D	T	S	D	T	S	D	T
1/3			93									
1/2			93			114						
3/4			93			114			194			
1	66	87	93			114			194			
1-1/2	71	92	98			119			199			287
2	81	102	108	88	120	129			209			297
3	95	116		102	134	143	150	206	223			311
5	99	120		106	138		154	210	227			315
7-1/2	169	190		177	209		222	278	295	265	361	363
10	211	232		219	250		259	315		302	398	420
15				252	283		292	348		335	431	453
20				334	366		375	431		418	514	
25							491	546		534	629	
30							491	546		534	629	
40										672	768	
50										672	768	
60										921	1016	
75										921	1016	

* All weights in lbs.

APG

MASTER XL

MOTO DRIVE

ULTIMA

APG Reducer Weights *

C-FACE REDUCERS FOOT MOUNT

SIZE		56C/140TC	FRAME SIZE				
			180/210TC	250TC	280TC	320TC	360TC
2	S	32					
	D	43	50				
	T	46					
3	S	46	60				
	D	66	80				
	T	71					
4	S	51	66	66			
	D	80	90	100			
	T	90	100				
5	S	100	104	115	125		
	D	141	151	155	165		
	T	155	165				
6	S	125	135	145	156	191	196
	D	215	225	225	235	265	270
	T	225	235	245	255		
7	S		300	300	315	365	365
	D		440	440	535	535	540
	T		485	535	535	535	540
8	S			695	695	815	820
	D			740	740	815	820
	T		750	750	845	855	855

C-FACE REDUCERS FLANGE MOUNT

SIZE		FRAME SIZE					
		56C/140TC	180/210TC	250TC	280TC	320TC	360TC
2	S	41					
	D	52	59				
	T	56					
3	S	56	68				
	D	80	90				
	T	85					
4	S	62	76	76			
	D	95	101	111			
	T	107	117				
5	S	110	114	125	135		
	D	152	162	166	176		
	T	172	182				
6	S	135	145	155	166	201	206
	D	226	235	235	246	276	281
	T	242	253	271	273		

SEPARATE REDUCERS

SIZE																	
3			4			5			6			7			8		
S	D	T	S	D	T	S	D	T	S	D	T	S	D	T	S	D	T
41	70	75	48	80	90	95	155	175	175	255	265	340	479	530	420	724	790

*All weights in lbs.