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982200	<u>5</u> U40U
982311	TR204

B.R.P - (0.M.C. (#C)
	20104
302304 082706	6204
983019	6220
983248	30460
983195	30460 6214
983318	6211
983424	60125
983444	30460
983446	6220
983790	30460
984356	6206
984456	. 30470 & MBK450
984536	70212
984565	60125
984628	70216
985063	SW268
985064	SW730
985237	6220
985 <u>4</u> 65	60125
	60125
000700 085700	SW984
	40152
	30460
30J300	60125
900000 nocene	
90///4	60070
	70125
987883	SW125
987969	70200
988012	70125
988013	70212
988217	30460
988247	60125
0586767	R767
3850216	SW463
3850525	. 30470 & MBK450
	30460
	SW394
3853853	60125
3853869	SW984
	. 30470 & MBK450
	SW984
	60125
3854190	70125
3854194	SW125
3854750	30460
3854/51	. 30470 & MBK450
3854809	60125 . 30470 & MBK450
38331//	. 30470 & WIBK450
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3857533	R473
3857561	60070
3857747	. 30470 & MBK450
3858463	30460
3860566	. 30470 & MBK450
3860769	60125
5004518	JSA518
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B.R.P - 0.M.C.	
5005374	6241
5005376	6241
5005831	6248
5006319	6247
5000013	0271
5009214	SW590
5036732	6240
PLSRCRAFT	
PLSKUKAF I	
R13001	CMSOA
N13001	344394
R130013	SW125
R130014	SW205
D000000	70001
R200000	
RA097002	40147
RA097006	
RA097006A	00108
RA097007	
RA097007A	
RA097007B	
NAU97007D	20023
RA097007C	
RA097009	20826
RA122001	70200
DA40000	70200
RA122002	
RA122004	70108
RA122008	30456
RA122009	30459
RA122014	70125
RA122015	30433
RA122016	30460
RA122016	
RA122019	30462
RA122019 RU0050	30462 SW456
RA122019 RU0050	30462 SW456
RA122019 RU0050 RU0050A	30462 SW456 SW463
RA122019 RU0050	30462 SW456 SW463
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RA122019 RU0050 RU0050A RU0050B	30462 SW456 SW463
RA122019 RU0050 RU0050A RU0050B	30462 SW456 SW463 SW463
RA122019	30462 SW456 SW463 SW463
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RA122019	30462 SW456 SW463 5373 5366 5374 30459 5379 5380 5380 5381X
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RA122019	30462 SW456 SW463 SW463
RA122019	30462 SW456 SW463 SW463 5373 5366 5374 30459 5375 5388 5380 5381X 5392 5363 5363 5393
RA122019	30462 SW456 SW463 SW463 5373 5366 5374 30459 5379 5380 5381X 5392 5367 5363 5393 5393 5397 5361
RA122019	30462 SW456 SW463 SW463 5373 5366 5374 30459 5379 5380 5381X 5392 5367 5363 5393 5393 5397 5361
RA122019	30462 SW456 SW463 SW463 S373 5366 5374 30459 5375 5379 5380 5381X 5392 5367 5363 5393 5393 5391 5361 5375
RA122019	30462 SW456 SW463 SW463 SW463 5373 5366 5374 30459 5379 5380 5381X 5392 5367 5363 5393 5393 5393 5393 5393 5393 5393
RA122019	30462 SW456 SW463 SW463 SW463 5373 5366 5374 30459 5375 5380 5381X 5392 5367 5363 5393 5361 5393 5361 5393 5361 5395
RA122019	30462 SW456 SW463 SW463 SW463 5373 5366 5374 5375 5380 5381X 5381X 5392 5363 5393 5361 5361 5361 5361 5395 5395
RA122019	30462 SW456 SW463 SW463 SW463 S373 S366 5379 5379 5380 5381 5382 5363 5363 5393 5395 5395 5395 5395 5395
RA122019	30462 SW456 SW463 SW463 SW463 5373 5366 5374 5375 5379 5381 5381 5392 5363 5393 5395 5395 5395 5395 5396 5396 5396
RA122019	30462 SW456 SW463 SW463 SW463 5373 5366 5374 5375 5379 5381 5381 5392 5363 5393 5395 5395 5395 5395 5396 5396 5396
RA122019	30462 SW456 SW463 SW463 SW463 S373 5366 5374 5375 5379 5380 5381 5392 5361 5393 5393 5397 5387 5395 5395 5396 5398
RA122019	30462 SW456 SW463 SW463 SW463 S373 5366 5374 30459 5375 5380 5381X 5392 5367 5361 5393 5395 5395 5396 5396 5396 5396 5398 5398 5398 5398
RA122019	30462 SW456 SW463 SW463 S373 5366 5374 30459 5379 5380 5381X 5392 5367 5363 5393 5393 5395 5396

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18-5629	5376
18-5630	
40 5000	5398
18-5632	=0=0
40 5005	5372 5370
18-5635 18-5636	5370
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40 5040	5373
18-5641	5366
18-5642	
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18-5644 18-5645	5393 5376
40 5040	5370
18-5647	5372
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18-5649	5377
	DV366
	DV385
18-5655 18-5656	DV376 DV377
	DV377
	DV325
18-5671	DV390
18-5673	DV393
	DV380
18-5675	DV387
	DV394
18-5678 18-5679	DV389 DVK72
	DVK72
	DV396
	BK900
	R809
18-5702	R952
40 5705	R832 R473
	R473 AR351
	AR103
	AR104
18-5710	VR405
18-5711	VR404
18-5712	VR407
18-5714 18-5727	VR095 VR406
18-5728	VR406 VR405
40 5700	R211
	R012
18-5801	SW394
18-5802	SW981
	SW774
18-5804	SW975 SW081
18-5807 18-5808	SW061
18-5811	SW463
18-5812	SW268
18-5813	SW268
18-5814	SW340
18-5815	SW275
18-5816	SW054
18-5817 18-5818	SW058 SW064
18-5819	SW064
10-3013	



SIERRA		SIERRA		SIERRA		SIERRA	ARCO
18-5820	SW099	18-6261	60070	18-6454	20840	18-6932	98185
18-5821	SW945	18-6262	60122	18-6455	20850	18-6937	98180
18-5822	SW926	18-6263		18-6754	6209	18-6943	5359
18-5823	SW580	18-6264	B036	18-6755	6204	18-6946	30470
18-5833	SW590	18-6265	60071	18-6756	6228	18-6947	12213
18-5834	SW109	18-6266		18-6758	6223	18-6952	60150
18-5835		18-6267		18-6759		18-6955	
18-5836		18-6268		18-6760	6265	18-18409	
18-5837				18-6761	6206	18-56001	
18-5838		18-6269		18-6762	6216	18-56002	SR446
18-5841	SW373	18-6270		18-6763	6217	18-56003	SR420
18-5879		18-6271		18-6764	6211	18-56004	
18-5882		18-6274	6224	18-6765	6270	18-56005	
18-5900	20460	18-6275		18-6767	6208	18-56006	
18-5900	20466	18-6276		18-6767-1	6208	18-56007	
18-5902	20450	18-6277	6244	18-6769	6275	18-56008	SR440
18-5903	70200	18-6278	84150	18-6769-1	6275	18-56009	
18-5904		18-6280	6242	18-6770	6227	23-5900	86050
18-5905 304	70 2 MDV 450	18-6281		18-6771	M525		
18-5906	10 0 10000430	18-6282		18-6772	6218	SUZUKI	
18-5907		18-6283		18-6773	6250	31100-87D00	
18-5908		18-6284		18-6774	6279	31100-87000	3442
18-5910 304	70 & MRK450	18-6285		18-6775	6274	31100-87D10	
18-5911	30460	18-6286	6255	18-6777	6276	31100-92E00	
18-5913 304	70 8. MRK450	18-6287	0200	18-6778	M532	31100-94400	
18-5914		18-6288	377430	18-6780		31100-94401	3412
18-5915	70201	18-6291		18-6781	6260	31100-94402	3412
18-5916	70216	18-6291	5W 125	18-6783		31100-94500	
18-5917		18-6292	10113	18-6785		31100-94510	
18-5918		18-6293	20800	18-6786	6268	31100-94511	3/1/1
18-5919		18-6298	20815	18-6787		31100-94512	
18-5920		18-6299		18-6788		31100-94600	
18-5923	70200	18-6410	3420	18-6789		31100-94601	
18-5927		18-6411		18-6798	0203	31100-94610	
18-5929		18-6412		18-6804 18-6805		31100-94610	
18-5939		18-6413		18-6811		31100-95600	
18-5943		18-6414		18-6812	6266	31100-95601	
18-5945	65055	18-6415	3428	18-6813	6275	31100-96311	
18-5950	20102	18-6416		18-6814	6206	38100-96311 38100-87D01	
18-5951		18-6417	3442	18-6815			
18-5954	40112	18-6418	3410	18-6816	6228	38100-87E20-0	ED0200
18-5956	20102	18-6420		18-6817	6232	38100-92E00-0	
18-5957	60050	18-6421		18-6821		38100-92E00-0	
18-5959		18-6422		18-6824	5384	38410-94540	R950/951
18-5960	60060	18-6423		18-6825	5381X		
18-5963	40152	18-6424		18-6826		TOHATSU	
18-5964	40152	18-6425	3430	18-6827		FM5900	2/10
18-59640		18-6426	3431	18-6828	5385	3C8-76010-10	2/10
18-5965	60065	18-6427	3432	18-6829	5359		
18-5966		18-6430	3421	18-6838	6225	353-76010-1A0	
18-5967	60055		3412	18-6841	20102	353-76010-04	
18-5972	60124	18-6433		18-6842	60125	353-76010-300	3410
18-5979		18-6434		18-6843	60075		
18-5983		18-6435		18-6845	60073	UNIVERSAL	
18-5984		18-6436		18-6847	60076	275753	
18-6250		18-6437		18-6848	60074		
18-6251		18-6438		18-6851	BI-1203	277584	
18-6252		18-6439	5382	18-6852	BI-1602	288182	
18-6253		18-6440	5400	18-6854		288759	60108
18-6254		18-6441		18-6855	BI-0/02	VOLVO	
18-6257		18-6443		18-6860	WH8UU	VOLVO	ARCO
18-6258		18-6450		18-6861		1214764	RN4N
18-6259		18-6451 18-6452		18-6863 18-6864		1324492	
18-6260		18-6453		18-6925		1501832	
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VOLVO	ARCO
1504952-1	R952
241812	R670
3586765	97225 6227
3587625	6227 30470 & MBK450
3803113	97225
3850216-7	SW463 30470 & MBK450
3850526	30470 & WBN450
3850927-9	60125
	SW394 60125
3853869-0	SW984
3853982-1	30470 & MBK450
3853998-7	SW984 60125
	70125
3854194-2	SW125
3854/50-1	30460 30470 & MBK450
3854809-5	60125
3855177-6	60125 30470 & MBK450
3856600	60070
3856004-1	30460 30470 & MBK450
3856596	6227
3857298	60125 6224
3857561	60070 30470 & MBK450
3857747	30470 & MBK450
3858071	60071 6232
l 3858077	M533
	R809 R809
3859054	SW463
3860082	60072
3860173	60070 60125
3860566	30470 & MBK450 30470 & MBK450
3860764	30470 & MBK450 60070
3860798	60071
	6233
	30460 60074
3862613	60076
3862665	60073
3885317	30459 30470 & MBK450
3884950	60073
594043	DV225 SW225
6643474-7	R670
818721	SW975
	SW814 97225
831725-7	R952
834625-6	80108
834804-7	SW814
834893-0	50142
835121-5 835334-4	50142 50141
000004-4	

VOLVO		
835635-4		
839367-0		
839586-5		
841066-4		
841177-9		
841377-5		20456
841378-3		
841656-2		00100 CMO75
841762-8		
841765-1		
841766-9		
847308		00100
847561-8		
849561-6		20200
849748-9		60175
850834-3		6000
851126-3		TD223
852565-1		CIMEGE
852928-1		6004
853083-4		6224
853084-2		6224
853544-5		
853545-2		
854346-4		NO7 U
854357-1		
854437		
854525-3		
854531-1		
857298		60125
858838-6		
858839-4		
859252-9		97225
859618-1		SW225
859623-1		DV/225
860334-2		95949
870670-7		R670
872018-7		80108
872235-7		80108
872241-5		10113
872272-0		R177
872300-9		
872449-4		6224
872926-1		80108
873051-7		6224
873120-0		RI-0702
873549-0		10113
875356-8		TR221
876037-3		R832
876038-1		
876039-9		R952
876040-7		
		110-10
WESTE		
33486		30456
39790		60075
21129980)	30459

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CS3-43880-00	😊
19-1400-10	60075
6BR-81800-00	3433
6BR-81800-01	3433
6CJ-81800-00 6C5-43880-00	3432 6257
6C5-43880-01	6257
6C5-81800-00	3432
6D8-43880-00	6258
6D8-43880-01 6D8-43880-09	6258 6258
6E5-43880-01	6267
6E5-43880-02	6267
6E5-81840-10 6E5-81800-11	SR426 3426
6E5-81941-10	SW941
	SW941
6E5-81950-01 6E5-8195A-01	R950 R951
OFF 04000 40	0.400
6F5-81800-11	3423
6G1-8194A-10 6G1-81940-00	SW945
6G1-81941-10	3423 3423 SW945 SW945 SW945
6G5-43880-01 6G5-43880-02	6265 6265
6H1-43880-00	6267
6H1-43880-02	6260
6H3-81800-10 6H3-81800-11	3422 3422
6H4-81800-10	3425
6H4-81800-11 6H4-81800-12	0.405
6H4-81800-12 6H5-43880-02	6264
6H5-43880-09	6264
6J4-81800-00 6J4-81800-01	3423
6K7-81800-10	3423 3428
6L2-81800-10	3421
6L2-81800-11	3421 3421
6L2-81800-20 6N7-81800-00	
6N7-81800-01	3428
6N7-81800-10 6N7-81840-00	3428 SR428
6N7-WS818-01	3428
61A-81800-00	3429
61A-81800-01 61A-81840-00	3429 SR429
61A-81941-00	SW941
61H-81800-00	3428
	3428 3428
62X-43880-00	6266
62X-43880-01	6266
	6266 6259
62Y-43880-02	6259
63P-81800-00	
	6240
64E-43880-01	6240 6240
64E-43880-03 64E-43880-04	6240
65W-81800-00	5364
65W-81800-01	5364
65W-81800-02	5364

YAMAHA	
65W-81800-03 65W-81941-00 66M-81800-01 66M-81800-02 66G-81840-11 67C-81800-00 67C-81800-01 67F-81800-00 67F-81800-01 67F-81800-01 67F-81800-01 67F-81800-01 67F-81800-01 67F-81800-03 67F-81800-03 67H-43880-01 67H-43880-01 68F-81800-03 68H-81800-01 68F-81800-01 68F-81800-01 68E-81800-01 68V-43880-01 68V-43880-01 68V-43880-01 68V-43880-01 68V-81800-01 688-81800-11 682-81800-11	5364 SW099 5359 5359 5359 5365 5365 5365 6261 3430 3430 6240 6240 6240 6240 6240 6240 6240 3431 3431 3431 3431 3431 3431 3432 3421 3421
YANMAR	
128170-77010 128170-77010D. 128270-77200 129608-77010 129698-77010 129772-77200 171008-77010 X211447009	98180 84135 98185 98185 84150 84150



3410 (NEW)

FITS: TOHATSU 45-140 HP, 2 Stroke Replaces: Hitatchi S114-415A, S114-415, S114-571A, S114-667

9-tooth drive gear

DV510*

9-tooth drive gear



*Will Fit These Starters Only:

3410, Hitachi S114-667, Tohatsu FM 5900

SR410*

Brush holder assembly w/brushes available

3412 (NEW) FITS: SUZUKI, TOHATSU, NISSAN 30-40 HP, 2 Stroke Replaces: Hitachi S108-94, S108-112, S108-120

DV512* 9-tooth drive gear



*Will Fit These Starters Only:

3412, Hitachi S108-120, Tohatsu 3C8-76010-100

SR412*

Brush holder assembly w/brushes available

3420 (NEW) FITS: YAMAHA 25-40 HP. 2 Stroke MARINER 20-40 HP. 2 Stroke Replaces: Hitachi S108-80, S108-80A, S108-80B 11-tooth drive gear DV520* 11-tooth

*Will Fit These Starters Only:

3420, Hitachi S108-80B, Yamaha 689-81800-13

SR420*

drive gear

Brush holder assembly w/brushes available

3421 (NEW)

1984-1997 9.9-15 HP

1988-1998 25 HP MERCURY 9.9 HP, 4 Stroke

15 HP, **4 Stroke** Replaces: Hitachi S106-07B,

S106-07E, S106-07F

10-tooth drive gear



FITS: YAMAHA

1984-UP 70 HP

1991-UP 60 HP, **2 Stroke** Replaces: Hitachi S108-97A

9-tooth drive gear

DV522*

9-tooth drive gear





*Will Fit These Starters Only:

3422, Hitachi S108-97A, Yamaha 6H3-81800-11

SR422*

Brush holder assembly w/brushes available

3423 (NEW)

FITS: YAMAHA

1987-Up 30 HP

1989-Up 40-50 HP

Replaces: Hitachi S108-87A

11-tooth drive gear

DV523*

11-tooth drive gear





*Will Fit These Starters Only:

4823, Hitachi S108-87A, Yamaha 6F5-81800-11

SR423*

Brush holder assembly w/brushes available







FITS: YAMAHA, MARINER 55-60 HP 2-Cyl, 2 Stroke Engines Replaces: Hitachi S114-221

9-tooth drive gear

DV524*

9-tooth drive gear



*Will Fit These Starters Only:

4 3424, Hitachi S114-221J, Yamaha 697-81800-13

SR424*

Brush holder assembly w/brushes available

3425 (NEW)

FITS: YAMAHA 1984-1988 40-50 HP Replaces: Hitachi S108-99B

9-tooth drive gear

DV525*

9-tooth drive gear



*Will Fit These Starters Only:

3425. Hitachi S108-99B. Yamaha 6H4-81800-12

SR425*

Brush holder assembly w/brushes available

3426 (NEW)

FITS: YAMAHA 1984-1996 115-200 HP. 2 Stroke 1995-2000 40-50 HP, 4 Stroke MERCURY 40-50 HP, 4 Stroke S/N 0G472132 & BELOW

Replaces: Hitachi S114-323 9-tooth drive gear

DV526*

9-tooth drive gear



*Will Fit These Starters Only:

3426, Hitachi S114-323C, Yamaha 6E5-81800-12

SR426*

Brush holder assembly w/brushes available

1994-1999 75 HP 1991-1996 85 HP

1984-UP 90 HP

Replaces: Hitachi S114-263B

9-tooth drive gear

DV527*

9-tooth drive gear



*Will Fit These Starters Only:

4 3427, Hitachi S114-263B, Yamaha 688-81800-12

SR427*

Brush holder assembly w/brushes available

3428 (NEW)

FITS: YAMAHA 115-225 HP, 2 Stroke

Replaces: Hitachi S114-552, S114-660

DV528*

9-tooth drive gear



*Will Fit These Starters Only:

3428, Hitachi S114-660B, Yamaha 6N7-81800-10

SR428*

Brush holder assembly w/brushes available

3429 (NEW)

FITS: YAMAHA

1998-UP V200. 1994-UP 225 HP

1990-UP 250 HP

Replaces: Hitachi S114-559B

9-tooth drive gear

DV529*

9-tooth drive gear



*Will Fit These Starters Only:

3429, Hitachi S114-559B, Yamaha 61A-81800-01

SR429*

Brush holder assembly w/brushes available







3430 (NEW) FITS: YAMAHA

1999-Up 80 HP, 4 Stroke 1999-Up 100 HP, 4 Stroke MERCURY/MARINER

75 HP, **4 Stroke** 90 HP, **4 Stroke** Replaces: Hitachi S114-828B **13-tooth drive gear**



3431 (NEW)

FITS: YAMAHA

2000-Up LZ 150-175 HP **2000-Up** VZ 150-175 HP **2000-Up** Z 150-175 HP

2000-Up LZ 200-Z200 HP Replaces: Hitachi S114-836A

13-tooth drive gear



3432 (NEW)

FITS: YAMAHA 2000-Up F115, 4 Stroke 2000-Up LF115, 4 Stroke 2005-UP 50, 60, 75 HP 4 Stroke

MERCURY 90-115 HP EFI, 4 Stroke Replaces: Hitachi S114-838A

13-tooth drive gear



3433 (NEW)

FITS: YAMAHA

2004-Up 150 HP, **4 Stroke 2005-Up** 250 HP, **4 Stroke**

2006-Up 225 HP, **4 Stroke** Replaces: Hitachi S114-867

13-tooth drive gear



3440 (NEW)

FITS: SUZUKI 75/85 HP 1988-2000 2 Stroke

Replaces: Hitachi S114-555

9-tooth drive gear

DV540*

9-tooth drive gear



*Will Fit These Starters Only:

440, Hitachi S114-555, Suzuki 31100-95601

SR440*

Brush holder assembly w/brushes available

3442 (NEW)

FITS: SUZUKI 90/100, 150-225 HP. 2 Stroke

Replaces: Hitachi S114-551, S114-674

8-tooth drive gear

DV542*

8-tooth drive gear



4

*Will Fit These Starters Only:

3442, Hitachi S114-674, Suzuki 31100-92E00

SR442*

Brush holder assembly w/brushes

available

3444 (NEW)

FITS: SUZUKI

115-140 HP, **2 Stroke** Replaces: Hitachi

S114-437, S114-673 **9-tooth drive gear**

DV544*

9-tooth drive gear





*Will Fit These Starters Only:

3444, Hitachi S114-673, Suzuki 31100-94610

SR444*

Brush holder assembly w/brushes

available









"DO NOT"

SPRAY OIL OR OTHER LUBRICANTS ON O/B STARTER DRIVES

The O/B Starter Drives are Rubber Cushioned Drives. If any oil gets between the compression nut and the rubber grip surface, drive failure will result.

"DO"

REMOVE THE DRIVE ASSEMBLY
WHEN APPLYING LUBE TO THE SHAFT

Always remove the drive assembly before applying lube to the shaft. Only apply a thin film of water resistant grease to the shaft. Make sure to wipe off any excess.

3446 (NEW)
FITS: HONDA
35,40,45 & 50 HP, 4 Stroke
Replaces: Hitachi S114-677,
S114-561
Honda 31200-ZV5-013,
31200-ZV5-003
9-tooth drive gear
CW Rotation

Starter To be discontinued when present stock is exhausted.

*Will Fit These Starters Only:

3446, Hitachi S114-677

SR446*

Brush holder assembly w/brushes available

3447 (NEW)
FITS: HONDA
2002 - UP 115 & 130 HP
Replaces: Mitsubishi MOT 60381
Honda: 31200-ZW5-003
13-tooth drive gear



5358 (NEW)
FITS: EVINRUDE
40, 50, 75, 90 HP
E-Tec Models
9-tooth drive gear

DV358
9-tooth

drive gear

Complete rear housing assembly w/brushes available



SR359

Complete rear housing assembly w/brushes available



SR360

Complete rear housing assembly w/brushes available



· Excess oil or grease may cause drive failure.

Be sure to follow the lubrication directions shown on page 12.

5361 (NEW)

FITS: O.M.C. 1993-UP 9.9-15 HP Small 10-tooth drive gear 2" casing

DV361

Small 10-tooth drive gear



SR361

Complete rear housing assembly w/brushes available

5362 (NEW)

FITS: MERCURY 40-50 HP 1997-UP 4-Stroke 9-tooth metric drive gear

DV362

9-tooth metric drive gear



SR362

Complete rear housing assembly w/brushes available

5363 (NEW) FITS: O.M.C.

1991-Up 150-175 HP V6 Eagle-Series **1997-Up** V4 and V6 **2003** 75/90/115 HP 2003-UP 90/105/115

60° Engine 2004-UP 100-175 HP Direct Injection

DV517 9-tooth drive gear







JSA517

Jack shaft assembly/9-tooth drive gear Fits Johnson Evinrude carbureted engines

Jack shaft assembly/10-tooth drive gear Fits Johnson Evinrude direct injection engines

Complete rear housing assembly w/brushes available



5364 (NEW)

FITS: MERCURY 1998-Up 25 HP, **4 Stroke** Yamaha 25 HP, 4 Stroke

DV364

9-tooth drive gear



SR364

Complete rear housing assembly w/brushes available

5365 (NEW)

FITS: MERCURY 30/40/50/60 HP 1999-Up 3-cyl, 4 Stroke 2000-UP Yamaha

40HP. 4 Stroke 9-tooth drive gear

DV365 9-tooth

drive gear





SR365

Complete rear housing assembly w/brushes available

5366 (NEW)

FITS: MERCURY 35-50 HP 9-tooth drive gear

DV366

9-tooth drive gear





SR366

Complete rear housing assembly w/brushes available







- · Excess oil or grease may cause drive failure.
- Be sure to follow the lubrication directions shown on page 12.



NOTE

When ordering drive assemblies for B.R.P./O.M.C. starters, be aware that some B.R.P./O.M.C. outboard starters use a 2-piece drive assembly; older B.R.P./O.M.C. starters use a 1-piece drive assembly. ORDER THE CORRECT DRIVE. THEY ARE NOT INTERCHANGEABLE!

5367 (NEW) FITS: MERCURY/MARINER

1986-1996 6-15 HP 1980-2003 18-25 HP 10-tooth drive gear 21/2" motor casing

DV367

10-tooth drive gear



SR367

Complete rear housing assembly w/brushes available

5368 (NEW) FITS: O.M.C. 1997-2000

9.9/15 HP. 4-stroke 10-tooth drive gear



SR368

Complete rear housing assembly w/brushes available

5369 (NEW)

FITS: O.M.C. 8/9.9-11 HP

1997-1998 4 stroke 1977-1992 9.9-15 HP

10-tooth drive gear

2" motor casing

DV369

10-tooth drive gear



SR369

Complete rear housing assembly w/brushes available

Save Time With ARCS SR107 - BRUSH LOADING TOOL See page 57

Makes brush loading as simple as 1-2-3

The "perfect tool" for loading outboard starter brushes.

Strong stainless steel construction.



(1) Depress Brushes and Slide End Cap In Tool



(2) Insert Armature



One Tool Fits All These Caps













- Excess oil or grease may cause drive failure.
- Be sure to follow the lubrication directions shown on page 12.



NOTE

When ordering drive
assemblies for B.R.P./O.M.C.
starters, be aware that some
B.R.P./O.M.C. outboard starters
use a 2-piece drive assembly;
older B.R.P./O.M.C.
starters use a 1-piece drive assembly.
ORDER THE
CORRECT DRIVE.
THEY ARE NOT

INTERCHANGEABLE!

5370 (NEW) FITS: O.M.C. 55-75 HP 3-cyl 9-tooth drive gear



DV370*
9-tooth drive gear
*See NOTE



DVK70*
2-pc drive kit
*See NOTE



Complete rear housing assembly w/brushes available

5371 (NEW) FITS: **0.M.C.** 50-60 HP 2-cyl **9-tooth drive gear**



DV371*
9-tooth drive gear
*See NOTE



SR371

Complete rear housing assembly w/brushes available



DV372*
Small 10-tooth drive gear
*See NOTE





SR372

Complete rear housing assembly w/brushes available

5372X (NEW) FITS: 0.M.C. 1969-1970 85-115 HP 1971-1972 85-125 HP Large 10-tooth drive gear





DV372X

Large 10-tooth drive gear

SR372

Complete rear housing assembly w/brushes available

5373 (NEW) FITS: 0.M.C. 150-235 HP V6 8-tooth drive gear



DV373 8-tooth drive gear



SR373

Complete rear housing assembly w/brushes available







- · Excess oil or grease may cause drive failure.
- Be sure to follow the lubrication directions shown on page 12.



NOTE

When ordering drive assemblies for B.R.P./O.M.C. starters, be aware that some B.R.P./O.M.C. outboard starters use a 2-piece drive assembly; older B.R.P./O.M.C. starters use a 1-piece drive assembly. ORDER THE CORRECT DRIVE. THEY ARE NOT INTERCHANGEABLE!



DV374

10-tooth drive gear

SR374

Complete rear housing assembly w/brushes available

5374X (NEW)

FITS: MERCURY 1956-1957 25-30 HP **1957** 55 HP 1958 30-55 HP 1959 35 & 55 HP Large 10-tooth



Large10-tooth drive gear

SR374

drive gear

Complete rear housing assembly w/brushes available



SR375

Complete rear housing assembly w/brushes available

5376 (NEW) FITS: O.M.C. 18-40 HP 11-tooth drive gear



DV376*

11-tooth drive gear *See NOTE



DVK76* 2-pc drive gear kit

*See NOTE



SR376

Complete rear housing assembly w/brushes available



DV377

10-tooth drive gear

SR377

Complete rear housing assembly w/brushes available



Excess oil or grease may cause drive failure.

Be sure to follow the lubrication directions shown on page 12.

NOTE

When ordering drive assemblies for B.R.P./O.M.C. starters, be aware that some B.R.P./O.M.C. outboard starters use a 2-piece drive assembly; older B.R.P./O.M.C. starters use a 1-piece drive assembly. ORDER THE CORRECT DRIVE.

THEY ARE NOT INTERCHANGEABLE!



DV378X

Large 10-tooth drive gear

Complete rear housing assembly w/brushes available



SR379

Complete rear housing assembly w/brushes available



8-tooth drive gear

> **SR380 Complete rear housing** assembly w/brushes available

5381 (NEW) **FITS: MERCURY**

1999-UP 2.5 DFI 1996-1999 200 HP V6 DFI **1998-Up** 225 HP V6 DFI 1999-Up 3.0L V6 9-tooth drive gear



DV381

9-tooth drive gear

SR381

Complete rear housing assembly w/brushes available



SR380

Complete rear housing assembly w/brushes available







- Excess oil or grease may cause drive failure.
- Be sure to follow the lubrication directions shown on page 12.



NOTE

When ordering drive
assemblies for B.R.P./O.M.C.
starters, be aware that some
B.R.P./O.M.C. outboard starters
use a 2-piece drive assembly;
older B.R.P./O.M.C.
starters use a 1-piece drive assembly.
ORDER THE
CORRECT DRIVE.
THEY ARE NOT
INTERCHANGEABLE!





SR382

Complete rear housing assembly w/brushes available





SR384

Complete rear housing assembly w/brushes available **5385** (NEW) FITS: MERCURY 35-40 HP, 2-cyl 10-tooth drive gear

DV385

10-tooth drive gear



SR385

Complete rear housing assembly w/brushes available

5386 (NEW) FITS: 0.M.C. **1985-Up** 120-140 HP V4 **10-tooth drive gear**



DV386* 10-tooth

drive gear
*See NOTE

SR386



DVK86* 2-pc drive kit *See NOTE



Complete rear housing assembly w/brushes available

5387 (NEW)

FITS: O.M.C.

V6, V8 loop, 115-300 HP E-TEC **10-tooth drive gear**



DV387 10-tooth

10-tooth drive gear

SR387

Complete center housing assembly w/brushes available







Excess oil or grease may cause drive failure.

· Be sure to follow the lubrication directions shown on page 12.



NOTE

When ordering drive
assemblies for B.R.P./O.M.C.
starters, be aware that some
B.R.P./O.M.C. outboard starters
use a 2-piece drive assembly;
older B.R.P./O.M.C.
starters use a 1-piece drive assembly.
ORDER THE
CORRECT DRIVE.
THEY ARE NOT
INTERCHANGEABLE!

5388 (NEW) FITS: MERCURY 50-60 HP, 3-cyl,

1991-1996 45 HP Jet **10-tooth drive gear**

DV388

10-tooth drive gear



SR388

Complete rear housing assembly w/brushes available

5389 (NEW)

FITS: 0.M.C. 1989-Up 25, 40, 50 HP; 2-cyl 1990-Up 48-50 HP 9-tooth drive gear



DV389* 9-tooth drive gear *See NOTE





SR389

Complete rear housing assembly w/brushes available



1987-1993 20-35 HP; 2-cyl





DV390*
9-tooth drive gear
*See NOTE





SR390

Complete rear housing assembly w/brushes available



FITS: MERCURY/MARINER 100-125 HP Inline 4-cyl; 80 HP Jet

8-tooth drive gear



DV392 8-tooth

drive gear

Complete rear housing assembly w/brushes available

5393 (NEW)

FITS: CHRYSLER/FORCE 70-150 HP

9-tooth drive gear



DV393 9-tooth drive gear

SR393

Complete rear housing assembly w/brushes available







- Excess oil or grease may cause drive failure.
- Be sure to follow the lubrication directions shown on page 12.



NOTE

When ordering drive assemblies for B.R.P./O.M.C. starters, be aware that some B.R.P./O.M.C. outboard starters use a 2-piece drive assembly; older B.R.P./O.M.C. starters use a 1-piece drive assembly. ORDER THE CORRECT DRIVE. THEY ARE NOT INTERCHANGEABLE!

5394 (NEW) **Determine location of the battery**

stud on starter being replaced before ordering - See 5397

FITS: FORCE 1996-1999 40-50 HP 13-tooth drive gear



13-tooth drive gear

SR394

Complete rear housing assembly w/brushes available

5395 (NEW) FITS: MERCURY/MARINER





DV395

8-tooth drive gear

Complete rear housing assembly w/brushes available

5396 (NEW) FITS: MERCURY 1994-1996 30-40 HP.

2-cvl, 55-60 HP 1997-Up 45 HP Jet 10-tooth drive gear



DV396

10-tooth drive gear

SR396

Complete rear housing assembly w/brushes available

5397 (NEW)

Determine location of the battery stud on starter being replaced before ordering - See 5394

FITS: FORCE 1992-1995 40 HP 1992-1995 50 HP 13-tooth drive gear



Battery stud exits **BOTTOM**

of starter

13-tooth drive gear

SR397

Complete rear housing assembly w/brushes available

1997-1999

10-tooth drive gear



SR398

Complete rear housing assembly w/brushes available





Battery stud exits

SIDE of starter



Excess oil or grease may cause drive failure.

Be sure to follow the lubrication directions shown on page 12.



NOTE

When ordering drive assemblies for B.R.P./O.M.C. starters, be aware that some B.R.P./O.M.C. outboard starters use a 2-piece drive assembly; older B.R.P./O.M.C. starters use a 1-piece drive assembly. ORDER THE CORRECT DRIVE. THEY ARE NOT INTERCHANGEABLE!

5399 (NEW) **MOTOR ONLY** FITS: O.M.C. 90-115 HP 1997-UP 60° V4 1998-2000 80 HP 1998-2000 100 HP





JSA517

Jack shaft assembly/9-tooth drive gear Fits Johnson Evinrude carbureted engines



SR399

Complete rear housing assembly w/brushes available

5400 (NEW) **FITS: MERCURY** 2001-UP 135-250 HP 200-250 Sport Jet 2005-UP **VERADO 4 STROKE** 200-275 HP

14-tooth drive gear

Replacement solenoid



5551 (NEW) FITS: CHRYSLER 25-35 HP





DV551 Large 10-tooth drive gear

SR551

Complete rear housing assembly w/brushes available

7325 (NEW) FITS: MERCURY/FORCE 90-120 HP Sport Jet 9-tooth drive gear

DV325 9-tooth

drive gear

SR325

Complete rear housing assembly w/brushes available



8-tooth drive gear

SR326

Complete rear housing assembly w/brushes available





An ARCO Warranty Protects You From Defects in MATERIALS OR WORKMANSHIP... The Warranty DOES NOT cover such things as:



FREIGHT DAMAGE

part boxes are not shipping boxes.

If you are shipping a part to a customer or sending a warranty return, the part must be packaged in a way to prevent possible damage. Place extra packing material around the part, place it back in the part box and then into a well packed, sturdy shipping container.

To prevent damage, properly pack all parts before reshipment.







BROKEN SOLENOIDS

The solenoid was not broken when the starter was packaged to be shipped. We have special boxes made for the starters, and we use special packing materials to ensure the item will arrive to the customer safely. Sometimes, though, the packages are mishandled by the carrier (i.e., dropped or thrown) and the solenoid becomes damaged. This is the carrier's responsibility. It is not a material defect; therefore it is **not covered by warranty.**





RUST, CORROSION, SUBMERSIONS OR BURNOUTS

However, it is impossible to protect the unit from direct contact with water. Therefore, a failure directly caused by rust, corrosion or submersion is **not covered by warranty.** Starter burnouts are caused by the starter running for extended periods of time without a cool down period causing the windings to overheat. This could be caused by a defective ignition switch, water in the ignition switch, defective starter relay or cranking for long periods of time without allowing the starter to cool down. Burnouts **are not covered by warranty.**

BROKEN MOUNTING FLANGES OR SHAFTS

A broken flange is typically caused by improper installation. The mounting holes may look evenly spaced in a triangular pattern, but they are not—one hole is slightly offset. Forcing a mounting bolt into the offset hole may cause the flange to break. This may also occur if the mounting bolts are not tightened evenly. A broken shaft is caused by a malfunction in the gearbox. These breaks are not material defects, and they are **not covered by warranty.**





CUT WIRES OR DISMANTLED UNITS

Cutting a unit's wires or dismantling a unit immediately voids the manufacturer's warranty. In addition, taking a motor off the reservoir and trying to install it on an old reservoir usually damages the brushes and seals in the motor. Disassembled parts are **not covered by warranty.**

BROKEN NOSE HOUSINGS, DRIVE GEARS OR INTERNAL GEARS

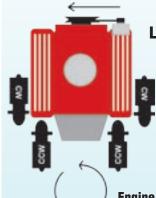
This type of failure is always blamed on a bad casting, defective drive gear or internal gears. In fact, it is caused when a starter, spinning at a high rate of rpm, comes to an abrupt stop. This can occur when an engine backfires or momentarily releasing the start switch and re-engaging the starter before it has spun down. It may also happen when a cylinder suffers a water hydraulic lock. In either case, the damage is not due to a defective part, and is **not covered by warranty.**





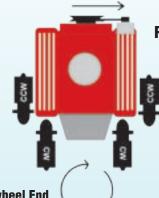


How To Determine The Correct Starter Rotation



Left Hand Engine Rotation

This is the most common engine rotation found on today's marine engines. This is the same rotation as automotive engines. Use these charts to determine the correct starter rotation needed.



Right Hand Engine Rotation

This is not very common on today's marine engines. This is the opposite rotation of automotive engines.

Engine Rotation Viewed From The Flywheel End

Another way to determine the starter rotation is to inspect the chamfer on the starter drive gear. The bevel will always be on the trailing edge.



Clockwise Rotation



Counter Clockwise Rotation

Important Check Points



High Resistance

This is a very common problem found in marine electrical systems. Corrosion, undersized wire, or bad connections will cause low voltage to the electrical components. Low voltage causes high heat and will destroy electrical devices. Be sure to check for voltage drops.



Incorrect Wiring

Incorrect wiring can cause burnouts. Always tag the wires when removing an electrical component.

Important Check Points



Worn Out Battery

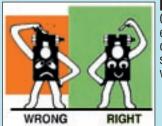
Batteries cause more trouble than any other component in a marine electrical system.

Always make sure the battery is completely charged and load tested before replacing other components.



Loose Connections

Be sure to check all the terminals and connections and make sure they are clean and tight.



Loose Battery ClampsCable terminals must be tight. If the ends of the clamps touch at the top, disconnect the cable clamps and shave the ends of the clamp jaws with a file so there is a gap.



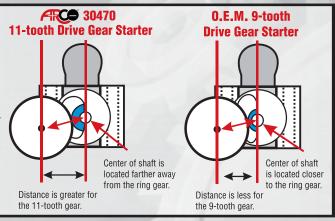


DRIVE GEARS

DID YOU KNOW...

Did you know the gear profile for the 9-tooth O.E.M. gear reduction starter and the 11-tooth High Performance gear reduction starter are the same?

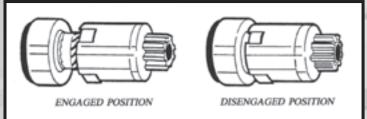
The only difference is the diameter of the drive gear. Since the 11-tooth drive gear has two more teeth it is naturally larger in diameter. To compensate for its smaller diameter, the center of the 9-tooth drive gear is located closer to the flywheel. Both starters are thus completely interchangeable. These are powerful starters and we are able to take advantage of a better gear ratio using this 11-tooth gear.





INERTIA DRIVES GEARS

As shown here, spinning the drive with a wire wheel in the direction it clicks will disengage the locks.



Do not condemn a drive until it has been tried in actual operation and proven faulty.

The Folo-Thru type drive currently used on many starting motors has brought about difficulty due to a misunderstanding of operating and lack of information on proper servicing. This fact has been reflected by the number of drives returned for warranty which are fully operative.

The Folo-Thru drive is designed to lock and remain in the extended or engaged position until the engine starts and reaches approximately 400 to 500 RPM. The drive to flywheel rotation is fifteen to one. When the engine is turning at 400 RPM, the starter drive gear is turning 6,000 RPM. If the drive is locked in the extended position it has to be reinstalled on the engine and the engine started or the drive must be turned in excess of 6,000 RPM by a wire wheel mounted on an electric bench grinder to make it disengage.

The reason the pinion locks in the engaged position is to assure the starter continues to crank until the engine has started, thus preventing false starts. This is accomplished by using a spring loaded pin which rides on one of the pinion screw threads and drops into a hole when the pinion is in the fully engaged position. This locks the pinion in the engaged position. When the engine starts, the flywheel of the engine drives the starter pinion. A clutch mechanism is built into the pinion to protect the starter from excessive RPM.

The clutch allows the pinion to turn faster or overrun the armature shaft. When the engine reaches 400-500 RPM, the pinion spins fast enough to create the needed centrifugal force to throw the spring loaded pin out of the hole in the shaft and allow the pinion to disengage.





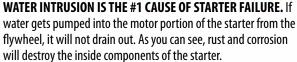
We could tell you why your starter failed, but we thought you might like to see for yourself.

If left unchecked, these problems will result in premature starter failure REGARDLESS of the STARTER MANUFACTURER.

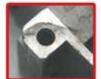




Although the outside of the starter (at bottom right) looks fine, the flywheel picked up water from the bilge and pumped it inside the starter causing the corrosion shown here.







Shown here are damaged starter mounting pads. Water ingested into the engine stresses the mounting bolts beyond normal conditions. The bolts stretch and cause the starter to become loose. This could eventually lead to damage to the ring gear, starter casting and possibly the entire engine block.

THE #2 CAUSE OF STARTER FAILURE IS WATER INGESTED INTO

THE ENGINE. Leaking exhaust manifolds, gaskets and risers are often the source. Damage to the mounting pads, as shown above, indicate the starter has been loose on the engine; possibly caused by water ingestion into the cylinder. Although the engine may not experience a complete hydro lock, if enough water is on top of the piston to raise the compression to a high level, the starter bolts and mounting pads will be stressed beyond normal load conditions.

DON'T BE FOOLED BY OUTWARD APPEARANCES. As shown here, the

outside condition of the starter appears to be fine, but by removing and inspecting the lower starter case bolt, it is obvious water has gotten inside the starter.

These problems are not the fault of the starter. Simply replacing the starter without first locating and correcting the source of water intrusion will only result in more starter failures.







Rust, Corrosion or Submersions are

NOT COVERED BY WARRANTY



ACC treats every component with special rust and corrosion resistant coatings to prevent water damage. However, it is impossible to protect the unit from direct contact with water. Therefore, a failure directly caused by rust, corrosion or submersion is not covered by warranty.

STANDARD DUTY Direct O.E.M. replacement **Gear-reduction starter. FITS: ALL GM ENGINES** with 14" flywheel using a staggered bolt pattern. Recommended for late model 3.0 Liter with 14" flywheel using tail bracket.

Can also be used in place of 10MT with two long bolt staggered pattern or 30470!

*Mounting bolt kit MBK450 required if replacing 10MT.

SW463 Replacement Solenoid

30456 (NEW) HIGH-PERFORMANĆE

FITS: MERCRUISER, CRUSADER, MARINE POWER,

PLEASURECRAFT, AND OTHERS.

14MT. CW Rotation

30457 (NEW) **HIGH-PERFORMANCE** FITS: MERCRUISER, **CRUSADER, MARINE POWER,** PLEASURECRAFT, AND OTHERS.





Replaces this 10 MT style starter

DV456

CW Rotation Replacement Drive Fits: Delco 14 MT, ARC 30456 starter



DV457

CCW Rotation Replacement Drive **Replaces: Mercury 850402**

Fits: Delco 14 MT, ARC 30457 starter



14 MT Replacement Solenoid 4 Post. 3-Bolt Mount





30459 (NEW) HIGH-PERFORMANCE FITS: MERCRUISER, CRUSADER, **MARINE POWER,** AND OTHERS. Light weight and compact;

Permanent magnet, Gear-reduction. **CCW Rotation**

SW463 Replacement Solenoid

30460 (NEW) HIGH-PERFORMANCE Permanent magnet **Gear-reduction starter** FITS: MERCRUISER, COBRA, YAMAHA, **VOLVO PENTA CW Rotation** 12¾" flywheel





30460 Will Replace all CW Rotating 10MT Starters with One Long and One Short Bolt Straight Across Pattern.

SW450

INCLUDES

MOUNTING

Replacement solenoid For \$\infty\$ 30460 & 30470 only!





The Starting & Charging Specialists

REPLACEMENT INBOARD STARTERS

Rust, Corrosion or Submersions are
NOT COVERED BY WARRANTY

However, it is impossible to protect the unit from direct contact with water. Therefore, a failure directly caused by rust, corrosion or submersion is not covered by warranty.

30462 (NEW)
FITS: 6.0L GM
ENGINES
Permanent magnet
Gear-reduction starter
with two long bolt
slight offset bolt pattern

noid

SW463 Replacement Solenoid

30470 (NEW)
HIGH-PERFORMANCE
Permanent magnet
Gear-reduction starter
FITS: VOLVO PENTA,
MERCRUISER,
MARINE POWER, ETC.
Two long bolt staggered pattern
14" flywheel, CW Rotation

Will also replace 9-tooth OEM version.

30470 Will Replace

all CW Rotating 10MT
Starters with Two Long Bolt
Staggered Pattern. DOES
NOT INCLUDE MOUNTING
BOLT KIT - SEE BELOW.



Replaces this 10 MT style starter

MBK450

MOUNTING BOLT KIT REQUIRED if replacing 10MT style starters.



SW450

Replacement solenoid
For ACO 30460, & 30470 only!



50109

HEAVY-DUTY
FITS: CHRYSLER
318 Marine V8
Two-bolt mount,
1 threaded hole
12 Volt, CW rotation



12 Volt, CCW Rotation



50134

HEAVY-DUTY

FITS: CHRIS CRAFT, HARMAN MARINE

Three-bolt mount (two 3/8" holes, one 5/16" threaded hole) 12 Volt, CW Rotation

50135

12 Volt. CCW rotation



Electrical Technical Manual

Published by Mechanics for Mechanics

TM001

Electrical Technical Manual

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Rust, Corrosion or Submersions are NOT COVERED BY WARRANTY



ARCS treats every component with special rust and corrosion resistant coatings to prevent water damage. However, it is impossible to protect the unit from direct contact with water. Therefore, a failure directly caused by rust, corrosion or submersion is not covered by warranty.

50137

HEAVY-DUTY

FITS: CHRIS CRAFT AND OTHERS

Three-bolt mount, (two 3/8"

holes, one 5/16" threaded hole) 12 Volt, CW Rotation

50138

12 Volt. CCW rotation



50141

HEAVY-DUTY 12 Volt, CCW rotation

50142

HEAVY-DUTY FITS: CHRIS CRAFT, **VOLVO PENTA V8 Two-bolt mount**

12 Volt, CW rotation



50143

HEAVY-DUTY FITS: MERCRUISER 470 Threaded mounting

stud in case 12 Volt, CW rotation



50160

HEAVY-DUTY FITS: CHRIS CRAFT Three-bolt housing 12 Volt, CW rotation

50161

HEAVY-DUTY FITS: CHRIS CRAFT 12 Volt, CCW rotation



50169

HEAVY-DUTY FITS: MERCRUISER 888, 302, 351 FORDS **Two-bolt mount** 12 Volt. CW rotation



70106

FITS: CRUSADER AND OTHERS W/FORD ENGINES

Two-bolt mount 12 Volt, CW rotation **Side battery terminal**

70107

12 Volt, CCW rotation **Side battery terminal**

SW394

Replacement solenoid

To be discontinued when present stock is exhausted.







Rust, Corrosion or Submersions are NOT COVERED BY WARRANTY

ACC treats every component with special rust and corrosion resistant coatings to prevent water damage. However, it is impossible to protect the unit from direct contact with water. Therefore, a failure directly caused by rust, corrosion or submersion is not covered by warranty.

70108

FITS: 460 FORDS **Heavy Duty** 12 Volt. CW rotation



70117

FITS: MANY LATE MODEL FORDS

Mod II style;

41/2" diameter case Nose extends 2%" into flywheel **Two-bolt mount** 12 Volt, CW rotation

Rear battery terminal

SW394 Replacement solenoid

To be discontinued when present stock is exhausted.

HIGH PERFORMANCE Permanent magnet Gear-reduction starter FITS: MANY LATE MODEL 5.0L, 5.8L FORDS 12 Volt, CW rotation

SW125

Replacement solenoid



HIGH PERFORMANCE **Permanent magnet Gear-reduction starter** FITS: 302, 351 FORDS 12 Volt, CW rotation Kit includes wiring harness to replace conventional starter.

70201 (NEW) HIGH PERFORMANCE **CCW ROTATION**

Same as above except **CCW rotation.**



Will also replace conventional style starter

SW125 Replacement solenoid

HIGH PERFORMANCE **Permanent magnet Gear-reduction starter FITS: 460 FORD ENGINES** Replaces: 0.M.C. 988013 12 Volt, CW rotation Two-bolt mount with 3/8" x 18 threaded mounting ear. Kit includes wiring harness to replace conventional starter.



Will also replace conventional style starter

SW125 Replacement solenoid







Rust, Corrosion or Submersions are NOT COVERED B

NOT COVERED BY WARRANTY



However, it is impossible to protect the unit from direct contact with water. Therefore, a failure directly caused by rust, corrosion or submersion is not covered by warranty.

70216 (NEW)
HIGH PERFORMANCE
Permanent magnet
Gear-reduction starter
FITS: 2.3L FORD ENGINES
Replaces: 0.M.C. 988012
12 Volt, CW rotation
Three-bolt mount.
Kit includes wiring harness
to replace conventional starter.



Will also replace conventional style starter

97225 (NEW)
Gear-reduction starter
FITS: VOLVO PENTA TMD40,
TMD41, KAD42 and others.
Replaces: PARIS RHONE/VALEO
D9R116, D9R144, D11E167T
Three-bolt mount, 12 Volt, CW
rotation



DV225 Replacement drive gear

98170

Lucas M45G starter
FITS: PERKINS 4-108VA
propulsion
13-tooth drive gear
12 volt. CW rotation

To be discontinued when present stock is exhausted.



98180 (NEW) FITS: YANMAR

GM, GM2, GM3, GM10, GM20/2-20F, GM30, GMF, 1GM, 2GM, 3GM

Replaces: HITACHI S114-303, S114-303A



98185 (NEW) FITS: YANMAR

3JH and 4JH, engines

Replaces: HITACHI S114-483, S114-815



10113 (NEW) Gear-reduction starter FITS: VOLVO PENTA

4 cyl, 6 cyl gas Aluminum pinion housing w/2 threaded mounting holes

Permanent magnet, 12 volt, CW rotation



12213 (NEW) FITS: CUMMINS 6BT. 10-tooth drive gear 12 Volt, CW rotation







IMPORTANT BATTERY FACTS

A good battery can provide four or five years of worry-free service with the right kind of care.

Bigger is better! The battery you are replacing does not have to be the same size as the original. **IT IS ALWAYS BETTER TO HAVE EXTRA BATTERY CAPACITY.**

POINTS TO REMEMBER

- The battery is the heart of the electrical system
- Always start troubleshooting at the battery
- Never store a battery in a discharged state
- Never add anything except distilled water to a battery



DRY CHARGED BATTERIES MUST BE CHARGED BEFORE USING



Many small batteries are supplied with the electrolyte in a separate container. If you have to fill a new battery with electrolyte, **YOU MUST PLACE THE BATTERY ON A QUICK CHARGER.** The charging system will never bring the battery to a fully charged state. **THE BATTERY CAPACITY WILL NEVER BE ABOVE 80%.** Pulling the battery out later and trying to charge it will not work. **THE BATTERY'S CAPACITY HAS BEEN PERMANENTLY CUT BY 20% AND THERE IS NOTHING YOU CAN DO ABOUT IT.**

BATTERIES WILL SELF DISCHARGE WHEN STORED

Batteries will self discharge when stored for long periods of time. This is a normal process with all lead acid batteries. Always charge the battery to full charge before storing. Also disconnect the negative battery cable. This will keep the small system drains from accelerating the discharge process. The best way to avoid shortened battery life is use a SMART CHARGER (not a trickle charger) on the battery when it's not being used. A smart charger is a charging device that will maintain the battery at a full state of charge by only charging the battery when the voltage drops to a specified level without overcharging.



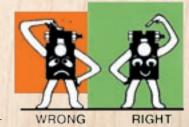
ELECTROLYTE BECOMES WATER IN A DISCHARGED BATTERY



As a battery becomes discharged the percentage of sulfuric acid in the electrolyte becomes less. The sulfuric acid combines with the lead plates producing lead sulfate. As this happens **the electrolyte solution becomes pure water.** A discharged battery will freeze in cold climates, which will destroy the insulators and plates inside it.

LOOSE BATTERY TERMINAL ENDS CAN DESTROY A BATTERY

Loose or corroded battery cable lugs can cause all sorts of problems. When the starter is engaged the loose or corroded connection can cause a heavy arc which will melt the post right out of the battery. If the battery is gassing, the arc can cause the battery to explode. Never use the temporary type battery ends. These are only good for emergency use and will become corroded in a short period of time. Always use a crimped and sealed battery cable end or replace the battery cable.



Make sure there is a gap between the ends of the terminal when tight.







DO NOT CUT WIRES OR DISMANTLE UNITS

Cutting a units wires or dismantling a unit immediately voids the manufacturer's warranty. Water can easily seep into the motor through cut wiring. In addition, taking a motor off the reservoir and trying to install it on an old reservoir usually damages the brushes in the motor. Disassembled parts are not covered by warranty.

6204 (NEW) FITS: 0.M.C. 3-wire connection 2-bolt mount



6206 (NEW) FITS: 0.M.C. 3-wire connection **3-bolt mount**



6209 (NEW) FITS: O.M.C.



6211 (NEW) FITS: O.M.C. stern-drive 1979-1985 2.5L, 3.0L 3-wire connection Ring Terminal Ends







6213 (NEW) FITS: GOOD AUTOMATIC WINDLASS

Ring Terminal Ends



Will also replace units with this style shaft



6216 (NEW) (MOTOR/RESERVOIR ONLY)



6217 (NEW) (MOTOR/RESERVOIR ONLY) FITS: B.M.W., MERCRUISER, VOLVO PENTA

Includes: Screws, gasket & adapter Ring Terminal Ends

TAK217

Screws, gasket, adapter



To be discontinued when present stock is exhausted

TR217

Complete end cap assembly w/brushes and springs available 6218 (NEW)
(MOTOR ONLY)
FITS: MERCRUISER I/O'S AND
MERCURY OUTBOARDS
W/OILDYNE PUMP
12 Volt
Ring Terminal Ends

6219

24 Volt Slow speed motor Fits Jack lift for racing outboards



TR218

Brush repair kit for 6218

6220 (NEW)
HEAVY-DUTY
FITS: 0.M.C.
2-wire connection
Includes 0-ring
3-bolt mount
Male Spade Terminal Ends
96" Leads

R473

Relay available

6220X (NEW) HEAVY-DUTY, FITS: 0.M.C.

2-wire connection, **Includes O-ring, 3-bolt mount**Male Spade Terminal Ends **62" Leads**

6223 (NEW) HEAVY-DUTY FITS: VOLVO PENTA Female Spade Terminal Ends







6224 (NEW) (COMPLETE) **FITS: VOLVO PENTA**

Includes: Hydraulic valve body Ring Terminal Ends



Replaces this style

Prestolite Pump

6227 (NEW) (COMPLETE) FITS: VOLVO PENTA - THRU 1999 **W/OILDYNE PUMP**

6232 (MOTOR ONLY)



M531 (NEW) FITS: (#C) 6227 Includes: Reservoir, cap, and **0-ring**

Fits Oildyne Pump ONLY

For new style 4 screw mount see M533 in miscellaneous section



6232 (NEW) (MOTOR ONLY) FITS: (6227, LATE MODEL **VOLVO PENTA W/OILDYNE PUMP** 2-wire connection



FITS: LATE MODEL **VOLVO PENTA SX** MODELS.

Replaces Teleflex Motor and Volvo part number 3861575



Distance between mounting bolts: 2.3" Bolt size: 10x24 coarse thread

6234 (NEW) **HEAVY-DUTY** FITS: HONDA **2002-Up** BF175, BF200, BF225 4-bolt mount, Round Plug-In Connector **Includes 0-ring** Replaces Honda part number 36120-ZY3-013



The Alarting & Charging Specialists

REPLACEMENT TILT/TRIM MOTORS & REPAIR KITS

6235 (NEW)
HEAVY-DUTY
FITS: HONDA
2004-Up BF135, BF150
4-bolt mount,
Round Plug-In
Connector
Includes O-ring
Replaces Honda
part number
36120-ZY6-013



6238 (NEW)
HEAVY-DUTY
Fits: O.M.C.
1998-Up
75 HP-250 HP FFI
Outboard Engines
4-bolt mount,
Female Sealed
Terminal Ends
Includes 0-ring



6236 (NEW)
HEAVY-DUTY
FITS: HONDA
2007-Up BF75, BF90
4-bolt mount,
Round Plug-In
Connector
Includes 0-ring
Replaces Honda

part number 36120-ZY9-003



6239 (NEW)
HEAVY-DUTY
FITS: HONDA
1992-2002 35-50 HP
2-wire connection
Includes 0-ring
4-bolt mount
Hollow-hex shaft
Female Spade
Terminal Ends



6237 (NEW)
HEAVY-DUTY
FITS: HONDA
2004-Up BF40, BF50
4-bolt mount,
Round Plug-In
Connector
Includes O-ring
Replaces Honda
part number



6240 (NEW)
HEAVY-DUTY
FITS: YAMAHA
1997-UP 115 HP
2000-UP 115 HP 4-Stroke
1997-2000 130 HP
1997-UP 150-200 HP
1998-UP 225 HP
2-wire connection
4-bolt mount,
Ring Terminal Ends
Includes 0-ring



36120-ZW4-H12



6241 (NEW)

HEAVY-DUTY

FITS: 0.M.C. 60, 70, 90, 115, 150, 175 HP

1991-Up 200, 225 HP, **1991-94** 120, 140 HP

1995-UP 50 HP 3-cyl, 60 HP, V4 130 HP

1997-Up 115-200 HP

1998-99 225 HP 2-wire connection **4-bolt mount. Flat-blade shaft**

Female Spade Terminal Ends

R473

Relay available

Includes O-ring and adaptor to replace motors with hollow hex shafts

ALSO REPLACES OEM MOTORS WITH HOLLOW HEX SHAFT



R473

Relay available



R473

Relay available



6244 (NEW) HEAVY-DUTY

HEAVY-DUTY FITS: O.M.C.

1993 V6

1993-Up Commercial V8

2-wire connection;

3-bolt mount, Includes 0-ring Flat-blade shaft

Female Spade Terminal Ends

R473

Relay available



6247 (NEW)

HEAVY-DUTY

FITS: EVINRUDE ETEC

2005-2009 70-90 HP

2007-2009 115 HP

2009- 130 HP

2-wire connection

4-bolt mount, Includes TAK247 mounting kit,

Flat-blade shaft



Mounting bolts, flat washers, O-ring and couplers





6248 (NEW) HEAVY-DUTY

FITS: EVINRUDE ETEC

2005-2009 40-50 HP **2006-2009** 60 HP

2009- 25-30 HP

2-wire connection

4-bolt mount, Includes TAK247 mounting kit,

Flat-blade shaft

TAK247

Mounting bolts, flat washers, O-ring and couplers







6250 (NEW) **HEAVY-DUTY**

FITS: Late model MERCURY

135, 150 XR6, Magnum III, 175, 200, 225, 250 HP, 105-140 HP Jet 2-wire connection.

2-bolt mount

Includes 0-ring

Flat-blade shaft **Bullet Connector Terminal Ends**

This motor will NOT replace an early model Mercury cartridge pump motor!



6255 (NEW) **HEAVY-DUTY FITS: Late model MERCURY/FORCE** 25-50 HP outboards

2-wire connection 4-bolt mount Flat-blade shaft

Bullet Connector Terminal Ends



6257 (NEW) **HEAVY-DUTY FITS: YAMAHA** 2004-2015 50/60HP 4 Stroke, 2-wire connection 3-bolt mount, ring

terminal ends

Includes 0-ring

Replaces Yamaha part numbers 6C5-43880-01 & 6C5-43880-00



6258 (NEW) **HEAVY-DUTY FITS: YAMAHA** 2005-UP 75 HP 4 Stroke 2005-UP 90 HP 4 Stroke 2-wire connection

4-bolt mount **Includes O-ring & Coupler**

Ring Terminal Ends



6259 (NEW)

HEAVY-DUTY **FITS: YAMAHA**

2001-2004 50 HP 4 Stroke

2002-2004 60 HP 4 Stroke 2001-2006 40 HP 2 Stroke (TLR)

2003-2009 50 HP 2 Stroke (TLR)

2-wire connection

3-bolt mount **Includes 0-ring**

Ring Terminal Ends

OEM unit pictured ARCO Replacement will look different



6260 (NEW)

HEAVY-DUTY

FITS: YAMAHA

1992-2002 90 HP 1992-1995 50-90 HP

1994 40 HP

1996 70-90 HP

1997-Up 60, 70, 90 HP

2-wire connection,

3-bolt mount **Includes O-ring**

Flat-blade shaft

Ring Terminal Ends



6261 (NEW)

HEAVY-DUTY FITS: YAMAHA

1999-2004 75, 80, 90 &

100 HP 4 Stroke O/B Engines

2-wire connection 4-bolt mount,

Ring Terminal Ends

Includes 0-ring



6263 (NEW) **HEAVY-DUTY**

FITS: YAMAHA

2002-2009 200, 225.

250 HP 4 Stroke

2002-2009 200-300 HP

2 Stroke

2-wire connection

3-bolt mount **Includes 0-ring**

Ring Terminal Ends





REPLACEMENT TILT/TRIM MOTORS & REPAIR KITS



6264 (NEW)
HEAVY-DUTY
FITS: YAMAHA
1985-1992
40-50 HP
2-wire connection
4-bolt mount,
Includes 0-ring
Ring Terminal Ends



6265 (NEW)
HEAVY-DUTY
FITS: YAMAHA
1987-1995
115-200 HP Outboards
1990-1993 225 HP
2-wire connection
3-bolt mount
Includes 0-ring
Flat-blade shaft
Ring Terminal
Ends



6266 (NEW) FITS: YAMAHA 1995-Up 40/50 HP 2-wire connection 3-bolt mount Includes 0-ring Ring Terminal Ends



6267 (NEW) FITS: YAMAHA Early 70, 90,115, 150-200 HP 3-wire connection 3-bolt mount Ring Terminal Ends 4-mm thick shaft blade with 68.3-mm mounting collar.

Includes 0-ring



6268 (NEW)
FITS: SUZUKI ONLY
1991-1997 DT90,
1991-2000 DT100,
1991-2003 DT150,
1991-2000 DT200,
1991-2003 DT225
WILL NOT FIT TOHATSU OR
NISSAN. 2-wire connection
3-bolt mount
Includes 0-ring and adaptor

Ring Terminal Ends

6269 (NEW)
FITS: SUZUKI DT 150/200
3-wire connection
3-bolt mount
Includes 0-ring
Ring Terminal Ends

6270 (NEW)
(COMPLETE)
FITS: Late model MERCURY
225-275 HP Outboards w/Oildyne pump
Ring Terminal Ends
6271 (NEW)
(COMPLETE)
Slow speed unit used for racing





Ring Terminal Ends



REPLACEMENT TILT/TRIM MOTORS & REPAIR KITS

6275 (NEW) (COMPLETE)

Ring Terminal Ends

FITS: Late model MERCRUISER w/Oildyne pump

6218 MOTOR ONLY

M525 (NEW)

Reservoir kit

FITS: (475) 6275

Includes: Reservoir, cap, O-ring,

mounting screw

For new style 4 screw mount Mercruiser 883166A2 see M532 in miscellaneous section





6276 (NEW)

HEAVY-DUTY
FITS: Late model

MERCURY/MARINER, FORCE

40-125 HP outboards w/single ram 2-wire connection

4-bolt mount

Hollow-hex shaft

(Motor/Reservoir Only)

Includes stainless steel mounting screws, shaft adaptor, O-ring and fill plug.

Bullet Connector Terminal Ends





TAK276

Mounting bolts, O-ring, fill cap and shaft adapters for tilt/trim motors



6277 (NEW)
HEAVY-DUTY
(MOTOR ONLY)
FITS: ARC cartridge pump 6278 only!
2-bolt mount
Ring Terminal Ends

Fits ARC style cartridge pump only

Motor WILL NOT fit original Mercury pump.

To be discontinued when present stock is exhausted

6279 (NEW)

HEAVY-DUTY

FITS: MERCURY/MARINER

outboards w/Design II 3 ram, three-wire trim units Hollow-hex shaft

W/AFT FILL RESERVOIR

3-wire connection

2-bolt mount

Shaft adaptor and O-ring included.

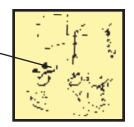
Ring Terminal Ends







Replaces this square motor



AFT FILL RESERVOIR



CHARGING SYSTEMS



NOTE: ALTERNATORS ARE NOT BATTERY CHARGERS

* ENGINE HORSEPOWER REQUIRED FOR ALTERNATORS

For every 23 AMPS of alternator output about one horsepower is required.FOR EXAMPLE: A 12 volt, 115 AMP alternator requires 5 horsepower.
(115 divided by 23 = 5 horsepower). A 24 volt unit requires twice the horsepower.



* ALTERNATORS ARE NOT BATTERY CHARGERS

Alternators are designed to supply current for the accessory load and maintain the charge of the battery. **Most alternators can safely charge at only two-thirds of their maximum rated output.** When trying to recharge a dead battery, the alternator will charge at maximum output for extended periods of time causing the alternator to overheat. **High heat destroys** transistors, diodes and windings.



* ONE-WIRE ALTERNATORS CAN NOT BE USED WITH BATTERY ISOLATORS

One-wire alternators, sometimes referred to as self-exciting alternators, require battery voltage at the output terminal in order to charge. Since battery isolators eliminate the battery voltage to the alternator, you must use a battery isolator with an ignition excite capability or modifications must be made to the alternator to allow ignition excitation.



 st alternators must turn the proper RPM in order to function

Just because the alternator looks like it's turning, doesn't mean it's turning fast enough to charge. **Most alternators do not start charging until they reach 1,000 RPM** alternator shaft speed. 5,000 RPM alternator shaft speed is normally required to reach maximum output. If you're not sure what the alternator shaft speed is, you can determine this with the pulley ratio. Measure the diameter of the crank shaft or drive pulley and the alternator pulley. Divide the crank shaft pulley diameter by the alternator pulley diameter. This figure would be the engine-to-alternator RPM ratio. A normal ratio would be 2.5 to 1. For example, let's say we have a 7 inch diameter crank shaft pulley and a 2.75 inch alternator pulley. We would divide 7 inches by 2.75 which equals 2.54 to 1. If the engine was turning 1,000 RPM we would multiply 1,000 by 2.54 which would give us 2.540 alternator RPM.



Alternator

Again, with today's high amperage alternators, belt condition and tension are critical in proper alternator performance.

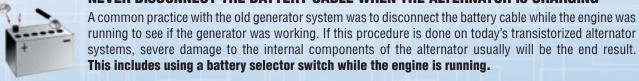
Crankshaft Pulley

IF YOU ARE ABLE TO TURN THE ALTERNATOR FAN BY HAND. YOU DO NOT HAVE THE BELT TIGHT ENOUGH.



* ALTERNATORS WILL CHARGE WHEN TURNING IN EITHER DIRECTION

* NEVER DISCONNECT THE BATTERY CABLE WHEN THE ALTERNATOR IS CHARGING







20100

FITS: MANY DIESEL ENGINES 12 Volt, 70 AMP

Self exciting internal regulator Negative ground

1-wire connection

2-inch mounting foot Single groove pulley included

For high-amp (12 Volt, 105 Amp) replacement alternator, see 60122 on Page 46.



20102

FITS: MERCRUISER, O.M.C. 12 Volt, 70 AMP

Self exciting

Ignition protection screens

Internal regulator Negative ground 1-wire connection

2-inch mounting foot Single groove pulley included

For high-amp (12 Volt, 105 Amp) replacement alternator, see 60122 on Page 46.



20104

FITS: MERCRUISER, O.M.C.

12 Volt, 70 AMP

Ignition protection screens Internal regulator Negative ground 2-wire plug

2-inch mounting foot Single groove pulley included

For high-amp (12 Volt, 105 Amp) replacement alternator, see 60122 on Page 46.



20500

Universal-mount alternator 12 Volt. 70 AMP

Self exciting Ignition protection screens 1-wire connection

Single groove pulley included 1-inch mounting foot

Adaptors available for 2" mounting configurations



20800 (NEW) FITS: MERCRUISER

4.3L - 8.2L 1998-Up

12 Volt, 70 AMP

Internal Fan

65-mm multi-groove serpentine

pulley included



20810 (NEW) FITS: MERCRUISER 3.0L

1999-UP

12 Volt, 70 AMP

Internal Fan

Single groove

pulley included



20815 (NEW) FITS: MERCRUISER 4.3L-6.2L

12 Volt. 70 AMP Internal Fan

50-mm multi-groove serpentine pulley included



20820 (NEW)

FITS: INDMAR.

PLEASURECRAFT. **CRUSADER, AND OTHERS** 12 Volt, 70 AMP

Internal Fan

2-inch mounting foot 65-mm multi-groove serpentine pulley included







20821 (NEW)
FITS: PLEASURECRAFT &
MARINE POWER
12 Volt, 70 AMP
Internal Fan
2-inch mounting foot
50-mm serpentine
pulley included



20822 (NEW)
FITS: PLEASURECRAFT
12 Volt, 70 AMP
Internal Fan
2-inch mounting foot
65-mm serpentine
pulley included



20825 (NEW)
FITS: INDMAR,
PLEASURECRAFT,
CRUSADER, AND OTHERS
12 Volt, 70 AMP
Internal Fan
2-inch mounting foot
Single groove
pulley included



20826 (NEW)
HIGH AMP
FITS: PLEASURECRAFT
12 Volt, 95 AMP
Internal Fan
2-inch mounting foot
65-mm serpentine
pulley included



20827 (NEW) HIGH AMP

FITS: INDMAR
12 Volt, 95 AMP
Internal Fan
2-inch mounting foot
65-mm serpentine
pulley included



20828 (NEW)
HIGH AMP
FITS: MARINE POWER
12 Volt, 95 AMP
Internal Fan
2-inch mounting foot
Double pulley included



20830 (NEW)
FITS: MARINE POWER
12 Volt, 70 AMP
Internal Fan
2-inch mounting foot
Double pulley included
Includes wire/plug
connector



20840 (NEW)
FITS: 2.5L
MERCURY OUTBOARD
12 Volt, 50 AMP
Internal Fan
2-inch mounting foot
Multi-groove
serpentine
pulley included
Includes wire/plug
connector







20850 (NEW)
FITS: 1.5L & 3.0L
MERCURY OUTBOARD
12 Volt, 50 AMP
Internal Fan
Multi-groove serpentine
pulley included

Includes wire/plug connector

> *Will not replace Mercury # 821663A-1



20860 (NEW)
FITS: All Mercury
Verado Outboards
12 Volt, 70 AMP
Internal Fan
Multi-groove
serpentine
pulley included



40112

FITS: CHRYSLER MARINE
12 Volt, 70 AMP
Internal regulator
Negative ground
Single groove
pulley included

VR405

Replacement Regulator for Prestolite alternator Not required for Preplacement alternator.





40115 (NEW)
FITS: CHRIS CRAFT
12 Volt, 55 AMP
Negative ground
1-inch mounting foot
Single groove
pulley included



VR407

Replacement Regulator for Prestolite alternator

Not required for replacement alternator.

40147 (NEW)

FITS: PLEASURECRAFT, WAUKESHA
12 Volt, 55 AMP
Negative ground

2-inch mounting foot Single groove pulley included

VR406

Replacement Regulator for Prestolite alternator Not required for

replacement alternator.







40152

FITS: O.M.C.
12 Volt, 70 AMP
Internal regulator
Negative ground
Single groove
pulley included

VR404

Replacement Regulator for Prestolite alternator Not required for replacement alternator.









60050 (NEW)
MANDO
FITS: LATE MODEL
MERCRUISER
12 Volt, 55 AMP
Internal regulator

2-inch mounting foot Single groove pulley included

M883

Replacement Regulator

65050 (NEW) 75 Amp high-output also available



60055 (NEW)
MANDO
FITS: LATE MODEL
MERCRUISER
12 Volt, 55 AMP
Internal regulator
2-inch mounting foot

Multi-groove serpentine pulley included

M883

Replacement Regulator

65055 (NEW) 75 Amp high-output also available

60060 (NEW)
MANDO
FITS: LATE MODEL
MERCRUISER
12 Volt, 65 AMP
Internal Regulator
2-inch mounting foot
Multi-groove serpentine
pulley included

65055 (NEW) 75 Amp high-output also available



60065 (NEW)
MANDO
FITS: LATE MODEL
MERCRUISER
12 Volt, 65 AMP
Internal regulator

2-inch mounting foot Single groove pulley included

65050 (NEW) 75 Amp high-output also available



60070 (NEW)
MANDO
FITS: LATE MODEL
VOLVO PENTA
12 Volt, 65 AMP
Internal Regulator
2-inch mounting foot
Single groove
pulley included



60071 (NEW)
MANDO
FITS: LATE MODEL
VOLVO PENTA
12 Volt, 65 AMP
Internal Regulator
2-inch mounting foot
Multi-groove serpentine
pulley included



60072 (NEW)
MANDO
FITS: LATE MODEL
VOLVO PENTA
12 Volt, 65 AMP
Multi-groove
serpentine
pulley included







60073 (NEW)
VOLVO PENTA
FITS: LATE MODEL VOLVO PENTA
12 Volt, 75 AMP
50-mm multi-groove
serpentine pulley included





60074 (NEW)
VOLVO PENTA
FITS: LATE MODEL
VOLVO PENTA
12 Volt, 75 AMP
2-inch mounting foot
Single groove
pulley included



60075 (NEW)

UNIVERSAL ALTERNATOR W/ MANY APPLICATIONS FITS: YAMAHA, MARINE POWER, CRUSADER

Replaces Motorola

12 Volt, 55 AMP
Internal regulator Includes:
Tachometer terminal, indicator light terminal, remote battery sensing terminal, excite terminal
1-inch mounting foot with 3-ear adjustment
Single groove pulley included



Replacement Regulator



60076 (NEW)
VOLVO PENTA
FITS: LATE MODEL VOLVO PENTA
12 Volt, 75 AMP
63-mm multi-groove
serpentine pulley included





60104 (NEW)
REPLACES: MOTOROLA
12 Volt, 55 AMP
Internal regulator
Negative ground
1-inch mounting foot
Single groove
pulley included





60108 (NEW)
FITS: UNIVERSAL AND OTHERS
12 Volt, 55 AMP

Internal regulator
Negative ground
2-inch mounting foot
Single groove
pulley included

65108 (NEW) 75 Amp high-output also available



60125 (NEW)

FITS: O.M.C. COBRA
Replaces: Prestolite/Motorola
12 Volt, 55 AMP

Internal regulator Negative ground **2-inch mounting foot**

Single groove pulley included



Replaces this ◀ style unit







12 VOLT, 105 AMP - HIGH AMP ALTERNATORS

Today's increased electrical loads and more sophisticated electronics demand improved performance, greater reliability, and higher output from the electrical generating system. Area is creative engineering offers a 105 AMP series as the means to a totally efficient electrical system. For comparison, just look at the Performance Chart at the bottom of the page!

HIGH-AMP 12 Volt, 105 AMP

Self exciting integral regulator Isolated ground Includes: Tachometer terminal. External voltage adjustment.

1-inch mounting foot, 1/2" hole Single groove pulley included



60122 (NEW) 12 Volt, 105 AMP

Self exciting integral regulator. Isolated ground. Includes: Tachometer terminal. External voltage adjustment.

2-inch mounting foot, 3/8" hole

Single groove pulley included

12 Volt, 105 AMP

Self exciting integral regulator Isolated ground Includes: Tachometer terminal External voltage adjustment

2-inch mounting foot.

10mm hole

Single groove pulley included



For applications WITHOUT warning panel connection, use 60124

60498 (NEW) **FITS: CATERPILLAR DIESEL 6T1396** 12 Volt, 105 AMP Integral regulator

Single groove

pulley included

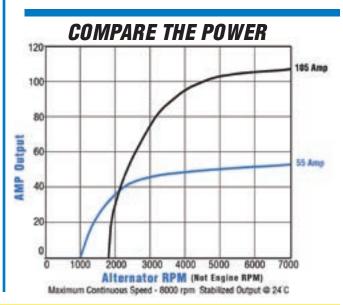
Isolated ground Heavy duty bearings 1-inch mounting foot



FITS: VOLVO PENTA



For applications WITH warning panel connection, use 60126







60195 (NEW)
Prestolite/Motorola
FITS: CUMMINS DIESEL
12 Volt, 65 AMP
Integral regulator
2-inch mounting foot
PULLEY NOT INCLUDED
Poly-V pulley
available separately

To be discontinued when present stock is exhausted



84135

HITACHI MARINE
FITS: YANMAR DIESEL
12 Volt, 35 AMP
Internal regulator
Single groove
pulley included



60198 (NEW)

FITS: CATERPILLAR DIESEL 6T1396

12 Volt, 51 AMP

Integral Regulator Isolated ground Heavy duty bearings

1-inch mounting foot PULLEY NOT INCLUDED

For high-amp (12 Volt, 105 Amp) replacement alternator see 60498 on Page 46.



84150

HITACHI MARINE
FITS: YANMAR DIESEL
12 Volt, 50 AMP
Internal regulator
Single groove
pulley included



80108 (NEW)

FITS: LATE MODEL VOLVO PENTA

DIESEL ENGINES
12 Volt, 55 AMP
Internal regulator

2-inch mounting foot PULLEY NOT INCLUDED

For high-amp (12 Volt, 105 Amp) replacement alternator see 60124/60126 on Page 46.



86050

FITS: WESTERBEKE
DIESEL ENGINES
12 Volt, 50 AMP
Internal regulator
Single groups

Single groove pulley included



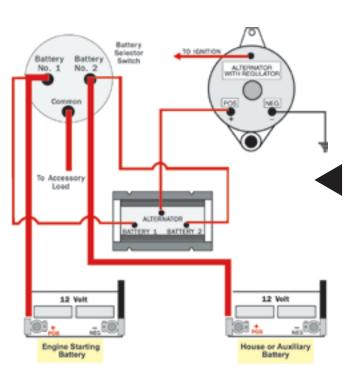




TYPICAL BATTERY ISOLATOR CIRCUITS

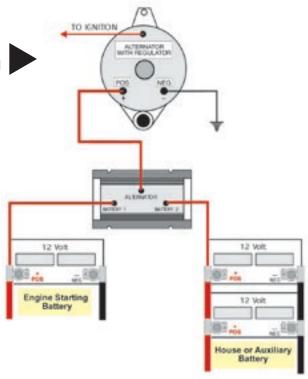
The most common battery isolator is the one alternator, two battery unit. It doesn't matter how many batteries are connected in parallel to the battery 1 or 2 terminal.

Remember, when batteries are connected in parallel, they become one large battery.

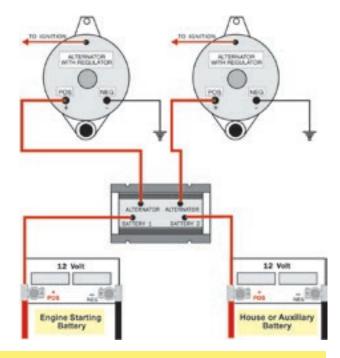


The two alternator, two battery isolator allows both alternators to charge both batteries.

In the event of one alternator failure, both batteries would be maintained by the working alternator.



The one alternator, two battery isolator with a battery selector switch will allow both banks of batteries to be charged regardless of what position the battery selector switch is in.







INBOARD/OUTBOARD BATTERY ISOLATORS

Battery isolators are solid-state devices which allow electrical current to flow in one direction only, thus permitting the alternator to be connected directly to two batteries without fear of one higher charged battery discharging into the lower charged battery. Both batteries are always being charged automatically, in proportion, to their needs, whenever the engine is running. When battery isolators are used in conjunction with selector switches, it is not necessary to change the switch position to provide for charging of both batteries. Isolators provide proportioning of the output or charging current on the alternator to the batteries as required, regardless of switch position. Rated for use with 10 to 350 amp alternators on 12, 24, or 32 volt negative ground systems.



Battery Isolators cannot be used on 12 volt charging systems with 24 volt trolling motors or newer outboard engines with rectifier-regulator charging systems.

BI-0702

1 Alternator, 2 Batteries 70 AMP max



BI-1202-3A

1 Alternator. 2 Batteries 120 AMP max Includes: Exciter Terminal



BI-0702-4

1 Alternator, 2 Batteries 70 AMP max Includes: Regulator sensing terminal



BI-1203

1 Alternator, 3 Batteries 120 AMP max



BI-0703

1 Alternator, 3 Batteries 70 AMP max



BI-1203-3A

1 Alternator, 3 Batteries 120 AMP max Includes Exciter Terminal



BI-1202

1 Alternator, 2 Batteries 120 AMP max



BI-1602

1 Alternator. 2 Batteries 160 AMP max





INBOARD/OUTBOARD BATTERY ISOLATORS



Battery Isolators cannot be used on 12 volt charging systems with 24 volt trolling motors or newer outboard engines with rectifier-regulator charging systems.

BI-1603

1 Alternator, 3 Batteries 160 AMP max



BI-2702

2 Alternators, 2 Batteries 70 AMP max



BI-2703

2 Alternators, 3 Batteries 70 AMP max



BI-2703-4

2 Alternators, 3 Batteries 70 AMP max Includes: Regulator sensing terminal



BI-3202

2 Alternators, 2 Batteries 120 AMP max



BI-3203

2 Alternators, 3 Batteries 120 AMP max





SW054

FITS: MERCRUISER, MERCURY Isolated base 12 Volt



SW058

STANDARD-DUTY FITS: MERCURY

Isolated base 12 Volt



SW058HD

HEAVY-DUTY
FITS: MERCRUISER, MERCURY

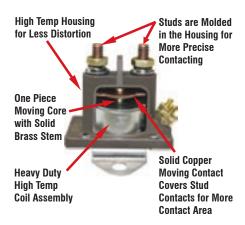




SW058 OEM STYLE COIL & CONTACT ASSEMBLY



SW058HD COIL & CONTACT ASSEMBLY



SW064

FITS: MERCRUISER, MERCURY Isolated base 12 Volt White housing



SW081

FITS: MANY APPLICATIONS; O.M.C Isolated base

12 Volt



SW097

FITS: MERCRUISER, MERCURY Isolated base

12 Volt

White housing



SW099

FITS: MERCRUISER, MERCURY & YAMAHA 4 STROKE

Isolated base 12 Volt



SW109

FITS: MERCURY/FORCE

Isolated base 12 Volt







SW125

HEAVY-DUTY
FITS: FORD
70125, 70200,
70201, 70212, 70216
gear reduction starters
on late model 5.0L, 5.8L



SW225

HEAVY-DUTY FITS: VOLVO PENTA, VALEO gear reduction



SW268

FITS: O.M.C. Grounded base 12 Volt



SW275

FITS: MERCURY Isolated base 12 Volt



SW288

FITS: 0.M.C. Isolated base 12 Volt



SW295

FITS: CHRYSLER Isolated base 12 Volt



SW340

FITS: 0.M.C. Isolated base 12 Volt



SW357

HEAVY-DUTY
FITS: STARTER PART
NUMBER 5357.
Used on Evinrude G2

engines.



SW394

FITS: MERCRUISER & O.M.C. Grounded base

Grounded base 12 Volt





SW450

FITS: (30460, 30470 4 terminals 12 Volt



SW580

FITS O.M.C. 1993-UP, 9.9 -15 HP Outboard Isolated base 12 Volt



SW456

FITS: 14 MT

ARCO 30456, 30457 4 Post, 3-Bolt Mount



SW590

Starter Solenoid **FITS: LATE MODEL EVINRUDE E-TEC ENGINES**

Isolated base



SW463

HEAVY-DUTY FITS: O.E. DELCO PG 260, MERCRUISER, OMC, VOLVO PENTA This solenoid will not fit **30460, 30470!**



SW595

FITS EVINRUDE E-TEC 2010-UP 15 HP-300 HP



SW622

FITS O.M.C. Isolated base 12 Volt



SW565 FITS: VOLVO PENTA

Isolated base

12 Volt



SW661 FITS: MERCURY

Isolated base 12 Volt







SW730

FITS: O.M.C. Grounded base 12 Volt



SW774

FITS: CHRYSLER, O.M.C. Replaces Chrysler 177917 Grounded base 12 Volt



SW814

FITS: PARIS RHONE D11E167T, ETC. 12 Volt



To be discontinued when present stock is exhausted.

SW865

HEAVY-DUTY 12 VOLT, 1000 AMP Parallel/solenoid Isolated ground



24 VOLT, 1000 AMP



SW924

FITS: FORCE OUTBOARDS Choke solenoid

PA924

Plunger to fit SW924



SW925

FITS: MERCURY OUTBOARDS

Choke solenoid



SW926 FITS: 75 HP-V200 HP **MERCURY OUTBOARDS**

Choke solenoid



SW941

FITS: YAMAHA Solenoid



SW945

FITS: YAMAHA 2 & 4 STROKE, **MERCURY 4 STROKE** Starter solenoid



SW950

FITS: YAMAHA Solenoid



SW975

FITS: DELCO Standard solenoid 12 Volt



SW981

FITS: MERCURY Grounded base

12 Volt







OUTBOARD RECTIFIERS & REPLACEMENT RELAYS

AR103

FITS: 0.M.C. 3-lead Rectifier



AR104
FITS: 0.M.C.
4-lead Rectifier



AR351
HEAVY-DUTY
FITS: MERCURY
3-post Rectifier



R012 Continuous duty relay; 12 Volt, 85 Amp

R024 24 Volt, 85 Amp

R036 32-36 Volt, 85 Amp

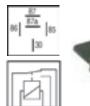


R038

S.P.D.T. normally closed, continuous duty relay used w/many winch motors Isolated ground, **12 Volt**, 85 Amp



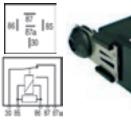
RO40 FITS: VOLVO PENTA 12 Volt, 30 Amp



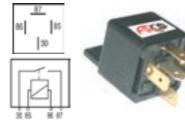


R151

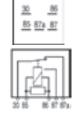
FITS: MERCURY & MARINER OUTBOARDS
12 Volt, 30 Amp



R177 FITS: VOLVO PENTA 12 Volt, 30 Amp

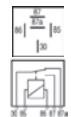


R202 FITS: MERCRUISER 12 Volt, 30 Amp



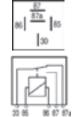


R211 FITS: MERCURY 12 Volt, 30 Amp





R473 FITS: 0.M.C.12 Volt, 30 Amp





R509 FITS: MERCURY, MARINER & FORCE, OUTBOARDS 12 Volt, 30 Amp

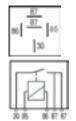




REPLACEMENT RELAYS



R670 FITS: VOLVO PENTA 12 Volt. 30 Amp

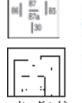




R751

FITS: MERCRUISER & MERCURY VERADO OUTBOARDS

12 Volt, 30 Amp





R767

EVINRUDE E-TEC 0/B TILT/TRIM RELAY REPLACES EVINRUDE 0586767 **2011-2012 E-TEC** 25, 30, 40, 50, 60, 75, 90, 115, 130, 150, 175, 200, 225, 250, 300 **2008-2010 E-TEC** 30, 40, 50, 60, 75, 90, 115, 130, 150, 175, 200, 225, 250, 300

2007 E-TEC 40, 50, 60, 75, 90, 115, 150, 175, 200, 225, 250

2006 E-TEC 40, 50, 60, 75, 90, 200, 225, 250 **2005 E-TEC** 40, 50, 75, 90, 200, 225, 250

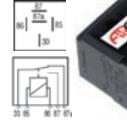
2004 E-TEC 40, 50, 75, 90

ELAY RUDE 0586767 3 25, 30, 40, 15, 130, 150, 50, 300 3 30, 40, 50, 130, 150, 175, 00 50, 60, 75, 90, 00, 225, 250 50, 60, 75, 90, 200, 225, 250

R809

VOLVO PENTA REPLACES: VOLVO PENTA 3858081, 3858809

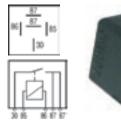
1998 SX-M-MAC, MDA, MLT), 3.0GLP-D, 4.3GL-E, 4.3GL-EF, 4.3GXi-F, 4.3GXi-FF, 4.30Si-F, 4.30Si-FF,



5.0GL-F, 5.0GL-FF, 5.0GXi-F, 5.0GXi-FF, 5.0Si-F, 5.7Gi-F/FF, 5.7GXi-G/GF, 5.7OSi-E/EF, 5.7OXi-E/EF, 5.7GII-F, 5.7GXi-G, 8.1Gi-G/GF, 8.1GXI-F/FF, 8.1OSi-C/CF, 8.1GII-G, 8.1GXII-F, DPH-A, DPH-B, DPR-A, DPH-B, EF drives, SX-M TSKs

1998-2005 SX-M, DP-SM, (WT drives, PJX-C, PJX-S SX-M, -MA-CLT, -MDA, -MDB, -MHP, -MTD, DP-E, DP-S, -S1, -S2, DP-SM, -SM) XDP-B, O.M.C. COBRAS WITH TELEFLEX PUMPS

R832 FITS: VOLVO PENTA 12 Volt, 30 Amp





R950

YAMAHA O/B TILT/TRIM RELAY REPLACES: YAMAHA 6E5 81950-01

1991 & Up 115 HP, **1991 - 2004** 130 HP, **1991 & Up** 150 HP, **1991 - 2000** 175 HP, **1991 - 1999** 200 HP

SUZUKI 38410-94540



R951

YAMAHA O/B TILT/TRIM RELAY REPLACES: YAMAHA 6E5 8195A-01

1991 & Up 115 HP, **1991 - 2004** 130 HP, **1991 & Up** 150 HP, **1991 - 2000** 175 HP, **1991 - 1999** 200 HP



R952 FITS: VOLVO PENTA









MISCELLANEOUS ITEMS

DV456

FITS: DELCO 14MT, (30456)
Starters w/CW Rotation
9-tooth gear



DV457

FITS: DELCO 14MT, (ACC) 30457 Starters w/CCW Rotation 9-tooth gear

BK900

Replacement brushes
FITS: AMERICAN-MADE
permanent magnet outboard starters



M525

Reservoir kit FITS: 6275

Replaces: MERCRUISER Includes: Reservoir, cap, O-rings, mounting screw



M531

Reservoir kit

FITS: 6227 Replaces: Volvo

Includes: Reservoir, cap, 0-rings



M532

REPLACES MERCRUISER 883166A2

M533

REPLACES VOLVO-PENTA 3858077

New style reservoir kit, heavy duty 4-screw mount. Improved design, will only fit late model **OILDYNE** pumps equipped with 4 mounting ears.

Includes: Reservoir, screws, cap, O-rings.



MBK450

Mounting bolt kit for gear reduction starters

FITS: 430470 starter,

2 long mounting bolts, %"-16 N.C. threads

This kit will also fit all **DELCO** gear

reduction starters w/staggered bolt mounting pattern

Required when replacing a 10MT Starter with a GearReduction Starter. Will NOT FIT metric engines or 10MT starters.

Will NOT FIT metric engines

MBK460 Mounting bolt kit

FITS: 450 30460 starter,

%"-16 N.C. threads This kit will also fit DELCO 10MT style starters **w/1 short & 1 long mounting bolt**



SR107

BRUSH LOADING TOOL

Makes brush loading as simple as 1-2-3Perfect tool for loading outboard starter brushes. Fits most all size and shape caps.



TM001

Electrical Technical Manual

This easy-to-understand technical reference is written by Mechanics for Mechanics. Procedures are explained in basic terms with illustrated examples.

