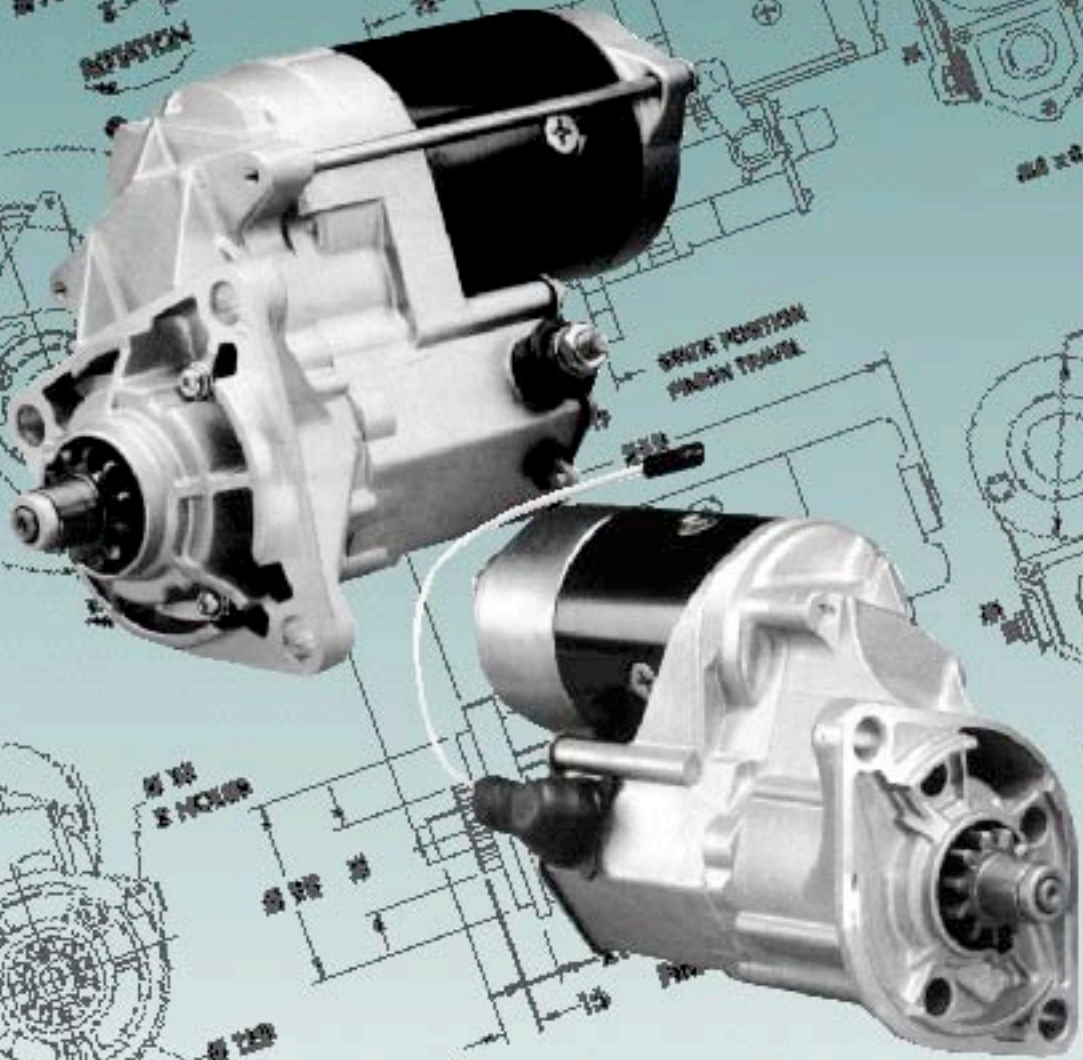


Cat. No. 9846-2530-000  
Replaces Cat.No. 9846-2530-096

# HEAVY DUTY GEAR REDUCTION STARTER MOTORS



**dixie**  
SPECIAL PRODUCT DISTRIBUTION





QMI  
 90 Burnhamthorpe Road West, Suite 300  
 Mississauga, Ontario, Canada L5B 3C3  
 Telephone: (905) 272-3920  
 Facsimile: (905) 272-3942  
 A Division of CMA International

## CERTIFICATE OF REGISTRATION

QMI issues this certificate to:

### DIXIE ELECTRIC LTD.

517 Basaltic Road  
 Concord, Ontario  
 L4K 4W8 Canada

which has demonstrated that its quality system is in compliance with:

### ISO 9002-1994

The following scope of registration applies:

Dixie remanufactures and manufactures alternators and starters and their components for automotive, industrial, farm and marine applications.

Certificate Number: CC0231-003781  
 SIC Numbers: 5013, 3612, 3677  
 Date of Original Registration: September 29, 1998  
 Date of Current Registration: September 29, 1998  
 Date Registration Expires: September 29, 2001



*Catherine Neville*  
 Catherine Neville  
 President

ISO  
 9000

## ABBREVIATIONS

Ø	Diameter	M	Motor
A	Amps.	mm	Millimeters
BAT.	Battery	Mnt.	Mount
C.E.	Commutator End	Neg.	Negative
CCW	Counter Clockwise	No.	Number
CW	Clockwise	O.D.	Outside Diameter
D	Dummy	O.E.M.	Original Equipment Manufacturer
DbL	Double	Pos.	Positive
D/D	Direct Drive	R	Return - Terminal
D.E.	Drive End	S	Switch - Terminal
Fig.	Figure	T	Teeth
G.R.	Gear Reduction	Term.	Terminal
H.D.	Heavy Duty	Tk.	Thick
I.D.	Inside Diameter	V	Volt
ILL.	Illustration	W	Wide
kW	Kilo Watt	w/	with
L	Long	Y	Yes

## CROSS REFERENCE

	Page:
ALLIS CHALMERS	2
BLUE BIRD	2
BOBCAT	2
BOSCH	2
CASE - I.H. ( Also see J.I.CASE )	2
CATERPILLAR	2
CAV	2-3
CHRYSLER	3
CLARK	3
CLARK BOBCAT (Refer to BOBCAT )	3
CLARK DETROIT	3
CUMMINS	3
DAIHATSU	3
DELCO REMY	3-4
DENSO	4-8
DUCELLIER	8
FIAT - AGRI ( Refer to FIAT )	8
FIAT - ALLIS ( Refer to FIAT )	8
FIAT	9
FORD	9
FUSO	9
GMC	9
GRADALL	9
HINO	9-10
HITACHI	10
HYSTER	10
I.H. ( Refer to CASE - I.H. )	10
ISKRA	10
ISUZU	10-11
IVECO	11
J.I.CASE (Also refer to CASE - I.H. )	11
JOHN DEERE	11-12
KHD	12
KOMATSU	12
KUBOTA	12
LUCAS	13
MAGIRUS DEUTZ	13
MAGNETI MARELLI	13
MASSEY FERGUSON	13
MELROE - BOBCAT (Refer to BOBCAT)	13
MITSUBISHI	13
MITSUBISHI HVY.IND.	13
MITSUMI - DEUTZ	13
NIKKO	13-14
NIPPONDENSO ( Refer to DENSO )	15
NISSAN U.D.	15
OSHKOSH	15
OTTAWA	15
SAWAFUJI	15
TELEDYNE	16
THERMO KING	16
THOMAS BUS	16
TOYOTA	16
UNIC	16
VERSATILE	16
VOLVO	16
WHITE	16
YANMAR	17

## CROSS REFERENCE

PAGES: 2 TO 17

SECTION

1

## PRODUCT DATA

PAGES: 18 TO 23

SECTION

2

## OUTLINE SPECIFICATIONS

PAGES: 24 TO 59

SECTION

3

## SERVICE PARTS

### STARTERS

PAGES: 60 TO 65

SECTION

4

## SERVICE PARTS

### SOLENOIDS

PAGES: 66 TO 67

SECTION

5

## BUYER'S GUIDE

PAGES: 68 TO 84

SECTION

6

## REPLACEMENT GUIDE

PAGES: 85 TO 111

SECTION

7



Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.
<b>CAV</b>			<b>CUMMINS</b>			<b>DELCO REMY</b>		
CA45D1257	246-25154 *	246-253	3282626	246-30207	246-305	1107514	246-25159 *	246-258
CA45D1272	246-25153 *	246-253	3283814	246-30214	246-317	1107539	246-25159 *	246-258
CA45F12Y2	246-25153 *	246-253	3283815	246-30117	246-319	1107540	246-25142 *	246-220
CA45F12Y4	246-25154 *	246-253	3604482	246-25101 *	246-202	1107577	246-25111 *	246-211
CA45F12Y51	246-25153 *	246-253	3604485	246-25112	246-206	1107580	246-25142 *	246-220
CA45F12Y57	246-25154 *	246-253	3604486	246-30104	246-302	1107589	246-25101 *	246-202
CA45F12Y72	246-25153 *	246-253	3604630	246-30101	246-303	1107592	246-25142 *	246-220
CA45F242	246-25230 *	246-253	3604648	246-25101 *	246-202	1107599	246-25111 *	246-211
CA45F244	246-25231 *	246-253	3604654	246-25101 *	246-202	1107863	246-25111 *	246-211
CA45F2457	246-25231 *	246-253	3604660	246-25112	246-206	1107866	246-25159 *	246-258
CA45G1257	246-25154 *	246-253	3604677	246-25236 *	246-202	1107871	246-25111 *	246-211
CA45G1272	246-25153 *	246-253	3604684	246-30101	246-303	1107872	246-25159 *	246-258
CA45G242	246-25230 *	246-253	3675154	246-25112	246-206	1108644	246-25142 *	246-220
			3675172	246-25159 *	246-258	1108648	246-25159 *	246-258
			3675204	246-25236 *	246-202	1108697	246-25142 *	246-220
			3675207	246-25241 *	246-258	1108698	246-25101 *	246-202
<b>CHRYSLER</b>			3901386	246-25101 *	246-202	1108700	246-25101 *	246-202
4428221	246-30101	246-303	3904445	246-25101 *	246-202	1109143	246-25101 *	246-202
4741012	246-25149	246-208	3904466	246-25107	246-206	1109144	246-25101 *	246-202
4746639	246-25149	246-208	3909913	246-25101 *	246-202	1109149	246-25101 *	246-202
			3909914	246-25236 *	246-202	1109189	246-25142 *	246-220
<b>CLARK</b>			3911343	246-30104	246-302	1109190	246-25101 *	246-202
909785	246-25142 *	246-220	3912084	246-30101	246-303	1109192	246-25159 *	246-258
909947	246-25110 *	246-210	3918377	246-25236 *	246-202	1109194	246-25159 *	246-258
910886	246-25159 *	246-258	3920328	246-30116 *	246-318	1109198	246-25159 *	246-258
916206	246-25113 *	246-212	3920329	246-30214 *	246-317	1109208	246-25111 *	246-211
916566	246-25142 *	246-220	3920403	246-25112	246-206	1109251	246-25111 *	246-211
2355695	246-25111 *	246-211	3920643	246-25112	246-206	1109253	246-25159 *	246-258
2743536	246-25142 *	246-220	3920644	246-25216	246-228	1109255	246-25103 *	246-203
			3921012	246-30126 *	246-317	1109258	246-25142 *	246-220
			3921682	246-25149	246-208	1109261	246-25159 *	246-258
<b>CLARK BOBCAT</b>			3922474	246-25216	246-228	1109263	246-25159 *	246-258
( refer to BOBCAT )			3924466	246-30207	246-305	1109265	246-25111 *	246-211
			3925045	246-30104	246-302	1109269	246-25142 *	246-220
						1109539	246-25159 *	246-258
<b>CLARK DETROIT</b>			<b>DAIHATSU</b>			1109542	246-25142 *	246-220
C07628	246-25144	246-254	28100-56161	246-25131	246-237	1109550	246-25142 *	246-220
			28100-87601	246-25126	246-245	1113220	246-25103 *	246-203
			28100-89107	246-25131	246-237	1113271	246-25111 *	246-211
						1113272	246-25237 *	246-211
						1113274	246-25142 *	246-220

\* This unit was designed to replace this specific OEM unit number; it may not be physically suitable for all intended applications. Refer to the respective Illustration for dimensions.

# CROSS REFERENCE



Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.
<b>DELCO REMY</b>			<b>DELCO REMY</b>			<b>DENSO</b>		
1113275	246-25142 *	246-220	1998468	246-25142 *	246-220	028000-549_	246-25118 Δ	246-223
1113276	246-25101 *	246-202	1998479	246-25142 *	246-220	028000-551_	246-25206	246-219
1113277	246-25236 *	246-202	1998480	246-25159 *	246-258	028000-552_	246-25128	246-233
1113278	246-25142 *	246-220	1998481	246-25142 *	246-220	028000-553_	246-25210	246-233
1113281	246-25159 *	246-258	1998484	246-25142 *	246-220	028000-555_	246-25201	246-217
1113282	246-25159 *	246-258	1998488	246-25236 *	246-202	028000-556_	246-25119	246-224
1113285	246-25159 *	246-258	1998490	246-25101 *	246-202	028000-557_	246-25207	246-224
1113290	246-25142 *	246-220	1998505	246-25101 *	246-202	028000-558_	246-25105	246-205
1113291	246-25236 *	246-202	1998519	246-25237 *	246-211	028000-565_	246-25206	246-219
1113292	246-25101 *	246-202	1998522	246-25101 *	246-202	028000-566_	246-25102	246-201
1113593	246-25101 *	246-202	10455500	246-25236 *	246-202	028000-569_	246-25201	246-217
1113594	246-25236 *	246-202	10461089	246-30118 *	246-320	028000-584_	246-25212	246-235
1113597	246-25142 *	246-220	10465026	246-25101 *	246-202	028000-586_	246-25203	246-214
1113657	246-25103 *	246-203	10465043	246-25101 *	246-202	028000-588_	246-25101	246-202
1993713	246-30118 *	246-320	10465044	246-25142 *	246-220	028000-589_	246-25203	246-214
1993874	246-30118 *	246-320	10465045	246-25142 *	246-220	028000-601_	246-25205	246-214
1998330	246-25159 *	246-258	10465046	246-25142 *	246-220	028000-602_	246-25205	246-214
1998336	246-25142 *	246-220	10465049	246-25159 *	246-258	028000-606_	246-25133	246-242
1998340	246-25142 *	246-220	10465050	246-25159 *	246-258	028000-620_	246-25208	246-239
1998342	246-25159 *	246-258	10465149	246-25101 *	246-202	028000-621_	246-25136	246-238
1998346	246-25111 *	246-211	10465399	246-25101 *	246-202	028000-629_	246-25126	246-245
1998350	246-25142 *	246-220	10465405	246-25241 *	246-258	028000-631_	246-25206	246-219
1998353	246-25101 *	246-202	10479604	246-25101 *	246-202	028000-634_	246-25122	246-243
1998357	246-25142 *	246-220	10479629	246-25241 *	246-258	028000-641_	246-25106	246-201
1998359	246-25159 *	246-258	10496881	246-25142 *	246-220	028000-646_	246-25207	246-224
1998360	246-25159 *	246-258	10496882	246-25101 *	246-202	028000-656_	246-25118	246-223
1998364	246-25111 *	246-211	10496883	246-25101 *	246-202	028000-664_	246-25121 Δ	246-240
1998367	246-25111 *	246-211	10496884	246-25236 *	246-202	028000-678_	246-25103	246-203
1998370	246-25103 *	246-203	10496885	246-25111 *	246-211	028000-686_	246-25105	246-205
1998373	246-25142 *	246-220	10496886	246-25159 *	246-258	028000-688_	246-25105	246-205
1998376	246-25159 *	246-258				028000-689_	246-25105	246-205
1998379	246-25159 *	246-258	<b>DENSO</b>			028000-690_	246-25224	246-231
1998383	246-25142 *	246-220				028000-691_	246-25224	246-231
1998387	246-25142 *	246-220	028000-329_	246-30128 *	246-328	028000-695_	246-25233 Δ	246-255
1998408	246-25101 *	246-202	028000-353_	246-25244 *	246-267	028000-714_	246-25218	246-246
			028000-393_	246-30128 *	246-328			
1998420	246-25159 *	246-258	028000-397_	246-30129 *	246-329	028000-722_	246-25117	246-222
1998423	246-25101 *	246-202	028000-487_	246-25118*Δ	246-223	028000-723_	246-25117	246-222
1998446	246-25142 *	246-220				028000-724_	246-25209	246-222
1998456	246-25101 *	246-202	028000-488_	246-25218	246-246	028000-743_	246-30116 *	246-318
1998457	246-25101 *	246-202	028000-500_	246-25104	246-204	028000-745_	246-25214	246-222
			028000-525_	246-30219 *	246-322			
1998459	246-25236 *	246-202	028000-530_	246-25204	246-218	028000-754_	246-25132	246-229

Denso numbers are listed without the last digit which denotes a minor production change, not a different unit.

\* This unit was designed to replace this specific OEM unit number; it may not be physically suitable for all intended applications. Refer to the respective Illustration for dimensions.

Δ Supplied without Relay Switch.

Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.
<b>DENSO</b>			<b>DENSO</b>			<b>DENSO</b>		
028000-773_	246-25141	246-215	028100-380_	5746-2521		028300-870_	5446-2514	
028000-780_	246-25129	246-241	028100-381_	5746-2511		028371-320_	54146-002	
028000-781_	246-25209	246-222	028100-441_	5746-3011		028371-321_	54146-003	
028000-784_	246-25140	246-217	028100-533_	5746-2511		028371-664_	54146-008	
028000-807_	246-25105	246-205	028100-541_	5746-3021		028401-106_	5146-2507	246-207
028000-837_	246-25138	246-244	028100-632_	5746-2521		028401-481_	5146-2555	246-255
028000-840_	246-25111	246-211	028100-640_	5746-2521		028401-494_	5146-2504	246-204
028000-850_	246-25227	246-240	028100-641_	5746-2511		028401-509_	5146-2518	246-218
028000-856_	246-25225	246-218	028100-808_	5746-3011		028401-513_	5146-2519	246-219
028000-863_	246-25136	246-238	028200-159_	6146-2521		028401-514_	5146-2533	246-233
028000-884_	246-25134	246-204	028200-178_	6146-2511		028401-515_	5146-2524	246-224
028000-904_	246-25131	246-237	028200-190_	6146-2511		028401-516_	5146-2523	246-223
028000-914_	246-25228	246-249	028200-223_	6146-2521		028401-525_	5146-2517	246-217
028000-916_	246-25120	246-234	028200-280_	6146-3011		028401-527_	5146-2501	246-201
028000-933_	246-25210	246-233	028200-525_	6146-3021		028401-540_	5146-2535	246-235
028000-967_	246-25138	246-244	028200-620_	6146-2511		028401-542_	5146-2502	246-202
028000-976_	246-25217	246-234	028200-622_	6146-2511		028401-548_	5146-2514	246-214
028000-977_	246-25120	246-234	028200-623_	6146-2511		028401-550_	5146-2519	246-219
028099-239_	5446-2501		028300-181_	5446-2503		028401-555_	5146-2542	246-242
028099-279_	7946-0001		028300-201_	5446-2504		028401-564_	5146-2504	246-204
028099-316_	7946-0004		028300-204_	5446-2508		028401-568_	5146-2540	246-240
028099-321_	54146-003		028300-207_	5446-2515		028401-574_	5146-2514	246-214
028099-322_	54146-001		028300-209_	5446-2513		028401-581_	5146-2545	246-245
028099-323_	54146-006		028300-226_	5446-2521		028401-585_	5146-2538	246-238
028099-324_	54146-018		028300-369_	5446-2516		028401-594_	5146-2543	246-243
028099-325_	54146-005		028300-395_	5446-2507		028401-599_	5146-2539	246-239
028099-327_	54146-002		028300-427_	5446-2521		028401-620_	5146-2505	246-231
028099-329_	54146-018		028300-448_	5446-2502		028401-645_	5146-2546	246-246
028099-330_	54146-010		028300-455_	5446-2504		028401-651_	5146-2522	246-222
028099-331_	54146-004		028300-509_	5446-2515		028401-671_	5146-2522	246-222
028099-356_	54146-009		028300-545_	5446-2502		028401-673_	5146-2503	246-203
028099-400_	54146-002		028300-565_	5446-2508		028401-704_	5146-2515	246-215
028099-506_	54146-006		028300-567_	5446-2506		028401-710_	5146-2541	246-241
028099-546_	54146-004		028300-655_	5446-2516		028401-752_	5146-2511	246-211
028099-549_	5446-2505		028300-661_	5446-2516		028401-762_	5146-2518	246-218
028099-620_	54146-007		028300-669_	5446-2516		028401-767_	5146-2544	246-244
028099-643_	7946-0003		028300-673_	5446-2506		028401-854_	5146-2534	246-234
028100-288_	5746-2511		028300-696_	5446-2516		028501-057_	5246-2501	
028100-300_	5746-2511		028300-765_	5446-2512		028501-086_	5246-2501**	
028100-331_	5746-2521		028300-766_	5446-2510		028501-090_	5246-2501**	
028100-360_	5746-2521		028300-780_	5446-2506		028501-091_	5246-2501**	

Denso numbers are listed without the last digit which denotes a minor production change, not a different unit.

\* This unit was designed to replace this specific OEM unit number; it may not be physically suitable for all intended applications. Refer to the respective Illustration for dimensions.

\*\* Universal C.E. Frame supplied without Drain Hole.

# CROSS REFERENCE



Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.
<b>DENSO</b>			<b>DENSO</b>			<b>DENSO</b>		
028501-092_	5246-2501**		053400-279_	6646-2511	246-204	053400-758_	6646-2514	246-211
028501-093_	5246-2501**		053400-295_	6646-2522	246-233	053400-764_	6646-2516	246-213
028501-094_	5246-2501**		053400-306_	6646-2511	246-206	053400-772_	6646-3021	246-301
028501-095_	5246-2501**		053400-307_	6646-2512	246-233	053400-773_	6646-2521	246-237
028501-096_	5246-2501**		053400-308_	6646-2511	246-224	053400-783_	6646-3021	246-301
028501-097_	5246-2501**		053400-309_	6646-2521	246-219	053400-784_	6646-3011	246-301
028501-098_	5246-2501**		053400-310_	6646-2513	246-223	053400-789_	6646-3021	246-305
028501-100_	5246-2501**		053400-320_	6646-2512	246-210	053400-804_	6646-2515	246-210
028501-102_	5246-2501**		053400-348_	6646-2514	246-202	053400-811_	6646-2522	246-218
028501-109_	5246-2501**		053400-355_	6646-2521	246-214	053400-818_	6646-2515	246-210
028501-159_	5246-3001**		053400-358_	6646-2511	246-222	053400-828_	6646-3011	246-302
028501-525_	5246-3001**		053400-373_	6646-2512	246-238	053400-849_	6646-2523	246-221
028501-527_	5246-3001**		053400-394_	6646-2521	246-217	053400-852_	6646-2512	246-208
028501-548_	5246-3001**		053400-410_	6646-2511	246-240	053400-880_	6646-2511	246-235
028501-587_	5246-3001**		053400-419_	6646-2511	246-205	053400-903_	6646-3011	246-303
028501-689_	5246-3001**		053400-420_	6646-2521	246-231	053400-905_	6646-2521	246-209
028501-690_	5246-2501**		053400-421_	6646-2521	246-231	053400-913_	6646-2511	246-225
028501-707_	5246-2501**		053400-422_	6646-2513	246-223	053400-917_	6646-3011	246-305
028501-708_	5246-2501**		053400-456_	6646-2521	246-246	053400-920_	6646-3011	246-301
028501-709_	5246-2501**		053400-461_	6646-2521	246-222	053400-924_	6646-2521	246-222
028501-728_	5246-2501**		053400-470_	6646-2522	246-230	053400-928_	6646-2515	246-212
028501-729_	5246-2501**		053400-477_	6646-2521	246-222	053400-934_	6646-3011	246-305
028501-750_	5246-2501**		053400-479_	6646-2511	246-203	053400-940_	6646-3013	246-304
028501-761_	5246-2501**		053400-485_	6646-2512	246-243	053400-941_	6646-3023	246-304
028501-771_	5246-3001**		053400-499_	6646-2512	246-215	053400-956_	6646-2511	246-205
028501-775_	5246-2501**		053400-509_	6646-2512	246-241	053400-957_	6646-2522	246-248
028501-776_	5246-3001**		053400-549_	6646-2521	246-240	053400-964_	6646-2511	246-205
028501-783_	5246-3001**		053400-550_	6646-2512	246-244	053400-967_	6646-2511	246-236
028501-784_	5246-2502**		053400-554_	6646-2512	246-244	053400-969_	6646-2512	246-216
028501-790_	5246-2501**		053400-564_	6646-2511	246-204	053400-972_	6646-2516	246-220
028501-797_	5246-2501**		053400-623_	6646-2511	246-205	053400-995_	6646-2522	246-236
028501-809_	5246-2501**		053400-629_	6646-2511	246-234	128000-021_	246-25107	246-206
028501-810_	5246-2501**		053400-644_	6646-3011	246-306	128000-038_	246-25105	246-205
028501-824_	5246-2501**		053400-648_	6646-2512	246-201	128000-048_	246-30220 *	246-323
028501-901_	5246-2501**		053400-705_	6646-2511	246-214	128000-049_	246-30102	246-306
028510-050_	5446-2502		053400-712_	6646-2511	246-207	128000-054_	246-25107	246-206
028510-716_	5446-3001		053400-730_	6646-2512	246-245	128000-056_	246-25138	246-244
053400-097_	6646-2511	246-206	053400-731_	6646-2521	246-237	128000-077_	246-30128 *	246-328
053400-252_	6646-2521	246-235	053400-733_	6646-2521	246-237	128000-079_	246-25102	246-201
053400-253_	6646-2521	246-214	053400-739_	6646-2523	246-221	128000-097_	246-25115	246-214
053400-260_	6646-2522	246-255	053400-752_	6646-2512	246-238	128000-100_	246-25211	246-230

Denso numbers are listed without the last digit which denotes a minor production change, not a different unit.

\* This unit was designed to replace this specific OEM unit number; it may not be physically suitable for all intended applications.

\*\* Universal C.E. Frame supplied without Drain Hole.

Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.
<b>DENSO</b>			<b>DENSO</b>			<b>DENSO</b>		
128000-101_	246-25215	246-230	128000-644_	246-25222	246-248	128401-101_	5146-2530	246-230
128000-106_	246-25108	246-207	128000-677_	246-25112	246-206	128401-157_	5146-2537	246-237
128000-156_	246-25131	246-237	128000-682_	246-25105	246-205	128401-178_	5146-2554	246-210
128000-157_	246-25220	246-237	128000-683_	246-25105	246-205	128401-179_	5146-2521	246-221
128000-158_	246-25220	246-237	128000-686_	246-25123 Δ	246-216	128401-225_	5146-2513	246-213
128000-178_	246-25110	246-210	128000-691_	246-25146	246-236	128401-245_	5146-3001	246-301
128000-179_	246-25226	246-221	128000-692_	246-25213	246-236	128401-256_	5146-3005	246-305
128000-180_	246-25116	246-221	128000-702_	246-30215 •	246-318	128401-303_	5146-2554	246-254
128000-225_	246-25114	246-213	128000-704_	246-25114	246-213	128401-408_	5146-2508	246-208
128000-227_	246-25107	246-206	128000-717_	246-30219 *	246-322	128401-422_	5146-3002	246-302
128000-245_	246-30203	246-301	128000-723_	246-30130 *	246-323	128401-491_	5146-3003	246-303
128000-247_	246-30107	246-301	128000-724_	246-30220 *	246-323	128401-497_	5146-2509	246-209
128000-248_	246-25112	246-206	128000-725_	246-30121 *	246-322	128401-530_	5146-2534	246-234
128000-256_	246-30202	246-305	128000-728_	246-25220	246-237	128401-538_	5146-2525	246-225
128000-274_	246-30203	246-301	128000-729_	246-25220	246-237	128401-560_	5146-2512	246-212
128000-303_	246-25110	246-210	128000-757_	246-30119 *	246-321	128401-562_	5146-3005	246-305
128000-308_	246-25226	246-221	128000-760_	246-25223 Δ	246-250	128401-572_	5146-3004	246-304
128000-312_	246-25112	246-206	128000-775_	246-25118	246-223	128401-644_	5146-2548	246-248
128000-332_	246-25116	246-221	128000-792_	246-25105	246-205	128401-686_	5146-2516	246-216
128000-369_	246-30128 *	246-328	128000-793_	246-25105	246-205	128401-691_	5146-2536	246-236
128000-408_	246-25109	246-208	128000-829_	246-25109	246-208	128401-704_	5146-2513	246-213
128000-409_	246-25114	246-213	128000-830_	246-25239	246-260	128401-760_	5146-2550	246-250
128000-410_	246-25130	246-235	128000-862_	246-25219	246-232	128401-829_	5146-2508	246-208
128000-411_	246-25145	246-214	128000-864_	246-25127	246-232	128401-830_	5146-2560	246-260
128000-422_	246-30104	246-302	128000-950_	246-25112	246-206	128401-862_	5146-2532	246-232
128000-491_	246-30101	246-303	128000-958_	246-25105	246-205	128401-961_	5146-2508	246-208
128000-497_	246-25202	246-209	128000-961_	246-25109	246-208	128401-996_	5146-2529	246-229
128000-509_	246-25120	246-234	128000-977_	246-25120	246-234	128401-997_	5146-2529	246-229
128000-530_	246-25120	246-234	128000-980_	246-30116 •	246-318	153400-007_	6646-2513	246-223
128000-533_	246-30116 •	246-318	128000-981_	246-30126 *	246-317	153400-014_	6646-2511	246-205
128000-537_	246-30106	246-305	128000-982_	246-30214 •	246-317	153400-054_	6646-2522	246-232
128000-538_	246-25137	246-225	128000-996_	246-25132	246-229	153400-055_	6646-2512	246-208
128000-551_	246-30107	246-301	128000-997_	246-25124	246-229	153400-081_	6646-2529	246-260
128000-560_	246-25113	246-212	128099-509_	54146-003		153400-095	6646-2511	246-205
128000-562_	246-30105	246-305	128099-516_	5446-2511		153400-096_	6646-2511	246-205
128000-572_	246-30103	246-304	128099-518_	5446-2511		153400-097_	6646-2511	246-228
128000-573_	246-30201	246-304	128099-525_	54146-009		153400-098_	6646-2512	246-208
128000-591_	246-30119 *	246-321	128099-535_	54146-009		153400-110_	6646-2515	246-212
128000-597_	246-30121 *	246-322	128401-021_	5146-2506	246-206	153400-112_	6646-2512	246-229
128000-617_	246-25220	246-237	128401-049_	5146-3006	246-306	153400-116_	6646-2512	246-229
128000-618_	246-25220	246-237	128401-100_	5146-2530	246-230	153400-129_	6646-2511	246-205

Denso numbers are listed without the last digit which denotes a minor production change, not a different unit.

\* This unit was designed to replace this specific OEM unit number; it may not be physically suitable for all intended applications. Refer to the respective Illustration for dimensions.

Δ Supplied without Relay Switch.

• Gear Reduction (OE) replacement for direct drive IIF Starter Motors.

# CROSS REFERENCE



Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.
<b>DENSO</b>			<b>DENSO</b>			<b>DENSO</b>		
153400-132_	6646-2522	246-233	228000-160_	246-25219	246-232	228000-573_	246-30111	246-312
153400-149_	6646-2511	246-206	228000-161_	246-25127	246-232	228000-581_	246-25162	246-263
153400-157_	6646-2511	246-205	228000-175_	246-25216	246-228	228000-585_	246-30112	246-314
153400-178_	6646-2512	246-241	228000-183_	246-25242	246-226	228000-590_	246-30117	246-319
153400-199_	6646-2515	246-212	228000-194_	246-30126 •	246-317	228000-605_	246-25144	246-254
153400-208_	6646-2511	246-226	228000-195_	246-25112	246-206	228000-635_	246-30114	246-316
153400-229_	6646-2511	246-205	228000-220_	246-30207	246-305	228000-640_	246-25159	246-258
153400-231_	6646-2522	246-232	228000-229_	246-25149	246-208	228000-647_	246-25111	246-211
153400-232_	6646-2512	246-232	228000-236_	246-30121 *	246-322	228000-651_	246-30116	246-318
153400-237_	6646-2512	246-227	228000-237_	246-30131 *	246-330	228000-653_	246-30119	246-321
153400-241_	6646-2521	246-228	228000-238_	246-30121 *	246-322	228000-655_	246-30122	246-323
153400-260_	6646-3021	246-305	228000-239_	246-30219 *	246-322	228000-656_	246-30216	246-321
153400-265_	6646-2511	246-205	228000-247_	246-30203	246-301	228000-657_	246-30217	246-323
153400-275_	6646-3021	246-301	228000-266_	246-25105	246-205	228000-664_	246-25216	246-228
153400-287_	6646-3011	246-302	228000-267_	246-30104	246-302	228000-667_	246-25216	246-228
153400-294_	6646-3012	246-311	228000-280_	246-30109	246-311	228000-712_	246-30124	246-325
153400-314_	6646-2521	246-237	228000-308_	246-25220	246-237	228000-728_	246-30104	246-302
153400-315_	6646-2521	246-237	228000-309_	246-25220	246-237	228000-729_	246-30104	246-302
153400-330_	6646-3011	246-302	228000-331_	246-30104	246-302	228000-730_	246-25161	246-264
153400-353_	6646-2511	246-214	228000-332_	246-30104	246-302	228000-731_	246-25165	246-266
153400-404_	6646-2511	246-228	228000-371_	246-25145	246-214	228000-738_	246-30215	246-318
153400-424_	6646-2521	246-234	228000-372_	246-25145	246-214	228000-749_	246-30123	246-324
153400-425_	6646-2512	246-254	228000-381_	246-25152	246-251	228000-750_	246-25163	246-262
153400-479_	6646-2522	246-233	228000-416_	246-25152	246-251	228000-796_	246-25152	246-251
153400-524_	6646-2521	246-234	228000-422_	246-30103	246-304	228000-808_	246-30120	246-321
153400-731_	6646-2521	246-237	228000-423_	246-30201	246-304	228000-851_	246-30118	246-320
228000-002_	246-25113	246-212	228000-463_	246-30121 •	246-322	228000-852_	246-30127	246-312
228000-010_	246-30118 •	246-320	228000-466_	246-25152	246-251	228401-063_	5146-2506	246-206
228000-019_	246-25132	246-229	228000-467_	246-25112	246-206	228401-135_	5146-2526	246-226
228000-027_	246-25220	246-237	228000-494_	246-25164	246-265	228401-280_	5146-3011	246-311
228000-028_	246-25220	246-237	228000-500_	246-30207	246-305	228401-381_	5146-2551	246-251
228000-035_	246-25105	246-205	228000-505_	246-30207	246-305			
228000-057_	246-25105	246-205	228000-521_	246-25109	246-208			
228000-062_	246-25112	246-206	228000-528_	246-30121	246-322			
228000-063_	246-25216	246-228	228000-531_	246-30126	246-317			
228000-119_	246-25113	246-212	228000-546_	246-30121	246-322			
228000-135_	246-25147	246-226	228000-551_	246-30125	246-326			
228000-136_	246-30121 *	246-322	228000-560_	246-30116	246-318			
228000-142_	246-25147	246-226	228000-561_	246-30215	246-318			
228000-144_	246-25124	246-229	228000-562_	246-30115	246-317			
228000-159_	246-25105	246-205	228000-563_	246-30214	246-317			
						<b>DUCELLIER</b>		
						538508A	246-25153 *	246-253
						<b>FIAT-AGRI</b>		
						( refer to FIAT )		
						<b>FIAT-ALLIS</b>		
						( refer to FIAT )		

Denso & Hino numbers are listed without the last digit which denotes a minor production change, not a different unit.

\* This unit was designed to replace this specific OEM unit number; it may not be physically suitable for all intended applications. Refer to the respective Illustration for dimensions.

Δ Supplied without Relay Switch.

• Gear Reduction (OE) replacement for direct drive IIF Starter Motors.

Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.
<b>FIAT</b>			<b>FORD</b>			<b>HINO</b>		
852962	246-25238 *	246-259	E8TZ-11002-A	246-25101 *	246-202	28100-1691_	246-25217 *	246-234
4104783	246-25238 *	246-259	F3TU-11000-AA	246-25101 *	246-202	28100-1700_	246-30205 *	246-308
4130796	246-25238	246-259	F4HS-11001-HA	246-25152	246-251	28100-1820_	246-25228 *	246-249
4169093	246-30110 *	246-309	F4PU-11000-AA	246-25101 *	246-202	28100-1821_	246-25228 *	246-249
4169096	246-30110 *	246-309	F4TZ-11002-A	246-25157 *	246-257	28100-1890_	246-25217 *	246-234
4172113	246-30110 *	246-309	F4TZ-11002-B	246-25101 *	246-202	28100-1891_	246-25217 *	246-234
4187122	246-30110	246-309	F5TU-11000-AA	246-25157 *	246-257	28100-1892_	246-25217 *	246-234
4199576	246-30211 *	246-309				28100-1900_	246-25217 *	246-234
4231018	246-30211 *	246-309				28100-1901_	246-25217 *	246-234
4269114	246-30211 *	246-309				28100-1930_	246-25120	246-234
4682999	246-30211 *	246-309	<b>FUSO</b>			28100-1931_	246-25120	246-234
4692477	246-30211 *	246-309	MEO29237	246-25233*Δ	246-255	28100-1940_	246-30205 *	246-308
4699704	246-30211 *	246-309	MEO37330	246-25218 *	246-246	28100-1941_	246-30205 *	246-308
4699705	246-30110 *	246-309	MEO37573	246-25218 *	246-246	28100-1942_	246-30205 *	246-308
4701920	246-30211 *	246-309	MEO87506	246-25160 *	246-227	28100-1943_	246-30205 *	246-308
4702248	246-30110 *	246-309	MEO87577	246-25160 *	246-227	28100-1944_	246-30205 *	246-308
4703751	246-30110 *	246-309	MEO87590	246-25240*Δ	246-227	28100-1960_	246-25120	246-234
4737754	246-30211	246-309				28100-1961_	246-25120	246-234
4737755	246-30110 *	246-309	<b>GMC</b>			28100-1980_	246-25228 *	246-249
4755108	246-30211 *	246-309	94039465	246-30102	246-306	28100-1981_	246-25228 *	246-249
4755109	246-30110 *	246-309				28100-2010_	246-25217 *	246-234
4807378	246-30211 *	246-309	<b>GRADALL</b>			28100-2011_	246-25217 *	246-234
77040560	246-30211 *	246-309	9103-3323	246-25114	246-213	28100-2012_	246-25217 *	246-234
77040561	246-30211 *	246-309				28100-2040_	246-30205 *	246-308
77080560	246-30211 *	246-309				28100-2041_	246-30205 *	246-308
77414430	246-30211 *	246-309				28100-2042_	246-30205 *	246-308
77414431	246-30211 *	246-309	<b>HINO</b>			28100-2043_	246-30205 *	246-308
77444430	246-30211 *	246-309	28100-1090_	246-25228 *	246-249	28100-2052_	246-30119 *	246-321
77445430	246-30211 *	246-309	28100-1100_	246-25228 *	246-249	28100-2062_	246-25228 *	246-249
88205006	246-30110 *	246-309	28100-1441_	246-30205 *	246-308	28100-2063_	246-25228 *	246-249
			28100-1442_	246-30205 *	246-308	28100-2072_	246-30205 *	246-308
			28100-1443_	246-30205 *	246-308	28100-2073_	246-30205 *	246-308
			28100-1444_	246-30205 *	246-308	28100-2074_	246-30205 *	246-308
			28100-1542_	246-25217 *	246-234	28100-2075_	246-30205 *	246-308
			28100-1543_	246-25217 *	246-234	28100-2121_	246-30119 *	246-321
			28100-1561_	246-25120	246-234	28100-2130_	246-25228 *	246-249
			28100-1562_	246-25120	246-234	28100-2131_	246-25228 *	246-249
			28100-1650_	246-25228 *	246-249	28100-2150_	246-30205 *	246-308
			28100-1651_	246-25228 *	246-249	28100-2151_	246-30205 *	246-308
			28100-1670_	246-30128 *	246-328	28100-2152_	246-30205 *	246-308
						28100-2153_	246-30205 *	246-308

Hino numbers are listed without the last digit which denotes a minor production change, not a different unit.

\* This unit was designed to replace this specific OEM unit number; it may not be physically suitable for all intended applications.

Refer to the respective Illustration for dimensions.

Δ Supplied without Relay Switch.

# CROSS REFERENCE



Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.
<b>HINO</b>			<b>HITACHI</b>			<b>ISUZU</b>		
28100-2270_	246-30205 *	246-308	S25-115	246-30209 *	246-307	1-81100-012-0	246-25243 *	246-261
28100-2271_	246-30205 *	246-308	S25-115A	246-30209 *	246-307	1-81100-032-0	246-25243 *	246-261
28100-2272_	246-30205 *	246-308	S25-120	246-25235 *	246-256	1-81100-043-0	246-25243 *	246-261
28100-2273_	246-30205 *	246-308	S25-120A	246-25235 *	246-256	1-81100-043-2	246-25243 *	246-261
28100-2280_	246-30119 *	246-321	S25-121	246-25234 *	246-256	1-81100-141-0	246-25208	246-239
28100-2300_	246-25228 *	246-249	S25-121A	246-25234 *	246-256	1-81100-152-1	246-25232 *	246-223
28100-2301_	246-25228 *	246-249	S25-135A	246-25232 *	246-223	1-81100-184-0	246-25232 *	246-223
			S25-137A	246-25232 *	246-223	1-81100-189-0	246-25232 *	246-223
			S25-137B	246-25232 *	246-223	1-81100-189-1	246-25232 *	246-223
			S25-142A	246-25229 *	246-252	1-81100-191-0	246-25232 *	246-223
			S25-142B	246-25229 *	246-252	1-81100-191-1	246-25232E*†	246-223
<b>HITACHI</b>			S25-161	246-25235 *	246-256	1-81100-192-0	246-25232E*†	246-223
S12-41A	246-25156 *	246-256	S25-162	246-25229 *	246-252	1-81100-221-0	246-30108 *	246-313
S12-47	246-25158 *	246-256	S25-164A	246-25229 *	246-252	1-81100-230-1	246-30203	246-301
S12-58	246-25156 *	246-256	S27-22	246-30209 *	246-307	1-81100-231-0	246-30107	246-301
S12-59	246-25156 *	246-256	S28-23B	246-30209 *	246-307	1-81100-233-0	246-25232 *	246-223
S13-02	246-30113 *	246-307	S28-25	246-30209 *	246-307	1-81100-234-0	246-30102	246-306
S13-03	246-30113 *	246-307	S210-98	246-30209 *	246-307	1-81100-234-1	246-30102	246-306
S13-28	246-25156 *	246-256	S210-98C	246-30209 *	246-307	1-81100-234-2	246-30102	246-306
S13-33	246-25156 *	246-256	S210-98D	246-30209 *	246-307	1-81000-237-1	246-30108F*†	246-313
S13-33A	246-25156 *	246-256	S210-98E	246-30209 *	246-307	1-81100-239-0	246-30203	246-301
S13-33B	246-25156 *	246-256				1-81100-245-1	246-30108 *	246-313
S13-41	246-25158 *	246-256				1-81100-253-0	246-25232E*†	246-223
S13-41A	246-25158 *	246-256				1-81100-253-1	246-25232 *	246-223
S13-41B	246-25158 *	246-256				1-81100-259-0	246-25232 *	246-223
S13-41C	246-25158 *	246-256				1-81100-261-0	246-30107 *	246-301
S13-68	246-25155 *	246-252				1-81100-264-0	246-25232 *	246-223
S13-82	246-25156 *	246-256				1-81100-264-1	246-25232 *	246-223
S13-82A	246-25156 *	246-256				1-81100-277-1	246-25232 *	246-223
S13-82B	246-25156 *	246-256				1-81100-291-0	246-25232E*†	246-223
S13-86	246-25155 *	246-252				1-81100-295-0	246-25221 *	246-247
S13-120B	246-25124 *	246-229				1-81100-299-0	246-30109 *	246-311
S15-02	246-30113 *	246-307				1-81100-307-0	246-25221 *	246-247
S15-03	246-30113 *	246-307				5-81100-013-1	246-25235 *	246-256
S24-03C	246-25235 *	246-256				5-81100-025-0	246-25232 *	246-223
S25-64B	246-25229 *	246-252				5-81100-025-2	246-25232F*†	246-223
S25-64E	246-25229 *	246-252				5-81100-028-0	246-25232 *	246-223
S25-75	246-25229 *	246-252				5-81100-030-1	246-25235 *	246-256
S25-110	246-25229 *	246-252				5-81100-035-0	246-25232 *	246-223
S25-110A	246-25229 *	246-252				5-81100-035-2	246-25232 *	246-223
S25-110C	246-25229 *	246-252				5-81100-036-0	246-25232F*†	246-223
S25-110G	246-25229 *	246-252						
S25-110L	246-25229 *	246-252						
			<b>HYSTER</b>					
			313394	246-25142 *	246-220			
			<b>I. H.</b>					
			( refer to					
			<b>CASE - I.H. )</b>					
			<b>ISKRA</b>					
			AZJ3116	246-30110 *	246-309			
			AZJ3133	246-30211 *	246-309			
			AZJ3158	246-25111 *	246-211			
			AZJ3535	246-30110 *	246-309			
			11.130.199	246-30110 *	246-309			
			11.130.410	246-30110 *	246-309			
			11.130.492	246-30211 *	246-309			
			11.130.534	246-25111 *	246-211			

\* This unit was designed to replace this specific OEM unit number; it may not be physically suitable for all intended applications. Refer to the respective Illustration for dimensions.

† Units with suffix A, B, C, D, E, & F are supplied with Relay Switch.

Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.
<b>ISUZU</b>			<b>ISUZU</b>			<b>JOHN DEERE</b>		
5-81100-055-0	246-25234 *	246-256	8-94453-211-1	246-25124 *	246-229	AL39700	246-25111 *	246-211
5-81100-059-1	246-25232 *	246-223	8-94453-212-0	246-25156 *	246-256	AL41247	246-25111 *	246-211
5-81100-059-2	246-25232 *	246-223	8-94454-559-0	246-25235E*†	246-256	AL62690	246-25111 *	246-211
5-81100-071-0	246-25118 *	246-223	8-97029-863-0	246-25235E*†	246-256	AL62772	246-25111 *	246-211
5-81100-080-0	246-25156 *	246-256	8-97029-863-1	246-25235E*†	246-256	AL78760	246-25111 *	246-211
5-81100-080-1	246-25156 *	246-256	8-97029-863-2	246-25235 *	246-256	AR25619	246-25111 *	246-211
5-81100-099-0	246-25156 *	246-256	8-97500-231-0	246-30109 *	246-311	AR63341	246-30129 *	246-329
5-81100-103-0	246-25156 *	246-256	9-81100-082-0	246-25243 *	246-261	AR66424	246-25111 *	246-211
5-81100-108-1	246-25118 *	246-223	9-82100-143-0	246-25235 *	246-256	AR70436	246-25111 *	246-211
5-81100-111-1	246-25156 *	246-256	9-82100-184-1	246-25156 *	246-256	AR70611	246-30128 *	246-328
5-81100-111-2	246-25156 *	246-256	9-82100-200-1	246-25234 *	246-256	AT18150	246-25111 *	246-211
5-81100-128-2	246-25235 *	246-256	9-82100-618-0	246-25235 *	246-256	AT23401	246-25111 *	246-211
5-81100-129-2	246-25234 *	246-256	9-82100-638-0	246-25156 *	246-256	AT25619	246-25111 *	246-211
5-81100-133-0	246-25156 *	246-256	9-82100-639-1	246-25235 *	246-256	CH12096	246-25102	246-201
5-81100-133-1	246-25156 *	246-256				CH19285	246-25102	246-201
5-81100-140-0	246-25136 *	246-238	<b>IVECO</b>			RE13722	246-30128 *	246-328
5-81100-147-0	246-25235 *	246-256				RE15663	246-30219 *	246-322
5-81100-154-0	246-25121	246-240	4755108	246-30211 *	246-309	RE15718	246-30220 *	246-323
5-81100-162-0	246-25232 *	246-223	4755109	246-30110 *	246-309	RE19187	246-25111 *	246-211
5-81100-164-0	246-25235 *	246-256				RE19275	246-25111	246-211
5-81100-169-0	246-25118 *	246-223	<b>J.I. CASE</b>			RE23900	246-30128 *	246-328
5-81100-169-1	246-25118 *	246-223	<b>( Also refer to CASE I.H. )</b>			RE38336	246-30121 *	246-322
5-81100-171-0	246-30108 *	246-313	A162469	246-30116 *	246-318	RE38369	246-30219 *	246-322
5-81100-193-0	246-25235 *	246-256	A170746	246-25107	246-206	RE39832	246-30130 *	246-323
5-81100-194-0	246-25234 *	246-256	A181056	246-25112	246-206	RE39833	246-30220 *	246-323
5-81100-195-0	246-25235 *	246-256	A186242	246-30106	246-305	RE40092	246-25109	246-208
8-94133-758-5	246-25156 *	246-256	A186247	246-30106	246-305	RE40595	246-25239	246-260
8-94136-400-1	246-25156 *	246-256	A187615	246-30105	246-305	RE42670	246-30121 *	246-322
8-94136-507-0	246-25156 *	246-256	A187722	246-30215 *	246-318	RE43266	246-30121 *	246-322
8-94142-262-0	246-25234 *	246-256	A187728	246-30116 *	246-318	RE44515	246-30219 *	246-322
8-94150-343-1	246-25136 *	246-238	A187785	246-25112	246-206	RE49033	246-25111 *	246-211
8-94171-296-2	246-25156 *	246-256	A187787	246-25112	246-206	RE51447	246-25111	246-211
8-94171-296-3	246-25156 *	246-256	D129494	246-30202	246-305	RE54090	246-25109	246-208
8-94171-621-0	246-25156 *	246-256	R39341	246-25101	246-202	RE54909	246-30121 *	246-322
8-94171-772-0	246-25235 *	246-256				RE54092	246-25111	246-211
8-94333-438-0	246-25235 *	246-256				RE54416	246-30121 *	246-322
8-94365-476-0	246-25235 *	246-256				RE54874	246-30131 *	246-330
8-94366-525-0	246-25235E*†	246-256				RE55641	246-30219 *	246-322
8-94366-525-1	246-25235E*†	246-256				RE59595	246-25109	246-208
8-94399-159-1	246-25228 *	246-249				RE60854	246-25111 *	246-211
8-94399-826-1	246-25221 *	246-247				RE61406	246-30121	246-322

\* This unit was designed to replace this specific OEM unit number; it may not be physically suitable for all intended applications. Refer to the respective Illustration for dimensions.

† Units with suffix A, B, C, D, E, & F are supplied with Relay Switch.

# CROSS REFERENCE



Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.
<b>JOHN DEERE</b>			<b>KOMATSU</b>			<b>KOMATSU</b>		
RE65100	246-30121 *	246-322	600-813-2680	246-30213 *	246-315	600-813-4270	246-30223A*†	246-331
RE69704	246-30119	246-321	600-813-2681	246-30213A*†	246-315	600-813-4280	246-30213A*†	246-315
RE69705	246-30216	246-321	600-813-2690	246-30212 *	246-333	600-813-4310	246-30224A*†	246-332
RE70474	246-30122	246-323	600-813-2691	246-30212 *	246-333	600-813-4350	246-30210B*†	246-310
RE70475	246-30217	246-323	600-813-2692	246-30212A*†	246-333	600-813-4410	246-25235A*†	246-256
TY1458	246-25111 *	246-211	600-813-3111	246-25235 *	246-256	600-813-4411	246-25235C*†	246-256
TY6614	246-25111 *	246-211	600-813-3121	246-25235 *	246-256	600-813-4420	246-30210C*†	246-310
TY6620	246-25111 *	246-211	600-813-3122	246-25235 *	246-256	600-813-4422	246-30210C*†	246-310
TY6702	246-25111 *	246-211	600-813-3130	246-25235A*†	246-256	600-813-4450	246-30210 *	246-310
			600-813-3140	246-25211 *	246-230	600-813-4480	246-25124	246-229
			600-813-3141	246-25211 *	246-230	600-813-4530	246-30218A*†	246-327
			600-813-3142	246-25211 *	246-230	600-813-4560	246-30213A †	246-315
<b>KHD</b>			600-813-3143	246-25211 *	246-230	600-813-4650	246-30213D*†	246-315
4682999	246-30211 *	246-309	600-813-3170	246-25235A*†	246-256	600-813-4670	246-30218C*†	246-327
			600-813-3171	246-25235A*†	246-256	600-813-4680	246-30218D*†	246-327
			600-813-3230	246-30224A*†	246-332	600-813-4790	246-30218 *	246-327
<b>KOMATSU</b>			600-813-3270	246-30223 *	246-331	600-813-5110	246-30207	246-305
1308066H91	246-25112	246-206	600-813-3280	246-30213A*†	246-315		246-30213 *	246-315
600-813-1410	246-25132	246-229	600-813-3310	246-30224 *	246-332	600-813-5660	246-30213 *	246-315
600-813-1420	246-25124	246-229	600-813-3320	246-30210B*†	246-310	600-813-6610	246-30218C*†	246-327
600-813-1430	246-25132	246-229						
600-813-1610	246-25132 *	246-229	600-813-3330	246-30224B*†	246-332			
600-813-1720	246-25156 *	246-256	600-813-3340	246-30224 *	246-332	<b>KUBOTA</b>		
600-813-1721	246-25124 *	246-229	600-813-3350	246-30210B*†	246-310	14182-63011	246-25134	246-204
600-813-2240	246-30213 *	246-315	600-813-3360	246-30210A*†	246-310	15451-63013	246-25104	246-204
600-813-2241	246-30213 *	246-315	600-813-3380	246-30213B*†	246-315	15451-63014	246-25104	246-204
600-813-2242	246-30213 *	246-315				15451-63015	246-25104	246-204
600-813-2243	246-30213A*†	246-315	600-813-3390	246-30213D*†	246-315	15451-63016	246-25104	246-204
600-813-2250	246-30213 *	246-315	600-813-3430	246-30224 *	246-332			
600-813-2251	246-30213A*†	246-315	600-813-3460	246-30224D*†	246-332	15481-63011	246-25141	246-215
600-813-2391	246-30212 *	246-333	600-813-3490	246-30224 *	246-332	15481-63012	246-25141	246-215
600-813-2392	246-30212 *	246-333	600-813-3510	246-30221A*†	246-327	15527-63011	246-25129	246-241
600-813-2393	246-30212A*†	246-333				15527-63012	246-25129	246-241
600-813-2394	246-30212A*†	246-333	600-813-3530	246-30218A*†	246-327	15611-63011	246-25133	246-242
600-813-2412	246-30221 *	246-327	600-813-3560	246-30213A*†	246-315			
600-813-2413	246-30221 *	246-327	600-813-3630	246-30218B*†	246-327	15611-63012	246-25133	246-242
600-813-2420	246-30221 *	246-327	600-813-3640	246-30221A*†	246-327	16541-63011	246-25123 Δ	246-216
600-813-2430	246-30222 *	246-333	600-813-3650	246-30213 *	246-315	16541-63012	246-25123 Δ	246-216
600-813-2450	246-30221 *	246-327	600-813-3660	246-30213B*†	246-315			
600-813-2530	246-30222 *	246-333	600-813-3710	246-30221D*†	246-327			
600-813-2620	246-30222 *	246-333	600-813-4000	246-25235 *	246-256			
600-813-2650	246-30222 *	246-333	600-813-4110	246-30213 *	246-315			
			600-813-4111	246-30213 *	246-315			
			600-813-4120	246-30213B*†	246-315			

\* This unit was designed to replace this specific OEM unit number; it may not be physically suitable for all intended applications. Refer to the respective Illustration for dimensions.

† Units with suffix A, B, C, D, E, & F are supplied with Relay Switch.

Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.
<b>LUCAS</b>			<b>M. MARELLI</b>			<b>MITSUBISHI</b>		
26363	246-25103 *	246-203	63216731	246-30211 *	246-309	M3T90072	246-25101 *	246-202
26363A	246-25103 *	246-203	63216747	246-30211 *	246-309	M3T90271	246-25160* <sup>Δ</sup>	246-227
26363E	246-25103 *	246-203	63216800	246-30110 *	246-309	M4T50073	246-25218 *	246-246
26390	246-30110 *	246-309	63216825	246-30110 *	246-309	M8T50071	246-25157 *	246-257
26398	246-25153 *	246-253	63216826	246-30110 *	246-309	M8T50171	246-25101 *	246-202
26398A	246-25153 *	246-253	63216827	246-30110 *	246-309	<b>MITSUBISHI MOTORS</b>		
26398E	246-25153 *	246-253	63223800	246-25238 *	246-259	ME029237	246-25233* <sup>Δ</sup>	246-255
26398F	246-25153 *	246-253	63223830	246-25238 *	246-259	ME037330	246-25218 *	246-246
26429	246-25103 *	246-203	63223897	246-25238 *	246-259	ME037465	246-25218 *	246-246
27430	246-30110 *	246-309	63224680	246-30110 *	246-309	ME037573	246-25218 *	246-246
27533	246-25109 *	246-208	<b>MASSEY FERGUSON</b>			ME037636	246-25218 *	246-246
27558	246-25103 *	246-203	508544M91	246-25142 *	246-220	ME077407	246-25218 *	246-246
<b>MAGIRUS DEUTZ</b>			517533M93	246-25159 *	246-258	ME087506	246-25160* <sup>Δ</sup>	246-227
4755108	246-30211 *	246-309	894031M91	246-25153 *	246-253	ME087577	246-25160* <sup>Δ</sup>	246-227
<b>M. MARELLI</b>			899447M91	246-25153 *	246-253	ME087590	246-25240* <sup>Δ</sup>	246-227
E115-3/24	246-25238 *	246-259	1446767M91	246-25153 *	246-253	<b>MITSUBISHI HVY. IND.</b>		
MT38QA	246-30110 *	246-309	1446770M91	246-25153 *	246-253	34466-00800	246-25106	246-201
MT38QB	246-30110 *	246-309	1618050M3	246-25153 *	246-253	<b>mitsui-deutz</b>		
MT38TB	246-30110 *	246-309	1714477M91	246-25153 *	246-253	04410711	246-25122	246-243
MT43PA	246-30211 *	246-309	1714478M91	246-25153 *	246-253	<b>NIKKO</b>		
MT67A	246-30211 *	246-309	1716455M91	246-25153 *	246-253	0-21000-1460	246-25243 *	246-261
MT67AA	246-30211 *	246-309	1903101M91	246-25142 *	246-220	0-21000-1461	246-25243 *	246-261
MT67AB	246-30211 *	246-309	1903103M91	246-25159 *	246-258	0-21000-1590	246-25235 *	246-256
MT67AC	246-30211 *	246-309	1903137M91	246-25153 *	246-253	0-21000-1591	246-25235 *	246-256
MT67AD	246-30211 *	246-309	1903145M91	246-25153 *	246-253	0-21000-1592	246-25235 *	246-256
MT68AA	246-30110 *	246-309	<b>MELROE BOBCAT</b>			0-21000-1593	246-25235 *	246-256
MT68AB	246-30110 *	246-309	<b>( Refer to BOBCAT )</b>			0-21000-2340	246-25234 *	246-256
MT68AC	246-30110 *	246-309	<b>MITSUBISHI</b>			0-21000-2370	246-25156 *	246-256
MT68AD	246-30110 *	246-309	M2T78381	246-25240* <sup>Δ</sup>	246-227	0-21000-2371	246-25156 *	246-256
63213853	246-30110 *	246-309	M2T78382	246-25240* <sup>Δ</sup>	246-227	0-21000-2510	246-30221 *	246-327
63214376	246-30211 *	246-309	M3T56071	246-25218 *	246-246			
63216701	246-30211 *	246-309	M3T56072	246-25218 *	246-246			
63216725	246-30211 *	246-309	M3T56074	246-25218 *	246-246			
63216726	246-30211 *	246-309	M3T90071	246-25101 *	246-202			
63216727	246-30211 *	246-309						

\* This unit was designed to replace this specific OEM unit number; it may not be physically suitable for all intended applications.

Refer to the respective Illustration for dimensions.

<sup>Δ</sup> Supplied without Relay Switch

# CROSS REFERENCE



Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.
<b>NIKKO</b>			<b>NIKKO</b>			<b>NIKKO</b>		
0-21000-2660	246-30222 *	246-333	0-21000-4871	246-30213A*†	246-315	0-23000-1033	246-25232 *	246-223
0-21000-2661	246-30222 *	246-333	0-21000-4880	246-30213A*†	246-315	0-23000-1060	246-25232E*†	246-223
0-21000-3260	246-25243 *	246-261	0-21000-4930	246-25234 *	246-256	0-23000-1070	246-25232E*†	246-223
0-21000-3290	246-25232 *	246-223	0-21000-4931	246-25235 *	246-256	0-23000-1071	246-25232E*†	246-223
0-21000-3291	246-25232F*†	246-223	0-21000-4932	246-25234 *	246-256	0-23000-1072	246-25232E*†	246-223
0-21000-3390	246-30221 *	246-327	0-21000-4933	246-25235E*†	246-256	0-23000-1073	246-25232E*†	246-223
0-21000-3391	246-30221 *	246-327	0-21000-4934	246-25235E*†	246-256	0-23000-1160	246-30213A*†	246-315
0-21000-3392	246-30221 *	246-327	0-21000-5150	246-30108 *	246-313	0-23000-1161	246-30213A*†	246-315
0-21000-3410	246-30222 *	246-333	0-21000-5230	246-25156 *	246-256	0-23000-1170	246-30224A*†	246-332
0-21000-3411	246-30222 *	246-333	0-21000-5231	246-25156 *	246-256	0-23000-1190	246-30223 *	246-331
0-21000-3450	246-25235 *	246-256	0-23000-0040	246-25235 *	246-256	0-23000-1191	246-30223 *	246-331
0-21000-3470	246-25234 *	246-256	0-23000-0041	246-25235 *	246-256	0-23000-1230	246-30213B*†	246-315
0-21000-3650	246-25243 *	246-261	0-23000-0042	246-25235 *	246-256	0-23000-1231	246-30213B*†	246-315
0-21000-3651	246-25243 *	246-261	0-23000-0050	246-25235 *	246-256	0-23000-1240	246-30224 *	246-332
0-21000-3660	246-25232 *	246-223	0-23000-0051	246-25235 *	246-256	0-23000-1260	246-25235 *	246-256
0-21000-3661	246-25232F*†	246-223	0-23000-0052	246-25235 *	246-256	0-23000-1270	246-30213D*†	246-315
0-21000-3690	246-25232 *	246-223	0-23000-0053	246-25235 *	246-256	0-23000-1290	246-30210B*†	246-310
0-21000-3691	246-25232 *	246-223	0-23000-0060	246-25235A*†	246-256	0-23000-1310	246-25235 *	246-256
0-21000-3730	246-25156 *	246-256	0-23000-0061	246-25235A*†	246-256	0-23000-1330	246-30224B*†	246-332
0-21000-3830	246-25232 *	246-223	0-23000-0062	246-25235A*†	246-256	0-23000-1340	246-30224 *	246-332
0-21000-3831	246-25232 *	246-223	0-23000-0063	246-25235A*†	246-256	0-23000-1400	246-30224 *	246-332
0-21000-4110	246-30213 *	246-315	0-23000-0090	246-25156 *	246-256	0-23000-1410	246-30210B*†	246-310
0-21000-4130	246-30212 *	246-333	0-23000-0091	246-25156 *	246-256	0-23000-1420	246-30108 *	246-313
0-21000-4131	246-30212 *	246-333	0-23000-0100	246-25235A*†	246-256	0-23000-1430	246-30210A*†	246-310
0-21000-4132	246-30212A*†	246-333	0-23000-0101	246-25235A*†	246-256	0-23000-1440	246-30224 *	246-332
0-21000-4190	246-30213 *	246-315	0-23000-0102	246-25235A*†	246-256	0-23000-1460	246-30224 *	246-332
0-21000-4191	246-30213 *	246-315	0-23000-0130	246-25156 *	246-256	0-23000-1530	246-30224D*†	246-332
0-21000-4192	246-30213 *	246-315	0-23000-0150	246-25211 *	246-230	0-23000-1550	246-30210B*†	246-310
0-21000-4193	246-30213 *	246-315	0-23000-0260	246-25156 *	246-256	0-23000-1620	246-30223A*†	246-331
0-21000-4220	246-30212 *	246-333	0-23000-0261	246-25156 *	246-256	0-23000-1630	246-30224A*†	246-332
0-21000-4221	246-30212 *	246-333	0-23000-0262	246-25156 *	246-256	0-23000-1670	246-25232 *	246-223
0-21000-4222	246-30212 *	246-333	0-23000-0270	246-25211 *	246-230	0-23000-1700	246-25235E*†	246-256
0-21000-4230	246-25156 *	246-256	0-23000-0271	246-25211 *	246-230	0-23000-1750	246-30210C*†	246-310
0-21000-4231	246-25156 *	246-256	0-23000-0272	246-25211 *	246-230	0-23000-1752	246-30210C*†	246-310
0-21000-4350	246-25235 *	246-256	0-23000-0330	246-25235A*†	246-256	0-23000-2080	246-30210 *	246-310
0-21000-4690	246-30108 *	246-313	0-23000-0331	246-25235 *	246-256	0-23000-2100	246-25235E*†	246-256
0-21000-4720	246-25235 *	246-256	0-23000-0332	246-25235C*†	246-256	0-23000-2101	246-25235E*†	246-256
0-21000-4721	246-25235 *	246-256	0-23000-0450	246-25235A*†	246-256	0-23000-2103	246-25235E*†	246-256
0-21000-4850	246-30212A*†	246-333	0-23000-1030	246-25232 *	246-223	0-23000-2340	246-25232 *	246-223
0-21000-4860	246-30212A*†	246-333	0-23000-1031	246-25232 *	246-223	0-23000-3010	246-25232 *	246-223
0-21000-4870	246-30213A*†	246-315	0-23000-1032	246-25232 *	246-223	0-23000-3090	246-25232 *	246-223

\* This unit was designed to replace this specific OEM unit number; it may not be physically suitable for all intended applications. Refer to the respective Illustration for dimensions.

† Units with suffix A, B, C, D, E, & F are supplied with Relay Switch.

Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.
<b>NIKKO</b>			<b>NISSAN - U.D.</b>			<b>OTTAWA</b>		
0-23000-3150	246-30218A*†	246-327	23300-L6000	246-25229 *	246-252	3283815	246-30117	246-319
0-23000-3151	246-30218A*†	246-327	23300-Z5000	246-25229 *	246-252	3920643	246-25112	246-206
0-23000-3160	246-30213A*†	246-315	23300-Z5505	246-25229 *	246-252	3925045	246-30104	246-302
0-23000-3170	246-30213D*†	246-315	23300-Z5509	246-25229 *	246-252			
0-23000-3180	246-30218D*†	246-327	23300-Z5511	246-25229 *	246-252			
						<b>SAWAFUJI</b>		
0-23000-3270	246-30218 *	246-327	23300-Z5512	246-25229 *	246-252			
0-23000-3280	246-30218C*†	246-327	23300-Z5515	246-25229 *	246-252	0330-402-001_	246-25228 *	246-249
0-23000-6210	246-30221A*†	246-327	23300-Z5517	246-25229 *	246-252	0330-402-031_	246-25228 *	246-249
0-23000-6211	246-30221A*†	246-327	23300-Z5562	246-25229 *	246-252			
0-23000-6212	246-30221A*†	246-327	23300-Z5564	246-25229 *	246-252	0330-402-032_	246-25228 *	246-249
						0330-402-041_	246-25228 *	246-249
0-23000-6213	246-30221A*†	246-327	23300-Z5566	246-25229 *	246-252	0350-402-003_	246-25228 *	246-249
0-23000-6250	246-30218A*†	246-327	23300-Z5573	246-25229 *	246-252	0350-402-011_	246-25217 *	246-234
0-23000-6251	246-30218A*†	246-327	23300-90060	246-25229 *	246-252	0350-402-012_	246-25217 *	246-234
0-23000-6340	246-30213A*†	246-315	23300-93508	246-30209 *	246-307			
0-23000-6341	246-30213A*†	246-315	23300-95000	246-30209 *	246-307	0350-402-021_	246-25217 *	246-234
						0350-402-022_	246-25217 *	246-234
0-23000-6510	246-30213B*†	246-315	23300-95006	246-30209 *	246-307	0350-402-024_	246-25228 *	246-249
0-23000-6530	246-30218B*†	246-327	23300-95009	246-30209 *	246-307	0350-402-025_	246-25217 *	246-234
0-23000-6531	246-30218B*†	246-327	23300-95011	246-30113 *	246-307	0350-502-001_	246-25228 *	246-249
0-23000-6532	246-30218B*†	246-327	23300-95017	246-30113 *	246-307			
0-23000-6570	246-30108F*†	246-313	23300-96060	246-30209 *	246-307	0350-502-003_	246-25229 *	246-252
						0350-502-004_	246-25228 *	246-249
0-23000-6590	246-30213 *	246-315	23300-96062	246-30209 *	246-307	0350-502-006_	246-25228 *	246-249
0-23000-6591	246-30213 *	246-315	23300-96064	246-30209 *	246-307	0350-502-013_	246-25229 *	246-252
0-23000-6610	246-30221D*†	246-327	23300-96069	246-30209 *	246-307	0350-502-014_	246-25229 *	246-252
0-23000-6612	246-30221D*†	246-327	23300-96076	246-30209 *	246-307			
0-23000-7020	246-30218C*†	246-327	23300-96077	246-30209 *	3246-07	0350-502-015_	246-25229 *	246-252
						0351-502-004_	246-25228 *	246-249
0-23000-7021	246-30218C*†	246-327	23300-96106	246-30209 *	246-307	0351-502-006_	246-25229 *	246-252
0-23000-7530	246-30221 *	246-327	23300-96116	246-30209 *	246-307	0350-552-001_	246-30205 *	246-308
0-24000-3000	246-25221 *	246-247	23300-96118	246-30209 *	246-307	0350-552-006_	246-30205 *	246-308
0-24000-3001	246-25221 *	246-247	23300-96119	246-30209 *	246-307			
0-24000-3020	246-25221 *	246-247	23300-96160	246-30209 *	246-307	0350-552-031_	246-30205 *	246-308
						0350-552-033_	246-30205 *	246-308
0-24000-3030	246-25221 *	246-247	23300-96161	246-30209 *	246-307	0350-552-034_	246-30205 *	246-308
			23300-96508	246-30209 *	246-307	0350-552-036_	246-30205 *	246-308
						0350-552-051_	246-30205 *	246-308
<b>NIPPONDENSO</b>			<b>OSHKOSH</b>					
<b>(Refer to DENSO)</b>						0300-602-002_	246-30209 *	246-307
			4428221	246-30101	246-303	0330-602-001_	246-30209 *	246-307
						0350-602-001_	246-30209 *	246-307
						0350-602-013_	246-30205 *	246-308
						0351-602-001_	246-30209 *	246-307

Sawafuji numbers are listed without the last digit which denotes a minor production change, not a different unit.

\* This unit was designed to replace this specific OEM unit number; it may not be physically suitable for all intended applications.

Refer to the respective Illustration for dimensions.

† Units with suffix A, B, C, D, E, & F are supplied with Relay Switch.

# CROSS REFERENCE



Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.	Original Numbers	Dixie Numbers	ILL. No's.
<b>TELEDYNE</b>			<b>TOYOTA</b>			<b>TOYOTA</b>		
TMD-27M504	246-25110	246-210	28100-54010	246-25105	246-205	28100-64091	246-25138	246-244
TMD-27M506	246-25110	246-210	28100-54011	246-25105	246-205	28100-77090	246-25204	246-218
TMD-27M507	246-25113	246-212	28100-54023	246-25224	246-231	28100-78502-71	246-25137	246-225
TMD-27M509	246-25113	246-212	28100-54042	246-25224	246-231	28100-89106	246-25120	246-234
TMD-27M512	246-25113	246-212	28100-54052	246-25105	246-205	28100-96502	246-25137	246-225
			28100-54061	246-25105	246-205	28300-22060-71	246-25205	246-214
			28100-54090	246-25105	246-205	28300-23040-71	246-25145	246-214
			28100-54120	246-25105	246-205	28300-23041-71	246-25145	246-214
44-5443	246-25156	246-256	28100-54140	246-25105	246-205	28300-31960-71	246-25214	246-222
44-6553	246-25156 *	246-256	28100-54160	246-25105	246-205	28300-32080-71	246-25205	246-214
			28100-54210	246-25105	246-205	28300-32880-71	246-25146	246-236
			28100-54220	246-25105	246-205	28300-32980-71	246-25213	246-236
			28100-54250	246-25105	246-205	28300-40510-71	246-25225	246-218
<b>THOMAS BUS</b>			28100-54300	246-25105	246-205			
61230355	246-30104	246-302	28100-54320	246-25105	246-205			
			28100-54390	246-25105	246-205			
			28100-54430	246-25105	246-205			
<b>TOYOTA</b>			28100-56030	246-25210	246-233			
28100-17010	246-25127	246-232	28100-56040	246-25128	246-233			
28100-17020	246-25219	246-232	28100-56070	246-25201	246-217			
28100-17030	246-25219	246-232				<b>UNIC</b>		
28100-17040	246-25127	246-232				004682999	246-30211 *	246-309
28100-20560-71	246-25244	246-267				004755108	246-30211 *	246-309
			28100-56071	246-25201	246-217			
			28100-56101	246-25201	246-217			
			28100-56110	246-25140	246-217			
28100-22060-71	246-25203 *	246-214	28100-56120	246-25210	246-233			
28100-23660-71	246-25145	246-214	28100-56121	246-25210	246-233			
28100-30800-71	246-25212	246-235				<b>VERSATILE</b>		
28100-31625-71	246-25209	246-222				89332	246-25107	246-206
28100-32080-71	246-25203	246-214				104668	246-25112	246-206
			28100-56151	246-25220	246-237			
			28100-56180	246-25226	246-221			
			28100-56181	246-25226	246-221			
28100-40290-71	246-25115	246-214	28100-56190	246-25116	246-221			
28100-40291-71	246-25115	246-214	28100-56191	246-25116	246-221			
28100-42800-71	246-25130	246-235				<b>VOLVO</b>		
28100-46030	246-25119	246-224				243043	246-25223 *	246-250
28100-46040	246-25207	246-224	28100-56220	246-25220	246-237	244780	246-25223 *	246-250
			28100-56221	246-25220	246-237	420760	246-25223	246-250
			28100-56222	246-25220	246-237	1676822	246-25223	246-250
28100-47030	246-25206	246-219	28100-56240	246-25220	246-237	5001684	246-25223 *	246-250
28100-47040	246-25206	246-219	28100-56241	246-25220	246-237			
28100-47060	246-25206	246-219				8192262	246-25223 $\Delta$	246-250
28100-47070	246-25117	246-222						
28100-47080	246-25117	246-222				<b>WHITE</b>		
			28100-56242	246-25220	246-237	40-2500442	246-25114	246-229
28100-47081	246-25117	246-222	28100-56260	246-25220	246-237	303123383	246-25159 *	246-258
28100-47090	246-25209	246-222	28100-56270	246-25220	246-237	312903335	246-30110 *	246-309
28100-48011	246-25207	246-224	28100-56320	246-25220	246-237			
28100-53270	246-25220	246-237	28100-56330	246-25220	246-237			
			28100-64090	246-25138	246-244			

\* This unit was designed to replace this specific OEM unit number; it may not be physically suitable for all intended applications. Refer to the respective Illustration for dimensions.

$\Delta$  Supplied without Relay Switch.

Original Numbers	Dixie Numbers	ILL. No.	Original Numbers	Dixie Numbers	ILL. No.	Original Numbers	Dixie Numbers	ILL. No.
<b>YANMAR</b>								
121254-77010	246-25158 *	246-256						
121254-77011	246-25158 *	246-256						
121254-77012	246-25158 *	246-256						
121370-77010	246-25158 *	246-256						
121420-77010	246-25102	246-201						
121420-77011	246-25102	246-201						
123500-77010	246-25155 *	246-252						
124610-77010	246-25155 *	246-252						
124617-77010	246-25229 *	246-252						
124617-77011	246-25229 *	246-252						

\* This unit was designed to replace this specific OEM unit number; it may not be physically suitable for all intended applications. Refer to the respective Illustration for dimensions.

# PRODUCT DATA

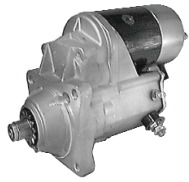



ILLUSTRATION	PAGE NO.	PINION TEETH	OIL SEALED	ROTATION	SOLENOID PULL IN WINDING CURRENT (A)	SOLENOID HOLD IN WINDING CURRENT (A)	ELECTRICAL DIAGRAM †	PERFORMANCE CURVE FIG. NO. ‡	WEIGHT (KG/LBS)	APPLICATION (TYPICAL)	
<b>12V 2.8 kW</b>											
246-25101	246-202	24	13	Y	CW	56	13	1	1	8.3/18.3	CUMMINS
246-25102	246-201	24	15		CW	56	13	1	1	8.3/18.3	JOHN DEERE
246-25103	246-203	24	10	Y	CW	56	13	1	1	8.3/18.3	ALLIS
246-25104	246-204	25	9		CW	56	13	1	1	8.3/18.3	KUBOTA
246-25105	246-205	25	11		CW	56	13	1	1	8.3/18.3	TOYOTA
246-25106	246-201	24	11		CW	56	13	1	1	8.3/18.3	ALLIS
246-25107	246-206	25	13		CW	56	13	1	1	8.3/18.3	CUMMINS
246-25108	246-207	26	10	Y	CW	56	13	1	1	8.3/18.3	CATERPILLAR
246-25109	246-208	26	10	Y	CW	56	13	1	1	8.3/18.3	CATERPILLAR
246-25110	246-210	27	10	Y	CW	56	13	2	1	8.3/18.3	TELEDYNE
246-25111	246-211	27	11	Y	CW	56	13	1	1	8.3/18.3	JOHN DEERE
246-25112	246-206	25	13	Y	CW	56	13	1	1	8.3/18.3	CUMMINS
246-25113	246-212	27	10	Y	CW	56	13	2	1	8.3/18.3	TELEDYNE
246-25114	246-213	28	10	Y	CW	56	13	1	1	8.3/18.3	CATERPILLAR
246-25115	246-214	28	11		CW	56	13	1	1	8.3/18.3	TOYOTA
246-25116	246-221	30	11		CW	56	13	1	1	8.3/18.3	TOYOTA
246-25117	246-222	31	11		CW	56	13	1	1	8.3/18.3	TOYOTA
246-25118	246-223	31	11		CW	56	13	1	1	8.3/18.3	ISUZU
246-25119	246-224	31	11		CW	56	13	1	1	8.3/18.3	TOYOTA
246-25120	246-234	35	11		CW	56	13	1	1	8.3/18.3	HINO
246-25121	246-240	37	11		CW	56	13	1	1	8.3/18.3	ISUZU
246-25122	246-243	38	11		CW	56	13	1	1	8.3/18.3	MITSUI-DEUTZ
246-25123	246-216	29	9		CW	56	13	1	1	8.3/18.3	KUBOTA
246-25124	246-229	33	11		CW	56	13	1	1	8.3/18.3	ISUZU
246-25126	246-245	38	11		CW	56	13	1	1	8.3/18.3	DAIHATSU
246-25127	246-232	34	12		CW	56	13	1	1	8.3/18.3	TOYOTA
246-25128	246-233	34	11		CW	56	13	1	1	8.3/18.3	TOYOTA
246-25129	246-241	37	11		CW	56	13	1	1	8.3/18.3	KUBOTA
246-25130	246-235	35	11		CW	56	13	1	1	8.3/18.3	TOYOTA
246-25131	246-237	36	11		CW	56	13	1	1	8.3/18.3	DAIHATSU
246-25132	246-229	33	11	Y	CW	56	13	1	1	8.3/18.3	KOMATSU
246-25133	246-242	37	11		CW	56	13	1	1	8.3/18.3	KUBOTA
246-25134	246-204	25	11		CW	56	13	1	1	8.3/18.3	KUBOTA
246-25136	246-238	36	11	Y	CW	56	13	1	1	8.3/18.3	ISUZU
246-25137	246-225	32	11		CW	56	13	1	1	8.3/18.3	TOYOTA
246-25138	246-244	38	10		CW	56	13	1	1	8.3/18.3	TOYOTA
246-25140	246-217	29	11		CW	56	13	1	1	8.3/18.3	TOYOTA
246-25141	246-215	28	9		CW	56	13	1	1	8.3/18.3	KUBOTA
246-25142	246-220	30	10	Y	CW	56	13	1	1	8.3/18.3	MASSEY
246-25144	246-254	41	9	Y	CW	56	13	1	1	8.3/18.3	CLARK
246-25145	246-214	28	11	Y	CW	56	13	1	1	8.3/18.3	TOYOTA
246-25146	246-236	35	11	Y	CW	56	13	1	1	8.3/18.3	TOYOTA
246-25147	246-226	32	10		CW	56	13	1	1	8.3/18.3	CATERPILLAR
246-25149	246-208	26	13		CW	56	13	1	1	8.3/18.3	CUMMINS
246-25152	246-251	40	13	Y	CW	56	13	1	1	8.3/18.3	FORD

⌘ Refer to pages 22 / 23.

	ILLUSTRATION	PAGE NO.	PINION TEETH	OIL SEALED	ROTATION	SOLENOID PULL IN WINDING CURRENT (A)	SOLENOID HOLD IN WINDING CURRENT (A)	ELECTRICAL DIAGRAM	PERFORMANCE CURVE FIG. NO.	WEIGHT (KG / LBS)	APPLICATION (TYPICAL)
<b>12V 2.8 kW</b>											
246-25153	246-253	41	10	Y	CW	56	13	1	1	8.3/18.3	PERKINS
246-25154	246-253	41	13	Y	CW	56	13	1	1	8.3/18.3	PERKINS
246-25155	246-252	41	11		CW	56	13	1	1	8.3/18.3	NISSAN - U.D.
246-25156	246-256	42	9	Y	CW	56	13	1	1	8.3/18.3	ISUZU
246-25157	246-257	42	12		CW	56	13	1	1	8.3/18.3	FORD
246-25158	246-256	42	15		CW	56	13	1	1	8.3/18.3	ISUZU
246-25159	246-258	43	10	Y	CW	56	13	1	1	8.3/18.3	CATERPILLAR
246-25160	246-227	32	10		CW	56	13	1	1	8.3/18.3	MITSUBISHI
246-25161	246-264	45	13	Y	CW	56	13	1	1	8.3/18.3	CUMMINS
246-25162	246-263	44	11	Y	CW	56	13	2	1	8.3/18.3	BOBCAT
246-25163	246-262	44	10		CW	56	13	1	1	8.3/18.3	PERKINS
246-25164	246-265	45	10	Y	CW	56	13	1	1	8.3/18.3	BOBCAT
246-25165	246-266	45	13	Y	CW	56	13	1	1	8.3/18.3	KOMATSU
246-25166	246-218	29	11		CW	56	13	1	1	8.3/18.3	-
<b>12V 3.0 kW</b>											
246-30101	246-303	48	13		CW	56	13	1	2	10.1/22.2	CUMMINS
246-30102	246-306	49	11		CW	56	13	1	2	10.1/22.2	ISUZU
246-30103	246-304	49	10	Y	CW	56	13	1	2	10.1/22.2	CATERPILLAR
246-30104	246-302	48	13		CW	56	13	1	2	10.1/22.2	CUMMINS
246-30105	246-305	49	10	Y	CW	56	13	1	2	10.1/22.2	CASE
246-30106	246-305	49	10		CW	56	13	1	2	10.1/22.2	CASE
246-30107	246-301	48	11		CW	56	13	1	2	10.1/22.2	ISUZU
246-30108	246-313	52	11	Y	CW	56	13	1	2	10.1/22.2	ISUZU
246-30109	246-311	51	11		CW	56	13	1	2	10.1/22.2	ISUZU
246-30110	246-309	50	9	Y	CW	56	13	1	2	10.1/22.2	FIAT
246-30111	246-312	51	10	Y	CW	56	13	1	2	10.1/22.2	BOBCAT
<b>12V 4.0 kW</b>											
246-30112	246-314	52	10	Y	CW	56	13	1	2	10.1/22.2	THOMAS BUS
246-30113	246-307	50	11	Y	CW	56	13	1	2	10.1/22.2	NISSAN - U.D.
246-30114	246-316	53	10		CW	56	13	1	3	10.1/22.2	UPS
246-30115	246-317	53	10	Y	CW	56	13	1	3	10.1/22.2	CUMMINS
246-30116	246-318	53	10	Y	CW	56	13	1	3	10.1/22.2	CASE
246-30117	246-319	54	10	Y	CW	56	13	1	3	10.1/22.2	CUMMINS
246-30118	246-320	54	10	Y	CW	56	13	1	3	10.1/22.2	NAVISTAR
246-30119	246-321	54	11	Y	CW	56	13	1	3	10.1/22.2	JOHN DEERE
246-30120	246-321	54	11		CW	56	13	1	3	10.1/22.2	JOHN DEERE
246-30121	246-322	55	10	Y	CW	56	13	1	3	10.1/22.2	JOHN DEERE
246-30122	246-323	55	11		CW	56	13	1	3	10.1/22.2	JOHN DEERE
246-30123	246-324	55	10		CW	56	13	1	3	10.1/22.2	JOHN DEERE
246-30124	246-325	56	10	Y	CW	56	13	1	3	10.1/22.2	CATERPILLAR
246-30125	246-326	56	10	Y	CW	56	13	2	3	10.1/22.2	BOBCAT
246-30126	246-317	53	10		CW	56	13	1	3	10.1/22.2	CUMMINS

\* Refer to pages 22 / 23.

# PRODUCT DATA



ILLUSTRATION	PAGE NO.	PINION TEETH	OIL SEALED	ROTATION	SOLENOID PULL IN WINDING CURRENT (A)	SOLENOID HOLD IN WINDING CURRENT (A)	ELECTRICAL DIAGRAM	PERFORMANCE CURVE FIG. NO.	WEIGHT (KG / LBS)	APPLICATION (TYPICAL)	
<b>12V 4.0 kW</b>											
246-30127	246-312	51	10	Y	CW	56	13	1	3	10.1/22.2	KOMATSU
246-30128	246-328	57	10	Y	CW	56	13	1	3	10.1/22.2	JOHN DEERE
246-30129	246-329	57	10	Y	CW	56	13	1	3	10.1/22.2	JOHN DEERE
246-30130	246-323	55	10	Y	CW	56	13	1	3	10.1/22.2	JOHN DEERE
246-30131	246-330	57	10	Y	CW	56	13	1	3	10.1/22.2	JOHN DEERE
<b>24V 4.5 kW</b>											
246-25201	246-217	29	11		CW	23	5	1	4	8.3/18.3	TOYOTA
246-25202	246-209	26	10		CW	23	5	1	4	8.3/18.3	CATERPILLAR
246-25203	246-214	28	11		CW	23	5	1	4	8.3/18.3	TOYOTA
246-25204	246-218	29	11		CW	23	5	1	4	8.3/18.3	TOYOTA
246-25205	246-214	28	11	Y	CW	23	5	1	4	8.3/18.3	TOYOTA
246-25206	246-219	30	11		CW	23	5	1	4	8.3/18.3	TOYOTA
246-25207	246-224	31	11		CW	23	5	1	4	8.3/18.3	TOYOTA
246-25208	246-239	36	11		CW	23	5	1	4	8.3/18.3	ISUZU
246-25209	246-222	31	11		CW	23	5	1	4	8.3/18.3	TOYOTA
246-25210	246-233	34	11		CW	23	5	1	4	8.3/18.3	TOYOTA
246-25211	246-230	33	11		CW	23	5	1	4	8.3/18.3	KOMATSU
246-25212	246-235	35	11		CW	23	5	1	4	8.3/18.3	TOYOTA
246-25213	246-236	35	11	Y	CW	23	5	1	4	8.3/18.3	TOYOTA
246-25214	246-222	31	11	Y	CW	23	5	1	4	8.3/18.3	TOYOTA
246-25215	246-230	33	11	Y	CW	23	5	1	4	8.3/18.3	KOMATSU
246-25216	246-228	33	10	Y	CW	23	5	1	4	8.3/18.3	CUMMINS
246-25217	246-234	35	11		CW	23	5	1	4	8.3/18.3	HINO
246-25218	246-246	39	11		CW	23	5	1	4	8.3/18.3	MITSUBISHI
246-25219	246-232	34	12		CW	23	5	1	4	8.3/18.3	TOYOTA
246-25220	246-237	36	11		CW	23	5	1	4	8.3/18.3	TOYOTA
246-25221	246-247	39	11		CW	23	5	1	4	8.3/18.3	ISUZU
246-25222	246-248	39	13		CW	23	5	1	4	8.3/18.3	ISIKAWA
246-25223	246-250	40	11		CW	23	5	1	4	8.3/18.3	VOLVO
246-25224	246-231	34	11		CW	23	5	1	4	8.3/18.3	TOYOTA
246-25225	246-218	29	11	Y	CW	23	5	1	4	8.3/18.3	TOYOTA
246-25226	246-221	30	11		CW	23	5	1	4	8.3/18.3	TOYOTA
246-25227	246-240	37	11	Y	CW	23	5	1	4	8.3/18.3	ISUZU
246-25228	246-249	40	11		CW	23	5	1	4	8.3/18.3	HINO
246-25229	246-252	41	11		CW	23	5	1	4	8.3/18.3	NISSAN U.D.
246-25230	246-253	41	10	Y	CW	23	5	1	4	8.3/18.3	PERKINS
246-25231	246-253	41	13	Y	CW	23	5	1	4	8.3/18.3	PERKINS
246-25232	246-223	31	11	Y	CW	23	5	1	4	8.3/18.3	ISUZU
246-25233	246-255	42	11		CW	23	5	1	4	8.3/18.3	MITSUBISHI
246-25234	246-256	42	9	Y	CW	23	5	1	4	8.3/18.3	ISUZU
246-25235	246-256	42	9	Y	CW	23	5	1	4	8.3/18.3	ISUZU
246-25236	246-202	24	13	Y	CW	23	5	1	4	8.3/18.3	CUMMINS
246-25237	246-211	27	11	Y	CW	23	5	1	4	8.3/18.3	JOHN DEERE
246-25238	246-259	43	9		CW	23	5	1	4	8.3/18.3	FIAT

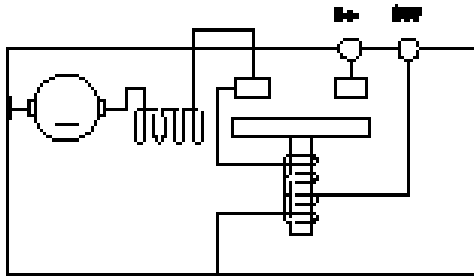
☞ Refer to pages 22 / 23.

	ILLUSTRATION	PAGE NO.	PINION TEETH	OIL SEALED	ROTATION	SOLENOID PULL IN WINDING CURRENT (A)	SOLENOID HOLD IN WINDING CURRENT (A)	ELECTRICAL DIAGRAM <sup>✦</sup>	PERFORMANCE CURVE FIG. NO. <sup>✦</sup>	WEIGHT (KG / LBS)	APPLICATION (TYPICAL)
<b>24V 4.5 kW</b>											
246-25239	246-260	43	10		CW	23	5	1	4	8.3/18.3	JOHN DEERE
246-25240	246-227	32	10		CW	23	5	1	4	8.3/18.3	mitsubishi
246-25241	246-258	43	10	Y	CW	23	5	1	4	8.3/18.3	BOBCAT
246-25242	246-226	32	10		CW	23	5	1	4	8.3/18.3	CATERPILLAR
246-25243	246-261	44	11		CW	23	5	1	4	8.3/18.3	ISUZU
246-25244	246-267	46	9		CW	23	5	1	4	8.3/18.3	TOYOTA
<b>24V 5.5 kW</b>											
246-30201	246-304	49	10	Y	CW	23	5	1	5	10.1/22.2	CATERPILLAR
246-30202	246-305	49	10		CW	23	5	1	5	10.1/22.2	CASE
246-30203	246-301	48	11		CW	23	5	1	5	10.1/22.2	ISUZU
246-30204	246-313	52	13	Y	CW	23	5	1	5	10.1/22.2	KOMATSU
246-30205	246-308	50	11		CW	23	5	1	5	10.1/22.2	HINO
246-30206	246-306	49	11	Y	CW	23	5	1	5	10.1/22.2	KOMATSU
246-30207	246-305	49	10	Y	CW	23	5	1	5	10.1/22.2	CUMMINS
246-30209	246-307	50	11	Y	CW	23	5	1	5	10.1/22.2	NISSAN - U.D.
246-30210	246-310	51	11	Y	CW	23	5	1	5	10.1/22.2	KOMATSU
246-30211	246-309	50	9	Y	CW	23	5	1	5	10.1/22.2	FIAT
246-30212	246-333	58	11	Y	CW	23	5	1	5	10.1/22.2	KOMATSU
<b>24V 7.5 kW</b>											
246-30213	246-315	52	13	Y	CW	23	5	1	6	10.1/22.2	KOMATSU
246-30214	246-317	53	10	Y	CW	23	5	1	6	10.1/22.2	CUMMINS
246-30215	246-318	53	10	Y	CW	23	5	1	6	10.1/22.2	CASE
246-30216	246-321	54	11	Y	CW	23	5	1	6	10.1/22.2	JOHN DEERE
246-30217	246-323	55	11		CW	23	5	1	6	10.1/22.2	JOHN DEERE
246-30218	246-327	56	10	Y	CW	23	5	1	6	10.1/22.2	KOMATSU
246-30219	246-322	55	10	Y	CW	23	5	1	6	10.1/22.2	JOHN DEERE
246-30220	246-323	55	10	Y	CW	23	5	1	6	10.1/22.2	JOHN DEERE
246-30221	246-327	56	11	Y	CW	23	5	1	6	10.1/22.2	KOMATSU
246-30222	246-333	58	13	Y	CW	23	5	1	6	10.1/22.2	KOMATSU
246-30223	246-331	58	10	Y	CW	23	5	1	6	10.1/22.2	KOMATSU
246-30224	246-332	58	10	Y	CW	23	5	1	6	10.1/22.2	KOMATSU

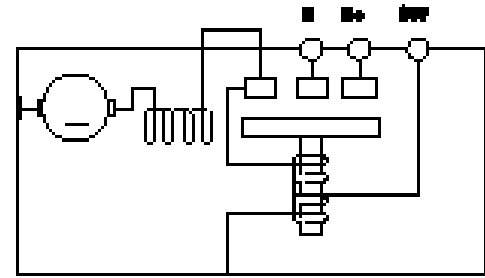
<sup>✦</sup> Refer to pages 22 / 23.

## WIRING DIAGRAMS

WIRING 1



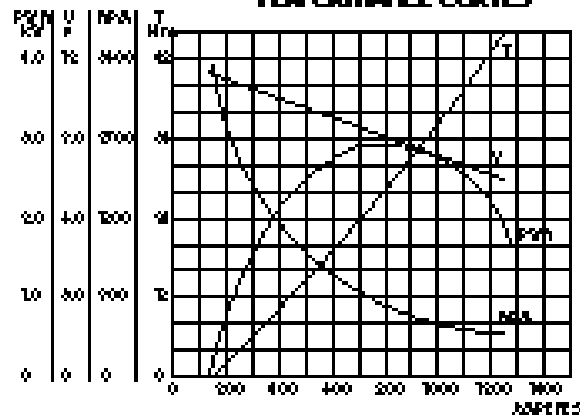
WIRING 2



## PERFORMANCE CURVES - 12V

FIG.1

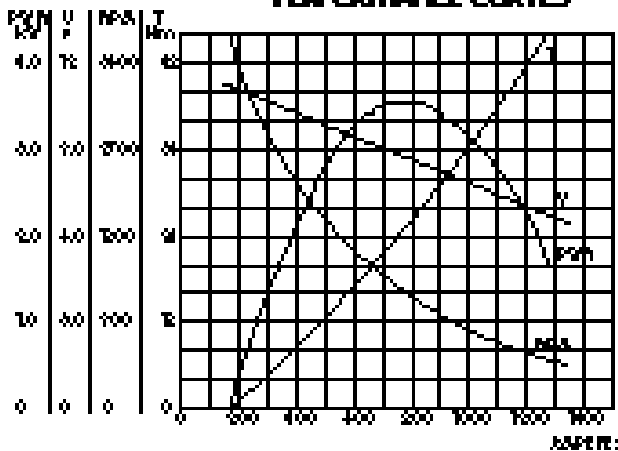
12V 2.6 kW  
PERFORMANCE CURVES



MAXIMUM POWER 2.6 kW  
 SPEED @ MAX POWER 1500 RPM  
 FREE RUN SPEED 4500 RPM  
 CURRENT @ MAX POWER 700 A  
 FREE RUN CURRENT 150 A  
 TORQUE @ MAX POWER 24.7 Nm  
 TORQUE @ 1200 A 50 Nm

FIG.2

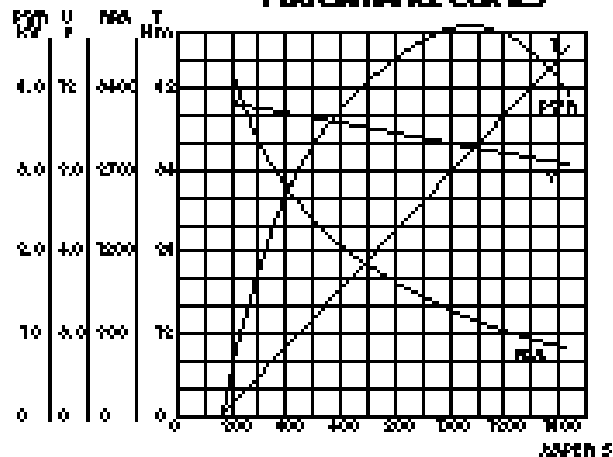
12V 3.0 kW  
PERFORMANCE CURVES



MAXIMUM POWER 3.0 kW  
 SPEED @ MAX POWER 1200 RPM  
 FREE RUN SPEED 4500 RPM  
 CURRENT @ MAX POWER 500 A  
 FREE RUN CURRENT 170 A  
 TORQUE @ MAX POWER 33.1 Nm  
 TORQUE @ 1200 A 45 Nm

FIG.3

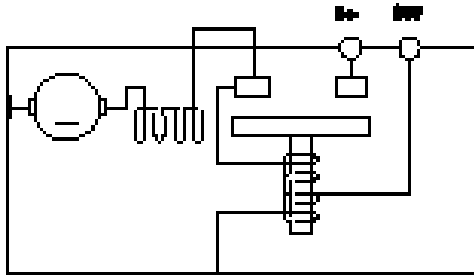
12V 4.0 kW  
PERFORMANCE CURVES



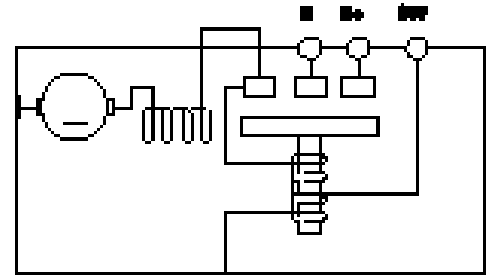
MAXIMUM POWER 4.0 kW  
 SPEED @ MAX POWER 1200 RPM  
 FREE RUN SPEED 4500 RPM  
 CURRENT @ MAX POWER 700 A  
 FREE RUN CURRENT 155 A  
 TORQUE @ MAX POWER 33.5 Nm  
 TORQUE @ 1200 A 45 Nm

**WIRING DIAGRAMS**

**DIAGRAM 1**

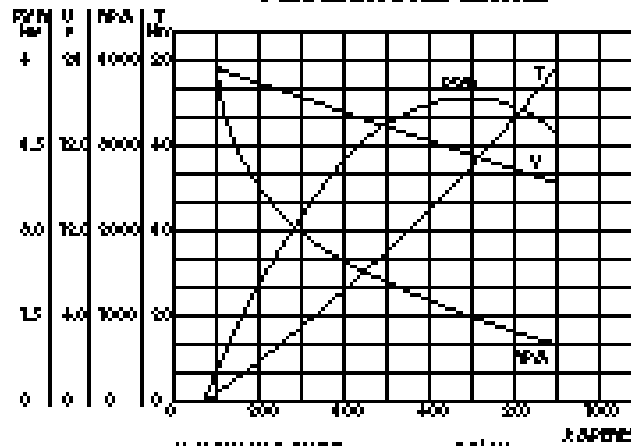


**DIAGRAM 2**



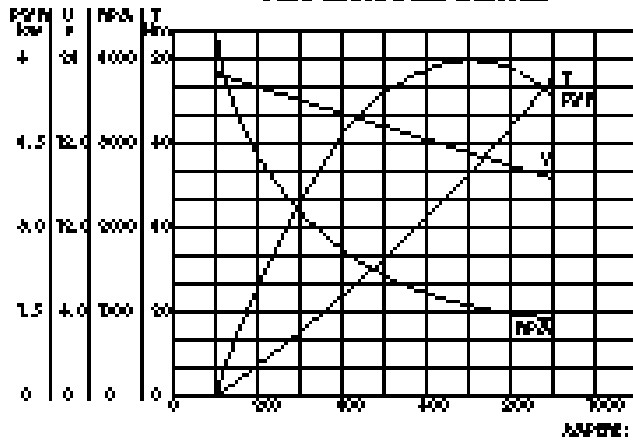
**PERFORMANCE CURVES - 24V**

**FIG. 4 24V 4.5 kW PERFORMANCE CURVES**



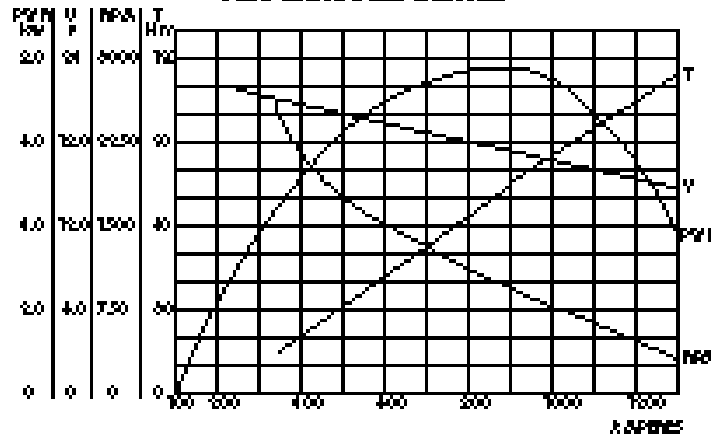
MAXIMUM POWER 4.5 kW  
 SPEED @ MAX. POWER 900 RPM  
 FREE RUN SPEED 4600 RPM  
 CURRENT @ MAX. POWER 700 A  
 FREE RUN CURRENT 75 A  
 TORQUE @ MAX. POWER 5.4 Nm  
 TORQUE @ 900 A 75 Nm

**FIG. 5 24V 5.5 kW PERFORMANCE CURVES**



MAXIMUM POWER 5.5 kW  
 SPEED @ MAX. POWER 1100 RPM  
 FREE RUN SPEED 4700 RPM  
 CURRENT @ MAX. POWER 700 A  
 FREE RUN CURRENT 100 A  
 TORQUE @ MAX. POWER 5.6 Nm  
 TORQUE @ 900 A 75.0 Nm

**FIG. 6 24V 7.5 kW PERFORMANCE CURVES**



MAXIMUM POWER 7.5 kW  
 SPEED @ MAX. POWER 1000 RPM  
 FREE RUN SPEED 5450 RPM  
 CURRENT @ MAX. POWER 900 A  
 FREE RUN CURRENT 102 A  
 TORQUE @ MAX. POWER 120 Nm  
 TORQUE @ 300 A 16.5 Nm

# OUTLINE SPECIFICATIONS



Illustration  
246-201

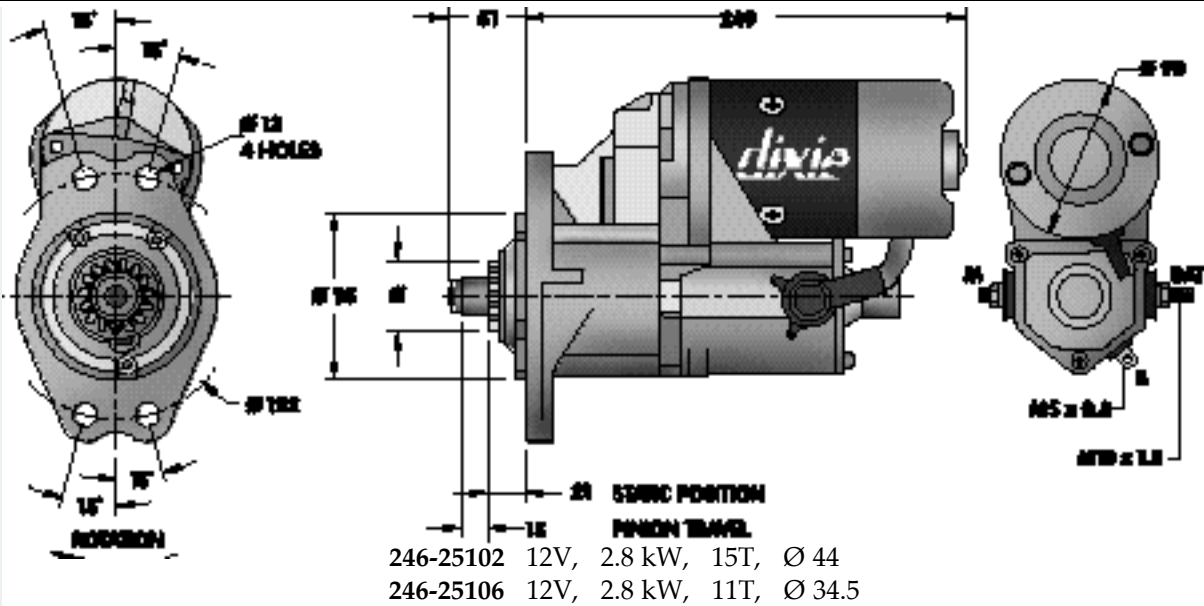


Illustration  
246-202

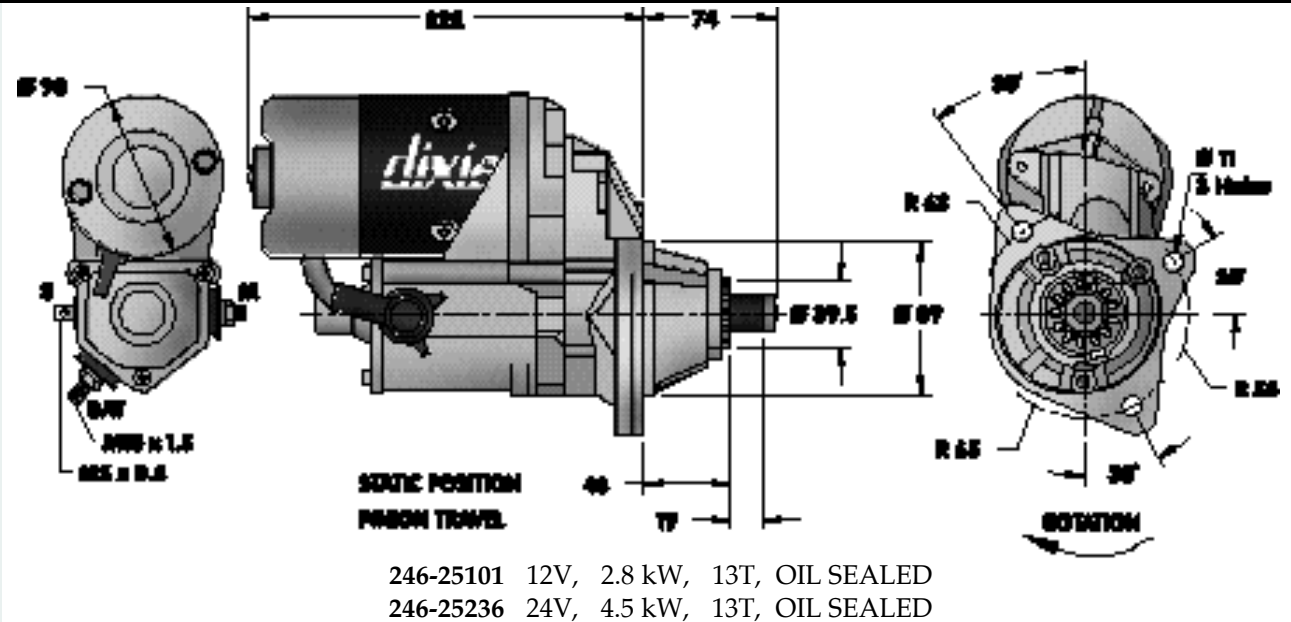


Illustration  
246-203

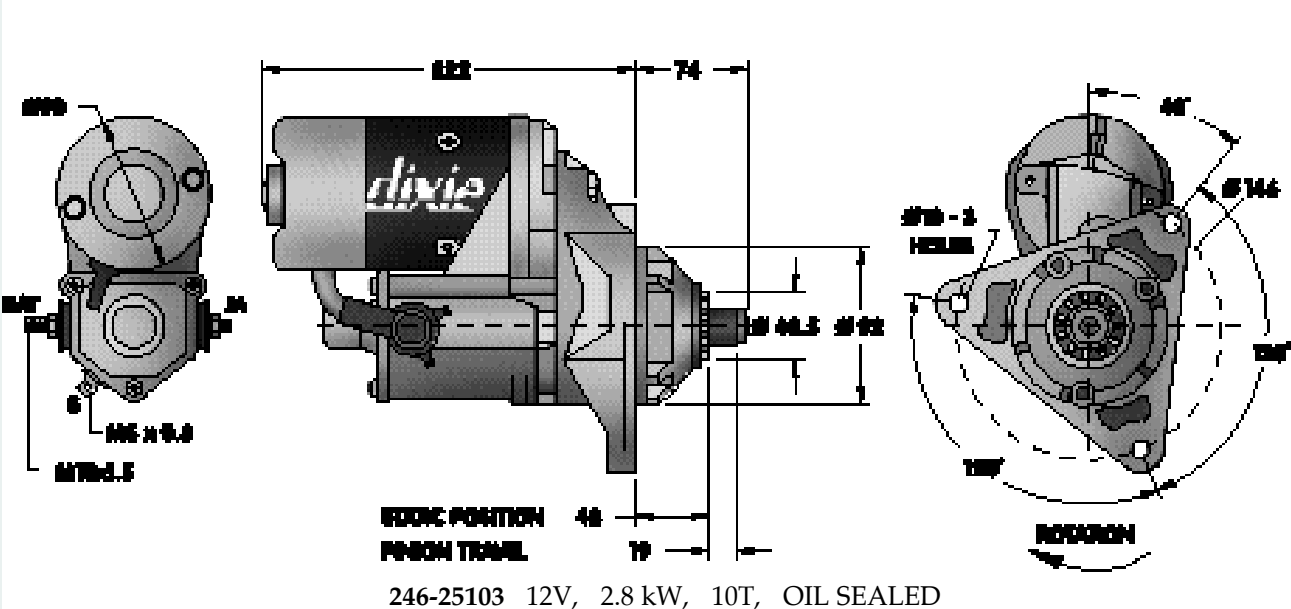
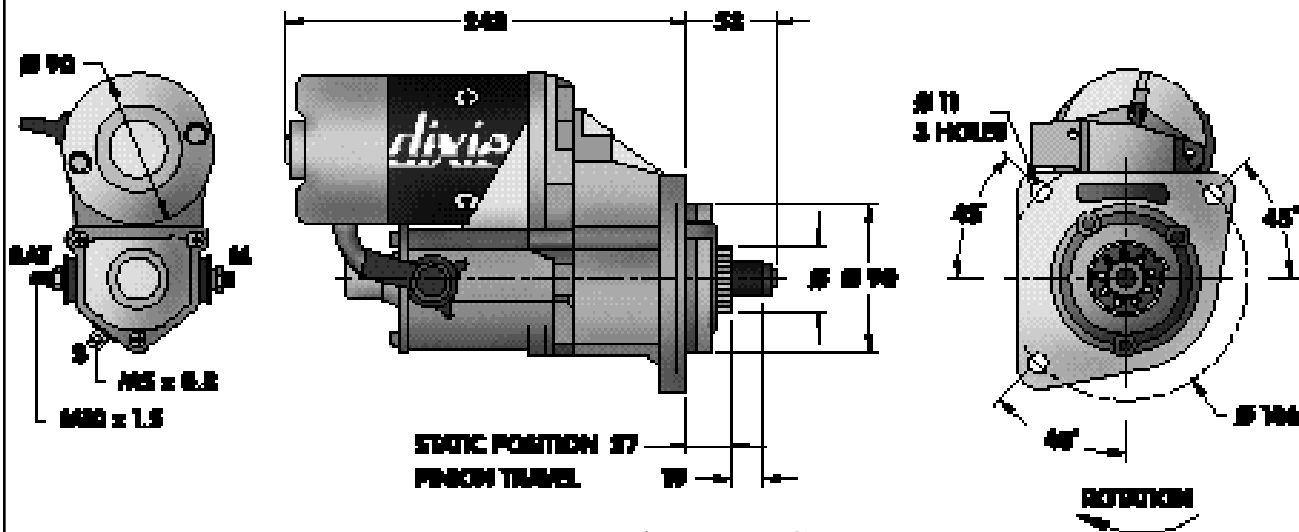
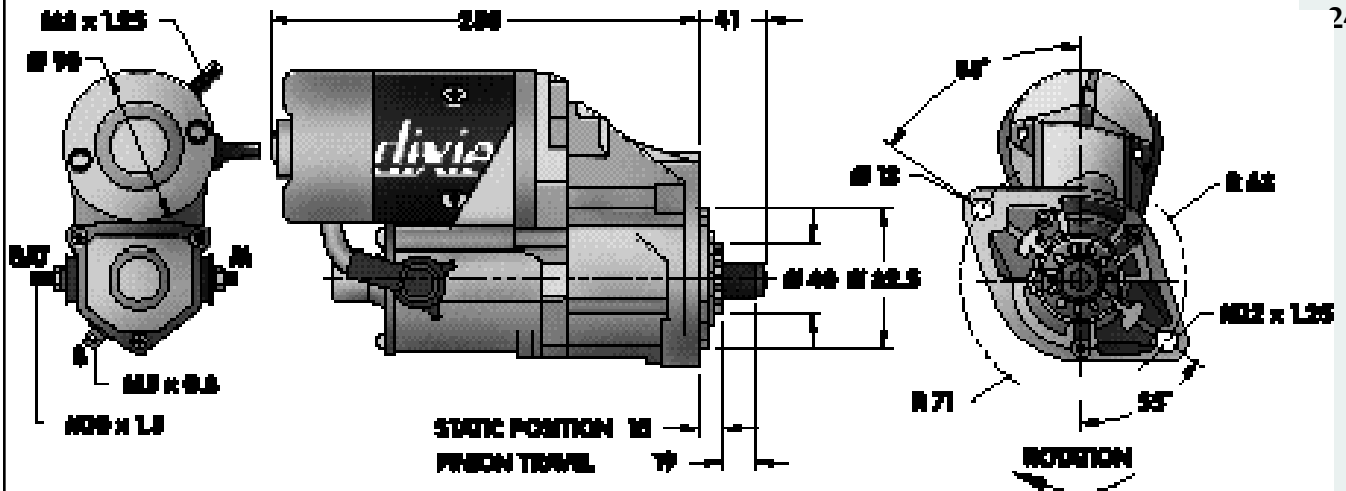


Illustration  
246-204



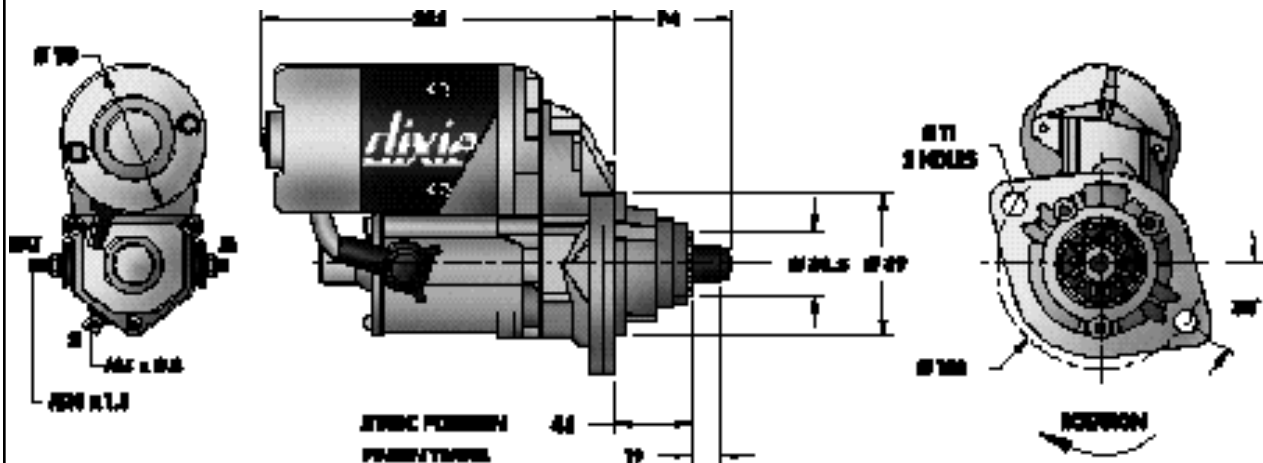
246-25104 12V, 2.8 kW, 9T,  $\varnothing 35.5$   
 246-25134 12V, 2.8 kW, 11T,  $\varnothing 40$

Illustration  
246-205



246-25105 12V, 2.8 kW, 11T,

Illustration  
246-206

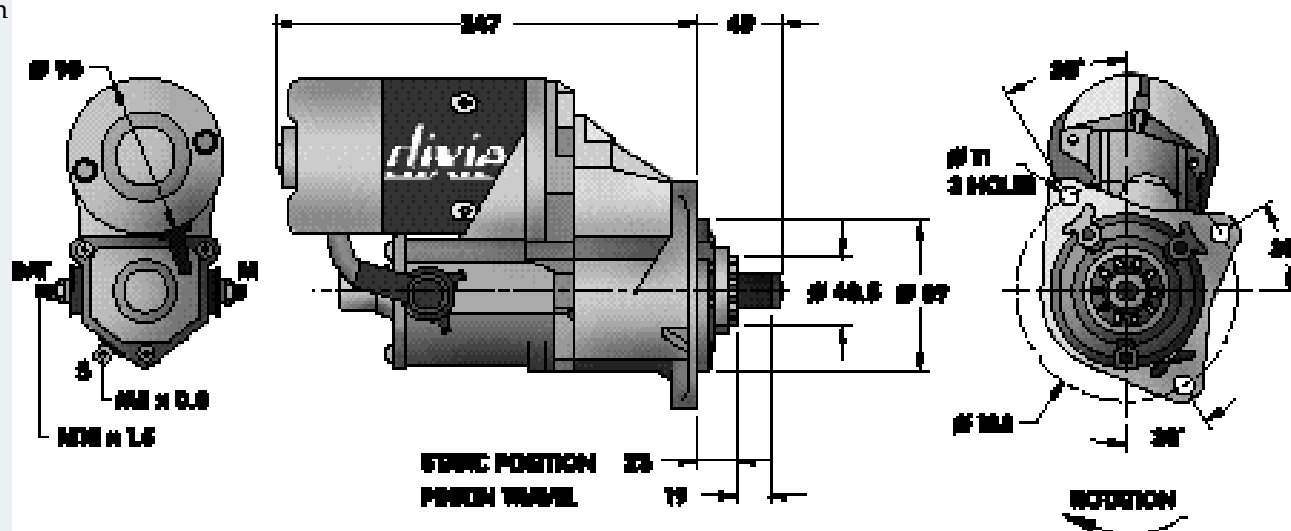


246-25107 12V, 2.8 kW, 13T,  
 246-25112 12V, 2.8 kW, 13T, OIL SEALED

# OUTLINE SPECIFICATIONS

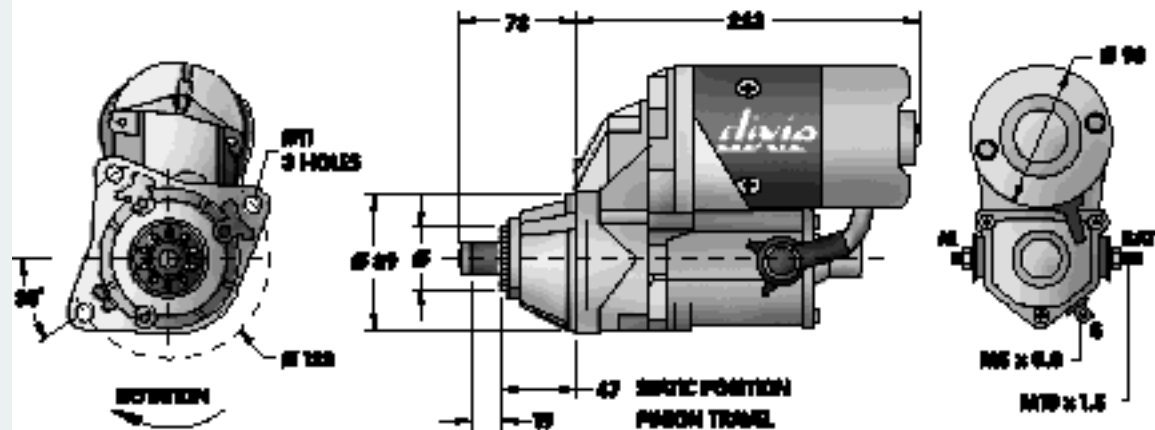


Illustration  
246-207



246-25108 12V, 2.8 kW, 10T, OIL SEALED

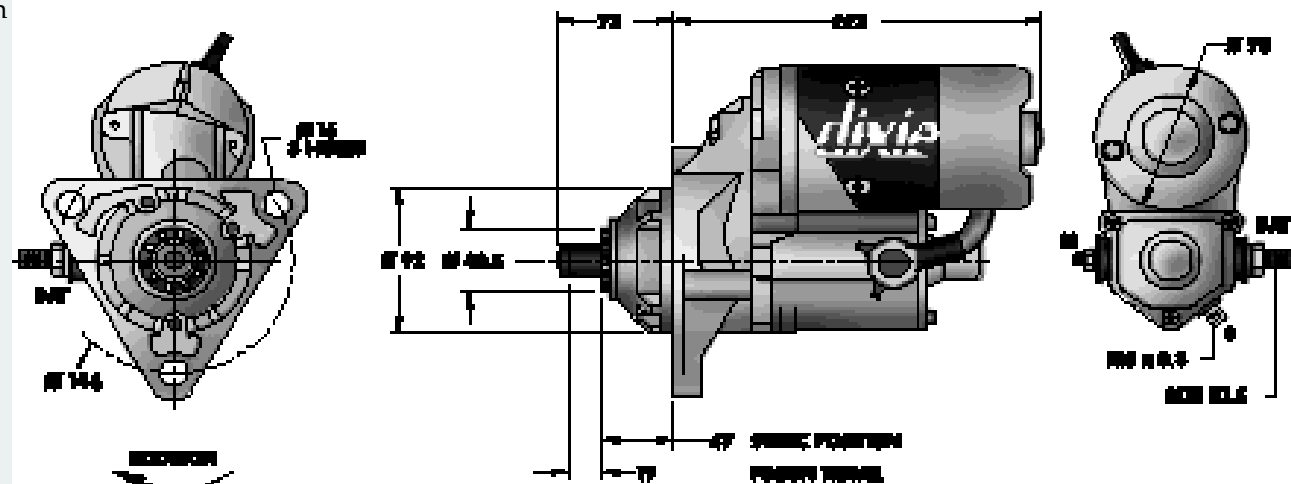
3 Illustration  
246-208



246-25109 12V, 2.8 kW, 10T,  $\varnothing 40.5$  OIL SEALED

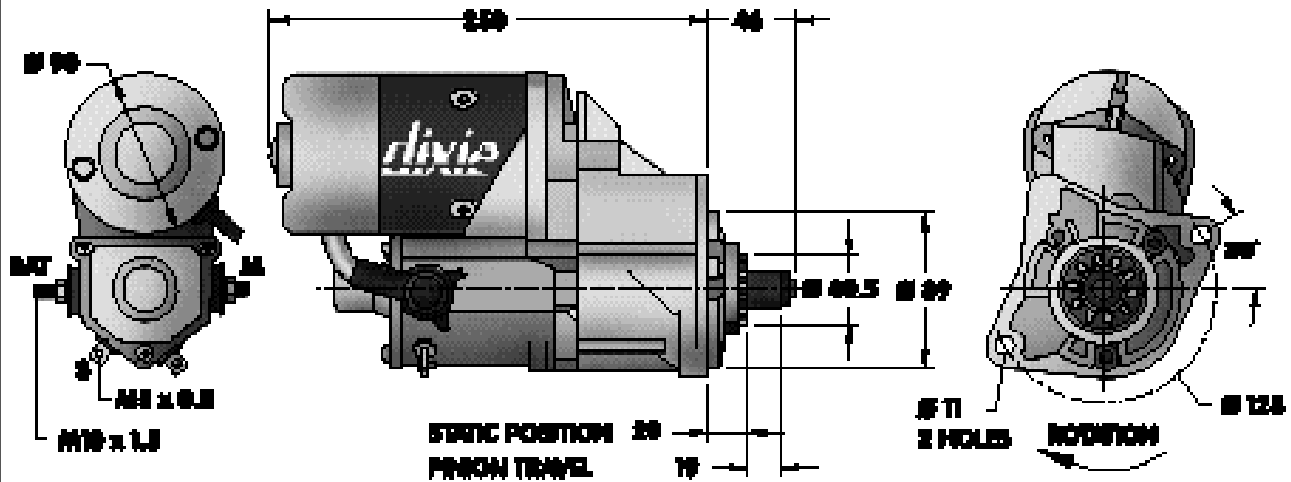
246-25149 12V, 2.8 kW, 13T,  $\varnothing 39.5$

Illustration  
246-209



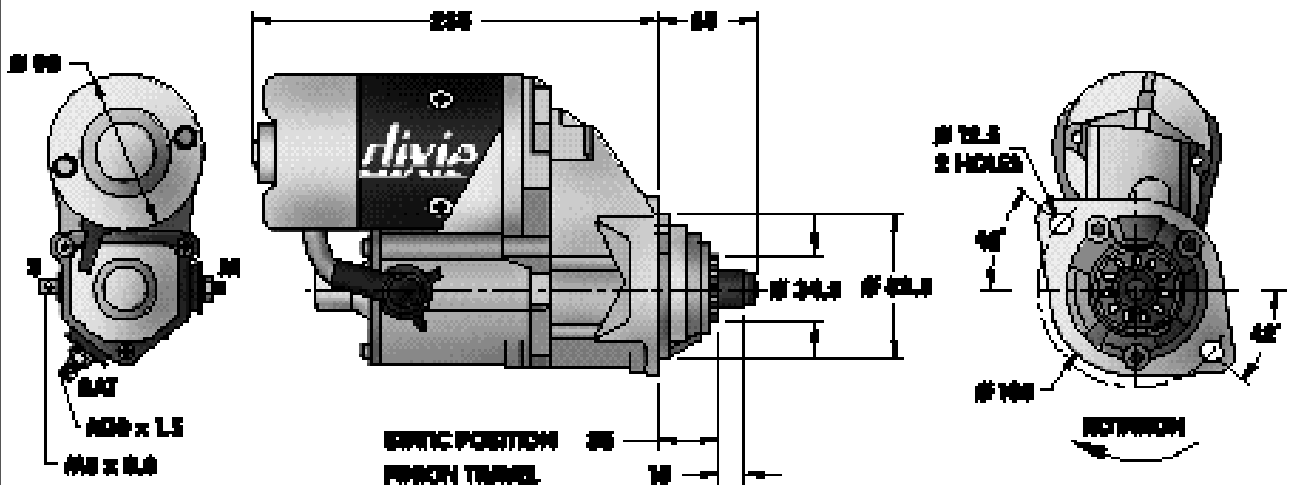
246-25202 24V, 4.5 kW, 10T,

Illustration  
246-210



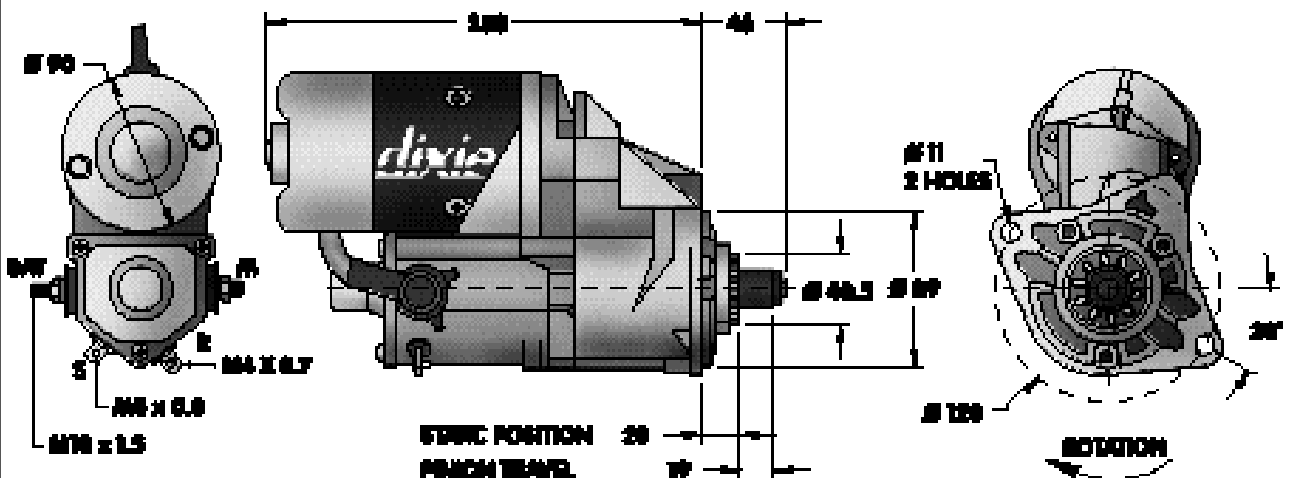
246-25110 12V, 2.8 kW, 10T, OIL SEALED

Illustration  
246-211



246-25111 12V, 2.8 kW, 11T, OIL SEALED  
246-25237 24V, 4.5 kW, 11T, OIL SEALED

Illustration  
246-212



246-25113 12V, 2.8 kW, 10T, OIL SEALED

# OUTLINE SPECIFICATIONS



Illustration  
246-213

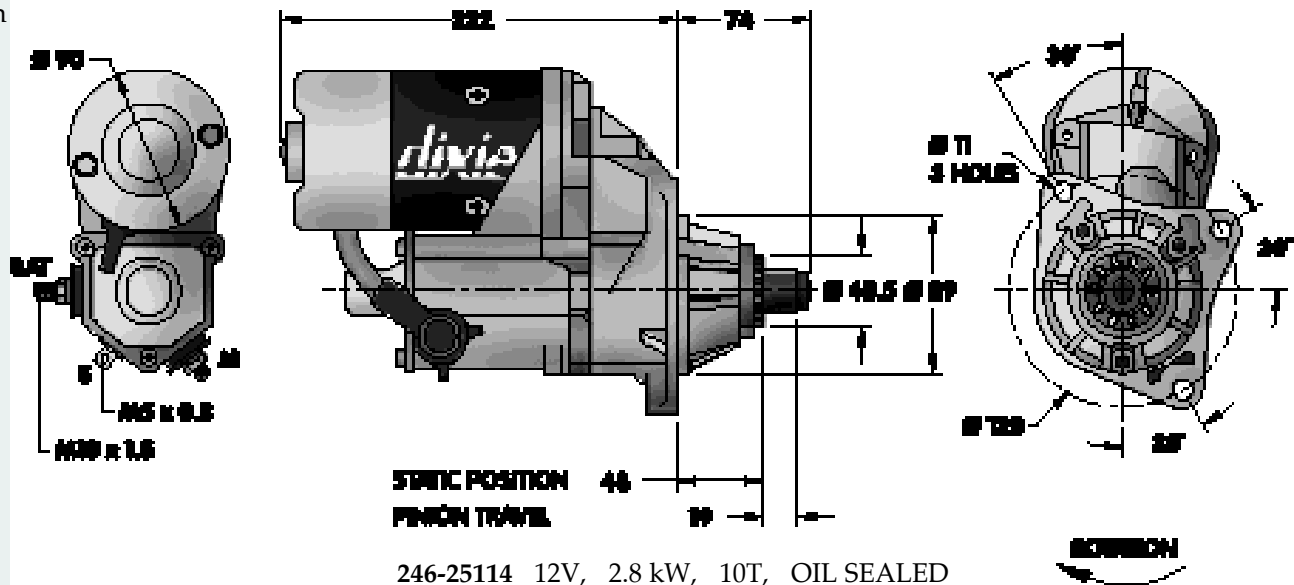


Illustration  
246-214

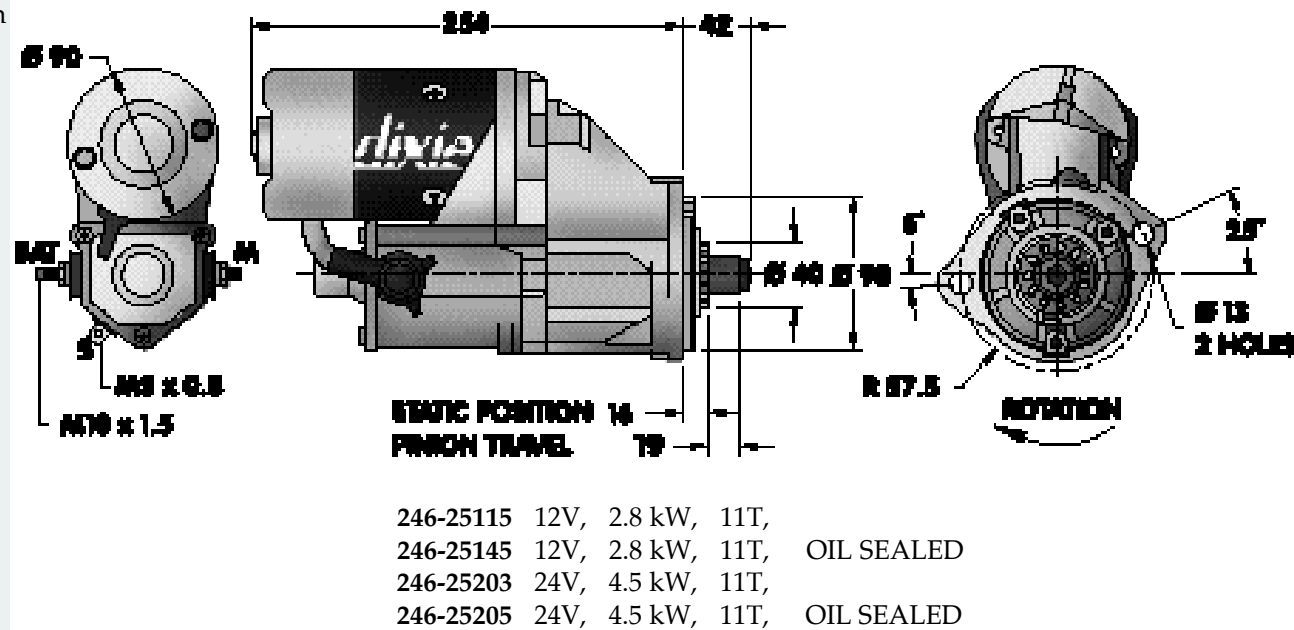
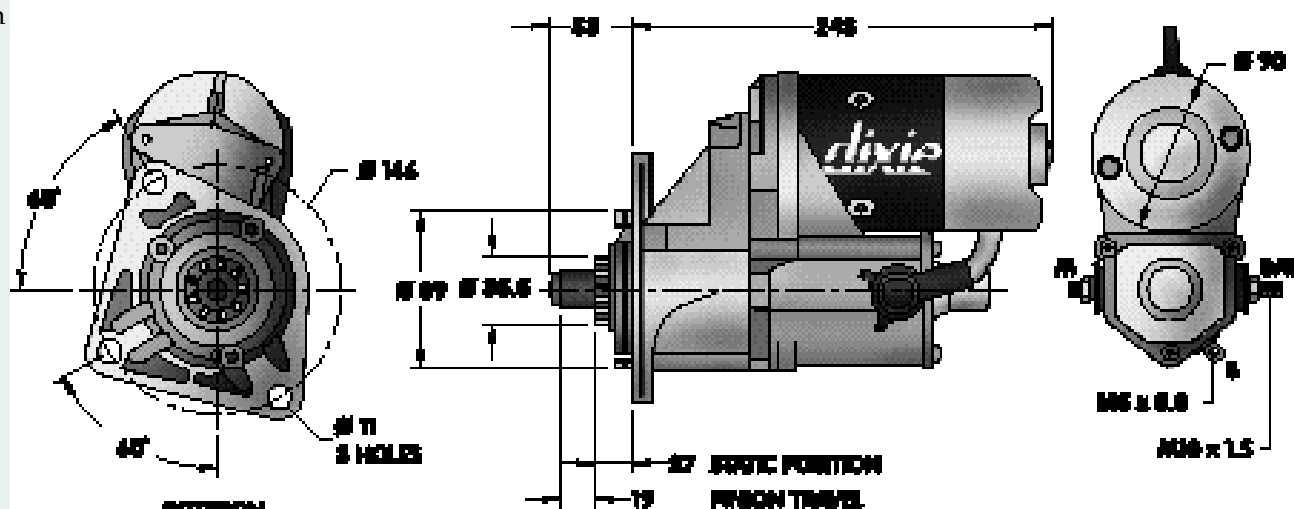


Illustration  
246-215

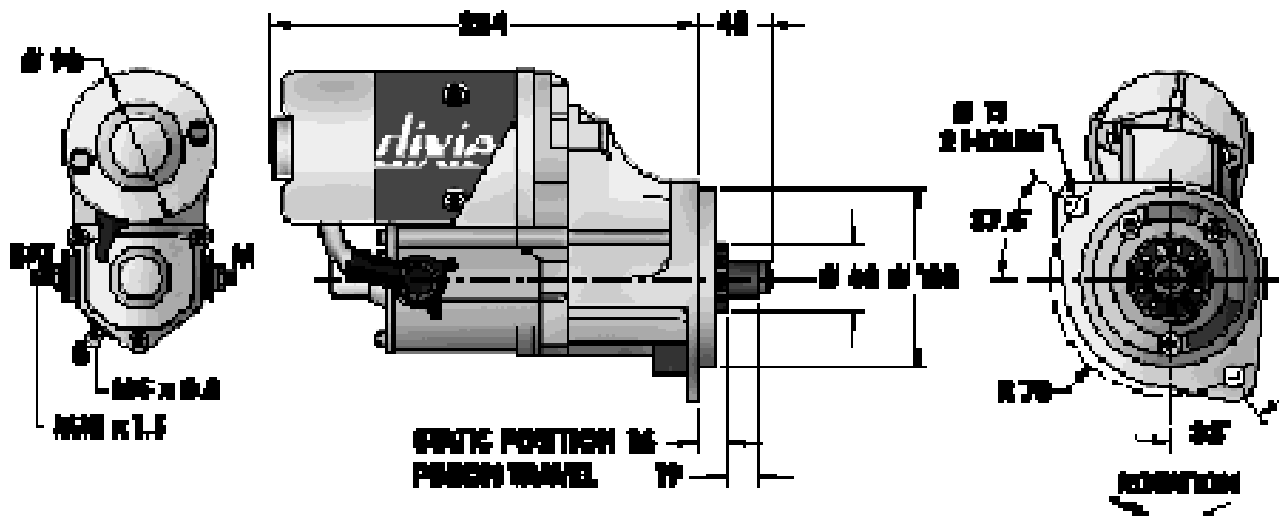




# OUTLINE SPECIFICATIONS

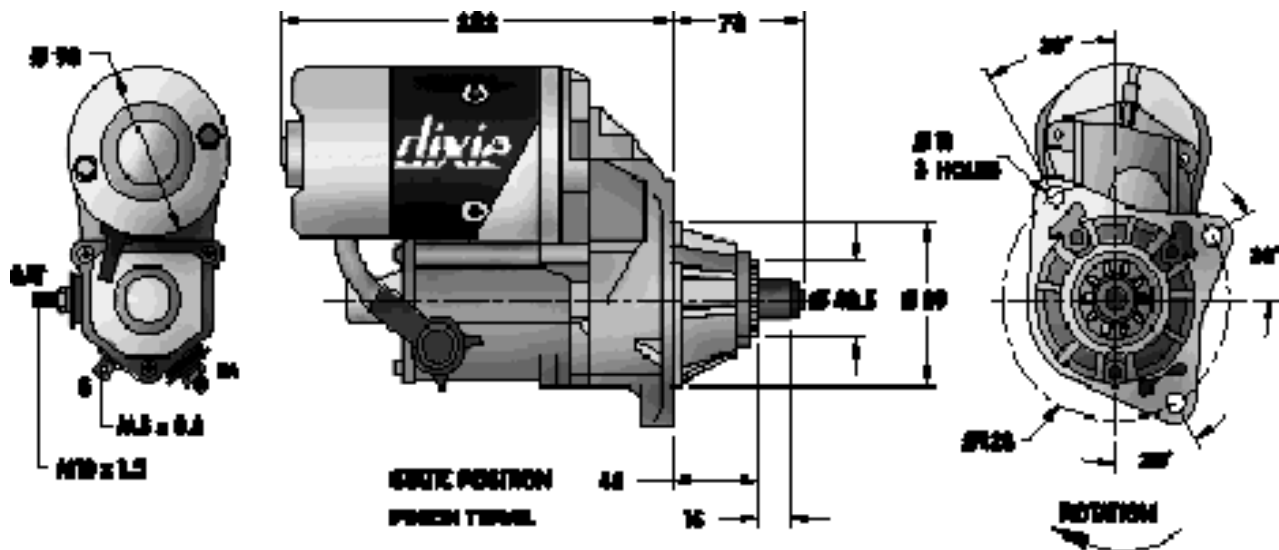


Illustration  
246-219



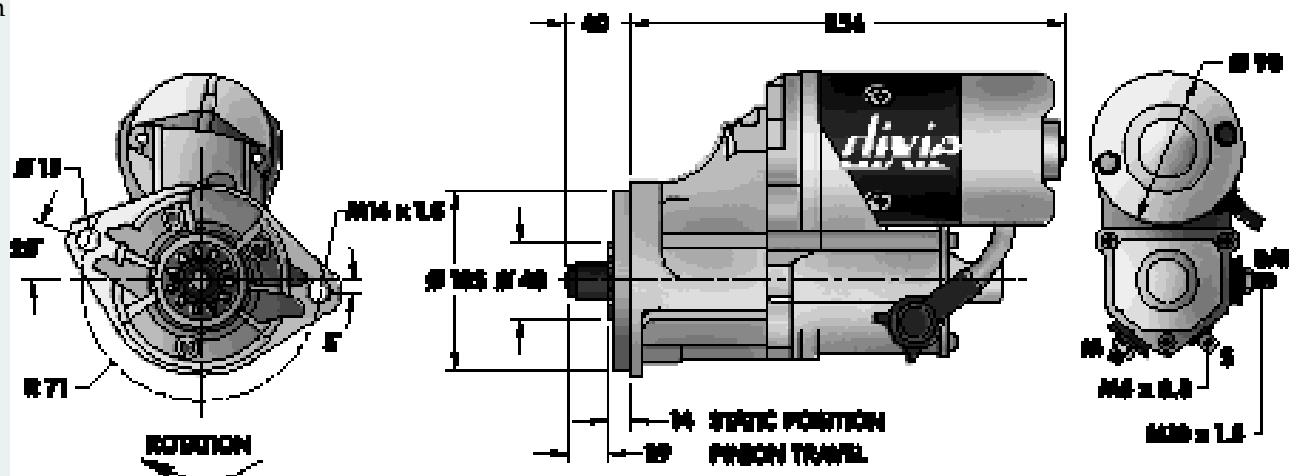
246-25206 24V, 4.5 kW, 11T,

3 Illustration  
246-220



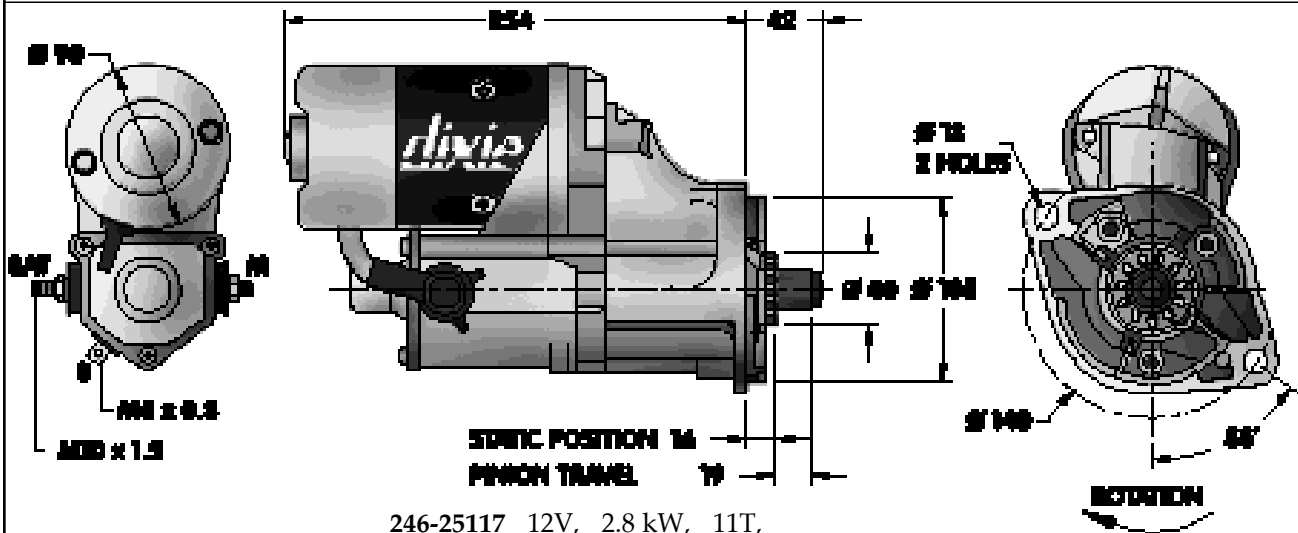
246-25142 12V, 2.8 kW, 10T, OIL SEALED

Illustration  
246-221



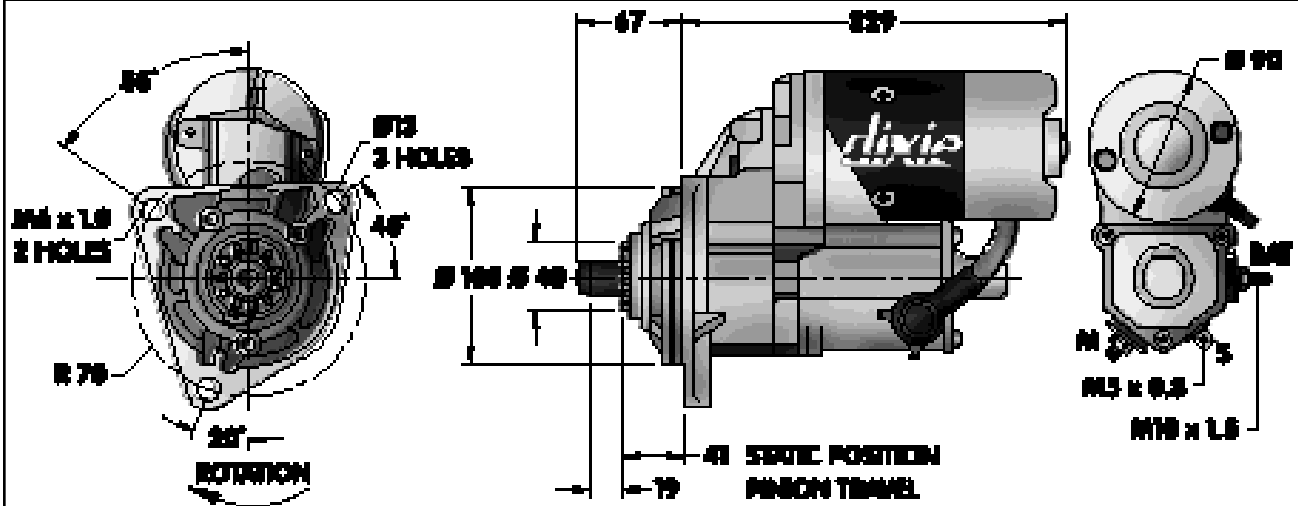
246-25116 12V, 2.8 kW, 11T,  
246-25226 24V, 4.5 kW, 11T,

Illustration  
246-222



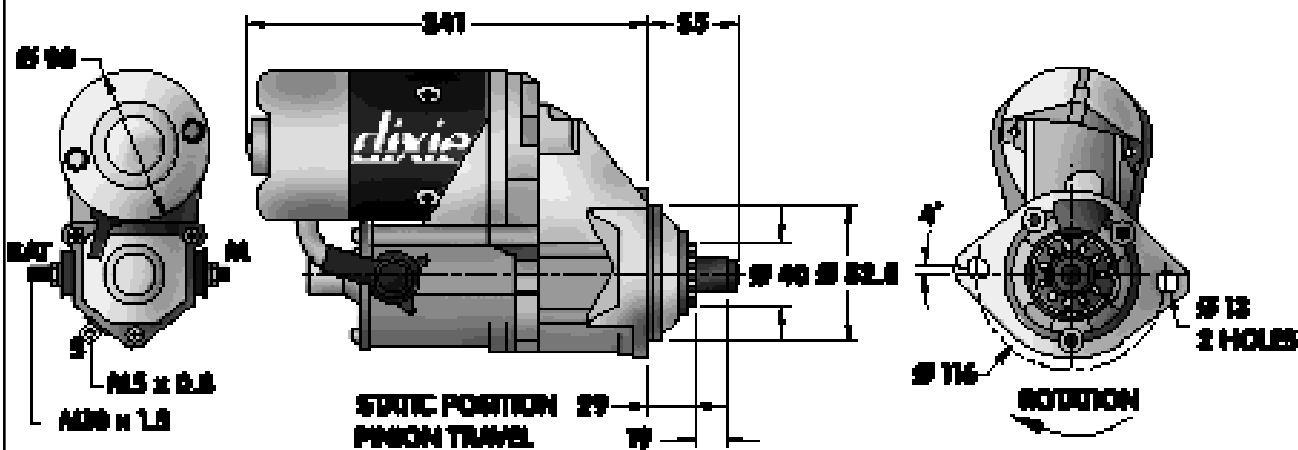
- 246-25117 12V, 2.8 kW, 11T,
- 246-25209 24V, 4.5 kW, 11T,
- 246-25214 24V, 4.5 kW, 11T, OIL SEALED

Illustration  
246-223



- 246-25118 12V, 2.8 kW, 11T,
- 246-25232 24V, 4.5 kW, 11T, OIL SEALED

Illustration  
246-224

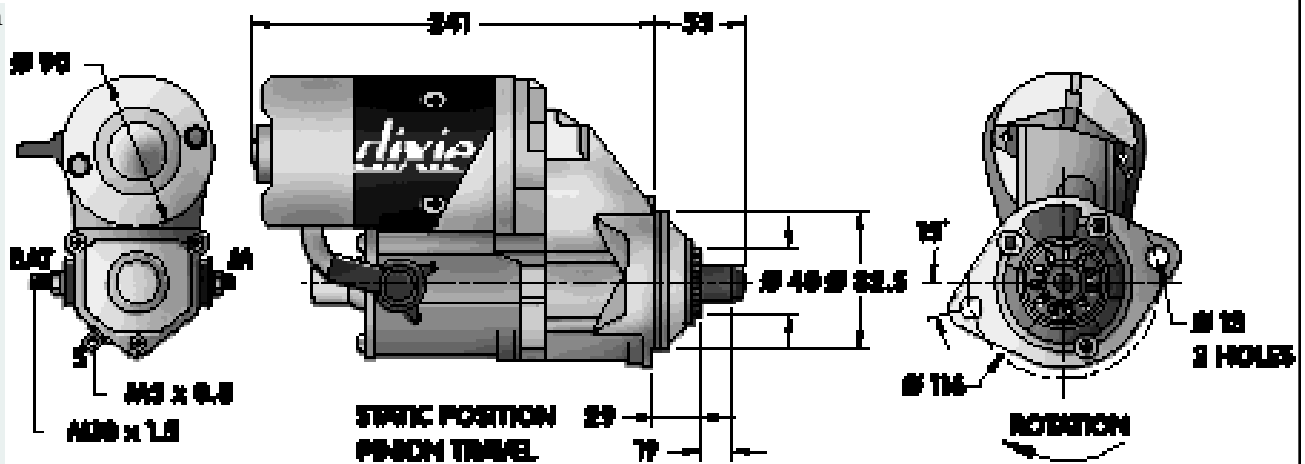


- 246-25119 12V, 2.8 kW, 11T,
- 246-25207 24V, 4.5 kW, 11T,

# OUTLINE SPECIFICATIONS



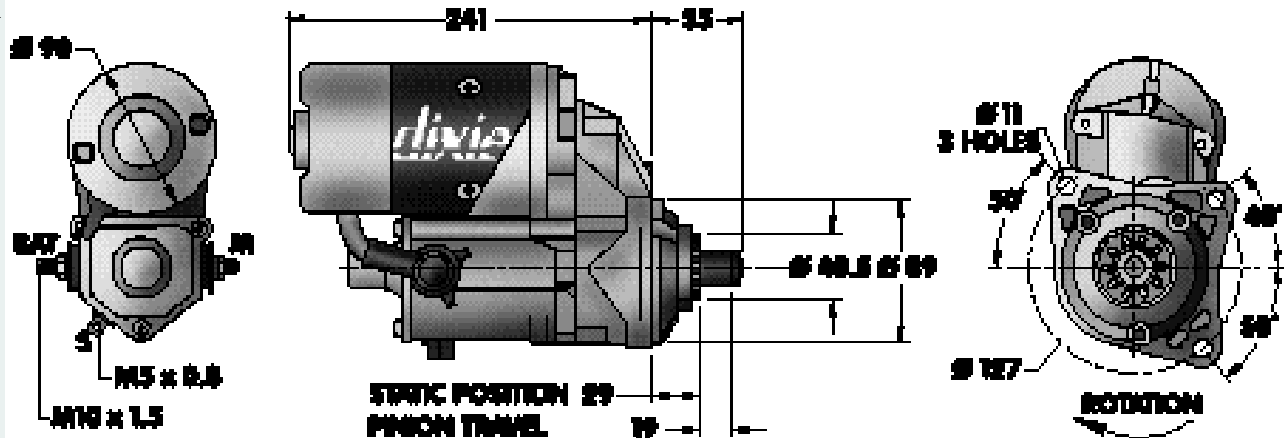
Illustration  
246-225



246-25137 12V, 2.8 kW, 11T,

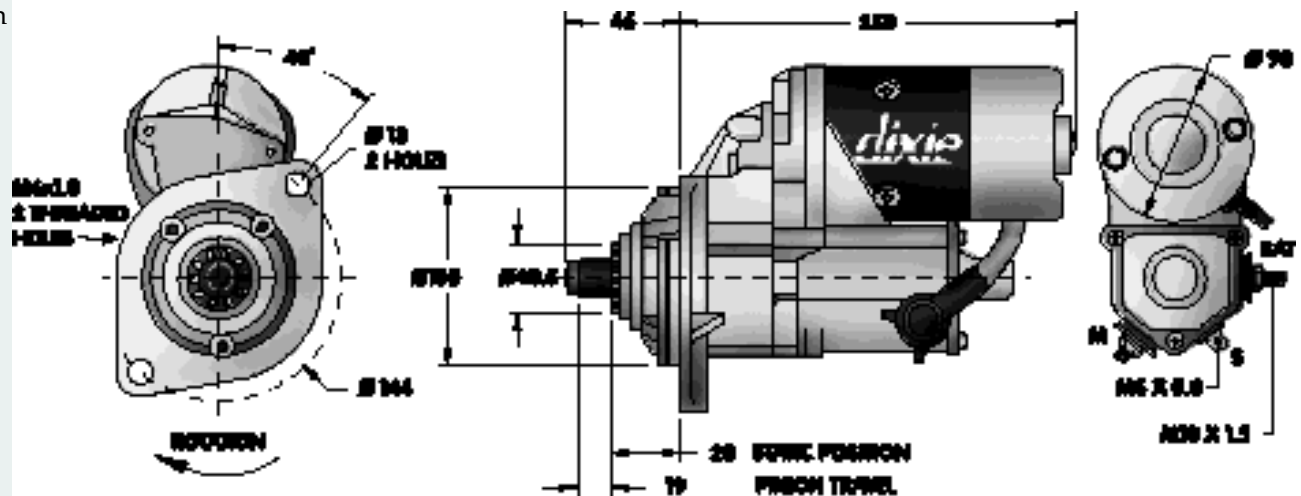
3

Illustration  
246-226



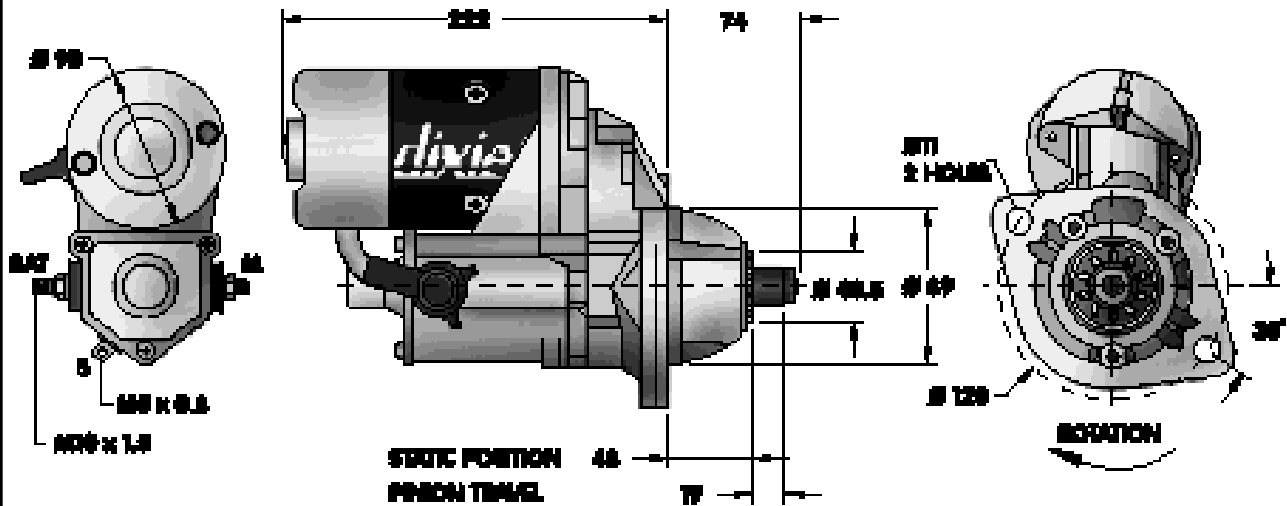
246-25147 12V, 2.8 kW, 10T,  
246-25242 24V, 4.5 kW, 10T,

Illustration  
246-227



246-25160 12V, 2.8 kW, 10T,  
246-25240 24V, 4.5 kW, 10T,

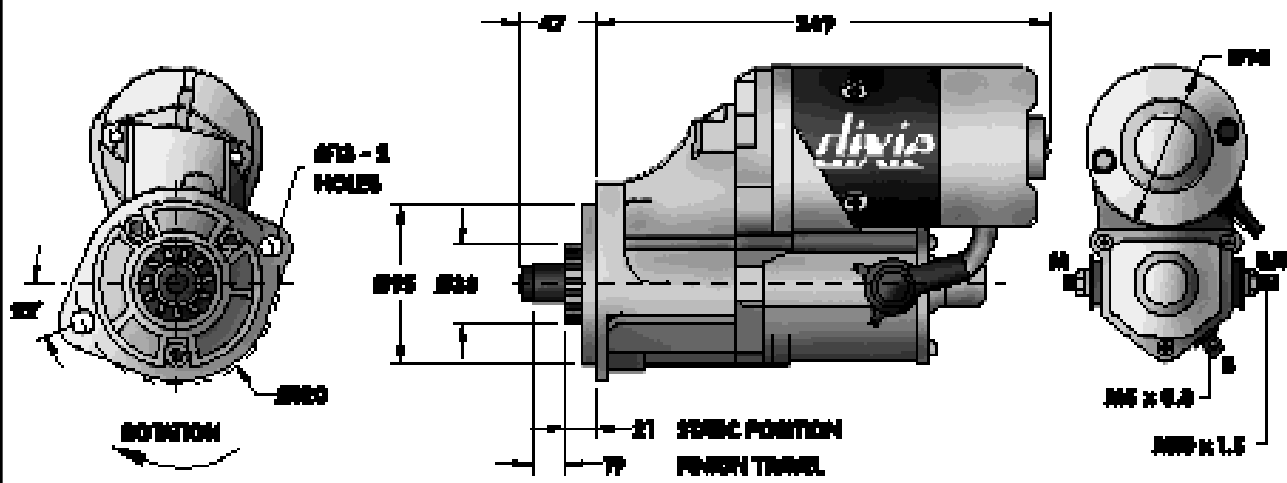
Illustration  
246-228



246-25216 24V, 4.5 kW, 10T, OIL SEALED

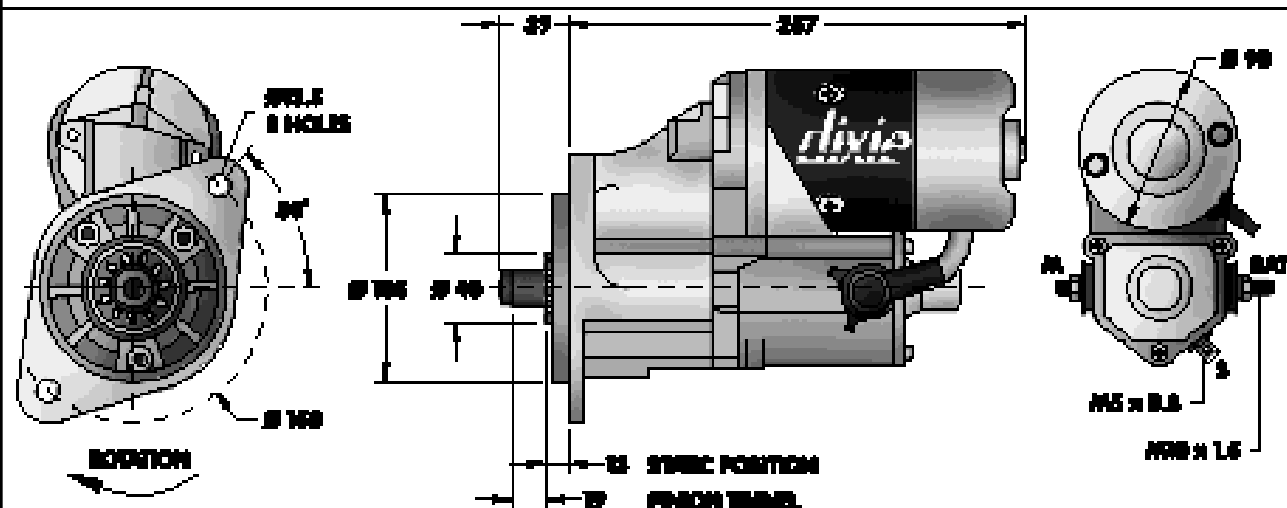
Illustration  
246-229

3



246-25124 12V, 2.8 kW, 11T,  
246-25132 12V, 2.8 kW, 11T, OIL SEALED

Illustration  
246-230

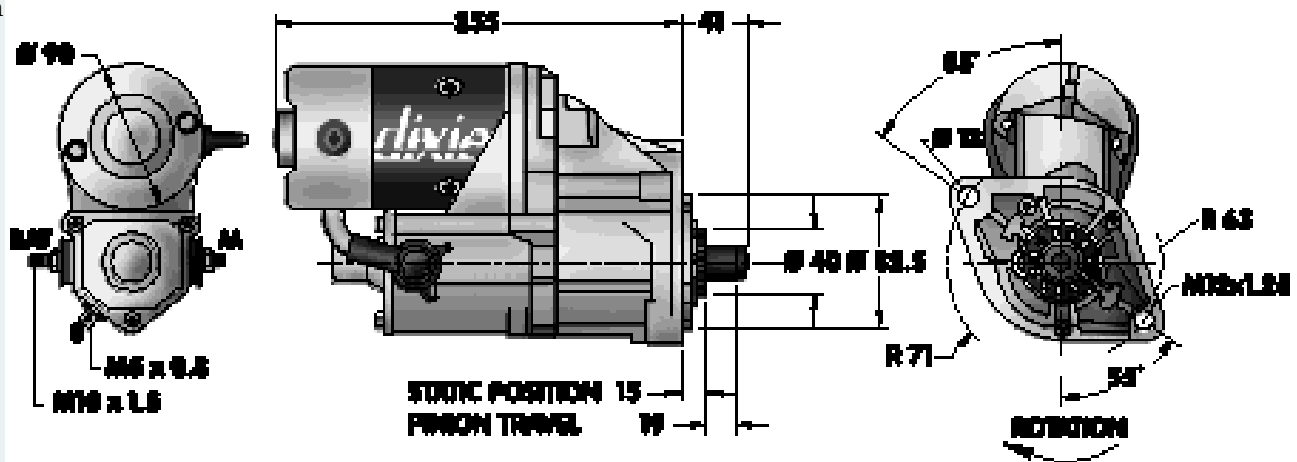


246-25211 24V, 4.5 kW, 11T,  
246-25215 24V, 4.5 kW, 11T, OIL SEALED

# OUTLINE SPECIFICATIONS

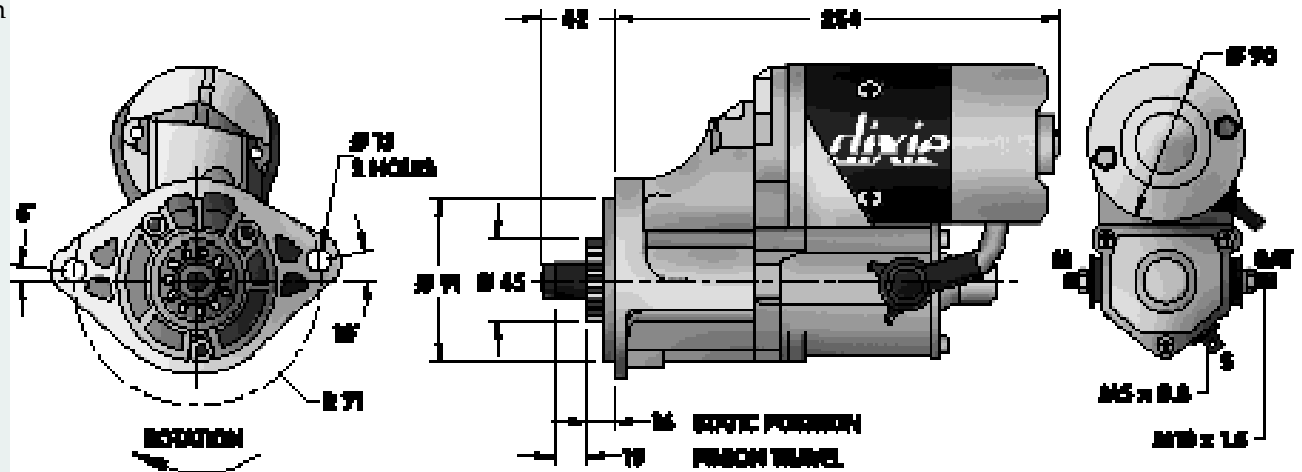


Illustration  
246-231



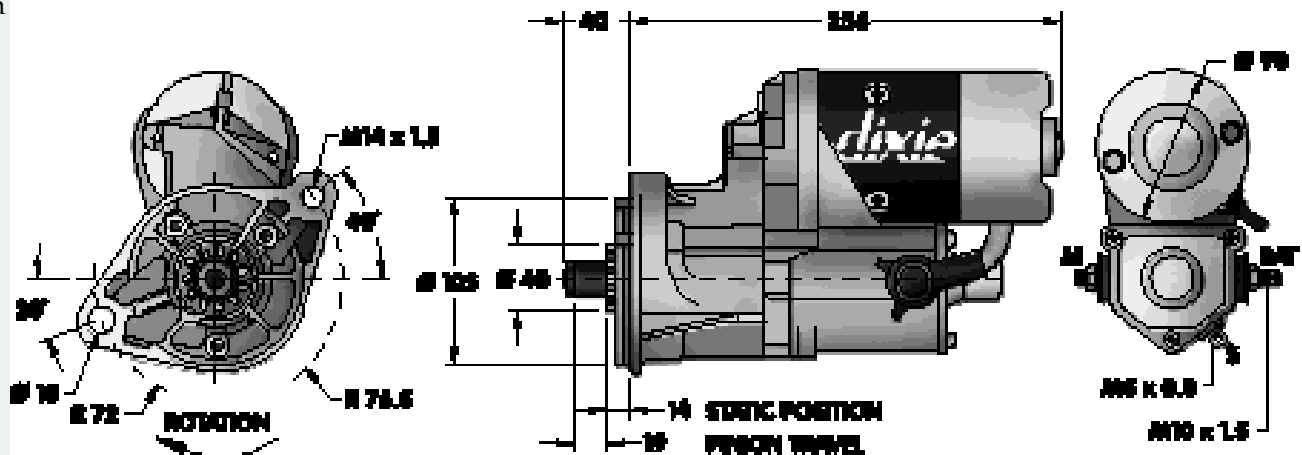
246-25224 24V, 4.5 kW, 11T,

3 Illustration  
246-232



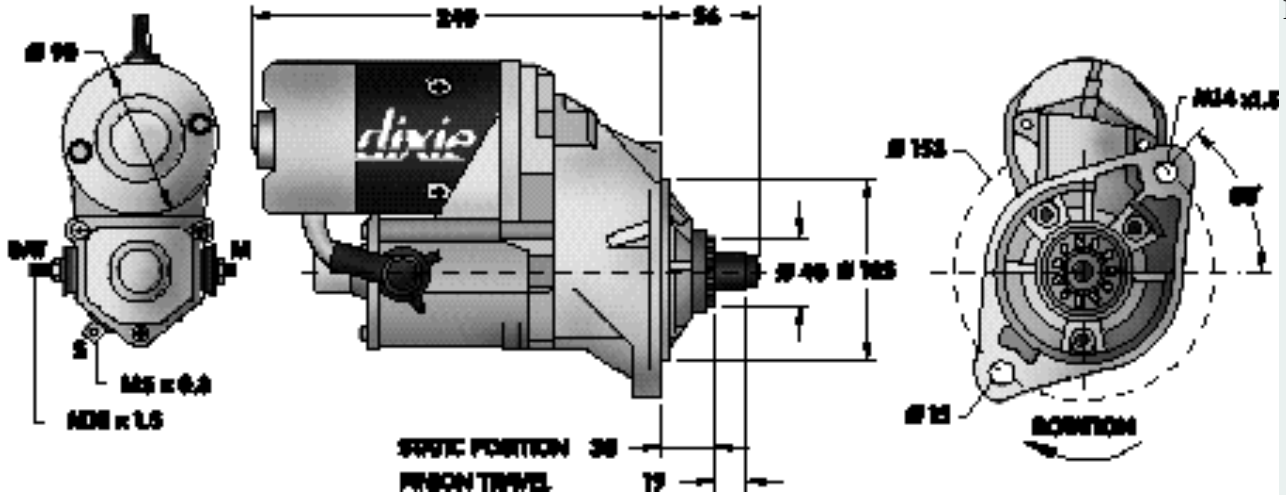
246-25127 12V, 2.8 kW, 12T,  
246-25219 24V, 4.5 kW, 12T,

Illustration  
246-233



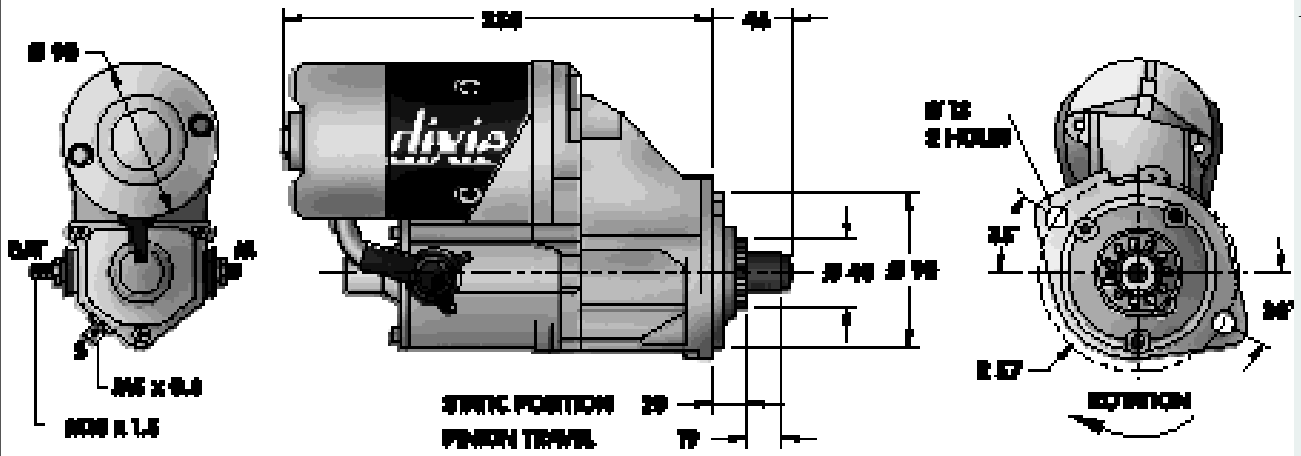
246-25128 12V, 2.8 kW, 11T,  
246-25210 24V, 4.5 kW, 11T,

Illustration  
246-234



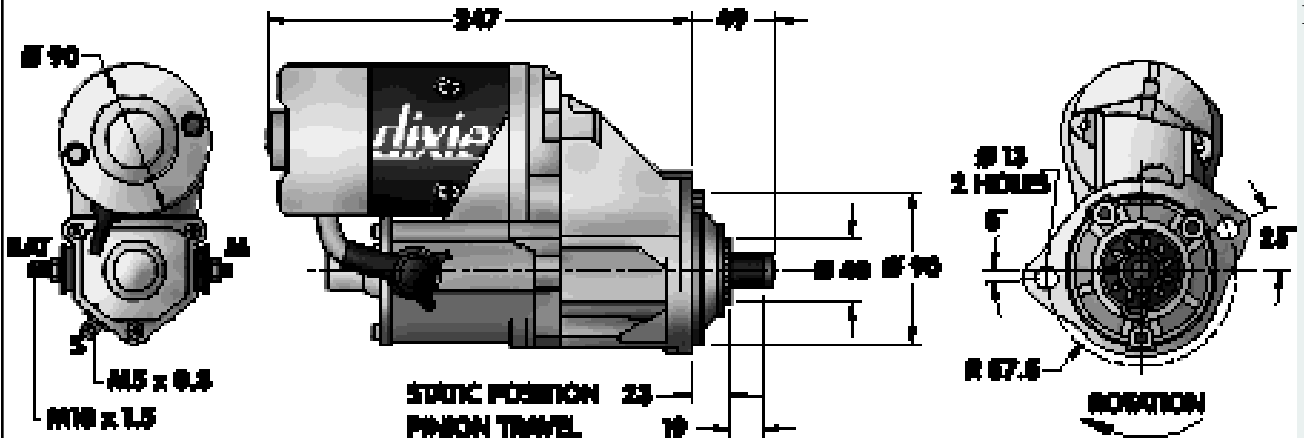
246-25120 12V, 2.8 kW, 11T,  
246-25217 24V, 4.5 kW, 11T,

Illustration  
246-235



246-25130 12V, 2.8 kW, 11T,  
246-25212 24V, 4.5 kW, 11T,

Illustration  
246-236

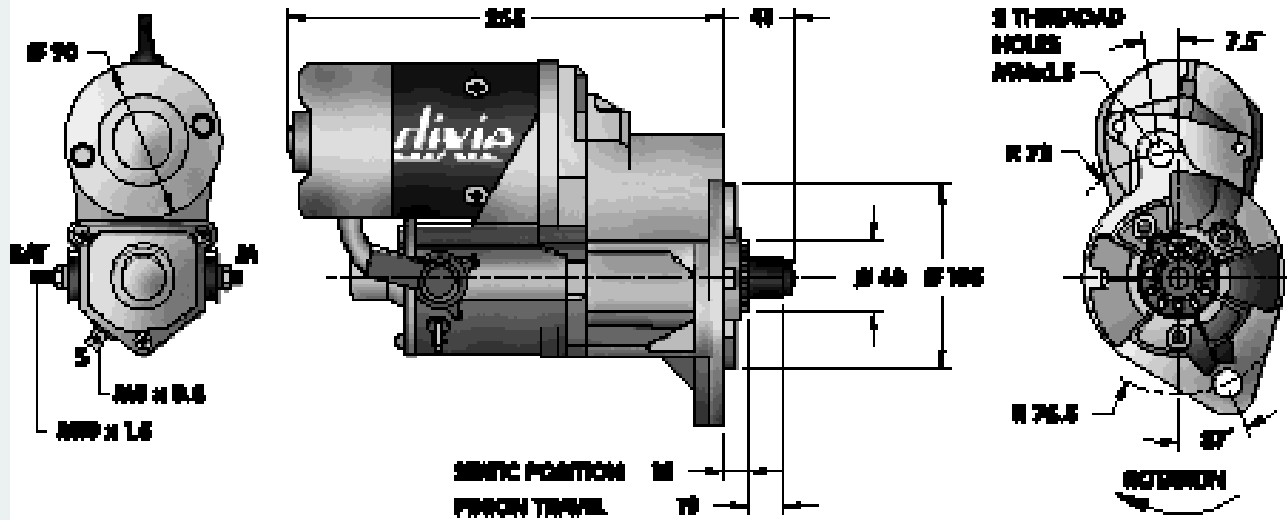


246-25146 12V, 2.8 kW, 11T, OIL SEALED  
246-25213 24V, 4.5 kW, 11T, OIL SEALED

# OUTLINE SPECIFICATIONS

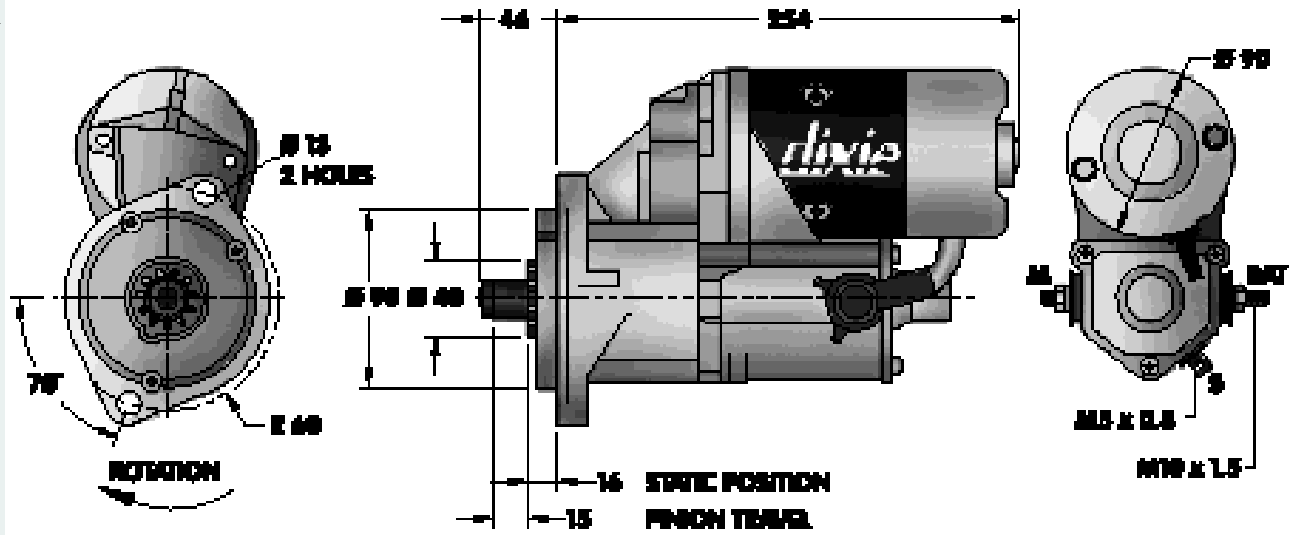


Illustration  
246-237



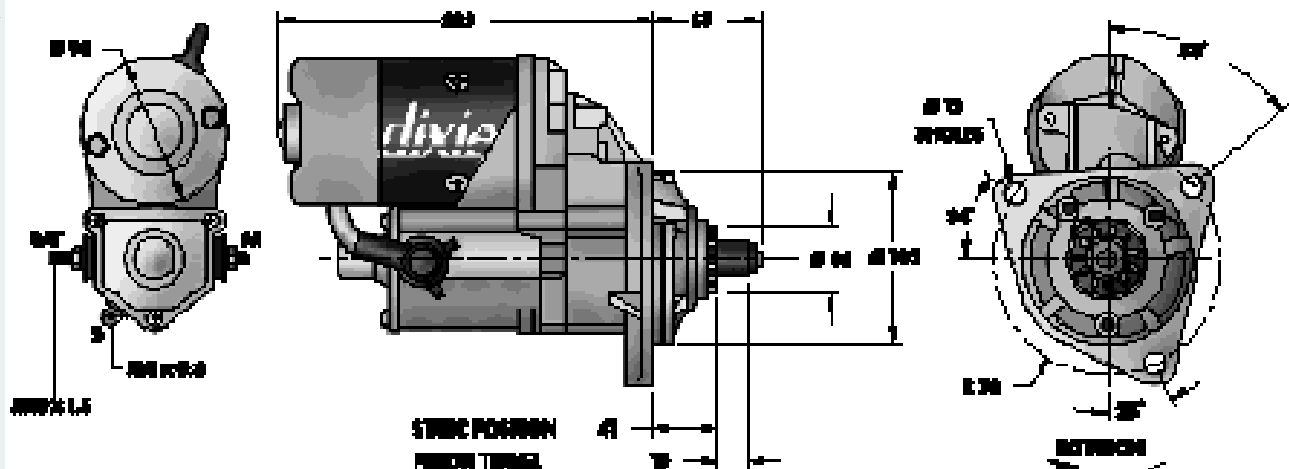
246-25131 12V, 2.8 kW, 11T,  
246-25220 24V, 4.5 kW, 11T,

3 Illustration  
246-238

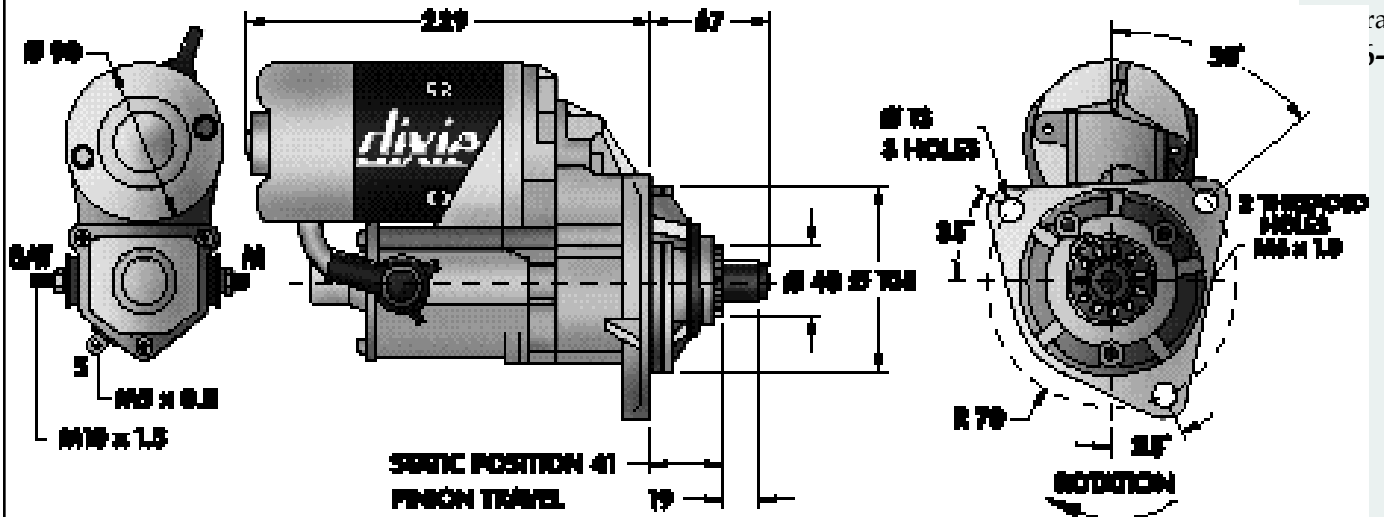


246-25136 12V, 2.8 kW, 11T, OIL SEALED

Illustration  
246-239



246-25208 24V, 4.5 kW, 11T,



ation  
-240

246-25121 12V, 2.8 kW, 11T  
246-25227 24V, 4.5 kW, 11T, OIL SEALED

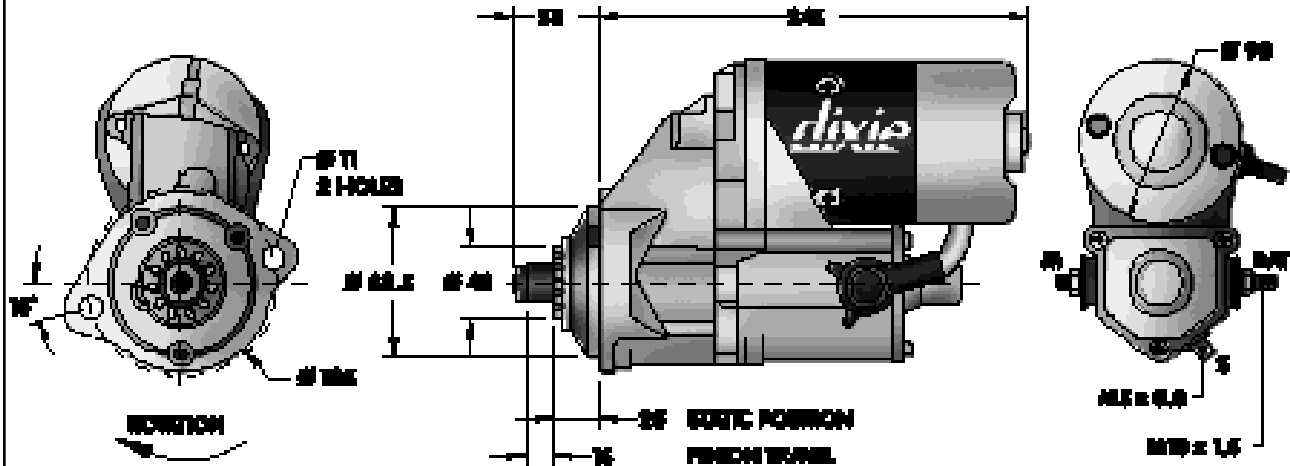


Illustration  
246-241

3

246-25129 12V, 2.8 kW, 11T,

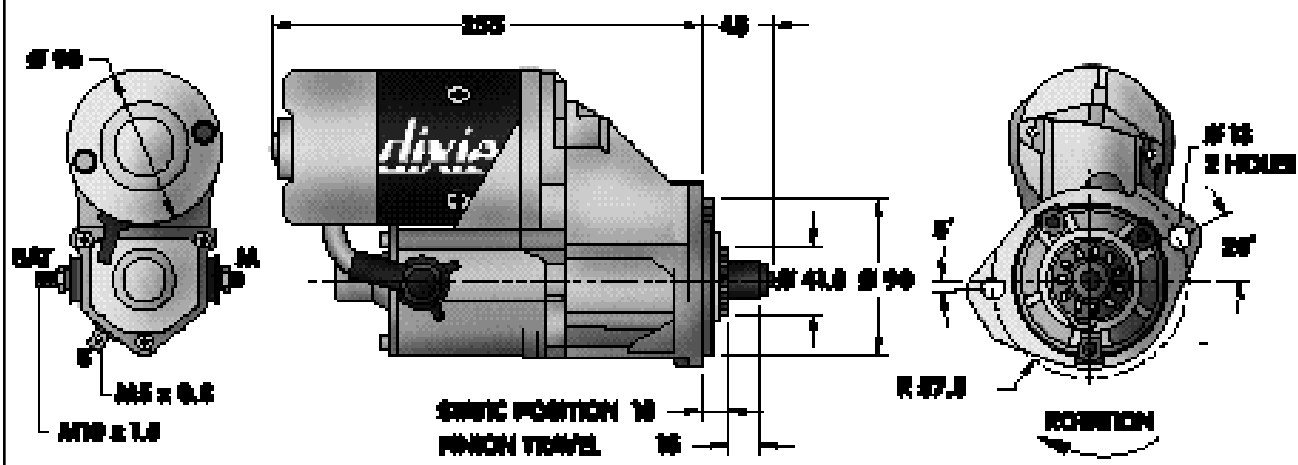


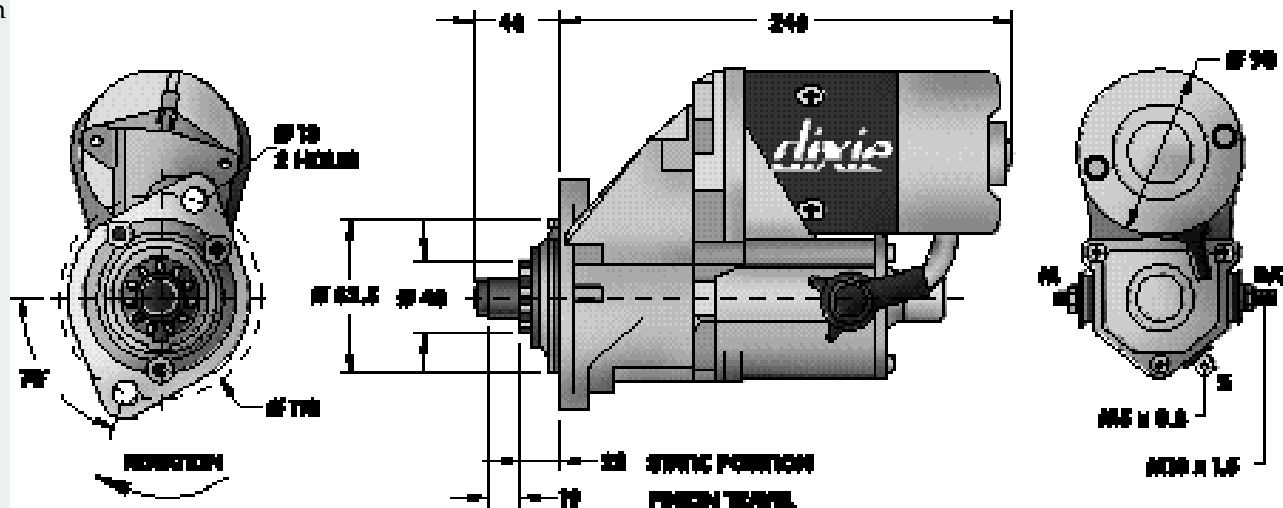
Illustration  
246-242

246-25133 12V, 2.8 kW, 11T,

# OUTLINE SPECIFICATIONS

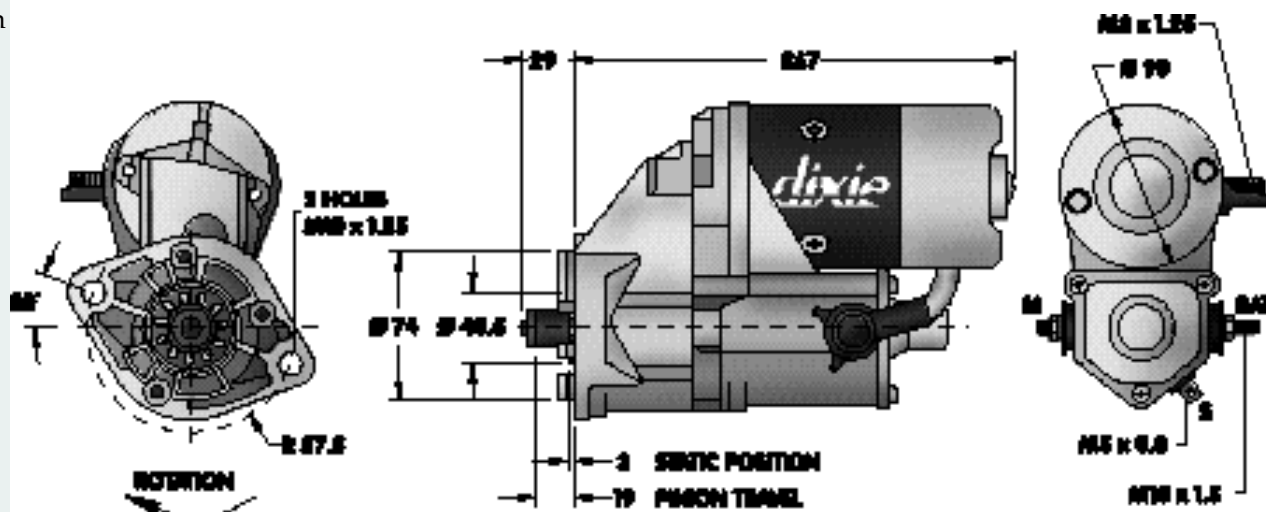


Illustration  
246-243



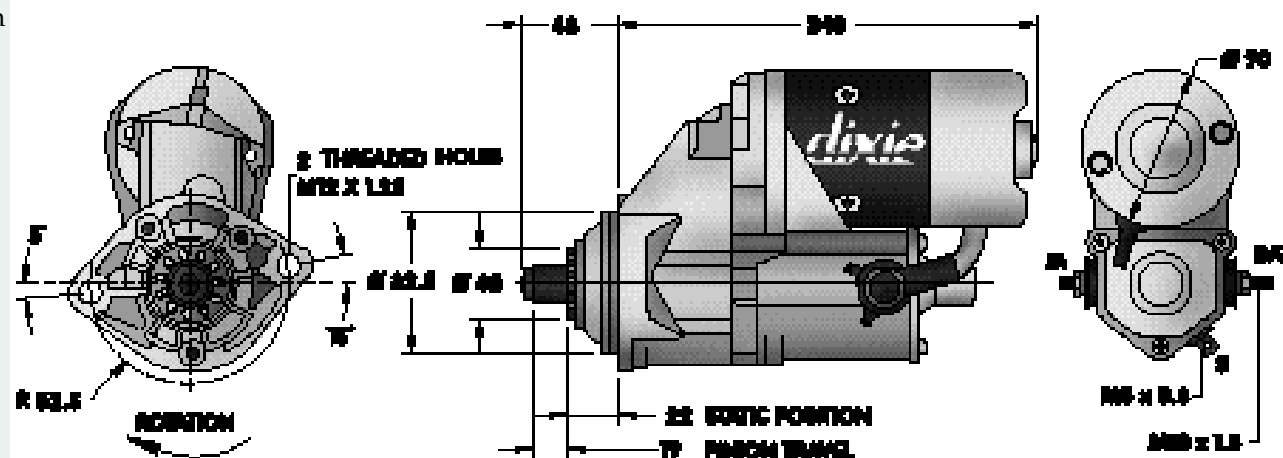
246-25122 12V, 2.8 kW, 11T,

Illustration  
246-244



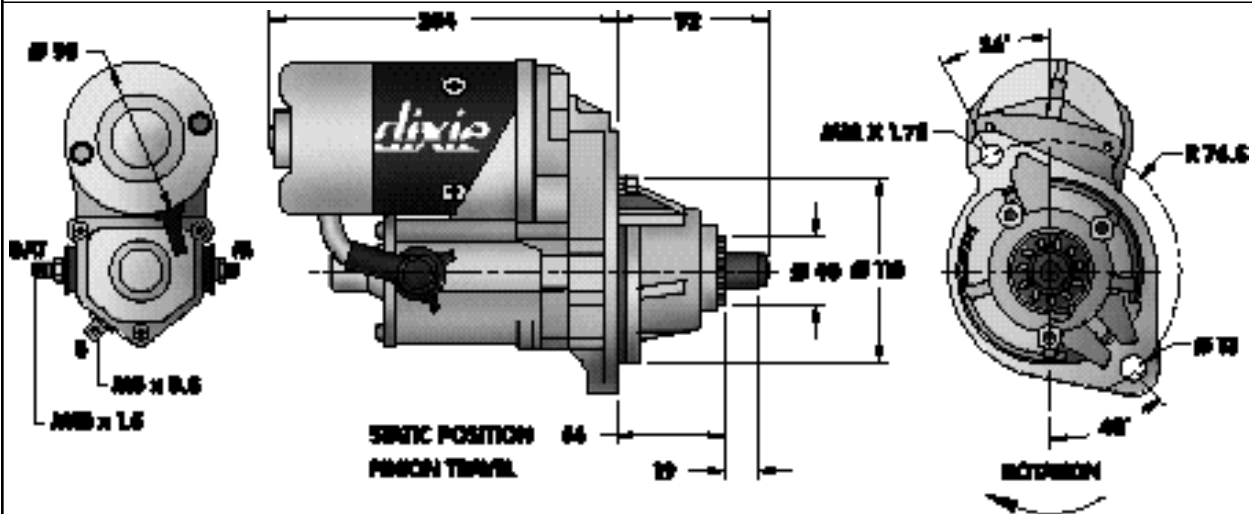
246-25138 12V, 2.8 kW, 10T,

Illustration  
246-245



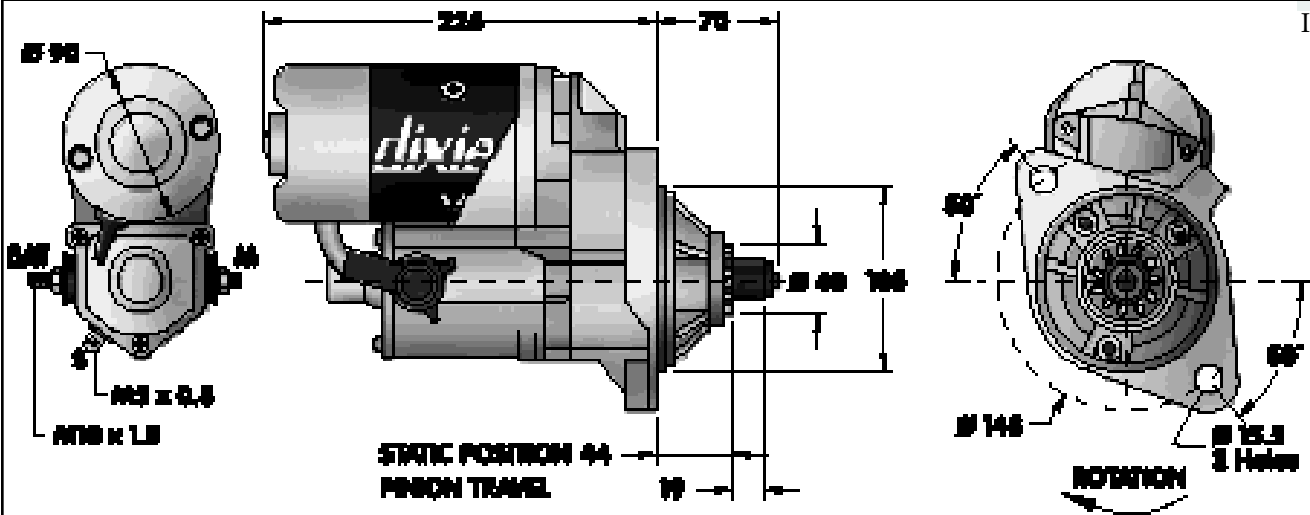
246-25126 12V, 2.8 kW, 11T,

Illustration  
246-246



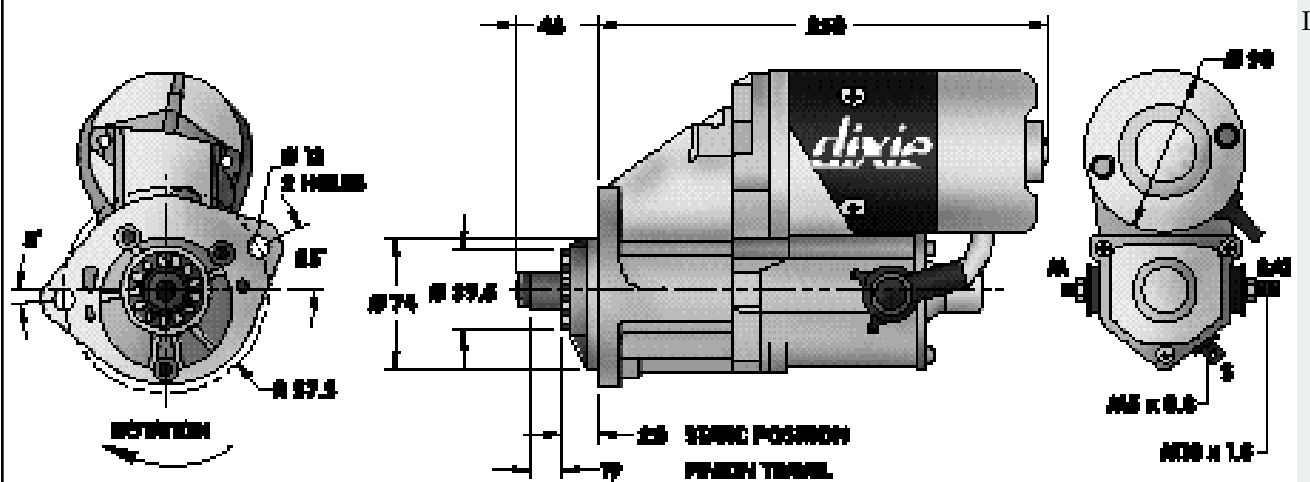
246-25218 24V, 4.5 kW, 11T,

Illustration  
246-247



246-25221 24V, 4.5 kW, 11T,

Illustration  
246-248

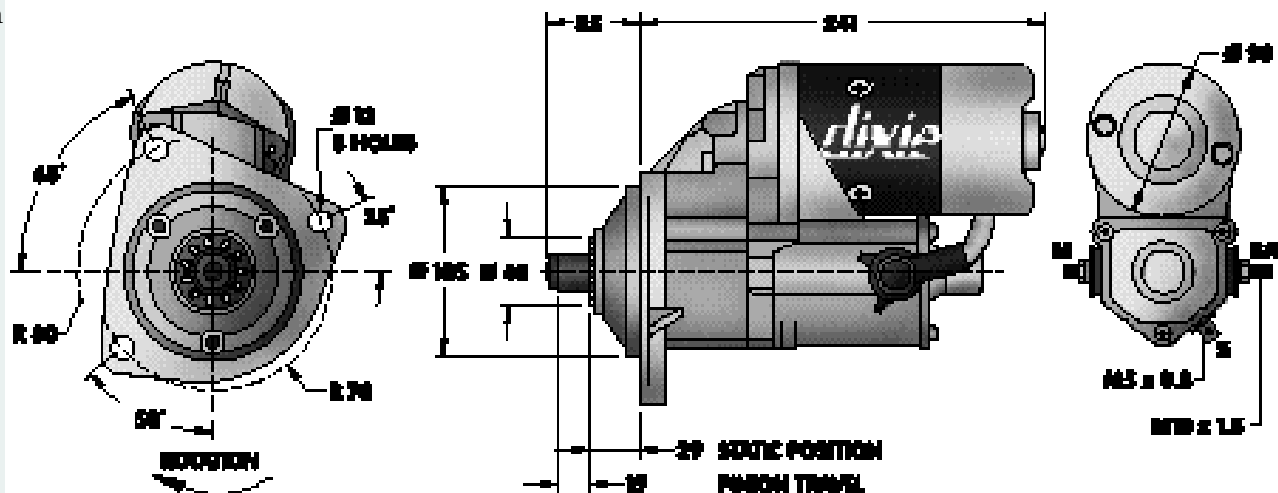


246-25222 24V, 4.5 kW, 13T,

# OUTLINE SPECIFICATIONS

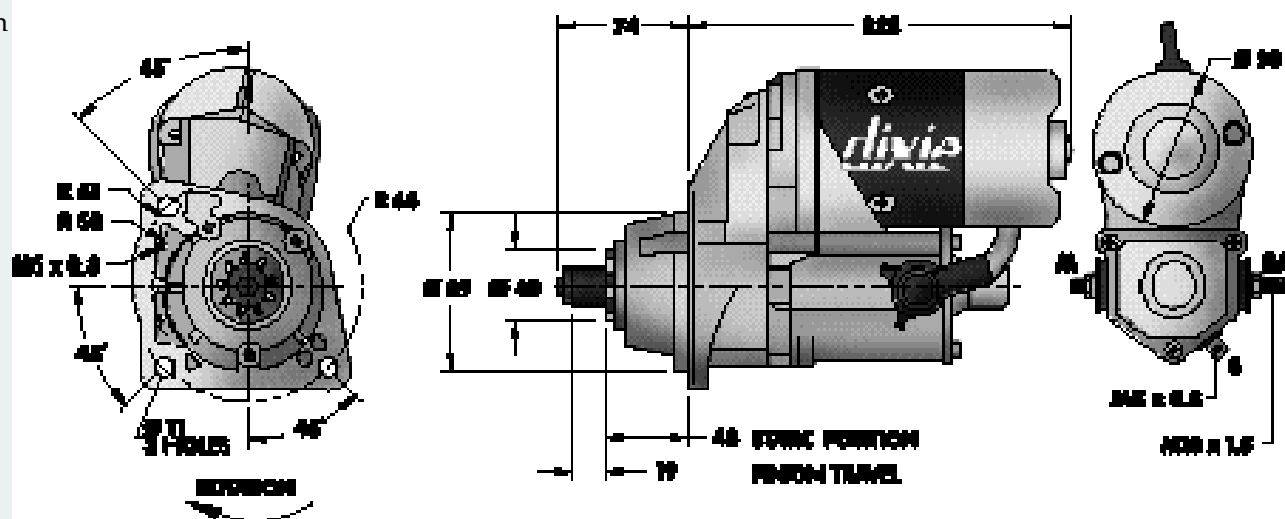


Illustration  
246-249



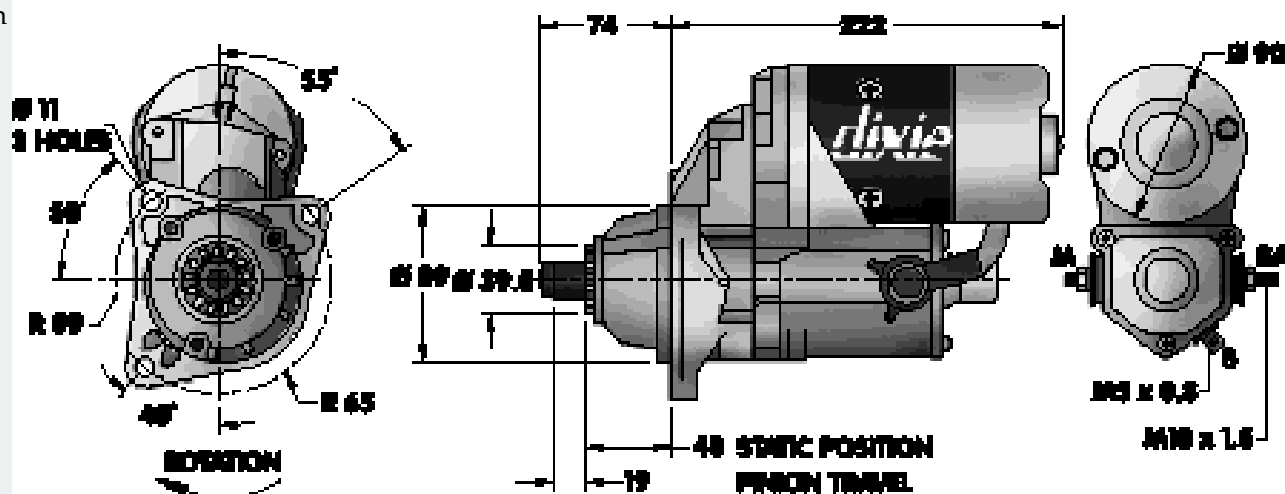
246-25228 24V, 4.5 kW, 11T,

Illustration  
246-250



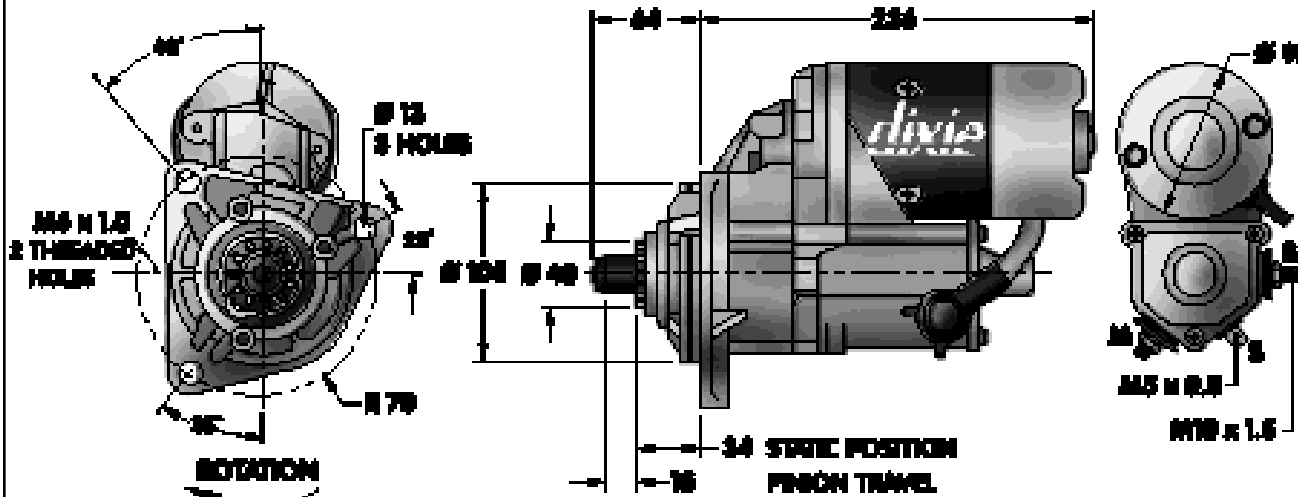
246-25223 24V, 4.5 kW, 11T,

Illustration  
246-251



246-25152 12V, 2.8 kW, 13T, OIL SEALED

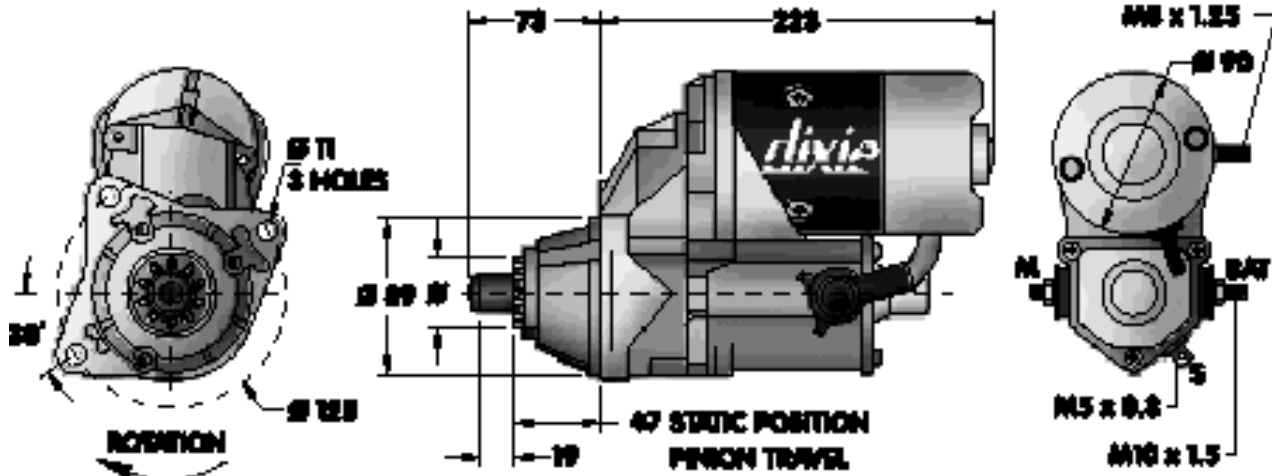
Illustration  
246-252



246-25155 12V, 2.8 kW, 11T,  
246-25229 24V, 4.5 kW, 11T,

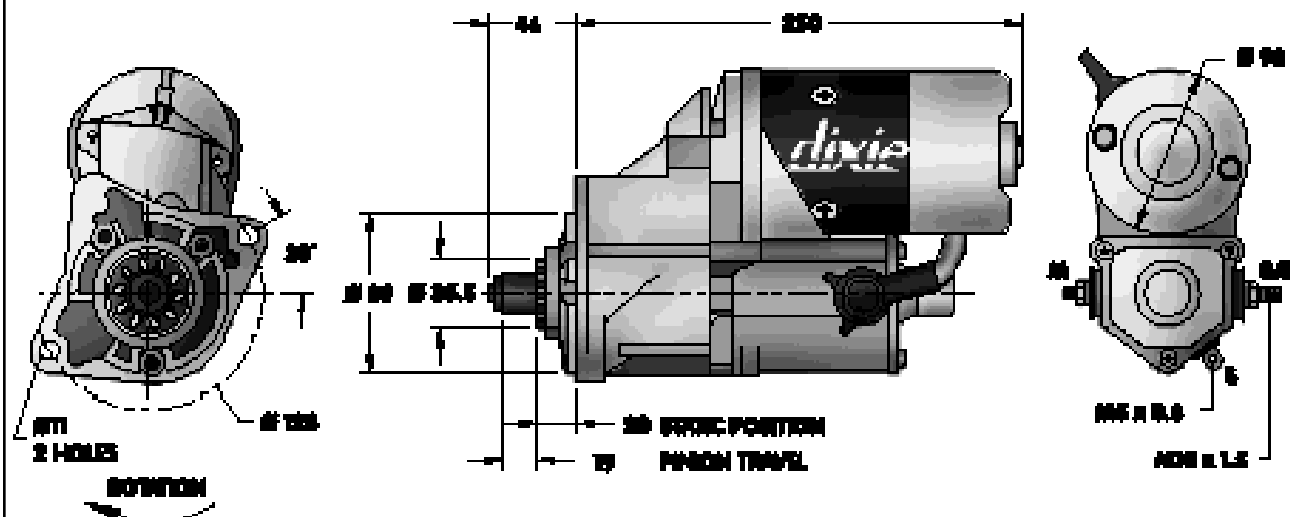
Illustration  
246-253

**3**



246-25153 12V, 2.8 kW, 10T,  $\varnothing 40.5$  OIL SEALED  
246-25154 12V, 2.8 kW, 13T,  $\varnothing 45.5$  OIL SEALED  
246-25230 24V, 4.5 kW, 10T,  $\varnothing 40.5$  OIL SEALED  
246-25231 24V, 4.5 kW, 13T,  $\varnothing 45.5$  OIL SEALED

Illustration  
246-254

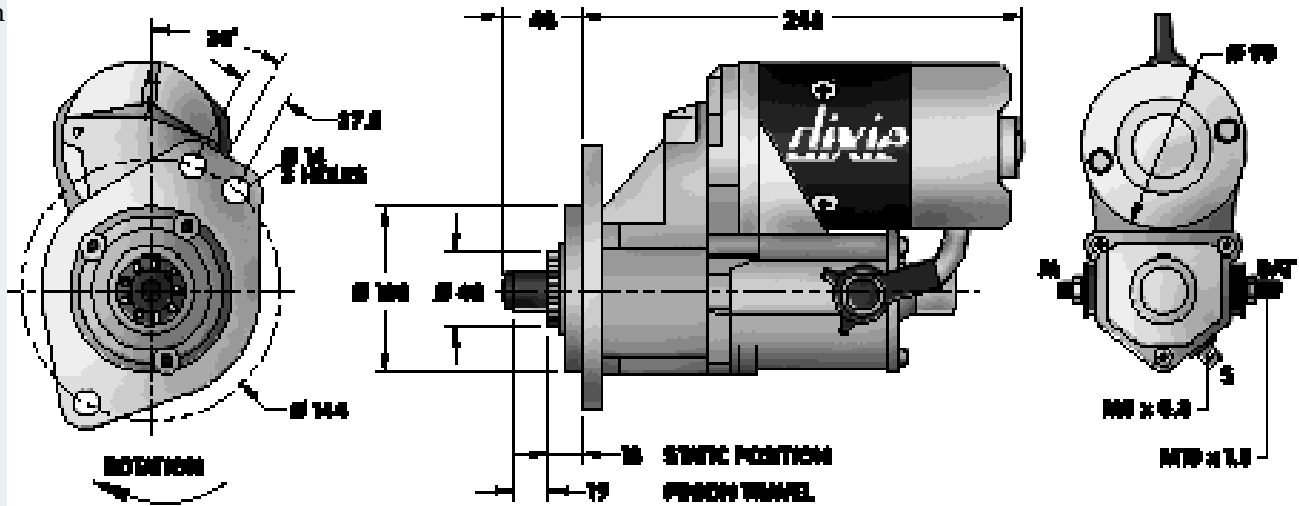


246-25144 12V, 2.8 kW, 9T, OIL SEALED

# OUTLINE SPECIFICATIONS

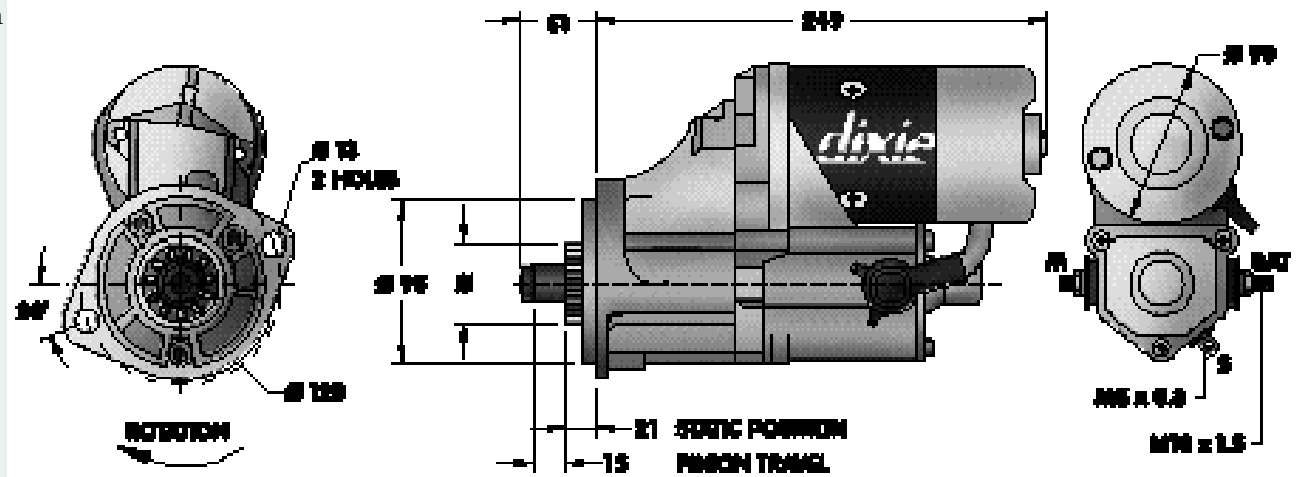


Illustration  
246-255



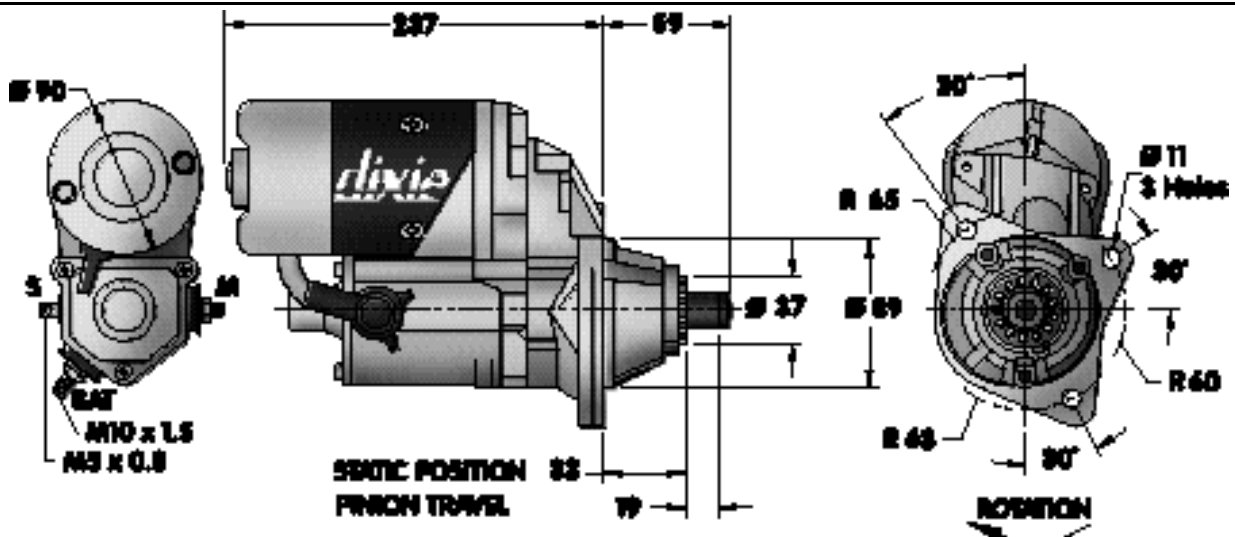
246-25233 24V, 4.5 kW, 11T,

Illustration  
246-256



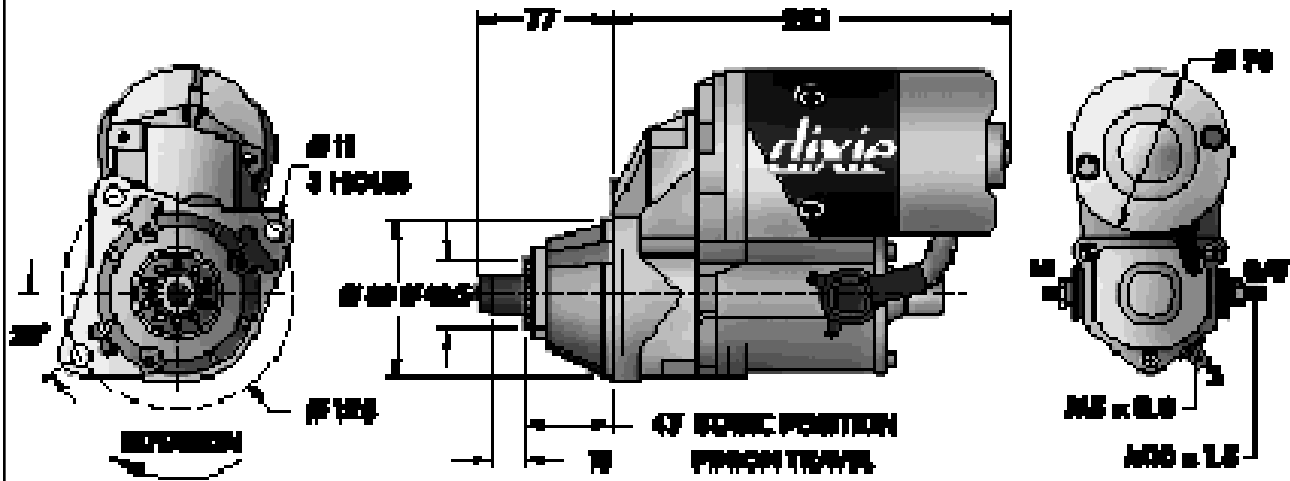
246-25156 12V, 2.8 kW, 9T, Ø 32 OIL SEALED  
 246-25158 12V, 2.8 kW, 15T, Ø 44  
 246-25234 24V, 4.5 kW, 9T, Ø 32 OIL SEALED  
 246-25235 24V, 4.5 kW, 9T, Ø 35.5 OIL SEALED

Illustration  
246-257



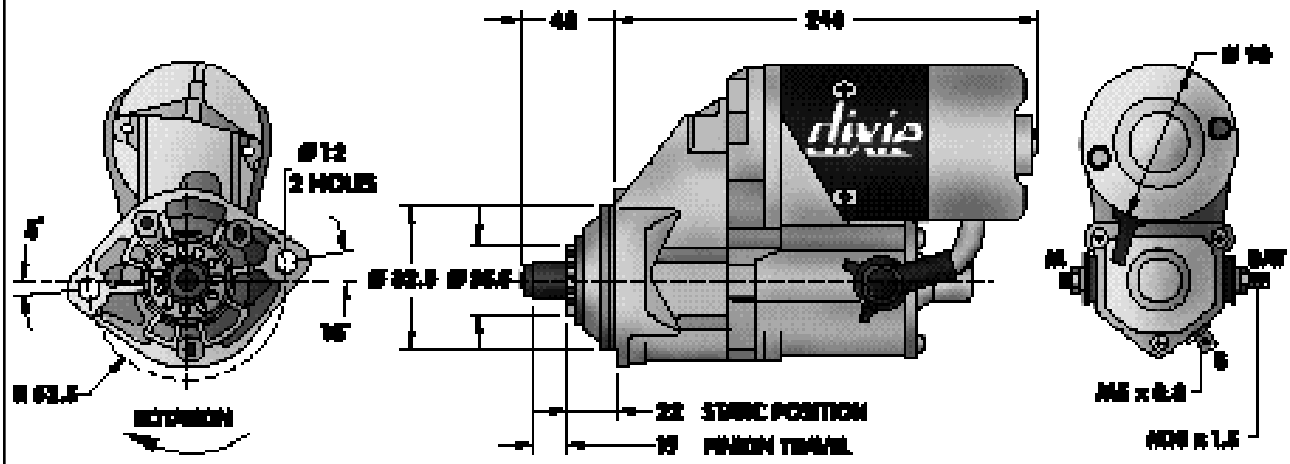
246-25157 12V, 2.8 kW, 12T,

Illustration  
246-258



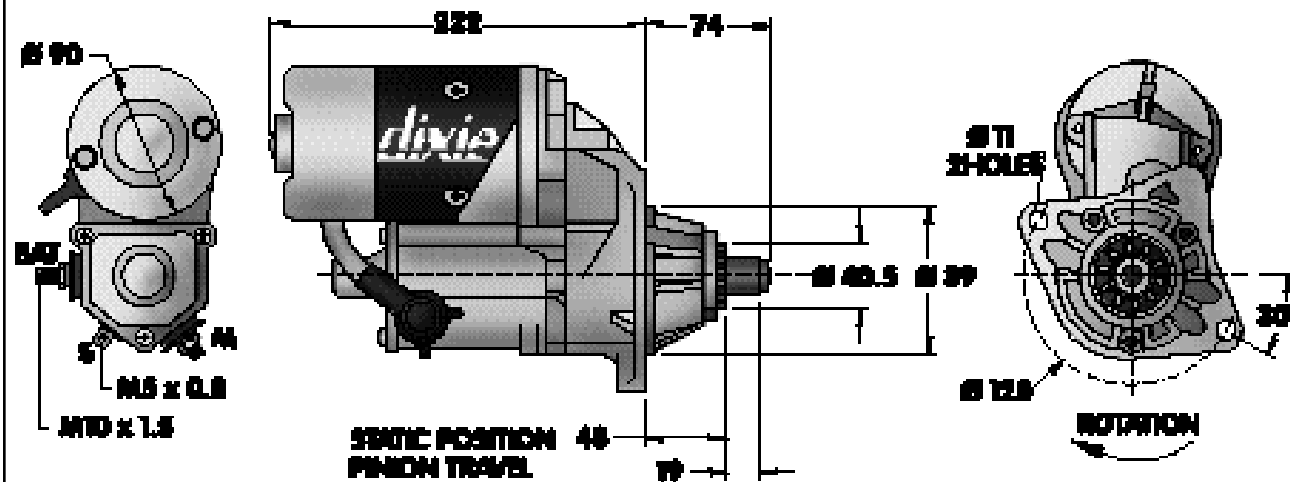
246-25159 12V, 2.8 kW, 10T, OIL SEALED  
246-25241 24V, 4.5 kW, 10T, OIL SEALED

Illustration  
246-259



246-25238 24V, 4.5 kW, 9T,

Illustration  
246-260

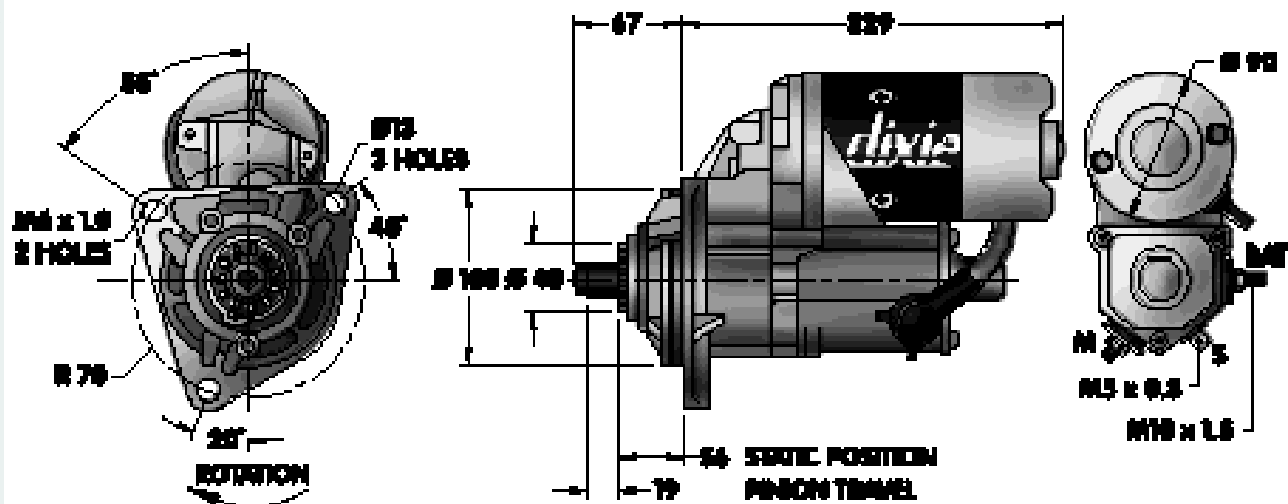


246-25239 24V, 4.5 kW, 10T,

# OUTLINE SPECIFICATIONS

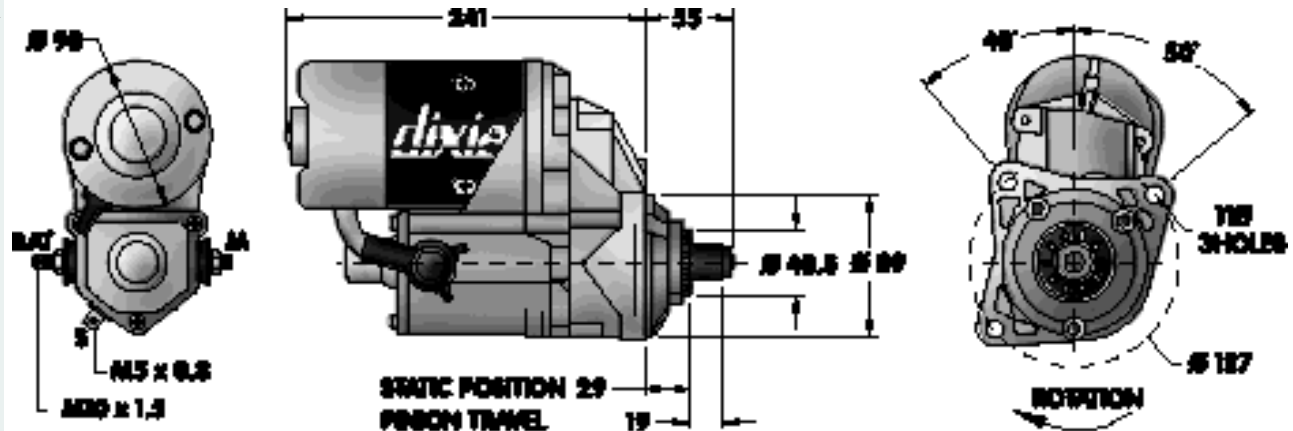


Illustration  
246-261



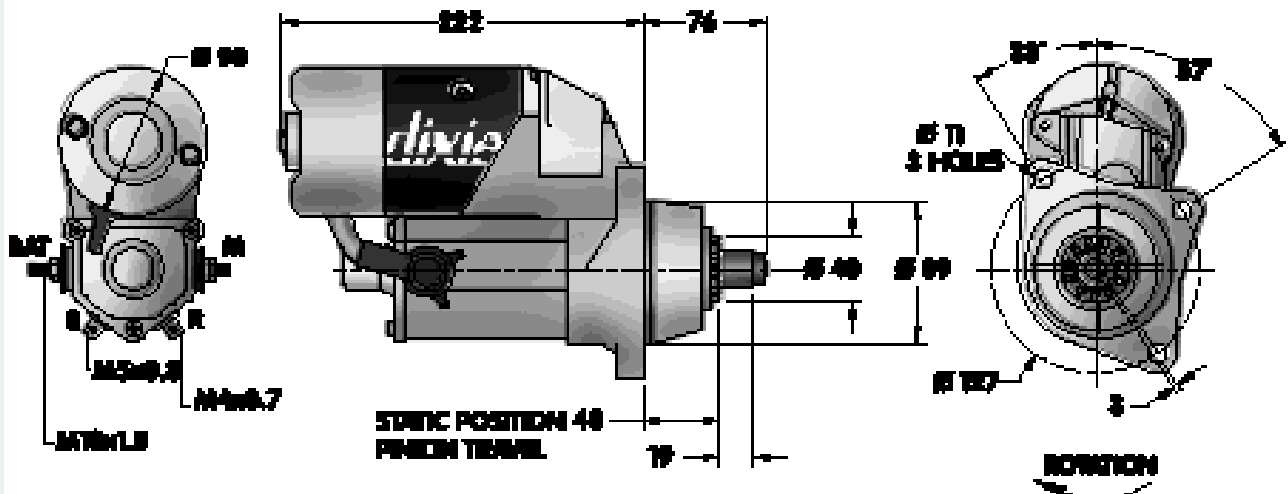
246-25243 24V, 4.5 kW, 11T,

Illustration  
246-262



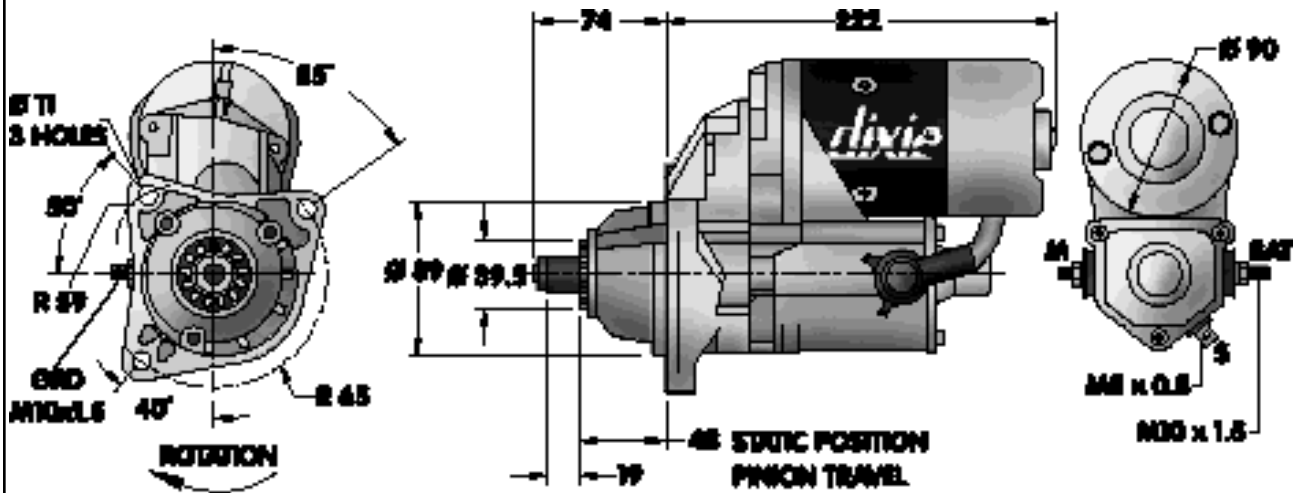
246-25163 12V, 2.8 kW, 10T,

Illustration  
246-263



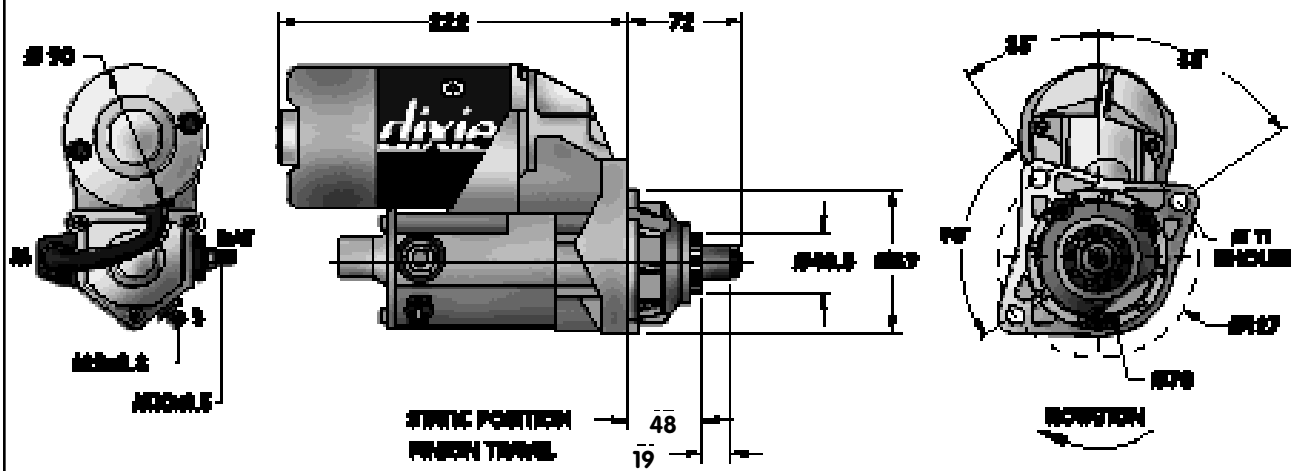
246-25162 12V, 2.8 kW, 11T, OIL SEALED

Illustration  
246-264



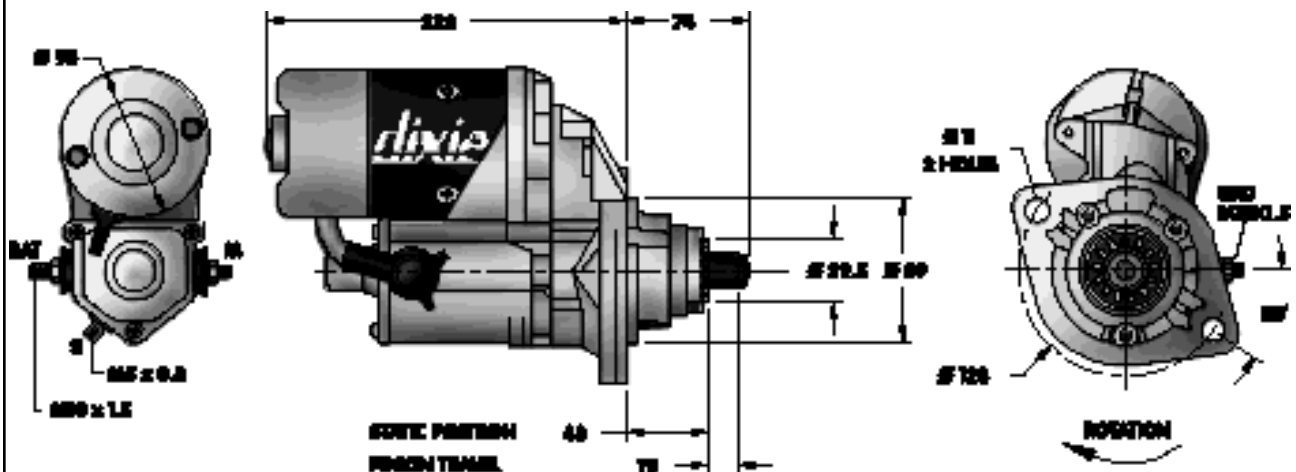
246-25161 12V, 2.8 kW, 13T, OIL SEALED

Illustration  
246-265



246-25164 12V, 2.8 kW, 10T, OIL SEALED

Illustration  
246-266

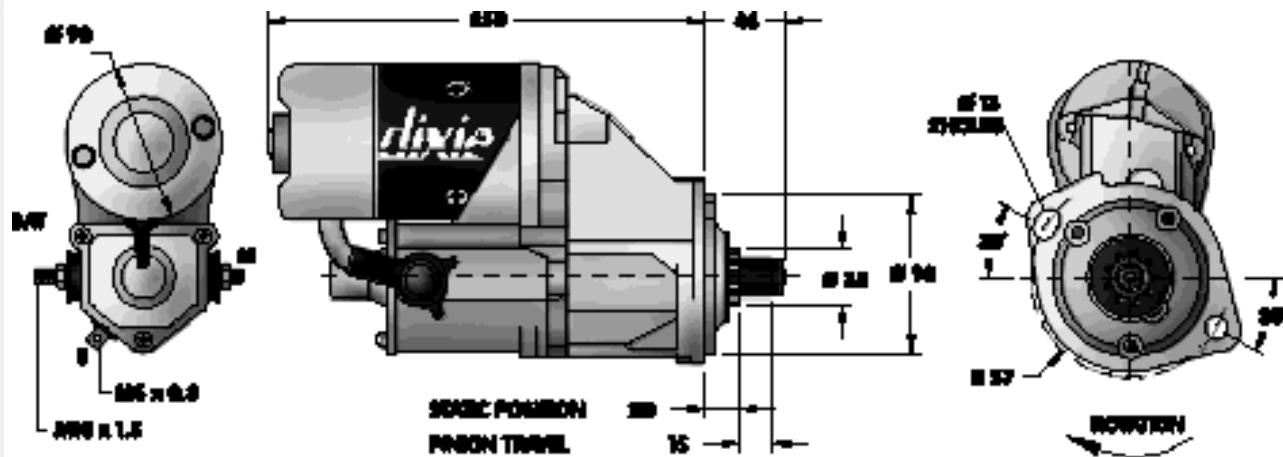


246-25165 12V, 2.8 kW, 13T, OIL SEALED

# OUTLINE SPECIFICATIONS



Illustration  
246-267



246-25244 24V, 4.5 kW, 9T,

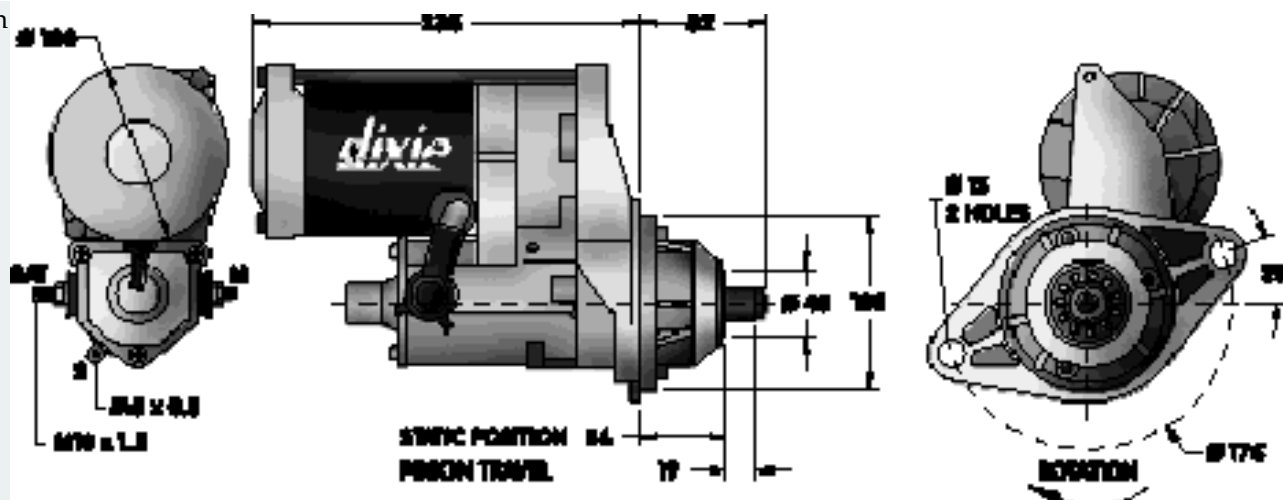
3



# OUTLINE SPECIFICATIONS

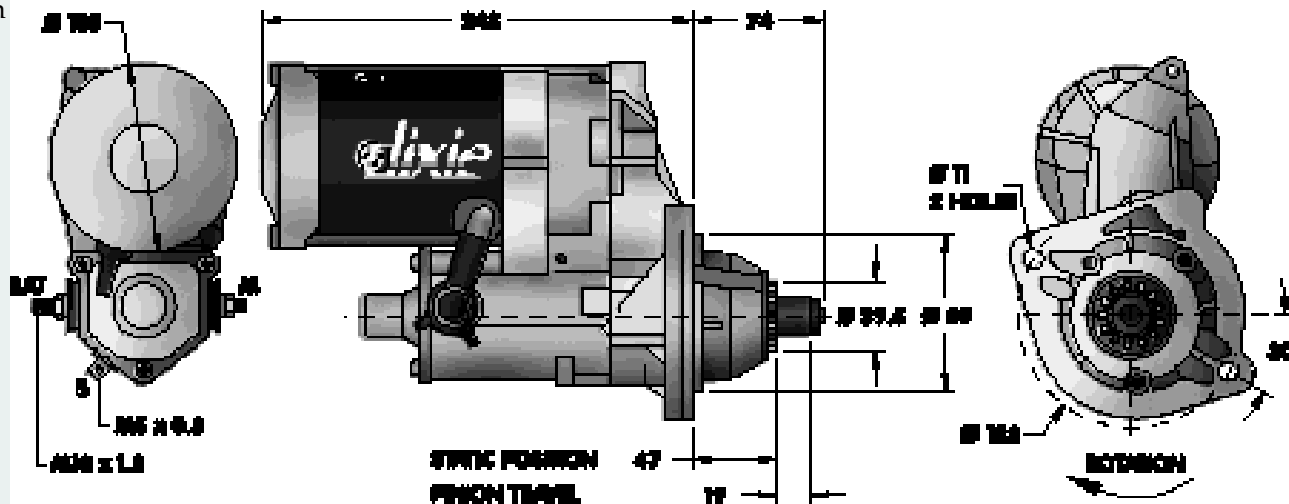


Illustration  
246-301



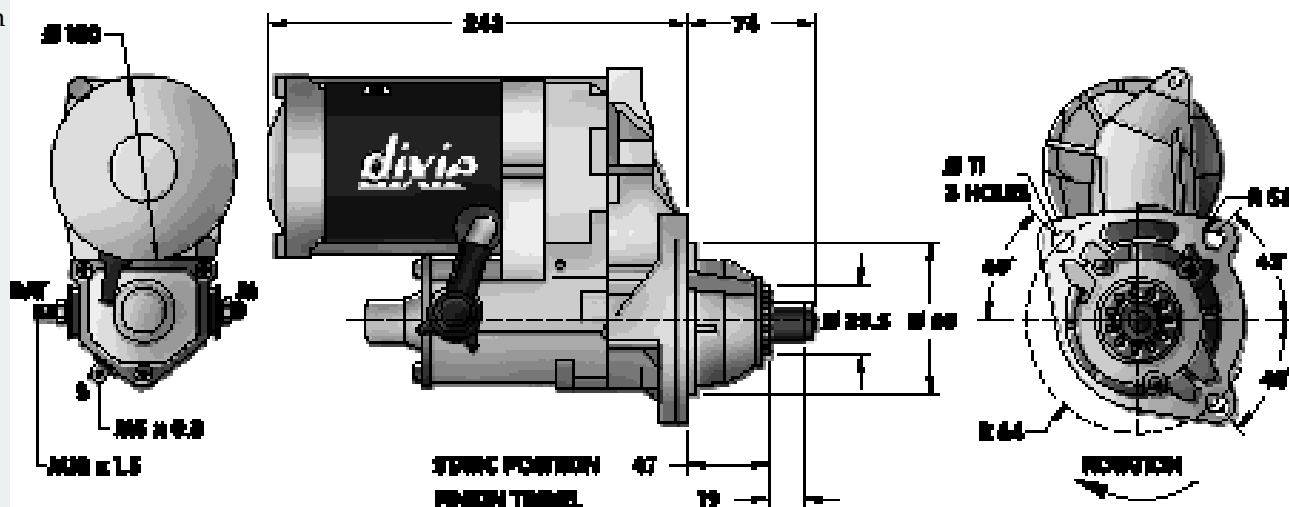
246-30107 12V, 3.0 kW, 11T,  
246-30203 24V, 5.5 kW, 11T,

3 Illustration  
246-302



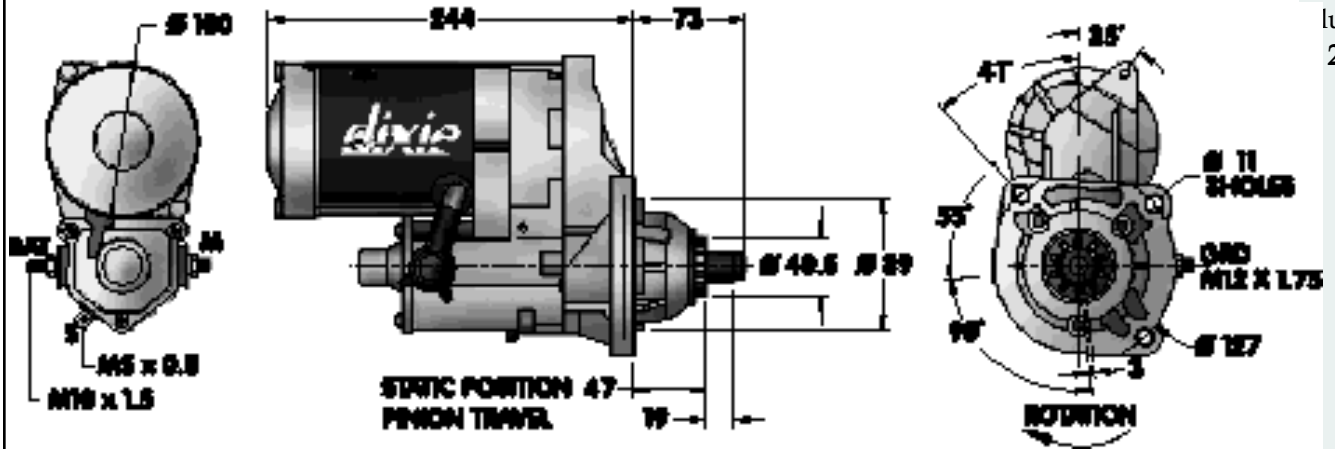
246-30104 12V, 3.0 kW, 13T

Illustration  
246-303



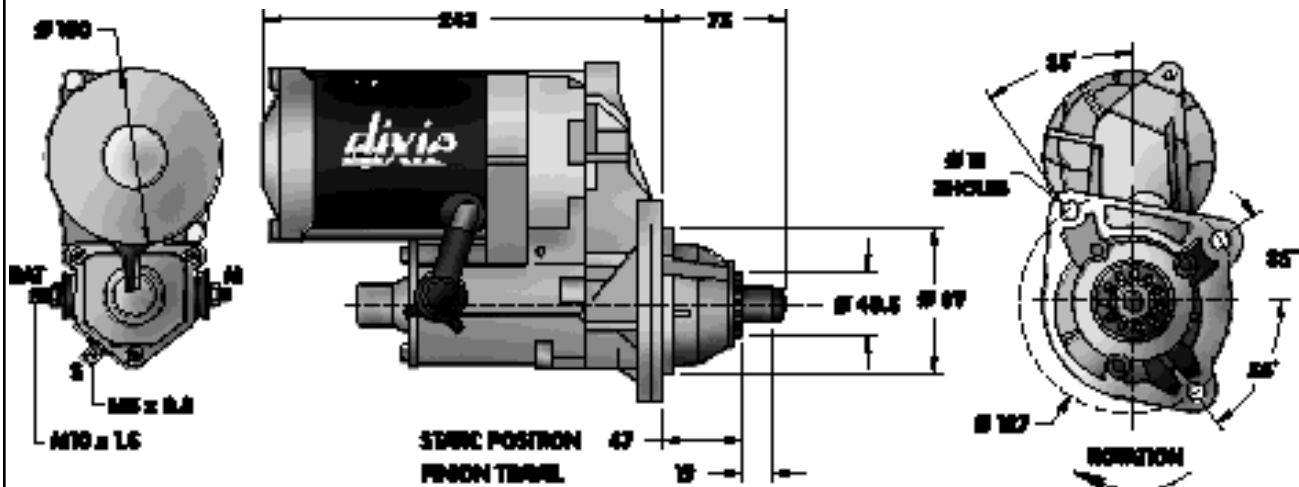
246-30101 12V, 3.0 kW, 13T,

Illustration  
246-304



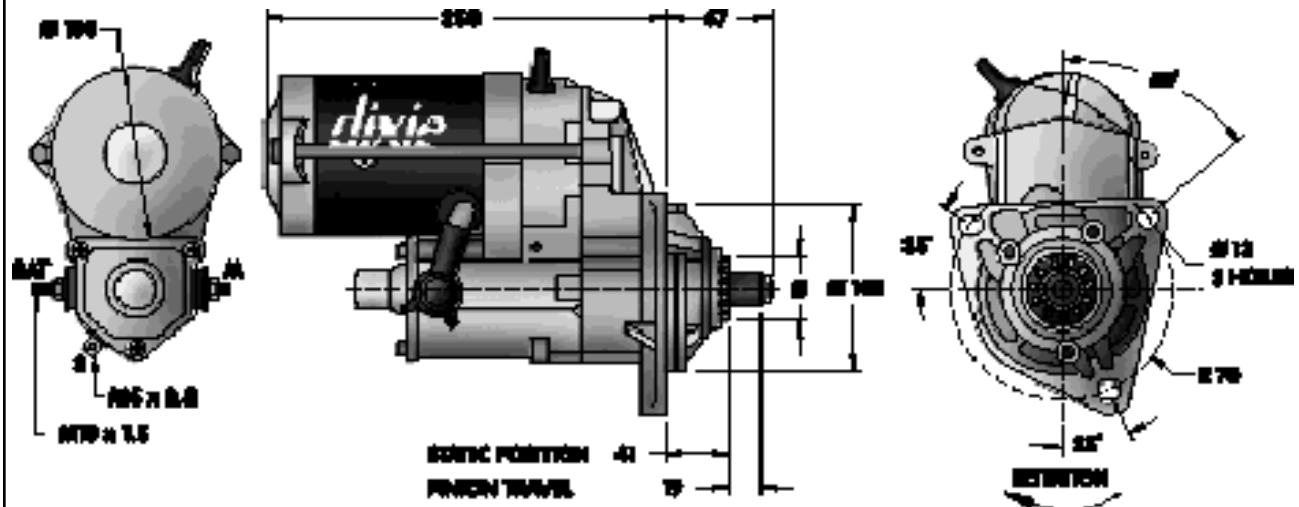
246-30103 12V, 3.0 kW, 10T, OIL SEALED  
246-30201 24V, 5.5 kW, 10T, OIL SEALED

Illustration  
246-305



246-30105 12V, 3.0 kW, 10T, OIL SEALED  
246-30106 12V, 3.0 kW, 10T,  
246-30202 24V, 5.5 kW, 10T,  
246-30207 24V, 5.5 kW, 10T, OIL SEALED

Illustration  
246-306

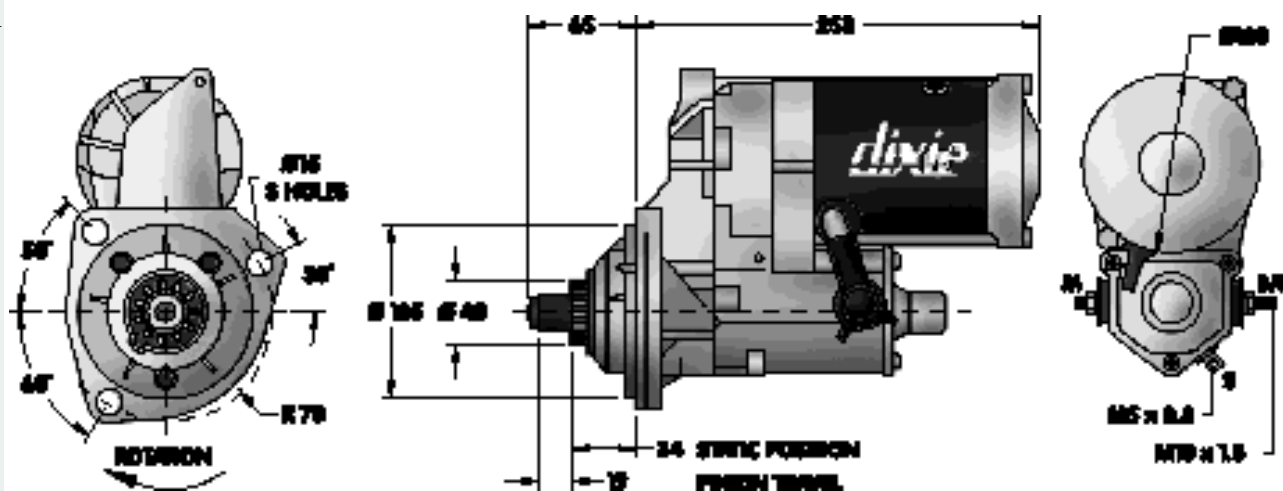


246-30102 12V, 3.0 kW, 11T,  $\varnothing 40$   
246-30206 24V, 5.5 kW, 11T,  $\varnothing 40$  OIL SEALED

# OUTLINE SPECIFICATIONS

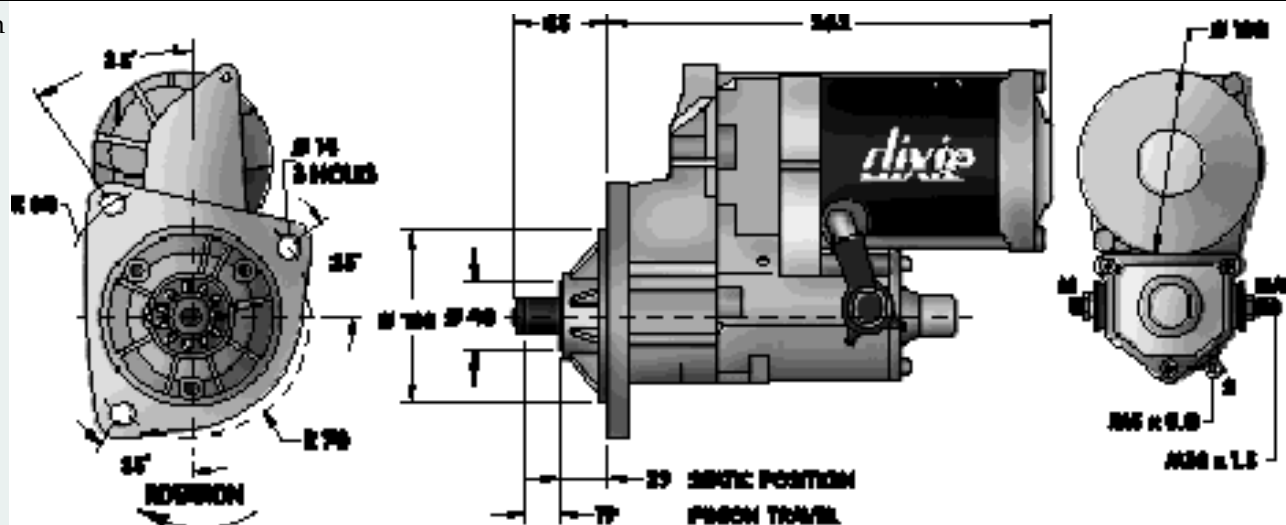


Illustration  
246-307



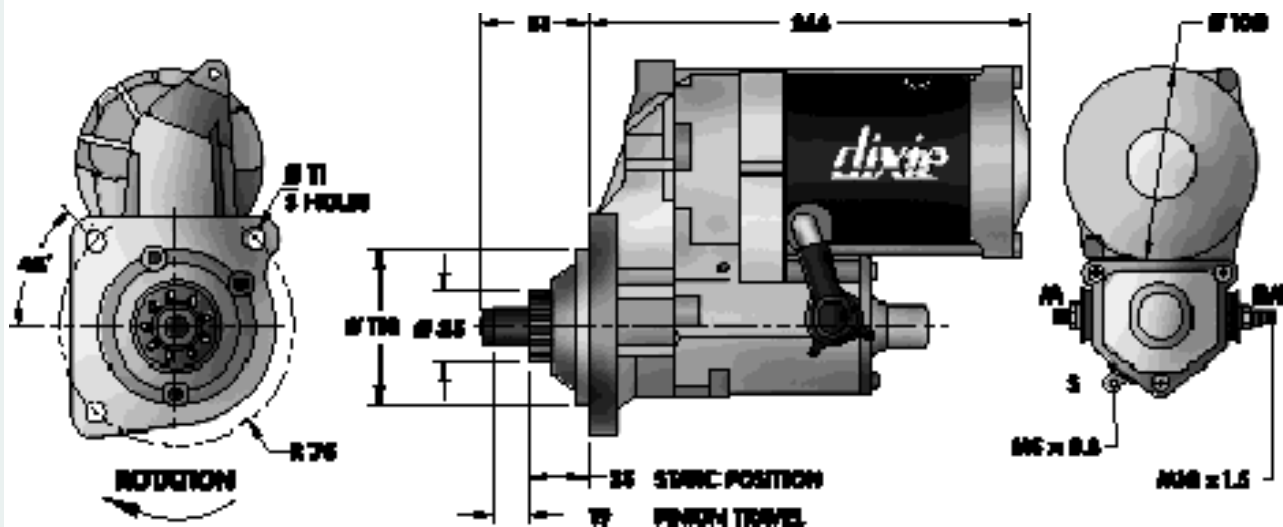
246-30113 12V, 4.0 kW, 11T, OIL SEALED  
246-30209 24V, 7.5 kW, 11T, OIL SEALED

3 Illustration  
246-308



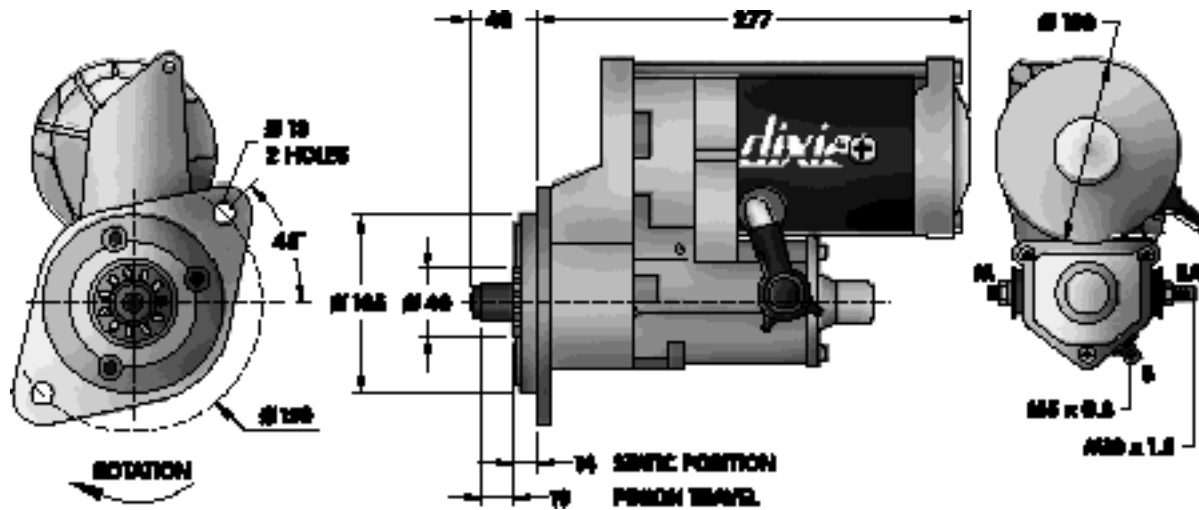
246-30205 24V, 5.5 kW, 11T,

Illustration  
246-309



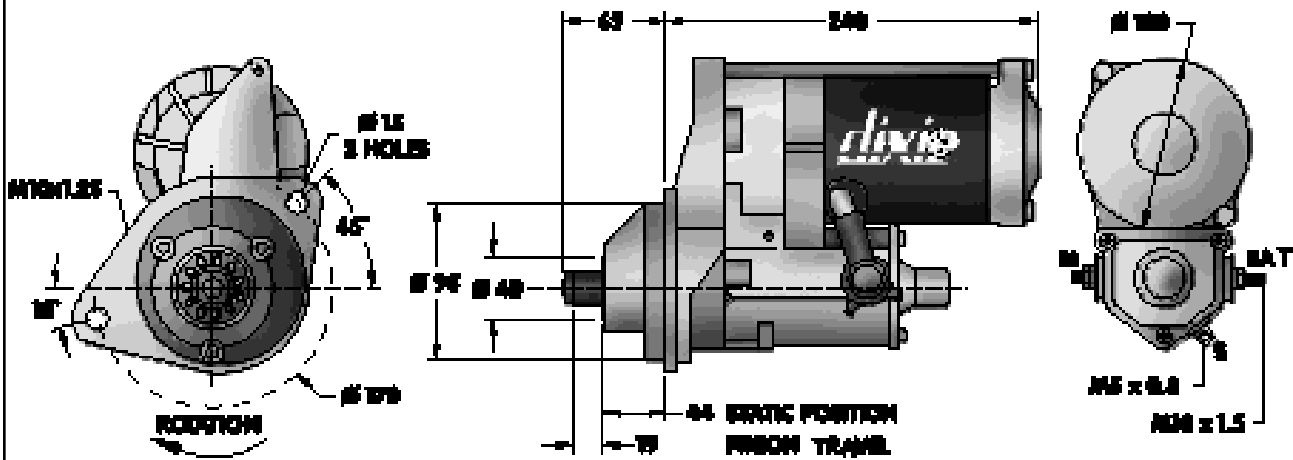
246-30110 12V, 4.0 kW, 9T, OIL SEALED  
246-30211 24V, 5.5 kW, 9T, OIL SEALED

Illustration  
246-310



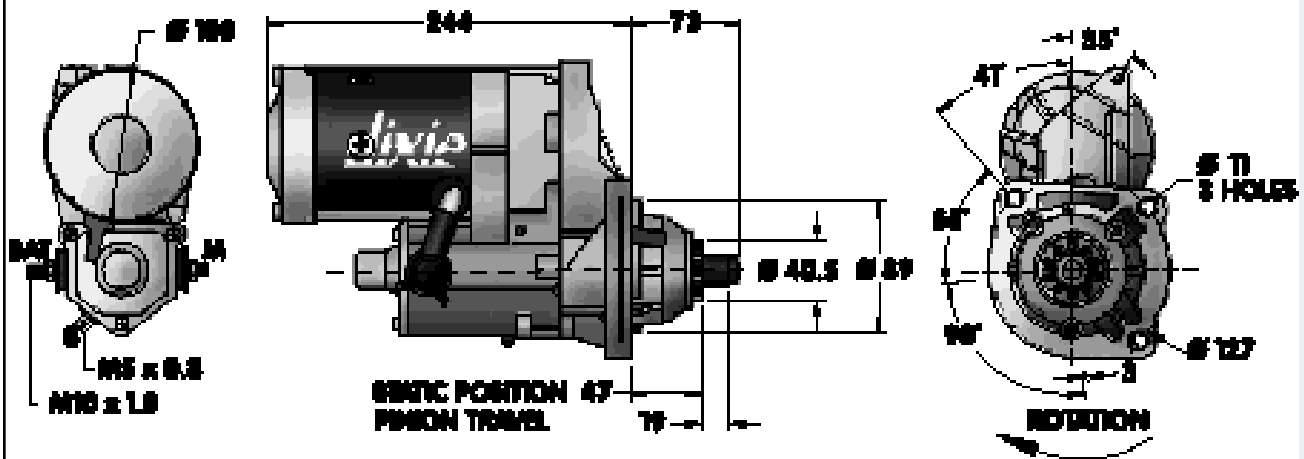
246-30210 24V, 5.5 kW, 11T, OIL SEALED

Illustration  
246-311



246-30109 12V, 3.0 kW, 11T,

Illustration  
246-312

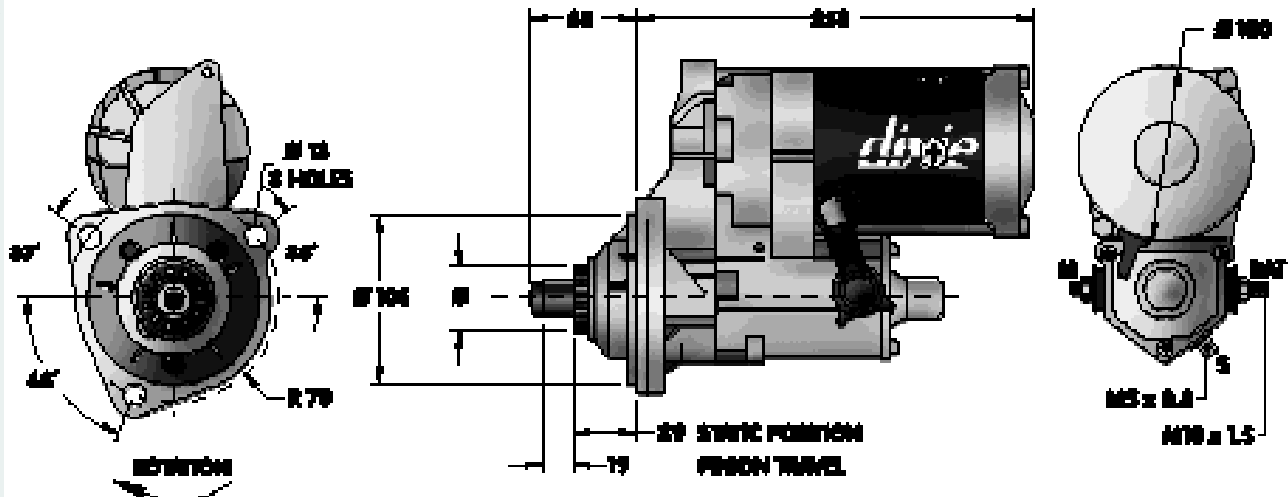


246-30111 12V, 3.0 kW, 10T, OIL SEALED  
246-30127 12V, 4.0 kW, 10T, OIL SEALED

# OUTLINE SPECIFICATIONS

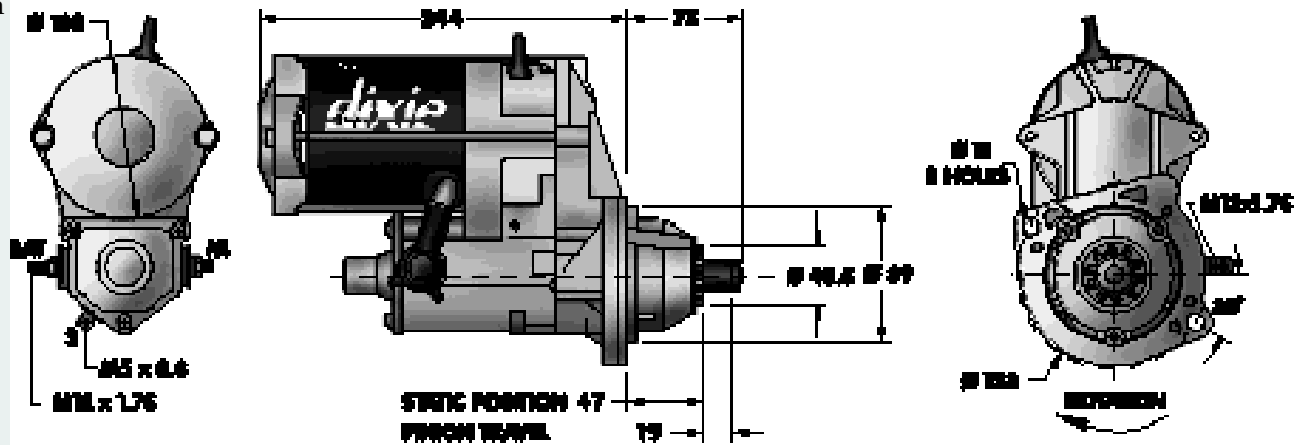


Illustration  
246-313



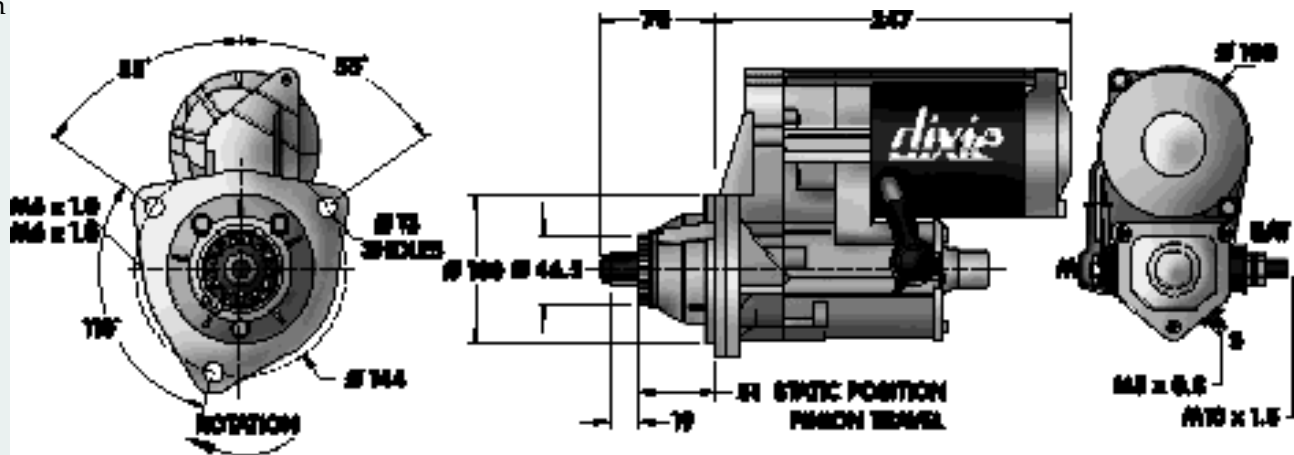
246-30108	12V, 3.0 kW, 11T, Ø 40	OIL SEALED
246-30204	24V, 5.5 kW, 13T, Ø 46.5	OIL SEALED

Illustration  
246-314



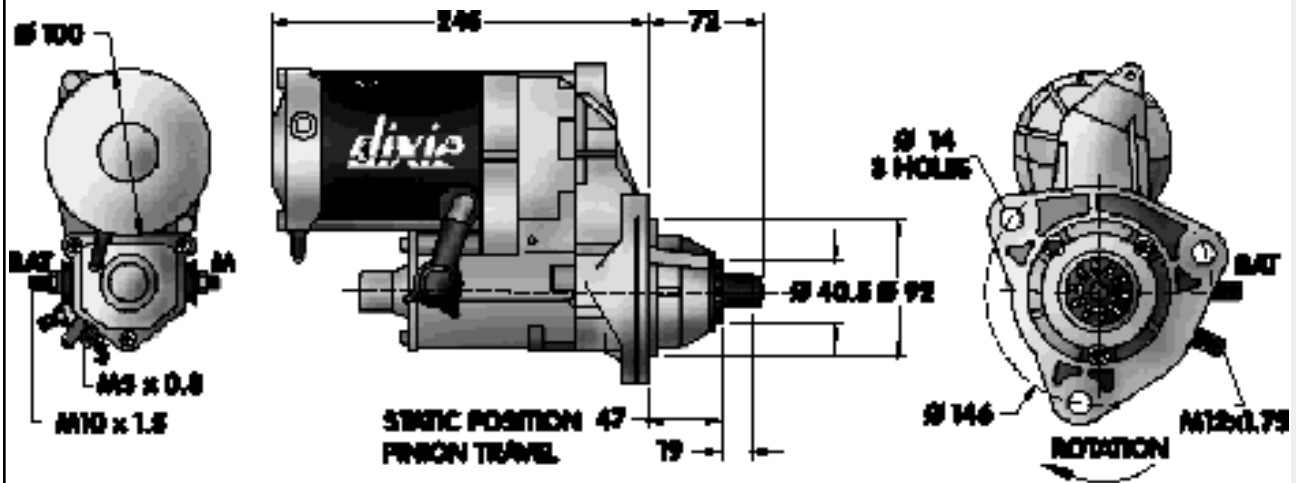
246-30112	12V, 4.0 kW, 10T,	OIL SEALED
-----------	-------------------	------------

Illustration  
246-315



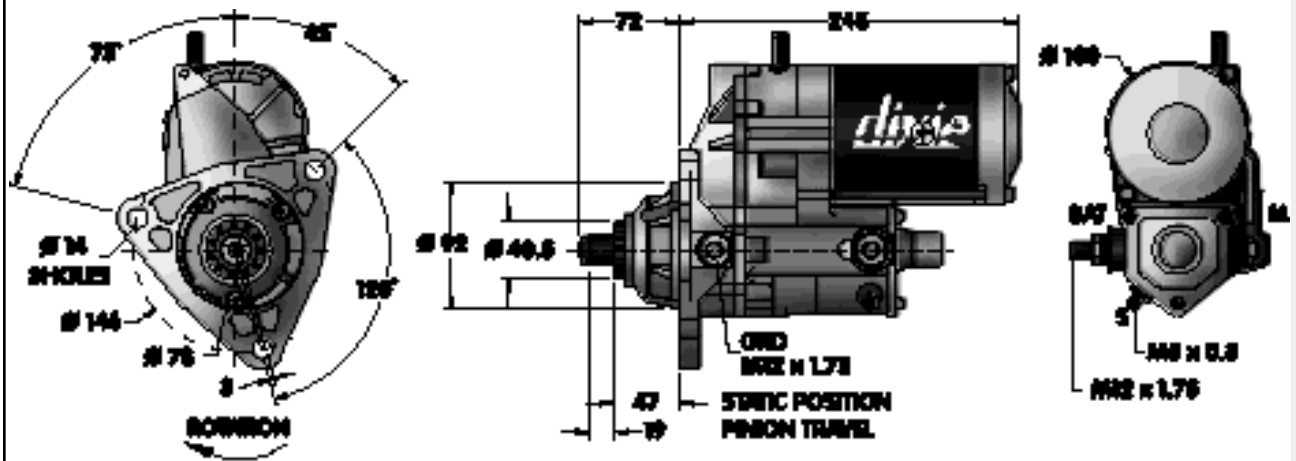
246-30213	24V, 7.5 kW, 13T,	OIL SEALED
-----------	-------------------	------------

Illustration  
246-316



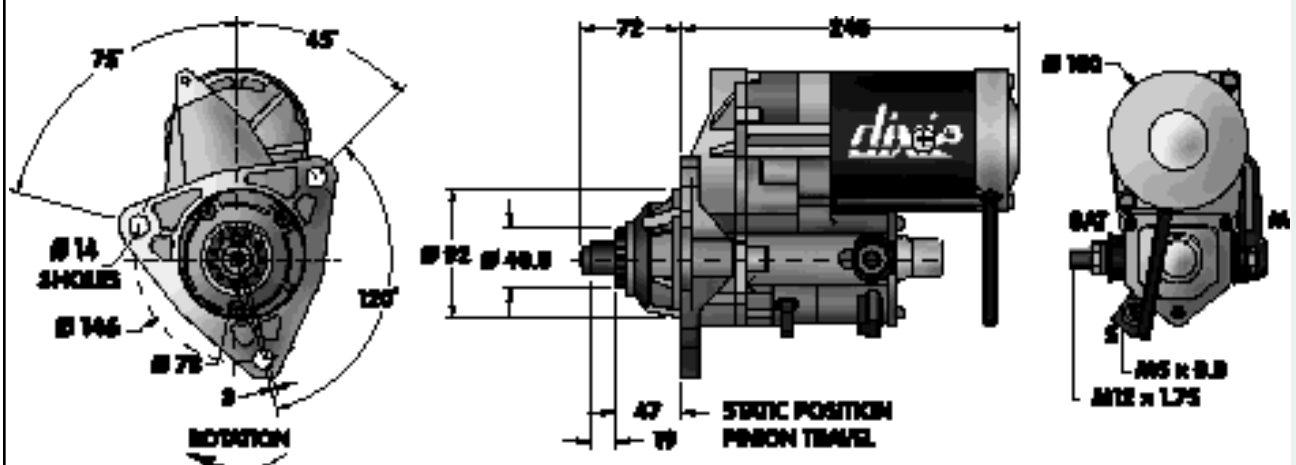
246-30114 12V, 4.0 kW, 10T,

Illustration  
246-317



246-30115 12V, 4.0 kW, 10T, OIL SEALED  
 246-30126 12V, 4.0 kW, 10T,  
 246-30214 24V, 7.5 kW, 10T, OIL SEALED

Illustration  
246-318

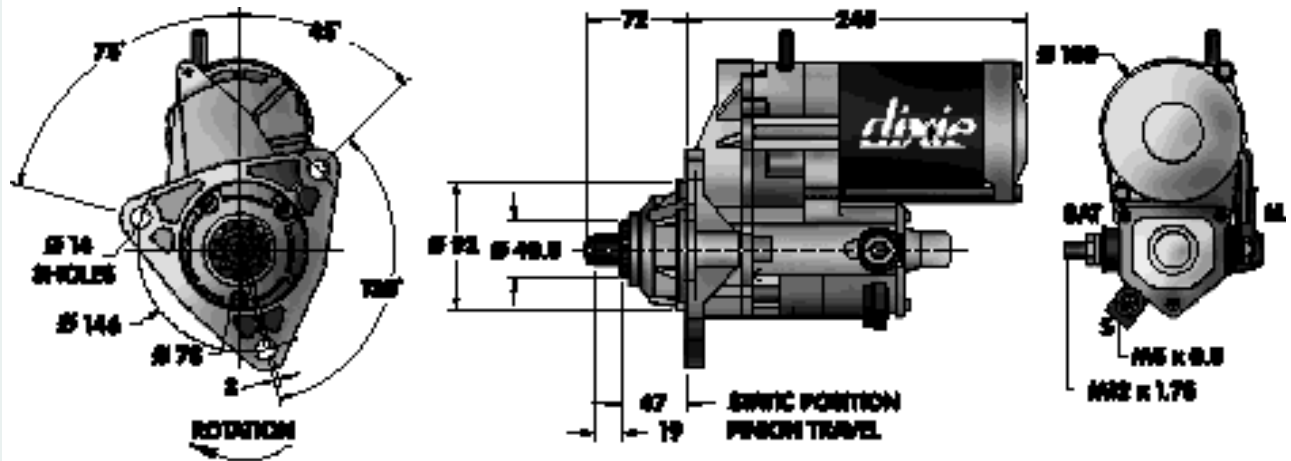


246-30116 12V, 4.0 kW, 10T, OIL SEALED  
 246-30215 24V, 7.5 kW, 10T, OIL SEALED

# OUTLINE SPECIFICATIONS

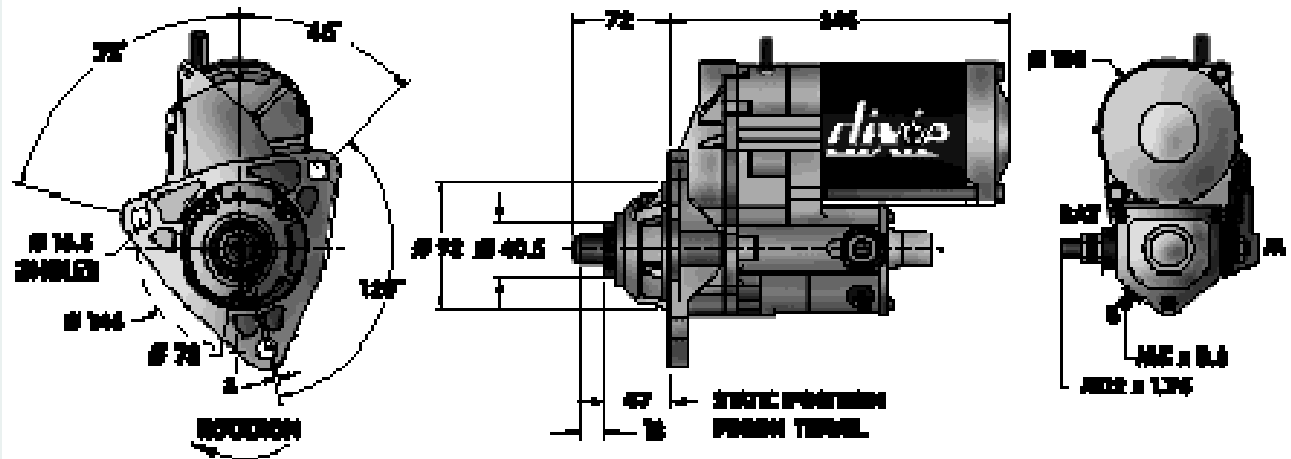


Illustration  
246-319



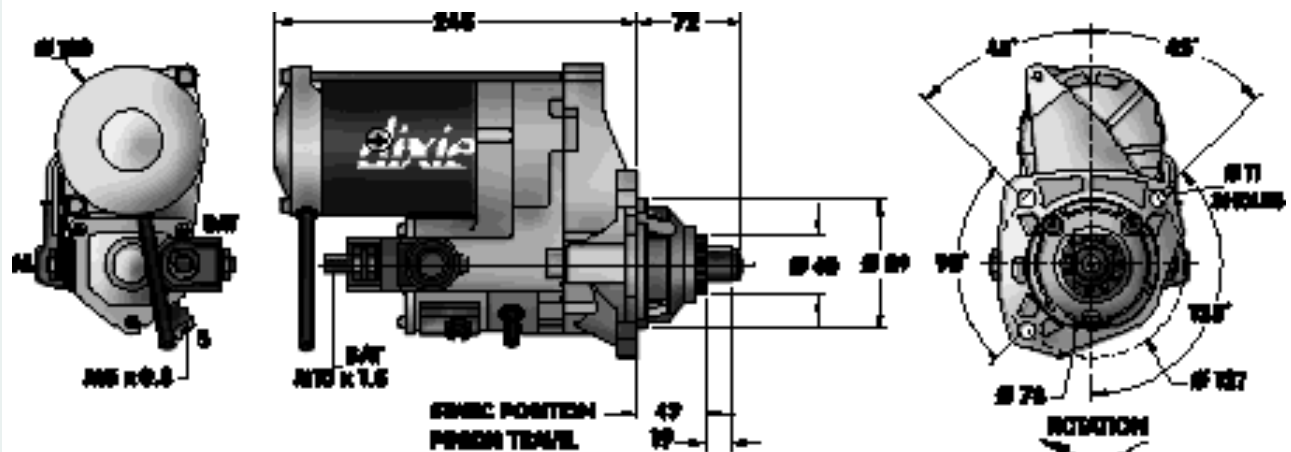
246-30117 12V, 4.0 kW, 10T, OIL SEALED

Illustration  
246-320



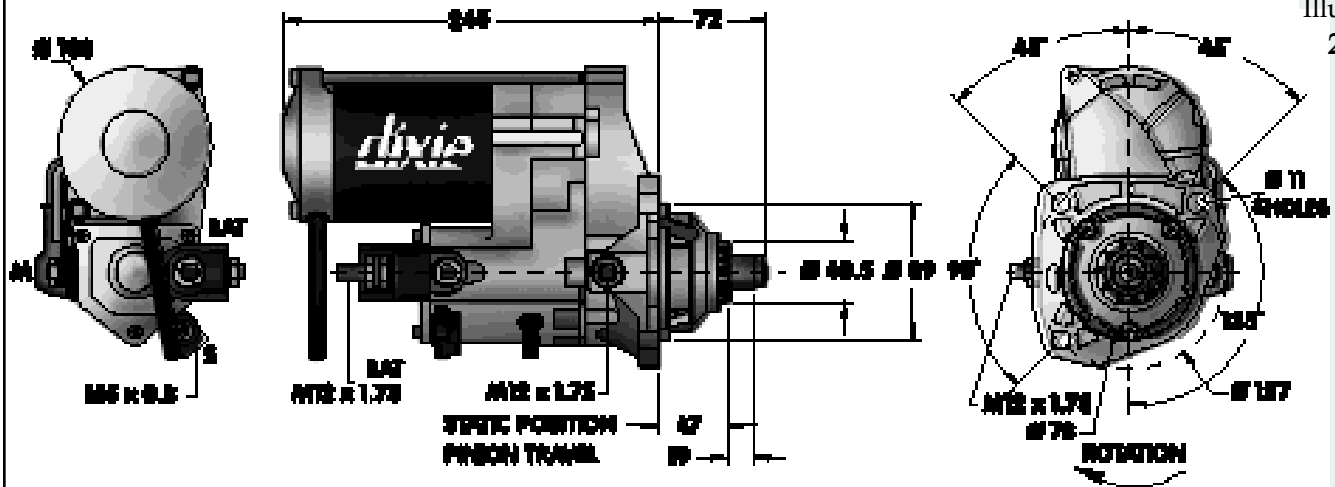
246-30118 12V, 4.0 kW, 10T, OIL SEALED

Illustration  
246-321



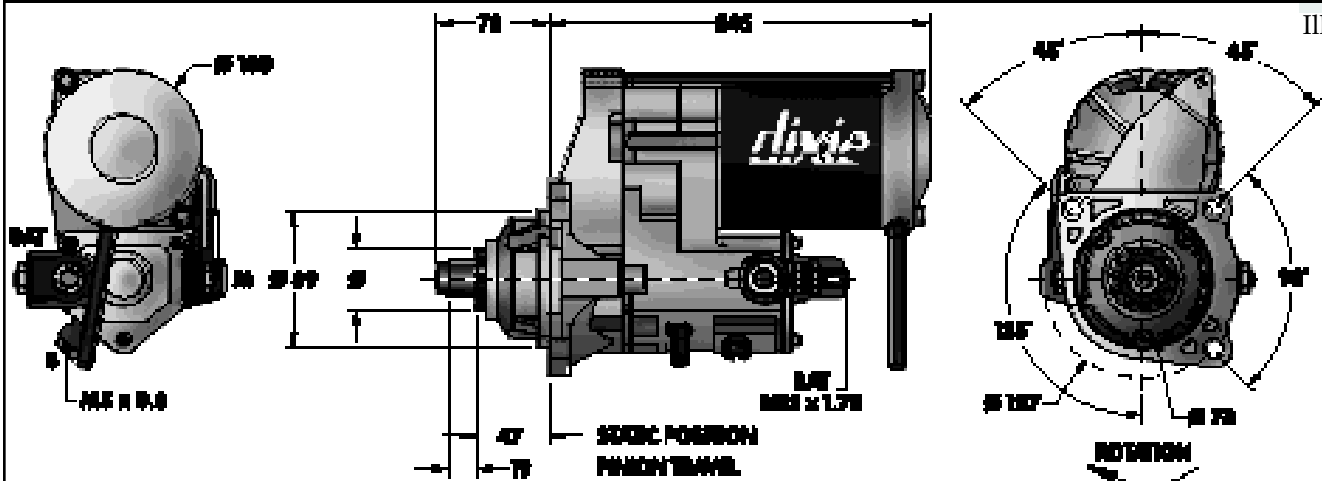
246-30119 12V, 4.0 kW, 11T, OIL SEALED  
 246-30120 12V, 4.0 kW, 11T, OIL SEALED  
 246-30216 24V, 7.5 kW, 11T, OIL SEALED

Illustration  
246-322



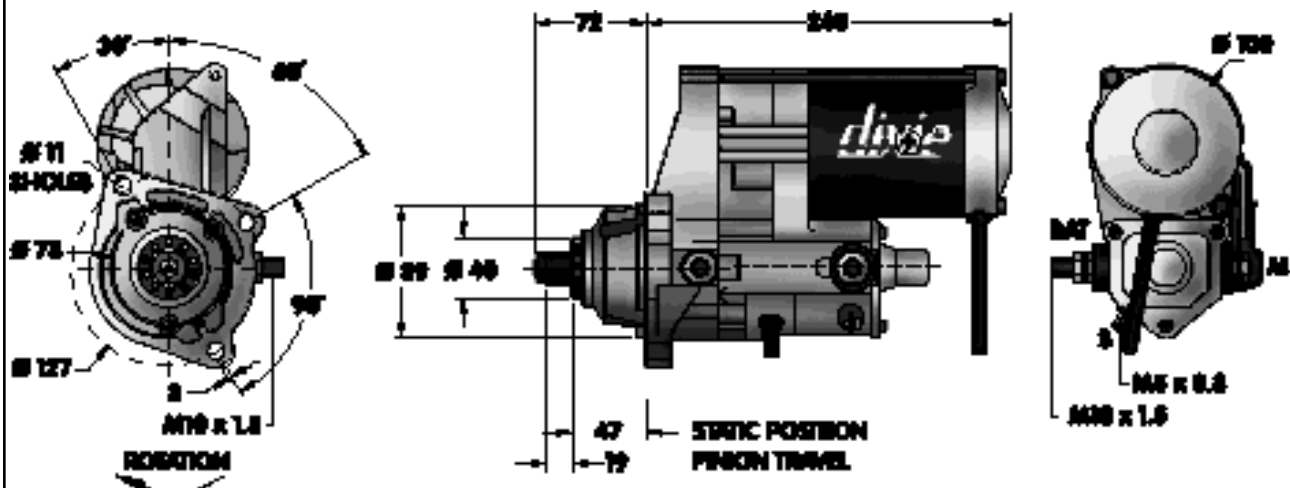
- 246-30121 12V, 4.0 kW, 10T, OIL SEALED
- 246-30219 24V, 7.5 kW, 10T, OIL SEALED

Illustration  
246-323



- 246-30122 12V, 4.0 kW, 11T,  $\varnothing 40$
- 246-30130 12V, 4.0 kW, 10T,  $\varnothing 40.5$  OIL SEALED
- 246-30217 24V, 7.5 kW, 11T,  $\varnothing 40$
- 246-30220 24V, 7.5 kW, 10T,  $\varnothing 40.5$  OIL SEALED

Illustration  
246-324

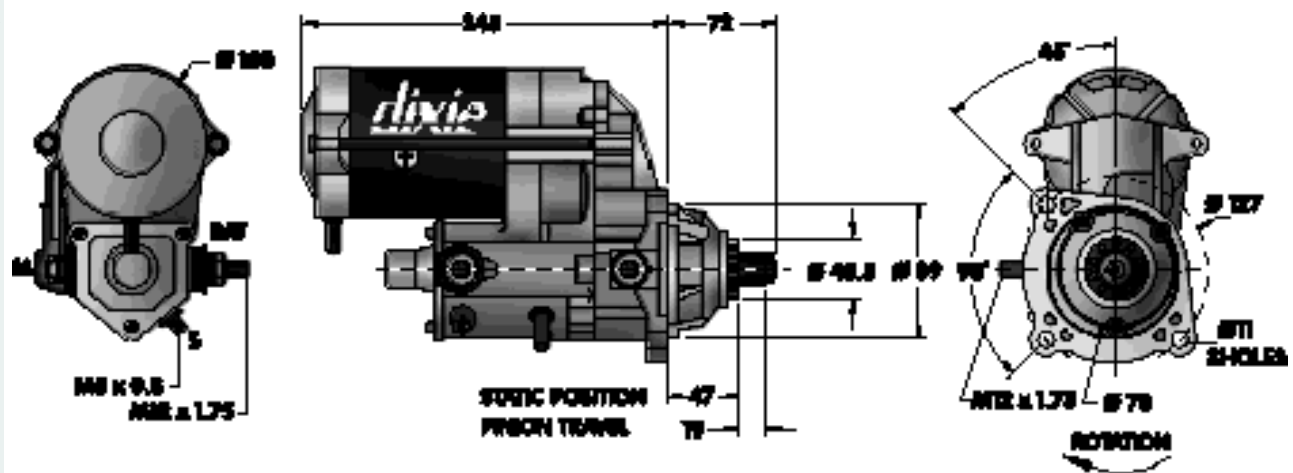


- 246-30123 12V, 4.0 kW, 10T,

# OUTLINE SPECIFICATIONS

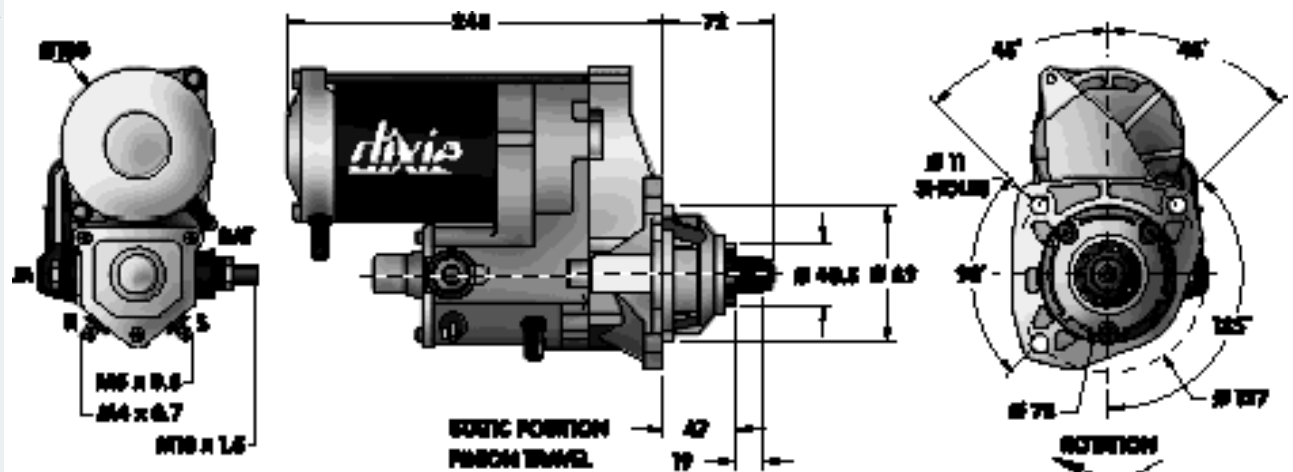


Illustration  
246-325



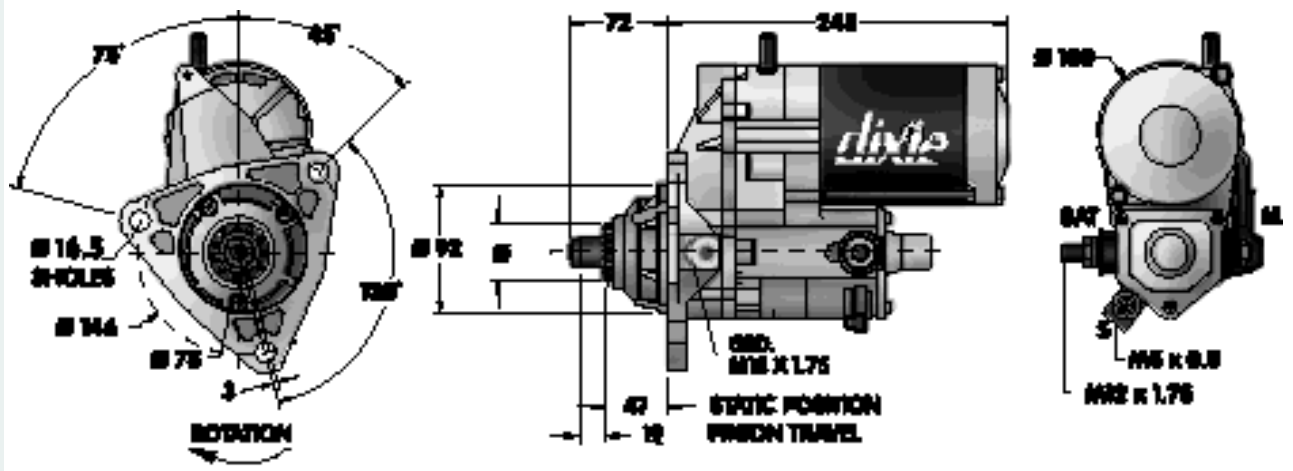
246-30124 12V, 4.0 kW, 10T, OIL SEALED

Illustration  
246-326



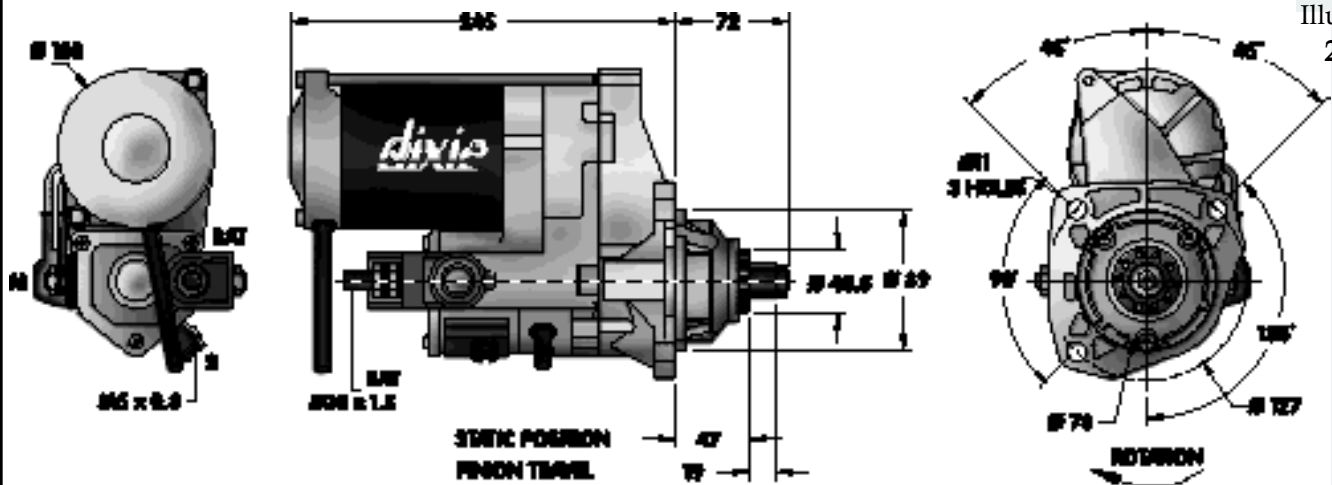
246-30125 12V, 4.0 kW, 10T, OIL SEALED

Illustration  
246-327



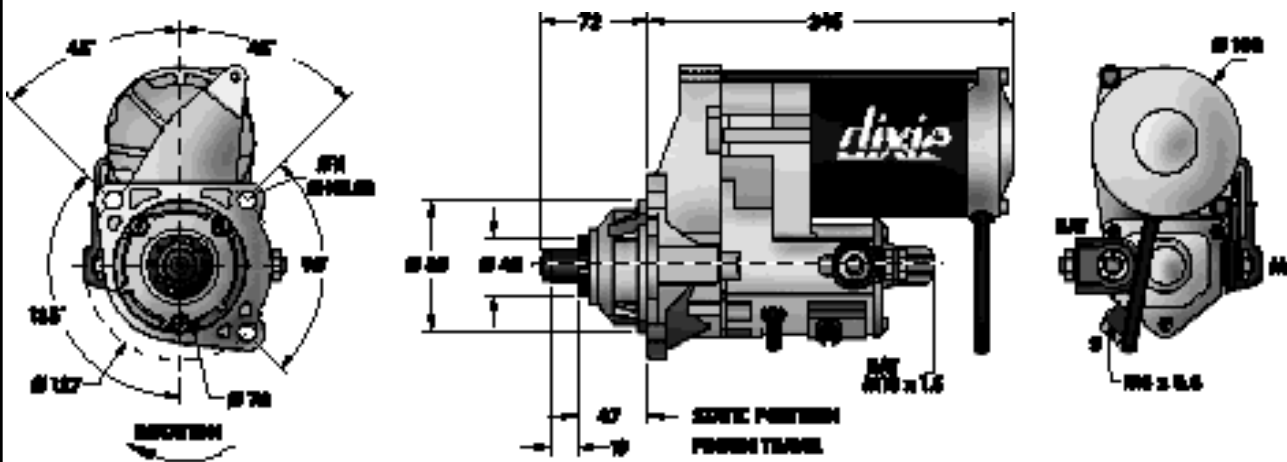
246-30218 24V, 7.5 kW, 10T,  $\varnothing 40.5$  OIL SEALED  
246-30221 24V, 7.5 kW, 11T,  $\varnothing 53$  OIL SEALED

Illustration  
246-328



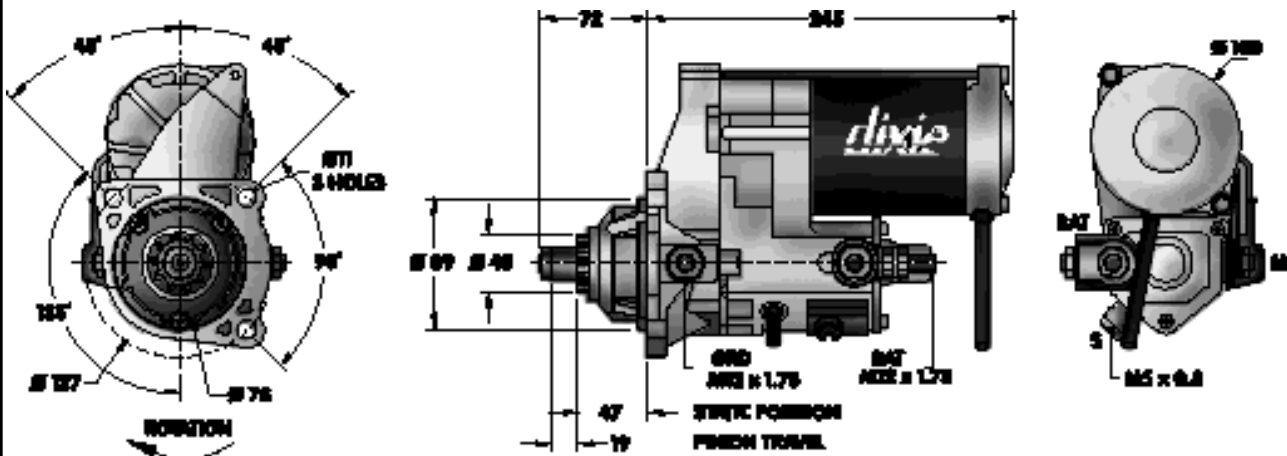
246-30128 12V, 4.0 kW, 10T, OIL SEALED

Illustration  
246-329



246-30129 12V, 4.0 kW, 10T, OIL SEALED

Illustration  
246-330

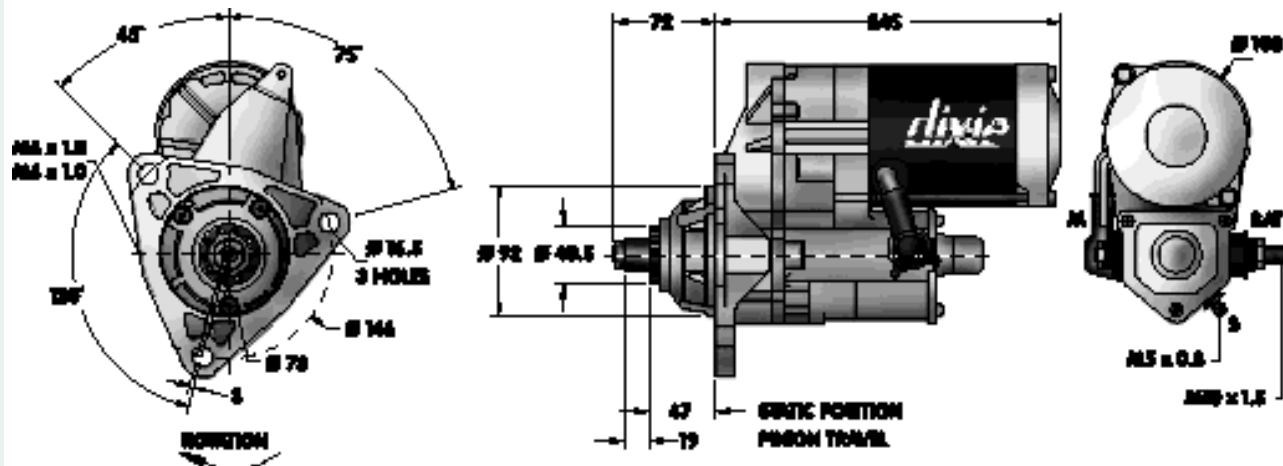


246-30131 12V, 4.0 kW, 10T, OIL SEALED

# OUTLINE SPECIFICATIONS

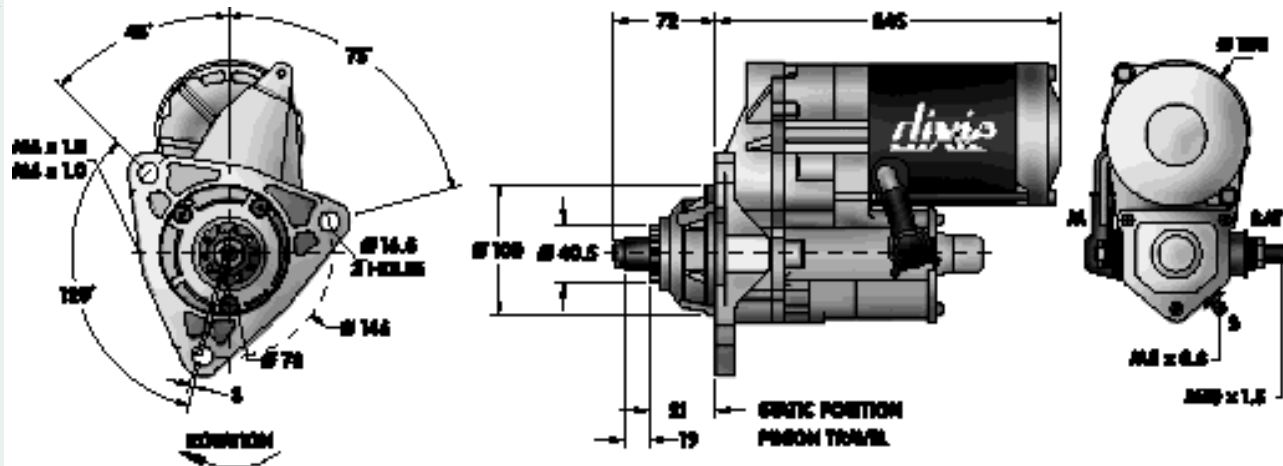


Illustration  
246-331



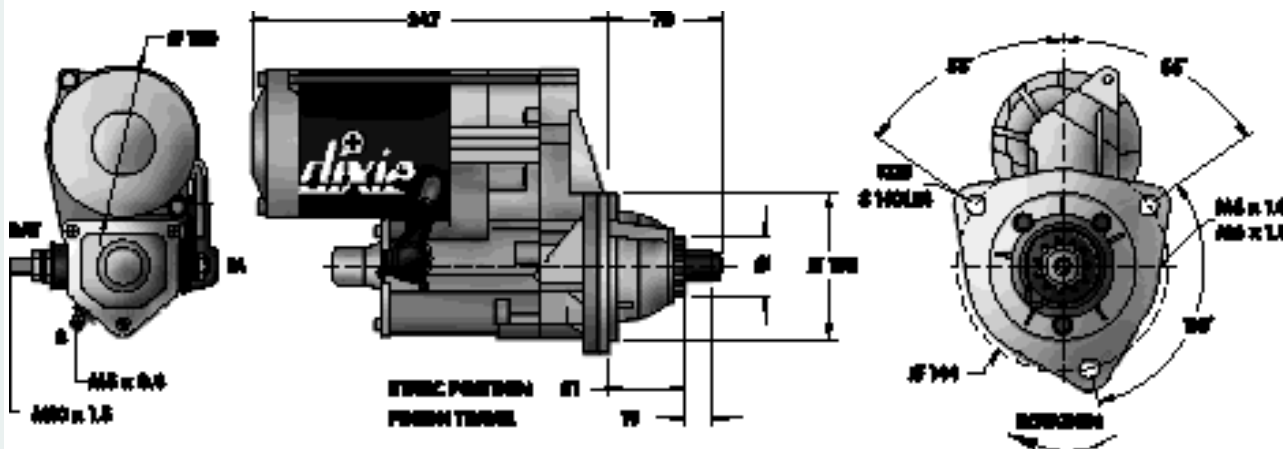
246-30223 24V, 7.5kW, 10T, OIL SEALED

3 Illustration  
246-332



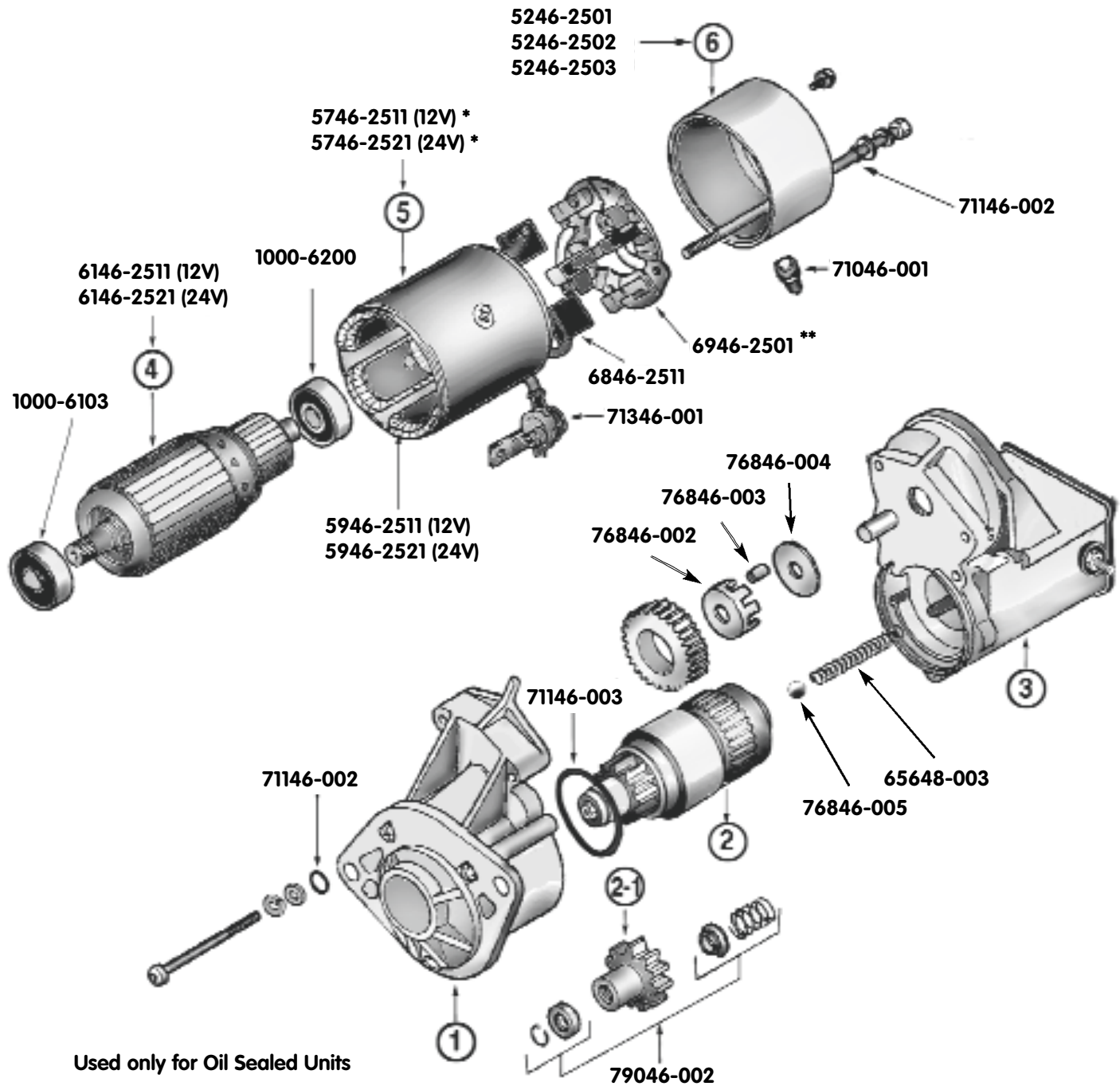
246-30224 24V, 7.5kW, 10T, OIL SEALED

Illustration  
246-333



246-30212 24V, 7.5kW, 11T, Ø40 OIL SEALED  
246-30222 24V, 7.5kW, 13T, Ø46.5 OIL SEALED

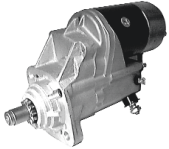











Dixie No.	O.E.M. No.	Description	Dixie No.	O.E.M. No.	Description
1000-6103	949100-1930	Bearing-Armature - 17 I.D.x 35 O.D.x 10W.	6146-2521	028200-1590	Armature - 24V
1000-6200	949100-1750	Bearing-Armature - 10 I.D.x 30 O.D.x 9W.	6846-2511	028099-3570	Brush
5246-2501	028501-0911	C.E. Frame	6946-2501**	028510-0500	Brush Holder Assy. - 12V & 24V
5246-2502	028501-1090	C.E. Frame w/ Ground Post	71046-001	028062-0200	Drain Tube - C.E.
5246-2503	-	C.E. Frame w/ Ground Post	71146-002	90801-10050	O-Ring - 4.8mm I.D.
5746-2511 *	028100-3001	Field Case Assy.- 12V- 90mm O.D.	71146-003	90801-20470	O-Ring - 47.2mm I.D.
5746-2521 *	028100-2881	Field Case Assy.- 24V- 90mm O.D.	71346-001	028062-0130	Motor Terminal Cover
5946-2511	-	Field Coil-12V- 2.5 & 2.7 kW	79046-002	-	Pinion Lock Kit
5946-2521	-	Field Coil-24V- 4.5 kW			
6146-2511	028200-1780	Armature - 12V			

\* Field Case Assy. supplied with Brushes. \*\* Brush Holder Assy. supplied with Brushes. Used only for Oil Sealed Units.

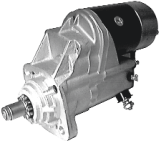







# **dixie** SERVICE PARTS - for Starters w/90 mm Motor Ø - 2.5, 2.7, 4.5 kW

	V / kW	ILL.	 ① D.E. Housing	 ② Drive Assy.	 ②-1 Pinion Gear	 ③ Solenoid	 ④ Armature	 ⑤ Field Case ★	 ⑥ C.E. Frame
246-25101	12 / 2.8	246-202	5146-2502	5446-2508	54146-006	6646-2514	6146-2511	5746-2511	5246-2501
246-25102	12 / 2.8	246-201	5146-2501	5446-2501	54146-001	6646-2512	6146-2511	5746-2511	5246-2501
246-25103	12 / 2.8	246-203	5146-2503	5446-2516	54146-002	6646-2511	6146-2511	5746-2511	5246-2501
246-25104	12 / 2.8	246-204	5146-2504	5446-2503	54146-003	6646-2511	6146-2511	5746-2511	5246-2501
246-25105	12 / 2.8	246-205	5146-2505	5446-2504	54146-004	6646-2511	6146-2511	5746-2511	5246-2502
246-25106	12 / 2.8	246-201	5146-2501	5446-2505	54146-005	6646-2512	6146-2511	5746-2511	5246-2501
246-25107	12 / 2.8	246-206	5146-2506	5446-2506	54146-006	6646-2511	6146-2511	5746-2511	5246-2501
246-25108	12 / 2.8	246-207	5146-2507	5446-2516	54146-002	6646-2511	6146-2511	5746-2511	5246-2501
246-25109	12 / 2.8	246-208	5146-2553	5446-2516	54146-002	6646-2512	6146-2511	5746-2511	5246-2501
246-25110	12 / 2.8	246-210	5146-2554	5446-2516	54146-002	6646-2515	6146-2511	5746-2511	5246-2501
246-25111	12 / 2.8	246-211	5146-2511	5446-2507	54146-007	6646-2514	6146-2511	5746-2511	5246-2501
246-25112	12 / 2.8	246-206	5146-2506	5446-2508	54146-006	6646-2511	6146-2511	5746-2511	5246-2501
246-25113	12 / 2.8	246-212	5146-2512	5446-2516	54146-002	6646-2515	6146-2511	5746-2511	5246-2501
246-25114	12 / 2.8	246-213	5146-2513	5446-2516	54146-002	6646-2516	6146-2511	5746-2511	5246-2501
246-25115	12 / 2.8	246-214	5146-2514	5446-2504	54146-004	6646-2511	6146-2511	5746-2511	5246-2501
246-25116	12 / 2.8	246-221	5146-2521	5446-2504	54146-004	6646-2513	6146-2511	5746-2511	5246-2501
246-25117	12 / 2.8	246-222	5146-2522	5446-2504	54146-004	6646-2511	6146-2511	5746-2511	5246-2501
246-25118	12 / 2.8	246-223	5146-2523	5446-2504	54146-004	6646-2513	6146-2511	5746-2511	5246-2501
246-25119	12 / 2.8	246-224	5146-2524	5446-2504	54146-004	6646-2511	6146-2511	5746-2511	5246-2501
246-25120	12 / 2.8	246-234	5146-2534	5446-2504	54146-004	6646-2511	6146-2511	5746-2511	5246-2501
246-25121	12 / 2.8	246-240	5146-2540	5446-2504	54146-004	6646-2511	6146-2511	5746-2511	5246-2501
246-25122	12 / 2.8	246-243	5146-2543	5446-2504	54146-004	6646-2512	6146-2511	5746-2511	5246-2501
246-25123	12 / 2.8	246-216	5146-2516	5446-2503	54146-003	6646-2512	6146-2511	5746-2511	5246-2501
246-25124	12 / 2.8	246-229	5146-2529	5446-2510	54146-009	6646-2512	6146-2511	5746-2511	5246-2501
246-25126	12 / 2.8	246-245	5146-2545	5446-2504	54146-004	6646-2512	6146-2511	5746-2511	5246-2501
246-25127	12 / 2.8	246-232	5146-2532	5446-2511	54146-008	6646-2512	6146-2511	5746-2511	5246-2501
246-25128	12 / 2.8	246-233	5146-2533	5446-2504	54146-004	6646-2512	6146-2511	5746-2511	5246-2501
246-25129	12 / 2.8	246-241	5146-2541	5446-2521	54146-018	6646-2512	6146-2511	5746-2511	5246-2501
246-25130	12 / 2.8	246-235	5146-2535	5446-2504	54146-004	6646-2511	6146-2511	5746-2511	5246-2501
246-25131	12 / 2.8	246-237	5146-2537	5446-2504	54146-004	6646-2511	6146-2511	5746-2511	5246-2501
246-25132	12 / 2.8	246-229	5146-2529	5446-2512	54146-009	6646-2512	6146-2511	5746-2511	5246-2501
246-25133	12 / 2.8	246-242	5146-2542	5446-2513	54146-010	6646-2511	6146-2511	5746-2511	5246-2501
246-25134	12 / 2.8	246-204	5146-2504	5446-2504	54146-004	6646-2511	6146-2511	5746-2511	5246-2501
246-25136	12 / 2.8	246-238	5146-2538	5446-2521	54146-018	6646-2512	6146-2511	5746-2511	5246-2501
246-25137	12 / 2.8	246-225	5146-2525	5446-2504	54146-004	6646-2511	6146-2511	5746-2511	5246-2501
246-25138	12 / 2.8	246-244	5146-2544	5446-2502	54146-002	6646-2512	6146-2511	5746-2511	5246-2503
246-25140	12 / 2.8	246-217	5146-2517	5446-2504	54146-004	6646-2511	6146-2511	5746-2511	5246-2501
246-25141	12 / 2.8	246-215	5146-2515	5446-2503	54146-003	6646-2512	6146-2511	5746-2511	5246-2501
246-25142	12 / 2.8	246-220	5146-2513	5446-2523	54146-020	6646-2516	6146-2511	5746-2511	5246-2501
246-25144	12 / 2.8	246-254	5146-2554	5446-2514	54146-003	6646-2512	6146-2511	5746-2511	5246-2501
246-25145	12 / 2.8	246-214	5146-2514	5446-2515	54146-004	6646-2511	6146-2511	5746-2511	5246-2501
246-25146	12 / 2.8	246-236	5146-2536	5446-2515	54146-004	6646-2511	6146-2511	5746-2511	5246-2501
246-25147	12 / 2.8	246-226	5146-2526	5446-2502	54146-002	6646-2511	6146-2511	5746-2511	5246-2501
246-25149	12 / 2.8	246-208	5146-2508	5446-2506	54146-006	6646-2512	6146-2511	5746-2511	5246-2501
246-25152	12 / 2.8	246-251	5146-2551	5446-2506	54146-006	6646-2512	6146-2511	5746-2511	5246-2501
246-25153	12 / 2.8	246-253	-	5446-2516	54146-002	6646-2512	6146-2511	5746-2511	5246-2503
246-25154	12 / 2.8	246-253	-	5446-2517	54146-011	6646-2512	6146-2511	5746-2511	5246-2503
246-25155	12 / 2.8	246-252	-	5446-2521	54146-018	6646-2517	6146-2511	5746-2511	5246-2501
246-25156	12 / 2.8	246-256	-	5446-2518	54146-015	6646-2512	6146-2511	5746-2511	5246-2501
246-25157	12 / 2.8	246-257	-	5446-2520	54146-017	6646-2514	6146-2511	5746-2511	5246-2501
246-25158	12 / 2.8	246-256	-	5446-2501	54146-001	6646-2512	6146-2511	5746-2511	5246-2501
246-25159	12 / 2.8	246-258	5146-2553	5446-2523	54146-020	6646-2512	6146-2511	5746-2511	5246-2501
246-25160	12 / 2.8	246-227	-	5446-2502	54146-002	6646-2517	6146-2511	5746-2511	5246-2501
246-25161	12 / 2.8	246-264	5146-2564	5446-2508	54146-006	6646-2512	6146-2511	5746-2511	5246-2501
246-25162	12 / 2.8	246-263	5146-2563	5446-2515	54146-004	6646-2515	6146-2511	5746-2511	5346-2501
246-25163	12 / 2.8	246-262	5146-2562	5446-2502	54146-002	6646-2511	6146-2511	5746-2511	5346-2501
246-25164	12 / 2.8	246-265	5146-2565	5446-2516	54146-002	6646-2512	6146-2511	5746-2511	5246-2501

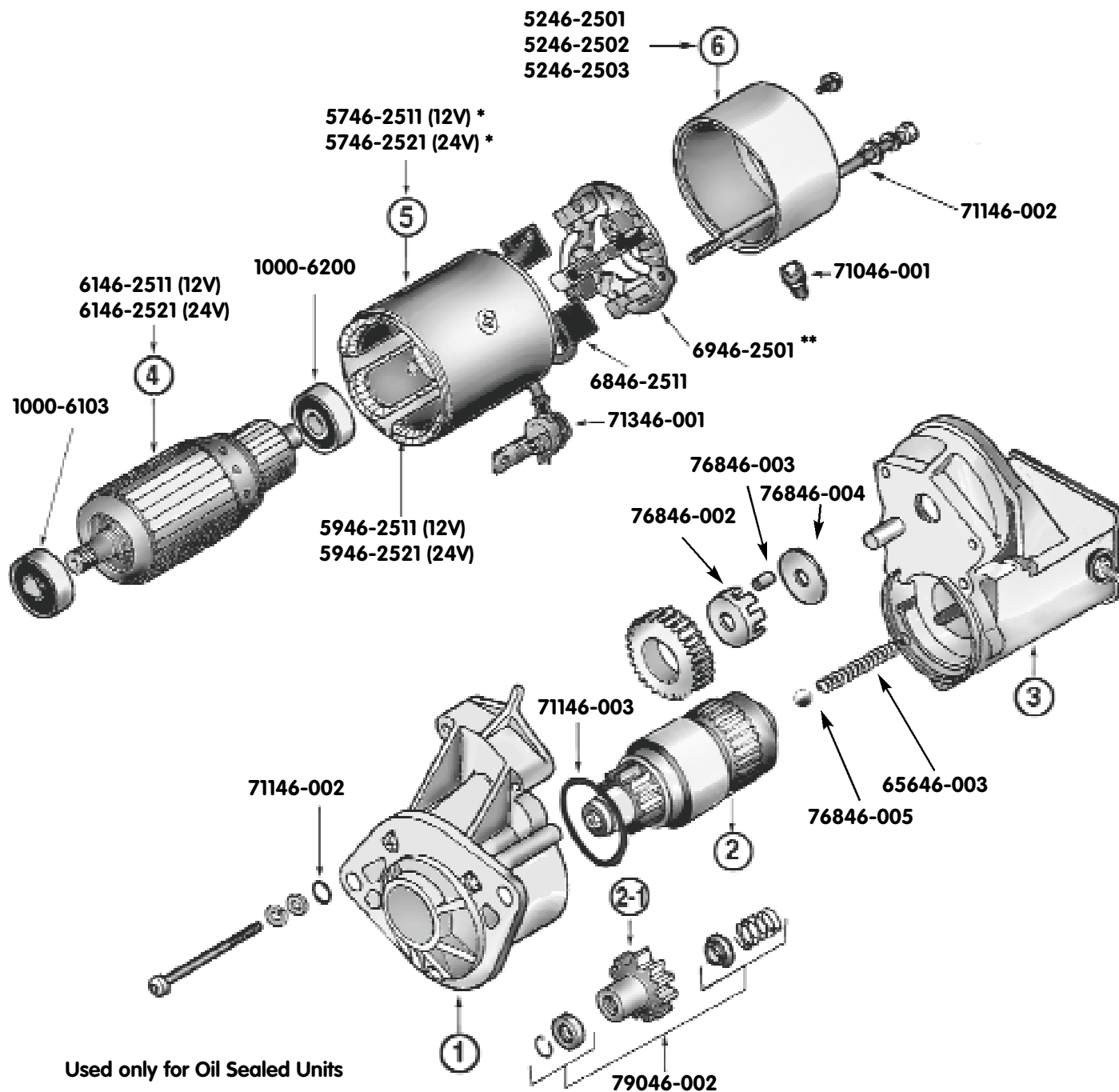
★ Supplied with Brushes

# SERVICE PARTS - for Starters w/90 mm Motor Ø - 2.5, 2.7, 4.5 kW



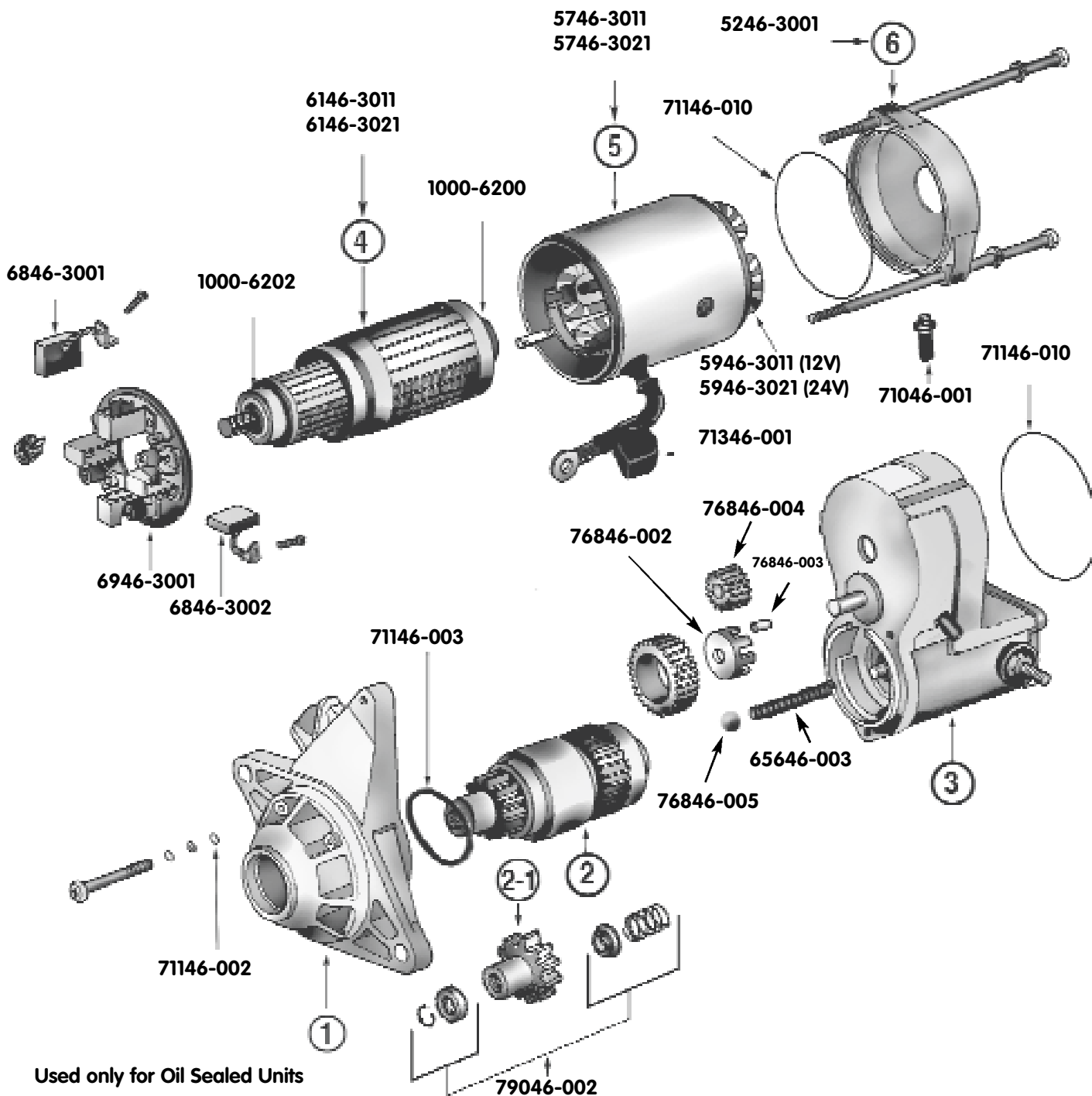
	V/kW	ILL.	 ① D.E. Housing	 ② Drive Assy.	 (2-1) Pinion	 ③ Solenoid	 ④ Armature	 ⑤ Field Case ★	 ⑥ C.E. Frame
246-25165	12/2.8	246-266	5146-2566	5446-2508	54146-006	6646-2511	6146-2511	5746-2511	5246-2501
246-25166	12/2.8	246-218	5146-2518	5446-2504	54146-004	6646-2512	6146-2511	5746-2511	5246-2501
246-25201	24/4.5	246-217	5146-2517	5446-2504	54146-004	6646-2521	6146-2521	5746-2521	5246-2501
246-25202	24/4.5	246-209	5146-2509	5446-2502	54146-002	6646-2522	6146-2521	5746-2521	5246-2501
246-25203	24/4.5	246-214	5146-2514	5446-2504	54146-004	6646-2521	6146-2521	5746-2521	5246-2501
246-25204	24/4.5	246-218	5146-2518	5446-2504	54146-004	6646-2522	6146-2521	5746-2521	5246-2501
246-25205	24/4.5	246-214	5146-2514	5446-2515	54146-004	6646-2521	6146-2521	5746-2521	5246-2501
246-25206	24/4.5	246-219	5146-2519	5446-2504	54146-004	6646-2521	6146-2521	5746-2521	5246-2501
246-25207	24/4.5	246-224	5146-2524	5446-2504	54146-004	6646-2521	6146-2521	5746-2521	5246-2501
246-25208	24/4.5	246-239	5146-2539	5446-2504	54146-004	6646-2521	6146-2521	5746-2521	5246-2501
246-25209	24/4.5	246-222	5146-2522	5446-2504	54146-004	6646-2521	6146-2521	5746-2521	5246-2501
246-25210	24/4.5	246-233	5146-2533	5446-2504	54146-004	6646-2522	6146-2521	5746-2521	5246-2501
246-25211	24/4.5	246-230	5146-2530	5446-2504	54146-004	6646-2522	6146-2521	5746-2521	5246-2501
246-25212	24/4.5	246-235	5146-2535	5446-2504	54146-004	6646-2521	6146-2521	5746-2521	5246-2501
246-25213	24/4.5	246-236	5146-2536	5446-2515	54146-004	6646-2521	6146-2521	5746-2521	5246-2501
246-25214	24/4.5	246-222	5146-2522	5446-2515	54146-004	6646-2521	6146-2521	5746-2521	5246-2501
246-25215	24/4.5	246-230	5146-2530	5446-2515	54146-004	6646-2522	6146-2521	5746-2521	5246-2501
246-25216	24/4.5	246-228	5146-2506	5446-2516	54146-002	6646-2521	6146-2521	5746-2521	5246-2501
246-25217	24/4.5	246-234	5146-2534	5446-2504	54146-004	6646-2521	6146-2521	5746-2521	5246-2501
246-25218	24/4.5	246-246	5146-2546	5446-2504	54146-004	6646-2521	6146-2521	5746-2521	5246-2501
246-25219	24/4.5	246-232	5146-2532	5446-2511	54146-008	6646-2522	6146-2521	5746-2521	5246-2501
246-25220	24/4.5	246-237	5146-2537	5446-2504	54146-004	6646-2521	6146-2521	5746-2521	5246-2501
246-25221	24/4.5	246-247	-	5446-2504	54146-004	6646-2521	6146-2521	5746-2521	5246-2501
246-25222	24/4.5	246-248	5146-2548	5446-2506	54146-006	6646-2522	6146-2521	5746-2521	5246-2501
246-25223	24/4.5	246-250	5146-2550	5446-2504	54146-004	6646-2522	6146-2521	5746-2521	5246-2501
246-25224	24/4.5	246-231	5146-2505	5446-2504	54146-004	6646-2521	6146-2521	5746-2521	5246-2501
246-25225	24/4.5	246-218	5146-2518	5446-2515	54146-004	6646-2522	6146-2521	5746-2521	5246-2501
246-25226	24/4.5	246-221	5146-2521	5446-2504	54146-004	6646-2523	6146-2521	5746-2521	5246-2501
246-25227	24/4.5	246-240	5146-2540	5446-2515	54146-004	6646-2521	6146-2521	5746-2521	5246-2501
246-25228	24/4.5	246-249	5146-2549	5446-2504	54146-004	6646-2522	6146-2521	5746-2521	5246-2501
246-25229	24/4.5	246-252	-	5446-2521	54146-018	6646-2527	6146-2521	5746-2521	5246-2501
246-25230	24/4.5	246-253	-	5446-2516	54146-002	6646-2522	6146-2521	5746-2521	5246-2503
246-25231	24/4.5	246-253	-	5446-2517	54146-011	6646-2522	6146-2521	5746-2521	5246-2503
246-25232	24/4.5	246-223	5146-2523	5446-2515	54146-004	6646-2523	6146-2521	5746-2521	5246-2501
246-25233	24/4.5	246-255	5146-2555	5446-2504	54146-004	6646-2522	6146-2521	5746-2521	5246-2501
246-25234	24/4.5	246-256	-	5446-2518	54146-015	6646-2522	6146-2521	5746-2521	5246-2501
246-25235	24/4.5	246-256	-	5446-2519	54146-016	6646-2522	6146-2521	5746-2521	5246-2501
246-25236	24/4.5	246-202	5146-2502	5446-2508	54146-006	6646-2528	6146-2521	5746-2521	5246-2501
246-25237	24/4.5	246-211	5146-2511	5446-2507	54146-007	6646-2528	6146-2521	5746-2521	5246-2501
246-25238	24/4.5	246-259	-	5446-2503	54146-003	6646-2522	6146-2521	5746-2521	5246-2501
246-25239	24/4.5	246-260	5146-2560	5446-2502	54146-002	6646-2529	6146-2521	5746-2521	5246-2501
246-25240	24/4.5	246-227	-	5446-2502	54146-002	6646-2527	6146-2521	5746-2521	5246-2501
246-25241	24/4.5	246-258	5146-2553	5446-2523	54146-020	6646-2522	6146-2521	5746-2521	5246-2501
246-25242	24/4.5	246-226	5146-2526	5146-2502	54146-002	6646-2521	6146-2521	5746-2521	5246-2501
246-25243	24/4.5	246-261	5146-2561	5446-2504	54146-004	6646-2523	6146-2521	5746-2521	5246-2501
246-25244	24/4.5	246-267	5146-2567	5446-2518	54146-015	6646-2522	6146-2521	5746-2521	5246-2501

★ Supplied with Brushes



Dixie No.	O.E.M. No.	Description	Dixie No.	O.E.M. No.	Description
1000-6103	949100-1930	Bearing-Armature - 17 I.D.x 35 O.D.x 10W.	6146-2521	028200-1590	Armature - 24V
1000-6200	949100-1750	Bearing-Armature - 10 I.D.x 30 O.D.x 9W.	6846-2511	028099-3570	Brush
5246-2501	028501-0911	C.E. Frame	6946-2501**	028510-0500	Brush Holder Assy.- 12V & 24V
5246-2502	028501-1090	C.E. Frame w/ Ground Post	71046-001	028062-0200	Drain Tube - C.E.
5246-2503	-	C.E. Frame w/ Ground Post	71146-002	90801-10050	O-Ring - 4.8mm I.D.
5746-2511 *	028100-3001	Field Case Assy.- 12V- 90mm O.D.	71146-003	90801-20470	O-Ring - 47.2mm I.D.
5746-2521 *	028100-2881	Field Case Assy.- 24V- 90mm O.D.	71346-001	028062-0130	Motor Terminal Cover
5946-2511	-	Field Coil - 12V - 2.5 & 2.7 kW	79046-002	-	Pinion Lock Kit
5946-2521	-	Field Coil - 24V - 4.5 kW			
6146-2511	028200-1780	Armature - 12V			

\* Field Case Assy. supplied with Brushes. \*\* Brush Holder Assy. supplied with Brushes. Used only for Oil Sealed Units.











Used only for Oil Sealed Units

Dixie No.	O.E.M. No.	Description	Dixie No.	O.E.M. No.	Description
1000-6200	949100-2160	Bearing - Armature -10 I.D.x 30 O.D.x9W.	6846-3002	028530-1100	Brush - Neg.
1000-6202	949199-3160	Bearing - Armature - 15 I.D.x 35 O.D.x11W.	6946-3001	028510-0880	Brush Holder Assy.
5246-3001	028501-5270	C.E. Frame	71046-001	028062-0200	Drain Tube - C.E.
5746-3011	028100-4410	Field Case Assy.- 12V - 3.0 kW	71146-002	90801-10050	O-Ring - 4.8mm I.D.
5746-3021	028100-5410	Field Case Assy. - 24V - 5.5 kW	71146-003	90801-20470	O-Ring - 47.2mm I.D.
5946-3011	-	Field Coil - 12V - 3.0kW	71146-010	028901-0360	Gasket
5946-3021	-	Field Coil - 24V - 5.5kW	71346-001	028062-0130	Motor Terminal Cover
6146-3011	028200-2800	Armature - 12V	79046-002	-	Pinion Lock Kit
6146-3021	028200-5250	Armature - 24V			
6846-3001	028530-1090	Brush - Pos.			

Used only for Oil Sealed Units.

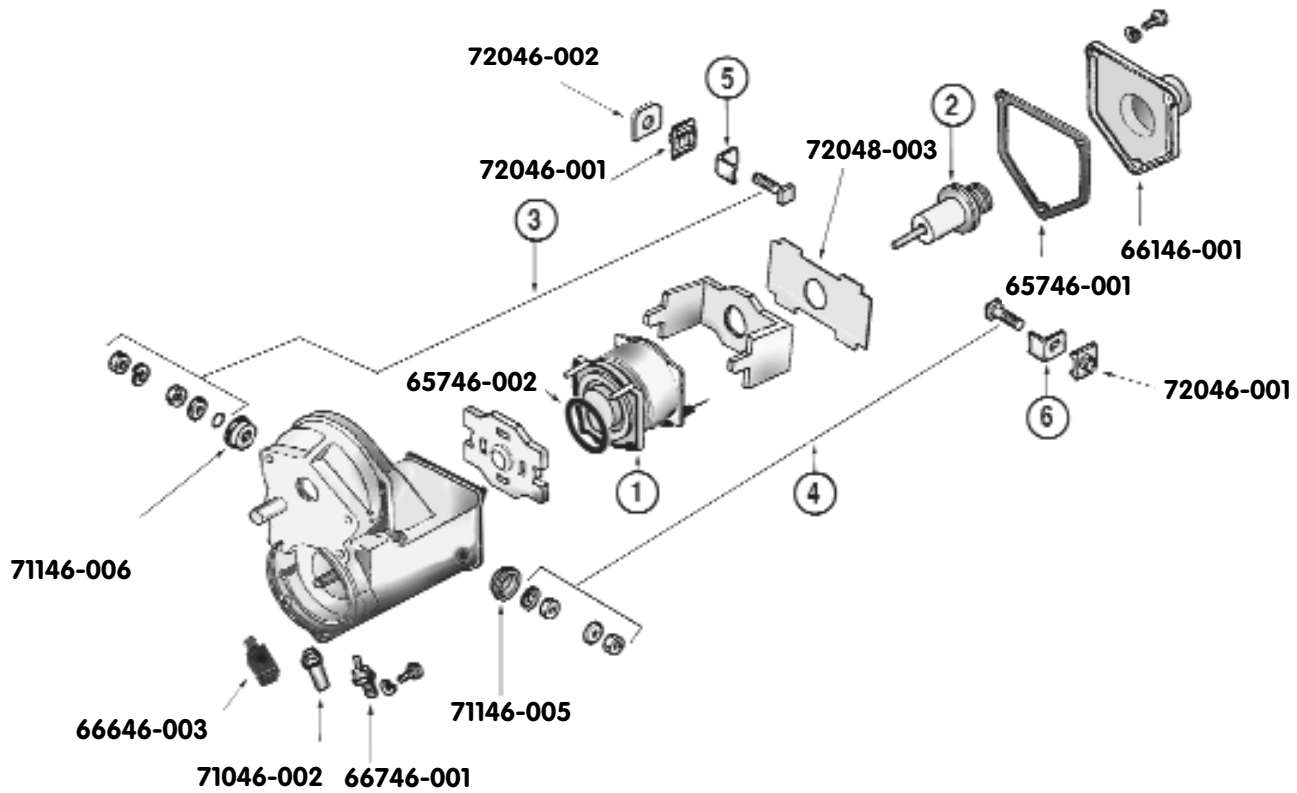


# SERVICE PARTS for Starters w/100 mm Motor Ø - 3.0, 5.5 kW

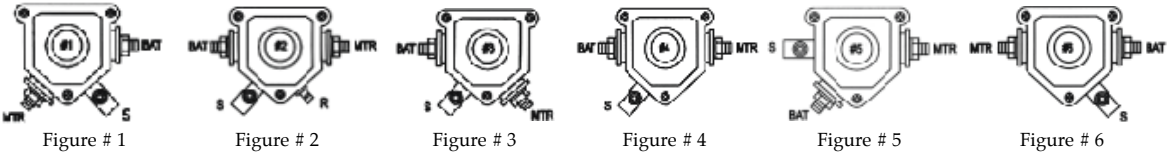
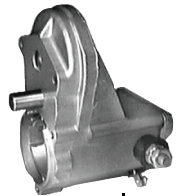
	V / kW	ILL.	 ①	 ②	 ②-1	 ③	 ④	 ⑤	 ⑥
246-30101	12/3.0	246-303	5146-3003	5446-2506	54146-006	6646-3011	6146-3011	5746-3011	5246-3001
246-30102	12/3.0	246-306	5146-3006	5446-2504	54146-004	6646-3011	6146-3011	5746-3011	5246-3001
246-30103	12/3.0	246-304	5146-3004	5446-2516	54146-002	6646-3013	6146-3011	5746-3011	5246-3001
246-30104	12/3.0	246-302	5146-3002	5446-2506	54146-006	6646-3011	6146-3011	5746-3011	5246-3001
246-30105	12/3.0	246-305	5146-3005	5446-2516	54146-002	6646-3011	6146-3011	5746-3011	5246-3001
246-30106	12/3.0	246-305	5146-3005	5446-2502	54146-002	6646-3011	6146-3011	5746-3011	5246-3001
246-30107	12/3.0	246-301	5146-3001	5446-2504	54146-004	6646-3011	6146-3011	5746-3011	5246-3001
246-30108	12/3.0	246-313	-	5446-3004	54146-004	6646-3012	6146-3011	5746-3011	5246-3001
246-30109	12/3.0	246-311	5146-3011	5446-2504	54146-004	6646-3012	6146-3011	5746-3011	5246-3001
246-30110	12/3.5	246-309	-	5446-3005	54146-013	6646-3012	6146-3011	5746-3011	5246-3001
246-30111	12/3.0	246-312	5146-3012	5446-3001	54146-002	6646-3011	6146-3011	5746-3011	5246-3001
246-30112	12/3.0	246-314	-	5446-2516	54146-002	6646-3013	6146-3011	5746-3011	5246-3001
246-30113	12/4.0	246-307	5146-3007	5446-3004	54146-004	6646-3012	6146-3011	5746-3011	5246-3001
246-30114	12/4.0	246-316	5146-3016	5446-3003	54146-002	6646-3011	6146-3011	5746-3011	5246-3001
246-30115	12/4.0	246-317	5146-3017	5446-3001	54146-002	6646-3013	6146-3011	5746-3011	5246-3001
246-30116	12/4.0	246-318	5146-3019	5446-3001	54146-002	6646-3013	6146-3011	5746-3011	5246-3001
246-30117	12/4.0	246-319	5146-3019	5446-3001	54146-002	6646-3013	6146-3011	5746-3011	5246-3001
246-30118	12/4.0	246-320	5146-3020	5446-3001	54146-002	6646-3013	6146-3011	5746-3011	5246-3001
246-30119	12/4.0	246-321	5146-3021	5446-3004	54146-004	6646-3012	6146-3011	5746-3011	5246-3001
246-30120	12/4.0	246-321	5146-3021	5446-3004	54146-004	6646-3012	6146-3011	5746-3011	5246-3001
246-30121	12/4.0	246-322	5146-3022	5446-3001	54146-002	6646-3012	6146-3011	5746-3011	5246-3001
246-30122	12/4.0	246-323	5146-3023	5446-3004	54146-004	6646-3011	6146-3011	5746-3011	5246-3001
246-30123	12/4.0	246-324	5146-3024	5446-3003	54146-002	6646-3011	6146-3011	5746-3011	5246-3001
246-30124	12/4.0	246-325	5146-3025	5446-3001	54146-002	6646-3012	6146-3011	5746-3011	5246-3001
246-30125	12/4.0	246-326	5146-3026	5446-3001	54146-002	6646-3014	6146-3011	5746-3011	5246-3001
246-30126	12/4.0	246-317	5146-3017	5446-3003	54146-002	6646-3013	6146-3011	5746-3011	5246-3001
246-30127	12/4.0	246-312	5146-3012	5446-3001	54146-002	6646-3011	6146-3011	5746-3011	5246-3001
246-30128	12/4.0	246-328	5146-3026	5446-3001	54146-002	6646-3012	6146-3011	5746-3011	5246-3001
246-30129	12/4.0	246-329	5146-3029	5446-3001	54146-002	6646-3011	6146-3011	5746-3011	5246-3001
246-30130	12/4.0	246-323	5146-3023	5446-3001	54146-002	6646-3011	6146-3011	5746-3011	5246-3001
246-30131	12/4.0	246-330	5146-3030	5446-3001	54146-002	6646-3011	6146-3011	5746-3011	5246-3001
246-30201	24/5.5	246-304	5146-3004	5446-3001	54146-002	6646-3023	6146-3021	5746-3021	5246-3001
246-30202	24/5.5	246-305	5146-3005	5446-3003	54146-002	6646-3021	6146-3021	5746-3021	5246-3001
246-30203	24/5.5	246-301	5146-3001	5446-3004	54146-004	6646-3021	6146-3021	5746-3021	5246-3001
246-30204	24/5.5	246-313	-	5446-3006	54146-014	6646-3022	6146-3021	5746-3021	5246-3001
246-30205	24/5.5	246-308	-	5446-3004	54146-004	6646-3022	6146-3021	5746-3021	5246-3001
246-30206	24/5.5	246-306	5146-3006	5446-3004	54146-004	6646-3021	6146-3021	5746-3021	5246-3001
246-30207	24/5.5	246-305	5146-3005	5446-3001	54146-002	6646-3021	6146-3021	5746-3021	5246-3001
246-30209	24/5.5	246-307	5146-3007	5446-3004	54146-004	6646-3022	6146-3021	5746-3021	5246-3001
246-30210	24/5.5	246-310	-	5446-3004	54146-004	6646-3022	6146-3021	5746-3021	5246-3001
246-30211	24/5.5	246-309	-	5446-3005	54146-013	6646-3022	6146-3021	5746-3021	5246-3001
246-30212	24/7.5	246-333	-	5446-3004	54146-004	6646-3021	6146-3021	5746-3021	5246-3001
246-30213	24/7.5	246-315	-	5446-3006	54146-014	6646-3022	6146-3021	5746-3021	5246-3001
246-30214	24/7.5	246-317	5146-3017	5446-3001	54146-002	6646-3023	6146-3021	5746-3021	5246-3001
246-30215	24/7.5	246-318	5146-3019	5446-3001	54146-002	6646-2023	6146-3021	5746-3021	5246-3001
246-30216	24/7.5	246-321	5146-3021	5446-3004	54146-004	6646-3022	6146-3021	5746-3021	5246-3001
246-30217	24/7.5	246-323	5146-3023	5446-3004	54146-004	6646-3021	6146-3021	5746-3021	5246-3001
246-30218	24/7.5	246-327	-	5446-3001	54146-002	6646-3021	6146-3021	5746-3021	5246-3001
246-30219	24/7.5	246-328	5146-3022	5446-3001	54146-002	6646-3022	6146-3021	5746-3021	5246-3001
246-30220	24/7.5	246-323	5146-3023	5446-3001	54146-002	6646-3021	6146-3021	5746-3021	5246-3001
246-30221	24/7.5	246-327	-	-	-	6646-3021	6146-3021	5746-3021	5246-3001
246-30222	24/7.5	246-333	-	5446-3006	54146-014	6646-3021	6146-3021	5746-3021	5246-3001
246-30223	24/7.5	246-331	-	5446-3001	54146-002	6646-3022	6146-3021	5746-3021	5246-3001
246-30224	24/7.5	246-332	-	5446-3001	54146-002	6646-3022	6146-3021	5746-3021	5246-3001

# SERVICE PARTS - SOLENOIDS

for Starters w/ 90 mm Motor Ø - 2.5, 2.7, 4.5 kW



5



Dixie No.	Volt	Figure	① Coil	② Plunger	③ Bat.Post Kit	④ Mtr.Post Kit	⑤ Bat.Contact	⑥ Mtr.Contact
6646-2511	12V	4	66246-101	65446-001	7946-0001	7946-0004	65146-010 *	65146-008
6646-2512	12V	6	66246-103	65446-001	7946-0001	7946-0004	65146-010 *	65146-008
6646-2513	12V	1	66246-105	65446-001	7946-0001	-	65146-010 *	65146-009
6646-2514	12V	5	66246-102	65446-001	-	7946-0004	65146-009	65146-008
6646-2515	12V	2	66246-101	65446-001	7946-0001	7946-0004	65146-010 *	65146-008
6646-2516	12V	3	66246-104	65446-001	7946-0001	-	65146-010 *	65146-011
6646-2517	12V	1	66246-105	65446-001	-	-	65146-010 *	65146-009
6646-2521	24V	4	66246-201	65446-001	7946-0001	7946-0004	65146-010 *	65146-008
6646-2522	24V	6	66246-203	65446-001	7946-0001	7946-0004	65146-010 *	65146-008
6646-2523	24V	1	66246-202	65446-001	7946-0001	-	65146-010 *	65146-009
6646-2527	24V	1	66246-202	65446-001	-	-	65146-010 *	65146-009
6646-2528	24V	5	66246-204	65446-001	-	7946-0004	65146-009	65146-008
6646-2529	24V	3	66246-205	65446-001	7946-0001	-	65146-010	65146-011

Dixie No.	O.E.M. No.	Description	Dixie No.	O.E.M. No.	Description
65746-001	053404-0240	Gasket - Solenoid Cover	71146-005	-	Insulator-Mtr. Terminal - 8 mm thick
66146-001	053505-0290	Cover	71146-006	-	Insulator-Bat. Terminal - 14 mm thick
66646-003	053480-7560	S-Terminal - M5 x 0.8	72046-001	-	Insulator (int.) 10 mm I.D.
66746-001	053480-0251	R-Terminal - M4 x 0.7	72046-002	-	Insulator-Bat.Post (int.)10 mm I.D.
71046-002	028065-0250	Drain Tube - Solenoid	72046-003	-	Insulator-Coil Bracket

\* Optional heavy duty, silver-inlayed contact, No. 65146-007.



# SERVICE PARTS - SOLENOIDS

for Starters w/ 100 mm Motor Ø - 3.0, 5.5 kW

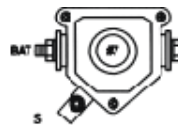
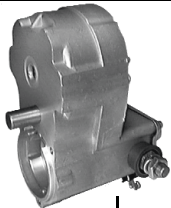
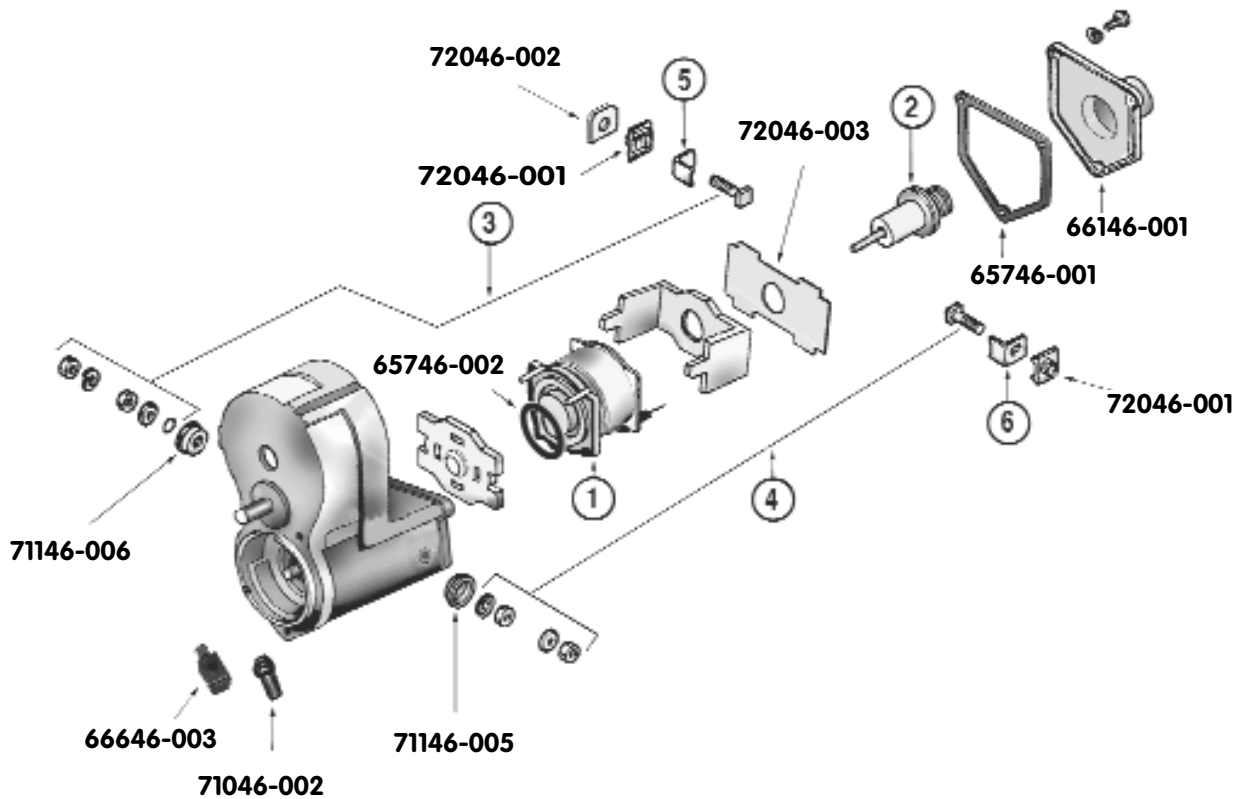


Figure # 7

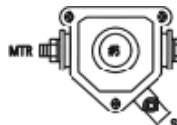


Figure # 8

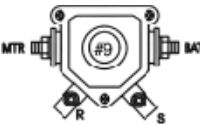


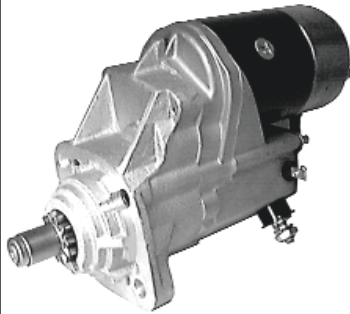
Figure # 9

Dixie No.	Volt	Figure	① Coil	② Plunger	③ Bat.Post Kit	④ Mtr.Post Kit	⑤ Bat.Contact	⑥ Mtr.Contact
6646-3011	12V	7	66246-101	65446-001	7946-0001	7946-0004	65146-010 *	65146-008
6646-3012	12V	8	66246-103	65446-001	7946-0001	7946-0004	65146-010 *	65146-008
6646-3013	12V	7	66246-101	65446-001	7946-0003	7946-0004	- **	65146-008
6646-3014	12V	9	66246-101	65446-001	7946-0001	7946-0004	- *	65146-008
6646-3021	24V	7	66246-201	65446-001	7946-0001	7946-0004	65146-010 *	65146-008
6646-3022	24V	8	66246-203	65446-001	7946-0001	7946-0004	65146-010 *	65146-008
6646-3023	24V	7	66246-201	65446-001	7946-0003	7946-0004	- **	65146-008

Dixie No.	O.E.M. No.	Description	Dixie No.	O.E.M. No.	Description
65746-001	053404-0240	Gasket-Solenoid Cover	71146-006	-	Insulator-Bat. Terminal -14 mm thick
66146-001	053505-0290	Cover	72046-001	-	Insulator (int.) 10 mm I.D.
66646-003	053480-7560	S-Terminal - M5 x 0.8	72046-002	-	Insulator-Bat.Post (int.)10 mm I.D.
71046-002	028065-0250	Drain Tube	72046-003	-	Insulator-Coil Bracket
71146-005	-	Insulator-Mtr. Terminal - 8 mm thick			

\* Optional heavy duty, silver-inlayed contact, No. 65146-007.

\*\* Contact supplied with Battery Post Kit no. 7946-0003. Optional heavy-duty, silver-inlayed contact no. 65146-013.



**246-25101**  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil-Sealed**

Replaces  
Denso: 028000-588\_  
J.I.Case: 116930A1, R39341.  
Refer to Illustration 246-202

**246-25102**  
**Starter-G/R -CW**  
**12V-2.8 kW**

Replaces  
Denso: 028000-566\_, 128000-079\_  
John Deere: CH12096, CH19285.  
Yanmar: 121420-77010, 011.  
Refer to Illustration 246-201

**246-25103**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
Denso: 028000-678\_  
Allis Chalmers: 270324.  
Refer to Illustration 246-203

**246-25104**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
Denso: 028000-500\_  
Kubota: 15451-63013, 014, 015, 016.  
Refer to Illustration 246-204

**246-25105**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
Denso: 028000-558\_, -686\_, 688\_, 689\_,  
-807\_, 128000-038\_, -682\_, 683\_,  
-792\_, 793\_, -958  
228000-035\_, 057\_, -159\_, -266\_  
Toyota: 28100-54010, 011, 052, 061,  
090, 120, 140, 160, 210, 220, 250,  
300, 320, 390, 430.  
Refer to Illustration 246-205

**246-25106**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
Denso: 028000-641\_  
Allis Chalmers: 4530350.  
Mitsubishi H.D.: 34466-00800.  
Refer to Illustration 246-201

**246-25107**  
**G/R Starter-CW**  
**12V-2.8 kW**

Replaces  
Denso: 128000-021\_, 054\_, -227\_  
Case I.H.: 1987559C1, A170746.  
Cummins: 3904466.  
Versatile: 89332.  
Refer to Illustration 246-206

**246-25108**  
**Starter-G/R -CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
Denso: 128000-106\_  
Caterpillar: 6T7001.  
Refer to Illustration 246-207

**246-25109**  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
Denso: 128000-408\_, -961\_  
Caterpillar: 3E0079, 7C2264, 8T8619.  
Refer to Illustration 246-208

**246-25110**  
**Starter G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
Denso: 128000-178\_, -303\_  
Teledyne: TMD27M-504, -506.  
Refer to Illustration 246-210

**246-25111**  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
Denso: 028000-840\_  
Bobcat: 6632415.  
John Deere: RE19275, 51447, 540925.  
Refer to Illustration 246-211

**246-25112**  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
Denso: 128000-248\_, -312\_, -677\_, -950\_,  
228000-062\_, -195\_, -467\_  
Blue Bird: 1760057, 1769512.  
Cummins: 3920403, 643.  
Case I.H.: 1987586C1,  
J.I.Case: A181056, A187785, 787.  
Ottawa: 3920643.  
Refer to Illustration 246-206

**246-25113**  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
Denso: 128000-560\_,  
228000-002\_, -119\_  
Teledyne: TMD27M-507, 509, 512.  
Refer to Illustration 246-212

**246-25114**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
Denso: 128000-225\_, -409\_  
Caterpillar: 7C4622, 8T9685,  
GRADALL: 9103-3323,  
White: 40-2500442.  
Refer to Illustration 246-213

**246-25115**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
Denso: 128000-097\_  
Toyota: 28100-40290-71, 291-71.  
Refer to Illustration 246-214

**246-25116**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
Denso: 128000-180\_, -332\_  
Toyota: 28100-56190, 191.  
Refer to Illustration 246-221

**246-25117**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
Denso: 028000-722\_, 723\_  
Toyota: 28100-47070, 080, 081.  
Refer to Illustration 246-222

**246-25118**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
Denso: 028000-549\_, -656\_, 128000-775\_  
Isuzu: 5-81100-108-1, -169-0.  
Refer to Illustration 246-223

**246-25119**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
Denso: 028000-556\_  
Toyota: 28100-46030.  
Refer to Illustration 246-224

**246-25120**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
Denso: 028000-916\_, 977\_,  
128000-509\_, 530\_, 977\_  
Hino: 28100-1561\_, 562\_,  
-1930\_, 931\_, 960\_, 961\_  
Toyota: 28100-89106.  
Refer to Illustration 246-234

**246-25121**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
Denso: 028000-664\_  
Isuzu: 5-81100-154-0.  
Refer to Illustration 246-240

**246-25122**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
Denso: 028000-634\_  
Mitsui-Deutz: 04410711.  
Refer to Illustration 246-243

**246-25123**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
Denso: 128000-686\_  
Kubota: 16541-63011, 012.  
Refer to Illustration 246-216

**246-25124**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
Denso: 128000-997\_  
Komatsu: 600-813-1420, -1720, 721.  
Refer to Illustration 246-229

**246-25126**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
Denso: 028000-629\_  
Daihatsu: 28100-87601.  
Refer to Illustration 246-245

**246-25127**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
Denso: 128000-864\_, 228000-161\_  
Toyota: 28100-17010, 040.  
Refer to Illustration 246-232

**246-25128**  
**Starter-G/R-CW**  
**12V-2.8 kW**

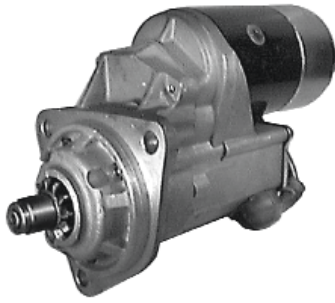
Replaces  
Denso: 028000-552\_  
Toyota: 28100-56040.  
Refer to Illustration 246-233

**246-25129**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
Denso: 028000-780\_  
Kubota: 15527-63011, 012.  
Refer to Illustration 246-241

**246-25130**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
Denso: 128000-410\_  
Toyota: 28100-42800-71.  
Refer to Illustration 246-235



**246-25131**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
 Denso: 028000-904\_, 128000-156\_  
 Daihatsu: 28100-56161, -89107.  
 Refer to Illustration 246-237

**246-25132**  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
 Denso: 028000-754\_,  
 128000-996\_, 228000-019\_  
 Komatsu: 600-813-1410, 430.  
 Refer to Illustration 246-229

**246-25133**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
 Denso: 028000-606\_  
 Kubota: 15611-63011, 012.  
 Refer to Illustration 246-242

**246-25134**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
 Denso: 028000-884\_  
 Kubota: 14182-63011.  
 Refer to Illustration 246-204

**246-25136**  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
 Denso: 028000-621, -863\_  
 Isuzu: 5-81100-140-0, 8-94150-343-1.  
 Refer to Illustration 246-238

**246-25137**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
 Denso: 128000-538\_  
 Toyota: 28100-78502-71, -96502.  
 Refer to Illustration 246-225

**246-25138**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
 Denso: 028000-837, -967\_  
 128000-056\_  
 Toyota: 28100-64090, 091.  
 Refer to Illustration 246-244

**246-25140**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
 Denso: 028000-784\_  
 Toyota: 28100-56110.  
 Refer to Illustration 246-217

**246-25141**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
 Denso: 028000-773\_  
 Kubota: 15481-63011, 012.  
 Refer to Illustration 246-215

**246-25142 \***  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
 Delco: 1107540, 580, 592, 1113274,  
 Hyster: 313394.  
 Massey Ferguson: 508544M91.  
 Refer to Illustration 246-220

**246-25144**  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
 Denso: 228000-605\_  
 Clark: C07628.  
 Refer to Illustration 246-254

**246-25145**  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
 Denso: 128000-411\_,  
 228000-371\_, 372\_  
 Toyota: 28100-23660-71,  
 28300-23040-71, 041-71.  
 Refer to Illustration 246-214

**246-25146**  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
 Denso: 128000-691\_  
 Toyota: 28300-32880-71.  
 Refer to Illustration 246-236

**246-25147**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
 Denso: 228000-135\_  
 Caterpillar: 3E7905.  
 Refer to Illustration 246-226

**246-25149**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
 Denso: 228000-229\_  
 Chrysler: 4741012, 4746639,  
 Cummins: 3921682.  
 Refer to Illustration 246-208

**246-25152**  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
 Denso: 228000-381\_, -416\_  
 Blue Bird: 1760065.  
 Ford: F4HS-11001-HA.  
 Refer to Illustration 246-251

**246-25153 \***  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
 CAV: 1320-023, 027, -510, 513, -720.  
 Perkins Eng.  
 Refer to Illustration 246-253

**246-25154 \***  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
 CAV: 1320-043, -045, -142, -571.  
 Perkins Eng.  
 Refer to Illustration 246-253

**246-25155 \***  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
 Hitachi: S13-68, -86.  
 Yanmar: 123500-77010, 124610-77010.  
 Refer to Illustration No.: 246-252

**246-25156 \***  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
 Hitachi: S12-41, -58, -59, S13-28, -33,  
 -82, -99, -103, -111, -133,  
 Isuzu: 5-81100-080-0,  
 Nikko: 0-21000-2370, 0-23000-0091.  
 Refer to Illustration 246-256

**246-25157 \***  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
 Mitsubishi: M8T50071.  
 Ford: F4TZ-11002-A, F5TU-11000-AA.  
 Refer to Illustration 246-257

**246-25158 \***  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
 Hitachi: S13-41, -41A, -41B, -41C.  
 Yanmar: 121254-77011, 012.  
 Refer to Illustration 246-256

**246-25159 \***  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
 Delco: 1107514, 539, 866, 872, 1108648,  
 1109198, 261, 263, 1113281, 282, 285,  
 1998330, 342, 376, 420, 480, 10465049, 050,  
 1049886.  
 Bobcat: 6651210, 664.  
 Case I.H.: 4500732R91, 596493R92.  
 Refer to Illustration 246-258

**246-25160 \***  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
 Mitsubishi: M3T90271  
 Mitsubishi Motors: ME087506, ME087577  
 Refer to Illustration 246-227

**246-25161**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
 Denso: 228000-730\_  
 Cummins: 1SB Eng.  
 Refer to Illustration 246-264

**246-25162**  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
 Denso: 228000-581\_  
 Bobcat: 6667587  
 Refer to Illustration 246-263

**246-25163**  
**Starter-G/R-CW**  
**12V-2.8 kW**

Replaces  
 Denso: 228000-750\_  
 Caterpillar: 144-9955  
 Perkins: 704-30 Eng.  
 Refer to Illustration 246-262

**246-25164**  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
 Denso: 228000-494\_  
 Bobcat: 6665324  
 Refer to Illustration 246-265

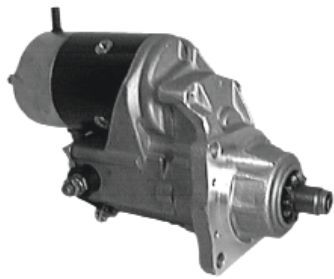
**246-25165**  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

Replaces  
 Denso: 228000-731\_  
 Refer to Illustration 246-266

**246-25166**  
**Starter-G/R-CW**  
**12V-2.8 kW-Oil Sealed**

SAME AS 246-25204  
 but 12V  
 Refer to Illustration 246-218

\* Refer to the respective Illustration for dimensions. The replacement unit may not be physically suitable for all intended applications.



**246-25201**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 028000-555\_, -569\_  
 Toyota: 28100-56070, 071, 101.  
 Refer to Illustration 246-217

**246-25202**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 128000-497\_  
 Caterpillar: 8C5580.  
 Refer to Illustration 246-209

**246-25203**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 028000-586\_, 589\_  
 Toyota: 28100-22060-71, -32080-71.  
 Refer to Illustration 246-214

**246-25204**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 028000-530\_  
 Toyota: 28100-77090.  
 Refer to Illustration 246-218

**246-25205**  
**Starter-G/R-CW**  
**24V-4.5 kW-Oil Sealed**

Replaces  
 Denso: 028000-601\_, -602\_  
 Toyota: 28300-22060-71, 32080-71.  
 Refer to Illustration 246-214

**246-25206**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 028000-551\_, -565\_, -631\_  
 Toyota: 28100-47030, 040, 060.  
 Refer to Illustration 246-219

**246-25207**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 028000-557\_, -646\_  
 Toyota: 28100-46040, -48011.  
 Refer to Illustration 246-224

**246-25208**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 028000-620\_  
 Isuzu: 1-81100-141-0.  
 Refer to Illustration 246-239

**246-25209**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 028000-724\_, -781\_  
 Toyota: 28100-31625-71, -47090.  
 Refer to Illustration 246-222

**246-25210**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 028000-553\_, 933\_  
 Toyota: 28100-56030, 120, 121.  
 Refer to Illustration 246-233

**246-25211**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 128000-100\_  
 Komatsu: 600-813-3140, 3240.  
 Refer to Illustration 246-230

**246-25212**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 028000-584\_  
 Toyota: 28100-30800-71.  
 Refer to Illustration 246-235

**246-25213**  
**Starter-G/R-CW**  
**24V-4.5 kW-Oil Sealed**

Replaces  
 Denso: 128000-692\_  
 Toyota: 28300-32980-71.  
 Refer to Illustration 246-236

**246-25214**  
**Starter-G/R-CW**  
**24V-4.5 kW-Oil Sealed**

Replaces  
 Denso: 028000-745\_  
 Toyota: 28300-31960-71.  
 Refer to Illustration 246-222

**246-25215**  
**Starter-G/R-CW**  
**24V-4.5 kW-Oil Sealed**

Replaces  
 Denso: 128000-101\_  
 Komatsu: 600-813-3250.  
 Refer to Illustration 246-230

**246-25216**  
**Starter-G/R-CW**  
**24V-4.5 kW-Oil Sealed**

Replaces  
 Denso: 228000-063\_, -175\_  
 Cummins: 3920644, 3922474.  
 Refer to Illustration 246-228

**246-25217**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 028000-976\_  
 Hino: 28100-1542\_  
 Refer to Illustration 246-234

**246-25218**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 028000-488\_  
 Mitsubishi: ME037573.  
 Refer to Illustration 246-246

**246-25219**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 128000-862\_, 228000-160\_  
 Toyota: 28100-17020, 030.  
 Refer to Illustration 246-232

**246-25220**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 128000-157\_, -158\_, -617\_,  
 -618\_, -728\_, -729\_,  
 228000-027\_, -028\_, -308\_, -309\_  
 Toyota: 28100-53270, -56151, 220, 221, 222,  
 240, 241, 242, 260, 270, 320, 330.  
 Refer to Illustration 246-237

**246-25221 \***  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Nikko: 024000-3000, 001, 020, 030.  
 Isuzu: 1-81100-295-0, -307-0.  
 Refer to Illustration 246-247

**246-25222**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 128000-644\_  
 Buscooler Appl.  
 Isikawa Appl.  
 Refer to Illustration 246-248

**246-25223**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 128000-760\_  
 Volvo: 420760, 1676822, 8192262.  
 Refer to Illustration 246-250

**246-25224**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 028000-690\_, -691\_  
 Toyota: 28100-54023, 042.  
 Refer to Illustration 246-231

**246-25225**  
**Starter-G/R-CW**  
**24V-4.5 kW-Oil Sealed**

Replaces  
 Denso: 028000-856\_  
 Toyota: 28300-40510-71.  
 Refer to Illustration 246-218

**246-25226**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 128000-179\_, -308\_  
 Toyota: 28100-56180, 181.  
 Refer to Illustration 246-221

**246-25227**  
**Starter-G/R-CW**  
**24V-4.5 kW-Oil Sealed**

Replaces  
 Denso: 028000-850\_  
 Kubota: 10666-01100.  
 Refer to Illustration 246-240

**246-25228**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 028000-914\_  
 Hino: 28100-1090, -1650, 651.  
 Isuzu: 8-94399-159-1.  
 Refer to Illustration 246-249

**246-25229 \***  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Hitachi: S25-110G, L, -142A, -142B,  
 -162, -164A.  
 Nissan UD: 23300-90060, -L6000, -Z5505,  
 509, 515.  
 Yanmar: 123500-77010, 124610-77010,  
 124617-77010, 124617-77011.  
 Refer to Illustration 246-252

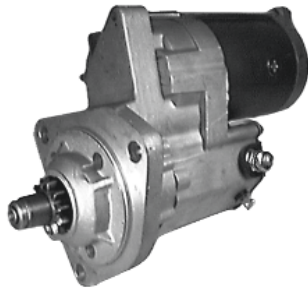
**246-25230 \***  
**Starter-G/R-CW**  
**24V-4.5 kW-Oil Sealed**

Replaces  
 CAV: 1321F022.  
 Perkins Appl.  
 Refer to Illustration 246-253

**246-25231 \***  
**Starter-G/R-CW**  
**24V-4.5 kW-Oil Sealed**

Replaces  
 CAV: 1321F042, 571.  
 Perkins Appl.  
 Refer to Illustration 246-253

\* Refer to the respective Illustration for dimensions. The replacement unit may not be physically suitable for all intended applications.



**246-25232 \***  
**Starter-G/R-CW**  
**24V-4.5 kW-Oil Sealed**

Replaces  
 Nikko: 021000-3290, 3291, 3660, 1, 3690, 1, 3830, 1,  
 023000-1030, 1, 2, 3, 1060, 1070, 1, 3, 1670,  
 3010, 3090.  
 Refer to Illustration 246-223

**246-25233**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 028000-695\_  
 Mitsubishi: ME029237.  
 Refer to Illustration 246-255

**246-25234 \***  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Nikko: 0-21000-2340.  
 Refer to Illustration 246-256

**246-25235 \***  
**Starter-G/R-CW**  
**24V-4.5 kW-Oil Sealed**

Replaces  
 Nikko: 0-21000-4931, 933, 934.  
 Refer to Illustration 246-256

**246-25236 \***  
**Starter-G/R-CW**  
**24V-4.5 kW-Oil Sealed**

Replaces  
 Delco: 1113277, 291.  
 Refer to Illustration 246-202

**246-25237 \***  
**Starter-G/R-CW**  
**24V-4.5 kW-Oil Sealed**

Replaces  
 Delco: 1998519  
 Refer to Illustration 246-211

**246-25238 \***  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Fiat: 4104783, 852962.  
 Marelli: 63223800, 830, 897.  
 Refer to Illustration 246-259

**246-25239**  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 128000-830\_  
 John Deere: RE40595.  
 Refer to Illustration 246-260

**246-25240 \***  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Mitsubishi: M2T78381, 382.  
 Fuso: ME087590.  
 Refer to Illustration 246-227

**246-25241 \***  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Delco: 10465405, 10479629.  
 Cummins: 3675207.  
 Refer to Illustration 246-258

**246-25242 \***  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 228000-183\_  
 Caterpillar: 143-0541, 543.  
 Refer to Illustration 246-226

**246-25243 \***  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Nikko: 021000-146-, 364\_, 365\_  
 Refer to Illustration 246-261

**246-25244 \***  
**Starter-G/R-CW**  
**24V-4.5 kW**

Replaces  
 Denso: 028000-353\_  
 Toyota: 28100-20560-71.  
 Refer to Illustration 246-267

**246-30101**  
**Starter-G/R-CW**  
**12V-3.0 kW**

Replaces  
 Denso: 128000-491\_  
 Chrysler: 4428221.  
 Cummins: 3912084.  
 Oshkosh: 4428221.  
 Refer to Illustration 246-303

**246-30102**  
**Starter-G/R-CW**  
**12V-3.0 kW**

Replaces  
 Denso: 128000-049\_  
 Isuzu: 1-81100-234-0, -1, -2.  
 Refer to Illustration 246-306

**246-30103**  
**Starter-G/R-CW**  
**12V-3.0 kW-Oil Sealed**

Replaces  
 Denso: 128000-572\_  
 Caterpillar: 3E5382, 9W2946.  
 Refer to Illustration 246-304

**246-30104**  
**Starter-G/R-CW**  
**12V-3.0 kW**

Replaces  
 Denso: 128000-422\_  
 228000-267\_, -331\_, -332\_  
 Cummins: 3911343, 3925045.  
 Thomas Bus: 61230355.  
 Refer to Illustration 246-302

**246-30105**  
**Starter-G/R-CW**  
**12V-3.0 kW-Oil Sealed**

Replaces  
 Denso: 128000-562\_  
 J.I.Case: A187615.  
 Refer to Illustration 246-305

**246-30106**  
**Starter-G/R-CW**  
**12V-3.0 kW**

Replaces  
 Denso: 128000-537\_  
 J.I.Case: A186242, 247.  
 Refer to Illustration 246-305

**246-30107**  
**Starter-G/R-CW**  
**12V-3.0 kW**

Replaces  
 Denso: 128000-247\_, -551\_  
 Isuzu: 1-81100-231-0, -261-0.  
 Refer to Illustration 246-301

**246-30108 \***  
**Starter-G/R-CW**  
**12V-3.0 kW-Oil Sealed**

Replaces  
 Isuzu: 1-81100-245-1,  
 Nikko: 0-23000-1420., -6570  
 Refer to Illustration 246-313

**246-30109**  
**Starter-G/R-CW**  
**12V-3.0 kW**

Replaces  
 Denso: 228000-280\_  
 Isuzu: 1-81100-299-0, 8-97500-231-0.  
 Refer to Illustration 246-311

**246-30110 \***  
**Starter-G/R-CW**  
**12V-3.0 kW-Oil Sealed**

Replaces  
 Marelli: MT38QA, MT38QB.  
 Fiat: 4169093.  
 Refer to Illustration 246-309

**246-30111**  
**Starter-G/R-CW**  
**12V-3.0 kW**

Replaces  
 Denso: 228000-573\_  
 Bobcat: 6667825.  
 Refer to Illustration 246-312

**246-30112**  
**Starter-G/R-CW**  
**12V-4.0 kW**

Replaces  
 Denso: 228000-585\_  
 Refer to Illustration 246-314

**246-30113**  
**Starter-G/R-CW**  
**12V-4.0 kW-Oil Sealed**

Replaces  
 Hitachi: S15-02, S15-03.  
 Refer to Illustration 246-307

**246-30114**  
**Starter-G/R-CW**  
**12V-4.0 kW**

Replaces  
 Denso: 228000-635\_  
 UPS: 440-1931.  
 Refer to Illustration 246-316

**246-30115**  
**Starter-G/R-CW**  
**12V-4.0 kW-Oil Sealed**

Replaces  
 Denso: 228000-562\_  
 Cummins: 3283813.  
 Refer to Illustration 246-317

**246-30116**  
**Starter-G/R-CW**  
**12V-4.0 kW-Oil Sealed**

Replaces  
 Denso: 228000-560\_, 651\_  
 J.I.Case: 193432A1.  
 Refer to Illustration 246-318

**246-30117**  
**Starter-G/R-CW**  
**12V-4.0 kW-Oil Sealed**

Replaces  
 Denso: 228000-590\_  
 Cummins: 3283815.  
 Refer to Illustration 246-319

**246-30118**  
**Starter-G/R-CW**  
**12V-4.0 kW-Oil Sealed**

Replaces  
 Denso: 228000-010\_, 851\_  
 Navistar: DT466 Eng.  
 Refer to Illustration 246-320

\* Refer to the respective Illustration for dimensions. The replacement unit may not be physically suitable for all intended applications.



**246-30119**  
**Starter-G/R-CW**  
**12V-4.0 kW-Oil Sealed**  
 Replaces  
 Denso: 228000-653\_  
 John Deere: RE69704.  
 Refer to Illustration 246-312

**246-30120**  
**Starter-G/R-CW**  
**12V-4.0 kW**  
 Replaces  
 Denso: 228000-808\_  
 John Deere: 6466 Eng.  
 Refer to Illustration 246-321

**246-30121**  
**Starter-G/R-CW**  
**12V-4.0 kW-Oil Sealed**  
 Replaces  
 Denso: 228000-528\_, 546\_  
 John Deere: RE61406  
 Blue Bird: 1839281.  
 Refer to Illustration 246-322

**246-30122**  
**Starter-G/R-CW**  
**12V-4.0 kW**  
 Replaces  
 Denso: 228000-655\_  
 John Deere: RE70474.  
 Refer to Illustration 246-323

**246-30123**  
**Starter-G/R-CW**  
**12V-4.0 kW**  
 Replaces  
 Denso: 228000-749\_  
 John Deere: 6.81 CNG Eng.  
 Refer to Illustration 246-324

**246-30124**  
**Starter-G/R-CW**  
**12V-4.0 kW-Oil Sealed**  
 Replaces  
 Denso: 228000-712\_  
 Caterpillar: 3126 Eng.  
 Refer to Illustration 246-325

**246-30125**  
**Starter-G/R-CW**  
**12V-4.0 kW-Oil Sealed**  
 Replaces  
 Denso: 228000-551\_  
 Bobcat: 6667320  
 Refer to Illustration 246-326

**246-30126**  
**Starter-G/R-CW**  
**12V-4.0 kW**  
 Replaces  
 Denso: 228000-531\_  
 Cummins: 3921012.  
 Refer to Illustration 246-317

**246-30127**  
**Starter-G/R-CW**  
**12V-4.0 kW-Oil Sealed**  
 Replaces  
 Denso: 228000-852\_  
 Refer to Illustration 246-312

**246-30128** \*  
**Starter-G/R-CW**  
**12V-4.0 kW-Oil Sealed**  
 Replaces  
 Denso: 028000-329\_, 393\_, 128000-077\_  
 Hino: 28100-1670\_  
 Refer to Illustration 246-328

**246-30129** \*  
**Starter-G/R-CW**  
**12V-4.0 kW-Oil Sealed**  
 Replaces  
 Denso: 028000-397\_  
 John Deere: AR63341.  
 Refer to Illustration 246-329

**246-30130** \*  
**Starter-G/R-CW**  
**12V-4.0 kW-Oil Sealed**  
 Replaces  
 Denso: 128000-723\_  
 John Deere: AR39832  
 Refer to Illustration 246-330

**246-30131** \*  
**Starter-G/R-CW**  
**12V-4.0 kW-Oil Sealed**  
 Replaces  
 Denso: 228000-237\_  
 John Deere: RE54874.  
 Refer to Illustration 246-330

**246-30201**  
**Starter-G/R-CW**  
**24V-5.5 kW-Oil Sealed**  
 Replaces  
 Denso: 128000-573\_  
 Caterpillar: 3E5381, 8C4774, 9W3748.  
 Refer to Illustration 246-304

**246-30202**  
**Starter-G/R-CW**  
**24V-5.5 kW**  
 Replaces  
 Denso: 128000-256\_  
 J.I. Case: D129494.  
 Refer to Illustration 246-305

**246-30203**  
**Starter-G/R-CW**  
**24V-5.5 kW**  
 Replaces  
 Denso: 128000-245\_  
 Isuzu: 1-81100-230-1.  
 Komatsu: 600-813-4490.  
 Refer to Illustration 246-301

**246-30204** \*  
**Starter-G/R-CW**  
**24V-5.5 kW-Oil Sealed**  
 Replaces  
 Nikko: 021000-3930, 931, 0-23000-1660..  
 Komatsu: 600-813-2350, 351, 4111..  
 Refer to Illustration 246-313

**246-30205** \*  
**Starter-G/R-CW**  
**24V-5.5 kW**  
 Replaces  
 Sawafuji: 0350-552-001\_  
 Hino: 28100-1441\_, 442\_, 443\_  
 Refer to Illustration 246-308

**246-30206** \*  
**Starter-G/R-CW**  
**24V-5.5 kW-Oil Sealed**  
 Replaces  
 Nikko: 0-21000-4132, -4850.  
 Komatsu: 600-813-2393, 394.  
 Refer to Illustration 246-306

**246-30207**  
**Starter-G/R-CW**  
**24V-5.5 kW-Oil Sealed**  
 Replaces  
 Denso: 228000-500\_  
 Cummins: 3282626.  
 Komatsu: 600-813-5110.  
 Refer to Illustration 246-305

**246-30209** \*  
**Starter-G/R-CW**  
**24V-5.5 kW-Oil Sealed**  
 Replaces  
 Sawafuji: 0-300-602-002\_  
 Nissan UD: 23300-96106, 119.  
 Refer to Illustration 246-307

**246-30210** \*  
**Starter-G/R-CW**  
**24V-5.5 kW-Oil Sealed**  
 Replaces  
 Nikko: 0-23000-1290, -1750, 752.  
 Komatsu: 600-813-3320, -4420, 422.  
 Refer to Illustration 246-310

**246-30211** \*  
**Starter-G/R-CW**  
**24V-5.5 kW-Oil Sealed**  
 Replaces  
 Marelli: MT43PA.  
 Fiat: 4194576.  
 Refer to Illustration 246-309

**246-30212** \*  
**Starter-G/R-CW**  
**24V-7.5 kW-Oil Sealed**  
 Replaces  
 Nikko: 0-21000-4130, 4131, 4132, 4850.  
 Refer to Illustration 246-333

**246-30213** \*  
**Starter-G/R-CW**  
**24V-7.5 kW-Oil Sealed**  
 Replaces  
 Nikko: 0-23000-1230, -1231, -1270, -1590, -1600, -1601, -1660.  
 Komatsu: 600-813-3380, -3390, -4110, -4111, -4120, -4180, -4290.  
 Refer to Illustration 246-315

**246-30214**  
**Starter-G/R-CW**  
**24V-7.5 kW-Oil Sealed**  
 Replaces  
 Denso: 228000-563\_  
 Cummins: 3283814.  
 Refer to Illustration 246-317

**246-30215**  
**Starter-G/R-CW**  
**24V-7.5 kW-Oil Sealed**  
 Replaces  
 Denso: 228000-561\_, 738\_  
 J.I. Case: 223900A1..  
 Refer to Illustration 246-318

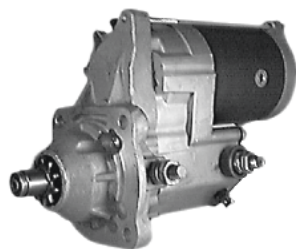
**246-30216**  
**Starter-G/R-CW**  
**24V-7.5 kW-Oil Sealed**  
 Replaces  
 Denso: 228000-656\_  
 John Deere: RE69705.  
 Refer to Illustration 246-321

**246-30217**  
**Starter-G/R-CW**  
**24V-7.5 kW-Oil Sealed**  
 Replaces  
 Denso: 228000-657\_  
 John Deere: RE70475.  
 Refer to Illustration 246-323

**246-30218**  
**Starter-G/R-CW**  
**24V-7.5 kW-Oil Sealed**  
 Replaces  
 Nikko: 023000-653\_, 702\_  
 Komatsu: 600-813-3630, 6531.  
 Refer to Illustration 246-327

**246-30219**  
**Starter-G/R-CW-Oil Sealed**  
**24V-7.5 kW**  
 Replaces  
 Denso: 028000-525\_, 128000-717\_, 228000-239\_  
 John Deere: RE55641.  
 Refer to Illustration 246-322

\* Refer to the respective Illustration for dimensions. The replacement unit may not be physically suitable for all intended applications.



**246-30220**  
**Starter-G/R-CW-Oil Sealed**  
 24V-7.5 kW  
 Replaces  
 Denso: 128000-048\_, -724\_  
 John Deere: RE15718, RE39833.  
 Refer to Illustration 246-323

**246-30221**  
**Starter-G/R-CW-Oil Sealed**  
 24V-7.5 kW  
 Replaces  
 Nikko: 0-23000-621\_, -6610, 612,  
 Refer to Illustration 246-327

**246-30222**  
**Starter-G/R-CW-Oil Sealed**  
 24V-7.5 kW  
 Replaces  
 Nikko: 0-23000-2660, 661, -3410, 411,  
 Refer to Illustration 246-333

**246-30223**  
**Starter-G/R-CW-Oil Sealed**  
 24V-7.5 kW  
 Replaces  
 Nikko: 0-23000-1190, 191, -1620,  
 Refer to Illustration 246-331

**246-30224**  
**Starter-G/R-CW-Oil Sealed**  
 24V-7.5 kW  
 Replaces  
 Nikko: 0-23000-1170, -1240, -1330, 340,  
 -1400, 440, 460, -1530, -1630,  
 Refer to Illustration 246-332



**1000-6103**  
**Bearing - Dbl. Sealed**  
 Dim.: 17 mm I.D.x35 mm O.D.x10 mm W.  
 Replaces  
 Denso: 949100-1930.



**1000-6200**  
**Bearing - Dbl. Sealed**  
 Dim.: 10 mm I.D.x30 mm O.D. x 9 mm W.  
 Replaces  
 Denso: 949100-2160



**1000-6202**  
**Bearing - Dbl. Sealed**  
 Dim.: 15 mm I.D.x35 mm O.D.x11 mm W.  
 Replaces  
 Denso: 949199-3160.



**5146-2501**  
**D.E. Housing**  
 Replaces  
 Denso: 028401-527\_  
 Used on Starter No.246-25102, 106.  
 Refer to Illustration 246-201

**5146-2502**  
**D.E. Housing-Oil Sealed**  
 Replaces  
 Denso: 028401-542\_  
 Used on Starter No.246-25101, 236.  
 Refer to Illustration 246-202

**5146-2503**  
**D.E. Housing**  
 Replaces  
 Denso: 028401-673\_  
 Used on Starter No.246-25103.  
 Refer to Illustration 246-203

**5146-2504**  
**D.E. Housing**  
 Replaces  
 Denso: 028401-494\_, -564\_  
 Used on Starter No's. 246-25104, 134.  
 Refer to Illustration 246-204

**5146-2505**  
**D.E. Housing**  
 Replaces  
 Denso: 028401-620\_  
 Used on Starter No's. 246-25105, 224.  
 Refer to Illustration 246-205, -231

**5146-2506**  
**D.E. Housing-Oil Sealed**  
 Replaces  
 Denso: 128401-021\_, 228401-063\_  
 Used on Starter No's. 246-25107, 112, 216.  
 Refer to Illustration 246-206, -228

**5146-2507**  
**D.E. Housing-Oil Sealed**  
 Replaces  
 Denso: 028401-106\_  
 Used on Starter No.246-25108.  
 Refer to Illustration 246-207

**5146-2508**  
**D.E. Housing**  
 Replaces  
 Denso: 128401-829.  
 Used on Starter No's. 246-25149.  
 Refer to Illustration 246-208

**5146-2509**  
**D.E. Housing**  
 Replaces  
 Denso: 128401-497\_  
 Used on Starter No.246-25202  
 Refer to Illustration 246-209

**5146-2511**  
**D.E. Housing-Oil Sealed**  
 Replaces  
 Denso: 028401-752\_  
 Used on Starter No.246-25111, 237  
 Refer to Illustration 246-211

**5146-2512**  
**D.E. Housing-Oil Sealed**  
 Replaces  
 Denso: 128401-560\_  
 Used on Starter No.246-25113.  
 Refer to Illustration 246-212

**5146-2513**  
**D.E. Housing-Oil Sealed**  
 Replaces  
 Denso: 128401-225\_, -704\_  
 Used on Starter No.246-25114, 142.  
 Refer to Illustration 246-213, -220

**5146-2514**  
**D.E. Housing-Oil Sealed**  
 Replaces  
 Denso: 028401-548\_, 574.  
 Used on Starter No's. 246-25115, 145,  
 203, 205.  
 Refer to Illustration 246-214

**5146-2515**  
**D.E. Housing**  
 Replaces  
 Denso: 028401-704\_  
 Used on Starter No.246-25141.  
 Refer to Illustration 246-215

**5146-2516**  
**D.E. Housing**  
 Replaces  
 Denso: 028401-686\_  
 Used on Starter No.246-25123.  
 Refer to Illustration 246-216

**5146-2517**  
**D.E. Housing**  
 Replaces  
 Denso: 028401-525\_  
 Used on Starter No's. 246-25140, 201.  
 Refer to Illustration 246-217

**5146-2518**  
**D.E. Housing-Oil Sealed**  
 Replaces  
 Denso: 028401-509\_, -762.  
 Used on Starter No's. 246-25204, 225.  
 Refer to Illustration 246-218

**5146-2519**  
**D.E. Housing**  
 Replaces  
 Denso: 128401-513\_, 550\_  
 Used on Starter No.246-25206.  
 Refer to Illustration 246-219

**5146-2521**  
**D.E. Housing**  
 Replaces  
 Denso: 128401-179\_  
 Used on Starter No's. 246-25116, 226.  
 Refer to Illustration 246-221

**5146-2522**  
**D.E. Housing-Oil Sealed**  
 Replaces  
 Denso: 028401-651\_, -671\_  
 Used on Starter No's. 246-25117,  
 209, 214.  
 Refer to Illustration 246-222

**5146-2523**  
**D.E. Housing**  
 Replaces  
 Denso: 028401-516\_  
 Used on Starter No's. 246-25118, 232.  
 Refer to Illustration 246-223



**5146-2524**  
**D.E. Housing**

Replaces  
Denso: 028401-515\_  
Used on Starter No.246-25119, 207.  
Refer to Illustration 246-224

**5146-2525**  
**D.E. Housing**

Replaces  
Denso: 128401-538\_  
Used on Starter No.246-25137.  
Refer to Illustration 246-225

**5146-2526**  
**D.E. Housing**

Replaces  
Denso: 228401-135\_  
Used on Starter No.246-25147.  
Refer to Illustration 246-226

**5146-2529**  
**D.E. Housing-Oil Sealed**

Replaces  
Denso: 128401-996\_  
Used on Starter No.246-25132.  
Refer to Illustration 246-229

**5146-2530**  
**D.E. Housing-Oil Sealed**

Replaces  
Denso: 128401-100\_, -101\_  
Used on Starter No's. 246-25211, 215.  
Refer to Illustration 246-230

**5146-2532**  
**D.E. Housing**

Replaces  
Denso: 128401-862\_  
Used on Starter No's. 246-25127, 219.  
Refer to Illustration 246-232

**5146-2533**  
**D.E. Housing**

Replaces  
Denso: 028401-514\_  
Used on Starter No's. 246-25128,  
210.  
Refer to Illustration 246-233

**5146-2534**  
**D.E. Housing**

Replaces  
Denso: 028401-854\_, -530\_  
Used on Starter No's. 246-25120, 217.  
Refer to Illustration 246-234

**5146-2535**  
**D.E. Housing**

Replaces  
Denso: 028401-540\_  
Used on Starter No's. 246-25130, 212.  
Refer to Illustration 246-235

**5146-2536**  
**D.E. Housing-Oil Sealed**

Replaces  
Denso: 128401-691\_  
Used on Starter No's. 246-25146, 213.  
Refer to Illustration 246-236

**5146-2537**  
**D.E. Housing**

Replaces  
Denso: 128401-157\_  
Used on Starter No's. 246-25131, 220.  
Refer to Illustration 246-237

**5146-2538**  
**D.E. Housing-Oil Sealed**

Replaces  
Denso: 028401-585\_  
Used on Starter No's. 246-25136.  
Refer to Illustration 246-238

**5146-2539**  
**D.E. Housing**

Replaces  
Denso: 028401-599\_  
Used on Starter No.246-25208.  
Refer to Illustration 246-239

**5146-2540**  
**D.E. Housing-Oil Sealed**

Replaces  
Denso: 028401-568\_  
Used on Starter No's. 246-25121, 227.  
Refer to Illustration 246-240

**5146-2541**  
**D.E. Housing**

Replaces  
Denso: 028401-710\_  
Used on Starter No's.246-25129.  
Refer to Illustration 246-241

**5146-2542**  
**D.E. Housing**

Replaces  
Denso: 028401-555\_  
Used on Starter No.246-25133.  
Refer to Illustration 242

**5146-2543**  
**D.E. Housing**

Replaces  
Denso: 028401-594\_  
Used on Starter No.246-25122.  
Refer to Illustration 246-243

**5146-2544**  
**D.E. Housing**

Replaces  
Denso: 028401-767\_  
Used on Starter No.246-25138.  
Refer to Illustration 246-244

**5146-2545**  
**D.E. Housing**

Replaces  
Denso: 028401-581\_  
Used on Starter No.246-25126.  
Refer to Illustration 246-245

**5146-2546**  
**D.E. Housing**

Replaces  
Denso: 028401-645\_  
Used on Starter No.246-25218.  
Refer to Illustration 246-246

**5146-2548**  
**D.E. Housing**

Replaces  
Denso: 128401-644\_  
Used on Starter No.246-25222.  
Refer to Illustration 246-248

**5146-2549**  
**D.E. Housing**

Replaces  
Denso: 028402-596\_  
Used on Starter No.246-25228.  
Refer to Illustration 246-249

**5146-2550**  
**D.E. Housing**

Replaces  
Denso: 128401-760\_  
Used on Starter No.246-25223.  
Refer to Illustration 246-250

**5146-2551**  
**D.E. Housing**

Replaces  
Denso: 228401-381\_  
Used on Starter No.246-25152.  
Refer to Illustration 246-251

**5146-2553**  
**D.E. Housing-Oil Sealed**

Replaces  
Denso: 128401-408\_, -961\_  
Used on Starter No's. 246-25109, -25241.  
Refer to Illustration 246-208, -258

**5146-2554**  
**D.E. Housing-Oil Sealed**

Replaces  
Denso: 128401-178\_, -303\_  
Used on Starter No.246-25110, -25144.  
Refer to Illustration 246-210, -254

**5146-2555**  
**D.E. Housing**

Replaces  
Denso: 028401-481\_  
Used on Starter No.246-25233.  
Refer to Illustration 246-255

**5146-2560**  
**D.E. Housing**

Replaces  
Denso: 128401-830\_  
Used on Starter No.246-25239  
Refer to Illustration 246-260

**5146-2561**  
**D.E. Housing**

Used on Starter No.246-25243  
Refer to Illustration 246-261

**5146-2562**  
**D.E. Housing**

Replaces  
Denso: 228401-750\_  
Used on Starter No.246-25163.  
Refer to Illustration 246-262

**5146-2563**  
**D.E. Housing-Oil Sealed**

Used on Starter No.246-25162.  
Refer to Illustration 246-263

**5146-2564**  
**D.E. Housing-Oil Sealed**

Used on Starter No.246-25161.  
Refer to Illustration 246-264

**5146-2566**  
**D.E. Housing-Oil Sealed**

Used on Starter No.246-25165.  
Refer to Illustration 246-266

**5146-2567**  
**D.E. Housing**

Used on Starter No.246-25244.  
Refer to Illustration 246-267

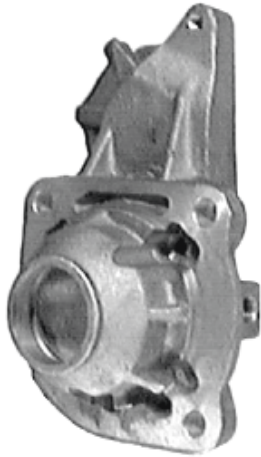
**5146-3001**  
**D.E. Housing**

Replaces  
Denso: 128401-245\_  
Used on Starter No's. 246-30107, 203.  
Refer to Illustration 246-301

**5146-3002**  
**D.E. Housing**

Replaces  
Denso: 128401-422\_  
Used on Starter No.246-30104.  
Refer to Illustration 246-302

6



**5146-3003**  
**D.E. Housing**

Replaces  
Denso: 128401-491\_  
Used on Starter No.246-30101.  
Refer to Illustration 246-303

**5146-3004**  
**D.E. Housing-Oil Sealed**

Replaces  
Denso: 128401-572\_  
Used on Starter No.246-30103, 201.  
Refer to Illustration 246-304 , -312

**5146-3005**  
**D.E. Housing-Oil Sealed**

Replaces  
Denso: 128401-256\_ , 562\_  
Used on Starter No's. 246-30105, 106, 202, 207.  
Refer to Illustration 246-305

**5146-3006**  
**D.E. Housing-Oil Sealed**

Replaces  
Denso:128401-049\_  
Used on Starter No's. 246-30102, 206.  
Refer to Illustration 246-306

**5146-3011**  
**D.E. Housing**

Replaces  
Denso: 228401-280\_  
Used on Starter No.246-30109.  
Refer to Illustration 246-311

**5146-3012**  
**D.E. Housing-Oil Sealed**

Replaces  
Denso: 228401-573\_  
Used on Starter No.246-30111, 127.  
Refer to Illustration 246-312

**5146-3016**  
**D.E. Housing**

Used on Starter No's. 246-30114,  
Refer to Illustration 246-316

**5146-3017**  
**D.E. Housing**

Used on Starter No's. 246-30115, 126, 214,  
Refer to Illustration 246-317

**5146-3019**  
**D.E. Housing**

Replaces  
Denso: 338401-560\_  
Used on Starter No's. 246-30116, 117, 215,  
Refer to Illustration 246-318, -319

**5146-3020**  
**D.E. Housing**

Replaces  
Denso: 228401-851\_  
Used on Starter No's. 246-30118,  
Refer to Illustration 246-320.

**5146-3021**  
**D.E. Housing**

Replaces  
Denso: 228401-653\_  
Used on Starter No's. 246-30119, 120, 216,  
Refer to Illustration 246-321

**5146-3022**  
**D.E. Housing**

Replaces  
Denso: 228401-528\_  
Used on Starter No's. 246-30121, 219,  
Refer to Illustration 246-322,

**5146-3023**  
**D.E. Housing**

Used on Starter No's. 246-30122, 130,  
217, 220,  
Refer to Illustration 246-323

**5146-3024**  
**D.E. Housing**

Used on Starter No's. 246-30123,  
Refer to Illustration 246-324

**5146-3025**  
**D.E. Housing**

Replaces  
Denso: 228401-712\_  
Used on Starter No's. 246-30124,  
Refer to Illustration 246-325

**5146-3026**  
**D.E. Housing**

Used on Starter No's. 246-30125, 128.  
Refer to Illustration 246-326, 328.

**5146-3029**  
**D.E. Housing**

Used on Starter No's. 246-30129,  
Refer to Illustration 246-329

**5146-3030**  
**D.E. Housing**

Used on Starter No's. 246-30130, 131,  
Refer to Illustration 246-323



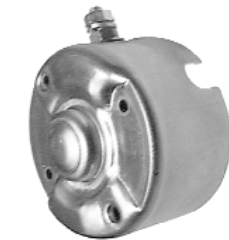
**5246-2501** \*\*  
**C.E. Frame**

Replaces  
Denso: 028501-0911.  
Used on 90 mm dia, Field Case



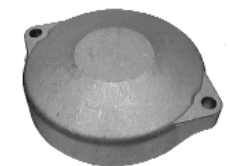
**5246-2502** \*\*  
**C.E. Frame w/ Ground Post**

Replaces  
Denso: 028501-1090.  
Used on Starter No's. 246-25105,  
Refer to Illustration 205



**5246-2503** \*\*  
**C.E. Frame w/ Ground Post**

Used on Starter No's. 246-25138, 153, 154,  
230, 231.  
Refer to Illustration 244, 253



**5246-3001** \*\*  
**C.E. Frame**

Replaces  
Denso: 028501-5270.  
Used on 100 mm dia. Field Case

\*\* Universal C.E. Frame supplied without drain hole.



**5446-2501**  
Starter Drive-CW  
15T-44 mm Gear O.D.

Replaces  
Denso: 028099-2390.  
Uses Pinion Gear: 54146-001.  
Used on Starter No's. 246-25102, 158.



**5446-2505**  
Starter Drive-CW  
11T-34.5 mm Gear O.D.

Replaces  
Denso: 028099-5490.  
Uses Pinion Gear: 54146-005.  
Used on Starter No.246-25106.



**5446-2510**  
Starter Drive-CW  
11T-38 mm Gear O.D.

Replaces  
Denso: 028300-7660,  
Uses Pinion Gear: 54146-009.  
Used on Starter No.246-25124



**5446-2514**  
Starter Drive-CW  
9T-35.5 mm Gear O.D.  
Oil Sealed

Replaces  
Denso: 028300-8700.  
Uses Pinion Gear: 54146-003.  
Used on Starter No.246-25144.



**5446-2502**  
Starter Drive-CW  
10T-40.5 mm Gear O.D.

Replaces  
Denso: 028300-4480, -5450,  
Uses Pinion Gear: 54146-002.  
Used on Starter No's. 246-138, 147, 160,  
163, 202, 239, 240, 242, -30106.



**5446-2506**  
Starter Drive-CW  
13T-39.5 mm Gear O.D.

Replaces  
Denso: 028300-5670, 671, -6730,  
-7801, 802.  
Uses Pinion Gear: 54146-006.  
Used on Starter No's. 246-25107, 149,  
152, 222, -30101, 104



**5446-2511**  
Starter Drive-CW  
12T-45 mm Gear O.D.

Replaces  
Denso: 128099-5160, 180.  
Uses Pinion Gear: 54146-008.  
Used on Starter No's. 246-25127, 219.



**5446-2515**  
Starter Drive-CW  
11T-40 mm Gear O.D.  
Oil Sealed

Replaces  
Denso: 028300-2070, -5090.  
Uses Pinion Gear: 54146-004.  
Used on Starter No's. 246-25145, 146,  
205, 213, 214, 215, 225, 227.



**5446-2503**  
Starter Drive-CW  
9T-35.5 mm Gear O.D.

Replaces  
Denso: 028300-1810, 1811.  
Uses Pinion Gear: 54146-003.  
Used on Starter No's. 246-25104,  
123, 141, 238



**5446-2507**  
Starter Drive-CW  
11T-34.5 mm Gear O.D.  
Oil Sealed

Replaces  
Denso: 028300-3950, 952.  
Uses Pinion Gear: 54146-007.  
Used on Starter No's. 246-25111, 237



**5446-2512**  
Starter Drive-CW  
11T-38 mm Gear O.D.  
Oil Sealed

Replaces  
Denso: 028300-7650.  
Uses Pinion Gear: 54146-009.  
Used on Starter No.246-25132.



**5446-2516**  
Starter Drive-CW  
10T-40.5 mm Gear O.D.  
Oil Sealed

Replaces  
Denso: 028300-369\_, -655\_,  
-661\_, -669\_, -696\_,  
Uses Pinion Gear: 54146-002.  
Used on Starter No's. 246-25103, 108, 109,  
110, 113, 114, 153, 216, 230,  
-30103, 105, 112.



**5446-2504**  
Starter Drive-CW  
11T-40 mm Gear O.D.

Replaces  
Denso: 028300-2011, 012, -4550, 551.  
Uses Pinion Gear: 54146-004.  
Used on Starter No's. 246-25105, 115, 116,  
117, 118, 119, 120, 121, 122, 126, 128, 130,  
131, 134, 137, 140, 201, 203, 204, 206, 207,  
208, 209, 210, 211, 212, 217, 218, 220, 221,  
223, 224, 226, 228, 232, 233, 243,  
-30102, 107, 109



**5446-2508**  
Starter Drive-CW  
13T-39.5 mm Gear O.D.  
Oil Sealed

Replaces  
Denso: 028300-5650.  
Uses Pinion Gear: 54146-006.  
Used on Starter No's. 246-25101, 112,  
161, 165, 236



**5446-2513**  
Starter Drive-CW  
11T-41.5 mm Gear O.D.

Replaces  
Denso: 028300-2090.  
Uses Pinion Gear: 54146-010.  
Used on Starter No.246-25133.



**5446-2517**  
Starter Drive-CW  
13T-45.5 mm Gear O.D.  
Oil Sealed

Uses Pinion Gear: 54146-011.  
Used on Starter No's. 246-25154, 231.

6



**5446-2518**  
**Starter Drive-CW**  
**9T-32 mm Gear O.D.**  
**Oil Sealed**

Uses Pinion Gear: 54146-015.  
 Used on Starter No's. 246-25156, 234, 244.



**5446-2523**  
**Starter Drive-CW**  
**10T-40.5 mm Gear O.D.**  
**Oil Sealed**

Uses Pinion Gear: 54146-020.  
 Used on Starter No's. 246-25142, 159, 241



**5446-3004**  
**Starter Drive-CW**  
**11T-40 mm Gear O.D.**  
**Oil Sealed**

Heavy Duty Version of 5446-2504, -2515.  
 Uses Pinion Gear: 54146-004.  
 Used on Starter No's. 246-30108, 113, 119, 120, 122, 203, 205, 206, 209, 210



**5746-2521**  
**Field Case Assy.-24V**  
**90mm O.D.**

Replaces  
 Denso: 028100-2881.  
 Used on 4.5 kW Starters



**5446-2519**  
**Starter Drive-CW**  
**9T-35.5 mm Gear O.D.**  
**Oil Sealed**

Uses Pinion Gear: 54146-016.  
 Used on Starter No.246-25235.



**5446-3001**  
**Starter Drive-CW**  
**10T-40.5 mm Gear O.D.**  
**Oil Sealed**

Heavy Duty Version of 5446-2516  
 Uses Pinion Gear: 54146-002.  
 Used on Starter No's. 246-30111, 115, 116, 117, 118, 121, 124, 125, 127, 128, 129, 130, 131, 132, 133, 201, 207, 214, 215, 218, 219, 220, 223, 224.



**5446-3005**  
**Starter Drive-CW**  
**Oil Sealed**  
**9T-35 mm Gear O.D.**

Uses Pinion Gear: 54146-013.  
 Used on Starter No. 246-30110, 211.



**5446-2520**  
**Starter Drive-CW**  
**12T-37 mm Gear O.D.**

Uses Pinion Gear: 54146-017.  
 Used on Starter No.246-25157



**5446-3002**  
**Starter Drive-CW**  
**13T-39.5 mm Gear O.D.**

Heavy Duty Version of 5446-2506  
 Uses Pinion Gear: 54146-006.



**5446-3006**  
**Starter Drive-CW**  
**13T-46.5 mm Gear O.D.**  
**Oil Sealed**

Uses Pinion Gear: 54146-014.  
 Used on Starter No's. 246-30204, 213, 222.



**5746-3011**  
**Field Case Assy.-12V**  
**100mm O.D.**

Replaces  
 Denso: 028100-4410.  
 Used on 3.0 & 4.0kW Starters



**5446-2521**  
**Starter Drive-CW**  
**11T-40 mm Gear O.D.**  
**Oil Sealed**

Replaces  
 Denso: 028300-4270.  
 Uses Pinion Gear: 54146-018.  
 Used on Starter No's. 246-25129, 136, 155, 229.



**5446-3003**  
**Starter Drive-CW**  
**10T-40.5 mm Gear O.D.**

Heavy Duty Version of 5446-2502  
 Uses Pinion Gear: 54146-002.  
 Used on Starter No. 246-30114, 123, 126, 202.



**5746-2511**  
**Field Case Assy.-12V**  
**90mm O.D.**

Replaces  
 Denso: 028100-3001.  
 Used on 2.5, 2.7 KW Starters



**5746-3021**  
**Field Case Assy.-24V**  
**100mm O.D.**

Replaces  
 Denso: 028100-5410.  
 Used on 5.5 & 7.5kW Starters



**5946-2511**

**Field Coil-12V**

Used on 90mm Frames  
2.5, 2.7 kW Starters



**5946-2521**

**Field Coil-24V**

Used on 90mm Frames  
4.5 kW Starters



**5946-3011**

**Field Coil-12V**

Used on 100mm Frames  
3.0 & 4.0kW Starters



**5946-3021**

**Field Coil-24V**

Used on 100mm Frames  
5.5 & 7.5 kW Starters



**6146-2511**

**Armature-12V**

Replaces  
Denso: 028200-1780.  
Used on 12V - 90 mm Frames  
2.5, 2.8 kW Starters



**6146-2521**

**Armature-24V**

Replaces  
Denso: 028200-1590.  
Used on 24V - 90 mm Frames  
4.5 kW Starters



**6146-3011**

**Armature-12V**

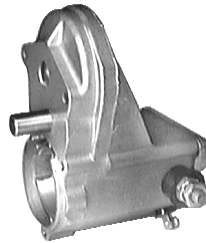
Replaces  
Denso: 028200-2800.  
Used on 12V - 100 mm Frames  
3.0 & 4.0kW Starters



**6146-3021**

**Armature-24V**

Replaces  
Denso: 028200-5250.  
Used on 24V - 100 mm Frames  
5.5 & 7.5 kW Starters

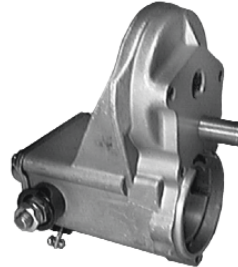


**6646-2511**

**Solenoid-12V-3 Term.  
M10 Battery Post**

Replaces  
Denso: 053400-0970, -2790, -3061, 580,  
-4100, 090, 091, 790, -5640, -6230, 290,  
-7050, -7120, -8800, -9130, 561, 640, 670,  
153400-0141, 142, 951, 961, 970, -1290, 570,  
-2080, 290, 650, -3530, -4040.

Used on Starter No's. 246-25103, 104, 105,  
107, 108, 112, 115, 117, 119, 120, 121, 130,  
131, 133, 134, 137, 140, 145, 146, 147, 163, 165  
Refer to Illustration 246-203, 204, 205, 206,  
207, 214, 217, 222, 224, 225, 226, 234, 235,  
236, 237, 240, 242, 262, 266.



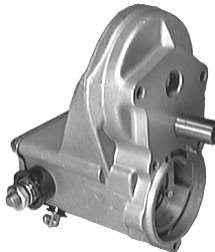
**6646-2512**

**Solenoid-12V-3 Term.  
M10 Battery Post**

Replaces  
Denso: 053400-3070, 200, -4850, 990,  
-5090, 500, 541, -6480, -7300, 520, -8520, -  
9690, 691.

Used on Starter No's. 246-25102, 106, 109,  
122, 123, 124, 126, 127, 128, 129, 132, 136,  
138, 141, 144, 149, 152, 153, 154, 156, 158,  
159, 161, 164.

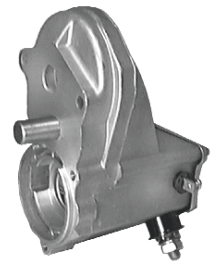
Refer to Illustration 246-201, 208, 215, 216,  
218, 229, 232, 233, 238, 241, 243, 244, 245,  
251, 253, 254, 256, 258, 264, 265.



**6646-2513**

**Solenoid-12V-3 Term.  
M10 Battery Post**

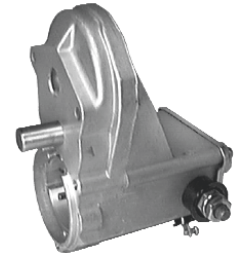
Replaces  
Denso: 053400-3100, -4220,  
153400-0070.  
Used on Starter No's. 246-25116, 118.  
Refer to Illustration 246-221, 223



**6646-2514**

**Solenoid-12V-3 Term.  
M10 Battery Post**

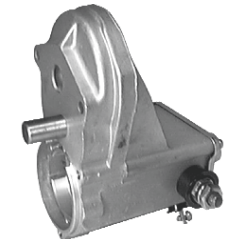
Replaces  
Denso: 053400-3480, 481, -7580.  
Used on Starter No's. 246-25101, 111, 157.  
Refer to Illustration 246-202, 211, 257



**6646-2515**

**Solenoid-12V-4 Term.  
M10 Battery Post**

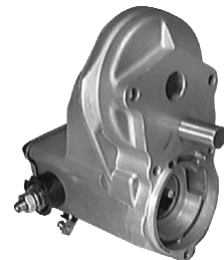
Replaces  
Denso: 053400-8040, 180, -9280,  
153400-1100, 990.  
Used on Starter No's. 246-25110, 113, 162.  
Refer to Illustration 246-210, 212, 263.



**6646-2516**

**Solenoid-12V-3 Term.  
M10 Battery Post**

Replaces  
Denso: 053400-7640, -9720.  
Used on Starter No's. 246-25114, 142.  
Refer to Illustration 246-213, 220

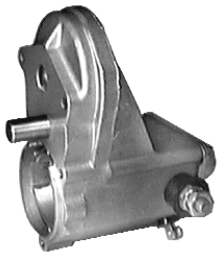


**6646-2517**

**Solenoid-12V-3 Term.  
M8 Battery Post**

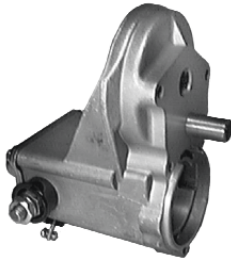
Used on Starter No.246-25155, 160.  
Refer to Illustration 246-227, 252

6



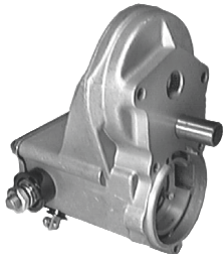
**6646-2521**  
Solenoid-24V-3 Term.  
M10 Battery Post

Replaces  
Denso: 053400-2520, 530, -3090, 550, 940, -4200, 210, 560, 610, 770, -5490, -7311, 330, 331, -9240, 950, 153400-2410, -3140, 150, -4240, -5240, -7311.  
Used on Starter No's. 246-25201, 203, 205, 206, 207, 208, 209, 212, 213, 214, 216, 217, 218, 220, 221, 224, 227, 242.  
Refer to Illustration 246-214, 217, 219, 222, 224, 226, 228, 231, 234, 235, 236, 237, 239, 240, 246, 247.



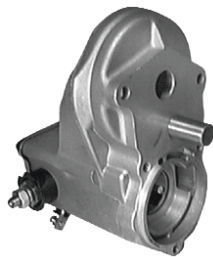
**6646-2522**  
Solenoid-24V-3 Term.  
M10 Battery Post

Replaces  
Denso: 053400-2600, 950, -4700, -8112, -9570, 950, 153400-0540, -1321, -2310.  
Used on Starter No's. 246-25202, 204, 210, 211, 215, 219, 222, 223, 225, 228, 230, 231, 233, 234, 235, 238, 241, 244.  
Refer to Illustration 246-209, 218, 230, 232, 233, 248, 249, 250, 253, 255, 256, 258, 259, 267.



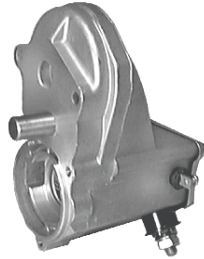
**6646-2523**  
Solenoid-24V-3 Term.  
M10 Battery Post

Replaces  
Denso: 053400-7390, -8490.  
Used on Starter No's 246-25226, 232, 243.  
Refer to Illustration 246-221, 223, 261.



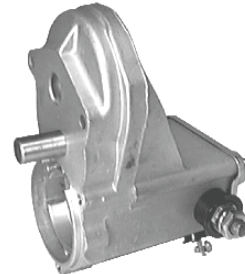
**6646-2527**  
Solenoid-24V-3 Term.  
M8 Battery Post

Used on Starter No. 246-25229, 240.  
Refer to Illustration 246-227, 252.



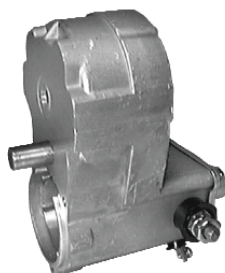
**6646-2528**  
Solenoid-24V-3 Term.  
M10 Battery Post

Used on Starter No. 246-25236, 237.  
Refer to Illustration 246-202, 211



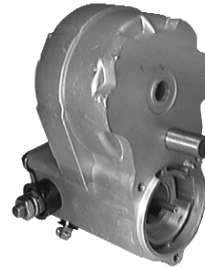
**6646-2529**  
Solenoid-24V-3 Term.  
M10 Battery Post

Replaces  
Denso: 153400-081.  
Used on Starter No. 246-25239.  
Refer to Illustration 246-260



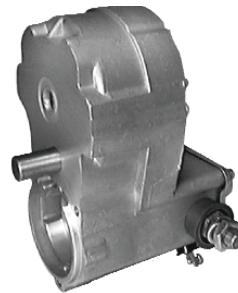
**6646-3011**  
Solenoid-12V-3 Term.  
M10 Battery Post

Replaces  
Denso: 053400-6440, -7840, -8280, -9030, 170, 200, 153400-2870, -3300..  
Used on Starter No's. 246-30101, 102, 104, 105, 106, 107, 111, 114, 122, 123, 127, 130, 131.  
Refer to Illustration 246-301, 302, 303, 305, 306, 312, 316, 323, 324, 329, 330.



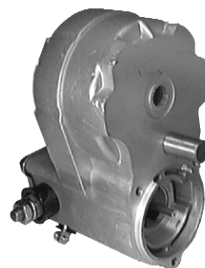
**6646-3012**  
Solenoid-12V-3 Term.  
M10 Battery Post

Replaces  
Denso: 153400-2943,  
Used on Starter No's. 246-30108, 109, 110, 113, 119, 120, 121, 124, 128.  
Refer to Illustration 246-307, 309, 311, 313, 321, 322, 325, 328.



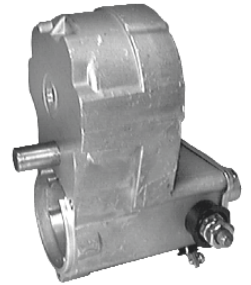
**6646-3013**  
Solenoid-12V-3 Term.  
M12 Battery Post

Replaces  
Denso: 053400-9400, 402.  
Used on Starter No. 246-30103, 112, 115, 116, 117, 118, 126.  
Refer to Illustration 246-304, 314, 317, 318, 319, 320.



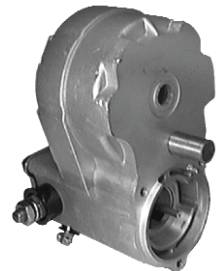
**6646-3014**  
Solenoid-12V-4 Term.  
M10 Battery Post

Used on Starter No's. 246-30125.  
Refer to Illustration 246-326



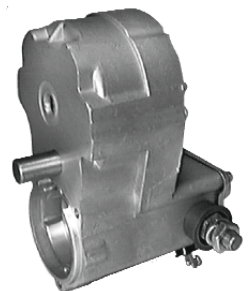
**6646-3021**  
Solenoid-24V-3 Term.  
M10 Battery Post

Replaces  
Denso: 053400-7720, 830, 890, 891, 153400-2600, 750.  
Used on Starter No's. 246-30202, 203, 206, 207, 208, 217, 218.  
Refer to Illustration 246-301, 305, 306, 323, 327, 333.



**6646-3022**  
Solenoid-24V-3 Term.  
M10 Battery Post

Used on Starter No. 246-30204, 205, 209, 210, 211, 212, 213, 216, 219, 223, 224.  
Refer to Illustration 246-307, 308, 309, 310, 313, 315, 321, 322, 331, 332.



**6646-3023**  
Solenoid-24V-3 Term.  
M12 Battery Post

Replaces  
Denso: 053400-9410, 412.  
Used on Starter No. 246-30201, 214, 215.  
Refer to Illustration 246-304, 317, 318.



**6846-2511**

**Brush-Pos. & Neg.  
For 90 mm Ø Frames**

Dim.: 25 mm W. x 8 mm Tk. x 20 mm Lg.  
Replaces  
Denso: 028099-3570.



**6846-3001**

**Brush-Pos.  
For 100 mm Ø Frames**

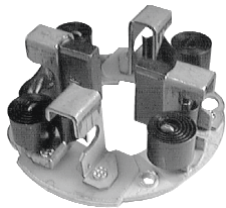
Dim.: 30 mm W. x 10 mm Tk. x 20 mm Lg.  
Replaces  
Denso: 028530-1090.



**6846-3002**

**Brush-Neg.  
For 100 mm Ø Frames**

Dim.: 30 mm W. x 10 mm Tk. x 20 mm Lg.  
Replaces  
Denso: 028530-1100.



**6946-2501**

**Brush Holder-12 & 24V**

Replaces  
Denso: 028510-0500.  
Used on 90 mm Frames.  
2.5, 4.5 kW Starters



**6946-3001**

**Brush Holder-12 & 24V**

Replaces  
Denso: 028510-0880.  
Used on 100 mm Frames.  
3.0, 5.5 kW Starters



**7946-0001**

**Battery Post Kit - M10 Post**

Replaces  
Denso: 028099-2790



**7946-0003**

**Battery Post Kit - M12 Post**

Replaces  
Denso: 028099-643,



**7946-0004**

**Motor Post Kit - M10 Post**

Replaces  
Denso: 028099-3160



**54146-001**

**Pinion Gear-CW**

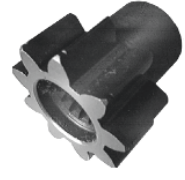
15T-44mm Gear O.D.-40mm L.  
Replaces  
Denso: 028099-3220.  
Used on 5446-2501 Drive.



**54146-002**

**Pinion Gear-CW**

10T-40.5mm Gear O.D.-36mm L.  
Replaces  
Denso: 028099-4000,  
028371-3200.  
Used on Drive: 5446-2502, 516,  
-3001, 003.



**54146-003**

**Pinion Gear-CW**

9T-35.5mm Gear O.D.-36mm L.  
Replaces  
Denso: 028099-3210, 128099-5090.  
Used on Drive: 5446-2503, 514



**54146-004**

**Pinion Gear-CW**

11T- 40mm Gear O.D.-36mm L.  
Replaces  
Denso: 028099-3310, -5460.  
Used on Drive: 5446-2504, 515, -3004.



**54146-005**

**Pinion Gear-CW**

11T-34.5mm Gear O.D.-40mm L  
Replaces  
Denso: 028099-3250.  
Used on Drive: 5446-2505.



**54146-006**

**Pinion Gear-CW**

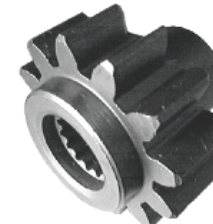
13T-39.5mm Gear O.D.-36mm L  
Replaces  
Denso: 028099-3230.  
Used on Drive: 5446-2506, 508, -3002.



**54146-007**

**Pinion Gear-CW**

11T-34.5mm Gear O.D.-40mm L  
Replaces  
Denso: 028099-6200.  
Used on Drive: 5446-2507.



**54146-008**

**Pinion Gear-CW**

12T-45mm Gear O.D.-36mm L.  
Replaces  
Denso: 028371-6640.  
Used on Drive: 5446-2511.



**54146-009**  
**Pinion Gear-CW**  
 11T-38mm Gear O.D.-36mm L.  
 Replaces  
 Denso: 128099-525\_  
 Used on Drive: 5446-2510, 512.



**54146-010**  
**Pinion Gear-CW**  
 11T-41.5mm Gear O.D.-40mm L  
 Replaces  
 Denso: 028099-3300.  
 Used on Drive: 5446-2513.



**54146-011**  
**Pinion Gear-CW**  
 13T-45.5mm Gear O.D.-36mm L  
 Used on Drive: 5446-2517.



**54146-013**  
**Pinion Gear-CW**  
 9T-35mm Gear O.D.-36mm L.  
 Used on Drive: 5446-3005.



**54146-014**  
**Pinion Gear-CW**  
 13T-46.5mm Gear O.D.-36mm L  
 Used on Drive: 5446-3006.



**54146-015**  
**Pinion Gear-CW**  
 9T-32mm Gear O.D.-40mm L.  
 Used on Drive: 5446-2518.



**54146-016**  
**Pinion Gear-CW**  
 9T-35.5mm Gear O.D.-40mm L.  
 Used on Drive: 5446-2519.



**54146-017**  
**Pinion Gear-CW**  
 12T-37mm Gear O.D.-36mm L.  
 Used on Drive: 5446-2520.



**54146-018**  
**Pinion Gear-CW**  
 11T-40mm Gear O.D.-40mm L.  
 Replaces  
 Denso: 028099-3240.  
 Used on Drive: 5446-2521.



**54146-020**  
**Pinion Gear-CW**  
 10T-40.5mm Gear O.D.-40mm L.  
 Replaces  
 Denso: 028099-3270.  
 Used on Drive: 5446-2523



**65146-007**  
**Contact Battery - Silver Inlaid**  
 10 mm ø hole



**65146-008**  
**Contact - Motor**  
 10 mm ø hole



**65146-009**  
**Contact Battery or Motor**  
 10 mm ø hole



**65146-010**  
**Contact - Battery**  
 10 mm ø hole



**65146-011**  
**Contact - Motor**  
 10 mm ø hole



**65146-013**  
**Contact Battery - Silver Inlaid**  
 12 mm ø hole



**65446-001**  
**Plunger**  
 Replaces  
 Denso: 053660-0443.



**65746-001**  
**Gasket**  
 Replaces  
 Denso: 053404-0240



**66146-001**  
**Cover**  
 Replaces  
 Denso:053505-0290



**66246-101**  
Coil-12V

Used on Solenoid:  
6646-2511, 15, -3011, 13



**66246-105**  
Coil-12V

Used on Solenoid:  
6646-2513, 17



**66246-204**  
Coil-24V

Used on Solenoid:  
6646-2528



**66246-102**  
Coil-12V

Used on Solenoid:  
6646-2514



**66246-201**  
Coil-24V

Used on Solenoid:  
6646-2521, -3021, 23



**66246-205**  
Coil-24V

Used on Solenoid:  
6646-2529



**66246-103**  
Coil-12V

Used on Solenoid:  
6646-2512, -3012



**66246-202**  
Coil-24V

Used on Solenoid:  
6646-2523, 27



**66246-104**  
Coil-12V

Used on Solenoid:  
6646-2516



**66246-203**  
Coil-24V

Used on Solenoid:  
6646-2522, -3022



**66646-003**  
S-Terminal - M5 x 0.8  
( Jump Start Protected )

Replaces  
Denso: 053480-7560



**66746-001**  
R - Terminal - M4 x 0.7

Replaces  
Denso: 053480-0251



**71046-001**  
Drain Tube - C.E. Frame

Replaces  
Denso: 028062-0200



**71046-002**  
Drain Tube - Solenoid

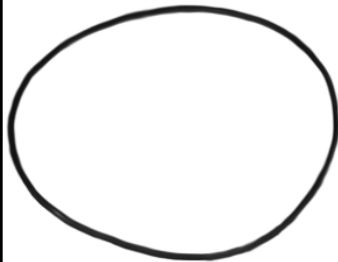
Replaces  
Denso: 028065-0250



**71146-002**  
**O-Ring-4.8mm I.D.**  
Replaces  
Denso: 90801-10050



**71146-003**  
**O-Ring-47.2mm I.D.**  
Replaces  
Denso: 90801-20470



**71146-010**  
**O - Ring**  
Replaces  
Denso: 028901-0360




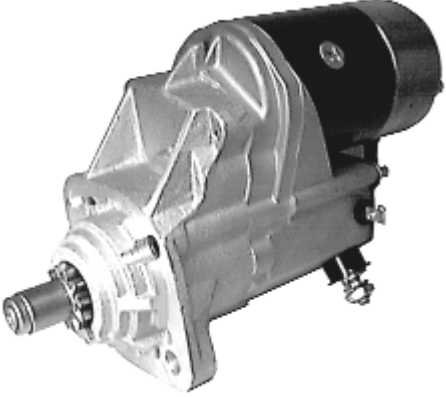

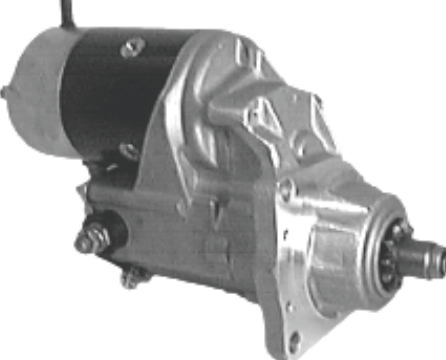

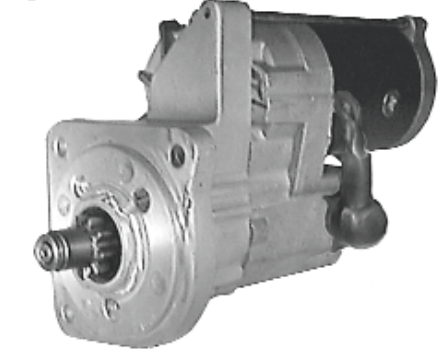
**71346-001**  
**Motor Terminal Boot**  
Replaces  
Denso: 028062-0130







**72046-003**  
**Insulator- Coil Bracket**




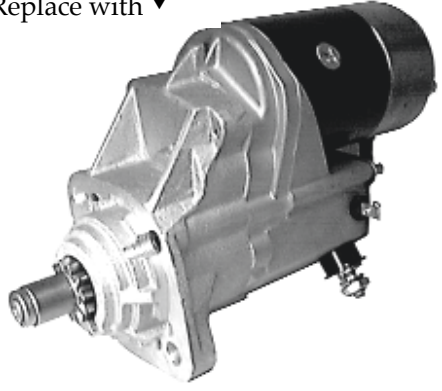
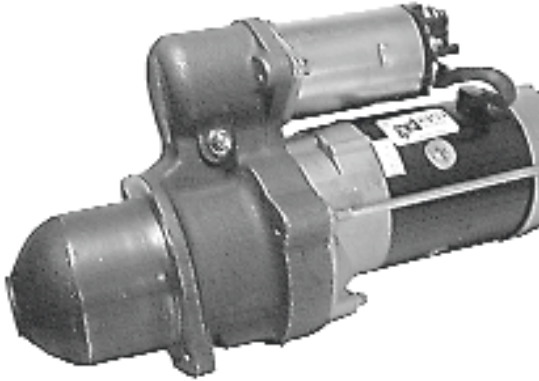
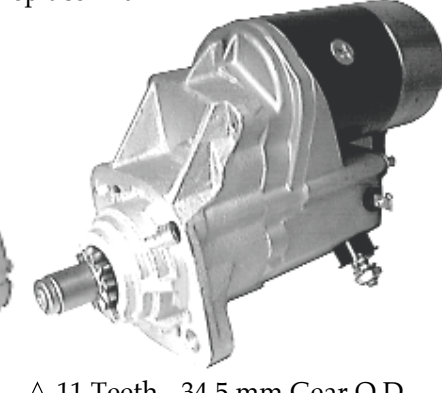

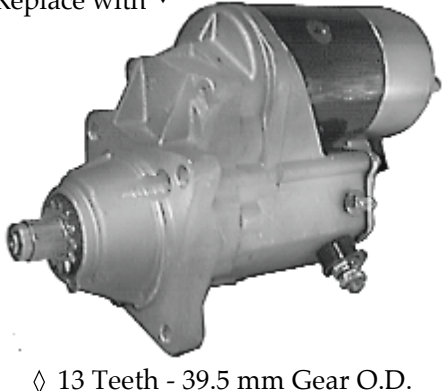
**79046-002**  
**Pinion Lock Kit**

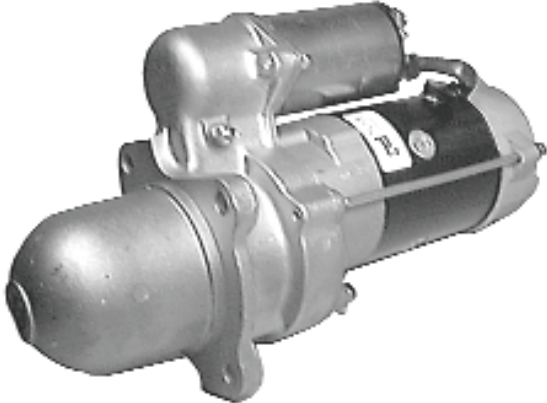

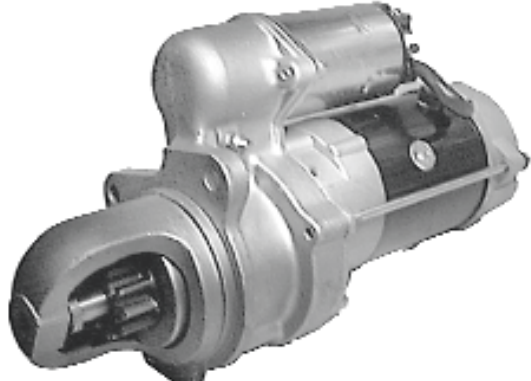



<p><b>BOSCH</b></p> <p>0-001-358-041 0-001-359-016 0-001-359-090 0-001-362-312 0-001-362-316 0-001-367-075 0-001-369-001 0-001-369-005 0-986-012-420 0-986-014-730 0-986-014-740</p>	<p><b>J. DEERE</b></p> <p>AL39700 AL41247 AL62690 AL62772 AL78760 AR70436 AT23401</p>	<p>Application: <b>JOHN DEERE</b></p>  <p>12V w/10 Teeth - 32 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>◇ 11 Teeth - 34.5 mm Gear O.D. 12V 2.8kW <b>246-25111</b> Illustration 246-211</p>
<p><b>BOSCH</b></p> <p>0-001-360-028 0-001-360-049 0-001-368-018</p>	<p><b>VOLVO</b></p> <p>243043 244780 5001684</p>	<p>Application: <b>VOLVO</b></p>  <p>24V w/9 Teeth - 34 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>◇ 11 Teeth - 40.0 mm Gear O.D. 24V 4.5kW <b>246-25223</b> Illustration 246-250</p>
<p><b>BOSCH</b></p> <p>0-001-359-021 0-001-359-102 0-001-360-043 ★ 0-001-367-028 0-001-368-019 ★ 0-986-011-220 0-986-011-221 0-986-011-310 ★</p>	<p><b>FIAT</b></p> <p>4169096 4682999 ★ 4699705 4703751 4755108 ★</p>	<p>Application: <b>FIAT - ENG., FIAT - ALLIS, FIAT - AGRI, IVECO</b></p>  <p>12V w/9 Teeth - 35 mm Gear O.D. ★ 24V w/9 Teeth - 35 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>12V 4.0kW <b>246-30110</b> 24V 5.5kW <b>246-30211</b> Illustration 246-309</p>

▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.


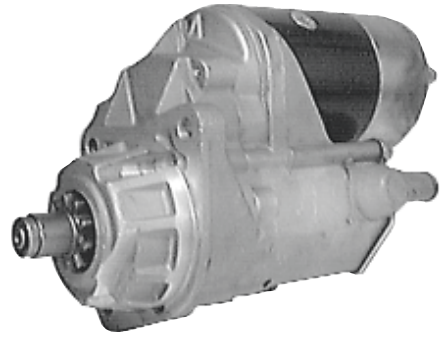

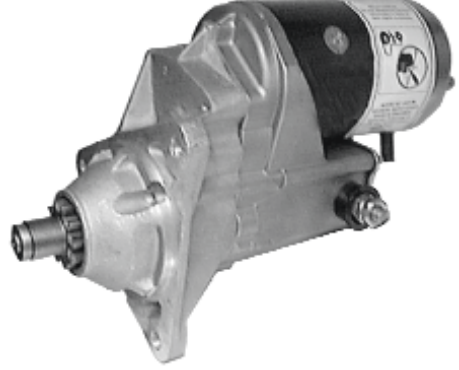

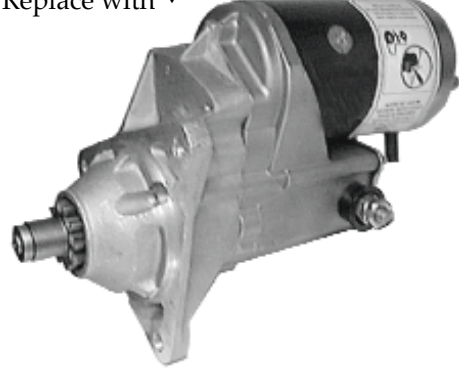
<p><b>CAV</b></p> <p>1320-023 1320-027 1320-510 1320-513 1320-720 1320-F027 1320-F513 1320-F720 1320-G720 1321-F022 ★ 1321-G022 ★ CA45C122 CA45C1251 CA45D122 CA45D1272 CA45F12Y2</p>	<p><b>CAV</b></p> <p>CA45F12Y51 CA45F12Y72 CA45G1272 CA45F242 ★ CA45G242 ★</p> <p><b>PERKINS</b></p>	<p>Application: <b>PERKINS ENG.</b>      Replace with ▼</p>   <p>12V w/10 Teeth - 40 mm Gear O.D. ★ 24V w/10 Teeth - 40 mm Gear O.D.</p> <p>12V 2.8kW <b>246-25153</b> 24V 4.5kW <b>246-25230</b></p> <p>Illustration 246-253</p>
<p><b>CAV</b></p> <p>1320-043 1320-045 1320-142 1320-571 1320-F045 1320-F571 1320-G571 1321-F042 ★ 1321-F571 ★ CA45C124 CA45D124 CA45D1214 CA45D1257 CA45F12Y4 CA45F12Y57 CA45F244 ★ CA45F2457 ★ CA45G1257</p>	<p><b>PERKINS</b></p>	<p>Application: <b>PERKINS ENG.</b>      Replace with ▼</p>   <p>12V w/13 Teeth - 45.5 mm Gear O.D. ★ 24V w/13 Teeth - 45.5 mm Gear O.D.</p> <p>12V 2,8kW <b>246-25154</b> 24V 4.5kW <b>246-25231</b></p> <p>Illustration 246-253</p>

▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.


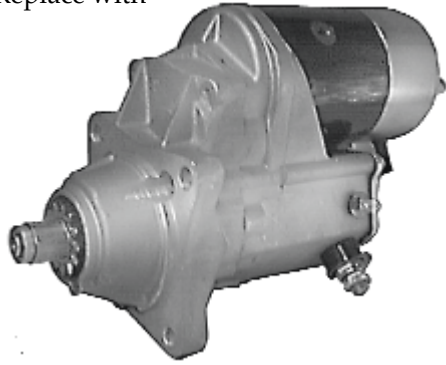
<p><b>DELCO</b></p> <p>1107577 1107599 1107863 1107871 1109208 1109251 1109265 1998346 1998364 1998367 1998519 ★ 10496885</p>	<p><b>J. DEERE</b></p> <p>TY1458 TY6614 TY6620 TY6702 AR25619 AR66424 AT18150 AT25619</p>	<p>Application: <b>JOHN DEERE</b></p>  <p>12V w/10 Teeth - 32 mm Gear O.D. ★ 24V w/10 Teeth - 32 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>◇ 11 Teeth - 34.5 mm Gear O.D. 12V 2.8kW <b>246-25111</b> 24V 4.5kW <b>246-25237</b></p> <p>Illustration 246-211</p>
<p><b>DELCO</b></p> <p>1113271 1113272 ★</p>	<p><b>J. DEERE</b></p> <p>RE49033 RE60854</p>	<p>Application: <b>JOHN DEERE</b></p>  <p>12V w/10 Teeth - 32 mm Gear O.D. ★ 24V w/10 Teeth - 32 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>◇ 11 Teeth - 34.5 mm Gear O.D. 12V 2.8kW <b>246-25111</b> 24V 4.5kW <b>246-25237</b></p> <p>Illustration 246-211</p>
<p><b>DELCO</b></p> <p>1113276 1113277 ★ 1113291 ★ 1113292 1998488 ★ 1998522 10455500 ★ 10465026 10465043 10479604</p>	<p><b>CUMMINS</b></p> <p>3604648 3604654 3604677 ★ 3918377 ★</p>	<p>Application: <b>CUMMINS ENG.</b></p>  <p>12V w/10 Teeth - 32 mm Gear O.D. ★ 24V w/10 Teeth - 32 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>◇ 13 Teeth - 39.5 mm Gear O.D. 12V 2.8kW <b>246-25101</b> 24V 4.5kW <b>246-25236</b></p> <p>Illustration 246-202</p>

<p><b>DELCO</b></p> <p>1113274 1113275 1113278 1113290 10465044 10465045 10465046</p>	<p><b>HYSTER</b></p> <p>313394</p>	<p>Application: <b>HYSTER</b></p>  <p>12V w/ 10 Teeth - 40 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>12V 2.8kW <b>246-25142</b></p> <p>Illustration 246-220</p>
<p><b>DELCO</b></p> <p>1113281 1113282 1113285 10465049 10465050 10465405 ★ 10479629 ★</p>	<p><b>BOBCAT</b></p> <p>6651210 6651664</p> <p><b>CUMMINS</b></p> <p>3675207 ★</p>	<p>Application: <b>BOBCAT</b></p>  <p>12V w/ 10 Teeth - 40 mm Gear O.D. ★ 24V w/ 10 Teeth - 40 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>12V 2.8kW <b>246-25159</b> 24V 4.5kW <b>246-25241</b></p> <p>Illustration 246-258</p>
<p><b>DELCO</b></p> <p>1107540 1107580 1107592 1108644 1108697 1109189 1109258 1109269 1109542 1109550 1113597 1998336 1998340 1998350 1998357 1998373</p>	<p><b>DELCO</b></p> <p>1998383 1998387 1998446 1998468 1998479 1998481 1998484 10496881</p> <p><b>MASSEY FERGUSON</b></p> <p>508544M91 1903101M91</p>	<p>Application: <b>MASSEY-FERGUSON</b></p>  <p>12V w/ 10 Teeth - 40 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>12V 2,8kW <b>246-25142</b></p> <p>Illustration 246-220</p>

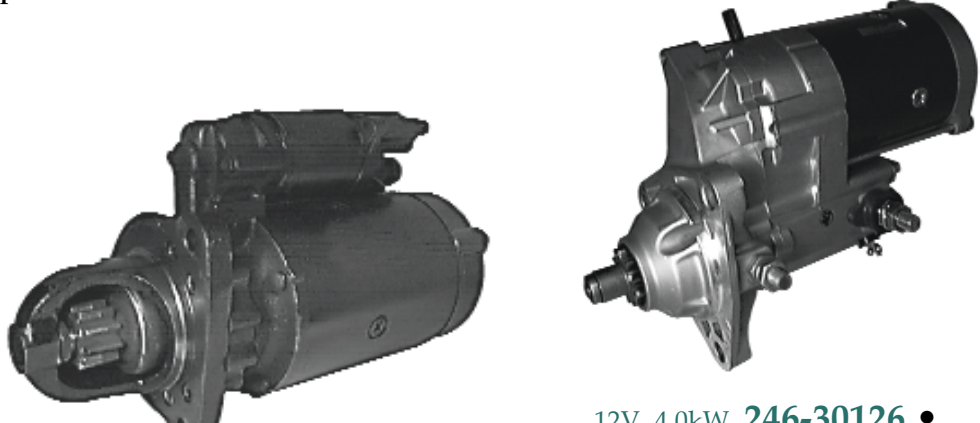
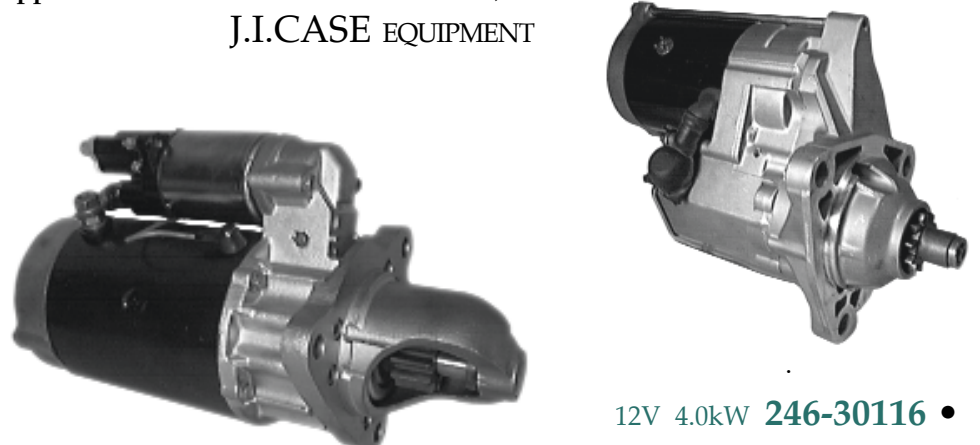
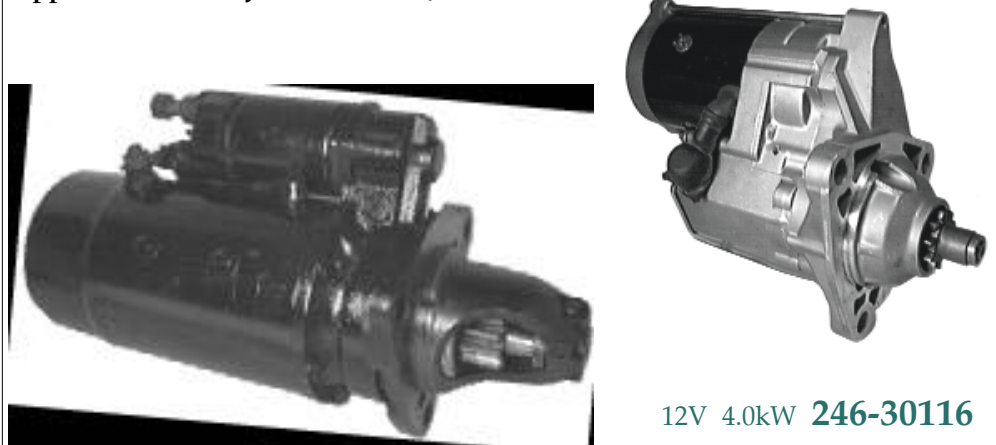
▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.

<p><b>DELCO</b></p> <p>1107514 1107539 1107866 1107872 1108648 1109192 1109194 1109198 1109253 1109261 1109263 1109539 1998330 1998342 1998359 1998360 1998376 1998379 1998420 1998480 10496886</p>	<p><b>CATERPILLAR</b></p> <p>347198 646218</p> <p><b>CASE - I.H.</b></p> <p>596493R92 4500732R91</p> <p><b>MASSEY FERGUSON</b></p> <p>517533M93 1903103M91</p>	<p>Application: <b>CATERPILLAR, CASE - I. H., MASSEY-FERGUSON</b></p> <p>Replace with ▼</p>   <p>12V w/10 Teeth - 40 mm Gear O.D.</p> <p>12V 2.8kW <b>246-25159</b></p> <p>Illustration 246-258</p>
<p><b>DELCO</b></p> <p>1113657</p>	<p><b>ALLIS-CHALMERS</b></p>	<p>Application: <b>ALLIS - CHALMERS</b></p> <p>Replace with ▼</p>   <p>12V w/10 Teeth - 40.5 mm Gear O.D.</p> <p>12V 2.8kW <b>246-25103</b></p> <p>Illustration 246-203</p>
<p><b>DELCO</b></p> <p>1109255 1998370</p>	<p><b>ALLIS-CHALMERS</b></p>	<p>Application: <b>ALLIS - CHALMERS</b></p> <p>Replace with ▼</p>   <p>12V w/10 Teeth - 40 mm Gear O.D.</p> <p>12V 2.8kW <b>246-25103</b></p> <p>Illustration 246-203</p>

▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.



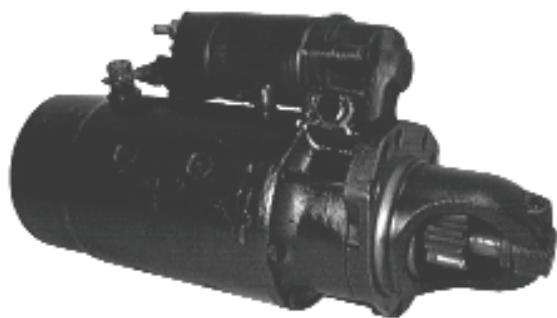
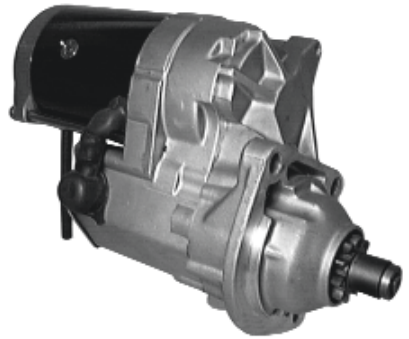


<p><b>DELCO</b></p> <p>1107589 1108698 1108700 1109143 1109144 1109149 1109190 1113593 1113594 ★ 1998353 1998408 1998423 1998456 1998457 1998459 ★ 1998490 1998505 10465149 10496882 10496883 10496884 ★</p>	<p><b>CUMMINS</b></p> <p>3604482 3901386 3904445 3909913 3909914 ★</p> <p><b>FORD</b></p> <p>E3TF-11000-AA E3TZ-11001-B E4TF-11000-AA</p>	<p>Application: <b>CUMMINS ENG., FORD</b></p>  <p>12V w/ 10 Teeth - 32 mm Gear O.D. ★ 24V w/ 10 Teeth - 32 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>◇ 13 Teeth - 39.5 mm Gear O.D.</p> <p>12V 2.8kW <b>246-25101</b> 24V 4.5kW <b>246-25236</b></p> <p>Illustration 246-202</p>

▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.  
◇ Number of teeth and Gear diameter are different, because the Gear is located off-center.

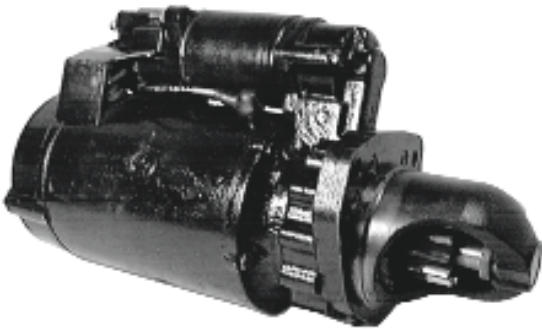
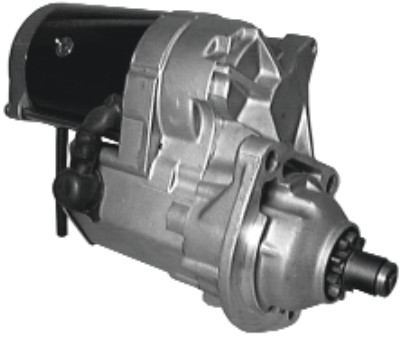




<p><b>DENSO</b></p> <p>128000-981_▼ 128000-982_•★ 228000-194_•</p>	<p><b>CUMMINS</b></p> <p>3921012 3920329 ★</p>	<p><b>Application:</b> CUMMINS ENG. <b>Replace with ▼</b></p>  <p>12V 4.0kW <b>246-30126</b> • 24V 7.5kW <b>246-30214</b> •</p> <p>12V 4.0 kW w/10 Teeth - 40.5 mm Gear O.D. ★ 24V 7.5 kW w/10 Teeth - 40.5 mm Gear O.D.</p> <p>Illustration 246-317</p>
<p><b>DENSO</b></p> <p>128000-533_• 128000-702_•★ 128000-980_•</p>	<p><b>CUMMINS</b></p> <p>3920328</p> <p><b>J.I.CASE</b></p> <p>A187722 ★ A187728</p>	<p><b>Application:</b> CUMMINS ENG., J.I.CASE EQUIPMENT <b>Replace with ▼</b></p>  <p>12V 4.0kW <b>246-30116</b> • 12V 7.5kW <b>246-30215</b> •</p> <p>12V 4.0 kW w/10 Teeth - 40.5 mm Gear O.D. ★ 24V 7.5kW w/10 Teeth - 40.5 mm Gear O.D.</p> <p>Illustration 246-318</p>
<p><b>DENSO</b></p> <p>028000-743_</p>	<p><b>J.I.CASE</b></p> <p>A162469</p>	<p><b>Application:</b> J.I.CASE EQUIPMENT <b>Replace with ▼</b></p>  <p>12V 4.0kW <b>246-30116</b></p> <p>12V 4.0 kW w/10 Teeth - 40.5 mm Gear O.D.</p> <p>Illustration 246-318</p>

▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.

• Gear Reduction (OE) replacement for direct drive IIF Starter Motors.



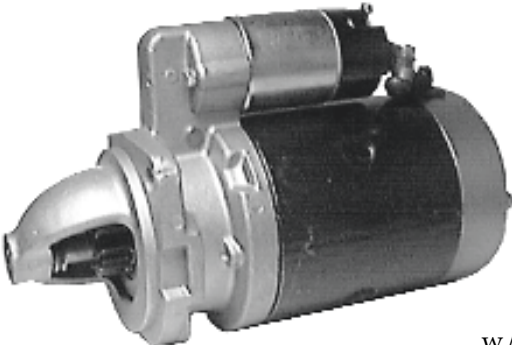
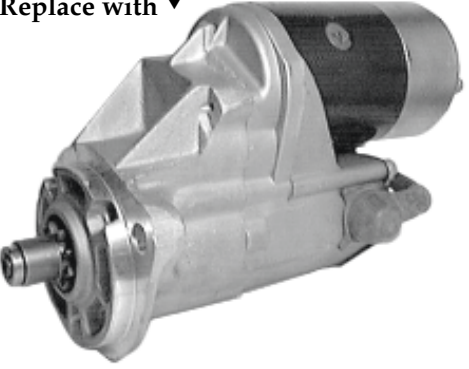


<p><b>DENSO</b></p> <p>028000-329_          028000-525_*          128000-077_          128000-369_</p>	<p><b>HINO</b></p> <p>28100-1670_   <b>JOHN DEERE</b></p> <p>RE13722          RE15663 *          RE23900</p>	<p><b>Application: JOHN DEERE EQUIP.,          HINO TRUCKS</b></p>  <p>12V 4.0 kW w/10 Teeth - 40.5 mm Gear O.D.          * 24V 7.5 kW w/10 Teeth - 40.5 mm Gear O.D.</p>	<p><b>Replace with ▼</b></p>  <p>12V 4.0kW <b>246-30128</b>          12V 7.5kW <b>246-30219</b>          Illustration 246-322</p>
<p><b>DENSO</b></p> <p>028000-397_          128000-048_*</p>	<p><b>JOHN DEERE</b></p> <p>AR63341          RE15718 *</p>	<p><b>Application: JOHN DEERE EQUIP.</b></p>  <p>12V 4.0 kW w/10 Teeth - 40.5 mm Gear O.D.          * 24V 7.5 kW w/10 Teeth - 40.5 mm Gear O.D.</p>	<p><b>Replace with ▼</b></p>  <p>12V 4.0kW <b>246-30129</b>          12V 7.5kW <b>246-30220</b>          Illustration 246-323</p>
<p><b>DENSO</b></p> <p>028000-393_</p>	<p><b>JOHN DEERE</b></p> <p>AR70611</p>	<p><b>Application: JOHN DEERE EQUIP.</b></p>  <p>12V 2.5 kW w/10 Teeth - 40.5 mm Gear O.D.</p>	<p><b>Replace with ▼</b></p>  <p>12V 4.0kW <b>246-30128</b>          Illustration 246-328</p>

▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.


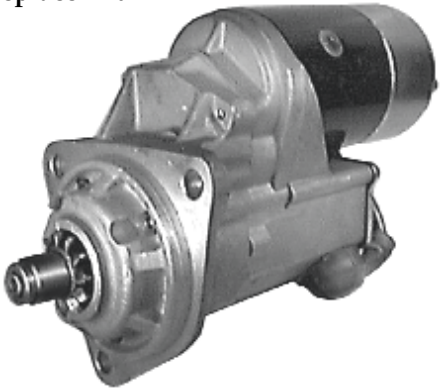

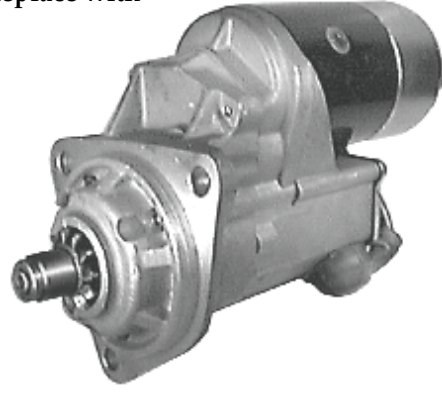
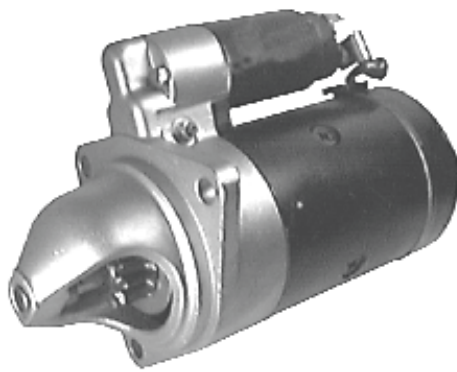
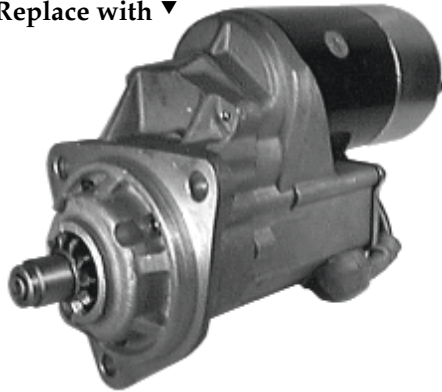
<p><b>DENSO</b></p> <p>128000-723_ 128000-724_★ 228000-237_</p>	<p><b>JOHN DEERE</b></p> <p>RE39832 RE39833 ★ RE54874</p>	<p><b>Application: JOHN DEERE EQUIP.,</b>      <b>Replace with ▼</b></p>   <p>12V 4.0kW <b>246-30130</b> 12V 4.0kW <b>246-30131</b> 24V 7.5kW <b>246-30220</b></p> <p>12V 4.0 kW w/10 Teeth - 40.5 mm Gear O.D. ★ 24V 7.5 kW w/10 Teeth - 40.5 mm Gear O.D.</p> <p>Illustration 246-323 / 246-330</p>
<p><b>DENSO</b></p> <p>128000-717_★ 128000-591_ 128000-597_ 128000-725_ 128000-757_ 228000-136_ 228000-236_ 228000-238_ 228000-239_★ 228000-463_•</p>	<p><b>JOHN DEERE</b></p> <p>RE38336 RE38369 ★ RE42670 RE43266 RE54416 RE44515 ★ RE54909 RE55641 ★ RE65100</p> <p><b>HINO</b></p> <p>28100-2052_ 28100-2280_ 28100-2121_</p>	<p><b>Application: JOHN DEERE EQUIP.,</b>      <b>Replace with ▼</b> <b>HINO TRUCKS</b></p>   <p>12V 4.0kW <b>246-30121</b> 12V 4.0kW <b>246-30119</b> 24V 7.5kW <b>246-30219</b></p> <p>12V 4.0 kW w/10 Teeth - 40.5 mm Gear O.D. ★ 24V 7.5 kW w/10 Teeth - 40.5 mm Gear O.D.</p> <p>Illustration 246-322 / 246-321</p>
<p><b>DENSO</b></p> <p>028000-353_</p>	<p><b>TOYOTA</b></p> <p>28100-20560-71</p>	<p><b>Application: TOYOTA</b>      <b>Replace with ▼</b></p>   <p>24V 4.5kW <b>246-25244</b></p> <p>24V 3.0 kW w/9 Teeth - 36 mm Gear O.D.</p> <p>Illustration 246-267</p>

▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.


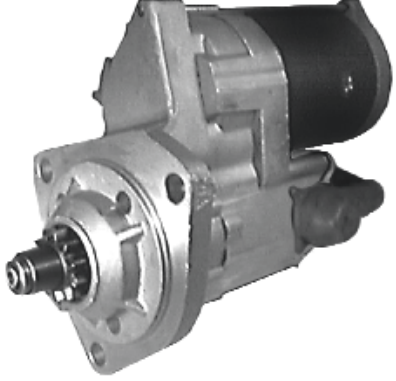

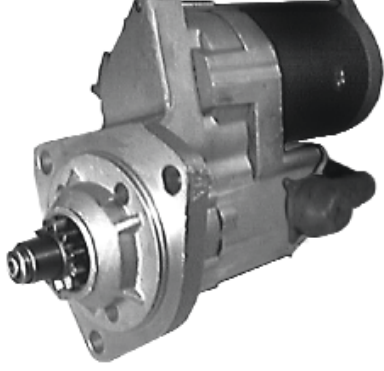
• Gear Reduction (OE) replacement for direct drive IIF Starter Motors.

<p><b>HITACHI</b></p> <p>S13-82 S13-82A S13-82B S13-120B S24-03C ★ S25-161 ★</p>	<p><b>ISUZU</b></p> <p>8-94136-400-1 8-94333-438-0 ★ 8-94365-476-0 ★ 8-94453-211-1 8-94453-212-0</p>	<p>Application: <b>ISUZU ENG.</b></p>  <p>12V w/ 9 Teeth - 32 mm Gear O.D. ★ 24V w/ 9 Teeth - 35.5 mm Gear O.D. 12V w/11 Teeth - 38 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>w/11T Ø 38 12V 2.8kW <b>246-25124</b> w/ 9T Ø 32 12V 2.8kW <b>246-25156</b> w/ 9T Ø 35.5 24V 4.5kW <b>246-25235</b> Illustration 246-229 &amp; 246-256</p>
<p><b>HITACHI</b></p> <p>S12-41A S12-47 S12-58 S12-59 S13-28 S25-120 ★ S25-120A ★ S25-121 ★ S25-121A ★</p>	<p><b>ISUZU</b></p> <p>5-81100-080-0 5-81100-099-0 5-81100-128-2 ★ 5-81100-129-2 ★</p> <p><b>THERMO KING</b></p> <p>44-5443</p> <p><b>YANMAR</b></p> <p>121370-77010</p>	<p>Application: <b>ISUZU ENG., YANMAR ENG.</b></p>  <p>12V w/ 9 Teeth-32 mm Gear O.D. ★ 24V w/ 9 Teeth-32 mm Gear O.D. ★ 24V w/ 9 Teeth-35.5 mm Gear O.D. 12V w/ 15 Teeth-44 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>12V 2.8kW <b>246-25156</b> w/ 9T Ø32 24V 4.5kW <b>246-25234</b> w/15T Ø44 12V 2.8kW <b>246-25158</b> w/ 9T Ø35.5 24V 4.5kW <b>246-25235</b> Illustration 246-256</p>
<p><b>HITACHI</b></p> <p>S13-33 S13-33A S13-33B S13-41 S13-41A S13-41B S13-41C</p>	<p><b>ISUZU</b></p> <p>5-81100-111-1 5-81100-111-2</p> <p><b>YANMAR</b></p> <p>121254-77010 121254-77011 121254-77012</p>	<p>Application: <b>ISUZU ENG., YANMAR ENG.</b></p>  <p>12V w/ 9 Teeth-32 mm Gear O.D. 12V w/15 Teeth-44 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>w/ 9T Ø 32 12V 2.8kW <b>246-25156</b> w/ 15T Ø 44 12V 2.8kW <b>246-25158</b> Illustration 246-256</p>

▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.

<p><b>HITACHI</b></p> <p>S25-135A S25-137A S25-137B</p>	<p><b>ISUZU</b></p> <p>1-81100-152-1 1-81100-233-0</p>	<p>Application: <b>ISUZU ENG.</b></p>  <p>24V w/11 Teeth - 40 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>24V 4.5kW <b>246-25232</b></p> <p>Illustration 246-223</p>
<p><b>HITACHI</b></p> <p>S13-68 S13-86 S25-110 ★ S25-110A ★ S25-110C ★ S25-110G ★ S25-110L ★ S25-142A ★ S25-142B ★ S25-162 ★ S25-164A ★</p>	<p><b>NISSAN</b></p> <p>23300-Z5505 ★ 23300-Z5509 ★ 23300-Z5512 ★ 23300-Z5515 ★</p> <p><b>YANMAR</b></p> <p>123500-77010 124610-77010 124617-77010★ 124617-77011★</p>	<p>Application: <b>NISSAN - U.D., YANMAR ENG.</b></p>  <p>12V w/11 Teeth - 40 mm Gear O.D. ★ 24V w/11 Teeth - 40 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>12V 2.8kW <b>246-25155</b> 24V 4.5kW <b>246-25229</b></p> <p>Illustration 246-252</p>
<p><b>HITACHI</b></p> <p>S25-64B S25-64E S25-75</p>	<p><b>NISSAN</b></p> <p>23300-L6000 23300-Z5000 23300-90060</p>	<p>Application: <b>NISSAN - U.D.</b></p>  <p>24V w/11 Teeth - 40 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>24V 4.5kW <b>246-25229</b></p> <p>Illustration 246-252</p>

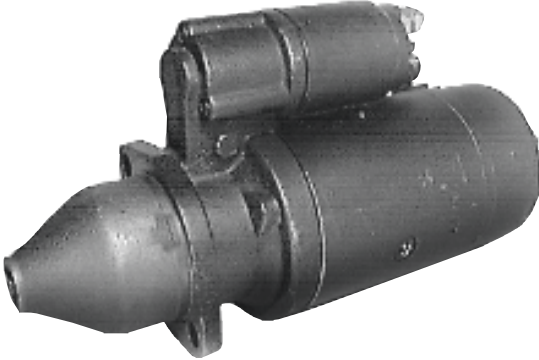
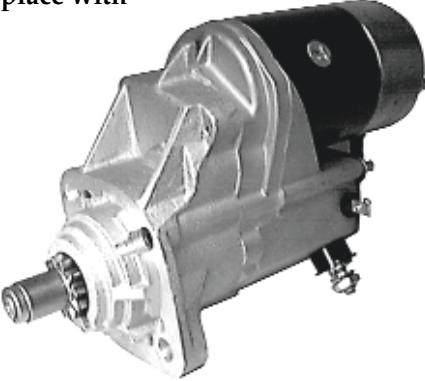


▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.

<p><b>HITACHI</b></p> <p>S15-02 S15-03 S28-23B *</p>	<p><b>NISSAN</b></p> <p>23300-95011 23300-95017 23300-96106 *</p>	<p>Application: <b>NISSAN - U.D.</b>      <b>Replace with ▼</b></p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p style="text-align: center;">12V 4.0kW w/11 Teeth - 40 mm Gear O.D. ★ 24V 6.0kW w/11 Teeth - 40 mm Gear O.D.</p> <p style="text-align: right;">12V 4.0kW <b>246-30113</b> 24V 7.5kW <b>246-30209</b> Illustration 246-307</p>
<p><b>HITACHI</b></p> <p>S210-98D</p>	<p><b>NISSAN</b></p> <p>23300-96119</p>	<p>Application: <b>NISSAN - U.D.</b>      <b>Replace with ▼</b></p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p style="text-align: center;">24V 5.5kW w/11 Teeth - 40 mm Gear O.D.</p> <p style="text-align: right;">24V 7.5kW <b>246-30209</b> Illustration 246-307</p>

▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.

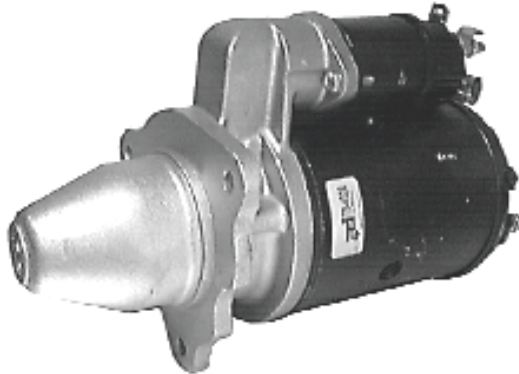
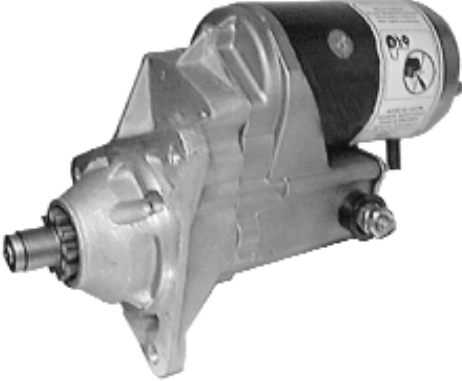




# ISKRA - REPLACEMENT GUIDE



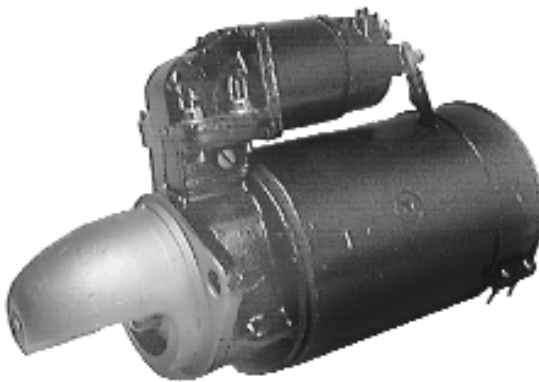
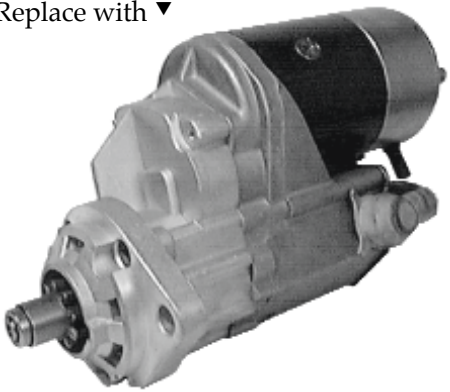
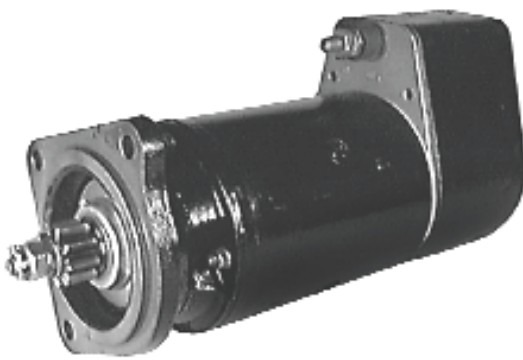



<p>ISKRA</p> <p>11.130.534 AZJ-3158</p>	<p>JOHN DEERE</p> <p>AR70436</p>	<p>Application: <b>JOHN DEERE</b></p>  <p>12V w/10 Teeth - 32 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>◇ 11 Teeth - 34.5 mm Gear O.D.</p> <p>12V 2.8kW <b>246-25111</b></p> <p>Illustration 246-211</p>
<p>ISKRA</p> <p>11.130.199 11.130.492 * 11.130.410 AZJ-3116 AZJ-3133 * AZJ-3535</p> <p>UNIC</p> <p>004 755 108 *</p>	<p>FIAT</p> <p>4169096 4231018 * 4269114 * 4682999 * 4692477 * 4699704 * 4699705 4701920 * 4703751 4807378 * 77040560 * 77040561 * 77080560 * 77414430 * 77414431 * 77444430 * 77445430 *</p>	<p>Application: <b>FIAT ENG., IVECO, UNIC</b></p>  <p>12V w/9 Teeth - 35 mm Gear O.D. * 24V w/9 Teeth - 35 mm Gear O.D.</p>	 <p>12V 4.0kW <b>246-30110</b> 24V 5.5kW <b>246-30211</b></p> <p>Illustration 246-309</p>

▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.

◇ Number of teeth and Gear diameter are different, because the Gear is located off-center.

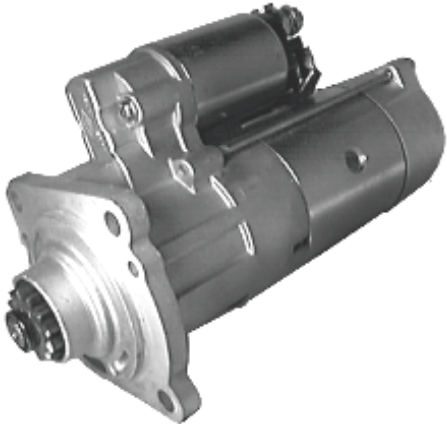
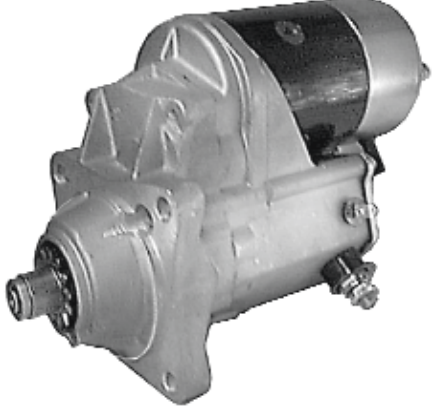


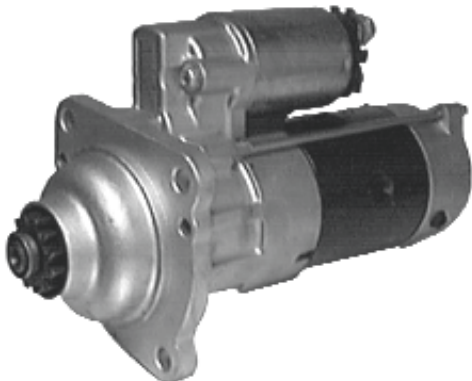

<p><b>LUCAS</b></p> <p>26363 26363A 26363E 26429 27558</p>	<p><b>ALLIS-CHALMERS</b></p>	<p>Application: <b>ALLIS-CHALMERS</b>    <b>Replace with ▼</b></p> <div style="display: flex; justify-content: space-around;">   </div> <p>12V w/ 10 Teeth - 40 mm Gear O.D.</p> <p style="text-align: right;">12V 2.8kW <b>246-25103</b> Illustration 246-203</p>
<p><b>LUCAS</b></p> <p>26390 27430</p>	<p><b>ALLIS-CHALMERS</b></p> <p>2091668 <b>WHITE</b> 312903335</p>	<p>Application: <b>ALLIS-CHALMERS, WHITE</b>    <b>Replace with ▼</b></p> <div style="display: flex; justify-content: space-around;">   </div> <p>12V w/ 9 Teeth - 35 mm Gear O.D.</p> <p style="text-align: right;">12V 4.0kW <b>246-30110</b> Illustration 246-309</p>
<p><b>LUCAS</b></p> <p>26398 26398A 26398E 26398F</p>	<p><b>MASSEY-FERGUSON</b></p> <p>1618050M3 1903145M91</p>	<p>Application: <b>MASSEY-FERGUSON</b>    <b>Replace with ▼</b></p> <div style="display: flex; justify-content: space-around;">   </div> <p>12V w/ 10 Teeth - 40 mm Gear O.D.</p> <p style="text-align: right;">12V 2.8kW <b>246-25153</b> Illustration 246-253</p>

▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.

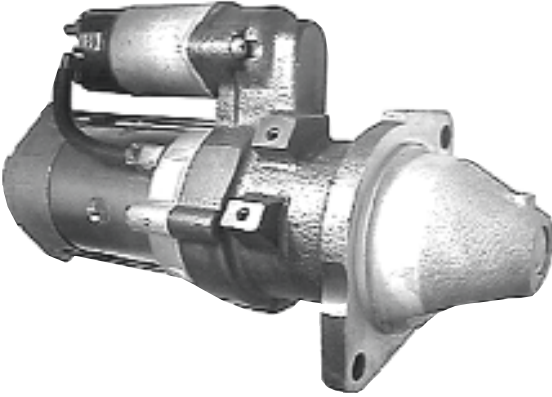
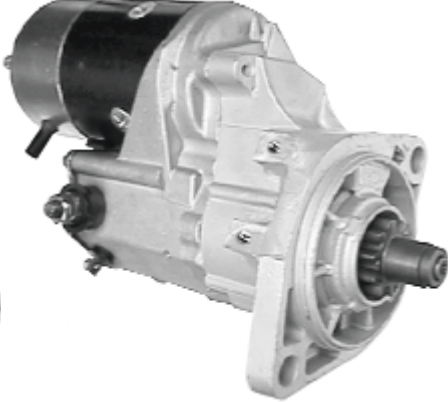
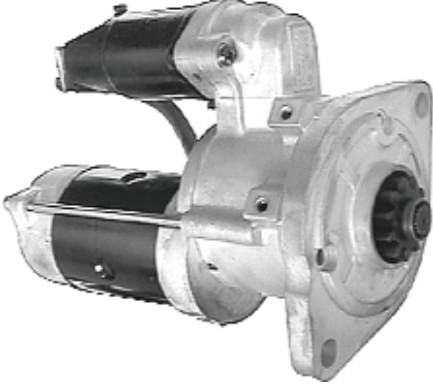
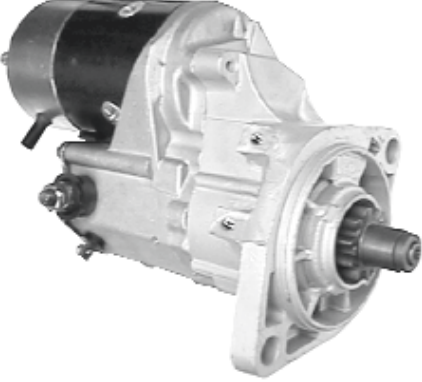
<p>M.MARELLI FIAT</p> <p>E115-3/24 63223800 63223830 63223897</p>	<p>852962 4104783 4130796</p>	<p>Application: FIAT ENG., FIAT TRACTOR, OLIVER</p>  <p>24V w/9 Teeth - 35.5 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>24V 4.5kW <b>246-25238</b></p> <p>Illustration 246-259</p>
<p>M.MARELLI FIAT</p> <p>MT38QA MT38QB MT38TB MT43PA ★ 63213853</p>	<p>4169093 4187122 4199576 ★</p>	<p>Application: FIAT ENG., FIAT - ALLIS</p>  <p>12V w/9 Teeth - 35 mm Gear O.D. ★ 24V w/9 Teeth - 35 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>12V 4.0kW <b>246-30110</b> 24V 5.5kW <b>246-30211</b></p> <p>Illustration 246-309</p>
<p>M.MARELLI FIAT</p> <p>MT68AA MT68AB MT68AC MT68AD MT67AA ★ MT67AB ★ MT67AC ★ MT67AD ★ 63216800 63216825</p>	<p>4172113 4231018 ★ 4701920 ★ 4702248 4737754 ★ 4737755 4755109 4807378 ★</p>	<p>Application: FIAT ENG., AIFO, FIAT - ALLIS, FIAT - AGRI, IVECO</p>  <p>12V w/9 Teeth - 35 mm Gear O.D. ★ 24V w/9 Teeth - 35 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>12V 4.0kW <b>246-30110</b> 24V 5.5kW <b>246-30211</b></p> <p>Illustration 246-309</p>

▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.

# MITSUBISHI - REPLACEMENT GUIDE

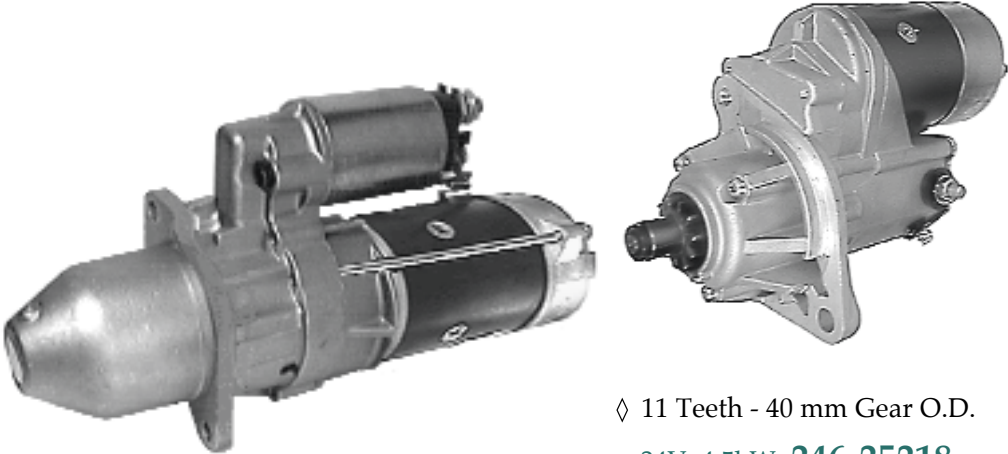
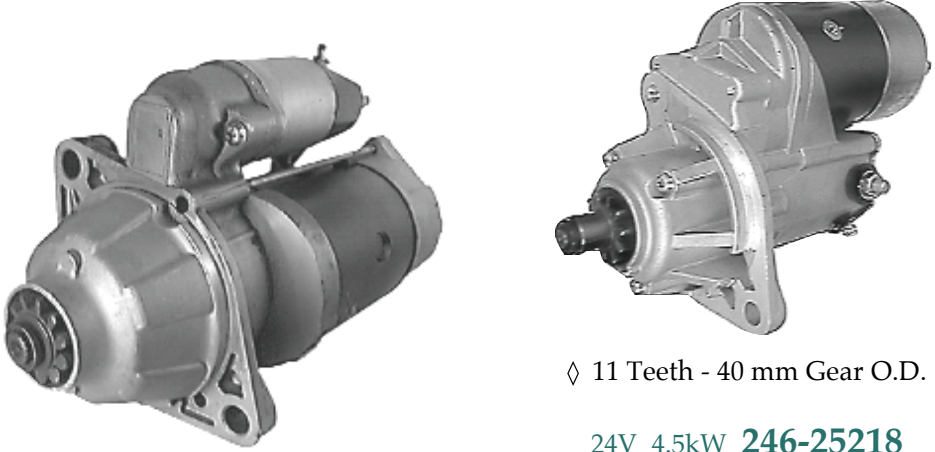
<p>MITSUBISHI M8T50071</p>	<p>FORD F4TZ-11002-A F5TU-11000-AA</p>	<p>Application: FORD 7.3L w. direct Injection</p>  <p>12V 2.8kW w / 12 Teeth - 37 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>12V 2.8kW <b>246-25157</b></p> <p>Illustration 246-257</p>
<p>MITSUBISHI M3T90071 M3T90072</p>	<p>FORD E5TF-11000-AA E5TF-11001-AA E5TZ-11002-B E8TF-11000-AA E8TZ-11002-A F3TU-11000-AA F4PU-11000-AA</p>	<p>Application: FORD</p>  <p>12V 2.8kW w / 13 Teeth - 40 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>12V 2.8kW <b>246-25101</b></p> <p>Illustration 246-202</p>
<p>MITSUBISHI M8T50171</p>	<p>FORD F4TZ-11002-B</p>	<p>Application: FORD</p>  <p>12V 2.8kW w / 12 Teeth - 37 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>◇ 13 Teeth - 39.5 mm Gear O.D.</p> <p>12V 2.8kW <b>246-25101</b></p> <p>Illustration 246-202</p>

▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.  
 ◇ Number of teeth and Gear diameter are different, because the Gear is located off-center.

<p>MITSUBISHI</p> <p>M3T90271</p>	<p>MITSUBISHI MOTORS</p> <p>ME087506 ME087577</p>	<p>Application: MITSUBISHI ENG., FUSO</p>  <p>12V w/13 Teeth - 48 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>◇ 10 Teeth - 40.5 mm Gear O.D.</p> <p>12V 2.8kW <b>246-25160</b></p> <p>Illustrations 246-227</p>
<p>MITSUBISHI</p> <p>M2T78381 M2T78382</p>	<p>MITSUBISHI MOTORS</p> <p>ME087590</p>	<p>Application: MITSUBISHI ENG.</p>  <p>24V w/11 Teeth - 41.7 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>◇ 10 Teeth - 40.5 mm Gear O.D.</p> <p>24V 4.5kW <b>246-25240</b></p> <p>Illustration 246-227</p>

▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.


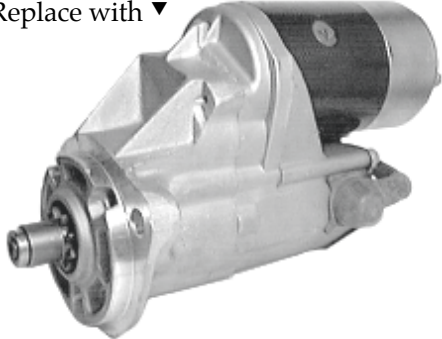
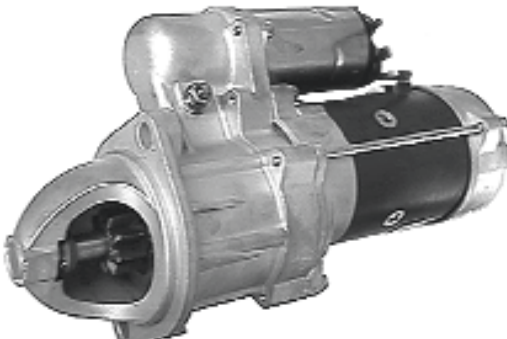
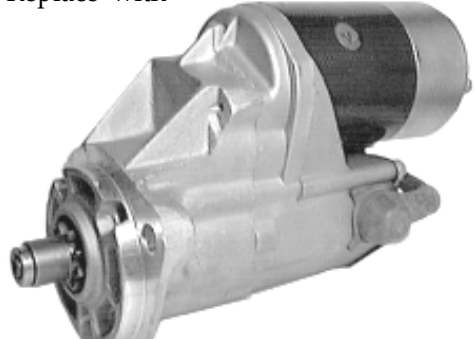

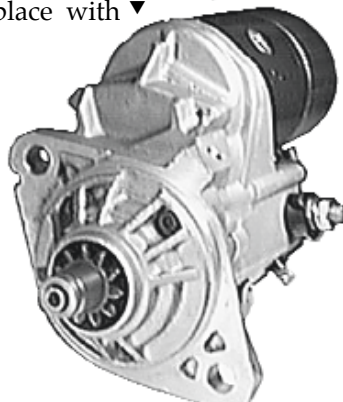
◇ Number of teeth and Gear diameter are different, because the Gear is located off-center.

<p>MITSUBISHI M4T50073</p>	<p>MITSUBISHI MOTORS ME037330</p>	<p>Application: MITSUBISHI TRACTOR Replace with ▼</p>  <p>24V w/12 Teeth</p> <p>◇ 11 Teeth - 40 mm Gear O.D. 24V 4.5kW <b>246-25218</b></p> <p>Illustration 246-246</p>
<p>MITSUBISHI M3T56071 M3T56072</p>	<p>MITSUBISHI MOTORS ME037465 ME037636</p>	<p>Application: MITSUBISHI TRACTOR Replace with ▼</p>  <p>24V w/12 Teeth</p> <p>◇ 11 Teeth - 40 mm Gear O.D. 24V 4.5kW <b>246-25218</b></p> <p>Illustration 246-246</p>

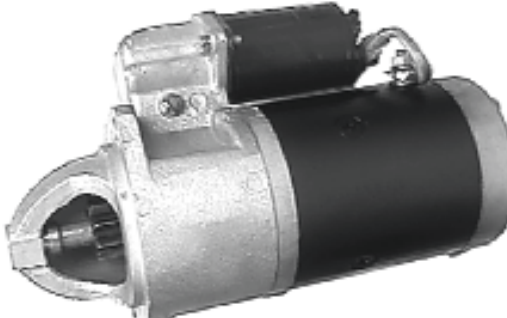

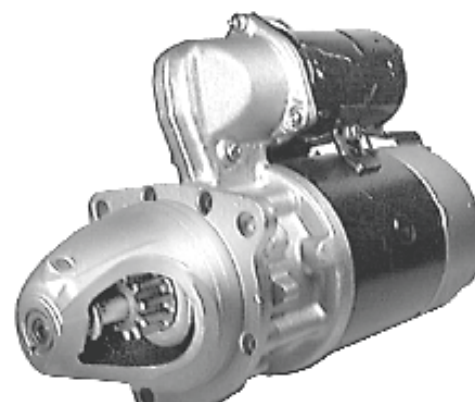
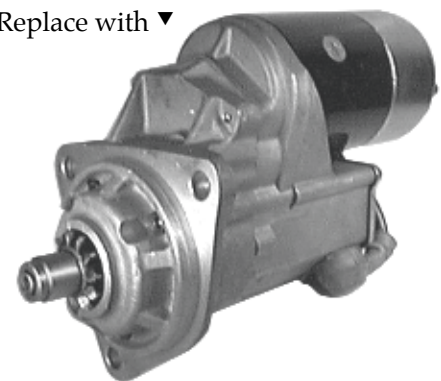

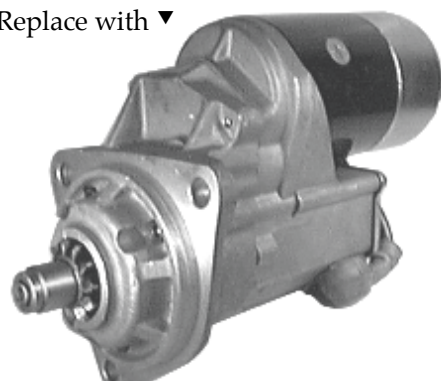
▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.  
◇ Number of teeth and Gear diameter are different, because the Gear is located off-center.

# NIKKO - REPLACEMENT GUIDE



<p><b>NIKKO</b> 0-23000-0090 0-23000-0091</p>	<p><b>ISUZU</b> 8-94171-296-2 8-94171-296-3</p>	<p>Application: <b>ISUZU ENG.</b></p>  <p>12V - 2.2kW w/ 9 Teeth-32 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>12V 2.8kW <b>246-25156</b></p> <p>Illustrations 246-256</p>
<p><b>NIKKO</b> 0-23000-1260 0-23000-1310 0-23000-1700 0-23000-2100 0-23000-2101</p>	<p><b>ISUZU</b> 8-94171-772-0 8-94454-559-0 8-97029-863-0 8-97029-863-1 8-97029-863-2</p>	<p>Application: <b>ISUZU ENG.</b></p>  <p>24V - 4.5 kW w/9 Teeth - 35.5 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>24V 4.5kW <b>246-25235</b></p> <p>Illustrations 246-256</p>
<p><b>NIKKO</b> 0-24000-3000 0-24000-3001 0-24000-3020 0-24000-3030</p>	<p><b>ISUZU</b> 1-81100-295-0 1-81100-307-0 8-94399-826-1</p>	<p>Application: <b>ISUZU ENG.</b></p>  <p>24V - 4.5kW w/11 Teeth - 40 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>24V 4.5kW <b>246-25221</b></p> <p>Illustration 246-247</p>

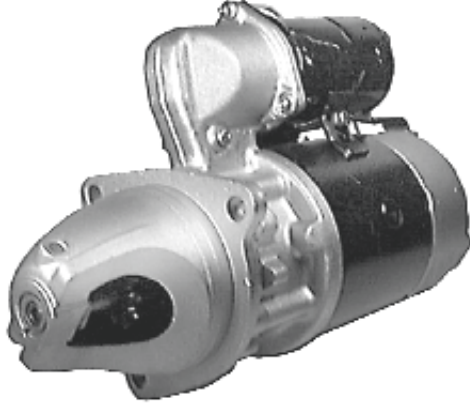
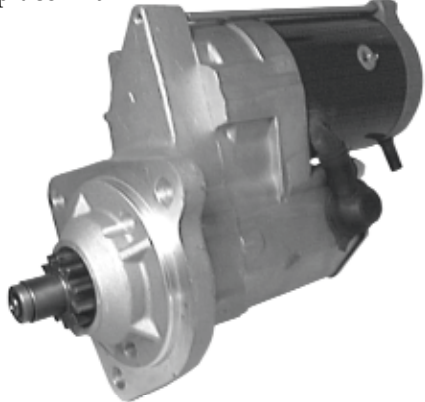
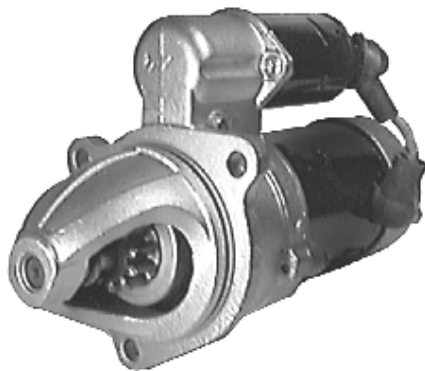
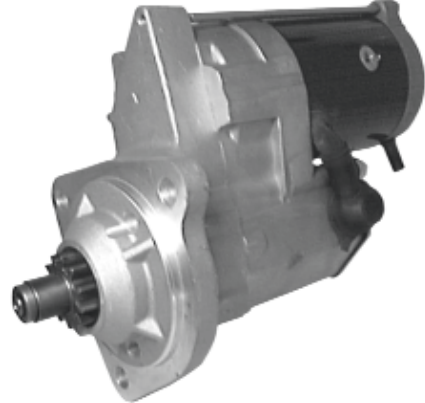

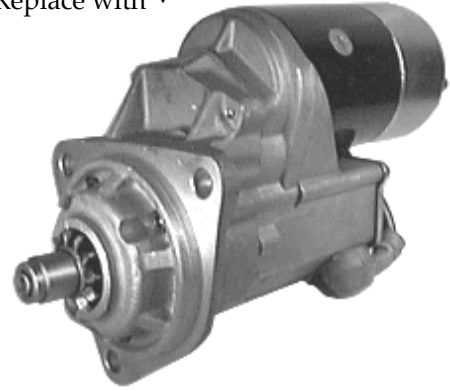
▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.

<p><b>NIKKO</b></p> <p>0-21000-1590 ★            0-21000-1591 ★            0-21000-1592 ★            0-21000-1593 ★            0-21000-2340 ★            0-21000-2370            0-21000-2371            0-21000-3450 ★            0-21000-3470 ★            0-21000-3730            0-21000-4230            0-21000-4231            0-21000-4350 ★            0-21000-4720 ★            0-21000-4721 ★            0-21000-4930 ★            0-21000-4931 ★            0-21000-4932 ★            0-21000-4933 ★            0-21000-4934 ★            0-21000-5230            0-21000-5231</p>	<p><b>ISUZU</b></p> <p>5-81100-013-1 ★            5-81100-030-1 ★            5-81100-055-0 ★            5-81100-133-1            5-81100-147-0 ★            5-81100-164-0 ★            5-81100-193-0 ★            5-81100-194-0 ★            5-81100-195-0 ★            8-94136-507-0            8-94142-262-0 ★            8-94171-621-0            8-94366-525-0 ★            8-94366-525-1 ★            9-82100-143-0 ★            9-82100-184-1            9-82100-200-1 ★            9-82100-618-0 ★            9-82100-638-0            9-82100-639-1 ★</p>	<p>Application: <b>ISUZU ENG.</b></p>  <p>12V 2.2kW w/ 9 Teeth - 32 mm Gear O.D.            ★ 24V 3.5kW w/ 9 Teeth - 32 mm Gear O.D.            ★ 24V 3.5kW w/ 9 Teeth - 35 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>12V 2.8kW <b>246-25156</b>            9T Ø 32 24V 4.5kW <b>246-25234</b>            9T Ø 35.5 24V 4.5kW <b>246-25235</b></p> <p>Illustration 246-256</p>
<p><b>NIKKO</b></p> <p>0-21000-1460            0-21000-1461            0-21000-3260            0-21000-3650            0-21000-3651</p>	<p><b>ISUZU</b></p> <p>1-81100-012-0            1-81100-032-0            1-81100-043-0            1-81100-043-2            9-81100-082-0</p>	<p>Application: <b>ISUZU ENG.</b></p>  <p>24V - 3.7kW w/ 11 Teeth - 40 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>24V 4.5kW <b>246-25243</b></p> <p>Illustration 246-261</p>
<p><b>NIKKO</b></p> <p>0-23000-1030            0-23000-1031            0-23000-1032            0-23000-1033            0-23000-1060            0-23000-1070            0-23000-1071            0-23000-1072            0-23000-1073            0-23000-1670            0-23000-2340            0-23000-3010            0-23000-3090</p>	<p><b>ISUZU</b></p> <p>1-81100-184-0            1-81100-189-0            1-81100-189-1            1-81100-191-0            1-81100-191-1            1-81100-192-0            1-81100-253-0            1-81100-253-1            1-81100-259-0            1-81100-264-0            1-81100-264-1            1-81100-277-1            1-81100-291-0            5-81100-162-0</p>	<p>Application: <b>ISUZU ENG.,            LINK BELT</b></p>  <p>24V - 4.5kW w/ 11 Teeth - 40 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>24V 4.5kW <b>246-25232</b></p> <p>Illustration 246-223</p>

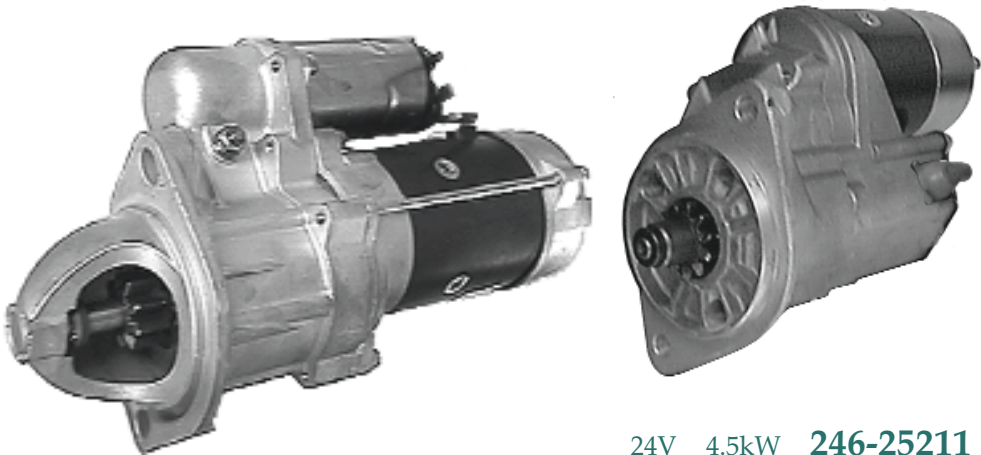
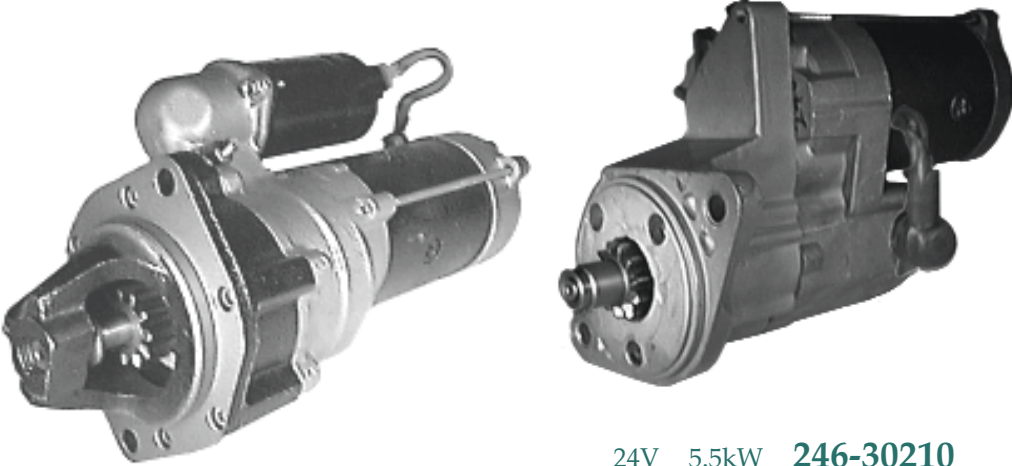
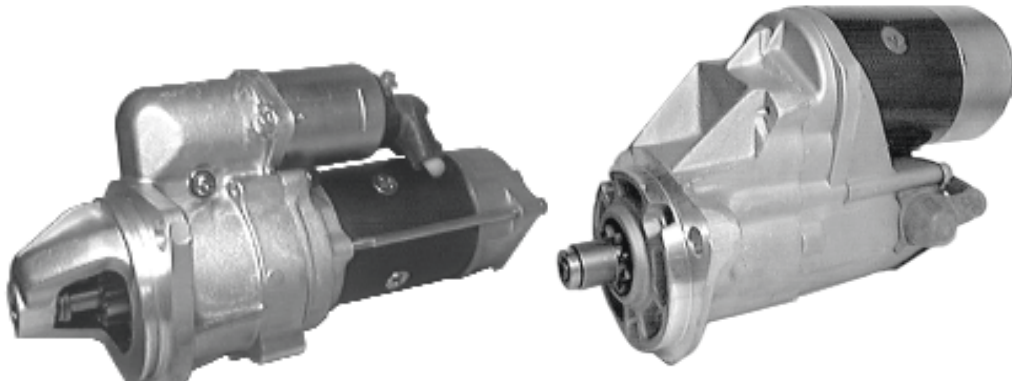
▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.

# NIKKO - REPLACEMENT GUIDE



<p><b>NIKKO</b></p> <p>0-21000-4690 0-21000-5150</p>	<p><b>ISUZU</b></p> <p>1-81100-221-0 5-81100-171-0</p>	<p>Application: <b>ISUZU ENG.</b></p>  <p>12V-3.0 kW w/ 11 Teeth - 40 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>12V 3.0kW <b>246-30108</b></p> <p>Illustration 246-313</p>
<p><b>NIKKO</b></p> <p>0-23000-1420 0-23000-6570</p>	<p><b>ISUZU</b></p> <p>1-81100-237-1 1-81100-245-1</p>	<p>Application: <b>ISUZU ENG.</b></p>  <p>12V-3.0 kW w/ 11 Teeth - 40 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>12V 3.0kW <b>246-30108</b></p> <p>Illustration 246-313</p>
<p><b>NIKKO</b></p> <p>0-21000-3290 0-21000-3291 0-21000-3660 0-21000-3661 0-21000-3690 0-21000-3691 0-21000-3830 0-21000-3831</p>	<p><b>ISUZU</b></p> <p>5-81100-025-0 5-81100-025-2 5-81100-028-0 5-81100-035-0 5-81100-035-2 5-81100-036-0 5-81100-059-1 5-81100-059-2</p>	<p>Application: <b>ISUZU ENG., TCM</b></p>  <p>24V - 3.7kW w/ 11 Teeth - 40 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>24V 4.5kW <b>246-25232</b></p> <p>Illustration 246-223</p>

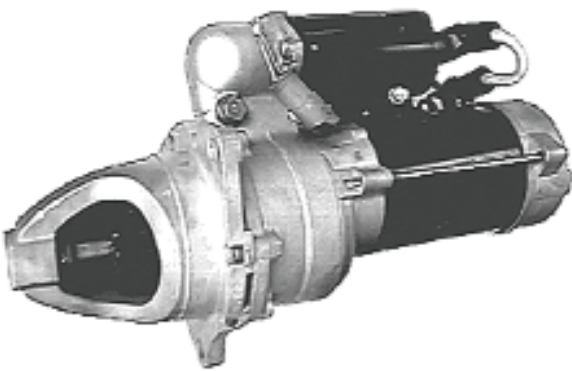





▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.

<p><b>NIKKO</b></p> <p>0-23000-0150 0-23000-0270 0-23000-0271 0-23000-0272</p>	<p><b>KOMATSU</b></p> <p>600-813-3140 600-813-3141 600-813-3142 600-813-3143</p>	<p>Application: <b>KOMATSU</b> Replace with ▼</p>  <p>24V 4.5kW <b>246-25211</b></p> <p>24V - 2.8kW - w/11 Teeth - 40 mm Gear O.D. Illustration 246-230</p>
<p><b>NIKKO</b></p> <p>0-23000-1290 0-23000-1410 0-23000-1430 0-23000-1550 0-23000-1750 0-23000-1752 0-23000-2080</p>	<p><b>KOMATSU</b></p> <p>600-813-3320 600-813-3350 600-813-3360 600-813-4350 600-813-4420 600-813-4422 600-813-4450</p>	<p>Application: <b>KOMATSU</b> Replace with ▼</p>  <p>24V 5.5kW <b>246-30210</b></p> <p>24V-5.5 kW w/11 Teeth - 40 mm Gear O.D. Illustration 246-310</p>
<p><b>NIKKO</b></p> <p>0-23000-0040 * 0-23000-0041 * 0-23000-0042 * 0-23000-0050 * 0-23000-0053 * 0-23000-0060 * 0-23000-0063 * 0-23000-0100 * 0-23000-0101 * 0-23000-0102 * 0-23000-0130 0-23000-0260 0-23000-0261 0-23000-0262 0-23000-0330 * 0-23000-0331 * 0-23000-0332 * 0-23000-0450 *</p>	<p><b>KOMATSU</b></p> <p>600-813-1720 600-813-3111 * 600-813-3121 * 600-813-3122 * 600-813-3130 * 600-813-3170 * 600-813-3171 * 600-813-4000 * 600-813-4410 * 600-813-4411 *</p>	<p>Application: <b>KOMATSU ENG.</b> Replace with ▼</p>  <p>12V 2.8kW <b>246-25156</b> 24V 4.5kW <b>246-25235</b></p> <p>12V - 2.2kW w/ 9 Teeth-32 mm Gear O.D. * 24V - 2.8kW w/ 9 Teeth-35.5 mm Gear O.D. Illustration 246-256</p>

▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.






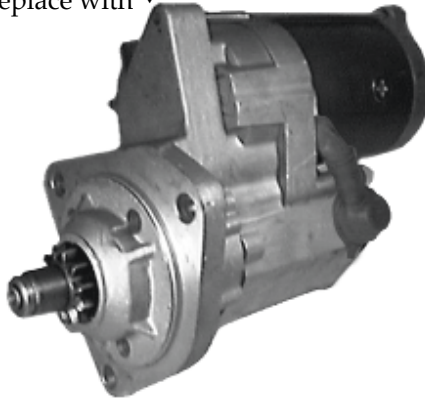
# NIKKO - REPLACEMENT GUIDE



<p><b>NIKKO</b></p> <p>0-23000-1160 0-23000-1161 0-23000-1230 0-23000-1231 0-23000-1270</p>	<p><b>KOMATSU</b></p> <p>600-813-3280 600-813-3380 600-813-3390 600-813-4120 600-813-4280</p>	<p>Application: <b>KOMATSU</b>      Replace with ▼</p>   <p>24V 7.5kW <b>246-30213</b></p> <p>24V-5.5 kW w/ 13 Teeth - 46.5 mm Gear O.D.      Illustration 246-315</p>
<p><b>NIKKO</b></p> <p>0-23000-3160 0-23000-3170 0-23000-6340 0-23000-6341 0-23000-6510 0-23000-6590 0-23000-6591</p>	<p><b>KOMATSU</b></p> <p>600-813-3560 600-813-3650 600-813-3660 600-813-4650 600-813-5660</p>	<p>Application: <b>KOMATSU</b>      Replace with ▼</p>   <p>24V 7.5kW <b>246-30213</b></p> <p>24V - 7.5 kW w/13 Teeth - 46.5 mm Gear O.D.      Illustration 246-315</p>
<p><b>NIKKO</b></p> <p>0-21000-4110 0-21000-4880</p>	<p><b>KOMATSU</b></p> <p>600-813-2680 600-813-2681</p>	<p>Application: <b>KOMATSU</b>      Replace with ▼</p>   <p>24V 7.5kW <b>246-30213</b></p> <p>24V - 7.5 kW w/ 13 Teeth - 46.5 mm Gear O.D.      Illustration 246-315</p>

7

▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.

<p><b>NIKKO</b></p> <p>0-21000-4130 0-21000-4131 0-21000-4132 0-21000-4850</p>	<p><b>KOMATSU</b></p> <p>600-813-2391 600-813-2392 600-813-2393 600-813-2394</p>	<p>Application: <b>KOMATSU</b></p>  <p>24V 5.5kW w/11 Teeth - 40 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>24V 7.5kW <b>246-30212</b></p> <p>Illustration 246-333</p>
<p><b>NIKKO</b></p> <p>0-21000-4220 0-21000-4222 0-21000-4860</p>	<p><b>KOMATSU</b></p> <p>600-813-2690 600-813-2691 600-813-2692</p>	<p>Application: <b>KOMATSU</b></p>  <p>24V 7.5kW w/11 Teeth - 40 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>24V 7.5kW <b>246-30212</b></p> <p>Illustration 246-333</p>
<p><b>NIKKO</b></p> <p>0-21000-4190 0-21000-4191 0-21000-4192 0-21000-4193 0-21000-4870 0-21000-4871</p>	<p><b>KOMATSU</b></p> <p>600-813-2240 600-813-2241 600-813-2242 600-813-2243 600-813-2250 600-813-2251</p>	<p>Application: <b>KOMATSU</b></p>  <p>24V-5.5 kW w/13 Teeth - 46.5 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>24V 7.5kW <b>246-30213</b></p> <p>Illustration 246-315</p>


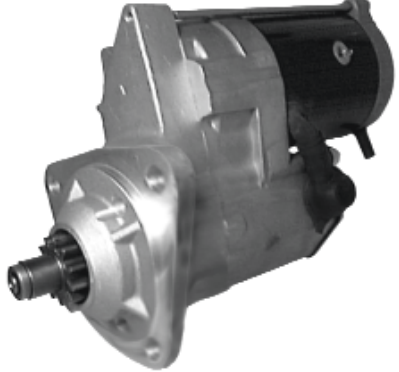
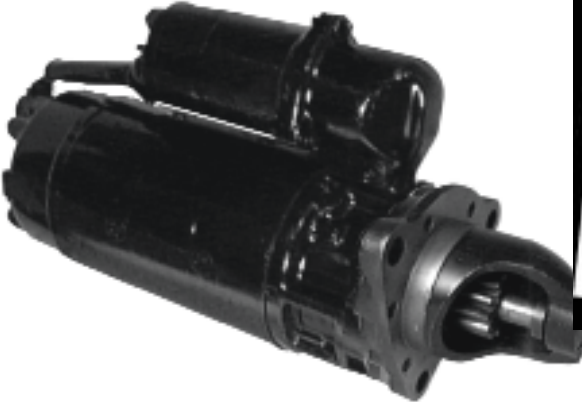


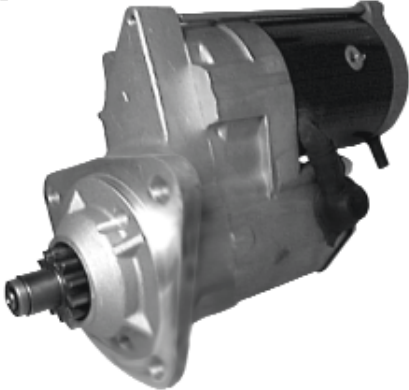
▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.

# NIKKO - REPLACEMENT GUIDE




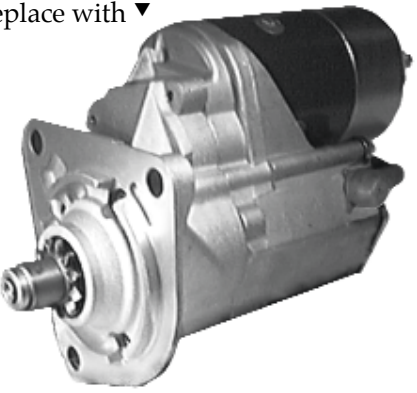

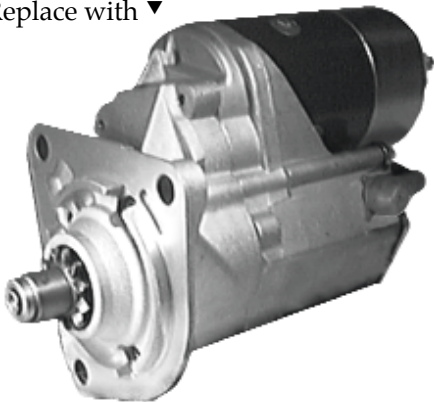


<p><b>NIKKO</b></p> <p>0-23000-3150 0-23000-3151 0-23000-3180 0-23000-3270 0-23000-3280 0-23000-6250 0-23000-6251 0-23000-6530 0-23000-6531 0-23000-7020</p>	<p><b>KOMATSU</b></p> <p>600-813-3530 600-813-3630 600-813-4530 600-813-4670 600-813-4680 600-813-4790 600-813-6610</p>	<p>Application: <b>KOMATSU</b></p>  <p>24V-7.5 kW w/ 12 Teeth - 46.5 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>◇ 10 Teeth - 40.5 mm Gear O.D. 24V 7.5kW <b>246-30218</b></p> <p>Illustration 246-327</p>
<p><b>NIKKO</b></p> <p>0-23000-6210 0-23000-6211 0-23000-6212 0-23000-6213 0-23000-6610 0-23000-6612</p>	<p><b>KOMATSU</b></p> <p>600-813-3510 600-813-3640 600-813-3710</p>	<p>Application: <b>KOMATSU</b></p>  <p>24V-7.5 kW w/ 11 Teeth - 56.5 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>◇ 11 Teeth - 53 mm Gear O.D. 24V 7.5kW <b>246-30221</b></p> <p>Illustration 246-327</p>
<p><b>NIKKO</b></p> <p>0-21000-2660 0-21000-2661 0-21000-3410 0-21000-3411</p>	<p><b>KOMATSU</b></p> <p>600-813-2430 600-813-2530 600-813-2620 600-813-2650</p>	<p>Application: <b>KOMATSU</b></p>  <p>24V-7.5 kW w/ 13 Teeth - 46.5 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>24V 7.5kW <b>246-30222</b></p> <p>Illustration 246-333</p>




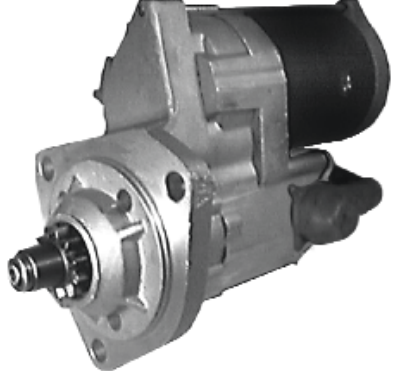

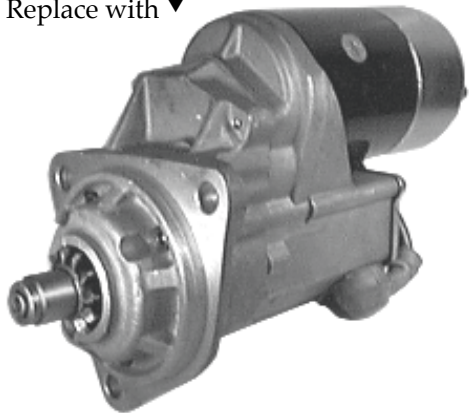
▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.

<p><b>NIKKO</b></p> <p>0-23000-1190 0-23000-1191 0-23000-1620</p>	<p><b>KOMATSU</b></p> <p>600-813-3270 600-813-4270</p>	<p>Application: <b>KOMATSU</b></p>  <p>24V-5.5 kW w/ 12 Teeth - 46.5 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>◇ 10 Teeth - 40.5 mm Gear O.D.</p> <p>24V 7.5kW <b>246-30223</b></p> <p>Illustration 246-331</p>
<p><b>NIKKO</b></p> <p>0-21000-2510 0-21000-3390 0-21000-3391 0-21000-3392</p>	<p><b>KOMATSU</b></p> <p>600-813-2412 600-813-2413 600-813-2420 600-813-2450</p>	<p>Application: <b>KOMATSU</b></p>  <p>24V-7.5 kW w/ 11 Teeth - 56.5 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>◇ 11 Teeth - 53 mm Gear O.D.</p> <p>24V 7.5kW <b>246-30221</b></p> <p>Illustration 246-327</p>
<p><b>NIKKO</b></p> <p>0-23000-1170 0-23000-1240 0-23000-1330 0-23000-1340 0-23000-1400 0-23000-1440 0-23000-1460 0-23000-1530 0-23000-1630</p>	<p><b>KOMATSU</b></p> <p>600-813-3230 600-813-3310 600-813-3330 600-813-3340 600-813-3430 600-813-3460 600-813-3490 600-813-4310</p>	<p>Application: <b>KOMATSU</b></p>  <p>24V-5.5 kW w/ 12 Teeth - 46.5 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>◇ 10 Teeth - 40.5 mm Gear O.D.</p> <p>24V 7.5kW <b>246-30224</b></p> <p>Illustration 246-332</p>

▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.  
◇ Number of teeth and Gear diameter are different, because the Gear is located off-center.

<p><b>SAWAFUJI</b></p> <p>0350-402-011_ 0350-402-012_ 0350-402-021_ 0350-402-022_ 0350-402-025_</p>	<p><b>HINO</b></p> <p>28100-1542_ 28100-1543_ 28100-1691_ 28100-1890_ 28100-1891_ 28100-1892_ 28100-1900_ 28100-1901_ 28100-2010_ 28100-2011_</p>	<p>Application: <b>HINO ENG.</b></p>  <p>24V w/11 Teeth - 40 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>24V <b>246-25217</b></p> <p>Illustration 246-234</p>
<p><b>SAWAFUJI</b></p> <p>0-330-402-001_ 0-330-402-031_ 0-330-402-032_ 0-330-402-041_</p>	<p><b>HINO</b></p> <p>28100-1090_ 28100-1100_</p>	<p>Application: <b>HINO ENG.</b></p>  <p>24V w/11 Teeth - 40 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>24V <b>246-25228</b></p> <p>Illustration 246-249</p>
<p><b>SAWAFUJI</b></p> <p>0350-402-003_ 0350-402-024_ 0350-502-006_ 0351-502-004_</p>	<p><b>HINO</b></p> <p>28100-1650_ 28100-1651_ 28100-1980_ 28100-1981_ 28100-2130_ 28100-2131_ 28100-2300_ 28100-2301_</p>	<p>Application: <b>HINO ENG.</b></p>  <p>24V w/11 Teeth - 40 mm Gear O.D.</p>	<p>Replace with ▼</p>  <p>24V <b>246-25228</b></p> <p>Illustration 246-249</p>

▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.

<p><b>SAWAFUJI</b></p> <p>0350-552-001_ 0350-552-006_ 0350-552-031_ 0350-552-033_ 0350-552-034_ 0350-552-036_ 0350-552-051_ 0350-602-013_</p>	<p><b>HINO</b></p> <p>28100-1441 28100-1442 28100-1443 28100-1444 28100-1700 28100-1940 28100-1941 28100-1942 28100-1943 28100-1944 28100-2040 28100-2041 28100-2042 28100-2043 28100-2072 28100-2073 28100-2074 28100-2075 28100-2150 28100-2151 28100-2152 28100-2153</p>	<p>Application: <b>HITACHI EXCAVATORS, HINO ENG.</b> Replace with ▼</p>   <p>24V w/11 Teeth - 40 mm Gear O.D.</p> <p><b>24V 246-30205</b></p> <p>Illustration 246-308</p>
<p><b>SAWAFUJI</b></p> <p>0350-602-001_ 0351-602-001_</p>	<p><b>NISSAN</b></p> <p>23300-96062 23300-96064 23300-96076 23300-96077 23300-96118 23300-96161 23300-96508</p>	<p>Application: <b>NISSAN - U.D.</b> Replace with ▼</p>   <p>24V w/11 Teeth - 40 mm Gear O.D.</p> <p><b>24V 246-30209</b></p> <p>Illustration 246-307</p>
<p><b>SAWAFUJI</b></p> <p>0350-502-003_ 0350-502-013_ 0351-502-006_</p>	<p><b>NISSAN</b></p> <p>23300-Z5511 23300-Z5517 23300-Z5562 23300-Z5564 23300-Z5566 23300-Z5573</p>	<p>Application: <b>NISSAN - U.D.</b> Replace with ▼</p>   <p>24V w/11 Teeth - 40 mm Gear O.D.</p> <p><b>24V 246-25229</b></p> <p>Illustration 246-252</p>

▼ Refer to the respective Illustration for dimensions; the replacement unit may not fit all intended applications.



# HEAVY DUTY GEAR REDUCTION STARTER MOTORS

In our efforts to provide the best possible catalogues we encourage your participation.

Please submit any information that may assist us in improving this catalogue.

For example:

- Any suggestions you may have for changes or additions.
- Unit consolidation or substitutions.
- If you find any



We appreciate your comments and suggestions. Please use one of the attached "CUSTOMER REPLY CARD", fill in the information and mail.

POSTAGE  
STAMP

CUSTOMER REPLY CARD

DIXIE ELECTRIC LTD.  
Attn. Publication Department  
517 Basaltic Road  
Concord, Ontario  
L4K 4W8  
Canada

POSTAGE  
STAMP

CUSTOMER REPLY CARD

DIXIE ELECTRIC LTD.  
Attn. Publication Department  
517 Basaltic Road  
Concord, Ontario  
L4K 4W8  
Canada



HEAVY DUTY GEAR REDUCTION STARTER MOTORS  
CATALOGUE NO. 9846-2530-000

Your name \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_  
Province / State \_\_\_\_\_ Country \_\_\_\_\_ Zip/Postal Code \_\_\_\_\_

COMMENTS:

---

---

---

---

---

---

---

---

---

---



HEAVY DUTY GEAR REDUCTION STARTER MOTORS  
CATALOGUE NO. 9846-2530-000

Your name \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_  
Province / State \_\_\_\_\_ Country \_\_\_\_\_ Zip/Postal Code \_\_\_\_\_

COMMENTS:

---

---

---

---

---

---

---

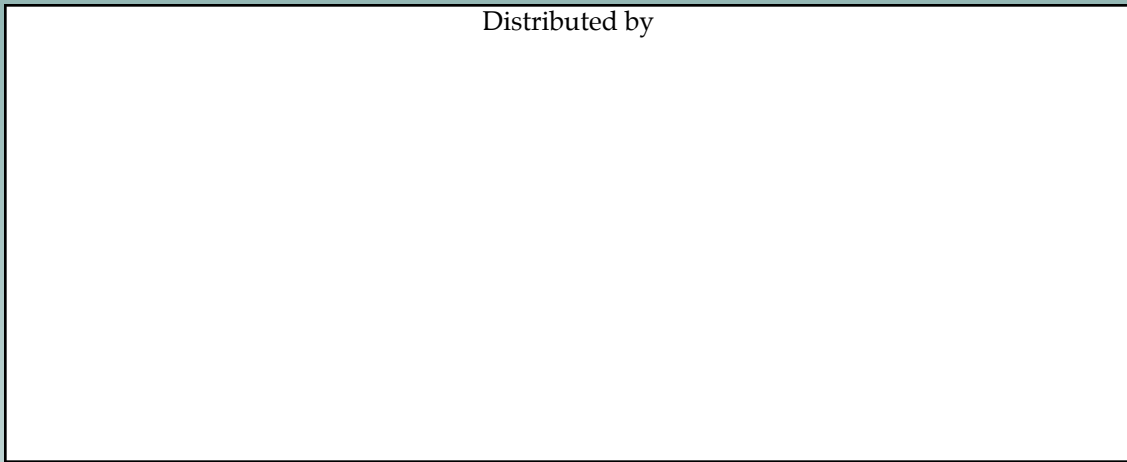
---

---

---



Distributed by



**Dixie Electric Ltd.**

517 Basaltic Road, Concord, Ontario  
Canada L4K 4W8

Tel.: (905) 879-0533 U.S. 800-563-3933  
Fax: (905) 879-0532  
E-Mail: [sales@dixie-mail.com](mailto:sales@dixie-mail.com)  
Web Site: [www.dixie-electric.com](http://www.dixie-electric.com)



**Dixie Electric Inc.**

15300-25<sup>th</sup> Ave. N., Minneapolis, MN.  
U.S.A. 55447-1993

Tel.: (612) 557-5772 800-478-0608  
Fax: (612) 557-5138 800-392-8719  
E-Mail: [mn.sales@dixie-mail.com](mailto:mn.sales@dixie-mail.com)  
Web Site: [www.dixie-electric.com](http://www.dixie-electric.com)

