

Prestolite
electric

Leece-Neville
HEAVY DUTY SYSTEMS

2009

ALTERNATORS & STARTER MOTORS



**JOMON
PERSADA
NUSANTARA**

BUYER'S GUIDE

TABLE OF CONTENTS

TITLE	PAGE
How To Use This Buyer's Guide - Alternator Section	2
Glossary of Alternator Terms	3
Inch to Metric Quick Reference Conversion Chart.....	4
Wire Sizing Guide	4
New MultiPower™ Technology	5
Alternator High Temperature Update Information.....	6
Alternator Technical Reference Information.....	7
Alternator Typical Connections and Wiring diagrams.....	36
How To Use This Buyer's Guide - Starter Motor Section.....	40
Glossary of Starter Motor Terms	41
Titan™ Series Starter Motors.....	42
MS2 Starter Motors	43
Starter Motor Typical Connections and Wiring diagrams	44
Flange Mounts Reference Guide.....	45
Starter Motor Nose Housing Rotation Information.....	46
Starter Motor Technical Reference Information	47
Model Supercedence Chart	58

DISCLAIMER

While every care has been taken in compiling the information in this document, Prestolite/Leece-Neville cannot accept legal liability for any inaccuracies, omissions, or consequential damage resulting there from. Prestolite/Leece-Neville has an extensive design and development team which may alter product specifications. Prestolite/Leece-Neville reserves the right to alter specifications without notice and whenever necessary to ensure optimum performance from its product range.

ALTERNATOR SECTION

HOW TO USE THIS BUYER'S GUIDE

ALTERNATOR SECTION:

Each section contains the product family and general description for the series. At the top of the page are listed the applications and features of the series.

Application:

Each general category of applications is identified.

Features:

Highlights of some of the unique features for the family/series are listed.

On the right side of the page are:

Specifications - mechanical/electrical general specifications of the family/series.

Regulator Codes - Specific information/functions of the regulator.

Feature Codes - Unique features of a specific model in the family/series.

Alternators are listed by family/series, then by mount type with illustrations of typical models. The mount type charts are listed by volts and amperages, then numerically by part number. Each of the regulator and feature codes are identified in the corresponding column on the model listing charts in the middle section of the page. For an explanation of codes, refer to the Glossary of Alternator Terms.

Glossary of Alternator Terms

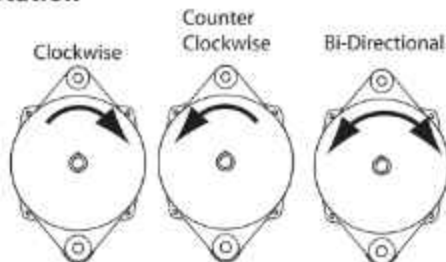
Irridite*	*Proprietary name of Allied Research Products. A chromate coating applied to provide corrosion resistance.
E-coat	An epoxy coating that protects the metal from corrosion.
Earth polarity	This is the type of electrical system fitted to the vehicle. Generally it means that the negative terminal of the battery is connected to the vehicle frame or "ground" reference.
Earth terminal	This is the connection point for the "Ground" or return path of the electrical device.
Hex shaft	Hex shaped indentation milled into the end of the shaft, eliminating the need for a key. (See illustration)
Rotation	CW – Clockwise direction when viewing the alternator from the drive end CCW – Counter Clockwise direction when viewing the alternator from the drive end Bi-Dir – Bi Directional – either direction when viewing the alternator from the drive end. (See illustration)

Glossary of Regulator Codes

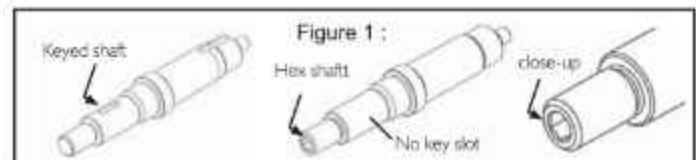
External location	Regulator is not mounted directly on alternator
Integral location	Regulator is mounted directly on alternator
External sense	Voltage sensing lead that is externally connected to alternator, defined as remote sense
Internal sense	Voltage sensing lead that is internally connected to alternator
Diode trio	Emulates the function of the diode trio without a trio being in the alternator
External excite	Turns on by external source. See alternator drawing for power requirements.
Ignition excite	Needs signal from ignition switch in order to turn on regulator
Self excite	Turns on by sensing a rotating condition of the alternator
SmartCheck	Regulator that provides diagnostic signaling by LED of a properly working alternator
Lamp driver	Regulator that has a terminal for connecting a dashboard lamp and providing a path to ground (open collector type)
Temp compensation	The value of the voltage change per degree C
D+	The diode trio terminal

Illustrations

Rotation







Hex Shaft



To assist in the assembly/disassembly/testing of units, a hex socket-like indentation has been milled into the end of the rotor shaft. This eliminated the need for a key in the assembly. Therefore the hex shaft will not have the key slot milled into the side. (See Fig.1).

Glossary of Alternator Mounting Terms

<p>J180 Dual foot mounts on bottom, single mounting ear on top</p> 	<p>T-Mount Same as pad mounts, minus one mounting bolt hole (seen in some Ford applications)</p> 
<p>Pad Four bolt mounts, two connected mounts on top, two connected mounts on bottom</p> 	<p>Spool 1 to 3 inch long bottom mounting foot with 1 to 3 top mounting hole configurations</p> 

INCH TO METRIC QUICK REFERENCE CONVERSION CHART

SHAFT DIAMETER INCHES	SHAFT DIAMETER METRIC
.5906"	15mm
.6265-.6272"	15.9mm
.669"	17mm
.748"	19mm
.8736-.8741"	22mm
.8740-.8745"	22.2mm
1.25"	31.75mm

PULLEY DIAMETER INCHES	PULLEY DIAMETER METRIC
2.559"	65mm
2.756"	70mm
3.150"	80mm

FRAME DIAMETER INCHES	FRAME DIAMETER METRIC
2.913"	74mm
3.661"	93mm
3.937"	100mm
4.567"	116mm
4.84"	123mm
5.039"	128mm
5.118"	130mm
5.67"	144mm
5"	127mm
6.5" (1/2")	165mm
6.5625" (9/16")	167mm
8.5625" (9/16")	217mm

WIRE SIZING GUIDE

Use the following chart to determine the correct wire sizes for your installation application.

- 'A' Load Circuit
- 'B' AC Circuit
- 'C' Field Circuit

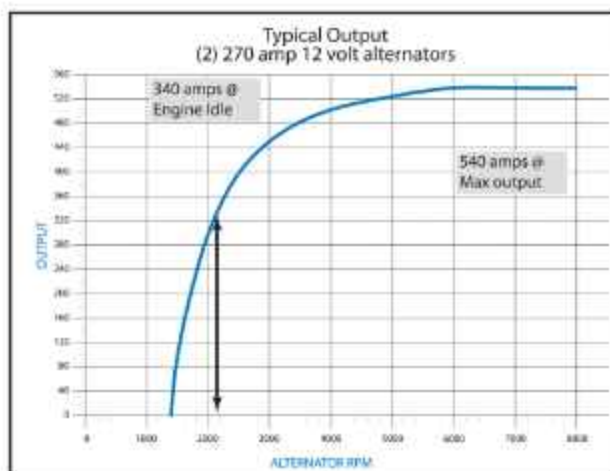
14 & 28 Volt Systems	Total Circuit Length	Recommended Minimum Wire Size		
		'A'	'B'	'C'
60-75 Amps	15 Feet or Less	#6	#8	#16
	16-25 Feet	#4	#6	#14
	26-40 Feet	#2	#4	#12
80-125 Amps	15 Feet or Less	#4	#6	#16
	16-25 Feet	#2	#4	#14
	26-40 Feet	#0	#2	#12
130-250 Amps	15 Feet or Less	#0	#4	#16
	16-25 Feet	#2/0	#2	#14
	26-40 Feet	#4/0	#0	#12
250-325 Amps	12 Feet or Less	#2/0	N/A	#16
	13-20 Feet	#4/0	N/A	#16

NEW MULTIPower™ TECHNOLOGY

The MultiPower™ system allows for the installation of up to four (4) alternators on a single vehicle, for a possible total of up to 1,080 amps.

The unique feature of the system is the ability of the alternators to communicate through a simple wire connected to a transmit/receive terminal on the integrated regulators. No external control or processing unit is required, greatly simplifying installation and increasing dependability.

This constant, real-time communication by the regulators allows the MultiPower™ system to share the load of the vehicle dynamically and effectively. This alternator unit can be installed in a single application where future expandability may be required, or in any configuration of up to 4 units on a single vehicle. Multiples of a single part number can be used in applications with requirements ranging all the way up to 1080 amps. This single unit capability means you only need to stock one alternator model.



The load sharing capability is integrated into the regulator that is installed on the alternator. No external CPU or CU is required, only a connecting wire between the alternators. The technology used utilizes proven components with long established reliability records.

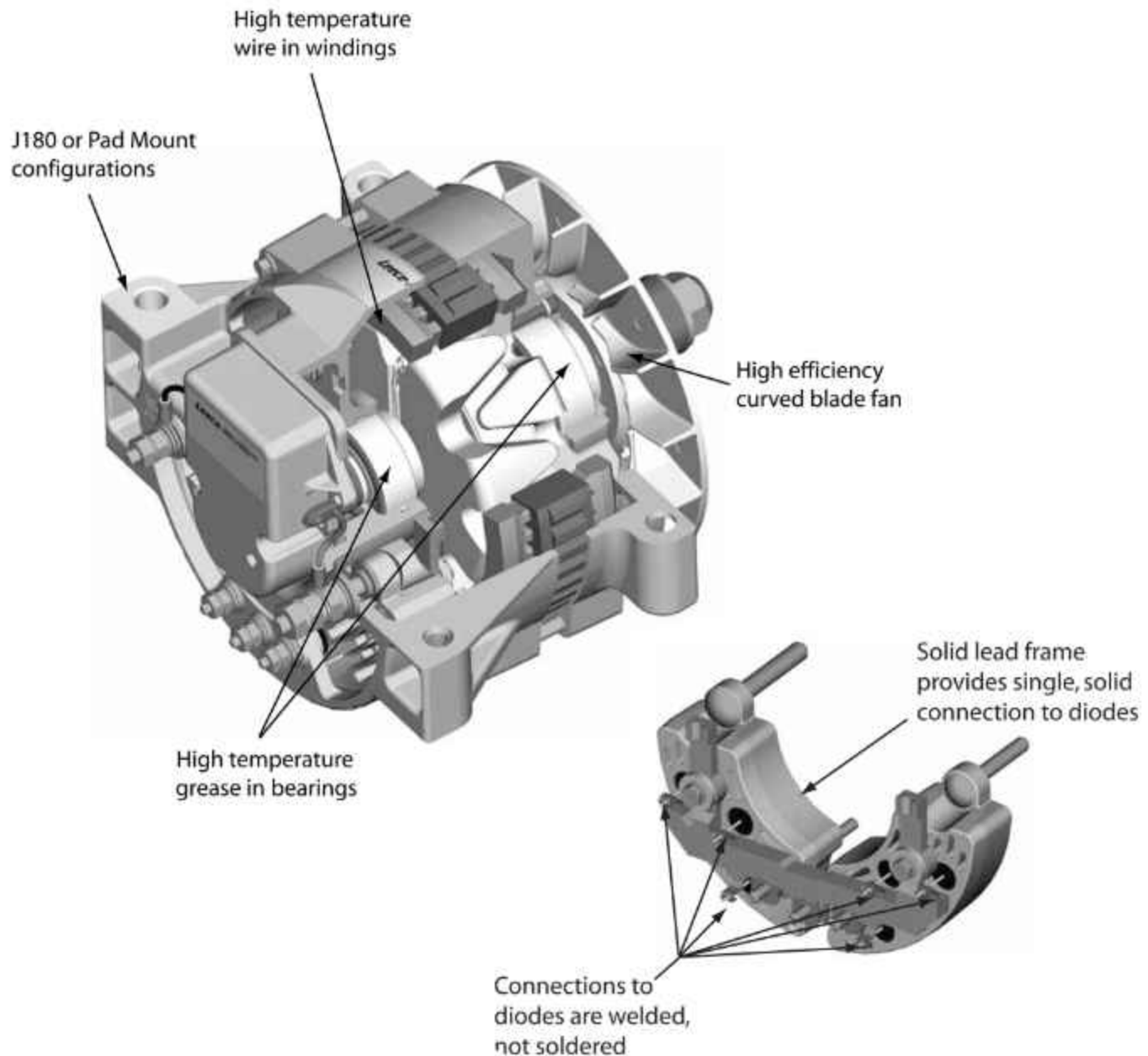
Multiple alternators provide back-up power in the event of a partial system failure, allowing for significant "Continue in Use" and "Limp Home" functionality. Very high amperage capabilities allow for large amounts of available power at engine idle. There is no need to operate alternators at high speed to obtain the desired output, extending the life of the units. These units are also high temperature rated at 110°C for installation on new EPA emission compliant engines.

The system will initially be confined to the 270 amp 4000 series alternators, with possible expansion to additional lines in the future.

ALTERNATOR HIGH TEMPERATURE UPDATE INFORMATION

Under-hood temperatures in today's heavy-duty trucks are exceeding anything the industry has seen before. Low-profile cab designs reduce air circulation, and the new emission standards mean hotter running engines. That's why we have redesigned and upgraded our alternator series so now they can take the heat better.

At Leece-Neville we are aggressively re-engineering our high volume alternators to the 110°C / 230°F specification. However, not all alternators in the series listing may have been converted to date. Please contact your Leece-Neville representative for additional details.



2000-3000

HIGH OUTPUT FOR HEAVY-DUTY VEHICLES AT ANY SPEED

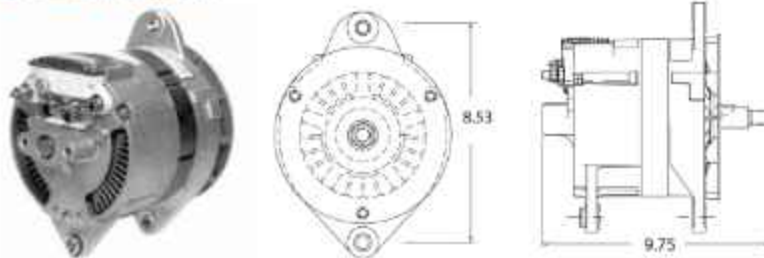
APPLICATIONS:

- Heavy Duty Truck
- Marine
- Military

FEATURES:

- Designed for high output performance in heavy duty applications
- Better low-speed performance than the competition
- Longer, larger brushes
- Brushes and slip-ring assembly are in a sealed compartment for longer life
- Heavy construction reduces stress and heat for longer life
- Lower cut-in and turn-on speeds
- Larger rear bearing
- New regulator technology

J180 MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	FEATURE
A0012502LC	2502LC	12	100		1/4-20	1/4-20	BI-DIR	BDI	
A0012500LC	2500LC	12	105		5/16-18	1/4-20	BI-DIR	BDI	
A0012526LC	2526LC	12	105		5/16-18	1/4-20	BI-DIR	BDI	
A0012670LC	2670LC	12	130		5/16-18	1/4-20	BI-DIR	BDI	
A0012702LC	2702LC	12	130		1/4-20	1/4-20	BI-DIR	BDI	
A0012713LC	2713LC	12	130		1/4-20	1/4-20	CW	BDI	
A0012805LC	2805LC	12	145		5/16-18	5/16-18	BI-DIR	BDI	
A0012800LC	2800LC	12	160		5/16-18	5/16-18	BI-DIR	BDI	
A0012802LC	2802LC	12	160		5/16-18	1/4-20	BI-DIR	BDI	
A0012824LC	2824LC	12	160		5/16-18	5/16-18	BI-DIR	BCG	
A0012825LC	2825LC	12	160		5/16-18	5/16-18	BI-DIR	BCG	
A0012303JB	2303JB	24	45		5/16-18	1/4-20	BI-DIR	BDI	3, 8
A0012509JB	2509JB	24	60		5/16-18	1/4-20	BI-DIR	BDI	3, 8
A0012511AA	2511AA	24	90		5/16-18	1/4-20	BI-DIR	N/A	
A0012511JB	2511JB	24	90		1/4-20	5/16-18	BI-DIR	BDI	
A0012302JB	2302JB	32	60		5/16-18	1/4-20	BI-DIR	BDI	4, 8
A0012302AA	2302AA	32	60		5/16-18	1/4-20	BI-DIR	N/A	4

SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 6 9/16" / 167mm
- Shaft diameter: .8736 - .8741
- Max Ambient Air: 93°C (200°F)

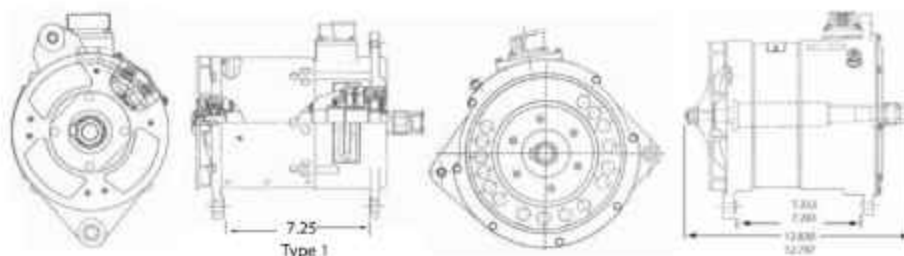
REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

- 1 UL Listed
- 2 E-coated
- 3 UL Listed / Painted
- 4 Painted
- 5 1.25" Tapered Shaft
- 6 Right angle connector
- 7 Internal ground
- 8 Ignition protect

MILITARY MOUNT

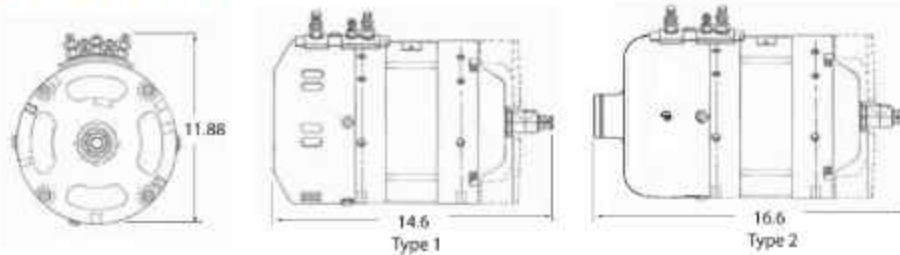


PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	FEATURE
A0012184AD	2184AD	24	100	TYPE 1	AMP CONNL	AMP CONN.	BI-DIR	N/A	4
A0012260AE	2260AE	24	200	TYPE 2	AMP CONNL	AMP CONN.	BI-DIR	N/A	4
A0012266AC	2266AC	24	200	TYPE 2	AMP CONNL	AMP CONN.	BI-DIR	N/A	4, 6

2000-3000 (Continued)

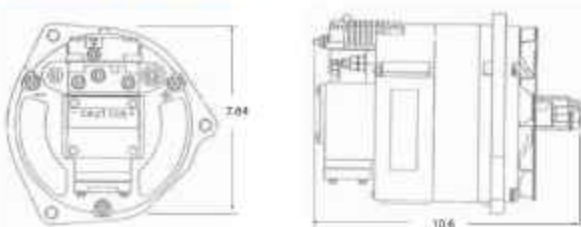
HIGH OUTPUT FOR HEAVY-DUTY VEHICLES AT ANY SPEED

MOUNT 1 & 2



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	FEATURE
A0012148AB	2148AB	24	150	TYPE 1	3/8-16	3/8-16	BI-DIR	N/A	4, 5
A0012258AC	2258AC	24	220	TYPE 2	5/16-18	1/4-20	BI-DIR	N/A	4, 5

FLANGE MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	FEATURE
A0013525JC	3525JC	12	90	FLANGE	5/16-18	1/4-20	BI-DIR	BDH	4
A0013625JC	3625JC	12	105	FLANGE	5/16-18	1/4-20	BI-DIR	BDH	4
A0013725JC	3725JC	12	130	FLANGE	5/16-18	1/4-20	BI-DIR	BDH	4
A0013426JC	3426JC	24	65	FLANGE	5/16-18	1/4-20	BI-DIR	BDH	4
A0013428JC	3428JC	24	65	FLANGE	5/16-18	1/4-20	BI-DIR	BDH	4
A0013627JC	3627JC	24	100	FLANGE	5/16-18	1/4-20	BI-DIR	BDH	4
A0013632JC	3632JC	32	115	FLANGE	5/16-18	1/4-20	BI-DIR	BDH	4

SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 6 9/16" / 167mm
- Shaft diameter: .8736 - .8741
- Max Ambient Air: 93°C (200°F)

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

- 1 UL Listed
- 2 E-coated
- 3 UL Listed / Painted
- 4 Painted
- 5 1.25" Tapered Shaft
- 6 Right angle connector
- 7 Internal ground
- 8 Ignition protect

4400-4700

INTERSTATE ALTERNATORS FOR HEAVY DUTY TRUCKS

APPLICATIONS:

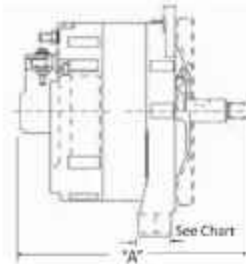
- Heavy Trucks
- Emergency Vehicles
- Ambulances
- Vans
- Light Trucks

FEATURES:

- Designed for reliability in applications where high output at idle is required
- High output with low cut-in
- Mounting- these units are .66" longer than the ambulance alternators, but in most cases they can be mounted using the same brackets and hardware

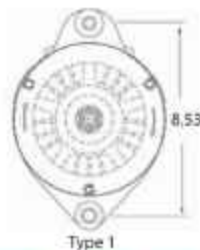
- Used on all gasoline engines and diesel engines up through 7.3 litres
- These units cut alternator rpm in half and increase the life of wearing parts, such as bearings, brushes and belts
- Permanently greased ball type bearings are sealed for more reliability

SPOOL MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	TYPE	B+	B-	ROTATE	REGULATOR	DIM "A"	FEATURE
A0014452AB	4452AB	12	75	1.2" SPOOL	3	5/16-18	1/4-20	BI-DIR	N/A	8.63	
A0014654AB	4654AB	12	105	1.2" SPOOL	3	5/16-18	1/4-20	BI-DIR	N/A	8.79	
A0014754AB	4754AB	12	130	1.2" SPOOL	3	5/16-18	1/4-20	BI-DIR	N/A	8.79	
A0014754JA	4754JA	12	130	1.2" SPOOL	3	5/16-18	1/4-20	BI-DIR	BDI	8.63	

J180 MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	TYPE	B+	B-	ROTATE	REGULATOR	DIM "A"	FEATURE
A0014727AA	4727AA	24	140	J-180	1	5/16-18	5/16-18	CW	N/A	10.67	
A0014727JB	4727JB	24	140	J-180	1	5/16-18	5/16-18	CW	BDH	10.67	
A0014728JB	4728JB	24	140	J-180	1	5/16-18	5/16-18	CW	BDH	10.67	
A0014729LC	4729LC	24	140	J-180	1	5/16-18	5/16-18	CW	N/A	10.67	

SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 6 9/16" / 167mm
- Shaft diameter: .8736 - .8741
- Max Ambient Air: 93°C (200°F)

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

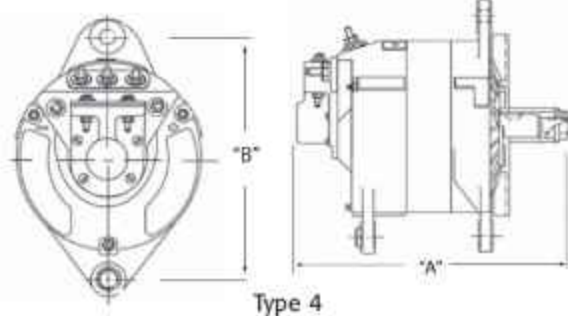
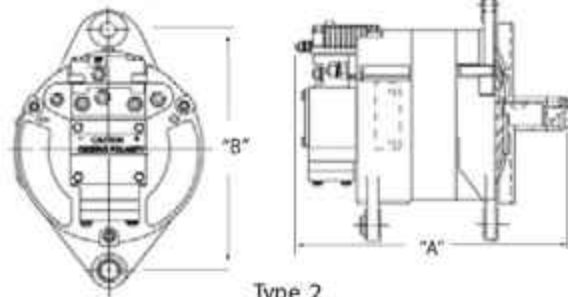
FEATURE CODES:

- 1 Painted
- 2 110°C (230°F)

4400-4700 (Continued)

INTERSTATE ALTERNATORS FOR
HEAVY DUTY TRUCKS

J180 MOUNT



SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 6 9/16" / 167mm
- Shaft diameter: .8736 - .8741
- Max Ambient Air: 93°C (200°F)

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

- 1 Painted
- 2 110°C (230°F)
- 3 MultiPower

PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	TYPE	B+	B-	ROTOR	REGULATOR	DIM. "A"	DIM. "B"	FEATURE
A0014425AA	4425AA	12	75	J-180	4	1/4-20	1/4-20	BI-DIR	N/A	10.12	8.53	
A0014625AA	4625AA	12	105	J-180	4	1/4-20	1/4-20	BI-DIR	N/A	10.12	8.53	
A0014625IC	4625IC	12	105	J-180	2	5/16-18	1/4-20	BI-DIR	BDH	10.43	8.53	
A0014725AA	4725AA	12	130	J-180	4	1/4-20	1/4-20	BI-DIR	N/A	10.12	8.53	
A0014725IC	4725IC	12	130	J-180	2	5/16-18	1/4-20	BI-DIR	BDH	10.43	8.53	
A0014630IA	4630IA	24	65	J-180	2	5/16-18	1/4-20	BI-DIR	BDH	10.43	8.53	
A0014626AA	4626AA	24	100	J-180	4	1/4-20	1/4-20	BI-DIR	N/A	10.12	8.53	
A0014626IC	4626IC	24	100	J-180	2	5/16-18	1/4-20	BI-DIR	N/A	10.43	8.53	
A0014629IA	4629IA	24	100	J-180	2	5/16-18	1/4-20	BI-DIR	BDH	10.43	8.53	
A0014740IB	4740IB	24	200	J-180	2	5/16-18	3/8-16	CW	BDK	11.01	8.53	
A0014742IB*	4742IB	24	200	J-180	2	5/16-18	3/8-16	CW	BCCN	11.01	8.50	2, 3
A0014632AA	4632AA	32	115	J-180	4	5/16-18	1/4-20	BI-DIR	N/A	10.12	8.53	1
A0014632IA	4632IA	32	115	J-180	4	5/16-18	1/4-20	BI-DIR	BDI	10.12	8.53	1
A0014417IB	4417IB	48	90	J-180	2	5/16-18	5/16-18	BI-DIR	BCC	9.9	8.53	

* MULTIPOWER ALTERNATOR SYSTEM MODEL

4800-4856

SPECIALTY ALTERNATORS

APPLICATIONS:

12 Volt:

- Firetruck
- Ambulance
- Shuttle Bus*
- Utility Trucks
- Motorhomes

24 Volt:

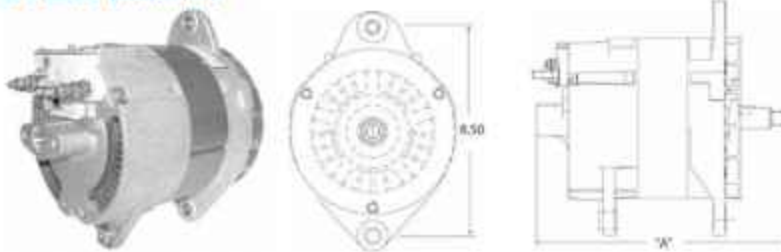
- Firetruck
- Ambulance
- Shuttle Bus*
- Off-Highway Equipment

* Use only 185 amp and higher for Bus application

FEATURES:

- Designed for Heavy-duty diesel and gas engine applications
- Well suited for emergency vehicles, as they feature extended 1/4-20 threaded AC terminals to aid installation of auxiliary equipment
- High output at all engine speeds/ Superior performance at low engine rpm
- Integral solid-state regulators on JB style units
- JB style units are totally encapsulated against moisture and vibration
- "AA" style units used with separately mounted solid-state regulator
- Heavy-duty components for long life:
 - Large bearings with large grease capacity
 - Heavy duty, high P.I.V. rated rectifiers mounted in large heat sinks for proper cooling
 - Rotor and stator windings treated with a baked varnish process for superior winding rigidity and added insulation
 - Longer life graphite brushes, fully enclosed for protection against contaminants
- Low cut-in
- Compact frame size

J180 MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	DIM "W"	FEATURE
A0014805AA	4805AA	12	145	J-180	5/16-18	5/16-18	BI-DIR	N/A	10.60	
A0014805JB	4805JB	12	145	J-180	5/16-18	5/16-18	BI-DIR	BDH	10.60	2
A0014806AA	4806AA	12	145	J-180	5/16-18	5/16-18	BI-DIR	N/A	11.00	
A0014806JB	4806JB	12	145	J-180	5/16-18	5/16-18	BI-DIR	BDH	11.00	2
A0014850AA	4850AA	12	200	J-180	N/A	N/A	CW	N/A	10.70	
A0014852AA	4852AA	12	240	J-180	N/A	N/A	CW	N/A	10.70	
A0014854AA	4854AA	12	250	J-180	N/A	N/A	CW	N/A	10.70	
A0014856AA	4856AA	12	270	J-180	N/A	N/A	CW	N/A	10.74	
A0014826JB	4826JB	24	105	J-180	5/16-18	5/16-18	BI-DIR	BDH	10.70	2
A0014827JB	4827JB	24	130	J-180	5/16-18	5/16-18	BI-DIR	BDH	11.09	2
A0014840AAH	4840AAH	48	85	J-180	N/A	N/A	CW	N/A	10.74	1

SPECIFICATIONS:

- System voltage: 12/24/48 Volt
- Frame: 6 9/16" / 167mm
- Shaft diameter: .8736 - .8741
- Max Ambient Air: 93°C (200°F)

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

- 1 Hex shaft
- 2 Ignition terminal
- 3 Dual alternator system
- 4 Reversed output terminal
- 5 110°C (230°F)

4800-4900

HIGH OUTPUT / HIGH TEMPERATURE*
ALTERNATORS

APPLICATIONS:

- Medium and Heavy Duty Trucks
- Transit Buses
- School Buses
- Shuttle Bus
- Emergency Vehicles
- Military

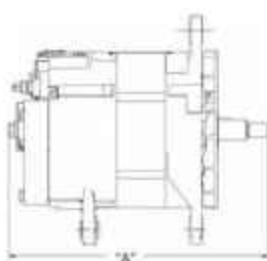
*Now High Temperature
Rated for New EPA Emission
Compliant Engines!*

FEATURES:

- Designed for reliable high output in applications where power demands are varied over a wide range of operating rpm's
- Solid rectifier lead frame, advanced avalanche diodes, welded connections
- Regulator options include self-excite, ignition excite, remote sense, or adjustable regulator type configurations

- Brush/slip ring system is enclosed to protect against road dirt
- Fan design offers more efficient air flow and cooler operation under high output load conditions
- Large, cartridge width, front ball bearing is used to support high belt loads
- Uses high temperature grease and seals for longer bearing life

J180 MOUNT



SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 6 9/16" / 167mm
- Shaft diameter: .8736 - .8741
- Max Ambient Air: 110°C (230°F*)

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

- 1 Hex shaft
- 2 Ignition terminal
- 3 Dual alternator system
- 4 Reversed output terminal

* Leece-Neville is aggressively re-engineering our high volume alternators to the 110 °C / 230 °F specification. However, not all alternators in the series listed may have been converted to date. Please contact your Leece-Neville representative for additional details.

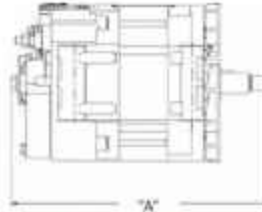
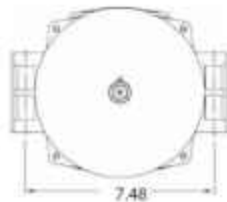
PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	DIM "A"	DIA "B"	FEATURE
A001483LGH	483LGH	12	185	J-180	5/16-18	5/16-18	CW	BDI	11.23	8.50	1
A001483AAH	483AAH	12	185	J-180	5/16-18	5/16-18	CW	N/A	11.22	8.50	1,4
A001483LGH	483LGH	12	185	J-180	5/16-18	5/16-18	CW	BDI	11.22	8.50	1,4
A001484AAH	484AAH	12	185	J-180	5/16-18	5/16-18	CW	N/A	11.22	8.50	1
A0014890AA	4890AA	12	200	J-180	5/16-18	3/8-16	CW	N/A	11.09	8.50	
A0014890JB	4890JB	12	200	J-180	5/16-18	3/8-16	CW	BDH	11.09	8.50	2
A0014861JB	4861JB	12	200	J-180	5/16-18	3/8-16	CW	BDH	11.09	8.50	2,4
A0014863JB	4863JB	12	200	J-180	5/16-18	3/8-16	CW	BDI	11.09	8.50	
A001486JGH	486JGH	12	200	J-180	5/16-18	3/8-16	CW	BDI	11.01	8.50	1,4
A0014884JB	4884JB	12	200	J-180	5/16-18	3/8-16	CW	BCHO	11.09	8.50	2
A0014885JB	4885JB	12	220	J-180	5/16-18	3/8-16	CW	BCG	11.01	8.50	2
A0014887JB	4887JB	12	220	J-180	5/16-18	3/8-16	CW	BDI	11.01	8.50	
A0014869JB	4869JB	12	245	J-180	5/16-18	3/8-16	CW	BDI	11.01	8.50	
A0014873JB	4873JB	12	245	J-180	5/16-18	3/8-16	CW	BDH	11.01	8.50	2
A0014856AA	4856AA	12	270	J-180	5/16-18	5/16-18	CW	N/A	10.74	8.50	
A0014867JB	4867JB	12	270	J-180	5/16-18	3/8-16	CW	BDI	11.01	8.50	
A0014867JGH	4867JGH	12	270	J-180	5/16-18	3/8-16	CW	BDI	11.01	8.50	1
A0014870AA	4870AA	12	270	J-180	5/16-18	3/8-16	CW	N/A	11.01	8.50	4
A0014870JB	4870JB	12	270	J-180	5/16-18	3/8-16	CW	BDH	11.09	8.50	2
A0014870JGH	4870JGH	12	270	J-180	5/16-18	3/8-16	CW	BCG	11.01	8.50	1,2
A0014871JB	4871JB	12	270	J-180	5/16-18	3/8-16	CW	BDH	11.09	8.50	2,4
A0014872AA	4872AA	12	270	J-180	5/16-18	3/8-16	CW	N/A	11.01	8.50	
A0014874JB	4874JB	12	270	J-180	5/16-18	3/8-16	CW	BCHO	11.09	8.50	2
A0014883JB	4883JB	12	270	J-180	5/16-18	3/8-16	CW	BCGN	11.01	8.50	2,3,5
A0014890AA	4890AA	12	320	J-180	5/16-18	3/8-16	CW	N/A	11.01	8.50	4
A0014890JB	4890JB	12	320	J-180	5/16-18	3/8-16	CW	BDI	11.09	8.50	

4800-4900 (Continued)

HIGH OUTPUT / HIGH TEMPERATURE*
ALTERNATORS

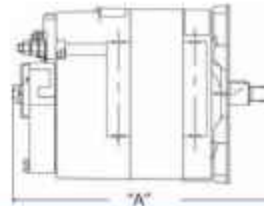
Now High Temperature
Rated for New EPA Emission
Compliant Engines!

PAD MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	DIM "A"	FEATURE
A0014939AAH	4939AAH	12	185	PAD	5/16-18	5/16-18	CW	BDI	11.23	1
A0014939PGH	4939PGH	12	185	PAD	5/16-18	5/16-18	CW	BDI	11.23	1
A0014943PGH	4943PGH	12	185	PAD	5/16-18	5/16-18	CW	BDI	11.23	1,4
A0014977AAH	4977AAH	12	185	PAD	5/16-18	5/16-18	CW	N/A	11.00	1
A0014940PA	4940PA	12	200	PAD	5/16-18	3/8-16	CW	BDH	10.83	2
A0014948PA	4948PA	12	200	PAD	5/16-18	3/8-16	CW	BCH	11.02	2
A0014951PGH	4951PGH	12	200	PAD	5/16-18	3/8-16	CW	BDI	11.02	1
A0014958PA	4958PA	12	220	PAD	5/16-18	3/8-16	CW	BCG	11.02	2
A0014959PA	4959PA	12	220	PAD	5/16-18	3/8-16	CW	BDI	11.02	
A0014911PA	4911PA	12	245	PAD	5/16-18	3/8-16	CW	BDI	11.02	
A0014913PA	4913PA	12	245	PAD	5/16-18	3/8-16	CW	BCG	11.02	2
A0014942PA	4942PA	12	270	PAD	5/16-18	3/8-16	CW	BCH	10.83	2
A0014944PA	4944PA	12	270	PAD	5/16-18	3/8-16	CW	BDI	10.83	
A0014947PA	4947PA	12	270	PAD	5/16-18	3/8-16	CW	BDH	10.83	2
A0014947PGH	4947PGH	12	270	PAD	5/16-18	3/8-16	CW	BDH	10.83	1,2
A0014949PA	4949PA	12	270	PAD	5/16-18	3/8-16	CW	BDI	11.02	
A0014949PGH	4949PGH	12	270	PAD	5/16-18	3/8-16	CW	BDI	11.02	1
A0014967PGH	4967PGH	12	270	PAD	5/16-18	5/16-18	CW	BCIKO	10.59	1
A0014975PAA	4975PAA	12	270	PAD	5/16-18	5/16-18	CW	N/A	10.59	4
A0014993PA	4993PA	12	270	PAD	5/16-18	3/8-16	CW	BCGN	11.02	2,3,5
A0014982PA	4982PA	12	320	PAD	5/16-18	3/8-16	CW	BDI	11.02	
A0014982PAH	4982PAH	12	320	PAD	5/16-18	1/4-20	CW	BDI	11.02	1
A0014966PAA	4966PAA	12	320	PAD	5/16-18	5/16-18	CW	N/A	10.59	4
A0014964PA	4964PA	24	200	PAD	5/16-18	3/8-16	CW	BDIK	11.02	
A0014974PA	4974PA	24	200	PAD	5/16-18	3/8-16	CW	BCGN	11.02	2,3,5

T-MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	DIM "A"	FEATURE
A0014905AAS	4905AAS	12	145	T-MOUNT	5/16-18	5/16-18	CW	N/A	9.90	
A0014900JBS	4900JBS	12	200	T-MOUNT	5/16-18	3/8-16	BI-DIR	BDH	10.23	2
A0014954AAS	4954AAS	12	250	T-MOUNT	N/A	N/A	BI-DIR	N/A	9.80	
A0014970JBS	4970JBS	12	270	T-MOUNT	5/16-18	3/8-16	BI-DIR	BDH	10.23	2

SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 6 9/16" / 167mm
- Shaft diameter: .8736 - .8741
- Max Ambient Air: 110°C (230°F)*

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

- 1 Hex shaft
- 2 Ignition terminal
- 3 MultiPower Alternator system
- 4 Reversed output terminal
- 5 TxRx terminal

* Leece-Neville is aggressively re-engineering our high volume alternators to the 110 °C / 230 °F specification. However, not all alternators in the series listed may have been converted to date. Please contact your Leece-Neville representative for additional details.

MULTIPOWER™

HIGH PERFORMANCE / HIGH OUTPUT /
HIGH TEMPERATURE*

APPLICATIONS:

- Emergency Vehicles
- School Buses
- Shuttle Bus
- Transit Buses
- Military

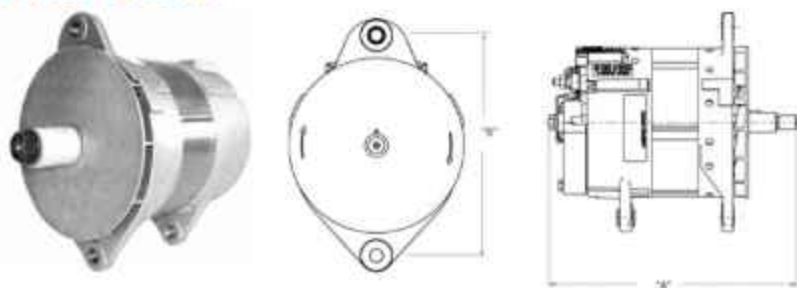
*Now High Temperature
Rated for New EPA Emission
Compliant Engines!*

FEATURES:

- Intelligent Regulator provides load sharing capability. No external CPU or CU is required, only a connecting wire between alternators
- Designed for reliable high output for large amounts of available power at engine idle
- Multiple alternators provide back-up power in the event of a partial system failure

- Brush/slip ring system is enclosed to protect against road dirt
- Fan design offers more efficient air flow and cooler operation under high output load conditions
- Solid rectifier lead frame, advanced avalanche diodes, welded connections
- Uses high temperature grease and seals for longer bearing life

J180 MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	DIM. "W"	DIM. "B"	FEATURE
A0014742JB	4742JB	24	200	J-180	5/16-18	3/8-16	CW	BCGN	11.01	8.50	2,3,5

SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 6 9/16" / 167mm
- Shaft diameter: .8736 - .8741
- Max Ambient Air: 110°C (230°F*)

REGULATOR CODES:

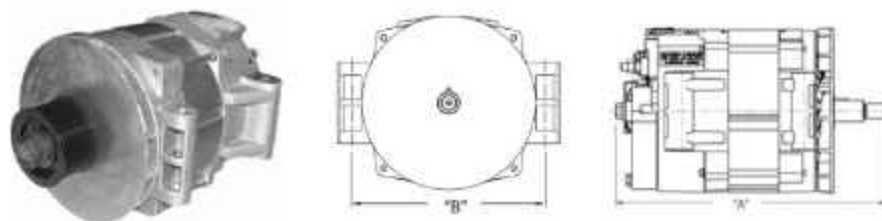
- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

- 1 Hex shaft
- 2 Ignition terminal
- 3 Multiple alternator system
- 4 Reversed output terminal
- 5 TxRx terminal

* Leece-Neville is aggressively re-engineering our high volume alternators to the 110 °C / 230 °F specification. However, not all alternators in the series listed may have been converted to date. Please contact your Leece-Neville representative for additional details.

PAD MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	DIM. "W"	DIM. "B"	FEATURE
A0014993PA	4993PA	12	270	J-180	5/16-18	3/8-16	CW	BCGN	11.02	7.48	2,3,5
A0014974PA	4974PA	24	200	J-180	5/16-18	3/8-16	CW	BCGN	11.02	7.48	2,3,5

5500-7000

EMERGENCY VEHICLE ALTERNATOR
CHARGING SYSTEM (EVACS)

APPLICATIONS:

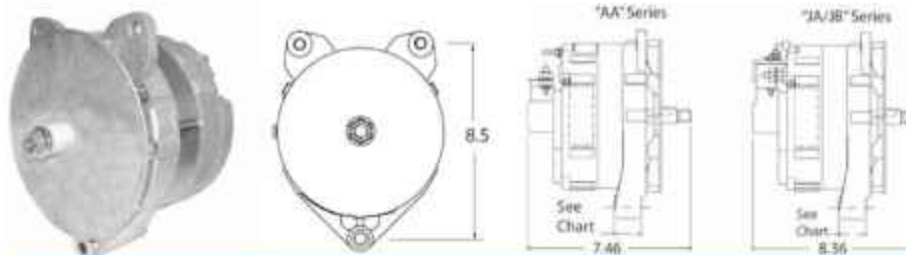
- Heavy and Light Trucks
- Shuttle Bus*
- School Buses*
- Motorcoach
- Emergency Vehicles
- Ambulances
- Vans
- Military

* Use only 185 amp and higher for Bus application

FEATURES:

- EVACS (5522AA/5523AA)
 - Specifically designed for emergency vehicle and ambulance applications
 - Remote mounted convection cooled rectifier
 - Size makes mounting easier
 - Produces enough current to satisfy the electrical needs of most emergency vehicle and ambulance applications
- Other models in the series:
 - Designed to produce high output at low rpm's
 - Vibration resistant
 - Internally regulated
 - Internally rectified
 - Permanently greased ball type bearings are sealed for more reliability

SPOOL MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	FEATURE
A0017601AA	7601AA	12	105	3" SPOOL	5/16-18	1/4-20	BI-DIR	N/A	
A0017604JA	7604JA	12	105	3" SPOOL	5/16-18	1/4-20	BI-DIR	BDI	
A0017705AA	7705AA	12	130	1.2" SPOOL	5/16-18	1/4-20	BI-DIR	N/A	
A0017705JA	7705JA	12	130	1.2" SPOOL	5/16-18	1/4-20	BI-DIR	BDI	
A0015522AA	5522AA	12	165	1.2" SPOOL	N/A	N/A	BI-DIR	N/A	
A0017706AA	7706AA	12	165	1.2" SPOOL	5/16-18	1/4-20	BI-DIR	N/A	
A0017706JA	7706JA	12	165	1.2" SPOOL	5/16-18	1/4-20	BI-DIR	BDI	
A0015527AA	5527AA	12	165	3" SPOOL	N/A	N/A	BI-DIR	N/A	
A0017711JA	7711JA	12	165	3" SPOOL	5/16-18	1/4-20	BI-DIR	BDF	
A0015523AA	5523AA	12	200	1.2" SPOOL	N/A	N/A	BI-DIR	N/A	

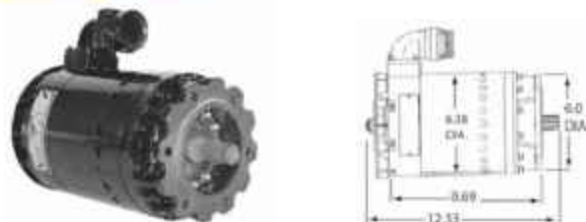
SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 6 1/2" / 165mm
- Shaft diameter:
5500 Series .8736-.8741
7700 Series .6690-.6695
- Max Ambient Air: 93°C (200°F)

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

GEAR DRIVEN



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	FEATURE
A0015504AC	5504AC	24	100	MILITARY	N/A	N/A	BI-DIR	N/A	
A0015520AB	5520AB	24	180	MILITARY	N/A	N/A	BI-DIR	N/A	

8AL / 8AR

AGRICULTURAL AND OFF-HIGHWAY
ALTERNATOR

APPLICATIONS:

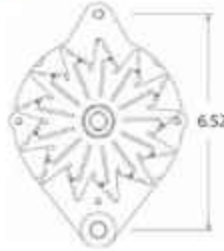
- Off Highway
- General Industrial
- Gen Sets
- Agriculture and Material Handling

FEATURES:

- Longer life graphite brushes for extended service life
- Dynamically balanced rotor and shaft assembly
- Permanently lubricated and sealed ball bearings

- Heavy duty copper stator windings for higher output and cooler operation
- Ignition and self excite available

SPOOL MOUNT 1 HOLE



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	DIM "A"	DIM "B"	FEATURE
8AL2048FA	110-529	12	37	3" SPOOL	14-20	10-24	CW	AE	5.70	6.52	2
8AL2108FA	110-504	12	37	1" SPOOL	14-20	10-24	CW	AE	5.70	6.52	
8AR2066FA	110-498	12	37	2" SPOOL	14-20	10-24	CW	BDEG	5.68	6.52	
8AR2160F	110-470	12	37	2" SPOOL	14-20	10-24	CW	BDEG	5.36	6.52	
8AR2014F	110-478	12	37	2" SPOOL	14-20	10-24	CW	BCEGM	5.52	6.52	
8AR2023KA	110-506	12	51	2" SPOOL	14-20	10-24	CW	BDEG	5.95	6.52	
8AR2062KA	110-495	12	51	2" SPOOL	14-20	10-24	CW	BDEG	5.06	6.52	
8AR2078KS	110-325	12	51	2" SPOOL	14-20	10-24	CW	NA	6.66	6.52	
8AR2163K	110-490	12	51	2" SPOOL	14-20	10-24	CW	BDEG	5.71	6.52	
8AR2013L	110-476	12	65	2" SPOOL	14-20	10-24	BI-DIR	BDEG	5.85	6.52	
8AR2200L	110-460	12	65	2" SPOOL	M6X1.0	M5X.8	NO FAN	BCEG	5.97	6.52	1
8AR2201L	110-461	12	65	2" SPOOL	M6X1.0	M5X.8	NO FAN	BCEG	5.97	6.52	1
8AR2205L	110-519	12	65	2" SPOOL	M6X1.0	M5X.8	BI-DIR	BDEG	6.13	6.52	
8AR2204T	110-467	12	90	2" SPOOL	M6X1.0	M5X.8	CW	BDI	6.85	6.52	
8AR3200G	110-462	24	40	2" SPOOL	M6X1.0	M5X.8	NO FAN	BCEG	5.97	6.52	
8AR3006G	110-501	24	40	1" SPOOL	14-20	10-24	BI-DIR	BCEG	6.14	6.52	1

SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 5 Inch
- Shaft diameter: .6265-.6272
- Max Ambient Air: 93°C (200°F)

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

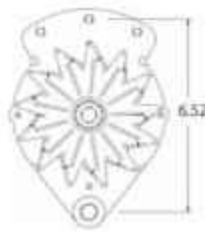
FEATURE CODES:

- 1 B- is case ground
- 2 Field terminal

8AL / 8AR (Continued)

AGRICULTURAL AND OFF-HIGHWAY
ALTERNATOR

SPOOL MOUNT 3 HOLE



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	DIM. "A"	DIM. "B"	FEATURE
8AL2055FA	110-544	12	37	2" SPOOL	1/4-20	10-24	CW	AE	5.68	5.52	2
8AL2108FA	110-506	12	37	1" SPOOL	1/4-20	10-24	CW	AE	5.70	5.52	2
8AL2109FA	110-492	12	37	1" SPOOL	1/4-20	10-24	NO FAN	AE	5.68	5.52	
8AR2065FS	110-234	12	37	3" SPOOL	1/4-20	10-24	CW	BDEGK	6.40	5.52	
8AR2074F	110-479	12	37	1" SPOOL	M6X1.0	M5X.8	CW	BDEG	5.52	5.52	1
8AR2169F	110-628	12	37	1" SPOOL	1/4-20	10-24	CW	BDEG	5.52	5.52	
8AL2109FB	8AL2109FB	12	37	1" SPOOL	1/4-20	10-24	NO FAN	AE	5.68	5.52	
8AR2073FAS	110-493	12	37	1" SPOOL	1/4-20	10-24	BI-DIR	BCEGM	5.7	5.52	
8AR2173F	110-477	12	37	1" SPOOL	1/4-20	10-24	BI-DIR	BCEGM	5.52	5.52	
8AL2056KA	110-538	12	51	2" SPOOL	1/4-20	10-24	CW	AE	5.93	5.52	
8AL2080KA	110-497	12	51	2" SPOOL	1/4-20	10-24	NO FAN	AE	5.93	5.52	2
8AL2107KA	110-503	12	51	1" SPOOL	1/4-20	10-24	CW	AE	5.95	5.52	2
8AR2070KA	110-647	12	51	1" SPOOL	1/4-20	10-24	CW	BDEG	5.95	5.52	
8AR2018L	110-683	12	65	1" SPOOL	1/4-20	10-24	CW	BDEG	5.96	5.52	
8AR3080FA	110-522	24	35	1" SPOOL	1/4-20	10-24	CW	BDEG	5.95	5.52	

SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 5 Inch
- Shaft diameter: .6265-.6272
- Max Ambient Air: 93°C (200°F)

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

- 1 B- is case ground
- 2 Field terminal

8HA / 8HC

HEAVY DUTY ALTERNATORS

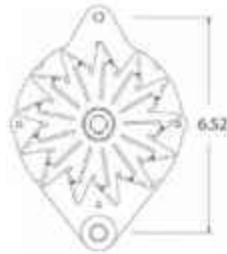
APPLICATIONS:

- Heavy Duty Marine
- Off Highway
- Agriculture
- Construction applications
- Marine applications restricted to diesel

FEATURES:

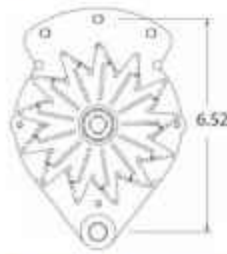
- Longer life graphite brushes for extended service life
- Dynamically balanced rotor and shaft assembly
- Permanently lubricated and sealed ball bearings
- Heavy duty copper stator windings for higher output and cooler operation
- Ignition and self excite available

SPOOL MOUNT 1 HOLE



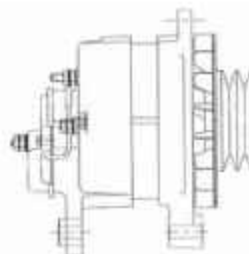
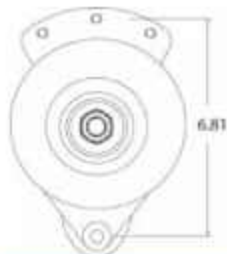
PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	DIM "A"	FEATURE
8HA2003FS	110-159	12	37	1" SPOOL	1/4-20	10-24	CW	N/A	6.33	
8HA2006F	110-225	12	37	1" SPOOL	1/4-20	10-24	CW	AE	5.92	
8HA2008FA	110-542	12	37	1" SPOOL	1/4-20	10-24	CW	AE	5.67	
8HA2009KA	110-543	12	51	1" SPOOL	1/4-20	10-24	CW	AE	5.92	
8HC2015LS	110-212	12	62	2" SPOOL	1/4-20	10-24	BI-DIR	N/A	6.33	
8HC3017GS	110-222	24	40	2" SPOOL	1/4-20	10-24	NO FAN	N/A	6.30	
8HC3026G	110-392	24	42	1" SPOOL	1/4-20	10-24	BI-DIR	BCEG	7.15	1,2

SPOOL MOUNT 3 HOLE



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	DIM "A"	FEATURE
8HC2023KS	110-284	12	51	1" SPOOL	1/4-20	10-24	BI-DIR	BDI	7.70	1
8HC3022FS	110-285	24	35	1" SPOOL	1/4-20	10-24	BI-DIR	BDI	7.70	1

DUAL FOOT MOUNT 3 HOLE



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	DIM "A"	FEATURE
8HC2027PAS	110-538	12	72	DUAL FOOT	1/4-20	1/4-20	BI-DIR	BDEG	7.20	
8HC2027PB	110-548	12	72	DUAL FOOT	1/4-20	1/4-20	BI-DIR	BDEG	7.05	

SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 5 Inch/127mm
- Shaft diameter: .6265-.6272
- Max Ambient Air: 93°C (200°F)

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

- 1 E-coated
- 2 UL listed

8LHA

HEAVY DUTY ALTERNATOR SERIES

APPLICATIONS:

- Heavy, Medium and Light Duty Truck

Now High Temperature Rated for New EPA Emission Compliant Engines!

FEATURES:

- A standard for both OEM and Aftermarket applications on Heavy Truck and Off-highway vehicles
- Designed for vibration resistance and reliability, featuring "conical lock" through bolts and various thread lock systems for overall structural integrity
- Heavy-duty aluminum front and rear housings are used for strength and light weight
- Finned aluminum heat sinks are used in the rectifier system to assure proper heat dissipation and cooler operation over the entire operating speed range
- Higher efficiency fan for greater air flow and cooling

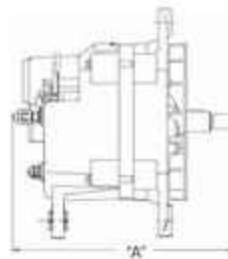
- Key structural components such as housings and hardware are interchangeable between similar mounts
- Key functional components such as rotors, stators, regulators and rectifiers are interchangeable between all types, reducing maintenance costs
- Strong low speed performance in applications where engine operating speeds are relatively low
- Large front and rear ball bearings increase operating life, provide better support for higher belt loads
- Sealed brush cavity reduces contamination, providing longer brush life

SPOOL MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	DIM. "A"	DIM. "B"	FEATURE
8LHA2026VAS	110-277A	12	130	3" SPOOL	5/16-24	1/4-28	BI-DIR	N/A	8.95	8.00	
8LHA2032VAS	110-309	12	130	3" SPOOL	5/16-24	1/4-28	BI-DIR	N/A	8.98	8.00	
8LHA2050VBS	110-454	12	130	3" SPOOL	1/4-28	1/4-28	CW	8DI	9.04	8.00	
8LHA3161U	110-550	24	110	3" SPOOL	1/4-28	1/4-28	CW	8DIK	9.05	8.00	

J-180 MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	DIM. "A"	DIM. "B"	FEATURE
8LHA2077VA	110-777	12	140	J180	5/16-24	1/4-28	CW	BDI	9.45	8.50	
8LHA2098VA	8LHA2098VA	12	140	J180	5/16-24	1/4-28	CW	BDIK	9.45	8.50	8
8LHA2252V	110-566	12	155	J180	5/16-24	1/4-28	CW	BDI	9.45	8.50	6
8LHA2057VA	110-450	12	160	J180	5/16-24	1/4-28	CW	BDI	9.46	8.50	
8LHA2057VCH	8LHA2057VCH	12	160	J180	5/16-24	1/4-28	CW	BDI	9.46	8.50	
8LHA2070VE	110-555JHO	12	160	J180	5/16-24	1/4-28	CW	BDI	9.45	8.50	7
8LHA2070VCH	8LHA2070VCH	12	160	J180	5/16-24	1/4-28	CW	BDI	9.45	8.50	1
8LHA2071VA	110-555JHO	12	160	J180	5/16-24	1/4-28	CW	BDIK	9.45	8.50	7
8LHA2097V	110-558	12	160	J180	5/16-24	1/4-28	CW	BDI	9.51	8.50	
8LHA2121V	110-580	12	160	J180	1/4-28	1/4-28	CW	BDI	8.96	8.50	3
8LHA2159V	110-584	12	160	J180	1/4-28	1/4-28	CW	BDI	9.08	8.50	3, 8
8LHA2225V	110-775	12	170	J180	5/16-24	1/4-28	CW	BDI	9.45	8.50	
8LHA3071P	110-446	24	75	J180	5/16-24	1/4-28	CW	BDI	9.51	8.50	
8LHA3095R	110-466	24	95	J180	M6X1.25	M6X1.0	CW	BDIK	9.07	8.50	
8LHA3087U	110-564	24	110	J180	M6X1.25	M6X1.0	CW	BDIK	10.34	8.50	2, 5
8LHA3096U	110-459	24	110	J180	M6X1.25	M6X1.0	CW	BDIK	9.49	8.50	2, 5, 8

SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 6 1/2" / 165mm
- Shaft diameter: .8736 - .8741
- Max Ambient Air: 110°C (230°F)*

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

- 1 Hex Shaft
- 2 E-coated
- 3 Reverse output studs
- 4 Reverse terminal for Cummins B engines
- 5 External Filter Capacitor
- 6 115 °C*
- 7 105 °C*
- 8 93 °C

* Leece-Neville is aggressively re-engineering our high volume alternators to the 110 °C / 230 °F specification. However, not all alternators in the series listed may have been converted to date. Please contact your Leece-Neville representative for additional details.

8LHP

HEAVY DUTY ALTERNATOR SERIES

APPLICATIONS:

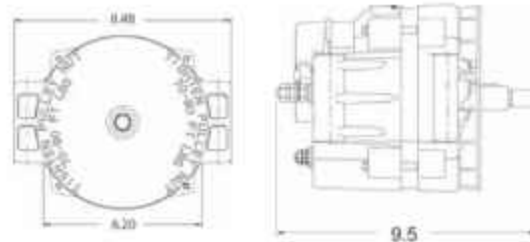
- Heavy, Medium and Light Duty Truck

Now High Temperature Rated for New EPA Emission Compliant Engines!

FEATURES:

- A standard for both OEM and Aftermarket applications on Heavy Truck and Off-highway vehicles
- Designed for vibration resistance and reliability, featuring "conical lock" through bolts and various thread lock systems for overall structural integrity
- Heavy-duty aluminum front and rear housings are used for strength and light weight
- Finned aluminum heat sinks are used in the rectifier system to assure proper heat dissipation and cooler operation over the entire operating speed range
- Higher efficiency fan for greater air flow and cooling
- Key structural components such as housings and hardware are interchangeable between similar mounts
- Key functional components such as rotors, stators, regulators and rectifiers are interchangeable between all types, reducing maintenance costs
- Strong low speed performance in applications where engine operating speeds are relatively low
- Large front and rear ball bearings increase operating life, provide better support for higher belt loads
- Sealed brush cavity reduces contamination, providing longer brush life

PAD MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	B+	B-	ROTATE	REGULATOR	FEATURE
8LHP2177V	110-777P	12	140	5/16-24	1/4-28	CW	BDI	
8LHP2245VGH	8LHP2245VGH	12	140	5/16-24	1/4-28	CW	BDI	1
8LHP2247V	8LHP2247V	12	140	5/16-24	1/4-28	CW	BCI	4, 8
8LHP2253V	110-566P	12	156	5/16-24	1/4-28	CW	BDI	2, 6
8LHP2170VE	110-555PHO	12	160	5/16-24	1/4-28	CW	BDI	3, 7
8LHP2276V	110-775P	12	170	5/16-24	1/4-28	CW	BDI	
8LHP3173V	8LHP3173V	24	75	5/16-24	1/4-28	CW	BDI	8
8LHP3172V	8LHP3172V	24	110	M8X1.25	M6X1.0	CW	BDIK	8

SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 6 1/2" / 165mm
- Shaft diameter: .8736 - .8741
- Max Ambient Air: 110°C (230°F)

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

- 1 Hex Shaft
- 2 E-coated
- 3 Reverse output studs
- 4 Reverse terminal for Cummins B engines
- 5 External Filter Capacitor
- 6 115°C
- 7 105°C
- 8 93°C

* Leece-Neville is aggressively re-engineering our high volume alternators to the 110 °C / 230 °F specification. However, not all alternators in the series listed may have been converted to date. Please contact your Leece-Neville representative for additional details.

8MR

MARINE APPLICATIONS
SMALL FRAME ALTERNATORS

APPLICATIONS:

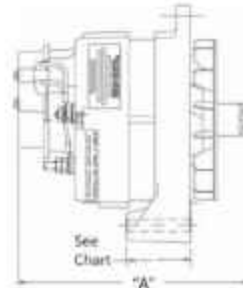
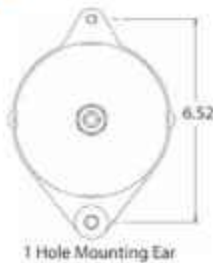
- UL Listed models -
Marine, Material Handling
- Non-UL Listed models -
Medium Duty Truck, Air Conditioning, Off Highway, Industrial, Gen Set, Agriculture, Construction, Material handling

FEATURES:

- Over thirty years supplying small frame alternators for Marine applications
- Wide range of outputs, regulator features and mounting configurations
- Corrosion protected
- Longer life graphite brushes
- Permanently lubricated and sealed ball bearings

- Adjustable voltage regulators, as well as pre-set
- Noise suppression built-in
- These units are for gas and diesel
- Ignition, self excite and remote battery sense available
- NOTE: Large frame, higher output units are also available for marine diesel applications

SPOOL MOUNT 1 HOLE



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	DIM. "A"	DIM. "B"	FEATURE
8MR2051FA	110-515	12	37	2" SPOOL	1/4-20	10-24	BI-CIR	BDEGM	6.74	6.52	1, 4
8MR2051FAS	110-555	12	37	2" SPOOL	1/4-20	10-24	BI-CIR	BDEGM	6.74	6.52	1, 4
8MR2049KA	110-517	12	51	2" SPOOL	1/4-20	10-24	BI-CIR	BDEGM	7.00	6.52	1, 4
8MR2084K	110-494	12	51	2" SPOOL	1/4-20	10-24	BI-CIR	BDEGM	7.00	6.52	1, 4
8MR2085K	110-488	12	51	2" SPOOL	1/4-20	10-24	BI-CIR	BDEGM	7.00	6.52	1, 4
8MR2091KSS	110-686	12	51	2" SPOOL	1/4-20	10-24	CW	BCEGM	7.00	6.52	1, 4
8MR2086L	110-491	12	65	2" SPOOL	1/4-20	10-24	BI-CIR	BDEGM	7.25	6.52	1, 4
8MR2092L	110-483	12	65	2" SPOOL	1/4-20	10-24	CW	BCEGM	7.24	6.52	1, 4
8MR2093L	110-484	12	65	2" SPOOL	1/4-20	10-24	CW	BCEGM	7.24	6.52	1, 4
8MR2301LS	110-464	12	65	2" SPOOL	M6X1.0	MSX.8	CW	BCEG	7.24	6.52	1
8MR2302L	110-485	12	65	2" SPOOL	M6X1.0	MSX.8	BI-CIR	BCEGM	7.24	6.52	1
8MR2305L	110-589	12	65	2" SPOOL	M6X1.0	MSX.8	BI-CIR	BDEGM	7.24	6.52	1
8MA2003PA	110-538	12	72	2" SPOOL	1/4-20	10-24	CW	N/A	6.85	6.52	
8MR2058PA	110-521	12	72	2" SPOOL	1/4-20	10-24	BI-CIR	BDEGM	7.21	6.52	1, 4
8MR2069TA	110-602	12	90	2" SPOOL	M6X1.0	M6X1.0	BI-CIR	BDI	7.15	6.52	1, 4
8MR2033TS	110-252	12	90	2" SPOOL	1/4-20	10-24	CW	BCEG	7.59	6.52	3
8MR2071T	110-411	12	90	2" SPOOL	1/4-20	10-24	NO FAN	BCEI	7.59	6.52	
8MR2030TC	110-570	12	90	2" SPOOL	1/4-20	10-24	CW	BDEG	7.00	6.52	3
8MR2035T	110-244	12	90	2" SPOOL	1/4-20	N/A	NO FAN	BCEI	7.59	6.52	3
8MR2307U	110-560	12	105	2" SPOOL	M6X1.0	MSX.8	BI-CIR	BCEGM	7.24	6.52	1
8MR3300G	110-485	24	40	2" SPOOL	M6X1.0	MSX.8	NO FAN	BCEG	7.14	6.52	1
8MR3301G	110-486	24	40	2" SPOOL	M6X1.0	MSX.8	BI-CIR	BCEG	7.05	6.52	1

SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 5 Inch / 127mm
- Shaft diameter: .6265-.6272
- Max Ambient Air: 93°C (200°F)

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

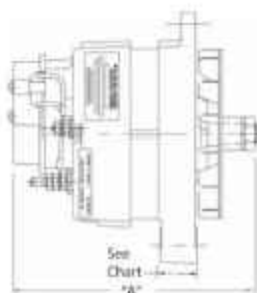
- 1 E-coated
- 2 Iridite Coated
- 3 Dust Shield
- 4 UL Listed

BMR

(Continued)

MARINE APPLICATIONS
SMALL FRAME ALTERNATORS

SPOOL MOUNT 3 HOLE



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	DIM. "A"	FEATURE
BMR215D	110-581	12	23	1" SPOOL	1/4-20	10-24	BH-DR	BDEG	6.56	1
BMR2050FA	110-532	12	37	1" SPOOL	1/4-20	10-24	BH-DR	BDEGM	6.57	1, 4
BMR2175F	110-698	12	37	1" SPOOL	1/4-20	10-24	CW	BCEGM	6.56	1, 4
BMR2048KA	110-512	12	51	1" SPOOL	1/4-20	10-24	BH-DR	BDEG	6.62	1, 4
BMR2199KS	110-656	12	51	1" SPOOL	1/4-20	10-24	BH-DR	BDEGM	7.59	1, 4
BMR2009KS	110-139	12	51	1" SPOOL	10-24	10-24	BH-DR	N/A	6.75	2
BMA2019KA	110-527	12	51	1" SPOOL	1/4-20	10-24	NO FAN	N/A	6.82	
BMR2013L	110-467	12	65	1" SPOOL	1/4-20	10-24	BH-DR	BDEGM	7.07	1, 4
BMR2169L	110-600	12	65	1" SPOOL	1/4-20	10-24	CW	BCEGM	7.00	1, 4
BMR2198LS	110-679	12	65	1" SPOOL	1/4-20	10-24	BH-DR	BDEGM	7.00	1, 4
BMR2403L	110-547	12	65	1" SPOOL	1/4-20	10-24	BH-DR	BDI	7.11	1
BMR2008PS	110-211	12	72	1" SPOOL	1/4-20	1/4-20	BH-DR	N/A	6.95	
BMR2026PA	110-523	12	72	1" SPOOL	1/4-20	10-24	CW	BDEG	6.38	1
BMR2070TA	110-603	12	90	1" SPOOL	1/4-20	1/4-20	BH-DR	BDI	7.14	1, 4
BMR2401UA	110-567	12	105	1" SPOOL	1/4-20	1/4-20	BH-DR	BDI	7.11	1, 4
BMR3005C	110-489	24	35	1" SPOOL	1/4-20	10-24	BH-DR	BDEG	7.09	1
BMR3009CA	110-518	24	35	1" SPOOL	1/4-20	10-24	BH-DR	BDEG	7.09	1
BMR3404G	110-684	24	40	1" SPOOL	1/4-20	10-24	BH-DR	BDEGM	7.59	1, 4
BMR3331G	BMR3331G	24	40	1" SPOOL	1/4-20	10-24	BH-DR	BDEGM	7.59	1
BMR3168K	110-557	24	55	1" SPOOL	1/4-20	1/4-20	CW	BDI	7.13	1, 4

SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 5 Inch / 127mm
- Shaft diameter: .6265-.6272
- Max Ambient Air: 93°C (200°F)

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

- 1 E-coated
- 2 Irridite Coated
- 3 Dust Shield
- 4 UL Listed

8SA

AGRICULTURAL AND OFF-HIGHWAY
ALTERNATOR

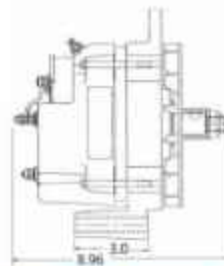
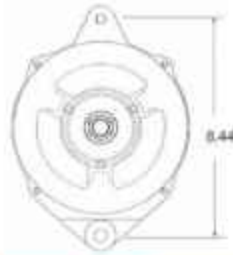
APPLICATIONS:

- Off Highway
- Agriculture

FEATURES:

- Longer life graphite brushes for extended service life
- Dynamically balanced rotor and shaft assembly
- Permanently lubricated and sealed ball bearings
- Heavy duty copper stator windings for higher output and cooler operation

SPOOL MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	FEATURE
8SA3064P	110-408	24	75	3" SPOOL	5/16-24	1/4-28	BI-DIR	BDEG	
8SA3064PC	110-413	24	75	3" SPOOL	5/16-24	1/4-28	BI-DIR	BDEG	1
8SA3065P	110-409	24	75	3" SPOOL	5/16-24	1/4-28	BI-DIR	N/A	
8SA3065PC	110-412	24	75	3" SPOOL	5/16-24	1/4-28	BI-DIR	N/A	1

SPECIFICATIONS:

- System voltage: 24 Volt
- Frame: 6 1/2" / 165mm
- Shaft diameter: .8740 - .8745
- Max Ambient Air: 93°C (200°F)

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

- Totally Enclosed Brush Area
- 1 E-coated

BSC/SCJ

DESIGNED FOR EXTRA HEAVY ELECTRICAL LOADS AND HIGH CHARGE REQUIREMENTS AT IDLE

APPLICATIONS:

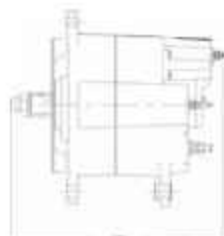
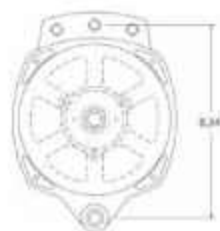
- Heavy Duty Trucks
- Emergency Vehicles
- Off-Highway
- Agricultural

FEATURES:

- Integral charging systems that can handle heavy belt loads and extremely high electrical loads on today's large diesel or gas engines
- Solid rectifier lead frame, advanced avalanche diodes, welded connections
- Simplified wiring - insulated three wire system
- Built-in "Load Dump" protected regulator with solid state circuitry and external adjustment

- SAE double lug mount with adjustable steel bushing and steel insert
- Heavy-duty 5/16" output stud for superior electrical connections
- Special AC terminal for connection of tachometers and other instruments
- "R" terminal for indicator lamp hook-up
- Long life copper graphite brushes enclosed in a dirt resistant chamber to extend brush life
- Trash screens are available for protection against foreign particles

J180 MOUNT



SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 6 1/2" / 165mm
- Shaft diameter: .8736 - .8741
- Max Ambient Air: see chart

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

- 1 Dust Shield/Trash Screen
- 2 E-coat
- 3 Air Inlet Nozzle
- 4 Secondary D+ Terminal
- 5 93°C
- 6 110°C
- 7 Indicator Light Terminal
- 8 Pulley

PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	DIM. "A"	FEATURE
BLHC2010Z	110-254	12	180	J-180	5/16-24	1/4-28	BI-DIR	BDIK	9.87	2, 5
SCJ2226	SCJ2226	12	180	J-180	5/16-24	1/4-28	CW	BDIK	10.87	1, 5
SCJ2231	SCJ2231	12	180	J-180	5/16-24	1/4-28	CW	BCEH	10.89	1, 4, 5
BSC2020Z	110-563	12	185	J-180	5/16-24	1/4-28	CW	BDI	10.41	5
BSC2023Z	110-565	12	185	J-180	5/16-24	1/4-28	CW	BDIK	10.35	5
SCJ2227	SCJ2227	12	185	J-180	5/16-24	1/4-28	CW	BDIK	10.87	1, 5
BSC2282VG	BSC2282VG	12	185	J-180	5/16-24	1/4-28	CW	BDIK	10.87	1, 8
BSC3014J	110-298	24	100	J-180	M8X1.25	M6X1.25	CW	BDH	9.86	6, 7
BSC3015J	110-302	24	100	J-180	5/16-24	1/4-28	CW	BDH	9.41	5, 7
BSC3019J	110-316	24	100	J-180	5/16-24	1/4-28	CW	BDH	9.41	6, 7
BSC3017VA	110-575	24	150	J-180	5/16-24	1/4-28	CW	ACH	10.41	5
BSC3018VA	110-576	24	150	J-180	5/16-24	1/4-28	CW	ACH	10.41	5
BSC3088V	110-431	24	150	J-180	5/16-24	1/4-28	CW	BDG	10.41	6, 7
BSC3110V	110-568	24	150	J-180	5/16-24	1/4-28	CW	ACG	10.41	5
SCJ3218	SCJ3218	24	170	J-180	5/16-24	1/4-28	CW	BDIK	12.90	1, 3, 5, 8
BSC3009ZA	110-258	24	175	J-180	5/16-24	1/4-28	CW	BDG	10.41	6, 7
BSC3029Z	110-569	24	175	J-180	5/16-24	1/4-28	CW	BDG	10.41	6, 7

8TA

TOTALLY ENCLOSED DESIGN

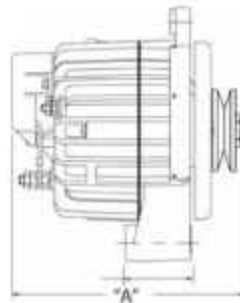
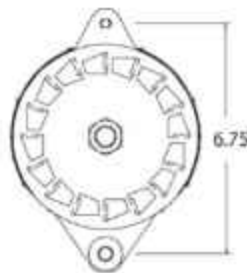
APPLICATIONS:

- Off Highway
- Agriculture
- Construction
- Industrial and Gen Sets
- Mining Industry

FEATURES:

- Totally enclosed housing design for extremely adverse environments
- Longer life graphite brushes extend service life
- Permanently lubricated and sealed ball bearings for dust protection and longer life
- Bi-directional fans for better cooling
- Ignition and self excite available
- Designed for the Construction and Agricultural environment

SPOOL MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	DIM "A"	FEATURE
8TA2029E	110-414	12	30	1" SPOOL	1/4-28	#10-24	BI-DIR	BDEG	6.58	1, 3
8TA2028E	110-473	12	30	2" SPOOL	1/4-28	#10-24	BI-DIR	BDEGM	7.26	1, 3
8TA2032E	110-551	12	30	2" SPOOL	1/4-28	#10-24	BI-DIR	BDEG	7.1	1, 3
8TA2031G	110-475	12	45	2" SPOOL	1/8 X 1.0	#10	BI-DIR	BDEIK	7.1	1
8TA2034G	110-552	12	45	2" SPOOL	1/4-28	#10-24	BI-DIR	BDEG	7.1	1, 3
8TA3025CS	110-221	24	16	2" SPOOL	1/4-28	#10-24	BI-DIR	N/A	7.1	1
8TA2030G	110-458	12	45	2" SPOOL	1/4-28	#10-24	BI-DIR	BDEG	7.1	1, 3
8TA2010ES	110-190	12	30	2" SPOOL	1/4-28	#10-24	BI-DIR	N/A	6.58	1, 2, 3

SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 5" / 127mm
- Shaft diameter: .6272 -.6265
- Max Ambient Air: 93°C (200°F)

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

- 1 Totally Enclosed Brush Area
- 2 Corrosion Protected
- 3 Noise Filter Capacitor

AC172RA

BUS & COACH ALTERNATOR

APPLICATIONS:

- Motorcoach
- Shuttle Bus

Versions are available which are both mechanically and electrically interchangeable with the Bosch T1

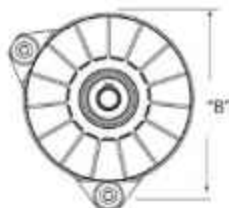
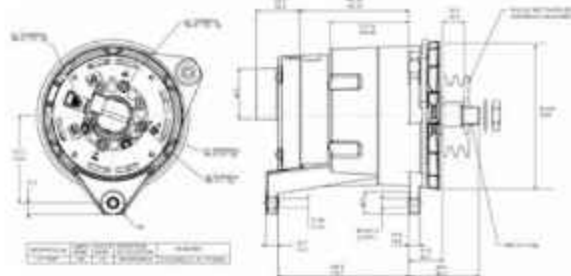
FEATURES:

- Originally developed to support the London Bus Fleets, for arduous traffic conditions and heavy system demands
- Now improved to provide an increased performance throughout its operational range
- Brush life has been increased by up to 60%
- Versions are available which are both mechanically and electrically interchangeable with the Bosch T1
- Extremely good low end performance
- Single, double and triple installations are possible
- Sealed for life high-specification bearings
- Regulator provides load dump and surge protection
- Enhanced slip-ring and brush design
- Multiple bracket options
- Reversible rotation
- Facilities for piped air

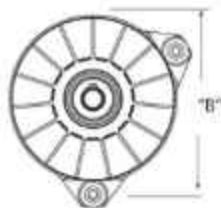
SWUNG MOUNT



Pulley not supplied



Type 1



Type 2

SPECIFICATIONS:

- System voltage: 24/28 Volt
- Frame: 128mm / 5.04"
- Max Operating Ambient: +100°C (212°F)

FEATURE CODES:

- 1 28 Volt Regulator
- 2 28.5 Volt Regulator
- 3 M12x1.5 front mounting hole
- 4 12.2 front mounting hole
- 5 M12x1.5 rear mounting hole
- 6 12.2 rear mounting hole
- 7 Fixed bush
- 8 Sliding bush

PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	TYPE	B+	B-	ROTATE	COMMENTS	FEATURE
1277640	1277640S	24	140	SWUNG	1	M8X1.25	M8X1.25	BI-DIR	D.E.SHIELD L.H.FITTING	1, 3, 6, 7
1277670	1277670S	24	140	SWUNG	1	M8X1.25	M8X1.25	BI-DIR	D.E.SHIELD L.H.FITTING	1, 4, 6, 7
1277680	1277680S	24	140	SWUNG	1	M8X1.25	M8X1.25	BI-DIR	D.E.SHIELD L.H.FITTING	2, 4, 6, 8
1277690	1277690S	24	140	SWUNG	2	M8X1.25	M8X1.25	BI-DIR	D.E.SHIELD L.H.FITTING	1, 4, 6, 7
1277700	1277700S	24	140	SWUNG	2	M8X1.25	M8X1.25	BI-DIR	D.E.SHIELD L.H.FITTING	1, 4, 6, 8
1277710	1277710S	24	140	SWUNG	1	M8X1.25	M8X1.25	BI-DIR	D.E.SHIELD L.H.FITTING	2, 4, 6, 7
1277720	1277720S	24	140	SWUNG	2	M8X1.25	M8X1.25	BI-DIR	D.E.SHIELD L.H.FITTING	1, 3, 5, 8

AS 123

ADAPTED FOR RIGOROUS APPLICATIONS

APPLICATIONS:

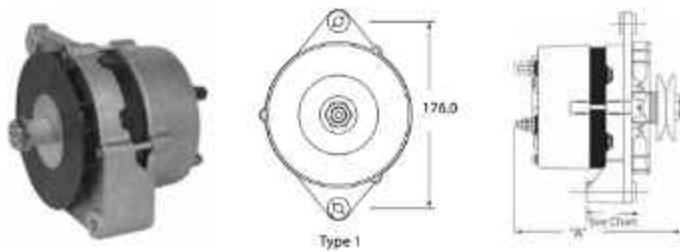
- Automotive
- Agriculture
- Material Handling
- Generator Sets
- Industrial

FEATURES:

- Bi-directional fan in a compact design for better cooling
- Thick film technology electronics
- High performance press fit diodes
- Normally internal sensing, also battery sensing and temperature sensing available
- Terminations provide for direct connection of warning lamp

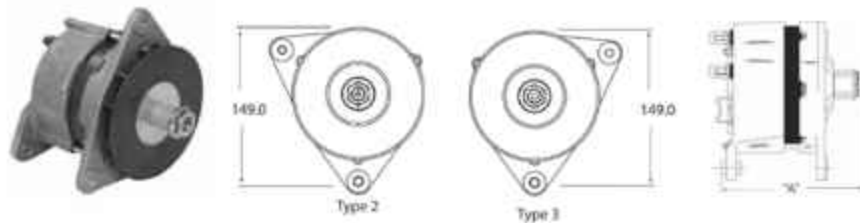
- Long life bearings
- Provision for earth terminal on machine frame if negative ground
- Speed sensing terminal for tachometer, auto-choke, pollution control and other speed dependent devices
- Provision for the attachment of an external suppression capacitor

SPOOL MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	TYPE	B+	B-	ROTATE	DIM. "A"	DIM. "B"	FEATURE
66021601C	66021601CS	12	65	56MM SPOOL	1	M8	*	BI-DIR	167.0	176.0	8
66021600C	66021600CS	24	50	50MM SPOOL	1	M8	*	BI-DIR	167.0	176.0	8
66021616C	66021616CS	24	55	76MM SPOOL	1	M5	*	BI-DIR	182.7	176.0	5, 10

SWING MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	TYPE	B+	B-	ROTATE	DIM. "A"	DIM. "B"	FEATURE
66021636C	66021636CS	12	70	SWING	2	M5	*	BI-DIR	167.4	149.0	6, 9
66021637	66021637CS	12	70	SWING	3	M5	*	BI-DIR	167.4	149.0	6, 9

SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 123mm / 4.84"
- Shaft diameter: see chart
- Max Ambient Air: 100°C (212°F)

FEATURE CODES:

- 1 Separate Field Control
 - 2 External regulator
 - 3 Temperature Sensing Regulator
 - 4 Bosch type plug
 - 5 Insulated ground
 - 6 Output - European termination
 - 7 15 mm shaft dia.
 - 8 17 mm shaft dia.
 - 9 17 mm long shaft
 - 10 19 mm shaft dia.
 - 11 Yazaki plug for excitation
 - 12 Variable pulley
 - 13 Single groove pulley
 - 14 2 groove pulley
 - 15 5 groove pulley
 - 16 70 mm double groove pulley
 - 17 8 groove poly-vee pulley
 - 18 VW terminal block
 - 19 Earth polarity
 - 20 10 mm clear hole in tap lug
- * Case ground - no B- needed

AS 128E

ADAPTED FOR RIGOROUS APPLICATIONS

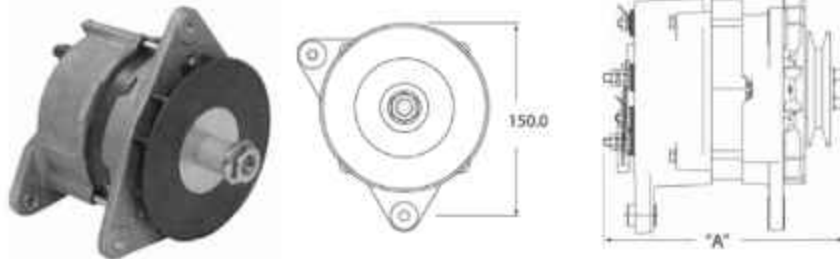
APPLICATIONS:

- Automotive
- Agriculture
- Material Handling
- Generator Sets
- Industrial

FEATURES:

- Bi-directional fan in a compact design for better cooling
- Performance is comparable to internal fan alternators
- Thick film technology electronics
- High performance press fit diodes
- Normally internal sensing, also battery sensing
- Terminations provide for direct connection of warning lamp
- Totally enclosed brush box
- Long life bearings
- Provision for earth terminal on machine frame if negative ground
- Speed sensing terminal for tachometer, auto-choke, pollution control and other speed dependent devices
- Provision for the attachment of an external suppression capacitor

SWING MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	DIM. "W"	FEATURE
66021535C	66021535CS	12	90	SWING	M6X1.0	*	BI-DIR	165.0	B, 9, 11

SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 128mm / 5.039"
- Shaft diameter: see chart
- Max Ambient Air: 100°C (212°F)

FEATURE CODES:

- 1 Separate Field Control
 - 2 External regulator
 - 3 Temperature Sensing Regulator
 - 4 Bosch type plug
 - 5 70 mm pulley
 - 6 65 mm variable pulley
 - 7 Single groove pulley
 - 8 80 mm pulley
 - 9 17 mm shaft dia.
 - 10 Supplied with Multi-fit kit
 - 11 Marine
- * Case ground, no B- needed

AVI 128

DUAL INTERNAL FAN ALTERNATOR

APPLICATIONS:

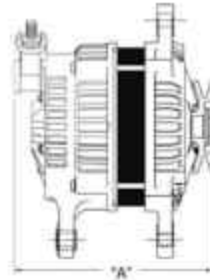
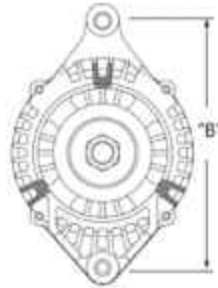
- Automotive
- Light Duty Truck
- Marine
- Material Handling

FEATURES:

- Two fans, state-of-the-art design, ventilate separately: electronics, front winding, rear winding and rotor
- More efficient cooling
- Range of mounting and termination options
- Wide range of operating temperatures

- Completely self-contained unit with integral regulator, minimizing wiring
- Direct connection of charge warning lamp
- High temperature rated diodes, varnish and bearings
- Built-in surge protection
- Enclosed brush box
- Bearings lubricated for life

J180 MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	DIM. "A"	DIM. "B"	FEATURE
35214655	35214655S	12	80	J180	M6X1.0	*	CW	170.0	170.0	1, 10

SPECIFICATIONS:

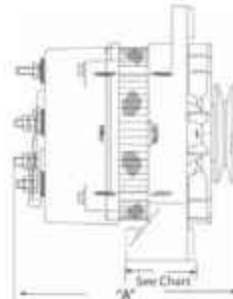
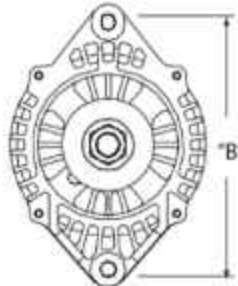
- System voltage: 12 Volt
- Frame: 128mm / 5.039"
- Shaft diameter: 17mm
- Max Ambient Air: 100°C (212°F)

FEATURE CODES:

- 1 1 groove pulley
- 2 2 groove pulley
- 3 4 groove pulley
- 4 5 groove pulley
- 5 6 groove pulley
- 6 8 groove pulley
- 7 Multi-groove pulley
- 8 Black powder coated
- 9 Heat shield on rear
- 10 17 mm shaft dia.
- 11 Terminal equivalent to Yazaki

* Case ground, no B- needed

SPOOL MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	DIM. "A"	DIM. "B"	FEATURE
35214605	35214605S	12	80	76MM SPOOL	M6X1.25	*	CW	197.0	170.0	6, 10
35214965	35214965S	12	90	51MM SPOOL	M6X1.0	*	CW	180.4	171.0	1, 10
35214615	35214615S	12	110	27MM SPOOL	M6X1.0	*	CW	180.5	170.0	1, 10

BLD/BLP

BRUSHLESS ALTERNATOR

APPLICATIONS:

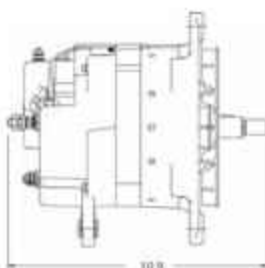
- Heavy and Medium Duty Truck
- Marine
- Off-Highway
- Construction
- Agricultural

FEATURES:

- These Brushless Alternators produce output characteristics typically found only in brush type machines
- Superior performance at low rpm and long life
- Direct replacement for existing "4 Point" Pad and 4" J180 mount applications

- No brushes or slip rings to wear out
- Longevity in service means mileage extension and lower maintenance costs
- Large needle bearings, front and rear, to handle high belt loads with high temperature grease
- Rotor and coil mass is evenly distributed to assure balance and eliminate vibration

J180 MOUNT



SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 6 1/2" / 165mm
- Shaft diameter: .8736-.8741
- Max Ambient Air: 110°C (230°F)*

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

- 1 Hex shaft
- 2 Corrosion protected

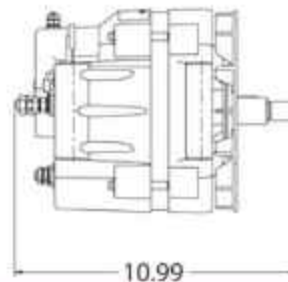
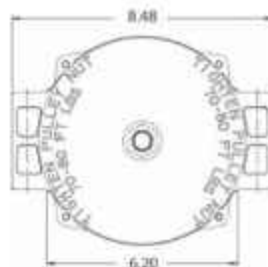
* Leece-Neville is aggressively re-engineering our high volume alternators to the 110 °C / 230 °F specification. However, not all alternators in the series listed may have been converted to date. Please contact your Leece-Neville representative for additional details.

PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	FEATURE
BLD2301	110-801	12	140	J-180	5/16-24 UNF	1/4-28 UNF	CW	B0I	
BLD2301	110-801	12	140	J-180	5/16-24 UNF	1/4-28 UNF	CW	B0I	
BLD2301GH	BLD2301GH	12	140	J-180	5/16-24 UNF	1/4-28 UNF	CW	B0I	1
BLD2305GH	BLD2305GH	12	140	J-180	5/16-24 UNF	1/4-28 UNF	CW	B0IK	1
BLD2130GH	BLD2130GH	12	160	J-180	5/16-24 UNF	1/4-28 UNF	CW	B1KO	1
BLD2307GH	BLD2307GH	12	160	J-180	5/16-24 UNF	1/4-28 UNF	CW	B0I	1
BLD2308GH	BLD2308GH	12	160	J-180	5/16-24 UNF	1/4-28 UNF	CW	B0IK	1
BLD2331GH	BLD2331GH	12	185	J-180	5/16-24 UNF	1/4-28 UNF	CW	B0I	1
BLD2333GH	BLD2333GH	12	185	J-180	5/16-24 UNF	1/4-28 UNF	CW	B1KO	1
BLD3314GH	BLD3314GH	24	140	J-180	5/16-24 UNF	1/4-28 UNF	CW	B0IK	1
BLD3315GH	BLD3315GH	24	140	J-180	5/16-24 UNF	1/4-28 UNF	CW	B0IK	1, 2
BLD3320	BLD3320	24	140	J-180	5/16-24 UNF	1/4-28 UNF	CW	B0IK	1, 2
BLD3338GH	BLD3338GH	24	140	J-180	5/16-24 UNF	1/4-28 UNF	CW	N	1, 2

BLD/BLP (Continued)

BRUSHLESS ALTERNATOR

PAD MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	FEATURE
BLP2303GH	BLP2303GH	12	140	PAD	5/16-24 UNF	1/4-28 UNF	CW	BDI	1
BLP2306	110-810	12	140	PAD	5/16-24 UNF	1/4-28 UNF	BI-DIR	B DIK	
BLP2306GH	BLP2306GH	12	140	PAD	5/16-24 UNF	1/4-28 UNF	CW	B DIK	1
BLP2318	BLP2318	12	140	PAD	5/16-24 UNF	1/4-28 UNF	CW	BDI	
BLP2131GH	BLP2131GH	12	160	PAD	5/16-24 UNF	1/4-28 UNF	CW	BIKO	1
BLP2309GH	BLP2309GH	12	160	PAD	5/16-24 UNF	1/4-28 UNF	CW	BDI	1
BLP2310GH	BLP2310GH	12	160	PAD	5/16-24 UNF	1/4-28 UNF	CW	B DIK	1
BLP2319	BLP2319	12	160	PAD	5/16-24 UNF	1/4-28 UNF	CW	BCIK	
BLP2332GH	BLP2332GH	12	185	PAD	5/16-24 UNF	1/4-28 UNF	CW	BDI	1
BLP2334GH	BLP2334GH	12	185	PAD	5/16-24 UNF	1/4-28 UNF	CW	BIKO	1
BLP3312	110-816	24	140	PAD	5/16-24 UNF	1/4-28 UNF	CW	B DIK	
BLP3317	BLP3317	24	140	PAD	5/16-24 UNF	1/4-28 UNF	CW	B DIK	
BLP3322	BLP3322	24	140	PAD	5/16-24 UNF	1/4-28 UNF	CW	N	2

SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 6 1/2" / 165mm
- Shaft diameter: .8736-.8741
- Max Ambient Air: 110°C (230°F)*

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

- 1 Hex shaft
- 2 Corrosion protected

* Leece-Neville is aggressively re-engineering our high volume alternators to the 110 °C / 230 °F specification. However, not all alternators in the series listed may have been converted to date. Please contact your Leece-Neville representative for additional details.

LBA-LBP

LONG BRUSH ALTERNATORS

APPLICATIONS:

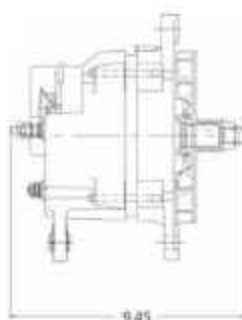
- Heavy Duty Truck
- Off-Highway

FEATURES:

- 60% longer brushes for extended life and a one piece brush holder for enhanced reliability and vibration resistance
- Incorporates features such as "conical lock" thru bolts, heavier rectifier system, heavy duty aluminum housings and various "thread lock" systems to assure structural integrity

- Strong low-end performance, where the vehicle power requirements are high but the average engine operating speed is relatively low
- Sealed brush cavity eliminates contamination
- All major components are interchangeable with the BLHA/BLHP series making upgrades for service parts minimal

J180 MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	FEATURE
LBA2198MDH	LBA2198MDH	12	110	J-180	5/16-24	1/4-28	CW	BDI	1, 2
LBA2108	110-900	12	135	J-180	5/16-24	1/4-28	CW	BDI	2
LBA2108GH	LBA2108GH	12	135	J-180	5/16-24	1/4-28	CW	BDI	1, 2
LBA2107	110-901	12	145	J-180	5/16-24	1/4-28	CW	BDI	2
LBA2107GH	LBA2107GH	12	145	J-180	5/16-24	1/4-28	CW	BDI	1, 2
LBA2119	110-904	12	145	J-180	5/16-24	1/4-28	CW	BDI	3
LBA2115	110-573	12	150	J-180	5/16-24	1/4-28	CW	BDI	2
LBA2108	110-902	12	160	J-180	5/16-24	1/4-28	CW	BDI	2
LBA2108GH	LBA2108GH	12	160	J-180	5/16-24	1/4-28	CW	BDI	1, 2

SPECIFICATIONS:

- System voltage: 12 Volt
- Frame: 6 1/2" / 165mm
- Shaft diameter: .8736-.8741
- Max Ambient Air: 110°C (230°F)*

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

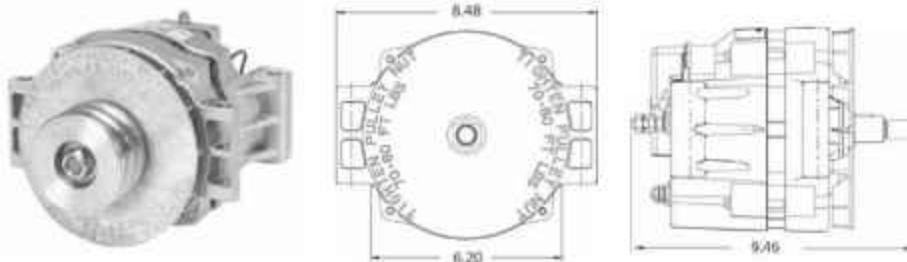
- 1 Hex shaft
- 2 Regulator voltage 14.2
- 3 Regulator voltage 14.4
- 4 Regulator voltage 14.0

* Leece-Neville is aggressively re-engineering our high volume alternators to the 110 °C / 230 °F specification. However, not all alternators in the series listed may have been converted to date. Please contact your Leece-Neville representative for additional details.

LBA-LBP (Continued)

LONG BRUSH ALTERNATORS

PAD MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	B+	B-	ROTATE	REGULATOR	FEATURE
LBP2176	110-910	12	135	PAD	5/16-24	1/4-28	CW	BDI	2
LBP2176GH	LBP2176GH	12	135	PAD	5/16-24	1/4-28	CW	BDI	1, 2
LBP2184	110-913	12	135	PAD	5/16-24	1/4-28	CW	BDI	3
LBP2190	110-916	12	135	PAD	5/16-24	1/4-28	CW	BDIK	2
LBP2185	110-914	12	145	PAD	5/16-24	1/4-28	CW	BDI	3
LBP2187	110-911	12	145	PAD	5/16-24	1/4-28	CW	BDI	2
LBP2187GH	LBP2187GH	12	145	PAD	5/16-24	1/4-28	CW	BDI	1, 2
LBP2188	110-917	12	145	PAD	5/16-24	1/4-28	CW	BDIK	2
LBP2188GH	LBP2188GH	12	145	PAD	5/16-24	1/4-28	CW	BDIK	1, 2
LBP2132	110-573P	12	150	PAD	5/16-24	1/4-28	CW	BDI	2
LBP2180	110-912	12	160	PAD	5/16-24	1/4-28	CW	BDI	2
LBP2180GH	LBP2180GH	12	160	PAD	5/16-24	1/4-28	CW	BDI	1, 2
LBP2186	110-915	12	160	PAD	5/16-24	1/4-28	CW	BDI	3
LBP2186GH	LBP2186GH	12	160	PAD	5/16-24	1/4-28	CW	BDI	1, 3
LBP2189	110-918	12	160	PAD	5/16-24	1/4-28	CW	BDIK	2

SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 6 1/2" / 165mm
- Shaft diameter: .8736-.8741
- Max Ambient Air: 110°C (230°F)*

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

- 1 Hex shaft
- 2 Regulator voltage 14.2
- 3 Regulator voltage 14.4
- 4 Regulator voltage 14.0

* Leece-Neville is aggressively re-engineering our high volume alternators to the 110 °C / 230 °F specification. However, not all alternators in the series listed may have been converted to date. Please contact your Leece-Neville representative for additional details.

MDA/110-444

MULTIPLE DUTY ALTERNATOR

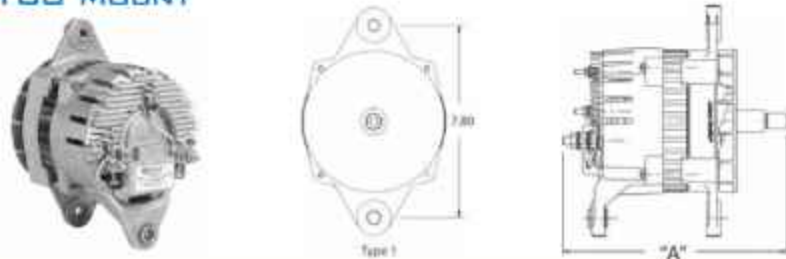
APPLICATIONS:

- Suitable for Class 3 through Class 8 Applications

FEATURES:

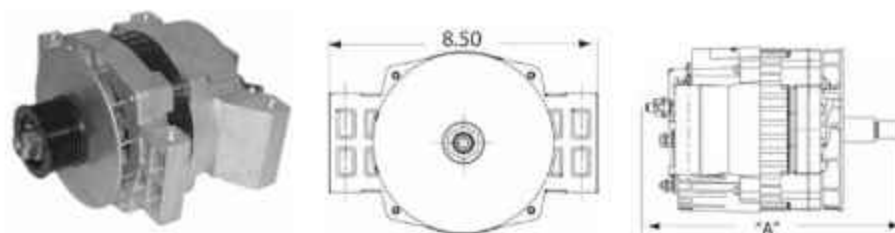
- Designed for Worldwide truck applications where output, compact size and economics are the key selection criteria
- Compact frame design allows easy adaptation to existing vehicle applications
- Strong low-end performance and cool operating temperature over entire output range
- Robust design with end frame structures that offer a wide variety of interchangeable mounting configurations
- Use of proven regulator designs assures reliable operation and allows a variety of features
- New curved blade cooling fan provides increased airflow and assures cooler operating temperatures

J180 MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	TYPE	B+	B-	ROTATE	REGULATOR	DIM. "A"	FEATURE
MDA2923	MDA2923	12	110	J-180	1	M8X1.25	M6X1.0	CW	BDIK	8.93	1
MDA2932	110-444	12	150	J180	1	M8X1.25	M6X1.0	CW	BDIK	8.93	1, 5
MDA3922	MDA3922	24	80	J-180	1	M8X1.25	M6X1.0	CW	BDIK	8.94	1, 5
MDA3925	MDA3925	24	80	J-180	1	M8X1.25	M6X1.0	CW	BDIK	8.48	2, 5
MDA3929	MDA3929	24	80	J-180	1	M8X1.25	M6X1.0	CW	BCI	8.94	1, 3

PAD MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	TYPE	B+	B-	ROTATE	REGULATOR	DIM. "A"	FEATURE
MDP2934	110-444P	12	150	PAD	1	M8X1.25	M6X1.0	CW	BDIK	8.90	1, 5
MDP3939H	MDP3939H	24	55	PAD	1	M6	M8	CW	BDEI	8.90	1.8

SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 144 mm
- Shaft diameter: See Feature Codes
- Max Ambient Air: 93°C (200°F)

REGULATOR CODES:

- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

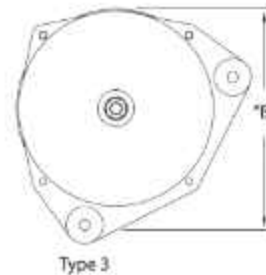
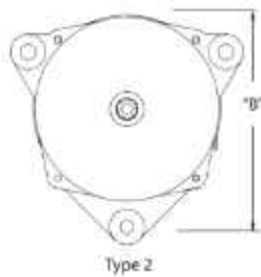
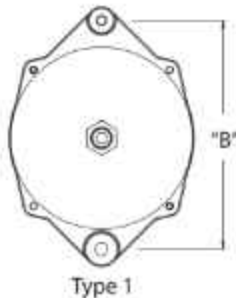
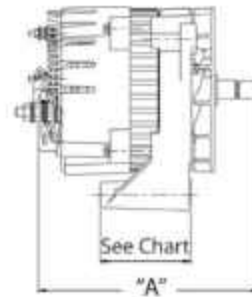
FEATURE CODES:

- 1 .8736-.8741 shaft
- 2 17mm shaft
- 3 Remote voltage sense terminal
- 4 Voltage sense terminal
- 5 Trio terminal
- 6 Painted
- 7 Capacitor
- 8 Isolated ground

MDA/110-444 (Continued)

MULTIPLE DUTY ALTERNATOR

SPOOL MOUNT



PART NO.	SALES NO.	VOLTS	AMPS	MOUNT	TYPE	B+	B-	ROTATE	REGULATOR	DIM. "A"	DIM. "B"	FEATURE
MDA2934	MDA2934	12	130	2" SPOOL	1	M8X1.25	M6X1.0	CW	B/D/K	8.93	7.20	1, 5
MDA2905	MDA2905	12	130	3MM SPOOL	3	M8X1.25	M6X1.0	CW	B/D/K	8.50	6.34	1, 5
MDA3921	110-873	24	80	6MM SPOOL	3	M6X1.25	M6X1.0	CW	B/D/K	8.48	6.34	2, 5
MDA3920	110-872	24	80	8MM SPOOL	2	M6X1.25	M6X1.0	CW	B/D/K	8.50	5.63	2, 5, 7
MDA3928	MDA3928	24	80	10MM SPOOL	2	M6X1.25	M6X1.0	CW	B/D/K	8.48	6.34	2, 7, 8

SPECIFICATIONS:

- System voltage: 12/24 Volt
- Frame: 144 mm
- Shaft diameter: See Feature Codes
- Max Ambient Air: 93°C (200°F)

REGULATOR CODES:

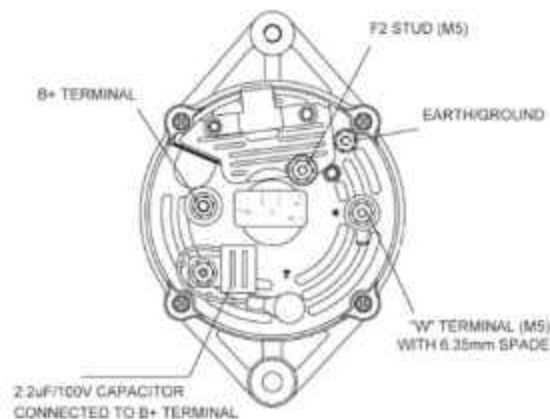
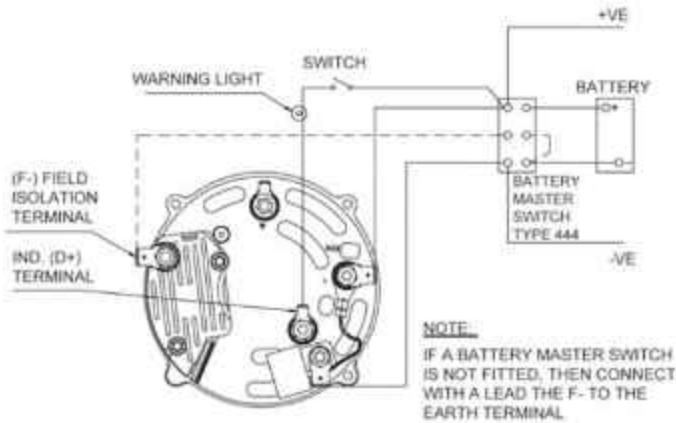
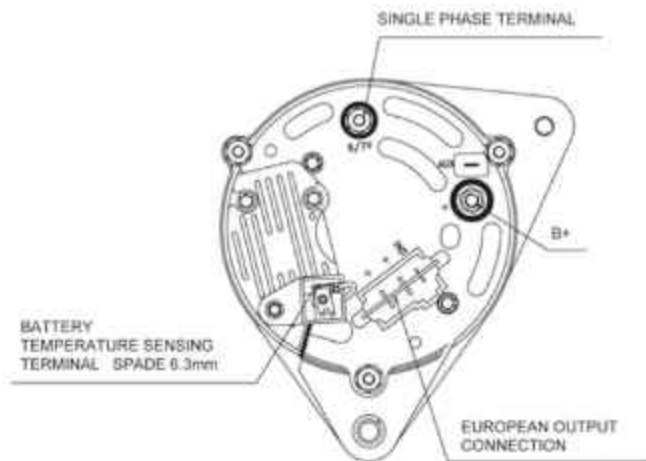
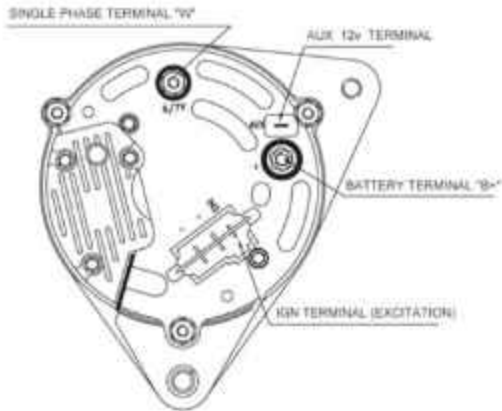
- A External location
- B Integral location
- C External sense
- D Internal sense
- E Diode trio
- G Ignition excite
- H External excite
- I Self excite
- K Lamp driver
- L Temp compensation
- M D+
- N Multi-power regulator
- O Remote sense

FEATURE CODES:

- 1 .8736-.8741 shaft
- 2 17mm shaft
- 3 Remote voltage sense terminal
- 4 Voltage sense terminal
- 5 Trio terminal
- 6 Painted
- 7 Capacitor
- B Isolated ground

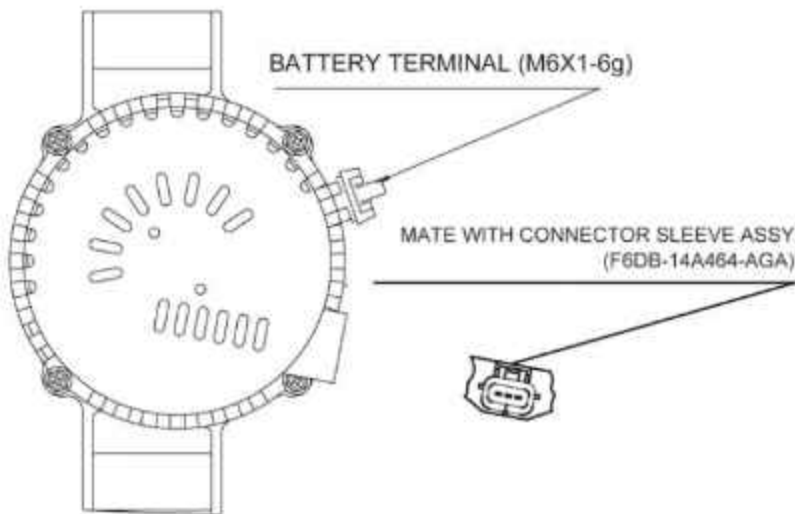
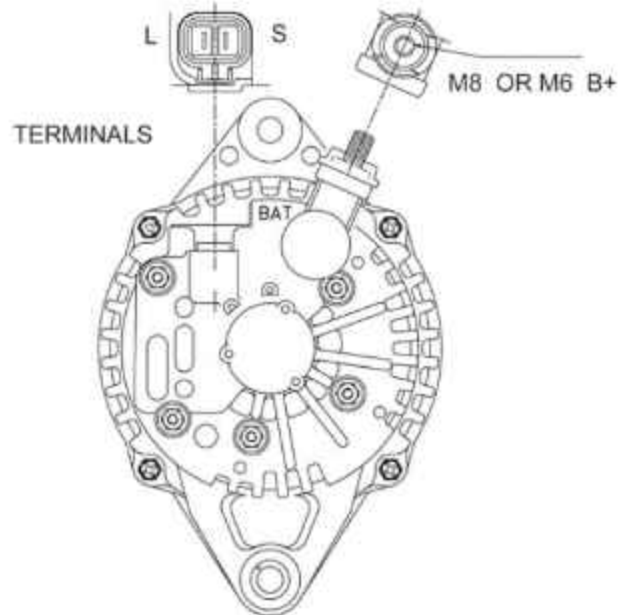
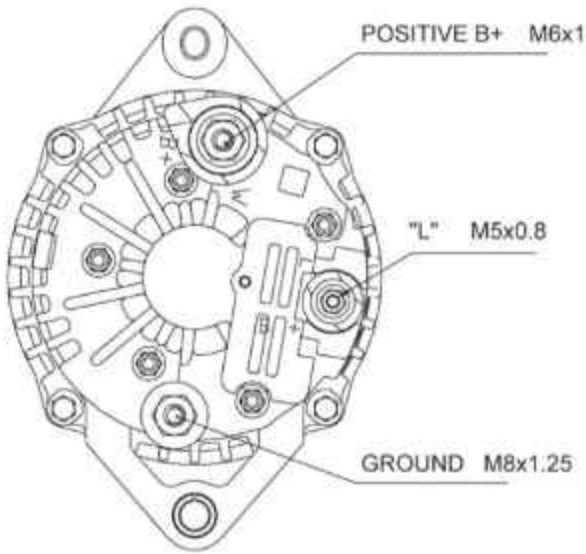
TECHNICAL REFERENCE INFORMATION
ALTERNATOR TYPICAL CONNECTIONS & WIRING DIAGRAMS

Typical wiring diagram for AS123 alternators



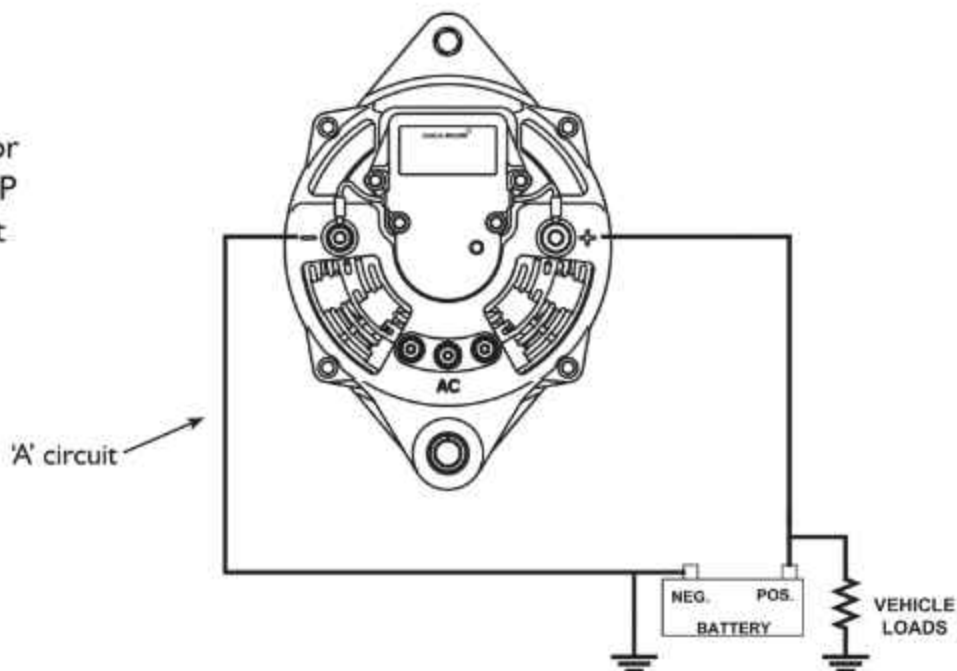
TECHNICAL REFERENCE INFORMATION
ALTERNATOR TYPICAL CONNECTIONS & WIRING DIAGRAMS

Typical wiring diagram for AVi128 alternators



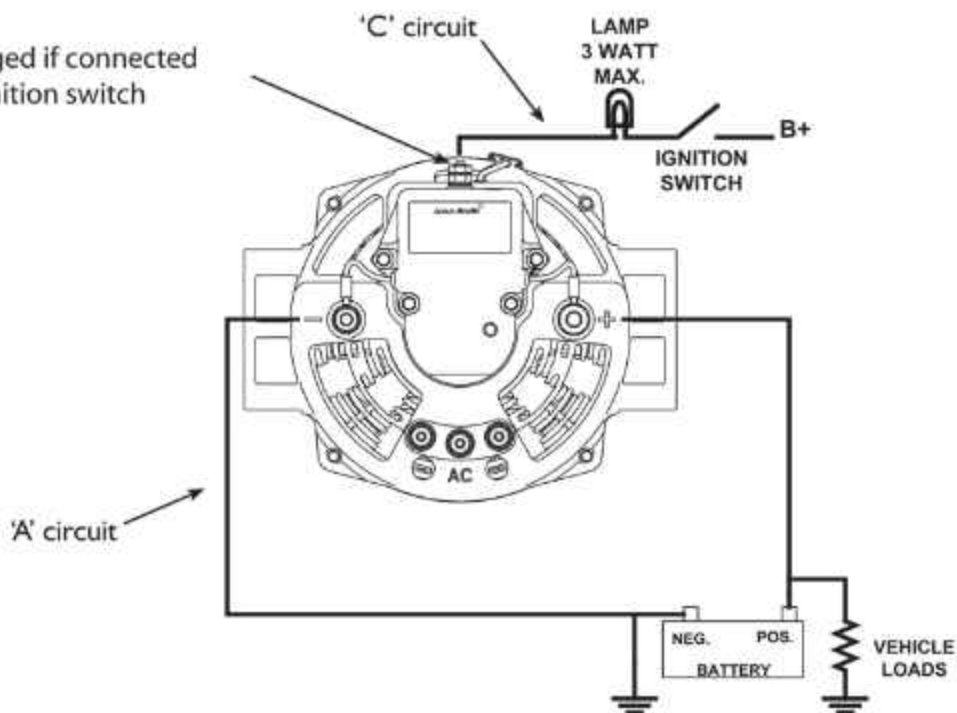
TECHNICAL REFERENCE INFORMATION
ALTERNATOR TYPICAL CONNECTIONS & WIRING DIAGRAMS

Typical wiring diagram for 8LHA/BLD/BLP/LBA/LBP series alternator without lamp driver circuit



Notice!!
Lamp connection only.
Regulator will be damaged if connected directly to battery or ignition switch

Wiring diagram for BLD/BLP/LBA/LBP series alternator with lamp driver circuit

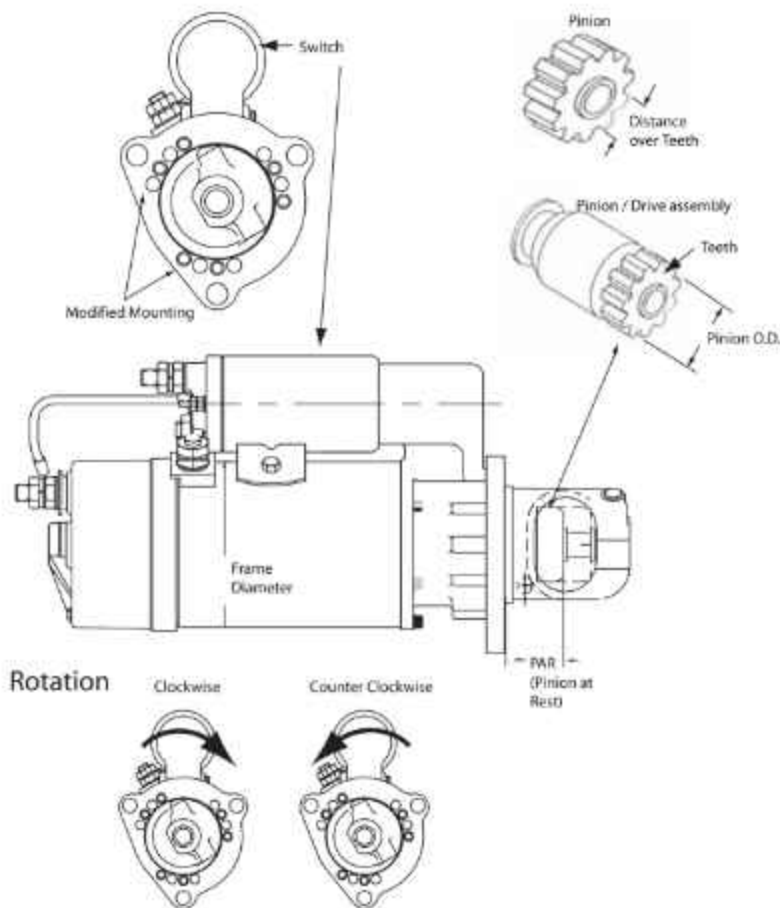


STARTER MOTOR SECTION

Glossary of Starter Motor Terms

Pinion	Part of the drive assembly, the teeth on the pinion engage the ring gear of the flywheel
Pinion O.D.	The outside diameter measurement across the pinion
Teeth	The part of the pinion that engages the ring gear of the flywheel
Distance over teeth	See illustration- the distance from the outside edge of one tooth to the outside edge of the second tooth
PAR	Pinion at rest, the distance from the mounting flange to the end of the pinion when not engaged (See Illustration)
Pitch	The number used to determine size and shape of tooth on pinion
Modified mounting	A standard SAE 1 or 3 that has additional holes for rotatable mounting to the starter frame
Switch	Solenoid - The part of the starter that activates the engagement/disengagement of the pinion to the flywheel
Rotation	CW – Clockwise direction when viewing the starter from the drive end CCW – Counter Clockwise direction when viewing the starter from the drive end

Glossary Illustrations



TITAN™ SERIES STARTER MOTORS

Leece-Neville is committed to providing the quality products you need to keep you moving. That's why we developed the Titan™ Series Starter Motors. These gear reduced starters are engineered to provide more power, maximum flexibility and the very latest technological advances for maximum dependability.

Gear reduced starters provide more power in a package that is considerably smaller and lighter than conventional starters. The in-line design further reduces the space required for the unit, allowing for maximum flexibility with the minimum number of units. A rotatable nose housing greatly reduces the number of part numbers that are required, keeping inventory levels low while keeping customer service at a maximum.

The Titan™ Series starter motors have electrical soft start, the most dependable way to eliminate milling of the ring gear. The soft start design slowly rotates the pinion as the starter is being engaged, ensuring that the pinion is fully engaged with the ring gear before full power is applied. The magnetic switch is a necessary component of the electrical soft start capability, allowing for minimal connection wiring, creating maximum dependability, and allowing for simple replacement of any conventional starter motor. The series includes the Titan™101, Titan™105 and Titan™125.

Leece-Neville also incorporates over crank protection as part of the internal design of the Titan™125 series starters. This eliminates the external plastic connector that can break or corrode, while it protects the motor from overheating during high stress situations.

The Titan™125 series starters are the strongest commercially available 12/24 volt starter available on the market today. At 8kW output this unit has been engineered to provide maximum speed at the required torque to start the toughest engines in the toughest environments.



MS2 STARTER MOTORS

When Leece-Neville began manufacturing starter motors we knew we wanted to provide the best possible product to our customers. Part of that commitment to quality is never ending improvement.

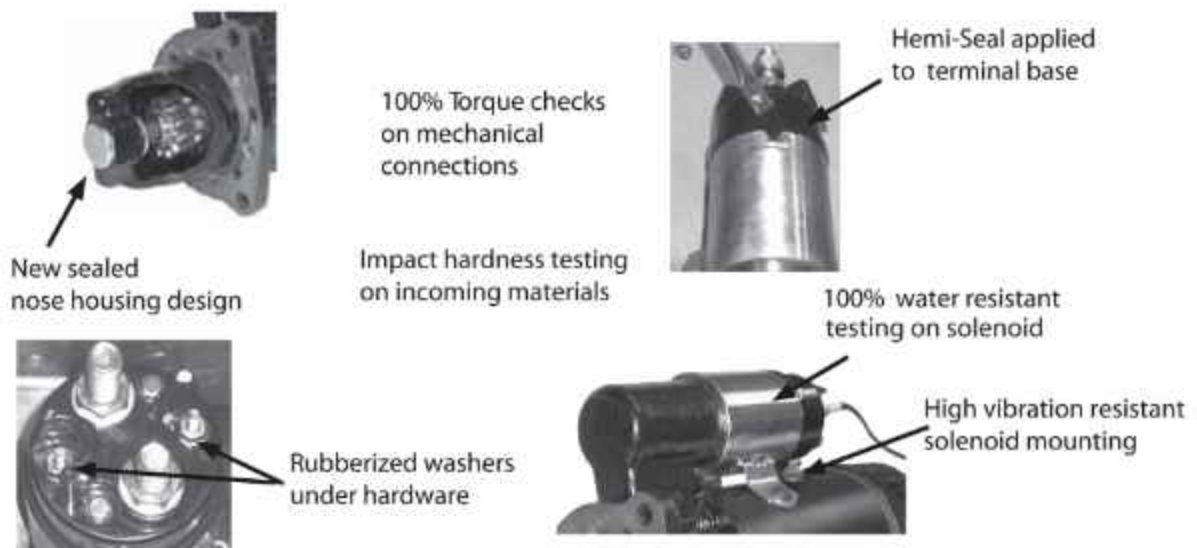
Our MS2 Series direct drive starter motors are now better than ever! This new series is high corrosive resistant, and with its robust, heavy duty design it provides higher reliability and longer life for your medium and heavy duty diesel applications.

New design features include a sealed nose design that keeps lubrication in and contamination out of the nose bushing, extending nose bush life. The armature shaft is coated with a Teflon[®]-moly coating, making it resistant to the adherence of corrosives, and our drive assembly contains alloy bearing material with grease retention features.

To prevent moisture penetration into the field coil assemblies we employ a double vacuum impregnating process. Even our water resistant solenoid is designed to prevent moisture from corroding the solenoid contacts.

And that's not all. We perform 100% torque checks on mechanical connections, and incoming materials are subject to impact hardness testing.

We never stop striving for excellence, because the better we perform the better your vehicles will perform. And that's a win-win partnership for everyone to be proud of!

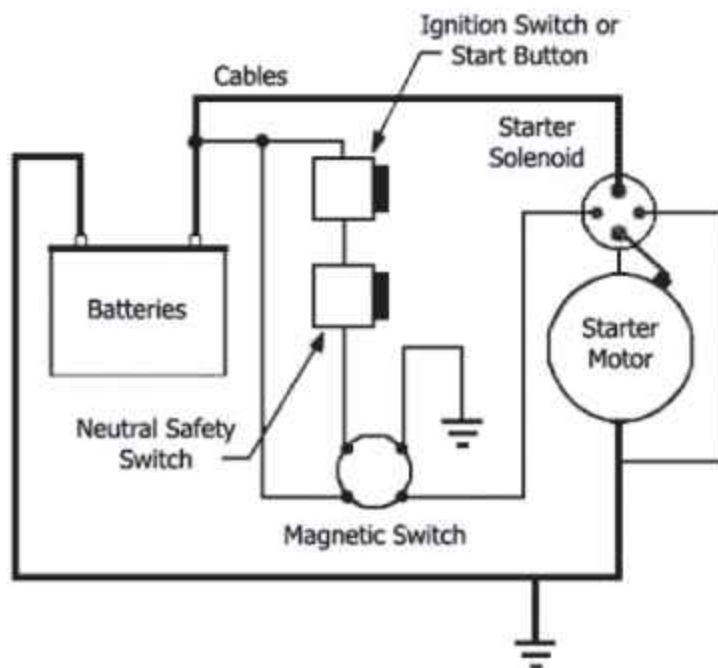


TECHNICAL REFERENCE INFORMATION
MEDIUM & HEAVY DUTY STARTER MOTOR FAMILY CRANKING SYSTEMS

Thermal Over-crank Protection

Thermal over-crank protection is provided on some models. A plug is provided in the rear cover of the starter motor, which connects into the vehicle wiring harness. The plug is connected internally to a heat sensitive switch, which opens, causing the starter to stop cranking when excessive temperatures are reached during extended cranking periods. Once the starter cools down, the switch closes, allowing for the normal operation of the starter once again.

Typical Starting Circuit Diagram

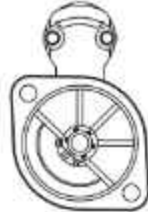


For starting and charging systems training and fault diagnosis, please log onto www.prestolite.com or contact technical services at 1-866-288-9853.

STARTER MOTOR FLANGE MOUNTS REFERENCE



Mount A1



Mount B1



Mount B1A



Mount C1



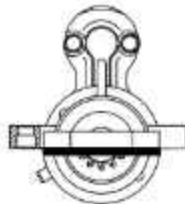
Mount D1



Mount E1



Mount F1



Mount G1



Mount H1



Mount J1



Mount K1



Mount K2



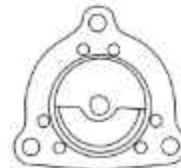
Mount K3



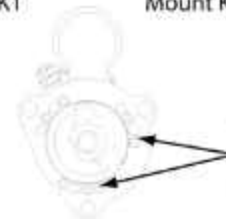
Mount L1



SAE J542 Type 1



SAE J542 Type 3



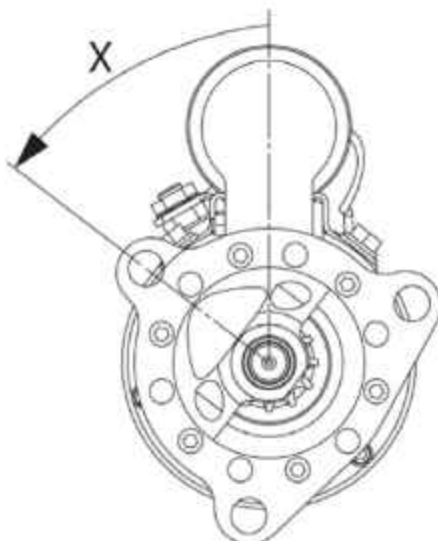
additional
mounting
holes

1 Mod - SAE J542 Type 1 mount,
modified mounting holes
ex.: Mount L1

3 Mod - SAE J542 Type 3 mount,
modified mounting holes

TECHNICAL REFERENCE INFORMATION
GUIDE FOR NOSE HOUSING ROTATION CONVENTION

Viewing the starter motor from the drive end, the solenoid switch is used as the zero degree position. The mounting hole on the flange opposite the pinion opening is then used as the pointer for the angular rotation of the nose.



Rotatable Nose Application Details
for MS2 Starter Motors

Nose Housing Part Number	6512-85A	6512-85B	6512-85C	6512-85D
Angle Of Rotation Counterclockwise X	15	37.5	22.5	27
	45	67.5	52.5	57
	75	97.5	82.5	87
	105	127.5	112.5	117
	135	157.5	142.5	147
	165	187.5	172.5	177
	195	217.5	202.5	207
	225	247.5	232.5	237
	255	277.5	262.5	267
	285	307.5	292.5	297
	315	337.5	322.5	327
	345	367.5	352.5	357

The data table shown above can be used to re-clock the nose housing position from one type of starter to another type by 30° at a time. Different nose housings will produce a different set of angles achievable within the specific range. By matching the original starter part number to the angle on the table, you can determine what the alternative starter part number will be by referencing the application guide.

TITAN™ 101

IN-LINE GEAR REDUCED STARTER MOTOR
PART OF THE ROAD WARRIOR™ SERIES

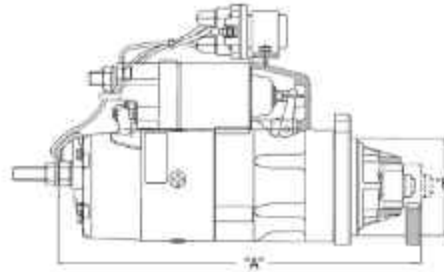
APPLICATIONS:

- Medium and Light Duty Applications
- Approved for diesel engines up to 8.5 Liters

FEATURES:

- 3.5kW Output – power to spare for today's demanding medium and light duty applications
- Integral mag switch relay – minimal wiring between relay and solenoid, assures more reliable starting circuit
- Electrical soft start – eliminates ring gear milling, as pinion slowly rotates while engaging to assure full meshing before full power is applied
- Sealed noseless design – protects against ingress of dust, oil, water and other contaminants and abrasives
- In-line gear reduced – more power in a smaller package, the in-line design allows for the greatest installation flexibility
- OCP available – protects the motor from overheating during high stress situations

TITAN™ 101



SPECIFICATIONS:

- System voltage: 12/14 Volt
- Frame: 101mm / 3.97"
- Operating Temperature Range: -30°C to 120°C (-22°F to 248°F)
- Approx. weight: 19.8 lbs/9 kg

PART NO	SALES NO	VOLTS	MOUNT	ROTATION	SWITCH POS	OCP	NO. OF TEETH	PINION PITCH	PINION OD mm	PAR mm	IGN TERM	BAT TERM (S)	DIST OVER TEETH	DIM "A"	DIM "B"	FRAME LENGTH
35262430	35262430S	12	K1	CW	50°	NO	11	8/10	40.5	47.5	M12X1.75	M12X1.75	14.50	330.9	88.8	
35262470	35262470S	12	K1	CW	50°	YES	11	8/10	40.5	47.5	M12X1.75	M12X1.75	14.50	330.9	88.8	
35262530	35262530S	12	K1	CW	90°	YES	10	10/12	32.0	47.5	M12X1.75	M12X1.75	12.31	330.9	88.8	

TITAN™ 105

IN-LINE GEAR REDUCED STARTER MOTOR
PART OF THE ROAD WARRIOR™ SERIES

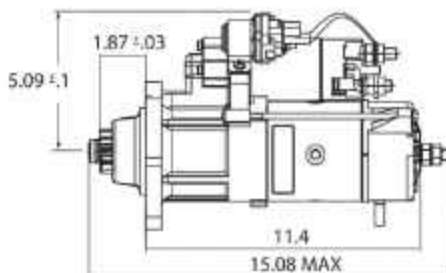
APPLICATIONS:

- Medium and Heavy Duty Applications
- Approved for diesel engines up to 11 Liters

FEATURES:

- 5kW Output - power to spare for today's demanding heavy and medium duty applications
- Integral mag switch relay - minimal wiring between relay and solenoid, assures more reliable starting circuit
- Rotatable flange for more versatility and less inventory
- Sealed noseless design - protects against ingress of dust, oil, water and other contaminants and abrasives
- Electrical soft start - eliminates ring gear milling, as pinion slowly rotates while engaging to assure full meshing before full power is applied
- In-line gear reduced - more power in a smaller package, the in-line design allows for the greatest installation flexibility
- Oil sealed for wet clutch applications

TITAN™ 105



SPECIFICATIONS:

- System voltage: 12/14 Volt, 24/28 Volt
- Frame: 105mm / 4.1"
- Operating Temperature Range: -40°C to 120°C (-40°F to 248°F)
- Approx. weight: 28.7 lbs/13 kg

PART NO.	SALES NO	VOLTS	MOUNT	ROTATION	SWITCH POS	DCP	NO. OF TEETH	PINION PITCH	PINION OD mm	PAR. mm	IGN. TERM	BAT. TERM (S)	DIST. OVER TEETH	DIM. "A"	DIM. "B"	FRAME LENGTH
M105R2002SE	M105302	12	SAE3	CW	82.5°	NO	12	8/10	46.6	47.5	M4	M12X1.75	15.6	443.0	92.0	
M105R2501SE	M105601	12	SAE1	CW	319°	NO	12	10/12	37.2	47.5	M4	M12X1.75	12.5	443.0	92.0	
M105R2510SE	M105610	12	SAE1	CW	319°	NO	10	8/10	39.9	47.5	M4	M12X1.75	15.5	443.0	92.0	
M105R2511SE	M105611	12	SAE1	CW	127.5°	NO	10	8/10	39.9	47.5	M4	M12X1.75	15.5	443.0	92.0	
M105R2512SE	M105612	12	SAE1	CW	127.5°	NO	12	8/10	46.6	47.5	M4	M12X1.75	15.6	443.0	92.0	
M105R3502SE	M105702	24	SAE3	CW	82.5°	NO	12	8/10	57.6	48.3	M5	M12X1.75	15.6	443.0	92.0	
M105R3503SE	M105703	24	SAE3	CW	82.5°	NO	11	6/8	46.7	48.3	M5	M12X1.75	20.8	443.0	92.0	
M105R3504SE	M105704	24	SAE1	CW	127.5°	NO	12	8/10	46.7	48.5	M5	M12X1.75	15.6	443.0	92.0	

TITAN™ 125

IN-LINE GEAR REDUCED STARTER MOTOR
PART OF THE ROAD WARRIOR™ SERIES

APPLICATIONS:

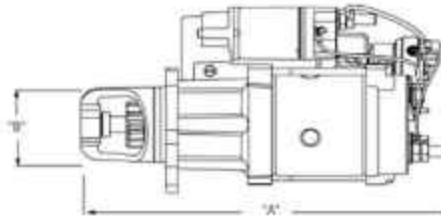
- Heavy Duty Big Bore Diesel Applications
- Heavy Duty Applications
- Extreme Conditions

FEATURES:

- 8/9kW Output - power to spare for today's demanding heavy and medium duty applications
- Integral mag switch relay - minimal wiring between relay and solenoid, assures more reliable starting circuit
- Electrical soft start - eliminates ring gear milling, as pinion slowly rotates while engaging to assure full meshing before full power is applied

- Sealed noseless design - protects against ingress of dust, oil, water and other contaminants and abrasives
- In-line gear reduced - more power in a smaller package, the in-line design allows for the greatest installation flexibility
- Oil sealed for wet clutch applications
- OCP standard - protects the motor from overheating during high stress situations

TITAN™ 125



SPECIFICATIONS:

- System voltage: 12/14 Volt, 24/28 Volt
- Frame: 125mm / 4.9"
- Operating Temperature Range: -40°C to 120°C (-40°F to 248°F)
- Approx. weight: 40.0 lbs/18.1 kg

PART NO	SALES NO	VOLTS	MOUNT	ROTATION	SWITCH POS	OCP	NO. OF TEETH	PINION PITCH	PINION OD mm	PAR mm	IGN TERM	BAT TERM (S)	DIST OVER TEETH	DIM "A"	DIM "B"	FRAME LENGTH
M125R2001SEP	M125601	12	SAE3	CW	82.5°	YES	11	6/8	46.5	48.5	M4	1/2-13	—	443.0	92.0	
M125R3001SEP	M125701	24	SAE3	CW	82.5°	YES	11	6/8	56.8	48.5	M4	1/2-13	20.3	443.0	92.0	

M-SERIES

TYPE: DIRECT DRIVE

APPLICATIONS:

- Class 6, 7 and 8 Trucks
- Off-Road Machinery
- Large Engine Equipment
- Military

FEATURES:

- Engineered for reliability, long life and low maintenance
- Heavy Duty and Medium Duty diesel engines up to 18 litres
- Superior engine cranking performance
- Directly interchangeable with competitive units
- Built-in overspeed protection
- Built-in environmental protection
- Compatibility with 12 volt, 24 volt and 32 volt systems
- Oil sealed for wet clutch application
- 2 frame lengths - standard, long
- For engines up to 18.0 liters

M-SERIES



SPECIFICATIONS:

- System voltage: 12/14, 24/28 Volt
- Frame: 130mm/5.1"
- Operating Temperature Range: Tested to -18°C
Engine compartment ambients to 94°C
- Approx. weight: 56.0 lbs/25.4 kg

PART NO.	SALES NO.	VOLTS	MOUNT	ROTATION	SWITCH POS.	OCP	NO. OF TEETH	PINION PITCH	PINION OD mm	PAR mm	IGN TERM	BAT TERM (S)	DIST OVER TEETH	DIM "A"	DIM "B"	FRAME LENGTH
M0017280ME	7280ME	12	3 MOD	CW	(-45°)	NO	12	8/10	48.3	48.7	10-32	1/2-13	0.61	19.27	3.62	STD.
M0017267ME	7267ME	12	3 MOD	CW	45°	NO	11	6/8	68.3	48.7	10-32	1/2-13	0.81	18.13	3.62	STD.
M0017324ME	7324ME	12	3 MOD	CW	88°	NO	11	6/8	58.7	46.7	10-32	1/2-13	0.81	19.27	3.62	STD.
M0017325ME	7325ME	12	3 MOD	CW	88°	NO	11	6/8	67.3	46.7	10-32	1/2-13	0.81	18.13	3.62	STD.
M0017072ME	7072ME	24	3 MOD	CW	45°	NO	12	8/10	48.3	46.7	10-32	1/2-13	0.61	19.02	3.62	STD.
M0017073ME	7073ME	24	3 MOD	CW	(-37.5°)	NO	12	8/10	46.3	46.7	10-32	1/2-13	0.61	19.02	3.62	STD.
M0017074ME	7074ME	24	3 MOD	CW	277.5°	NO	12	8/10	46.3	46.7	10-32	1/2-13	0.61	19.02	3.62	STD.
M0017075ME	7075ME	24	3 MOD	CW	82.5°	NO	12	8/10	46.3	46.7	10-32	1/2-13	0.61	19.02	3.62	STD.
M0017260ME	7260ME	24	3 MOD	CW	45°	NO	11	6/8	58.7	46.7	10-32	1/2-13	0.81	19.27	3.62	STD.
M0017261ME	7261ME	24	3 MOD	CW	80°	NO	11	6/8	58.7	46.7	10-32	1/2-13	0.81	19.27	3.62	STD.
M0017264ME	7264ME	24	3 MOD	CW	(-60°)	NO	13	8/10	49.7	47.6	10-32	1/2-13	0.62	19.02	3.62	STD.
M0017296ME	7296ME	24	3 MOD	CW	(-80°)	NO	13	8/10	58.7	48.7	10-32	1/2-13	0.62	18.66	3.62	STD.
M0017400ME	7400ME	24	3 MOD	CW	75°	NO	11	6/8	58.7	46.7	10-32	1/2-13	0.81	19.68	3.62	STD.
M0017406ME	7406ME	24	3 MOD	CW	(-82.5°)	NO	11	6/8	58.7	48.0	10-32	1/2-13	0.81	19.27	3.62	STD.
M0017407ME	7407ME	24	3 MOD	CW	82.5°	NO	11	6/8	58.7	48.0	10-32	1/2-13	0.81	19.27	3.62	STD.
M0017505ME	7505ME	24	1 MOD L1	CW	127.5°	NO	12	8/10	56.7	46.7	10-32	1/2-13	0.61	19.27	3.95	STD.
M0017506ME	7506ME	24	3 MOD	CW	(-30°)	NO	11	6/8	58.7	46.7	10-32	1/2-13	0.81	21.14	3.62	LONG
M0017507ME	7507ME	24	3 MOD	CW	87.5°	NO	11	6/8	58.7	46.7	10-32	1/2-13	0.81	21.14	3.62	LONG
M0017508ME	7508ME	24	3 MOD	CW	82.5°	NO	11	6/8	58.7	46.7	10-32	1/2-13	0.81	21.14	3.62	LONG
M0017511ME	7511ME	24	3 MOD	CW	(-52.5°)	NO	11	6/8	58.7	46.7	10-32	1/2-13	0.81	21.14	3.62	LONG
M0017514ME	7514ME	24	3 MOD	CW	(-30°)	NO	11	6/8	58.7	46.7	10-32	1/2-13	0.81	20.53	3.62	LONG
M0017515MC	7515MC	24	3 MOD	CW	87.5°	NO	16	20/30	21.1	27.1	10-32	1/2-13	NOSELESS	19.12	3.62	STD.
M0017702ME	7702ME	24	1 MOD L1	CW	(-52.5°)	NO	12	8/10	48.3	46.7	10-32	1/2-13	0.61	18.66	3.49	STD.
M0017703ME	7703ME	24	1 MOD L1	CW	127.5°	NO	12	8/10	48.3	46.7	10-32	1/2-13	0.61	19.27	3.49	STD.
M0017704ME	7704ME	24	3 MOD	CCW	(-37.5°)	NO	12	8/10	46.3	46.7	10-32	1/2-13	0.61	19.27	3.62	STD.
M0017705ME	7705ME	24	1 MOD L1	CW	127.5°	NO	12	8/10	48.3	46.7	10-32	1/2-13	0.61	19.27	3.62	STD.
M0017414MD	7414MD	24	3 MOD	CW	(-67.5°)	NO	16	20/30	21.1	27.1	10-32	1/2-13	NOSELESS	19.12	3.62	STD.
M0017504ME	7504ME	24/32	3 MOD	CW	(-82.5°)	NO	11	6/8	67.3	46.7	10-32	1/2-13	0.61	20.00	3.62	LONG
M0017518ME	7518ME	24/32	3 MOD	CW	(-37.5°)	NO	12	8/10	48.3	46.7	1/4-20	1/2-13	0.61	20.00	3.62	LONG
M0017520ME	7520ME	24/32	3 MOD	CW	(-322.5°)	NO	12	8/10	67.3	46.7	1/4-20	1/2-13	0.61	20.00	3.62	LONG

M74R

TYPE: PLANETARY GEAR REDUCTION

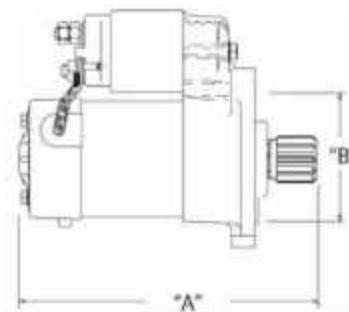
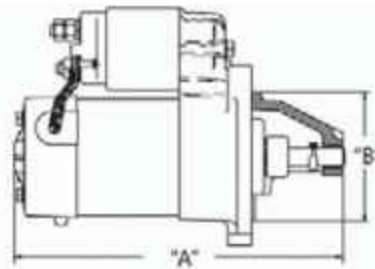
APPLICATIONS:

- Gasoline Engines and Small Diesel Engines
- Industrial
- Gen Sets
- Agriculture
- Material Handling
- Automotive
- On and Off Road

FEATURES:

- Designed for high reliability and longer life
- Delivers higher torque, resulting in lower battery current drain
- High strength polyester encapsulated armature with banding rings
- Armature sections brazed to barrel commutator
- High efficiency planetary gear box with shock absorption
- Sintered planetary gears ensure smooth operation and low noise level
- Corrosion resistant external components
- Dry clutch applications
- Superior performance
- Water / Splash proof
- Dust resistant

M74R



SPECIFICATIONS:

- Polarity: Negative Ground
- System voltage: 12/14 Volt
- Frame Diameter: 74mm/2.913"
- Operating Temperature Range: -30°C to 120°C (-22°F to 248 °F)
- Approx. weight: 7.5 lbs/3.4 kg

PART NO	SALES NO	VOLTS	MOUNT	ROTATION	SWITCH POS	OCP	NO. OF TEETH	PINION PITCH	PINION OD mm	PAR mm	IGN TERM	BAT TERM (S)	DIST OVER TEETH	DIM. "W"	DIM "B"
35258430S	35258430S	12	C1	CW	43°	NO	9	12/14	25.8	9.3	B-32	M10X1.5	10.45	211.7	76.1
35259220S	35259220S	12	D1	CCW	(-33°)	NO	10	-10/12	32.0	95.0	M6X1	M8X1.25	12.40	229.5	75.0
35260800S	35260800S	12	F1	CW	37°	NO	10	12/14	26.8	14.0	M6X1	M8X1.25	10.09	211.2	76.1
35261010S	35261010S	12	E1	CW	20°	NO	11	12/14	30.0	99.5	M5X0.8	M8X1.25	10.43	220.0	70.0
35261140S	35261140S	12	F1	CW	(-47°)	NO	10	12/14	27.8	14.0	M6X1	M8X1.25	10.09	209.4	68.5
35261180S	35261180S	12	E1	CW	20°	NO	11	12/14	30.0	99.5	M5X0.8	M8X1.25	10.43	212.0	70.0

M93R

TYPE: PLANETARY GEAR REDUCTION

APPLICATIONS:

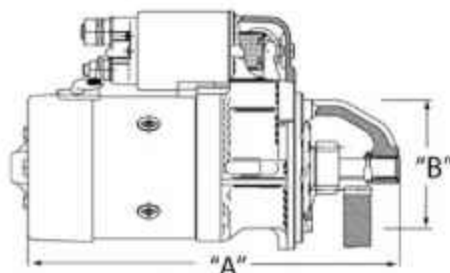
- Diesel Powered Trucks
- Low-Range Diesel Engines
- Transit Bus
- Shuttle Bus
- Industrial
- Gen Set
- Agriculture
- On and Off Road

FEATURES:

- Designed for high reliability and longer life
- Delivers higher torque, resulting in lower battery current drain
- High strength polyester encapsulated armature with banding rings
- Armature sections brazed to barrel commutator
- Dry clutch applications

- High efficiency planetary gear box with shock absorption
- Sintered planetary gears ensure smooth operation and low noise level
- Corrosion resistant external components
- Heavy-Duty performance
- Water / Splash proof
- Dust resistant

M93R



SPECIFICATIONS:

- System voltage: 12/14 Volt
- Frame: 93mm/3.661"
- Operating Temperature Range: -30°C to 120°C (-22°F to 248°F)
- Polarity: Negative Ground
- Approx. weight: 13.2 lbs/6.0 kg

PART NO.	SALES NO.	VOLTS	MOUNT	ROTATION	SWITCH POS.	OCP	NO. OF TEETH	PINION PITCH	PINION OD mm	PAR mm	IGN TERM	BAT TERM (S)	DIST OVER TEETH	DIM. "A"	DIM. "B"
35259540S	35259540S	12	SAE1	CW	(-35°)	NO	10	8/10	32.0	29.0	6.3X0.8	M10X1.5	12.00	255.9	88.5
35259580S	35259580S	12	B1	CW	(-48°)	NO	10	10/12	32.0	34.8	M5X0.8	M10X1.5	12.31	276.6	82.5
35259590S	35259590S	12	SAE1	CW	(-45°)	NO	10	8/10	40.0	47.5	M5X0.8	M10X1.5	15.37	278.6	88.9
35259620S	35259620S	12	SAE1	CW	(-35°)	NO	10	10/12	32.0	47.5	M6X1	M10X1.5	12.31	277.0	88.9
35259630S	35259630S	12	SAE1	CW	(-45°)	NO	10	10/12	32.0	47.5	M6X1	M10X1.5	12.31	277.0	88.9
35259650S	35259650S	12	SAE1	CW	(-45°)	NO	12	8/10	46.0	47.5	M6X1	M10X1.5	15.68	278.6	88.8
35259670S	35259670S	12	SAE1	CW	(-35°)	NO	12	8/10	46.0	47.5	M6X1	M10X1.5	15.68	277.0	88.9
35259690S	35259690S	12	SAE1	CW	(-35°)	NO	10	8/10	40.0	47.5	M5X0.8	M10X1.5	15.37	277.0	88.9
35259870S	35259870S	12	SAE1	CW	(-45°)	NO	10	10/12	32.0	45.0	4.8X0.8	M10X1.5	12.31	284.7	99.8
35261020S	35261020S	12	SAE1	CW	(-35°)	NO	10	10/12	32.0	46.4	M5X0.8	M10X1.5	12.31	255.0	88.8
35261175S	35261175S	12	SAE1	CW	(-35°)	NO	10	8/10	40.0	29.5	M5X0.8	M10X1.5	15.37	244.5	88.8
35261190S	35261190S	12	B1	CW	48°	NO	10	10/12	32.0	35.0	M5X0.8	M10X1.5	12.31	276.6	82.5

M100R

TYPE: PLANETARY GEAR REDUCTION

APPLICATIONS:

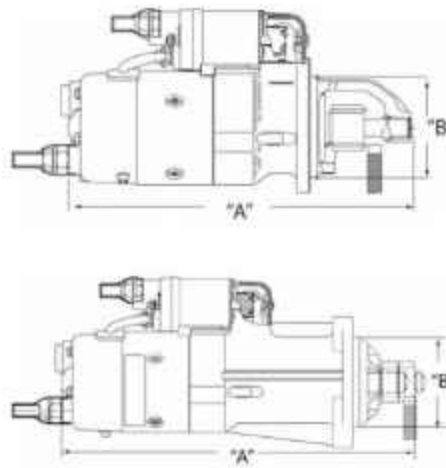
- Gasoline Engines and Small Diesel Engines
- School Bus
- Industrial
- Gen Set
- Agriculture
- On and Off Road

FEATURES:

- Designed to satisfy the parameters of larger engines and higher reliability for Medium Duty Diesel Engines 4, 5, 6 or 8 cylinders up to 7.8 litres
- An enhanced version of our M93R starter motor
- High strength polyester encapsulated armature with banding rings
- Armature sections brazed to barrel commutator

- High efficiency planetary gear box with shock absorption
- Sintered planetary gears ensure smooth operation and low noise level
- Protected against water and dust ingress
- Corrosion resistant external components
- Noseless Starters are Wet Clutch compatible
- Nosed Starters are Dry Clutch application

M100R



SPECIFICATIONS:

- Polarity: Negative Ground
- System voltage: 12/14, 24/28 Volt
- Frame Diameter: 100mm/3.937"
- Operating Temperature Range: -30°C to 120°C (-22°F to 248 °F)
- Approx. weight: 16.5 lbs/7.5 kg

PART NO	SALES NO	VOLTS	MOUNT	ROTATION	SWITCH POS	OCP	NO. OF TEETH	PINION PITCH	PINION OD mm	PAR mm	IGN TERM	BAT TERM (5)	DIST OVER TEETH	DIM "A"	DIM "B"
35259200S	35259200S	12	SAE1	CW	(-35°)	NO	10	10/12	32.0	47.5	M5 X 0.8	M12 X 1.75	12.26	306.8	88.8
35259260S	35259260S	12	SAE1	CW	(-45°)	NO	10	8/10	40.0	47.5	M6X1	M10X1.5	15.37	300.8	86.8
35259290S	35259290S	12	SAE1	CW	(-45°)	NO	10	10/12	32.0	47.5	M5X0.8	M10X1.5	12.26	300.6	86.8
35259510S	35259510S	12	SAE1	CW	45°	NO	13	10/12	39.7	47.5	M5X0.8	M10X1.5	12.20	306.8	88.9
35259520S	35259520S	12	SAE1	CW	(-35°)	NO	10	8/10	40.0	47.5	M5X0.8	M10X1.5	15.37	306.8	88.9
35259550S	35259550S	12	SAE1	CW	37°30'	NO	10	10/12	32.0	47.5	M5X0.8	M10X1.5	12.26	300.6	86.9
35259730S	35259730S	12	SAE3	CW	82.5°	NO	12	8/10	46.4	47.5	M5X0.8	M12X1.75	15.37	300.6	92.0
35259810S	35259810S	12	SAE3	CW	82.5°	YES	12	8/10	46.4	47.5	M5X0.8	M12X1.75	15.37	300.6	92.0
35259830S	35259830S	12	SAE3	CW	(-82.5°)	YES	10	8/10	40.0	47.5	M5X0.8	M12X1.75	15.37	300.6	92.0
35259840S	35259840S	12	SAE3	CW	(-82.5°)	NO	10	8/10	40.0	47.5	M5X0.8	M12X1.75	15.37	300.6	92.0
35260830S	35260830S	12	SAE1	CW	(-45°)	NO	10	8/10	40.0	47.5	M5X0.8	M12X1.75	15.37	300.6	86.8
35260840S	35260840S	12	SAE1	CW	(-45°)	YES	10	8/10	40.0	47.5	M5X0.8	M12X1.75	15.37	300.6	86.8
35260900S	35260900S	12	K1	CW	32°	NO	10	8/10	40.0	47.5	M5X0.8	M12X1.75	15.37	351.7	88.8
35261050S	35261060S	12	SAE3	CW	(-82.5°)	NO	12	8/10	46.4	47.5	M5X0.8	M12X1.75	15.73	300.6	92.0
35261110S	35261110S	12	SAE1	CW	(-45°)	NO	12	8/10	46.4	47.5	M5X0.8	M12X1.75	15.88	300.6	88.8
35261220S	35261220S	12	SAE1	CW	(-35°)	NO	10	10/12	32.0	31.6	M5X0.8	M12X1.75	12.26	306.8	86.8
35261680S	35261680S	12	K1	CW	32°	NO	11	8/10	40.5	47.5	M5X0.8	M12X1.75	14.50	351.7	88.8
35261690S	35261690S	12	K1	CW	32°	YES	11	8/10	40.5	47.5	M5X0.8	M12X1.75	14.50	351.7	86.9
35259780S	35259780S	24	SAE1	CW	(-35°)	NO	9	—	26.0	42.5	4.8X0.8	M10X1.5	14.38	308.2	96.5
35261185S	35261185S	24	SAE1	CW	(-35°)	NO	10	10/12	32.0	47.5	M5X0.8	M10X1.5	12.31	310.6	86.8

MS 1

TYPE: HEAVY DUTY PRE-ENGAGED MOTOR

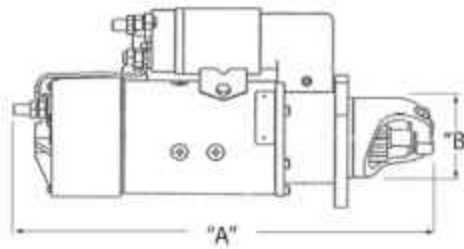
APPLICATIONS:

- Automotive
- Industrial
- Marine
- Military

FEATURES:

- Proven quality, reliability and durability
- Capable of starting engines of up to 15 litres or 915 cubic inches displacement
- Positorq drive provides overspeed protection and helical indexing to prevent abutment
- Environmentally sealed and suitable for wet clutch applications
- Multi-position nose housing means one starter will fit many applications
- Solenoid designed for extended contact life
- Fully-insulated return
- Protected against vibration
- High degree of parts commonality

MS 1



SPECIFICATIONS:

- System voltage: 24/28 Volt
- Frame: 130mm/5.118"
- Operating Temperature Range: -30°C to +94°C
- Approx. weight: 56 lbs/25.4 kg

PART NO.	SALES NO.	VOLTS	MOUNT	ROTATION	SWITCH POS.	OCP	NO. OF TEETH	PINION PITCH	PINION OD mm	PAR mm	IGN TERM	BAT TERM (S)	DIST OVER TEETH	DIM. "A"	DIM. "B"
MS1-300A	MS1-300A	24	SAE3	CW	52.5°	NO	11	6/8	2.25	1.643	M6	M12X1.75	14.50	19.05	3.62
MS1-301S	MS1-301S	24	SAE3	CW	82.5°	NO	11	6/8	2.25	1.643	M6	M12X1.75	14.50	19.05	3.62
MS1-302A	MS1-302A	24	SAE3	CW	292.5°	NO	11	6/8	2.25	1.633	M6	M12X1.75	14.50	19.05	3.62
MS1-455S	MS1-455S	24	SAE3	CW	315.0°	NO	12	8/10	1.825	1.500	10/32	1/2-13	15.68	19.17	3.62

MS2

TYPE: DIRECT DRIVE

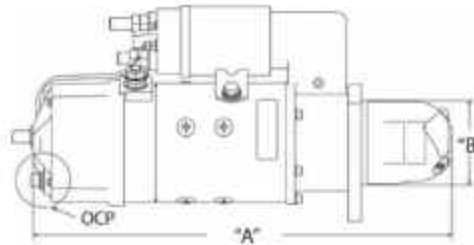
APPLICATIONS:

- High Powered Diesel Engines
- Off Highway
- Class 7, 8 Truck
- Transit Bus
- Marine
- Industrial
- Gen Set

FEATURES:

- Designed for Medium and Heavy Duty Diesel applications, engine size up to 14 litre diesel
- Radial tooth overrunning clutch provides overspeed protection and helical indexing to prevent abutment
- Rotatable nose housing: 12 positions, allowing for multiple applications and inventory savings
- 3/4" Shaft with fitted spring cleaning device
- Wet Bell Housing compatible
- Brazed armature connections to the commutator
- Extra solenoid brackets provide superior vibration resistance
- Insulated return wiring

MS2



SPECIFICATIONS:

- System voltage: 12/14 Volt
- Frame: 130mm/5.118"
- Operating Temperature Range: Tested to -18°C Engine compartment ambients to 94°C
- Approx. weight: 56 lbs/25.4 kg

PART NO	SALES NO	VOLTS	MOUNT	ROTATION	SWITCH POS	DCP	NO. OF TEETH	PINION PITCH	PINION OD mm	PAR mm	IGN TERM	BAT TERM (S)	BYPASS TERM	GROUND TERM	DIM. "A"	DIM "B"
MS2-500DS	MS2-500DS	12	SAE3	CW	67.5°	YES	11	6/8	2.25	1.84	10/32	1/2-13	NONE	1/2-13	18.18	3.62
MS2-501DS	MS2-501DS	12	SAE3	CW	67.5°	NO	11	6/8	2.25	1.84	10/32	1/2-13	NONE	1/2-13	18.18	3.62
MS2-502DS	MS2-502DS	12	SAE3	CW	52.5°	NO	11	6/8	2.25	1.84	10/32	1/2-13	NONE	1/2-13	18.18	3.62
MS2-503DS	MS2-503DS	12	SAE3	CW	82.5°	NO	11	6/8	2.25	1.84	10/32	1/2-13	NONE	1/2-13	18.18	3.62
MS2-504DS	MS2-504DS	12	SAE3	CW	82.5°	YES	11	6/8	2.25	1.84	10/32	1/2-13	NONE	1/2-13	18.18	3.62
MS2-505S	MS2-505S	12	SAE3	CW	82.5°	YES	12	8/10	1.83	1.50	10/32	1/2-13	NONE	1/2-13	19.17	3.62
MS2-506DS	MS2-506DS	12	SAE3	CW	82.5°	NO	12	8/10	1.83	1.50	10/32	1/2-13	NONE	1/2-13	18.18	3.62
MS2-508DS	MS2-508DS	12	SAE3	CW	277.5°	NO	11	6/8	2.25	1.83	10/32	1/2-13	NONE	1/2-13	19.17	3.62
MS2-510DS	MS2-510DS	12	SAE3	CW	87°	YES	11	6/8	2.25	1.84	10/32	1/2-13	NONE	1/2-13	18.18	3.62
MS2-511DS	MS2-511DS	12	SAE3	CW	87°	NO	11	6/8	2.25	1.84	10/32	1/2-13	NONE	1/2-13	18.18	3.62
MS2-512S	MS2-512S	12	SAE3	CW	67.5°	NO	12	8/10	1.83	1.84	10/32	1/2-13	NONE	1/2-13	19.17	3.62
MS2-530DS	MS2-530DS	12	SAE3	CW	82.5°	NO	12	8/10	1.83	1.84	10/32	1/2-13	NONE	1/2-13	19.17	3.62
MS2-531DS	MS2-531DS	12	SAE3	CW	82.5°	YES	12	8/10	1.83	1.84	10/32	1/2-13	NONE	1/2-13	19.17	3.62
MS2-570DS	MS2-570DS	12	SAE3	CW	82.5°	NO	12	8/10	1.83	1.84	10/32	1/2-13	NONE	1/2-13	19.17	3.62
MS2-571DS	MS2-571DS	12	SAE3	CW	82.5°	YES	12	8/10	1.83	1.84	10/32	1/2-13	NONE	1/2-13	19.17	3.62

MS3

TYPE: HEAVY DUTY PRE-ENGAGED MOTOR

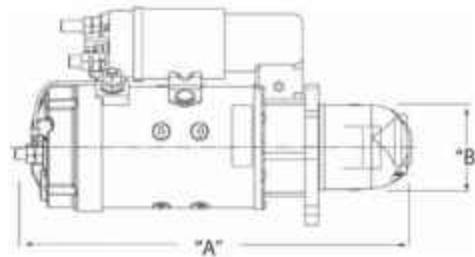
APPLICATIONS:

- Automotive
- Industrial
- Marine
- Military

FEATURES:

- Proven quality, reliability and durability
- Capable of starting engines of up to 15 litres or 915 cubic inches displacement
- Positorq drive provides overspeed protection and helical indexing to prevent abutment
- Environmentally sealed and suitable for wet clutch applications
- Multi-position nose housing means one starter will fit many applications
- Solenoid designed for extended contact life
- Fully-insulated return
- Protected against vibration
- High degree of parts commonality

MS3



SPECIFICATIONS:

- System voltage: 24/28 Volt
- Frame: 130mm/5.118"
- Operating Temperature Range: -30°C to +94°C
- Approx. weight: 54 lbs/24.5 kg

PART NO	SALES NO	VOLTS	MOUNT	ROTATION	SWITCH POS	OCP	NO. OF TEETH	PINION PITCH	PINION OD mm	PAR mm	IGN TERM	BAT TERM (S)	DIST OVER TEETH	DIM. "A"	DIM "B"
MS3-503S	MS3-503S	24	SAE3	CW	77°	NO	12	8/10	1.825	1.819	M6	M12X1.75	15.68	17.22	3.62

MS4

TYPE: HEAVY DUTY PRE-ENGAGED MOTOR

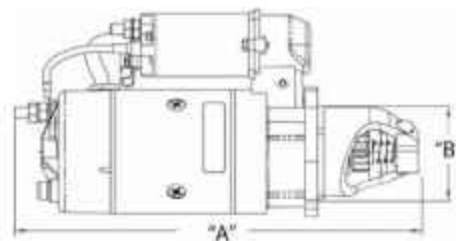
APPLICATIONS:

- Automotive
- Industrial
- Marine
- Military

FEATURES:

- Capable of starting engines of up to 10 litres or 610 cubic inches displacement
- Positorq drive provides overspeed protection and helical indexing to prevent abutment
- Environmentally sealed and suitable for wet clutch applications Multi-position nose housing means one starter will fit many applications

MS4



SPECIFICATIONS:

- System voltage: 24/28 Volt
- Frame: 116mm/4.567"
- Operating Temperature Range: -30°C to +94°C
- Approx. weight: 33.1 lbs/15.0 kg

PART NO	SALES NO	VOLTS	MOUNT	ROTATION	SWITCH POS	OCP	NO. OF TEETH	PINION PITCH	PINION OD mm	PAR mm	IGN TERM	BAT TERM (S)	DIST OVER TEETH	DIM. "A"	DIM "B"
MS4-400S	MS4-400S	24	SAE1	CW	45°	NO	12	10/12	37.26	48.5	M5	M10	12.59	396.00	88.8
MS4-401S	MS4-401S	24	SAE1	CW	45°	NO	12	10/12	37.26	48.5	M5	M10	12.59	396.00	88.8
MS4-402S	MS4-402S	24	SAE1	CW	225°	NO	12	10/12	37.26	48.5	M5	M10	12.59	396.00	88.8

MS7

TYPE: HEAVY DUTY PRE-ENGAGED MOTOR

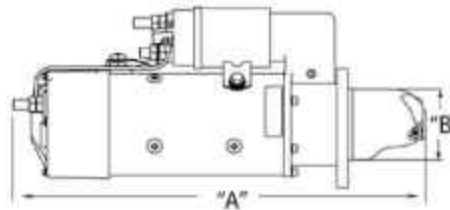
APPLICATIONS:

- Automotive
- Industrial
- Marine
- Military

FEATURES:

- Designed for High Displacement Diesel Engines
- Fits most popular heavy duty diesel applications and replaces the 50MT in the Aftermarket
- Capable of starting engines of up to 25 litres or 1525 cubic inches displacement
- Environmentally sealed and suitable for wet clutch applications
- Positork drive provides overspeed protection and helical indexing to prevent abutment
- Robust, heavy duty design
- Multi-position nose housing means one starter will fit many applications
- Diameter shaft with optional spring cleaning device
- Extra solenoid brackets provide superior vibration resistance

MS7



SPECIFICATIONS:

- System voltage: 24/28 Volt
- Frame: 130mm/5.118"
- Operating Temperature Range: -30°C to +94°C
- Approx. weight: 65 lbs/29.5 kg

PART NO	SALES NO	VOLTS	MOUNT	ROTATION	SWITCH POS	OCP	NO. OF TEETH	PINION PITCH	PINION OD mm	PAR mm	IGN TERM	BAT TERM (S)	DIST OVER TEETH	DIM "A"	DIM "B"
MS7-300A	MS7-300A	24	SAE3	CW	37.5°	NO	11	6/8	2.25	1.833	M6	M12X1.75	14.50	20.59	3.62
MS7-301A	MS7-301A	24	SAE3	CW	322.5"	NO	11	6/8	2.25	1.833	M6	M12X1.75	14.50	20.59	3.62
MS7-312A	MS7-312A	24	SAE3	CW	307.5"	NO	11	6/8	2.25	1.833	M6	M12X1.75	14.50	20.59	3.62
MS7-400S	MS7-400S	24	SAE3	CW	37.5°	YES	11	6/8	2.25	1.833	10-32	1/2-13	14.50	20.59	3.62
MS7-403S	MS7-403S	24	SAE3	CW	37.5°	NO	11	6/8	2.25	1.833	10-32	1/2-13	14.50	21.07	3.62
MS7-501S	MS7-501S	24	SAE3	CW	(-37.5°)	NO	11	6/8	2.25	1.833	M5	1/2-13	14.50	20.96	3.62
MS7-502S	MS7-502S	24	SAE3	CW	37.5°	NO	11	6/8	2.25	1.833	M5	1/2-13	14.50	20.96	3.62

MODEL SUPERCEDEANCE CHART

PART NO	SALES NO	REPLACED BY	SALES NO	REMARKS
10459189RM	10459189RM	22-9189RM	22-9189RM	REPL DISC
10459190RM	10459190RM	22-9190RM	22-9190RM	REPL DISC
10461233RM	10461233RM	42-1233RM	42-1233RM	REPL PEND DISC
110-450RM	110-450RM	110-450ORRM	110-450ORRM	
110-555NRRM	110-555NRRM	110-555ORRM	110-555ORRM	
110-555PRM	110-555PRM	110-555PORRM	110-555PORRM	
110-555RM	110-555RM	110-555ORRM	110-555ORRM	
110-555RMNR	110-555RMNR	110-555ORRM	110-555ORRM	
1268410	1268410	68021507	68021507	REPL OE ONLY
1268410S	1268410S	68021507S	68021507S	
1268520	1268520	68021507	68021507	REPL OE ONLY
1268520S	1268520S	68021507S	68021507S	
1268530M	1268530M	1268600M	1268600M	REPL INACTIVE
1268560	1268560	68021507	68021507	REPL OE ONLY
1268580	1268580	68021507	68021507	REPL OE ONLY
1268580S	1268580S	68021507S	68021507S	
1269720	1269720	68021507S	68021507S	
1269730M	1269730M	1268600M	1268600M	REPL INACTIVE
1277490	1277490	1277A730	1277A730	REPL INACTIVE
1277600	1277600	21277A730	21277A730	REPL INACTIVE
1277620	1277620	1277740	1277740	
1277620S	1277620S	1277740	1277740	
1277730	1277730	1277A730	1277A730	REPL INACTIVE
1279318	1279318	1277640	1277640	REPL OE ONLY
1290318	1290318	1277640	1277640	REPL OE ONLY
1290318S	1290318S	1277640S	1277640S	
1320F027	1320F027	1327A011	1327A011	REPL OE ONLY
1320F183	1320F183	1327A061	1327A061	
1320G720	1320G720	1327A091	1327A091	REPL OE ONLY
1320H830	1320H830	1327A071	1327A071	
1321F551	1321F551	1327A441	1327A441	REPL OE ONLY
1327A090	1327A090	1327A091	1327A091	REPL OE ONLY
1327A110	1327A110	1327A111	1327A111	REPL OE ONLY
1327A110S	1327A110S	1327A111S	1327A111S	
1327A430	1327A430	1327A431	1327A431	REPL OE ONLY
1327A430	1327A430	1327A431	1327A431	REPL OE ONLY
1327A430S	1327A430S	1327A431S	1327A431S	
1327A510	1327A510	1327A511	1327A511	REPL OE ONLY
1327A510	1327A510	1327A511	1327A511	REPL OE ONLY
1327A510S	1327A510S	1327A511S	1327A511S	
1327A600	1327A600	1327A601	1327A601	REPL INACTIVE
1391008	1391008	1391010	1391010	REPL INACTIVE
1391009	1391009	1391010	1391010	REPL INACTIVE
16990RM	16990RM	16990ORRM	16990ORRM	
178-131-100	110-1000	A0014990JB	4890JB	
21-9013RM	21-9013RM	21-9013ORRM	21-9013ORRM	REPL PEND DISC
21-9037RM	21-9037RM	21-9037ORRM	21-9037ORRM	REPL PEND DISC
21-9051RM	21-9051RM	21-9051ORRM	21-9051ORRM	REPL PEND DISC
2272A	2272A	A0012272AA	2272AA	REPL DISC
22-9188RM	22-9188RM	22-9188ORRM	22-9188ORRM	REPL PEND DISC
22-9189ORRM	22-9189ORRM	22-9189ORRM	22-9189ORRM	REPL DISC
2301J	2301J	A0012303JB	2303JB	
2302J	2302J	A0012302JB	2302JB	
2303J	2303J	A0012303JB	2303JB	
2360J	2360J	A0012360JC	2360JC	
2500J	2500J	A0012500LC	2500LC	

PART NO	SALES NO	REPLACED BY	SALES NO	REMARKS
2509J	2509J	A0012509JB	2509JB	
2511J	2511J	A0012511JB	2511JB	
2600J	2600J	A0012600LC	2500LC	
2613LCRM	2613LCRM	2613LCORRM	2613LCORRM	
2670J	2670J	A0012670LC	2670LC	
2670LCRM	2670LCRM	2670LCORRM	2670LCORRM	
2700J	2700J	A0012670LC	2670LC	
2800J	2800J	A0012800LC	2800LC	
2800LCRM	2800LCRM	2800LCORRM	2800LCORRM	
2801LCRM	2801LCRM	2801LCORRM	2801LCORRM	
2805J	2805J	A0012805LC	2805LC	
2813LCRM	2813LCRM	2813LCORRM	2813LCORRM	
2913LCRM	2913LCRM	2913LCORRM	2913LCORRM	
33-9141RM	33-9141RM	33-9141ORRM	33-9141ORRM	REPL PEND DISC
33-9143RM	33-9143ORRM	33-9143ORRM	33-9143ORRM	REPL PEND DISC
3426J	3426J	A0013426JC	3426JC	
34-9145RM	34-9145ORRM	34-9145ORRM	34-9145ORRM	REPL PEND DISC
34-9278RM	34-9278RM	34-9278ORRM	34-9278ORRM	REPL PEND DISC
351612S	351612S	35262430	35262430	REPL OE ONLY
3521390	3521390	35213540	35213540	REPL NO SVC
35256520	35256520	35259500	35259500	REPL PRIVATE
35258620	35258620	35262490	35262490	
35258620S	35258620S	35262490S	35262490S	
35258690	35258690	35259710	35259710	REPL DISC
35258710	35258710	35261175	35261175	
35259710S	35259710S	35261175S	35261175S	
35258760	35258760	35259860	35259860	REPL OE ONLY
35258760S	35258760S	35259860S	35259860S	REPL PEND DISC
35258780	35258780	35258790	35258790	REPL OE ONLY
35258790S	35258790S	35258790S	35258790S	REPL PEND DISC
35258810	35258810	35259580	35259580	REPL OE ONLY
35258810S	35258810S	35259580S	35259580S	
35258820	35258820	35259590	35259590	REPL PRIVATE
35258820S	35258820S	35259590S	35259590S	
35258850S	35258850S	35260800S	35260800S	
35258880	35258880	35259680	35259680	REPL DISC
35258940	35258940	35259620	35259620	REPL OE ONLY
35258940S	35258940S	35259620S	35259620S	
35258950	35258950	35259630	35259630	REPL OE ONLY
35258980	35258980	35259650	35259650	REPL PRIVATE
35258990S	35258990S	35259650S	35259650S	
35259000	35259000	OMS123	OMS123	REPL INACTIVE
35259000S	35259000S	35259670S	35259670S	
35259130	35259130	35259690	35259690	REPL OE ONLY
35259130S	35259130S	35259690S	35259690S	
35259150	35259150	35261020	35261020	REPL PRIVATE
35259150S	35259150S	35261020S	35261020S	
35259470	35259470	35261180	35261180	REPL OE ONLY
35259470S	35259470S	35261180S	35261180S	
35259500	35259500	35261680	35261680	REPL OE ONLY
35259500S	35259500S	35261680S	35261680S	
35259570	35259570	OMS123	OMS123	REPL INACTIVE
35259620	35259620	35261690	35261690	REPL OE ONLY
35259620S	35259620S	35261690S	35261690S	
35260800	35260800	35258850	35258850	
35260990	35260990	35261185	35261185	REPL PRIVATE

MODEL SUPERCEDECE CHART

PART NO	SALES NO	REPLACED BY	SALES NO	REMARKS
35280990S	35280990S	35261185S	35261185S	
3526199	3526199	35262470	35262470	REPL OE ONLY
35262210	35262210	35262430	35262430	REPL OE ONLY
35262220	35262220	35262470	35262470	REPL OE ONLY
35262430E	EDN-5910	35262430	35262430	REPL OE ONLY
35262470E	EDN-5911	35262470	35262470	REPL OE ONLY
35262530E	EDN-5909	35262530	35262530	REPL OE ONLY
3625J	3625J	A0013625JC	3625JC	
3627J	3627J	A0013627JC	3627JC	
37-1069RM	37-1069RM	37-1069ORRM	37-1069ORRM	REPL PEND DISC
37-1108RM	37-1108RM	37-1108ORRM	37-1108ORRM	REPL PEND DISC
37-1276RM	37-1276RM	37-1276ORRM	37-1276ORRM	REPL PEND DISC
3725J	3725J	A0013725JC	3725JC	
40-1045RM	40-1045RM	40-1045ORRM	40-1045ORRM	REPL PEND DISC
40-1060RM	40-1060RM	40-1060ORRM	40-1060ORRM	REPL PEND DISC
42-1050ORRM	42-1050ORRM	42-1050ORRM	42-1050ORRM	REPL PEND DISC
42-1052ORRM	42-1052ORRM	42-1052ORRM	42-1052ORRM	REPL PEND DISC
42-1053ORRM	42-1053ORRM	42-1053ORRM	42-1053ORRM	REPL PEND DISC
4426J	4426J	BLHA3071P	110-446	
4626J	4626J	A0014626JC	4626JC	
4628J	4628J	A0014628JA	4628JA	
4632J	4632J	A0014632JA	4632JA	
464600	46-4600	LRS-4000	LRS-4000	REPL DISC
4727J	4727J	A0014727JB	4727JB	
47920141	47920141	20550101	20550101	REPL OE ONLY
47920141S	47920141S	20550101S	20550101S	
4805J	4805J	A0014805JB	4805JB	
4826J	4826J	A0014826JB	4826JB	
4830LCRM	4830LCRM	4830LGHORRM	4830LGHORRM	
4830LGHORRM	4830LGHORRM	4830LGHORRM	4830LGHORRM	
4834LCRM	4834LCRM	4836LGHORRM	4836LGHORRM	
4836LGHORRM	4836LGHORRM	4836LGHORRM	4836LGHORRM	
4850A	4850A	A0014850AA	4850AA	
4860JBRM	4860JBRM	4860JBORRM	4860JBORRM	
4860JBRMS	4860JBRMS	4860JBSRM	4860JBSRM	REPL DISC
4863JBRM	4863JBRM	4863JBORRM	4863JBORRM	
4867JBRM	4867JBRM	4867JBORRM	4867JBORRM	
4870JBRM	4870JBRM	4870JBORRM	4870JBORRM	
4871JBRM	4871JBRM	4871JBORRM	4871JBORRM	REPL PRIVATE
4884JBRM	4884JBRM	4884JBORRM	4884JBORRM	
4890JBRM	4890JBRM	4890JBORRM	4890JBORRM	
4900JBSRM	4900JBSRM	4900JBSORRM	4900JBSORRM	
4939PGHRM	4939PGHRM	4939PGHORRM	4939PGHORRM	
4940PARM	4940PARM	4940PAORRM	4940PAORRM	
4942PARM	4942PARM	4942PAORRM	4942PAORRM	
4944PARM	4944PARM	4949PAORRM	4949PAORRM	
4947PARM	4947PARM	4947PAORRM	4947PAORRM	
4949PARM	4949PARM	4949PAORRM	4949PAORRM	
4951PARM	4951PARM	4951PAORRM	4951PAORRM	
4962PARM	4962PARM	4962PAORRM	4962PAORRM	
510-273	510-273	8HC2027PAS	110-536	
66021070SS	110-571	66021070S	66021070S	REPL DISC
66021136	66021136	66021636	66021636	REPL OE ONLY
66021136S	66021136S	66021636CS	66021636CS	
66021137	66021137	66021637	66021637	REPL OE ONLY
66021137S	66021137S	66021637CS	66021637CS	REPL DISC

PART NO	SALES NO	REPLACED BY	SALES NO	REMARKS
660-211-55	660-211-55	66021070S	66021070S	REPL DISC
66021155S	66021155S	66021070S	66021070S	REPL DISC
66021306	66021306	20110234	20110234	REPL OE ONLY
66021306S	66021306S	20110234S	20110234S	
66021455S	66021455S	66021470S	66021470S	REPL PEND DISC
66021490	66021490	66021616	66021616	REPL OE ONLY
66021490S	66021490S	66021490CS	66021490CS	REPL PEND DISC
66021491S	66021491S	66021491CS	66021491CS	REPL DISC
66021496	66021496	66021617	66021617	REPL OE ONLY
66021496S	66021496S	66021617S	66021617S	
66021497	66021497	66021616	66021616	REPL OE ONLY
66021497S	66021497S	66021616S	66021616S	
66021535S	66021535S	66021536CS	66021536CS	REPL DISC
66021600S	66021600S	66021600CS	66021600CS	
66021601S	66021601S	66021601CS	66021601CS	
66021821SS	66021821SS	66021621S	66021621S	REPL DISC
66021636S	66021636S	66021636CS	66021636CS	
66021637S	66021637S	66021637CS	66021637CS	REPL DISC
66925050	66925050	20500190	20500190	REPL INACTIVE
66925089	66925089	20500966	20500966	REPL OE ONLY
66925167	66925167	66925308	66925308	REPL DISC
66925167S	66925167S	66925308S	66925308S	REPL PEND DISC
66925325S	66925325S	66925325SS	66925325SS	REPL DISC
7268MERM	7268MERM	MS2-503ORRM	MS2-503ORRM	
7601A	7601A	A0017601AA	7601AA	
7705A	7705A	A0017705AA	7705AA	
7705J	7705J	A0017705JA	7705JA	
7706A	7706A	A0017706AA	7706AA	
7706J	7706J	A0017706JA	7706JA	
7706JARM	7706JARM	7706JAORRM	7706JAORRM	
7711J	7711J	A0017711JA	7711JA	
7711JARM	7711JARM	7711JAORRM	7711JAORRM	
856610	856610	MS7-301A	MS7-301A	
857265	857265	859482	859482	REPL DISC
857287	857287	859490	859490	REPL DISC
857906	857906	66021507	66021507	REPL OE ONLY
857821	857821	66021507	66021507	REPL OE ONLY
858441	858441	MS1-300C	MS1-300C	REPL OE ONLY
858442	858442	MS1-401A	MS1-401A	REPL OE ONLY
858448	858448	MS1-307A	MS1-307A	REPL INACTIVE
858693	858693	66021507	66021507	REPL OE ONLY
858710Z	858710Z	MS1-417A	MS1-417A	REPL INACTIVE
859200	859200	859483	859483	REPL DISC
859201	859201	859484	859484	REPL DISC
859284	859284	859485	859485	REPL DISC
859344	859344	859486	859486	REPL NO SVC
859385	859385	66021507	66021507	REPL OE ONLY
859385S	859385S	66021507S	66021507S	
859411	859411	MS4-401	MS4-401	REPL OE ONLY
859411S	859411S	MS4-401S	MS4-401S	
859442	859442	66021507	66021507	REPL OE ONLY
859444	859444	66021491	66021491	REPL OE ONLY
859444S	859444S	66021491CS	66021491CS	REPL DISC
859470	859470	MS1-401A	MS1-401A	REPL OE ONLY
859471	859471	MS1-300C	MS1-300C	REPL OE ONLY
859492	859492	MS7-301A	MS7-301A	

MODEL SUPERCEDECE CHART

PART NO	SALES NO	REPLACED BY	SALES NO	REMARKS
859493	859493	MS7-300C	MS7-300C	REPL OE ONLY
859532	859532	MS4-400	MS4-400	REPL OE ONLY
859532S	859532S	MS4-400S	MS4-400S	
859544	859544	66021507	66021507	REPL OE ONLY
859544S	859544S	1268590CS	1268590CS	
859673	859673	66021616	66021616	REPL OE ONLY
859673S	859673S	66021616S	66021616S	
859701	859701	MS7-312C	MS7-312C	REPL OE ONLY
859866	859866	860053	860053	
859866S	859866S	860053	860053	
870644Z	870644Z	1327A011	1327A011	REPL OE ONLY
8AL2024L	8AL2024L	8AR2018L	110-883	
8AL2037F	8AL2037F	8AL2108FA	110-504	
8AL2046F	8AL2046F	8AL2046FA	110-529	
8AL2055F	310-99	8AL2055FA	110-544	
8AL2056K	310-98	8AL2056KA	110-536	
8AL2071K	110-771	12N51	12N51	
8AL2080K	110-240	8AL2080KA	110-497	
8AL2106F	110-275	8AL2106FA	110-505	
8AL2107K	110-300	8AL2107KA	110-503	
8AL2108F	110-314	8AL2108FA	110-504	
8AL2109F	110-317	8AL2109FA	110-492	
8AR2007	110-192	8AR2070KA	110-847	
8AR2015KS	8AR2015KS	8AR2070KA	110-847	
8AR2021K	110-178	8AR2076KA	110-509	REPL DISC
8AR2023K	110-446	8AR2023KA	110-508	
8AR2050F	110-241	8AR2160F	110-470	
8AR2080F	110-282	8AR2180F	110-829	
8AR2082K	110-283	8AR2082KA	110-495	
8AR2086F	110-261	8AR2086FA	110-498	
8AR2096F	110-273	8AR2169F	110-829	
8AR2079K	110-274	8AR2070KA	110-847	
8AR2072F	110-288	8EA2011NA	110-330	REPL DISC
8AR2073F	110-289	8AR2173F	110-477	
8AR2073FA	110-511	8AR2173F	110-477	
8AR2112T	110-423	8AR2112TA	110-520	REPL DISC
8AR2116U	110-441	8AR2116UA	110-510	REPL DISC
8AR3080F	110-301	8AR3080FA	110-522	
8AR3113K	110-424	8AR3113KA	110-516	REPL DISC
8EA2001FA	110-329	8AR2169F	110-829	
8EA2001FAS2	310-101	8AR2169F	110-829	
8EA2001FAS3	8EA2001FAS3	8AR2169FS	8AR2169FS	REPL PRIVATE
8EA2002FA	110-331	8AR2173F	110-477	
8EA2004FA	110-333	8AR2180F	110-470	
8EA2004FAS	110-418	8AR2180FS	110-514	
8EA2006KA	110-345	8AL2056KA	110-536	
8EA2007KA	110-347	8AR2070KA	110-847	
8EA2008KA	110-348	8AR2079K	110-496	REPL DISC
8EA2009KA	110-349	8AR2076KA	110-509	REPL DISC
8EA2010KA	110-365	8AR2070KA	110-847	
8EA2013NA	110-390	8AR2013L	110-476	
8EA2014FA	110-373	8AR2014F	110-478	
8EA2017NA	110-382	8AR2200L	110-460	
8EA2018NA	110-383	8AR2018L	110-683	
8EA2021FA	110-326	8AR2074F	110-479	
8EA2023NA	110-385	8AR2201L	110-481	

PART NO	SALES NO	REPLACED BY	SALES NO	REMARKS
8EA2024NAS	110-406	8AR2018L	110-883	
8EA2026FA	8EA2026FA	8AR2180F	110-470	
8EA3002GA	110-378	8AR3080FA	110-522	
8EA3004GA	110-396	8AR3200G	110-462	
8EA3005GA	110-432	8AR3005G	110-501	
8EA37N12	8EA37N12	8AR37N12	8AR37N12	
8EA65N12	8EA65N12	8AR65N12	8AR65N12	
8EB2001FA	110-335	8AL2108FA	110-504	
8EB2002FB	110-336	8AL2108FA	110-492	
8EB2003FA	110-337	8AL2106FA	110-505	
8EB2006KA	110-352	8AL2107KA	110-503	
8EB2009FA	110-398	8AL2108FA	110-492	
8EB2010KA	8EB2010KA	8AL2171K	110-480	
8EK2003FC	8EK2003FC	8EK2003FD	8EK2003FD	REPL DISC
8EK2004DD	8EK2004DD	8MR2130D	8MR2130D	REPL PRIVATE
8EK2004DE	8EK2004DE	8MR2130D	8MR2130D	REPL PRIVATE
8EK2005NC	8EK2005NC	8MR2180L	8MR2180L	REPL PRIVATE
8EK2005ND	8EK2005ND	8MR2180L	8MR2180L	REPL PRIVATE
8EK2006FB	8EK2006FB	8MR2170F	8MR2170F	REPL PRIVATE
8EK2006FC	8EK2006FC	8MR2170F	8MR2170F	REPL PRIVATE
8EK2007VC	8EK2007VC	8MR2181L	8MR2181L	REPL PRIVATE
8EK2007VD	8EK2007VD	8MR2181L	8MR2181L	REPL PRIVATE
8EK2008FC	8EK2008FC	8MR2171F	8MR2171F	REPL PRIVATE
8EK2008FD	8EK2008FD	8MR2171F	8MR2171F	REPL PRIVATE
8EK2009FC	110-389	8MR2175F	110-699	
8EK2010VC	110-400	8MR2185L	110-600	
8EK2011FB	8EK2011FB	8MR2140F	8MR2140F	REPL PRIVATE
8EK2011FC	8EK2011FC	8MR2140F	8MR2140F	REPL PRIVATE
8EK2012VA	8EK2012NA	8MR2150L	8MR2150L	REPL PRIVATE
8EK2012VB	8EK2012NB	8MR2150L	8MR2150L	REPL PRIVATE
8EK2013N	8EK2013N	8MR2301LS	110-464	
8EK2013VA	110-442	8MR2301LS	110-464	
8EK3006G	8EK3006G	8MR3006G	110-485	
8EK3006GA	110-443	8MR3006G	110-485	
8EM2001FA	110-342	8MR2050FA	110-532	
8EM2002FA	110-343	8MR2051FA	110-515	
8EM2002FAS	110-420	8MR2051FAS	110-556	
8EM2003KAS	110-354	8MR2091KSS	110-686	
8EM2004KB	8EM2004KB	8MR2091K	8MR2091K	REPL DISC
8EM2004KBS	110-355	8MR2091KSS	110-886	
8EM2006KA	110-357	8MR2048KA	110-512	
8EM2007KA	110-358	8MR2049KA	110-517	
8EM2008NA	110-370	8MR2301LS	110-464	
8EM2009NC	8EM2009NC	8MR2302L	110-485	
8EM2009NDS	110-372	8MR2305L	110-589	
8EM2010KA	110-374	8MR2084K	110-494	
8EM2012NA	8EM2012NA	8MR2129L	8MR2129L	REPL PRIVATE
8EM2012NAS	110-379	8MR2198LS	110-679	
8EM2012NB	8EM2012NB	8MR2129L	8MR2129L	REPL PRIVATE
8EM2013NA	110-385	8MR2013L	110-487	
8EM2014KA	110-386	8MR2091KSS	110-686	
8EM2015NA	110-387	8MR2301LS	110-464	
8EM2016KA	110-388	8MR2048KA	110-512	
8EM2017KA	110-389	8MR2091KSS	110-686	
8EM2020NA	8EM2020NA	8EM2020NBS	110-393	REPL DISC
8EM2025KA	110-356	8MR2198KS	110-656	

MODEL SUPERCEDECE CHART

PART NO	SALES NO	REPLACED BY	SALES NO	REMARKS
BEM2028N	BEM2028N	BEM2028NA	BEM2028NA	REPL DISC
BEM2029K	BEM2029K	BMR2085K	110-488	
BEM3001GA	110-371	BMR3300G	110-465	
BEM3002G	BEM3002G	BMR3001G	110-486	
BEM3002GC	BEM3002GC	BMR3301G	110-486	
BEM3002GCS	110-378	BMR3301G	110-486	
BEM3003GA	110-384	BMR3404G	110-684	
BEM3005CA	110-427	BMR3005C	110-489	
BEM37N12	BEM37N12	BMR37N12	BMR37N12	
BEM42N24	BEM42N24	BMR42N24	BMR42N24	
BEM65N12	BEM65N12	BMR65N12	BMR65N12	
BHA2008F	110-303	BHA2008FA	110-642	
BHA2008K	110-304	BHA2008KA	110-643	
BHC2009P	BHC2009P	BHC2009PS	110-205	
BHC2023K	BHC2023K	BHC2023KA	BHC2023KA	REPL PRIVATE
BHC2024K	110-812	BHC2023KS	110-284	
BHC2027P	BHC2027P	BHC2027PA	BHC2027PA	REPL NO SVC
BHC2027PS	110-404	BHC2027PAS	110-636	
BHC3022F	BHC3022F	BHC3022FA	BHC3022FA	REPL NO SVC
BHC3025F	110-313	BHC3022FS	110-285	
BLHA2023V	110-255	BLHA2070VE	110-555JHO	
BLHA2026V	110-277	BLHA2026VAS	110-277A	
BLHA2027RA	BLHA2027RA	BLHA2027R	110-278	REPL DISC
BLHA2028VAS	110-279	BLHA2032VAS	110-309	
BLHA2032V	BLHA2032V	BLHA2032VAS	110-309	
BLHA2050VA	BLHA2050VA	BLHA2050VB	BLHA2050VB	REPL PRIVATE
BLHA2050VAS	BLHA2050VAS	BLHA2050VBS	110-454	
BLHA2051V	BLHA2051V	BLHA2051VA	110-472	
BLHA2054U	110-455	BLHA2054UAH	BLHA2054UAH	REPL PRIVATE
BLHA2054UA	110-579	BLHA2054UAH	BLHA2054UAH	REPL PRIVATE
BLHA2057V	BLHA2057V	BLHA2057VA	110-450	
BLHA2057VAE	EDN-A903	BLHA2057VA	110-450	
BLHA2070V	BLHA2070V	BLHA2070VE	110-555JHO	
BLHA2070VA	BLHA2070VA	BLHA2070VE	110-555JHO	
BLHA2070VB	110-555HD	BLHA2070VE	110-555JHO	
BLHA2070VBH	BLHA2070VBH	BLHA2070VE	110-555JHO	
BLHA2071V	110-555I	BLHA2071VA	110-555JHO	
BLHA2084V	BLHA2084V	BLHA2084VA	BLHA2084VA	REPL DISC
BLHA2087V	BLHA2087V	BLHA2087VA	BLHA2087VA	REPL DISC
BLHA2088V	BLHA2088V	BLHA2088VA	BLHA2088VA	REPL NO SVC
BLHA2096V	BLHA2096V	BLHA2096VA	110-555N	REPL DISC
BLHA2098V	110-559	BLHA2098VA	BLHA2098VA	
BLHA2197MDH	BLHA2197MDH	BLHA2197MD	BLHA2197MD	
BLHA3025P	110-296	BLHA3071P	110-446	
BLHA3158R	B59371	BLHA3158R	860323	
BLHP2170V	110-555F	BLHP2170VE	110-555PHO	
BMA2003P	110-141	BMA2003PA	110-539	
BMA2014P	310-97	BMA2014PA	BMA2014PA	
BMA2015T	310-102	BMA2015TA	BMA2015TA	REPL PRIVATE
BMA2019K	110-299	BMA2019KA	110-627	
BMA2020P	BMA2020P	BMA2020PA	BMA2020PA	REPL PRIVATE
BMH2003K	BMH2003K	BMH2003KS	110-133	
BMR2012PS	110-115	BMR2009P	110-266	REPL DISC
BMR2023F	BMR2023F	BMR2023FA	BMR2023FA	REPL PRIVATE
BMR2026P	110-259	BMR2026PA	110-623	
BMR2030T	BMR2030T	BMR2030TC	110-670	

PART NO	SALES NO	REPLACED BY	SALES NO	REMARKS
BMR2030TA	BMR2030TA	BMR2030TC	110-670	
BMR2030TB	110-637	BMR2030TC	110-670	
BMR2030TS	110-242	BMR2030TC	110-670	
BMR2033T	BMR2033T	BMR2033TS	110-252	
BMR2048K	110-272	BMR2048KA	110-612	
BMR2049K	110-271	BMR2049KA	110-617	
BMR2050F	110-270	BMR2050FA	110-632	
BMR2051F	110-268	BMR2051FA	110-615	
BMR2058P	110-307	BMR2058PA	110-621	
BMR2059T	110-402	BMR2059TA	110-602	
BMR2070T	110-403	BMR2070TA	110-603	
BMR2072L	BMR2072L	BMR2072LA	BMR2072LA	
BMR2072LS	110-430	BMR2072LAS	110-635	REPL DISC
BMR2122U	BMR2122U	BMR2122UB	BMR2122UB	REPL PRIVATE
BMR2122UA	BMR2122UA	BMR2122UC	BMR2122UC	REPL PRIVATE
BMR2123L	BMR2123L	BMR2123LA	BMR2123LA	REPL PRIVATE
BMR2124LA	BMR2124LA	BMR2124LC	BMR2124LC	REPL PRIVATE
BMR2126U	BMR2126U	BMR2126UA	BMR2126UA	REPL PRIVATE
BMR2127L	BMR2127L	BMR2127LA	BMR2127LA	REPL PRIVATE
BMR2128F	BMR2128F	BMR2118FA	BMR2118FA	REPL PRIVATE
BMR2128FA	BMR2128FA	BMR2118FA	BMR2118FA	REPL PRIVATE
BMR2321L	BMR2321L	BMR2321LA	BMR2321LA	REPL PRIVATE
BMR2331L	BMR2331L	BMR2331LA	BMR2331LA	REPL PRIVATE
BMR2332L	BMR2332L	BMR2332LA	BMR2332LA	REPL PRIVATE
BMR2401U	110-534	BMR2401UA	110-567	
BMR3115K	110-451	BMR3115KA	110-533	REPL DISC
B5A2035V	B5A2035V	B5A2035VAS	110-320	REPL DISC
B5A3008P	110-128	B5A3065P	110-409	
B5A3008P	110-126	B5A3064P	110-408	
B5C2202V-CA	B5C2202V-CA	B5C2236	B5C2236	REPL PRIVATE
B5C2205V-CA	B5C2205V-CA	B5C2285V	B5C2285V	REPL PRIVATE
B5C2223V	B5C2223V	B5C2282V	B5C2282V	REPL PRIVATE
B5C2223VG	B5C2223VG	B5C2282VG	B5C2282VG	
B5C3006Z	110-258A	B5C3006ZA	110-268	
B5C3017V	110-308	B5C3017VA	110-675	
B5C3018V	110-306	B5C3018VA	110-676	
B5C3021V	B5C3021V	B5C3111V	B5C3111V	REPL PRIVATE
B5C3022V	B5C3022V	B5C3112V	B5C3112V	REPL PRIVATE
B5C3074V	B5C3074V	B5C3110V	110-568	
B5C3125V	B5C3125V	SCJ3162	SCJ3162	REPL PRIVATE
B7A2010E	B7A2010E	B7A2010ES	110-190	
B8A2LA2B07	110-742	B8R2200L	110-460	
B8B2LF2B43		B8R2202L	110-463	
B8B2LF2B58	110-747A	B8R2200L	110-460	
B8B2LH2B58	110-748	B8R2201L	110-461	
B8B2LH2B58		B8R2201L	110-461	
B8B2LL2B58		B8R2200L	110-460	
B8B2LL2H58		B8R2200L	110-460	
B8B3FA3A58	110-749	B8R3200G	110-462	
B8B3GA3A58		B8R3200G	110-462	
B8B3GB3A58		B8R3200G	110-462	
A0010310JN	310JN	A0012505LC	A0012505LC	REPL PRIVATE
A0010410JN	A0010410JN	A0012505LC	A0012505LC	REPL PRIVATE
A0010510JN	510JN	A0012505LC	A0012505LC	REPL PRIVATE
A0010610JN	610JN	A0012706LC	A0012706LC	REPL PRIVATE
A0010810JN	810JN	A0012806LC	A0012806LC	REPL NO SVC

MODEL SUPERCEDEENCE CHART

PART NO	SALES NO	REPLACED BY	SALES NO	REMARKS
A001060515	90515	A0012500LC	2500LC	
A001060521	90521	A0012500LC	2500LC	
A001060522	90522	A001090821	90821	REPL DISC
A001060523	90523	A0012500LC	2500LC	
A001060599	90599	A0012360JC	2360JC	
A001060686	A001060686	A0012600LC	2600LC	
A001060727	90727	A0012670LC	2670LC	
A001060743	90743	A001090819	90819	
A001060748	90748	A001060770	90770	REPL PRIVATE
A001060749	90749	A001090806	90806	
A001060754	90754	A001060770	90770	REPL PRIVATE
A001060788	90788	A001060770	90770	REPL PRIVATE
A001060810	90810	A0012670LC	2670LC	
A001060811	90811	A001090821	90821	REPL DISC
A001060813	90813	A001090819	90819	
A001060822	90822	A0012670LC	2670LC	
A001060826	A001060826	A001090825	A001090825	REPL PRIVATE
A001060828	A001060828	A001090827	A001090827	REPL PRIVATE
A001060830	A001090830	A001090829	A001090829	REPL PRIVATE
A001060832	A001090832	A001090831	A001090831	REPL PRIVATE
A001060834	A001090834	A001090833	A001090833	REPL PRIVATE
A00106101JN	910JN	A0012819LC	A0012819LC	REPL PRIVATE
A0012014AB	2014A	A0018051AB	8051A	REPL DISC
A0012034AA	2034A	A0012036AA	2036A	REPL DISC
A0012056AA	2056A	A0018053AA	8053A	REPL DISC
A0012062AA	2062A	A0012066AA	2066A	REPL DISC
A0012064AA	2064A	A0012234AA	2234AA	REPL PEND DISC
A0012074AB	2074A	A0012178AB	2178A	REPL DISC
A0012092AA	2092A	A0012036AA	2036A	REPL DISC
A0012104AB	2104A	A0012178AB	2178A	REPL DISC
A0012128AA	2128A	A0012302AAS	2302AAS	
A0012144AA	2144A	A0018053AA	8053A	REPL DISC
A0012184AC	2184AC	A0012184AD	2184AD	
A0012260AC	2260AC	A0012260AE	2260AE	
A0012260AD	2260AD	A0012260AE	2260AE	
A0012266AA	2266AA	A0012266AC	2266AC	REPL NO SVC
A0012266AB	2266AB	A0012266AC	2266AC	REPL NO SVC
A0012270AA	2270AA	VLF2274	110-850	REPL DISC
A0012300JB	2300JB	A0012500LC	2500LC	
A0012300JC	2300JC	A0012500LC	2500LC	
A0012301JB	2301JB	A0012303JB	2303JB	
A0012310JB	A0012310JB	A0012505LC	A0012505LC	REPL PRIVATE
A0012360JB	2360JB	A0012360JC	2360JC	
A0012500JB	2500JB	A0012500LC	2500LC	
A0012500JC	2500JC	A0012500LC	2500LC	
A0012505JB	A0012505JB	A0012505LC	A0012505LC	REPL PRIVATE
A0012512JB	A0012512JB	A0012505LC	A0012505LC	REPL PRIVATE
A0012513JB	A0012513JB	A0012513LC	A0012513LC	REPL NO SVC
A0012513JC	A0012513JC	A0012513LC	A0012513LC	REPL NO SVC
A0012516JB	A0012516JB	A0012505LC	A0012505LC	REPL PRIVATE
A0012526JB	2526JB	A0012526LC	2526LC	
A0012526JC	2526JC	A0012526LC	2526LC	
A0012600JB	2600JB	A0012500LC	2500LC	
A0012600JC	2600JC	A0012500LC	2500LC	
A0012610JB	A0012610JB	A0012505LC	A0012505LC	REPL PRIVATE
A0012670JB	2670JB	A0012670LC	2670LC	

PART NO	SALES NO	REPLACED BY	SALES NO	REMARKS
A0012670JC	2670JC	A0012670LC	2670LC	
A0012680JB	A0012680JB	A0012670LC	2670LC	
A0012680JL	2680JL	A0012681LCF	A0012681LCF	REPL DISC
A0012680LC	A0012680LC	A0012670LC	2670LC	
A0012680LCF	A0012680LCF	A0012670LC	2670LC	
A0012681JB	A0012681JB	A0012681LCF	A0012681LCF	REPL DISC
A0012681LC	A0012681LC	A0012681LCF	A0012681LCF	REPL DISC
A0012700JB	2700JB	A0012670LC	2670LC	
A0012700JC	2700JC	A0012670LC	2670LC	
A0012700LC	2700LC	A0012670LC	2670LC	
A0012706JB	A0012706JB	A0012706LC	A0012706LC	REPL PRIVATE
A0012800JB	2800JB	A0012800LC	2800LC	
A0012800JC	2800JC	A0012800LC	2800LC	
A0012800LCE	EDN-A900	A0012800LC	2800LC	
A0012802JB	2802JB	A0012802LC	2802LC	
A0012802JC	2802JC	A0012802LC	2802LC	
A0012805JB	2805JB	A0012805LC	2805LC	
A0012805JC	2805JC	A0012805LC	2805LC	
A0012806JB	A0012806JB	A0012806LC	A0012806LC	REPL NO SVC
A0012810JB	A0012810JB	A0012806LC	A0012806LC	REPL NO SVC
A0012812JB	A0012812JB	A0012505LC	A0012505LC	REPL PRIVATE
A0012813JB	A0012813JB	A0012813LC	A0012813LC	REPL PRIVATE
A0012813JC	A0012813JC	A0012813LC	A0012813LC	REPL PRIVATE
A0012815JB	2815JB	A0012815LCF	A0012815LCF	REPL PRIVATE
A0012819JB	A0012819JB	A0012819LC	A0012819LC	REPL PRIVATE
A0012824JB	2824JB	A0012824LC	2824LC	
A0012828LC	2828LC	A0012824LC	2824LC	
A0012913JB	A0012913JB	A0012913LC	A0012913LC	REPL PRIVATE
A0012913JC	A0012913JC	A0012913LC	A0012913LC	REPL PRIVATE
A0013002AF	3002A	AMA-510AUT	51-281	REPL PEND DISC
A0013427JC	A0013427JC	A0013427JA	3427JA	REPL DISC
A0014401AD	4401D	A0014404AA	4404AA	REPL DISC
A0014401AE	4401E	A0014405AA	4405AA	REPL DISC
A0014426JC	4426JC	8LHA3071P	110-446	
A0014452AA	4452AA	A0014452AB	4452AB	
A0014627JA	4627J	A0014826JB	4826JB	
A0014654AA	4654AA	A0014654AB	4654AB	
A0014725JA	4725JA	A0014725JC	4725JC	
A0014725JB	4725JB	A0014725JC	4725JC	
A0014754AA	4754AA	A0014754AB	4754AB	
A0014800AA	4800AA	A0014846AAH	4846AAH	
A0014800JB	4800JB	A0014833LGH	4833LGH	
A0014830LC	4830LC	A0014833LGH	4833LGH	
A0014832LCH	4832LCH	A0014833LCH	A0014833LCH	REPL PRIVATE
A0014834AA	4834AA	A0014836AAH	4836AAH	
A0014834LC	4834LC	A0014836LGH	4836LGH	
A0014835PAH	A0014835PAH	A0014839PAH	A0014839PAH	REPL PRIVATE
A0014835PGH	4835PGH	A0014839PGH	4839PGH	
A0014864JB	4864JB	A0014867JB	4867JB	
A0014872JB	4872JB	A0014871JB	4871JB	
A0014930PA	4930PA	A0014939PGH	4939PGH	
A0014934PA	4934PA	A0014943PGH	4943PGH	
A0014936PA	4936PA	A0014943PGH	4943PGH	
A0014951PA	4951PA	A0014951PGH	4951PGH	
A0014991PA	4991PA	A0014993PA	4993PA	
A0014992PA	4992PA	A0014993PA	4993PA	

MODEL SUPERCEDECE CHART

PART NO	SALES NO	REPLACED BY	SALES NO	REMARKS
A0017501AA	7501A	A0017601AA	7601AA	
A0017603AA	7603AA	A0017604AA	7604A	REPL DISC
A0017608JA	7608JA	A0017608JB	7608JB	REPL DISC
A0017703AA	A0017703AA	A0017701AA	7701A	REPL DISC
A0017716JA	7716JA	A0017706JA	7706JA	
A0018680JB	A0018680JB	A0018680LCF	8680LCF	
A0018680LC	8680LC	A0018680LCF	8680LCF	
A0018615JB	A0018615JB	A0018615LCF	8615LCF	
A0018615LC	8615LC	A0018615LCF	8615LCF	
A0019800JB	9800JB	A0014833LGH	4833LGH	
A0019800LC	9800LC	A0014833LGH	4833LGH	
A0019802LC	9802LC	A0014833LGH	4833LGH	
A0019804LC	9804LC	A0014836LGH	4836LGH	
ALK-5101S	51-57	ALK-5101S-1	51-50	REPL DISC
ALK-9022	51-256	8AR2160FS	110-514	
ALK-6220YS	51-259	8MH2351FAS	110-556	
ALK-6322S	51-246	8AR2160FS	110-514	
ALU-8421	ALU-8421	ALU-8421R	ALU-8421R	REPL DISC
ALX-8421LS	ALX-8421LS	ALX-8421RS	51-220	REPL DISC
AMA-5104UTA	AMA-5104UTA	AMA-5104UT	51-281	REPL PEND DISC
BCA2923	BCA2923	MDA2923	110-874	
BCA2923S	BCA2923S	MDA2923	110-874	
BCA2924	BCA2924	MDA2924	110-444	
BCA2924S	BCA2924S	MDA2924	110-444	
BCA3920	BCA3920	MDA3920	110-872	
BCA3921	BCA3921	MDA3921	110-873	
BCA3922	BCA3922	MDA3922	110-876	
BCA3922S	BCA3922S	MDA3922	110-876	
BCA3925	BCA3925	MDA3925	110-877	
BLD2301H	BLD2301H	BLD2301	110-801	
BLD2301RM	BLD2301RM	BLD2301ORRM	BLD2301ORRM	
BLD2302	110-802	BLD2301GH	BLD2301GH	
BLD2302GH	BLD2302GH	BLD2301GH	BLD2301GH	
BLD2305	110-800	BLD2305GH	BLD2305GH	
BLD2305RM	BLD2305RM	BLD2305ORRM	BLD2305ORRM	
BLD2307	110-803	BLD2307GH	BLD2307GH	
BLD2308RM	BLD2308RM	BLD2308ORRM	BLD2308ORRM	
BLD2321GH	BLD2321GH	BLD2307GH	BLD2307GH	
BLD2333GHE	EDN-A905	BLD2333GH	BLD2333GH	
BLD3313	110-805	BLD3314GH	BLD3314GH	
BLD3314	110-806	BLD3314GH	BLD3314GH	
BLD3315	BLD3315	BLD3315GH	BLD3315GH	
BLP2303	110-811	BLP2303GH	BLP2303GH	
BLP2303HRM	BLP2303HRM	BLP2303ORRM	BLP2303ORRM	
BLP2303RM	BLP2303RM	BLP2303ORRM	BLP2303ORRM	
BLP2304	110-812	BLP2303GH	BLP2303GH	
BLP2304GH	BLP2304GH	BLP2303GH	BLP2303GH	
BLP2306RM	BLP2306RM	BLP2306ORRM	BLP2306ORRM	
BLP2309	110-813	BLP2309GH	BLP2309GH	
BLP2309HRM	BLP2309HRM	BLP2309ORRM	BLP2309ORRM	
BLP2309RM	BLP2309RM	BLP2309ORRM	BLP2309ORRM	
BLP2310	110-814	BLP2310GH	BLP2310GH	
BLP2310RM	BLP2310RM	BLP2310ORRM	BLP2310ORRM	
BLP2323GH	BLP2323GH	BLP2309GH	BLP2309GH	
BLP2334GHE	EDN-A906	BLP2334GH	BLP2334GH	
BLP3311	110-815	BLP3312	110-815	

PART NO	SALES NO	REPLACED BY	SALES NO	REMARKS
D0011045PM	RM40-1045	40-1045ORRM	40-1045ORRM	REPL PEND DISC
D0011050PM	RM42-1050	42-1050ORRM	42-1050ORRM	REPL PEND DISC
D0011052PM	RM42-1052	42-1052RM	42-1052RM	REPL DISC
D0011053PM	RM42-1053	42-1053ORRM	42-1053ORRM	REPL PEND DISC
D0011055PM	RM42-1055	42-1055RM	42-1055RM	REPL DISC
D0011060PM	RM40-1060	40-1060ORRM	40-1060ORRM	REPL PEND DISC
D0011069PM	RM37-1069	37-1069ORRM	37-1069ORRM	REPL PEND DISC
D0011075PM	RM42-1075	42-1075RM	42-1075RM	REPL DISC
D0011089PM	RM37-1089	37-1089RM	37-1089RM	REPL DISC
D0011108RM	RM37-1108	37-1108ORRM	37-1108ORRM	REPL PEND DISC
D0011169RM	RM37-1169	37-1169RM	37-1169RM	REPL DISC
D0011170RM	RM37-1170	37-1170RM	37-1170RM	REPL DISC
D0011171RM	RM41-1171	41-1171RM	41-1171RM	REPL DISC
D0011276RM	RM37-1276	37-1276ORRM	37-1276ORRM	REPL PEND DISC
E0019013PM	RM21-9013	21-9013ORRM	21-9013ORRM	REPL PEND DISC
E0019037PM	RM21-9037	21-9037ORRM	21-9037ORRM	REPL PEND DISC
E0019142PM	RM33-9142	33-9142RM	33-9142RM	REPL DISC
E0019143PM	RM33-9143	33-9143ORRM	33-9143ORRM	REPL PEND DISC
E0019145PM	RM34-9145	34-9145ORRM	34-9145ORRM	REPL PEND DISC
E0019188PM	RM22-9188	22-9188ORRM	22-9188ORRM	REPL PEND DISC
E0019206PM	RM34-9206	34-9206RM	34-9206RM	REPL DISC
JA012670RJ	2670RJ	2670LCORRM	2670LCORRM	
JA01RA2126	RA2126	A0012022AAS	2302AAS	
JA01RC2526	JA01RC2526	2670LCORRM	2670LCORRM	
JA01RJ2300	RJ2300	2670LCORRM	2670LCORRM	
JA01RJ2526	RJ2526	2670LCORRM	2670LCORRM	
JA01RJ2613	RJ2613	2613LCORRM	2613LCORRM	
JA01RJ2670	RJ2670	2670LCORRM	2670LCORRM	
JA01RJ2700	RJ2700	2670LCORRM	2670LCORRM	
JA01RJ2800	RJ2800	2600LCORRM	2600LCORRM	
JA01RJ2813	JA01RJ2813	2813LCORRM	2813LCORRM	
JA01RJ2913	JA01RJ2913	2913LCORRM	2913LCORRM	
JA01RJ4860	RJ4860	4860JBORRM	4860JBORRM	
JA01RJ4860S	RJ4860S	4860JBSRM	4860JBSRM	REPL DISC
JA01RJ4867	RJ4867	4867JBORRM	4867JBORRM	
JA01RJ4870	RJ4870	4870JBORRM	4870JBORRM	
JA01RJ4900	RJ4900	4900JBSORRM	4900JBSORRM	
JA01RJ7705	RJ7705	7705JAORRM	7705JAORRM	
JA01RJ7706	RJ7706	7705JAORRM	7705JAORRM	
JA01RJ7711	RJ7711	7711JAORRM	7711JAORRM	
JA01RJ9900	RJ9900	4833LGHORRM	4833LGHORRM	
JM01RM7268	RM7268	MS2-503ORRM	MS2-503ORRM	
JM01RM7282	RM7282	MS2-503ORRM	MS2-503ORRM	
LBA2116PM	LBA2116RM	LBA2116ORRM	LBA2116ORRM	
LBP2190E	EDN-A904	LBP2190	110-912	
LBP2199RM	LBP2199RM	LBP2199ORRM	LBP2199ORRM	
LBP2190RM	LBP2190RM	LBP2190ORRM	LBP2190ORRM	
LN40MT	LN40MT	LRS-4000	LRS-4000	REPL DISC
LNS-2800	LNS2800	35259620	35259620	REPL OE ONLY
LNS-2810	LNS2810	35259620	35259620	REPL OE ONLY
LNS-2820	LNS2820	OMS123	OMS123	REPL INACTIVE
LNS-4000	LNS4000	LRS-4000	LRS-4000	REPL DISC
LRS16990	LRS16990	16990ORRM	16990ORRM	
LRS16990	LRS-16990	16990ORRM	16990ORRM	
LRS-4200	LRS-4200	42-1052RM	42-1052RM	REPL DISC
M001093112	93112	M0017267ME	7267ME	

MODEL SUPERCEDEANCE CHART

PART NO	SALES NO	REPLACED BY	SALES NO	REMARKS
M001094107	94107	M0017269ME	7269ME	
M001094125	94125	M0017407ME	7407ME	
M001094125	94125	M0017407ME	7407ME	
M001094134	94134	M0017505ME	7505ME	
M001094136	94136	M0017325ME	7325ME	
M001094145	94145	M0017264ME	7264ME	
M001094168	94168	M0017295ME	7295ME	
M001094177	94177	M0017073ME	7073ME	
M001094187	94187	M0017507ME	7507ME	
M001094196	94196	M0017601ME	7601ME	
M001094202	94202	M0017261ME	7261ME	
M001094203	94203	M0017266ME	7266ME	
M001094210	94210	M0017262ME	7262ME	
M001094211	94211	M0017297ME	7297ME	
M0014502ME	4502M	35259290	35259290	REPL OE ONLY
M0014503ME	4503M	35259550	35259550	REPL PRIVATE
M0017072MD	7072M	M0017072ME	7072ME	
M0017260MD	7260M	M0017260ME	7260ME	
M0017264MD	7264M	M0017264ME	7264ME	
M0017268ME	7268ME	MS2-503DS	MS2-503DS	
M0017282MC	7282M	M0017282ME	7282ME	
M0017296MD	7296M	M0017296ME	7296ME	
M0017400MC	7400M	M0017400ME	7400ME	
M0017406MC	7406M	M0017406ME	7406ME	
M0017414MC	7414M	M0017414MD	7414MD	
M0017422MC	7422M	M0017422ME	7422ME	
M0017424MC	7424M	M0017424ME	7424ME	
M0017500MC	7500M	M0017500ME	7500ME	
M0017504MC	7504M	M0017504ME	7504ME	
M0017506MC	7506M	M0017506ME	7506ME	
M0017608MC	7608M	M0017608ME	7608ME	
M0017702MD	7702MD	M0017702ME	7702ME	
M0017703MD	7703MD	M0017703ME	7703ME	
M125601E	EDN-5907	M125R2001SEP	M125601	
M125R2001SE	M125R2001SE	M125R2001SEP	M125601	
MA2800	MA2800	2800LORRM	2800LORRM	
MA35N24	MA35N24	8MR42N24	8MR42N24	
MA55N12	MA55N12	8MR65N12	8MR65N12	
MA55N12Y	MA55N12Y	8MR65N12	8MR65N12	
MBJ-6201	46-4167	MBJ-6304	MBJ-6304	REPL INACTIVE
MDA2924	110-875	MDA2932	110-444	
MDA2932E	EDN-A901	MDA2932	110-444	
MDP2933	MDP2933	MDP2934	110-444P	
MDP2934E	EDN-A902	MDP2934	110-444P	
MFY-6701UT	46-2591	MFY-6714UT	MFY-6714UT	
MFY-6704UT	46-3760	MFY-6711UT	MFY-6711UT	
MH12N601	MH12N601	8MR2199KS	110-656	
MMD-6102	46-4210	MUX-6304	MUX-6304	REPL INACTIVE
MMD-6701UT	46-3767	MMD-6715UT	MMD-6715UT	
MS1-327A	MS1-327A	MS1-453	MS1-453	REPL NO SVC
MS1-419A	MS1-419A	MS1-458	MS1-458	REPL PRIVATE
MS1-419AS	MS1-419AS	MS1-458S	MS1-458S	
MS1-453S	MS1-453S	MS1-401AS	MS1-401AS	
MS2-444	MS2-444	MS2-513	MS2-513	REPL PRIVATE
MS2-444S	MS2-444S	MS2-513S	MS2-513S	
MS2-446	MS2-446	MS2-503D	MS2-503D	REPL PRIVATE

PART NO	SALES NO	REPLACED BY	SALES NO	REMARKS
MS2-446S	MS2-446S	MS2-503DS	MS2-503DS	
MS2-447	MS2-447	MS2-506D	MS2-506D	REPL OE ONLY
MS2-447S	MS2-447S	MS2-506DS	MS2-506DS	
MS2-448	MS2-448	MS2-511D	MS2-511D	REPL OE ONLY
MS2-448S	MS2-448S	MS2-511DS	MS2-511DS	
MS2-450	MS2-450	MS2-510D	MS2-510D	REPL OE ONLY
MS2-450S	MS2-450S	MS2-510DS	MS2-510DS	
MS2-451	MS2-451	MS2-505	MS2-505	REPL PRIVATE
MS2-451S	MS2-451S	MS2-505S	MS2-505S	
MS2-452	MS2-452	MS2-504D	MS2-504D	REPL PRIVATE
MS2-452S	MS2-452S	MS2-504DS	MS2-504DS	
MS2-455	MS2-455	MS2-502D	MS2-502D	REPL PRIVATE
MS2-455S	MS2-455S	MS2-502DS	MS2-502DS	
MS2-456	MS2-456	MS2-507	MS2-507	REPL PRIVATE
MS2-456S	MS2-456S	MS2-507S	MS2-507S	
MS2-457	MS2-457	MS2-509D	MS2-509D	REPL OE ONLY
MS2-457S	MS2-457S	MS2-509DS	MS2-509DS	
MS2-458	MS2-458	MS2-508D	MS2-508D	REPL OE ONLY
MS2-458S	MS2-458S	MS2-508DS	MS2-508DS	
MS2-500	MS2-500	MS2-500D	MS2-500D	REPL OE ONLY
MS2-500N	MS2-500N	MS2-500ND	MS2-500ND	REPL PRIVATE
MS2-500NS	MS2-500NS	MS2-500NDS	MS2-500NDS	REPL PRIVATE
MS2-500RM	MS2-500RM	MS2-500ORRM	MS2-500ORRM	
MS2-500S	MS2-500S	MS2-500DS	MS2-500DS	
MS2-501	MS2-501	MS2-501D	MS2-501D	REPL OE ONLY
MS2-501N	MS2-501N	MS2-501ND	MS2-501ND	REPL PRIVATE
MS2-501NS	MS2-501NS	MS2-501NDS	MS2-501NDS	REPL PRIVATE
MS2-501RM	MS2-501RM	MS2-501ORRM	MS2-501ORRM	
MS2-501S	MS2-501S	MS2-501DS	MS2-501DS	
MS2-502	MS2-502	MS2-502D	MS2-502D	REPL PRIVATE
MS2-502S	MS2-502S	MS2-502DS	MS2-502DS	
MS2-503	MS2-503	MS2-503D	MS2-503D	REPL PRIVATE
MS2-503DE	EDN-5901	MS2-503D	MS2-503D	REPL PRIVATE
MS2-503N	MS2-503N	MS2-503ND	MS2-503ND	REPL PRIVATE
MS2-503NDS	MS2-503NDS	M125R2001SEP	M125601	
MS2-503NS	MS2-503NS	M125R2001SEP	M125601	
MS2503RM	MS2503RM	MS2-503ORRM	MS2-503ORRM	
MS2-503RM	MS2-503RM	MS2-503ORRM	MS2-503ORRM	
MS2-503S	MS2-503S	MS2-503DS	MS2-503DS	
MS2-504	MS2-504	MS2-504D	MS2-504D	REPL PRIVATE
MS2-504DE	EDN-5902	MS2-504D	MS2-504D	REPL PRIVATE
MS2-504N	MS2-504N	MS2-504ND	MS2-504ND	REPL PRIVATE
MS2-504NDS	MS2-504NDS	M125R2001SEP	M125601	
MS2-504NS	MS2-504NS	M125R2001SEP	M125601	
MS2-504RM	MS2-504RM	MS2-504ORRM	MS2-504ORRM	
MS2-504S	MS2-504S	MS2-504DS	MS2-504DS	
MS2-506	MS2-506	MS2-506D	MS2-506D	REPL OE ONLY
MS2-506N	MS2-506N	MS2-506ND	MS2-506ND	REPL PRIVATE
MS2506RM	MS2506RM	MS2-506ORRM	MS2-506ORRM	
MS2-506RM	MS2-506RM	MS2-506ORRM	MS2-506ORRM	
MS2-506S	MS2-506S	MS2-506DS	MS2-506DS	
MS2-508	MS2-508	MS2-508D	MS2-508D	REPL OE ONLY
MS2-508N	MS2-508N	MS2-508ND	MS2-508ND	REPL PRIVATE
MS2-508NS	MS2-508NS	MS2-508NDS	MS2-508NDS	REPL PRIVATE
MS2508RM	MS2508RM	MS2-508ORRM	MS2-508ORRM	
MS2-508RM	MS2-508RM	MS2-508ORRM	MS2-508ORRM	

MODEL SUPERCEDEANCE CHART

PART NO	SALES NO	REPLACED BY	SALES NO	REMARKS
MS2-508S	MS2-508S	MS2-508DS	MS2-508DS	
MS2-509	MS2-509	MS2-509D	MS2-509D	REPL OE ONLY
MS2-509N	MS2-509N	MS2-509ND	MS2-509ND	REPL PRIVATE
MS2-509NS	MS2-509NS	MS2-509NDS	MS2-509NDS	REPL PRIVATE
MS2509RM	MS2509RM	MS2-509ORRM	MS2-509ORRM	
MS2-509RM	MS2-509RM	MS2-509ORRM	MS2-509ORRM	
MS2-509S	MS2-509S	MS2-509DS	MS2-509DS	
MS2-510	MS2-510	MS2-510D	MS2-510D	REPL OE ONLY
MS2-510DE	EDN-5903	MS2-510D	MS2-510D	REPL OE ONLY
MS2-510N	MS2-510N	MS2-510ND	MS2-510ND	REPL PRIVATE
MS2-510NDS	MS2-510NDS	M125R2001SEP	M125601	
MS2-510NS	MS2-510NS	M125R2001SEP	M125601	
MS2-510RM	MS2-510RM	MS2-510ORRM	MS2-510ORRM	
MS2-510S	MS2-510S	MS2-510DS	MS2-510DS	
MS2-511	MS2-511	MS2-511D	MS2-511D	REPL OE ONLY
MS2-511DE	EDN-5904	MS2-511D	MS2-511D	REPL OE ONLY
MS2-511N	MS2-511N	MS2-511ND	MS2-511ND	REPL PRIVATE
MS2-511NDS	MS2-511NDS	M125R2001SEP	M125601	
MS2-511NS	MS2-511NS	M125R2001SEP	M125601	
MS2-511RM	MS2-511RM	MS2-511ORRM	MS2-511ORRM	
MS2-511S	MS2-511S	MS2-511DS	MS2-511DS	
MS2-514	MS2-514	MS2-514D	MS2-514D	REPL PRIVATE
MS2-514N	MS2-514N	MS2-514ND	MS2-514ND	REPL PRIVATE
MS2-514NS	MS2-514NS	MS2-514NDS	MS2-514NDS	REPL PRIVATE
MS2-514S	MS2-514S	MS2-514DS	MS2-514DS	
MS2-522P	MS2-522P	MS2-522NCP	MS2-522NCP	REPL PRIVATE
MS2-522PS	MS2-522PS	MS2-522NCP6	MS2-522NCP6	
MS2-530	MS2-530	MS2-530D	MS2-530D	REPL PRIVATE
MS2-530DE	EDN-5905	MS2-530D	MS2-530D	REPL PRIVATE
MS2-530N	MS2-530N	MS2-530ND	MS2-530ND	REPL PRIVATE
MS2-530NS	MS2-530NS	MS2-530NDS	MS2-530NDS	REPL PRIVATE
MS2530RM	MS2530RM	MS2-530ORRM	MS2-530ORRM	
MS2-530RM	MS2-530RM	MS2-530ORRM	MS2-530ORRM	
MS2-530S	MS2-530S	MS2-530DS	MS2-530DS	
MS2-531	MS2-531	MS2-531D	MS2-531D	REPL PRIVATE
MS2-531DE	EDN-5906	MS2-531D	MS2-531D	REPL PRIVATE
MS2-531N	MS2-531N	MS2-531ND	MS2-531ND	REPL PRIVATE
MS2-531NS	MS2-531NS	MS2-531NDS	MS2-531NDS	REPL PRIVATE
MS2531RM	MS2531RM	MS2-531ORRM	MS2-531ORRM	
MS2-531RM	MS2-531RM	MS2-531ORRM	MS2-531ORRM	
MS2-531S	MS2-531S	MS2-531DS	MS2-531DS	
MS2-570	MS2-570	MS2-570D	MS2-570D	REPL PRIVATE
MS2-570N	MS2-570N	MS2-570ND	MS2-570ND	REPL PRIVATE
MS2-570NS	MS2-570NS	MS2-570NDS	MS2-570NDS	REPL PRIVATE
MS2-570RM	MS2-570RM	MS2-570ORRM	MS2-570ORRM	
MS2-570S	MS2-570S	MS2-570DS	MS2-570DS	
MS2-571	MS2-571	MS2-571D	MS2-571D	REPL OE ONLY
MS2-571N	MS2-571N	MS2-571ND	MS2-571ND	REPL PRIVATE
MS2-571NS	MS2-571NS	MS2-571NDS	MS2-571NDS	REPL PRIVATE
MS2-571RM	MS2-571RM	MS2-571ORRM	MS2-571ORRM	
MS2-571S	MS2-571S	MS2-571DS	MS2-571DS	
MS3-351A	MS3-351A	MS3-503	MS3-503	REPL OE ONLY
MS3-351AS	MS3-351AS	MS3-503S	MS3-503S	
MS3-451A	MS3-451A	MS3-503	MS3-503	REPL OE ONLY
MS7-300	MS7-300	MS7-300A	MS7-300A	
MS7-301	MS7-301	MS7-301A	MS7-301A	

PART NO	SALES NO	REPLACED BY	SALES NO	REMARKS
MS7-301S	MS7-301S	MS7-301A	MS7-301A	
RA65N12B	RA65N12B	BAR65N12	BAR65N12	
RM110-255	RM110-255	110-555ORRM	110-555ORRM	
RM110-450	RM110-450	110-450ORRM	110-450ORRM	
RM110-487	RM110-487	110-612RM	110-612RM	
RM110-555	RM110-555	110-555ORRM	110-555ORRM	
RM110-555NR	RM110-555NR	110-555ORRM	110-555ORRM	
RM110-555OR	RM110-555OR	110-555ORRM	110-555ORRM	
RM110-555P	RM110-555P	110-555PORRM	110-555PORRM	
RM110-579	RM110-579	110-555ORRM	110-555ORRM	
RM110-606	RM110-606	110-606RM	110-606RM	
RM110-607	RM110-607	110-607RM	110-607RM	
RM110-608	RM110-608	110-608RM	110-608RM	
RM110-609	RM110-609	110-609RM	110-609RM	
RM110-610	RM110-610	110-610RM	110-610RM	
RM110-611	RM110-611	110-611RM	110-611RM	
RM110-612	RM110-612	110-612RM	110-612RM	
RM110-800P	RM110-800P	BLP2303ORRM	BLP2303ORRM	
RM110-801	RM110-801	BLD2301ORRM	BLD2301ORRM	
RM219013	RM219013	21-9013ORRM	21-9013ORRM	REPL PEND DISC
RM219037	RM219037	21-9037ORRM	21-9037ORRM	REPL PEND DISC
RM219051	RM219051	E0019051RM	RM21-9051	REPL DISC
RM21-9051	RM21-9051	E0019051RM	RM21-9051	REPL DISC
RM229188	RM229188	22-9188ORRM	22-9188ORRM	REPL PEND DISC
RM22-9188	RM22-9188	22-9188ORRM	22-9188ORRM	REPL PEND DISC
RM22-9189	RM22-9189	22-9189RM	22-9189RM	REPL DISC
RM309009	RM309009	RM30-9009	RM30-9009	REPL DISC
RM33-9142	RM33-9142	33-9142RM	33-9142RM	REPL DISC
RM33-9143	RM33-9143	33-9143ORRM	33-9143ORRM	REPL PEND DISC
RM34-9145	RM34-9145	34-9145ORRM	34-9145ORRM	REPL PEND DISC
RM37-1108	RM37-1108	37-1108ORRM	37-1108ORRM	REPL PEND DISC
RM37-1169	RM37-1169	37-1169RM	37-1169RM	REPL DISC
RM37-1170	RM37-1170	37-1170RM	37-1170RM	REPL DISC
RM37-1276	RM37-1276	37-1276ORRM	37-1276ORRM	REPL PEND DISC
RM40-1045	RM40-1045	40-1045ORRM	40-1045ORRM	REPL PEND DISC
RM40-1060	RM40-1060	40-1060ORRM	40-1060ORRM	REPL PEND DISC
RM41-1171	RM41-1171	41-1171RM	41-1171RM	REPL DISC
RM42-1050	RM42-1050	42-1050ORRM	42-1050ORRM	REPL PEND DISC
RM42-1055	RM42-1055	42-1055RM	42-1055RM	REPL DISC
RM42-1233	RM42-1233	42-1233RM	42-1233RM	REPL PEND DISC
SCJ2165	SCJ2165	SCJ2225	SCJ2225	REPL PRIVATE
SCJ2167	SCJ2167	SCJ2287	SCJ2287	REPL PRIVATE
SCJ2216	SCJ2216	SCJ2225	SCJ2225	
SCJ2217	SCJ2217	SCJ2227	SCJ2227	
SCJ2219	SCJ2219	SCJ2239	SCJ2239	REPL PRIVATE
SCJ2221	SCJ2221	SCJ2231	SCJ2231	
SCJ3126	SCJ3126	SCJ3162	SCJ3162	REPL PRIVATE
SCJ3128	SCJ3128	SCJ3147	SCJ3147	REPL PRIVATE
TA12N325	110-60	8TA201CES	110-190	
Z1327A611	Z1327A611	1327A611	1327A611	REPL OE ONLY

THE POWER OF EXCELLENCE