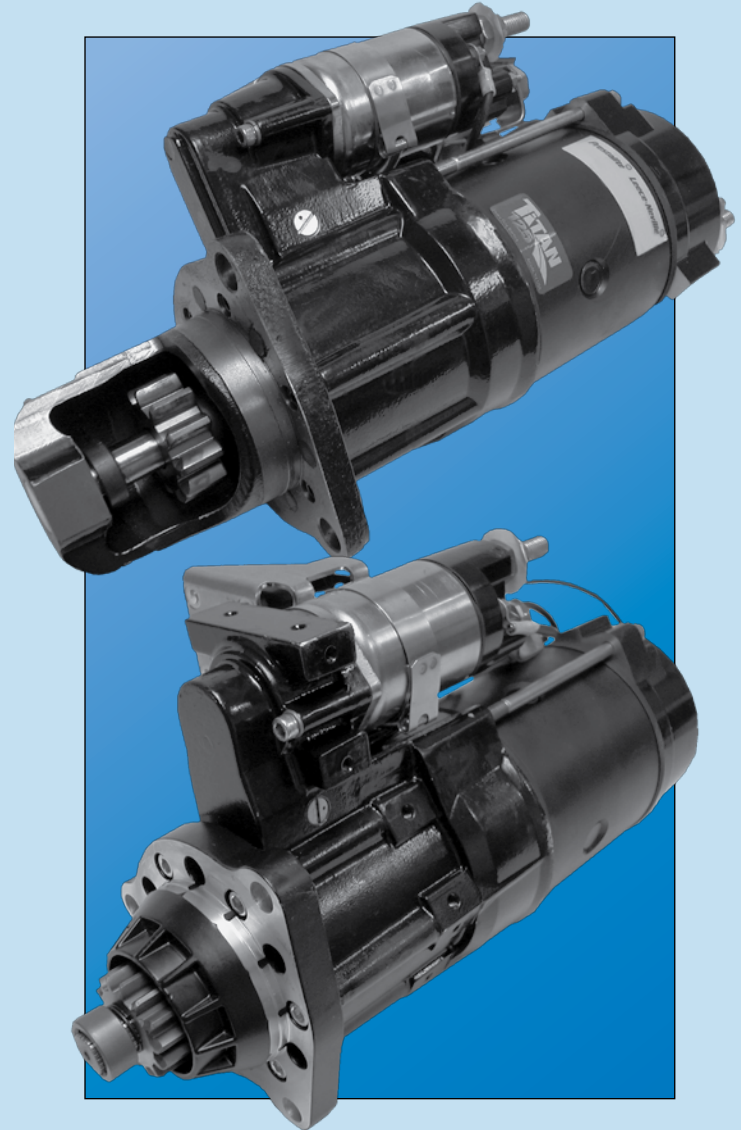


TITAN

HEAVY DUTY
STARTER MOTORS

Contents

The Titan™ is born	3
The Titan™ Edge In-line Gear Reduced	3
Features - Benefits	5
Causes and Solutions	6
Technical Guidelines- 12V	7
Applications- 12V	8
Cross Reference- 12V	9
Stacking Up To Performance- 12V	10
Technical Guidelines- 24V	11
Applications- 24V	12
Cross Reference- 24V	13
Stacking Up To Performance- 24V	14



TITAN
125

Prestolite

Leece-Neville

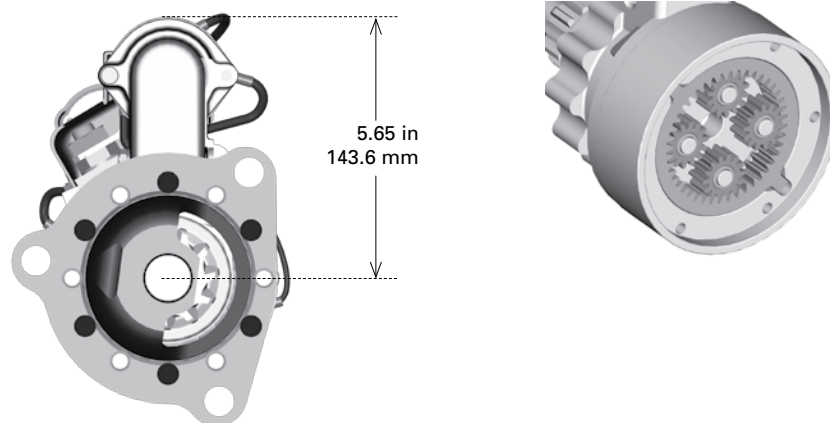
THE TITAN™ IS BORN

Early in 2005 Prestolite Electric Incorporated placed into motion a strategic plan to expand and consolidate our gear reduced starter line.

THE TITAN™ EDGE

Prestolite / Leece-Neville is proud to announce the Titan™ Series of gear reduced starter motors. The new Titan™ brand encompasses our complete line of gear reduced starter motors. Models are available in rotatable nosed and noseless designs.

In-line Gear Reduced



With the name Titan™ you expect it to be strong, and this next generation Titan™125 starter motor series will exceed your expectations. Designed specifically for large bore diesel engines up to 16L applications, the gear reduced technology delivers the high torque output and starting power you need, even in severe conditions and low voltages.

GEAR REDUCTION SYSTEM

COMPACT SIZE, LIGHTER WEIGHT

ELECTRONIC SOFT START

HEAVY DUTY ROLLER CLUTCH DRIVE

INLINE GEAR REDUCED WITH 4 PLANETS

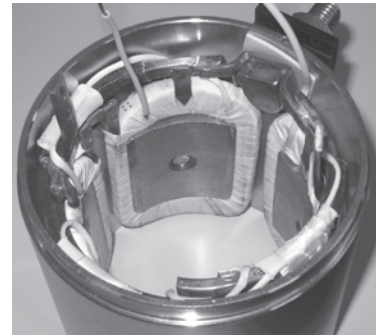
OVER CRANK PROTECTION

INLINE GEAR REDUCED WITH 4 PLANETS

- Gear reduction yields higher torque in a smaller package.
- Inline design reduces envelope requirements versus offset gear reduced.
- 40% stronger gear box, due to larger component sizes (Planets, annulus, armature pinion).

SOFT ENGAGEMENT

Incorporates additional soft start features (Ancillary windings in field coil).

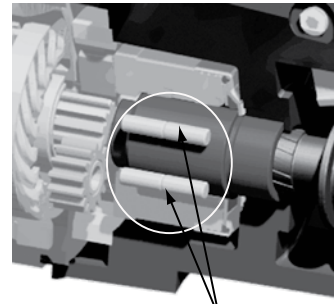


Electronic Soft Start The Leece-Neville soft engagement system incorporates additional soft start features, like ancillary windings in the field coil, providing proper pinion to ring gear alignment and full engagement before cranking due to the rotating pinion. This helps prevent wear on pinions and ring gears.

HEAVY DUTY ROLLER CLUTCH DRIVE

Better able to withstand shock loading of gear reduced drives.

Long Life. With our bush-less design, jump start and over crank protection, and heavy duty roller-clutch drive, these powerful starter motors are designed to keep your engines cranking when you need them most.



Double layered
12 roller clutch
drive

OVER CRANK PROTECTION

Built-in OCP in some models.

Service and versatility. The Titan™ Series are a compact size and their light weight makes them easy to service. Rotatable nose housings and flanges gives them more versatility than other brands of starter motors.

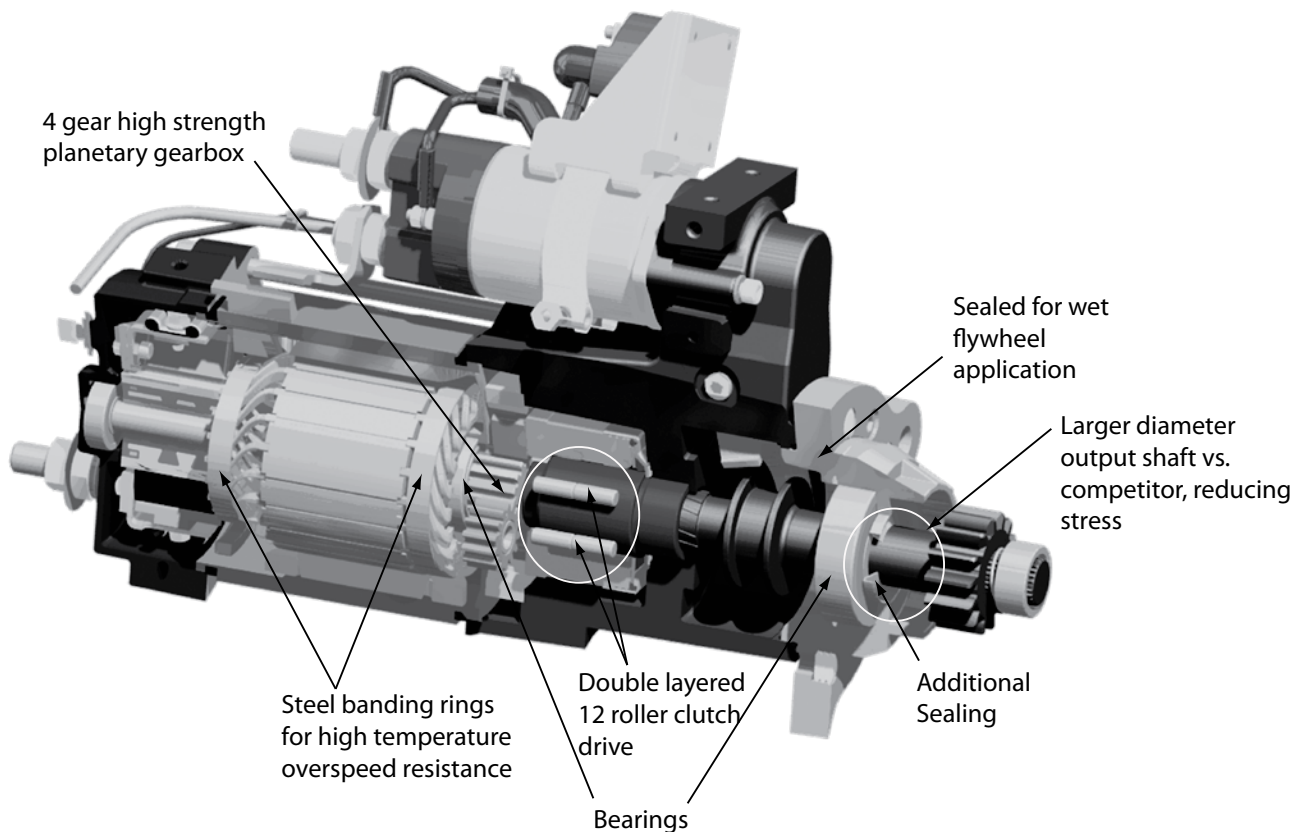
Capability. The Titan™ 125 provides more power in a smaller package and the in-line design allows for the greatest installation flexibility.

HEAVY AND MEDIUM DUTY POWER

The new Titan™ 125 Series starter motors are 8 kW gear reduced for today's demanding heavy duty applications.

FEATURES AND BENEFITS

Feature	Benefit
Compact size, Lighter weight	Ease of service, reduces overall vehicle weight
Inline gear reduced with 4 planets	Yields higher torque in a smaller package, inline design reduces envelope requirements, 40% stronger gear box
Electronic soft start	Provides proper pinion to ring gear alignment and full engagement before cranking due to the rotating pinion
Heavy duty roller clutch drive OCP (Built-in)	Better able to withstand shock loading Safeguards you system even in the harshest conditions



CAUSES AND SOLUTIONS

The new Titan™ Series starter motors provide solutions to the primary causes of starting system malfunction.

LOW BATTERY CHARGE

A battery having a low / poor state of charge will place abnormal stresses on the starting system. The Titan™ is designed to maximize performance, making every crank count.

ADVERSE WEATHER CONDITIONS

A starter motor can become damaged if it operates too long at high temperatures. Excessive heat is generally due to continuous engagement of the starter. Damage to starting system components can occur when the starter motor is cranked for long periods (often due to cold weather starts).

The Titan™ 125 has been proved capable of cranking big bore engines unaided down to -40°F.

EXCESSIVE VIBRATION

When starting system components are poorly or loosely mounted to the vehicle's engine, the resulting vibration can damage sensitive internal components. The Titan™ evolutionary design withstands high vibration levels, providing high durability and endurance.

CORROSION, DIRT AND DUST

Starting system components operate less efficiently when corrosion forms or dirt particles build up. The Titan™ design deters build up and ingress of foreign materials.

OPERATOR MISUSE

With it's evolutionary design, quality engineering and proven capability, the Titan™ 125 will stand up to the rigorous conditions your big bore engine needs to face.

12 VOLT TECHNICAL GUIDELINES

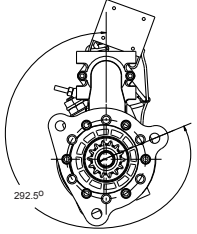
The new Titan™ 125 Series starter motors provide the technology you need for 15L and 16L large bore diesel engines.

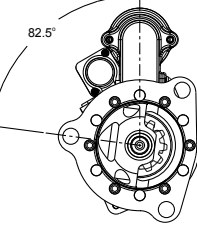
Data	Part Number	Frame Diameter mm	Voltage	Rotation CW/CCW	Flange (SAE J542 Type)	Flange Thickness	External Nose Bearing	Fixing Holes		Spigot Diameter	Pinion Rest Position
								Diameter	PCD		
	M125601	125	12	CW	3	14.3	Yes	16.0	146	92.00	48.50
	M125600	125	12	CW	3	16.4	Yes	16.0	146	92.00	48.50
	M125632	125	12	CW	3	14.3	Yes	16.0	146	92.00	48.50
	M125634	125	12	CW	3	16.4	Yes	16.0	146	92.00	48.50

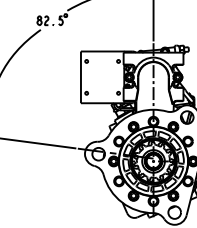
Data	Terminals			OCP	Return path & insulation	Pinion						
	Battery	Negative	Solenoid			No. of Teeth	O/D	Root Dia	Tooth Form	Pressure Angle	Distance over 2 teeth	
	M125601	1/2-13UNC	1/2-13UNC	M5x0.8	Yes	IR	11	46.50	42.70	6/8	20°	20.30
	M125600	1/2-13UNC	1/2-13UNC	M5x0.8	No	IR	14	50.58	37.08	3	14.5°	14.56
	M125632	1/2-13UNC	1/2-13UNC	M5x0.8	No	IR	11	57.60	42.70	6/8	20°	20.85
	M125634	1/2-13UNC	1/2-13UNC	M5x0.8	No	IR	12	46.30	46.40	8/10	20°	15.62

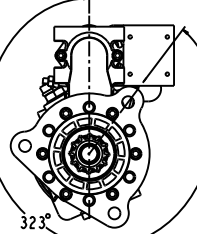
12 VOLT APPLICATIONS

The new Titan™ 125 Series starter motors are designed specifically for large bore diesel engines up to 16 Liters.

M125600					
Front View	Details	Teeth	Pinion Details		
			Pitch	OD	Pinion at rest
	12V CW	14	Mod 3	50.58	1.909" 48.5mm

M125601					
Front View	Details	Teeth	Pinion Details		
			Pitch	OD	Pinion at rest
	12V CW	11	6/8	46.5mm	1.909" 48.5mm

M125632					
Front View	Details	Teeth	Pinion Details		
			Pitch	OD	Pinion at rest
	12V CW	11	6/8	57.6mm	1.909" 48.5mm

M125634					
Front View	Details	Teeth	Pinion Details		
			Pitch	OD	Pinion at rest
	12V CW	12	8/10	46.3mm	1.909" 48.5mm

12 VOLT CROSS REFERENCE

The new Titan™ 125 Series starter motors are designed to cross reference the following competitor models:

Sales Number	Application Info.	Delco		Denso	Mitsubishi		Leece-Neville
M125601 Nosed	Cummins ISX/ CAT/ Detroit Series S60	8300009 8300019 10461753 10461777 8200033 19011506 19011516 19011518 19011521 19011529	19011530 1990355 1990352 8200083 10462155 10462196 10462175 10479266 10479265	428000-4420 428000-4440			MS2-500 MS2-501 MS2-503 MS2-504 MS2-510 MS2-511
M125600 Noseless	Freightliner (DD13, 15, 16) Sterling Western Star	8200329 8200298 8300058 8200434 19011514 19011525	8300013 8300008 8200287 8200084 8200082	428000-4451	FL0379 MIB970379 MIB971179 MIB971179FL FL1179		
M125632 * Noseless	Detroit S60, Cummins N14, ISM, ISX CAT C11, C12, C13, C15, C16	19011518 19011521 19011529 19011530 8200050 8200090 8200091	8200104 8200289 8200290 8200308 8300009 8300019	428000-4420 428000-4430 428000-4440	IN0976, FL0579, M009T70579, M9T70579 MIB97059, MIB70579FL, 8MJ5439M, MK0077, 009T70077, 8MJ4298AM, VV0977, MIB970975, MIB970975FL	FL0975, MIB970777, MIB970777FL, FL0777, PC0979, PC1479, PC1879, M983579, 20851006, VV0776	MS2-500D**, MS2-501D, MS2-503D, MS2-503ND, MS2-504D**, MS2-504ND**, MS2-510D**, MS2-510ND**, MS2-511D, MS2-511ND
M125634 Noseless	Volvo D13, D16 Mack MP8, MP10	8200214 8200572	8300060 8200417 8200182		21029460 21019456 MK2078, MK2079 VV2079, VV2080		MS2-512, MS2-512D, MS2-512N, MS2-512ND MS2-522NCP MS2-530, MS2-530D, MS2-530N, MS2-530ND MS2-531, MS2-531D, MS2-531N, MS2-531ND** MS2-570,MS2- 570D,MS2- 570N,MS2- 570ND

Note: In some instances the starter flange may need to be relocked and vehicle OCP circuit bypassed with furnished bypass plug.

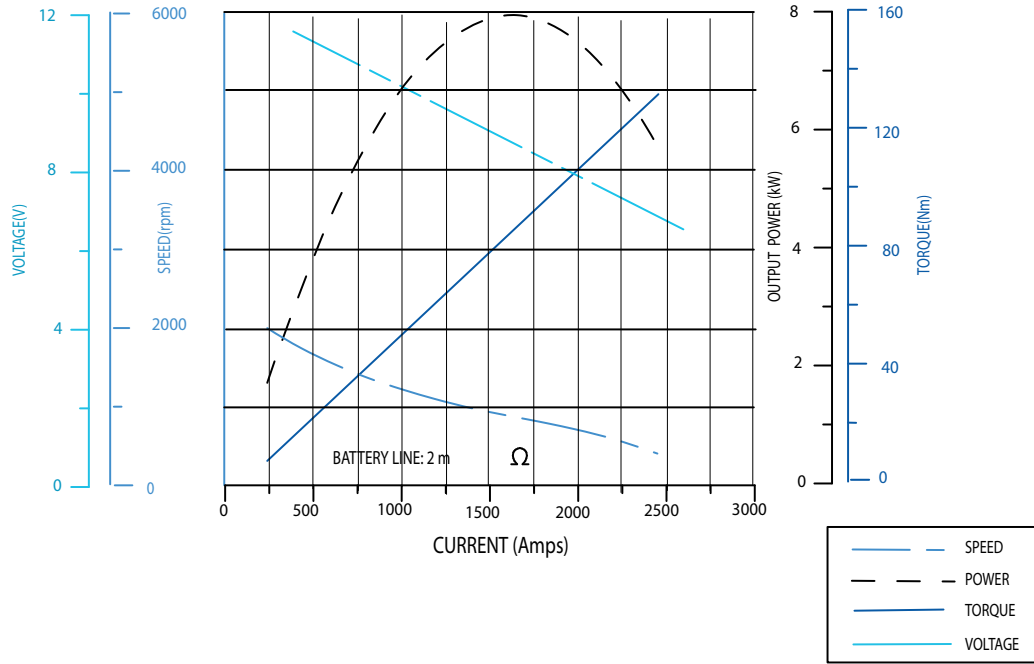
All M125R starters have IMS/ soft start relay.

* NOTE: this table cross references the 39MT only. For cross references to 42MT and 50MT, please go to our website at www.prestolite.com.

** Bypass vehicle OCP

STACKING UP TO PERFORMANCE

M125R 12V TYPICAL PERFORMANCE CURVE

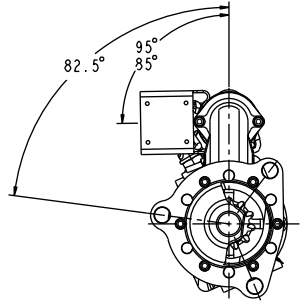


24 VOLT TECHNICAL GUIDELINES

The new Titan™ 125 Series starter motors provides the technology you need for up to 18L large bore diesel engines.

Data					Flange (SAE J542 Type)	Flange Angle	Flange Thick- ness	External Nose Bearing	Fixing Holes		Spigot Diameter	Reach (Flange to Ring- gear)	Pinion Rest Position
Part Number	Frame Diameter mm	Volt- age	Rotation CW/CCW	RH / LH Mount					Diameter	PCD			
M125701	125	24	CW	L	3*	82.5	14.3	Yes	16.0	146	92.00	50.8	48.5

Data	Terminals			OCP	Return path & insulation	Pinion						
Part Number	Battery	Negative	Solenoid			No. of Teeth	O/D	PCD	Root Dia	Tooth Form	Pressure Angle	Distance over 2 teeth
M125701	1/2-13UNC	1/2-13UNC	M5x0.9	Yes	IR	11	56.8	46.6	42.7	6/8DP	20°	20.3

M125701					
Front View	Details	Teeth	Pinion Details		
			Pitch	OD	Pinion at rest
	24V CW Rotatable SAE3 Flange	11	6/8	2.24" 56.8mm	1.91" 48.5mm

24 VOLT APPLICATIONS

The new Titan™ 125 Series starter motors are designed specifically for large bore diesel engines up to 18 Liters.

Application (Trucks, Off-Road, Ag, etc.)	CAT	CUMMINS	DETROIT DIESEL	JOHN DEERE	IVECO	MACK	WAUKESHA DRESSER
ALLIS CHALMERS: Crawlers - HD-16, HD-16DD, HD-16DP, HD-16P, HD-16-PS, HD-21, HD-21G, HD-41		V-1710					
AUTOCAR: Trucks-w/Cat & w/DD Engines	3406		12V-71N				
CASE: Crawlers-120C, Excavators-120D, Compactors-825C			12V-71				
CATERPILLAR: Compactors-826C, Excavators-245, Construction/Mining Trucks-768C, 769B, 769C, 769D, 771C, 772B, 772D, 773B, 773D, Scrapers-621B, 621E, 623E, 631D, 631E, 633D, 637E, 639D, 641B, 651B, 651E, 657B, 657E, 660B, Loaders (Track)-983B, D8N, Loaders (Wheel)-988, 988B, 992, 992B, 992C, DOZER-824C, 834B, MARINE-Various Models (1974-1997)	3406		D343				
	3408		D346				
	3412						
	3508						
	3512						
CHEVROLET/GMC Trucks: D9K Titan, D9L Titan, DK90, DP90, FK90, MK90, N9E, N9F, Bison		KTA-450	8V-92				
		KT	12V-71				
		KTA-1150	8V-71				
		NT-310	12V-71				
CLARK: Dozer-380, 380III, 380IIIA, 380-2 III, 380C III, 480, Scrapers-310, 310 III, 310 III-H, 410, Tractor Shovels-275K, 475 III, 475B, 675, 675B, Construction Equip (Trucks) - CFA-13, CFA-14, CFA-15, CFA-19, (Tournapuls) BPA-5, BPA-7, BPA-8, BPH-5		NVH-450	12V-71N				
		V12-635	16V-71N				
		V12-635C1	16V-92				
		V-1710					
		V-1710C					
DRESSER: Loaders-550, 560B		KTA-1150					
DETROIT MFG: Crawlers-120C			12V-71				
		NT-380	12V-71				
EUCLID: Scrapers-SS-40A, Tractors-36LDT, 41LDT, 44LDT, 46LDT, Trucks-201TD, 71TD, 74TD, 75TD, R35, Wagons-138W, 141W, 144W, 146W		NHV-12					
		V17-525					
		VT-12					
		VT12-600					
FIAT-ALLIS: Crawler/Loaders - FL20, Crawler/Tractors-HD-16DD/PS, HD21, HD31, HD41, Crawlers-FD20, FD30, Excavators-FE40, Tractor/Scrapers-FS11, FS20, FS21, FS22, FS23, Loaders (Wheel) - 745, 945/B, FL20, FR20,FR35		VT-1710			8215		
		KT-1150			8285		
FORD Trucks: L6000/7000/8000/9000 Series, Many models prior to 1984 w/Cummins, DD, Cat engines	3406	855	6V-92				
		KTA-1150	8V-71				
FREIGHTLINER: Classic, FL, FLC112/120, FLT	3306	K Series	60 Series				
	3408		8V-92				
			12V-71				
GROVE MFG: Cranes-TM1400	3408TA	KT-450	8V-92TA				
HOUGH: D-5000		VT12-635					
INGERSOLL RAND: Air Compressor-DL122			12V-71				
INTERNATIONAL Construction Equip: PayDozers-D400, D500, PayHaulers-PH350B, PayLoaders-H400B, H400C		V12-525	12V-71				
		VT12-635	16V-71N				
INTERNATIONAL Truck: Paystar DD, Transtar, Transtar DD			8V-92				
JOHN DEERE: Engines-8955, Excavators-900, Loaders-844, Power Units-8955				8955T/A 955			
KENWORTH: C500, C500DD, K100, K100D, L700, L700D, W900, W900DD	3406	KT400/600	8V-92				
	3408	KT450/600	12V-71				
		NTC-855					
		L10					
MACK: CH/CL/CM series, DM/DMM series, F/FL/FS/FDM series, MC/MH/MR series, R/RB/RD/RL/RM/RW series, U Series (all with Mack Engines), also MH Series w/ Cat engine	3208					E5, EC5, DM, DMM F, FL, FS, FDM MC, MH, MR, R RB, RD, RL, RM RS, RW, U	
MURPHY DIESEL: 852, 862, 872, MP11, MP12, MP20, MP21, M22, M24							
PETERBILT: 357, 359, 362, 377, 378, 379, All Models (1980-85) w/Cat 3406, All Models (1980-89) w/Cat 3408, All Models (1977-88) w/Cummins K, All Models (1972-82) w/DD 12V-71, All Models (1979-90) w/DD 8V-92	3406	K Series	8V-92				
	3408						
STEIGER: Tractors-Tiger 450, Tiger 470, Tiger III, Tiger III ST450, Tiger III ST470, Tiger IV KP525	3408	KTA-1150					
VERSATILE: Tractors-1150, 1156		KTA-1150					
VOLVO: Trucks-Most Models (1983-93) w/various Engines							
WABCO: Haulpack Trucks - 35 ton, 50 ton, 65 ton, 75 ton, 85 ton, 120 ton, 170 ton (1979-87), Haulpack Scrappers-333, 339, 353FT		KT-2300C	12V-71				
		KTA-2300	12V-71T				
		KTA-3067	12V-149				
		VT1700	16V-71				
		VT1710	16V-149				
WAUKESHA/DRESSER: Engines-F/L Series (1981-89)							F-2895
							F-3335D
							F-3521
							L-5108G
							L-5790
						L-6670D	
						L-7042G	
WESTERN STAR: Trucks-All Models (1974-88) w/Cat 3408 & Cummins K/KT, All Models (1989-92) w/DD60, Other earlier Models w/various Engines	3408	K/KT	DD-60				
		L10	8V-92				
			12V-71				
WHITE: Trucks-All Models (1974-84) w/Cat 3408 & Cummins K/KT, All Models (1974-80) w/DD 12V-71, All Models (1974-84) w/8V-92	3408	K/KT	8V-92				
		K/KT	8V-92				

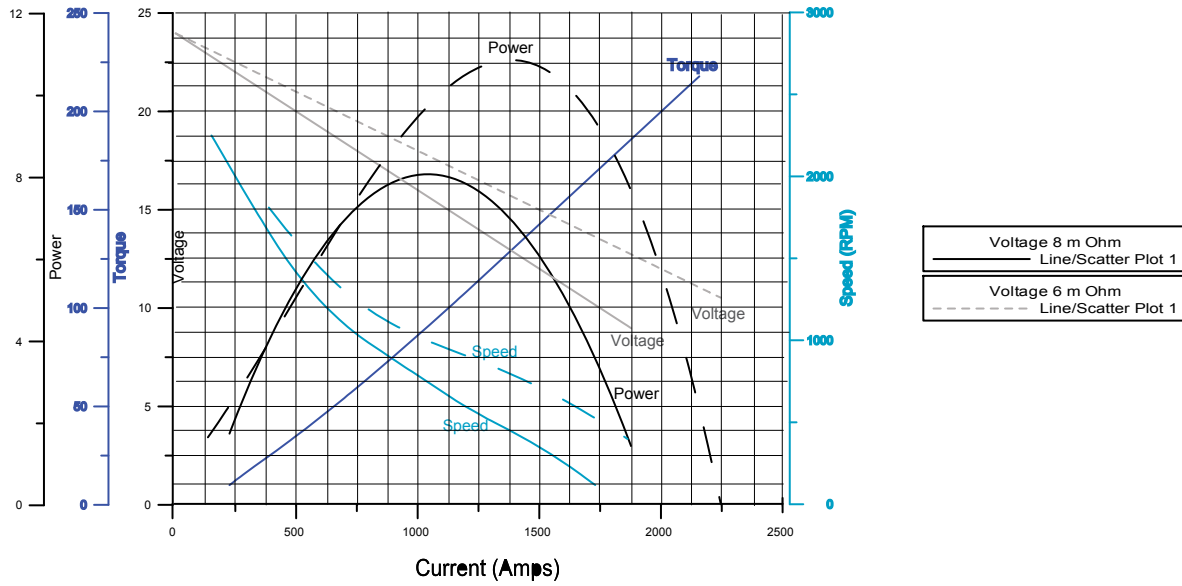
24 VOLT CROSS REFERENCE

The new Titan™ 125 Series starter motors are designed to cross reference the following competitor models:

Type	OE Reference Number										
	Delco		Case	CAT	Cummins	Detroit Diesel	Fiat Allis	International	John Deere	Ford	Onan
M125701	1990249	1109798	20-1297T91	0R4272	173184	R0461125	70620350	399440C91	RE10464	D7HT-11001-AA	191-1588
	10479339	1109839	462588C91	OR5213	3000576		70675686	462588C91		D8HZ-11002-C	191-2135
	10461739	1109840	489717C91	3L8205	3004699		70697811	489717C91		E1HT-11001-DB	
	10461057	1109841	739911C9	3T2780	3004700		73114229	729912C91		E2HT-11001-CA	
	10461125	1109842	739912C91	3T2785	3010125		73130196	739911C91		E3HZ-11002	
	10479125	1109845		3T2787	3021038		73130197	844317C91			
	10479126	1109846		3T3778	3063771		73130198				
	1109222	1109961		3T8947	3603868RX		73130627				
	1109285	1109965		3T8949	3603888RX						
	1109286	1109972		3T8954	3632274						
	1109287	1109979		3T8967	3632274RX						
	1109288	1109985		4M5615							
	1109289	1990229		4N0959							
	1109290	1990231		4N3343							
	1109291	1990235		4N3349							
	1109292	1990237		5L3648							
	1109296	1990239		5L4405							
	1109298	1990248		5L5353							
	1109494	1990249		5L648							
	1109553	1990250		5L8205							
	1109631	1990251		5LG48							
	1109638	1990259		5N2685							
	1109642	1990260		6N9667							
	1109643	1990262		6N9677							
	1109647	1990263		6T0640							
	1109649	1990264		6T0647							
	1109755	1990269		6V0511							
	1109759	1990270		6V0590							
	1109768	1990271		6V0890							
	1109771	1990273		8L8205							
	1109772	1990274		9L6464							
	1109774	1990276		9L6474							
1109775	1993825		9L6484								
1109776	1993840										
1109777	1993841										
1109780	1993852										
1109791											

STACKING UP TO PERFORMANCE

M125 24V Starter Performance Graph



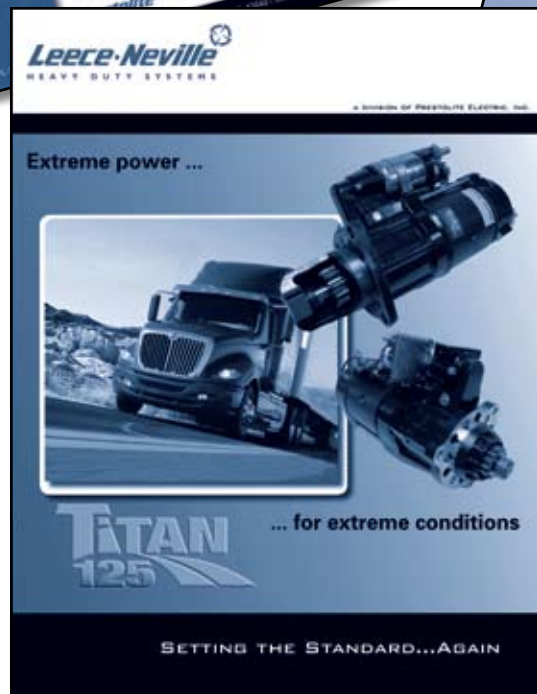
Additional Information is available in these brochures:



FL1116



PG1019



PG1007

Visit our website at www.prestolite.com, or call your Leece-Neville Representative today!

THE POWER OF EXCELLENCE

LEECE-NEVILLE HEAVY DUTY SYSTEMS

A DIVISION OF PRESTOLITE ELECTRIC INC.

www.prestolite.com

Manufacturing OE Sales

400 Main Street
Arcade, NY USA 14009

Phone: (585) 492-1700

Fax: (585) 492-1660

Distribution, Aftermarket Sales

7585 Empire Drive
Florence, KY USA 41042

Phone: (859) 525-8801

(800) 354-0560

Fax: (800) 997-6202