

Protorque





Adjustable for Header & Oil Pan Clearance.

5 Adjustment Positions

[#:])

Part # Applications

5311 Pontiac / Oldsmobile 350, 400, 455

SPECIFICATIONS

Type of Unit: Estimated Horsepower: Reduction Ratio: Weight: Nippondenso Gear Reduction 1.9HP 4:1 10 Lbs.



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Adj Heade 18 Adjustabl	Ford Eng	nines	Part #5055		Part #5056	a state
Part # 5048 5049 5055 5056 Note:	Applications Ford 351M, 400 Ford 390, 427, Ford 289, 302, Ford 289, 302, Powerglide Con All units replac	0, 429, 460 428 (FE Series) 351 A/T and 4 & 5-Spee 351 3-Speed M/T and nversion se 2 or 3 hole mount sta	ed M/T inters	Part #5056	*Note: Replaces OEM units whic nose housing extends 2"	h
<u>SPECIFICAT</u> Type of Uni Estimated H Reduction F Weight:	<i>IONS</i> t: lorsepower: Ratio:	Nippondenso Gear Redu 1.9HP 4:1 10 Lbs.	uction	Part #5048 5049 5055	*Note: Replaces OEM units whic nose housing extends 2	h 3/8″

• Unique Aluminum Housing (eliminates hot start problems)	Easily Replaceable Plunger and Contacts
Units Coated with Gold Chromemate to Eliminate Corrosion and Prevent Premature Failure	Sealed with Rubber O-rings and Grommets

Chrysler Engines

Part # Applications

1337 Chrysler, Dodge, Plymouth Small & Big Block 6 & 8 Cylinder Engines

SPECIFICATIONS

Type of Unit: Estimated Horsepower: Reduction Ratio: Weight: Nippondenso Gear Reduction 1.9HP 4:1 10 Lbs.







Protorque

Jeep Engines

Adjustable for Header & Oil Pan Clearance. 18 Adjustable Positions



 Part #
 Applications

 5044
 1972-87 with AMC 232 or 258 6 Cylinder and 1972-82 AMC V8

 1283
 1988-2000 with 4.2L 258 or 4.0L 6 Cylinder

SPECIFIC ATIONS

Type of Unit: Estimated Horsepower: Reduction Ratio: Weight: Nippondenso Gear Reduction 1.9HP 4:1 10 Lbs.



Part #5044



Part #1283

STARTER DIMENSIONS





Protorque Maximum



Unique Aluminum Housing (eliminates hot start problems)
 Units Coated with Gold Chromemate to Eliminate Corrosion and Prevent Premature Failure
 Sealed with Rubber O-rings and Grommets





Protorque Maximum

Chrysler Engines

Part #Applications1337MChrysler, Dodge, Plymouth Small & Big
Block 6 & 8 Cylinder Engines



SPECIFIC ATIONS

Type of Unit: Estimated Horsepower: Reduction Ratio: Weight:

Nippondenso Gear Reduction 3.1HP 4.44:1 9.5 Lbs.

Part #1337M

PROTORQUE DRIVE-END PLATES

Part #048DE



Part #056DE



Part #323DE



Part #311DE



Part #3230DE



Note: Ford and GM units all interchange by changing the driveend mounting plates. This gives the ability to convert a GM unit to a Ford unit.

Protorque Tech Info

The 'R' Terminal?

Before electronic ignition, vehicles required an R-Terminal, which bypassed the ignition resistor for easier starting. Today's electronic ignitions do not use a ballast resistor, therefore they do not require an 'R' terminal. When updating an existing starter to a racing starter which does not have an 'R' terminal, **simply do not connect this wire**.

Note: *CVR* offers a 5323R for Chevy engines with a factory points ignition that requires a relay terminal. Another option is that a remote solenoid can be added that has a built-in relay terminal.

FREQUENTLY ASKED QUESTION: WHY DOES THE STARTER DRIVE NOT CROSS THE ENTIRE FLYWHEEL?

The *CVR* Protorque starter is designed only to cross between .400" and .500". This is quite sufficient for this type of unit with proper shimming.

Shimming Procedures

UNLIKE FORD AND CHRYSLER which have a fixed starter drive gear to flywheel clearance, GM starters have an **ADJUSTABLE CLEARANCE**.

IMPORTANT:

Most of the causes of premature starter <u>failure</u> of GM pad-mounted starters are a result of <u>improper shimming</u>, regardless of whether the old starter had shims or not, you <u>must inspect the clearance</u> of this new unit as it may <u>or</u> may not require shimming.

BEFORE INSTALLATION:

You must understand the need for proper starter pinion to flywheel clearance!

This "CLEARANCE" is critical to avoid damage to:

Flywheel, Starter Drive, Battery

WHY SHIMMING VARIES?

1. Mounting pad tolerances and hole locations vary from block to block, this <u>moves</u> the starter drive gear away from the flywheel varying distances.

2. The mounting pad on the engine block dimensions <u>vary</u>. This also moves the starter drive gear away from the flywheel varying distances.

STEP 1: INSPECTION

REMOVE lower flywheel housing cover and <u>examine</u> the <u>entire flywheel</u> for visual problems: worn, chipped or broken teeth; bent flywheel and/or incorrectly cut teeth.

STEP 2: CHECKING CLEARANCE

Insert a screwdriver behind the starter drive. Move starter drive assembly out toward flywheel so that starter pinion and ring gear teeth mesh.

STEP 3: MEASURING CLEARANCE

Center the pinion tooth. **Check clearance** (looking for .025" - .060"). A convenient plug gauge is a common paper clip, which typically mikes out at about .035". **Important** - Check at least <u>3</u> ring gear locations 120° apart for proper clearance. Shim <u>as required</u> at <u>minimum</u> clearance location. After measuring clearance, push starter drive back into original position.

STEP 4: PROPER SHIMMING

To INCREASE CLEARANCE: Use entire shim across both holes. .015" shim <u>increases clearance</u> approx. <u>.0075"</u>. This moves the starter down and out, <u>away</u> from the flywheel (use no more than 6 shims).

To Decrease Clearance: Use 1/2 shim only on the outer mounting bolt hole from oil pan. This moves the starter in and **toward** the flywheel. .015" shim **decreases clearance** approx. .010".



Propower

SPECIFICATIONS

Type of Unit: Estimated Amperage: Regulator: Voltage: Weight: Pulley Type: Pulley Size: Special Coating: Bearings: Nippondenso Internal Fan 50 Amps. Internal Self-Exciting One Wire 14.9 5.75 Lbs. Aluminum Single Deep Groove 3.15" Gold Chromemate Oversized Double Sealed, Low Drag, High Speed

Part #4940 is the smallest and most compact *CVR* alternator. It's 50 Amp output makes it ideal for serious drag racing. It has the lowest amps to weight ratio of all *CVR* alternators.



Part #4940



TRUE ONE WIRE DENSO RACE ALTERNATORS

SPECIFICATIONS

Type of Unit: Estimated Amperage: Regulator: Voltage: Weight: Pulley Type: Pulley Size: Special Coating: Bearings: Nippondenso Internal Fan 75 Amps. Internal Self-Exciting One Wire 14.9 7.9 Lbs. Aluminum Single Deep Groove 3.15" Gold Chromemate Oversized Double Sealed, Low Drag, High Speed

3.86"

Part #4935



6.49"

Part #4935 is the perfect unit for Pro Street Racers and others with high electrical demands. Its oversize, high speed bearings make it an ideal choice for racers who count on a durable, long lasting unit which provides more amps per pound.



<u>2.28</u> 5.75"



Propower

SPECIFICATIONS

Type of Unit: Estimated Amperage: Regulator: Voltage: Weight: Pulley Type: Pulley Size: Special Coating: Bearings: Delco External/Internal Fan 100 Amps. Internal Self-Exciting One Wire 14.9 8.8 Lbs. Steel Single Deep Groove 3.15" Gold Chromemate Double Sealed, Low Drag, High Speed

Part #7970 is the perfect choice for drag racing when ounces is not as crucial as amperage. This alternator still provides low drag, high speed bearings, high output at idle and one wire hookup.





Part #7970

TRUE ONE WIRE DELCO RACE ALTERNATORS

SPECIFICATIONS

Type of Unit: Estimated Amperage: Regulator: Voltage: Weight: Pulley Type: Pulley Size: Special Coating: Bearings: Delco External Fan 100 Amps. Internal Self-Exciting One Wire 14.9 11.4 Lbs. Steel Serpentine 6 Groove Gold Chromemate Double Sealed, Low Drag, High Speed

Part #7278 is designed as a bolt on upgrade for 1966-86 Fords with V-belt pulley system. It is a one wire system so there is no need for a cluttered wiring harness.

Part #7279 is designed as a bolt on upgrade for 1987-93 Fords with serpentine pulley system. It is a perfect unit for Ford Mustang 5.0L. It is a one wire system so there is no need for a cluttered wiring harness.



Part #7278





Propower

SPECIFICATIONS

Type of Unit: Estimated Amperage: Regulator: Voltage: Weight: Pulley Type: Pulley Size: Special Coating: Bearings: Delco External Fan 160 Amps. Internal Self-Exciting w/ Delco Smart Chip 14.9 15 Lbs. Steel Single Deep Groove 3.15" Gold Chromemate Double Sealed, Low Drag, High Speed

Part #7684

Part #7684 is the ideal *CVR* alternator. Whether it's a high wattage stereo system, accessory lights, winches for off-road or towing use, CBs, etc. these alternators can handle almost anything. This alternator is a combination of an industrial alternator in an automotive size housing. We use a hand-wound stator, heavy duty rectifier, selfexciting regulator and Delco's Smart Chip which allows an automatic cut-in for charging at the lowest RPMs.

Part #7684-1 is an installation package for Jeep applications. It fits 1973-1990 CJ, YJ 6 and 8-cylinder engines. Package includes belt, fasteners and mounting bracket.

Note: Will not fit Jeep engines with serpentine belt drive.





PROPOWER INSTALLATION BRACKETS

Part #7970-5



First 4 digits of bracket is alternator #.

Part #7970-3



Big Block Chevy Part #7970-5 Part #4940-5 Part #4935-5

Small Block Chevy Part #7970-4 Part #4940-4 Part #4935-4

<u>Note</u>: Can be used with electric or belt-drive water pumps.

Big Block Chevy Part #7970-3 Part #4940-3 Part #4935-3

<u>Small Block Chevy</u> Part #7970-2 Part #4940-2 Part #4935-2

Mid-Mount



Low-Mount





Propower Tech Info

SIZING UP YOUR ALTERNATOR

Accessories Amp Draw	
Trans Brake	10 - 20
Throttle Stop	5 - 18
On Board Computer	0.2 - 0.3
Electric Fans	5 - 18
CDI Ignition	5 - 30
HEI Ignition	5 - 10
Nitrous Solenoid (each)	5 - 15
Electric Fuel Pumps	3 - 9
Electric Water Pumps	5 - 12
Instrument Panel	1.5 - 3
Brake Lamps	3 - 5
Running Lights	3 - 5
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PREMATURE FAILURE

<u>Tech Tip</u>: We do not recommend switching one wire alternators off/on while the engine is running. This causes severe internal spikes in the alternator which will cause damage.

Tech Tip: Never disconnect the battery when engine is running to see if alternator is charging. Excessive load or voltage spikes on alternator will damage internal components or any on-board computers in the vehicle. Always use a multi-meter.

HOW MUCH HORSEPOWER IS YOUR ALTERNATOR USING?

Using Ohms Law

The formula to find power (watts) using Ohms Law is $P = I \times E$ or Power = Current x Voltage

I = 50 amps (alternator rating)

E = 14.9 volts (set voltage of alternator when engine is running)

50 amps x 14.9 volts = 745 watts

Assuming 1 horsepower is equal to 746 watts, we can calculate lost horsepower as follows: HP = 745 watts ÷ 746 watts HP = 1.0 (approx.)

The amount of power it takes to drive a 50 amp *CVR* Propower Alternator to its full rated power is approximately 1.0 HP. Which means if your batteries are fully charged and in good condition, your alternator will not have to work that hard, will pull only fractional horsepower on demand, and will produce enough at idle speed where it doesn't matter if horsepower is drawn.

<u>CAUTION:</u> Always use good fully charged deep cycle batteries. Your alternator is designed to maintain your battery not be a battery charger. Never install an alternator on a battery that is not fully charged.

PROPOWER ADVANTAGES

<u>Tech Tip</u>: Some companies claim that black paint dissipates heat but we have taken a different approach and provide all units with an chromemate coating, which as a known fact, prevents corrosion, increases electrical conductivity and prevents premature failure. We also spend more time and energy on custom-made rectifiers, regulators and hand-wound stators (which makes a real difference).

	CHARGING CABLE GUAGE SIZE							
Amps	Up to 4'	4' - 7'	7' - 10'	10′ - 13′	13' - 16'	16' - 19'	19' - 22'	22' - 28'
35-50	12 10	12	10 8	10	10	8	8	8
65-85	10	8	8	6	6	4	4	4
85-105	8	8	6	4	4	4	4	2
105-125	6	6	4	4	2	2	2	0
125-150	6	6	4	2	2	2	2	0
175-175	2	2	2	2	0	0	0	00



Proflo

Chevy Small Block Engines

SPECIFIC ATIONS

Type of Unit: Flow Rate: Weight: Type of Finish: Special Coating: Fasteners & Hardware: Amperage Draw: Voltage: Type of Material: Electric Water Pump 37GPM 6.8 Lbs. Cast Aluminum/Polished Billet N/A Stainless Steel 6.1 Amps. 12V Cast/T6-6061 Billet Aluminum

Part # Applications

7350 Small Block Chevy

Note: This pump does not require inlet fitting. Unit comes with standard 1 3/4" inlet.

<u>Special Feature:</u> This is the only electric pump which includes an adjustable cam stop which eliminates cam walk. Also has mounting hole for power steering bracket (not shown in photo).

High Temperature Viton® Seal Eliminates Leaks and Extends Pump Life
 Computer Designed Impeller Machined From T6-6061 Billet Aluminum

Chevy Big Block Engines

SPECIFIC ATIONS

Type of Unit: Flow Rate: Weight: Type of Finish: Special Coating: Fasteners & Hardware: Amperage Draw: Voltage: Type of Material: Electric Water Pump 40GPM 8.7 Lbs. Cast Aluminum/Polished Billet N/A Stainless Steel 6.1 Amps. 12V Cast/T6-6061 Billet Aluminum

Part # Applications

7454 Big Block Chevy

<u>Note:</u> This pump does not require inlet fitting. Unit comes with standard 1 3/4" inlet.

<u>Special Feature:</u> This is our highest volume pump designed especially for big block applications.



Stainless Steel Shaft will not Corrode
Mounts Easily in Stock Location

Part #7454



Proflo Billet

Chevy Big Block Engines

SPECIFICATIONS

Type of Unit: Flow Rate: Weight: Type of Finish: Special Coating: Fasteners & Hardware: Amperage Draw: Voltage: Type of Material:

Electric Water Pump 37GPM 6.3 Lbs. All Units Hand Polished (before coated) Anodized (coloured units only) Stainless Steel 6.1 Amps. 12V T6-6061 Billet Aluminum

Part # **Applications**

Note: Inlet fittings sold

separately.

Big Block Chevy - Black 6454BK Big Block Chevy - Red 6454R 6454P **Big Block Chevy - Polished** Part #6454R

Stainless Steel Shaft will not Corrode

• High Temperature Viton® Seal Eliminates Leaks and Extends Pump Life Computer Designed Impeller Machined From T6-6061 Billet Aluminum

Chevy Small Block Engines

SPECIFICATIONS

Type of Unit: Flow Rate: Weight: Type of Finish: Special Coating: Fasteners & Hardware: Amperage Draw: Voltage: Type of Material:

Applications

Note: Inlet fittings sold separately.

Small Block Chevy - Black

Small Block Chevy - Polished

Small Block Chevy - Red

Part #

6350R

6350P

6350BK

Electric Water Pump 37GPM 5.8 Lbs. All Units Hand Polished (before coated) Anodized (coloured units only) **Stainless Steel** 6.1 Amps. 12V T6-6061 Billet Aluminum

Part #6350R



Part #6350P







Mounts Easily in Stock Location

Part #6350BK

Note: The information contained herein is based upon data which we believe to be correct and has been obtained from sources which we regard as reliable, but we assume no liability for typographical errors or omissions therein.





Part #6454BK



Proflo Billet

Ford Big Block Engines

SPECIFICATIONS

Type of Unit: Flow Rate: Weight: Type of Finish: Special Coating: Fasteners & Hardware: Amperage Draw: Voltage: Type of Material:

Electric Water Pump 37GPM 5.7 Lbs. All Units Hand Polished (before coated) Anodized (coloured units only) Stainless Steel 6.1 Amps. 12V T6-6061 Billet Aluminum

Part # Applications

6460BK
6460BL
6460BL
6460P
Big Block Ford 429/460 - Blue
Big Block Ford 429/460 - Polished

Part #6460BL

Note: Inlet fittings sold separately.

Note: Inlet fittings can be changed between passenger and driver side to suit radiator outlet.

<u>Attention:</u> See Proflo tech info for back plate instructions.

High Temperature Viton® Seal Eliminates Leaks and Extends Pump Life
 Computer Designed Impeller Machined From T6-6061 Billet Aluminum

Ford Small Block Engines

SPECIFICATIONS

Type of Unit: Flow Rate: Weight: Type of Finish: Special Coating: Fasteners & Hardware: Amperage Draw: Voltage: Type of Material: Electric Water Pump 37GPM 4.0 Lbs. All Units Hand Polished (before coated) Anodized (coloured units only) Stainless Steel 6.1 Amps. 12V T6-6061 Billet Aluminum

Part # Applications

 6302BK
 Small Block Ford 289/302/351 - Black

 6302BL
 Small Block Ford 289/302/351 - Blue

 6302P
 Small Block Ford 289/302/351 - Polished

Note: Inlet fittings sold separately.

Note: Inlet fittings can be changed between passenger and driver side to suit radiator outlet.

<u>Attention</u>: See Proflo tech info for back plate instructions.



Part #6460BK

Part #6460P





Stainless Steel Shaft will not Corrode
Mounts Easily in Stock Location

Part #6302BK



Part #6302P





Proflo Billet

Chrysler Big Block Engines

SPECIFICATIONS

Type of Unit: Flow Rate: Weight: Type of Finish: Special Coating: Fasteners & Hardware: Amperage Draw: Voltage: Type of Material: Electric Water Pump 30GPM 3.0 Lbs. Machined Anodized Stainless Steel 6.1 Amps. 12V T6-6061 Billet Aluminum

Part # Applications

6440 Chrysler Big Block 383 & 440

Installation:

Mounts directly to stock water pump locations by removing existing fan, pulley, plate and impeller; includes stainless steel mounting hardware and gasket for simple installation.

Benefits:

Eliminates drive belt and fan to save weight and horsepower while providing maximum circulation to improve cooling efficiency during all driving conditions, especially while idling.

$ullet$ High Temperature Viton ${}^{\textcircled{B}}$ Seal Eliminates Leaks and Extends Pump Life	Stainless Steel Shaft will not Corrode
Computer Designed Impeller Machined From T6-6061 Billet Aluminum	Mounts Easily in Stock Location

GM LT-1 Small Block Engines

SPECIFIC ATIONS

Type of Unit: Flow Rate: Weight: Type of Finish: Special Coating: Fasteners & Hardware: Amperage Draw: Voltage: Type of Material: Electric Water Pump 30GPM 3.0 Lbs. Machined Anodized Stainless Steel 6.1 Amps. 12V T6-6061 Billet Aluminum

Part # Applications

6351 GM LT-1 Small Block

Installation:

On the LT-1 engine the factory pump is cam driven. Installation of this unit requires removal of the housing, disassembly and plugging of the drive hole and reinstallation. From there our unit plugs right into the housing supplied with seal and stainless fasteners.



Part #6351

Note: The information contained herein is based upon data which we believe to be correct and has been obtained from sources which we regard as reliable, but we assume no liability for typographical errors or omissions therein.

Part #6440



Proflo Accessories

Inlet Fittings



Part #6200P - Inlet Fittings - Polished Long 1 3/4 Part #6175P - Inlet Fittings - Polished 1 3/4 Part #6150P - Inlet Fittings - Polished 1 1/2 Part #6125P - Inlet Fittings - Polished 1 1/4

 $\label{eq:posterior} \begin{array}{l} \hline \textbf{Note:} \\ \textbf{P} = \textbf{Polished} \\ \textbf{BK} = \textbf{Black} \\ \textbf{R} = \textbf{Red} \\ \textbf{BL} = \textbf{Blue} \end{array}$

Back Plates

Attention:

See Proflo tech info for back plate instructions.



Part #64602BK - BBF Back Plate - Black



Part #63022BK - SBF Back Plate - Black





Proflo Tech Info

After Running the Pump

After a few heat cycles on the pump, recheck the eight (8) socket head cap screws attaching the pump center section to the body for tightness. Re-tighten if necessary. If the bolts continue to loosen after one re-tightening, remove the screws one at a time and apply a small amount of Locktite "Blue" retaining compound.

Back Plate

When considering purchasing the Ford water pump, you will notice that *CVR* offers the "back plate" separately.

Many of today's race cars use a full front motor plate or a belt drive system for the cam. In the Ford engine, the front motor plate or the cam belt drive may also be used to block off the center chamber in the timing cover housing and drilled only in the one spot on each side to allow water flow back into the engine block. In this case, the back plate is an unnecessary piece and may not be needed. In all other cases a back plate will be necessary.

Features

- 100% Tested for leaks, flow and amperage draw.
- Fully CNC machined from 6061-T6 aluminum.
- One piece main body. Not a pieced together unit.
- Efficient direct drive electric motor draws only 6 amps.

- Light weight. Complete standard Big or Small Block unit weighs only 4 to 8 pounds depending on model.

- Efficient hydrodynamic design.
- Stainless steel main shaft.
- High temperature Viton® Seal.
- 40 GPM free flow rating.
- Generates 9PSI static pressure.
- Suitable for street use.
- Pump will clear cam belt drives and most blower drives.
- Fully polished and anodized in your choice of 3 colours.
- All stainless steel hardware included.
- Fully rebuildable and easily serviced.