

Technical Update 29

Delco PG260 Series Starters: An Introduction

IN 1994 DELCO introduced the first of its new PG260 series PMGR starters on Chevrolet and GMC trucks with 5.7-liter and 7.4-liter V-8 engines. The Delco number on that first PG260 starter is 9000786. The WAI number is 2-1690-DR.

Since that time Delco has added nine more units to the PG260 series, four of which are for marine applications. So far WAI has been able to complete the research on eight of the ten total units. This *Technical Update* is a summary of what we have learned about these eight units to date. As we gather more information about the series we will keep you informed.

Applications

Because these starters are small and light but have high output capabilities, they are very viable for race car applications and V-8 engines that previously used the much heavier Delco 10MT starters. The PG260 starters weigh about 7.7 lbs, compared to the 10MT's 20 lbs. Their field case diameter is just 73.5 mm and overall length is 234.2 mm. Yet their output is 1.7KW.

As a test, we installed a PG260 on a 425-HP, V-8 Chevrolet with an 11.1 compression ratio. We decided to try a PG260 because a 10MT was too large and we thought a 5MT probably would not hold up. In this application, the PG260 performed very well. Even though a 10MT has a 9-tooth drive, the PG260, with an 11-tooth drive, will work. The opening in the D.E. housing is positioned to accommodate the difference in gear diameter.

There is one thing to watch for, however. The



The first starter in this series to be introduced was Delco #9000786 (WAI # 2-1690-DR)



mounting holes on the PG260 are 10 mm, so you should avoid using this starter on applications that have 3/8" mounting bolts, or it will not line up properly and will be loose.

Components Worth Noting

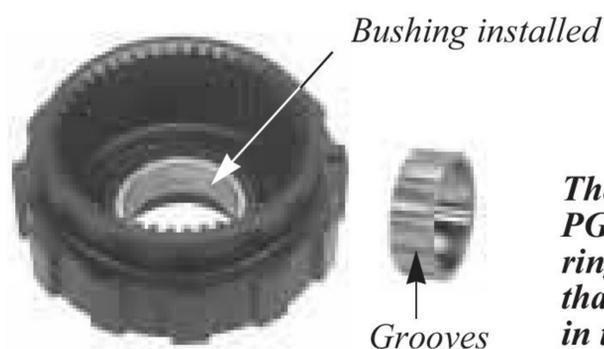
Drive-End Housings

There are four unique drive-end housings for these starters, all of which use needle bearings — although all other components of the unit use bushings. The solenoid is attached to the D.E. housing with three screws

Bushings

In these units Delco has redesigned both the bushing for the tracking ring and the tracking ring itself. Instead of being a press-fit style, this bushing has grooves in it that fit over ridges in the tracking ring. This groove-and-ridge design is what keeps the bushing from spinning. This design also allows you to remove and replace this bushing using just your thumbs.

While we're talking about bushings, you will want to note that the drive shaft for these starters has a bushing for the tip of the armature. Behind this



The bushing for the PG260's tracking ring has grooves that fit over ridges in the tracking ring.

bushing is a small metal stop-disk that keeps the armature from going in too far. This stop-disk will not come out until the bushing is removed. Then it will just fall out.

Also note that there are bushings in all three planetary gears for this starter, as well as in the C.E. cap. In order to remove the bushing in the C.E. cap, you must first remove the dust cover on the outside of the bushing.

C.E. Cap

This brings us to the C.E. cap. There are four different C.E. caps for these starters, all of which look very similar. You can differentiate among these caps by looking at two features: the location of the thru-bolt mounting holes in relation to the motor lead and whether or not the cap has a hole for a drain tube.



The location of the thru-bolt mounting holes and whether or not it has a hole for a drain tube are the only differences in the C.E. caps for these starters.

Field-Case Assembly

The PG260 series has two different field-case assemblies, each with four Magnequench® magnets mounted in a zinc-chromate frame. The only difference between these two assemblies is that the position of the tabs that locate the field case to the D.E. housing are different in relation



Tabs locate the field case to the D.E. housing

to the tabs for the C.E. cap. These tabs also keep you from installing the field case facing the wrong direction, which would change the direction of the starter. Also note that there is a gasket between the field case and the D.E. housing.

Drives

These starters have two different starter drives: a 9-tooth and an 11-tooth. A 9-tooth drive (WAI # 54-156) is used on Delco starter #9000805 for Cadillac and Oldsmobile with Northstar engines. The more popular 11-tooth drive (WAI # 54-155) fits all the other starters we researched.

Brush Holder

The brush holder is also new for this starter. Negative brushes are spot-welded to the brush-holder plate. Positive brushes are spot-welded to a bus bar. The brush holder uses torsion springs to prolong brush life.



The brush holder is new for these starters.

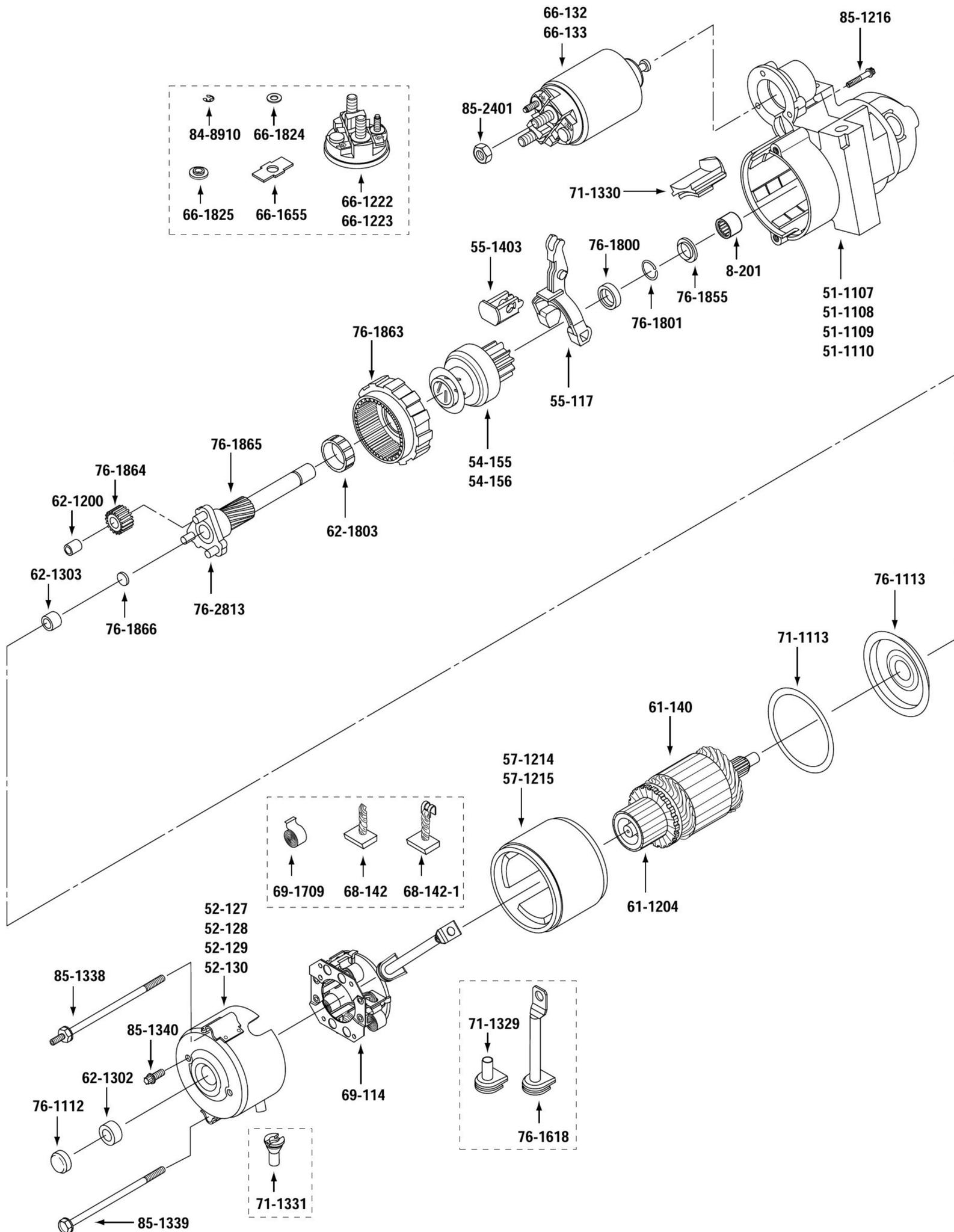
Solenoid

Two different solenoids are used in these units. One has four terminals and is used in starters #9000821 and #9000822 for marine applications. The other solenoid has three terminals and is used in automotive applications and other marine applications. The battery and motor terminals are both M8; the S and R terminals are M5. Although the solenoid is sealed with an integral cover, it is still able to be serviced.

You may be aware that on permanent-magnet starters there has been an inherent problem with the contact disk welding to the motor and battery terminals. In the PG260 series Delco has taken steps toward solving this problem by using a movable contact disk that is attached to the solenoid plunger. So now the large solenoid plunger-return spring also helps break this contact.

For more information about PG260 Series PMGR Starters, see WAI catalog 87-255-96

Delco PG260 PMGR Series Illustrated Breakdown



Delco PG260 PMGR Starters: WAI Unit Research to Date

OE No.	WAIR No.	Lester No.	Applications	Will Replace
9000786	2-1690-DR	6449	(1994-95) Chevrolet & GMC Truck, 5.7 & 7.4 L	PG200 9000719, 735, 744; 2-1474-DR
9000798	2-1689-DR	6470	(1995) Buick, Cadillac, Chevrolet, Pontiac 5.7 L	PG250 9000773; 2-1481-DR
9000805	2-1692-DR	6471	(1995) Cadillac 4.6 L; Oldsmobile 4.0L	PG250 9000775; 2-1480-DR
9000806	2-1688-DR	6472	(1995) Buick, Oldsmobile, Pontiac 3.8 L	PG250 9000776, 797; 2-1479-DR
9000819	2-1758-DR	----	Mercury Marine	PG200 9000762; PG250 9000789 2-1476-DR
9000820	2-1759-DR	----	Marine	----
9000821	2-1691-DR	----	Mercury Marine	PG200 9000768; 2-1789-DR
9000822	2-1760-DR	----	Marine	----

Delco PG260 Components

WAI No.	Description	WAI No.	Description
8-201	Needle Bearing	61-140	Armature
51-1107	D.E. Housing	62-1200	Bushing - Planetary Gear
51-1108	D.E. Housing	62-1302	Bushing - C.E. Frame
51-1109	D.E. Housing	62-1303	Bushing - Drive Shaft
51-1110	D.E. Housing	62-1803	Bushing - Stationary Gear
52-127	C.E. Frame	66-132	Solenoid - 3 Terminal
52-128	C.E. Frame	66-133	Solenoid - 4 Terminal
52-129	C.E. Frame	68-142	Brush wo/ clip
52-130	C.E. Frame	68-142-1	Brush w/ clip
54-155	Starter Drive - 11 T	69-114	Brush Holder Assembly
54-156	Starter Drive - 9 T	71-1330	Plug - D.E. Housing
55-117	Shift Lever	71-1331	Drain Tube - C.E. Frame
55-1403	Shift Lever Support	76-1112	Cover - C.E. Frame
57-1214	Field Case Assembly	76-1863	Stationary Gear
57-1215	Field Case Assembly	76-1864	Planetary Gear
		76-1865	Drive Shaft



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