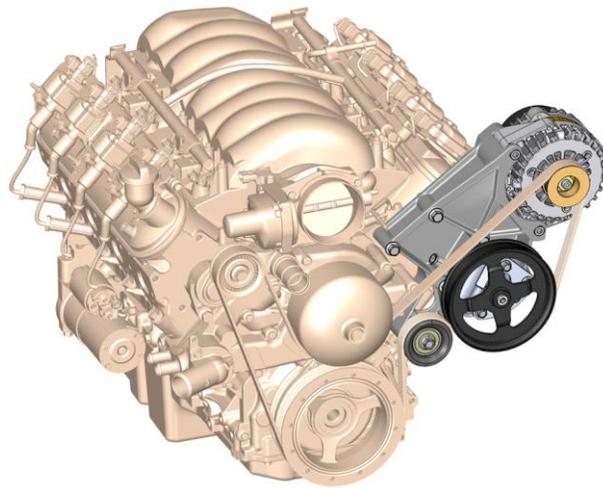




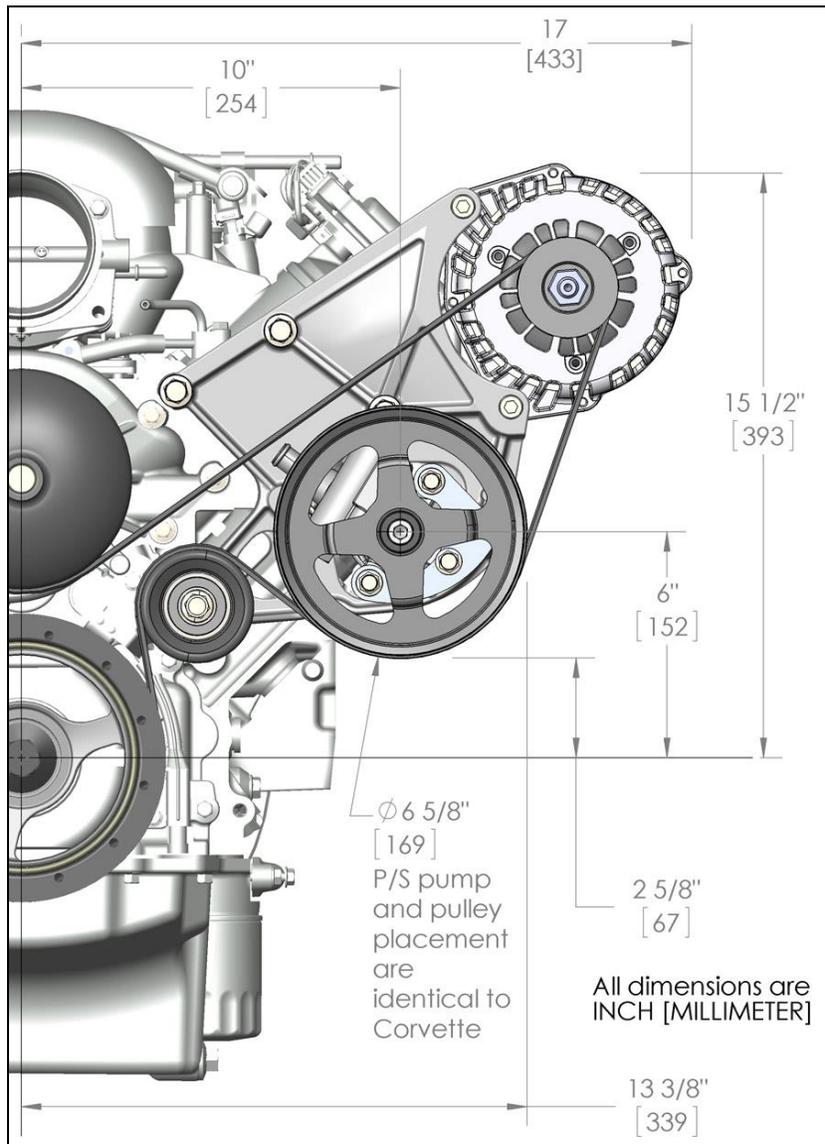
# Holley Alternator and P/S Bracket System

## Part Number 20-143



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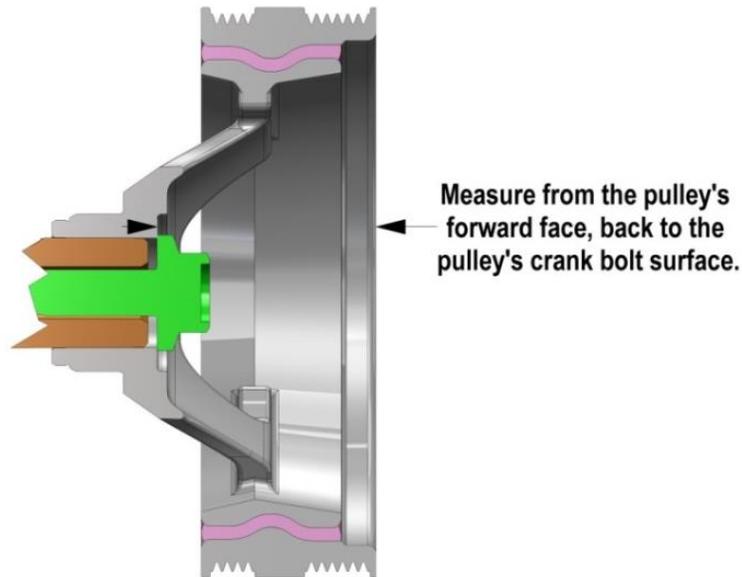
## Introduction:

Holley's accessory drive systems offer clean, economical brackets and accessories for LS engines. These accessory drives look truly at home on any LS engine as if they came from the factory this way.

Holley's complete alternator and P/S bracket system comes with virtually everything needed for installation, from the accessories to the pulleys. The 20-143 can be used with any of Holley's passenger's side A/C bracket systems or used stand-alone in most cases, using the application's original tensioner that matches the crank pulley and water pump's belt alignment.

The first step is to determine which belt alignment you want to proceed with. This is determined by the crank pulley and often, but not always, the water pump. If clearance to the radiator is an issue, the compact STANDARD spacing common on the Corvette may be preferred. Otherwise, it is most cost effective to retain the existing crank pulley/water pump and space the bracket and other accessories to match. **An application specific installation kit (part # 21-2 or 21-3) is REQUIRED for this accessory drive system if not using a STANDARD belt alignment.**

## Crank Pulley Belt Alignment Determination:



See the below chart for reference dimensions.

## Overview of Parts Required (but NOT included with 20-143 accessory drive system):

### Components with specific belt alignments

Belt Alignment Group	LS Application (Alignment Specific)	Holley Installation Kit (Alignment Specific)	Crank Pulley (Reference Dimension)		Water Pump (Alignment Specific)
					GM #
Standard	Corvette / CTS-V / G8	Not required	1.5"	37 MM	19256263, 89018052, or 12604630
Middle	F-body / GTO	21-2	2.25"	55 MM	19256263
Long	Camaro ('10-UP) / Truck (all) *	21-3	3"	75 MM	19207665 or any truck WP

\* Note for truck applications, a 97-151 tensioner will also be required

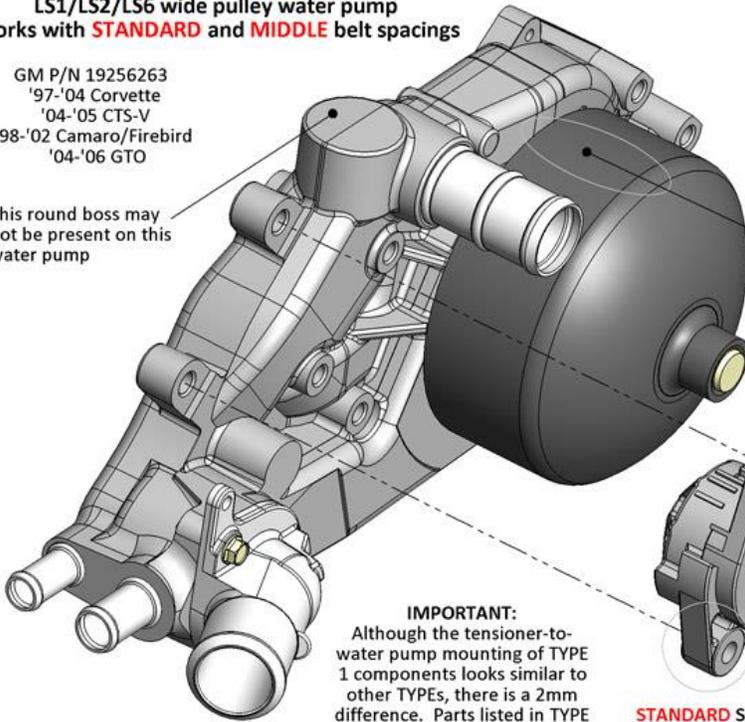
# Water Pump and Tensioner Assembly Determination:

To determine which water pump type and associated tensioner you have, refer to the following:

**LS1/LS2/LS6 wide pulley water pump**  
Works with **STANDARD** and **MIDDLE** belt spacings

GM P/N 19256263  
'97-'04 Corvette  
'04-'05 CTS-V  
'98-'02 Camaro/Firebird  
'04-'06 GTO

This round boss may not be present on this water pump



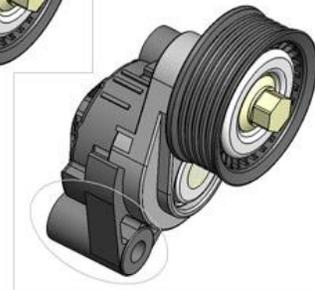
Identifying feature:  
Wide pulley allowing for both standard and middle belt spacings

# TYPE 1

**IMPORTANT:**  
Although the tensioner-to-water pump mounting of TYPE 1 components looks similar to other TYPEs, there is a 2mm difference. Parts listed in TYPE 1 should not be used in combination with any other TYPE's parts or pulley misalignment *will* occur.

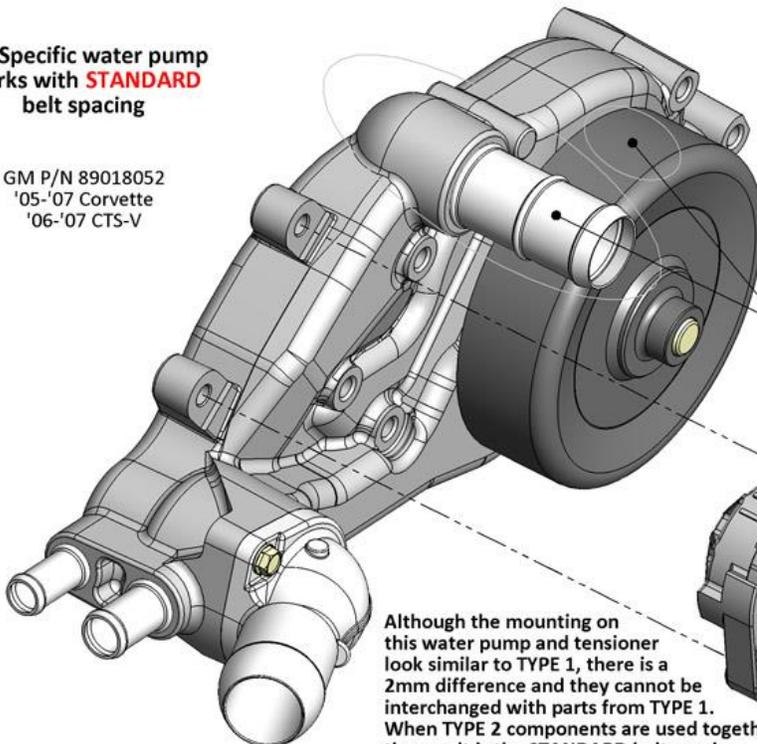
**STANDARD Spacing Tensioner**  
Holley P/N 97151  
GM P/N 12559325  
'97-'04 Corvette  
'04-'05 CTS-V

**MIDDLE Spacing Tensioner**  
GM P/N 12560344  
'98-'02 Camaro/Firebird  
'04-'06 GTO



**LS2 Specific water pump**  
Works with **STANDARD** belt spacing

GM P/N 89018052  
'05-'07 Corvette  
'06-'07 CTS-V

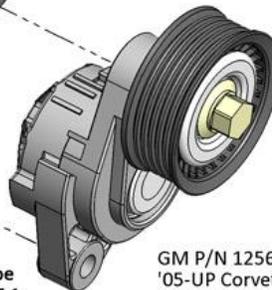


Identifying features:  
Narrow pulley and passenger's side outlet

# TYPE 2

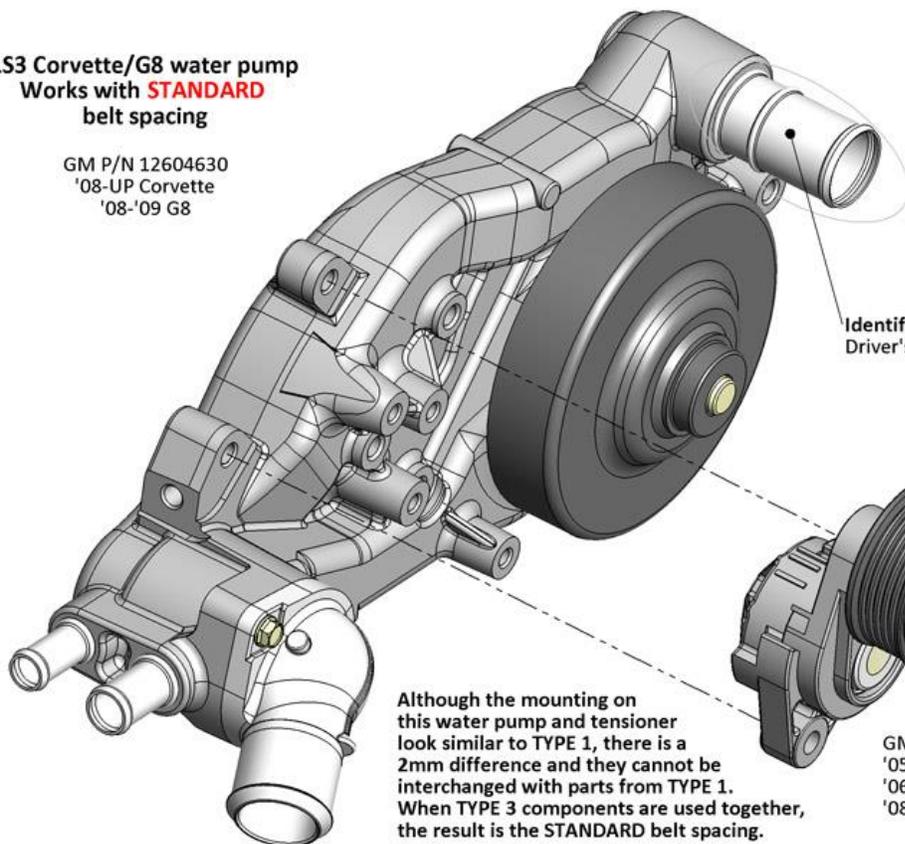
Although the mounting on this water pump and tensioner look similar to TYPE 1, there is a 2mm difference and they cannot be interchanged with parts from TYPE 1. When TYPE 2 components are used together, the result is the STANDARD belt spacing.

GM P/N 12569301  
'05-UP Corvette  
'06-'07 CTS-V  
'08-'09 G8



LS3 Corvette/G8 water pump  
Works with **STANDARD**  
belt spacing

GM P/N 12604630  
'08-UP Corvette  
'08-'09 G8



Identifying feature:  
Driver's side outlet

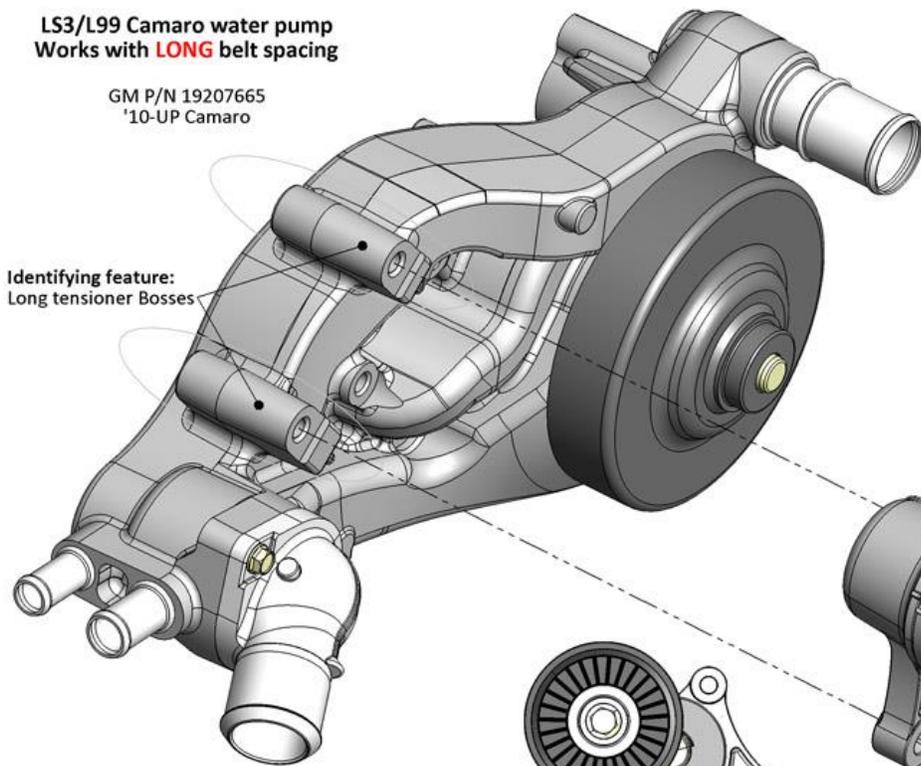
Although the mounting on  
this water pump and tensioner  
look similar to TYPE 1, there is a  
2mm difference and they cannot be  
interchanged with parts from TYPE 1.  
When TYPE 3 components are used together,  
the result is the STANDARD belt spacing.

GM P/N 12569301  
'05-UP Corvette  
'06-'07 CTS-V  
'08-'09 G8

# TYPE 3

LS3/L99 Camaro water pump  
Works with **LONG** belt spacing

GM P/N 19207665  
'10-UP Camaro



Identifying feature:  
Long tensioner Bosses

Front view

# TYPE 4

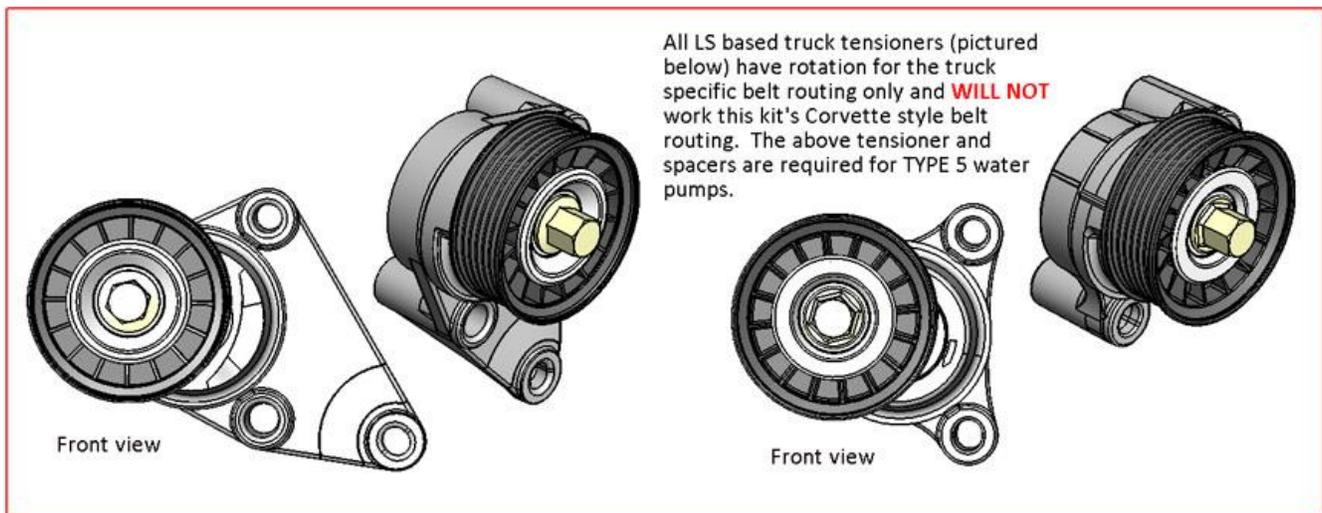
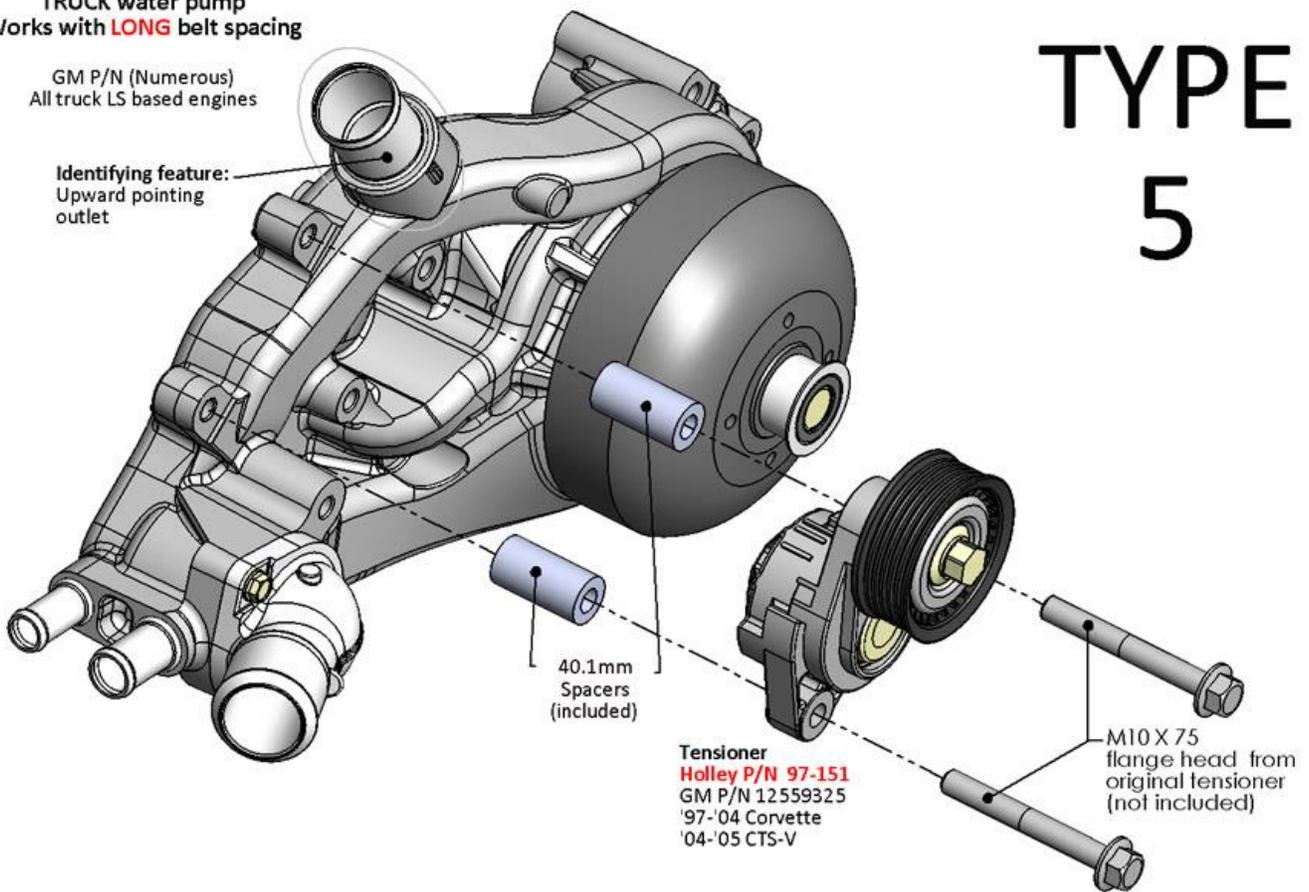
GM P/N 12628025  
'10-UP Camaro

TRUCK water pump  
Works with **LONG** belt spacing

GM P/N (Numerous)  
All truck LS based engines

Identifying feature:  
Upward pointing  
outlet

# TYPE 5

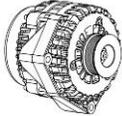
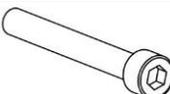


**NOTE:** Torque M8 bolts to 18 ft./lbs. and M10 bolts to 36 ft./lbs.

## Parts List:

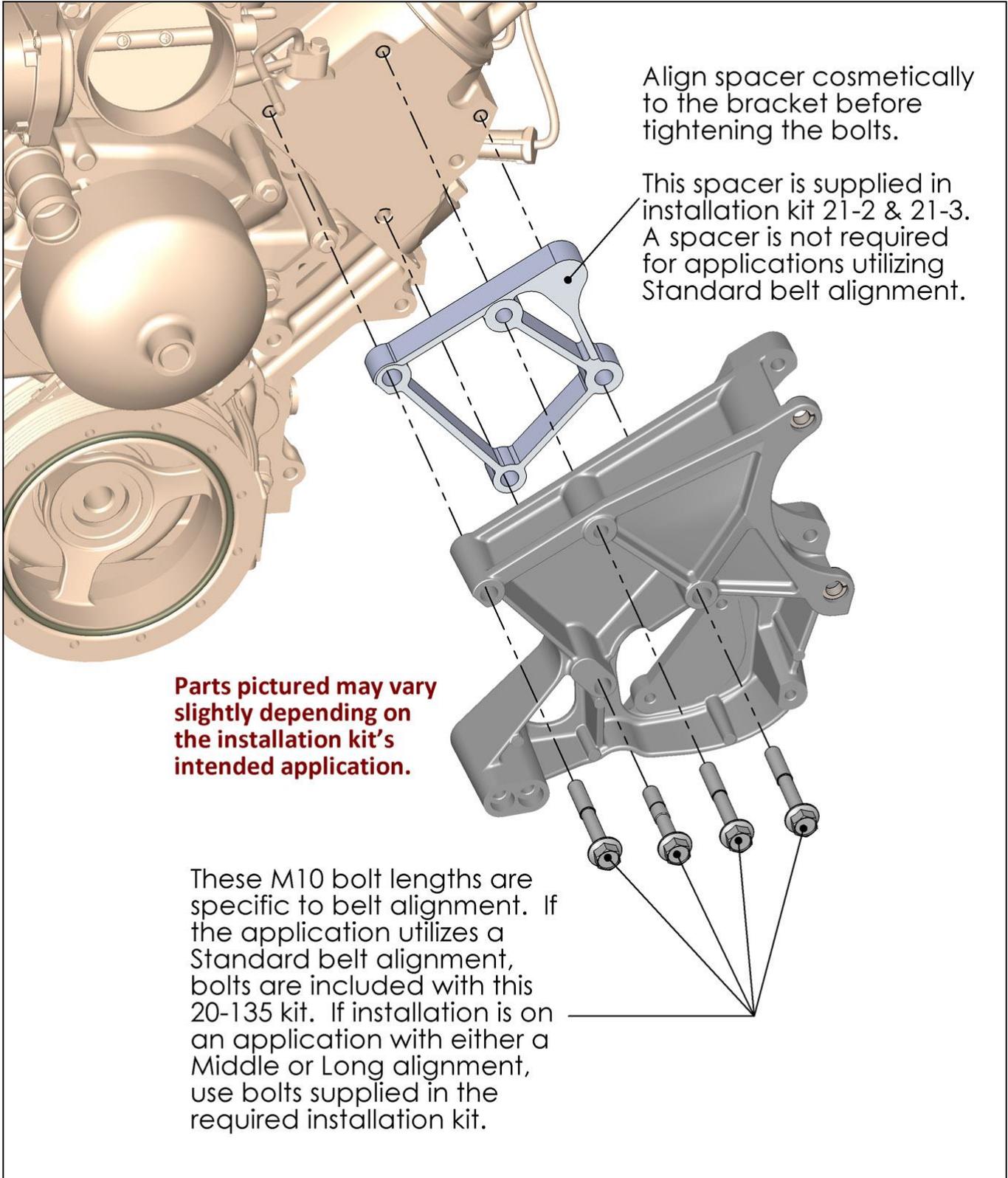
- If used with Middle or Long belt alignments, this bracket system requires installation kit part # 21-2 or 21-3 respectively. For Standard alignments no installation kit is required.

Parts included with 20-143 bracket kit (see list supplied with installation kit for additional parts):

PICTURE	QTY	DESCRIPTION	APPLICATION
	1	Alternator (P/N 197-301)	Driver's Side Bracket
	1	P/S Pump (P/N 198-100)	Driver's Side Bracket
	1	Smooth Idler Pulley (P/N 97-150)	Driver's & Passenger's Side Brackets
	1	Pigtail (P/N 197-400)	Alternator
	1	Ribbed Pulley (P/N 97-152)	P/S Pump
	1	Driver's Side Bracket Assembly	Alternator & Power Steering Pump
	1	Power Steering Pump Plate Bracket	Front Support of Power Steering Pump
	1	Step Spacer	Driver's Side Idler Pulley
	2	Tensioner Spacer	Between Tensioner & Water Pump (Use only with Type 5 water pump & Long belt alignment)
	2	Socket Head Cap Bolt, M10 x 1.5 x 80	Alternator Bolts
	2	Flange Head Bolt, M8 x 1.25 x 20	Power Steering Pump Bolts
	2	Flange Head Bolt, M8 x 1.25 x 80	Power Steering Pump Bolts
	1	Flange Head Bolt, M10 x 1.5 x 45	Idler Pulley to Driver's Side Bracket
	1	Flange Head Bolt, M10 x 1.5 x 60	Driver's Side Bracket to Head (NOT used with Middle & Long belt alignments)
	3	Flange Head Bolt, M10 x 1.5 x 70	Driver's Side Bracket to Head (NOT used with Middle & Long belt alignments)

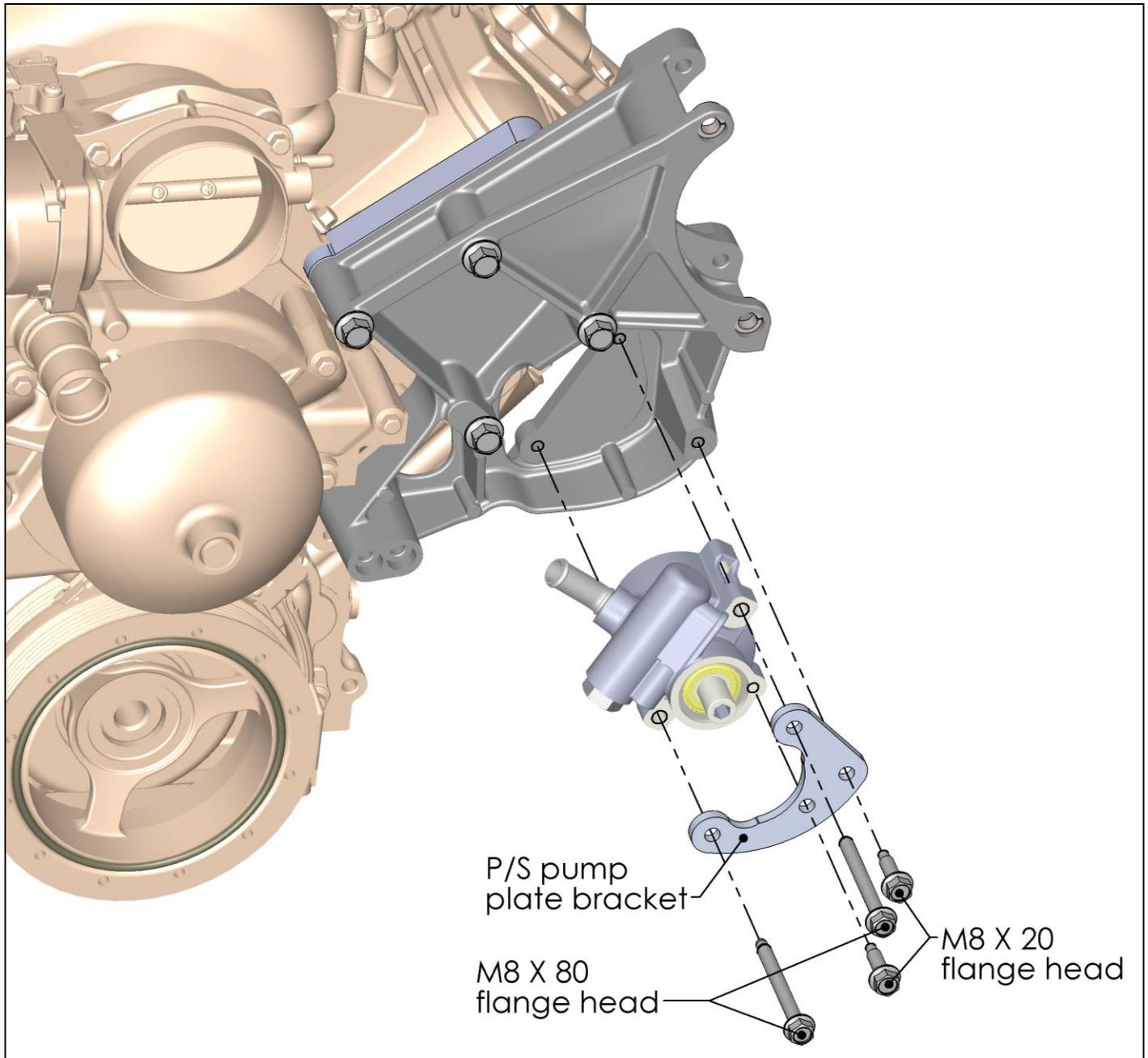
# Assembly Instructions

## **Driver's Side Bracket Installation:**



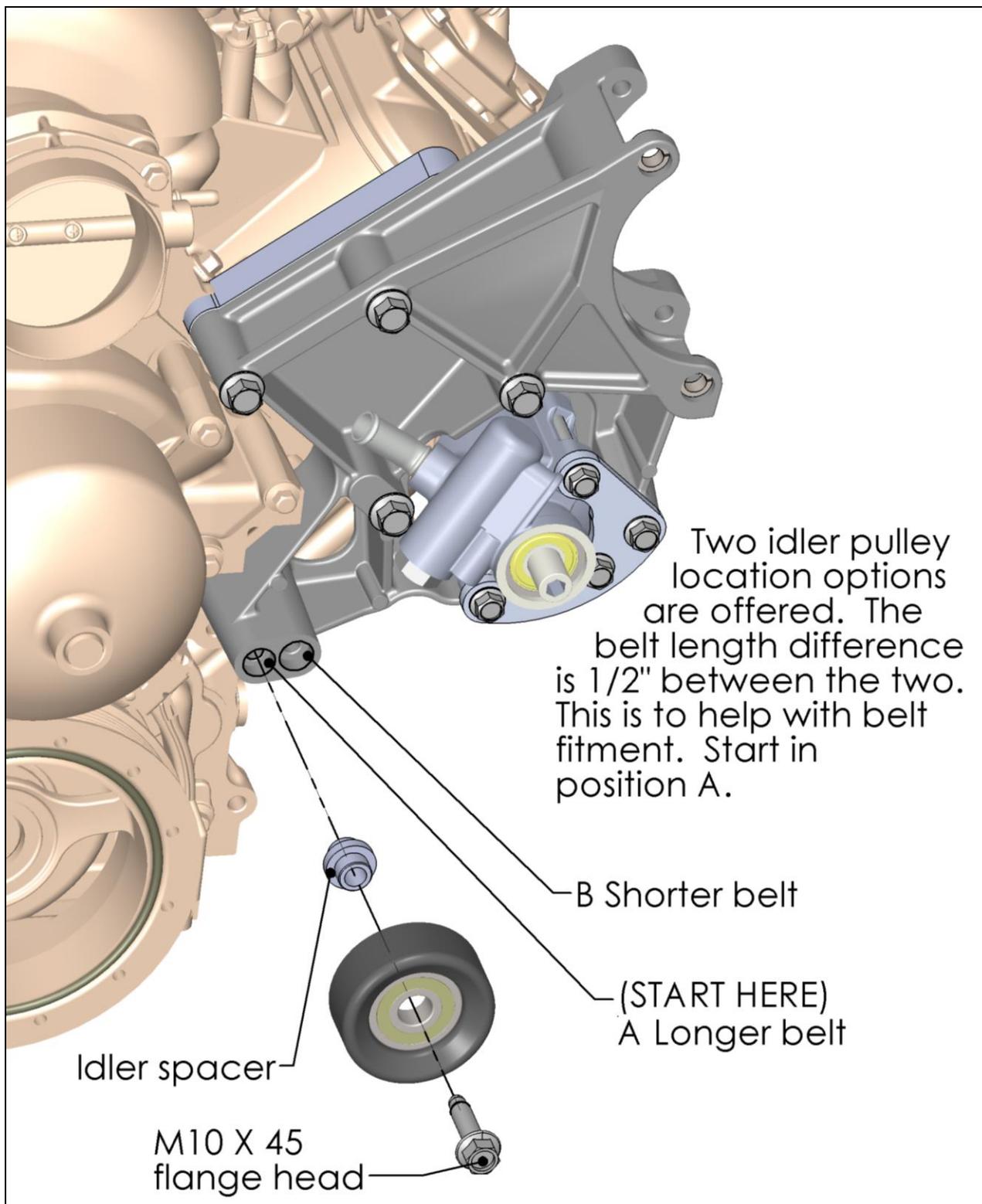
**NOTE:** Torque M8 bolts to 18 ft./lbs. and M10 bolts to 36 ft./lbs.

## Power Steering Pump Installation:



**NOTE:** Torque M8 bolts to 18 ft./lbs. and M10 bolts to 36 ft./lbs.

**Idler Pulley Installation (position options):**



**NOTE:** Torque M8 bolts to 18 ft./lbs. and M10 bolts to 36 ft./lbs.

## Power Steering Pump Pulleys:



NOTE: If using AN fittings on the pressure line, Holley P/N 961961ERL AN extension/adaptor is required.

There are several pulleys that will fit the pump, but some do not have the correct belt alignment for this application. See applicable service manual for pulley installation procedures.

### Small Diameter Pulley:

Power steering pulleys may interfere with the suspension A-arm in certain swap applications. Choosing a smaller pulley in these situations can give additional clearance.



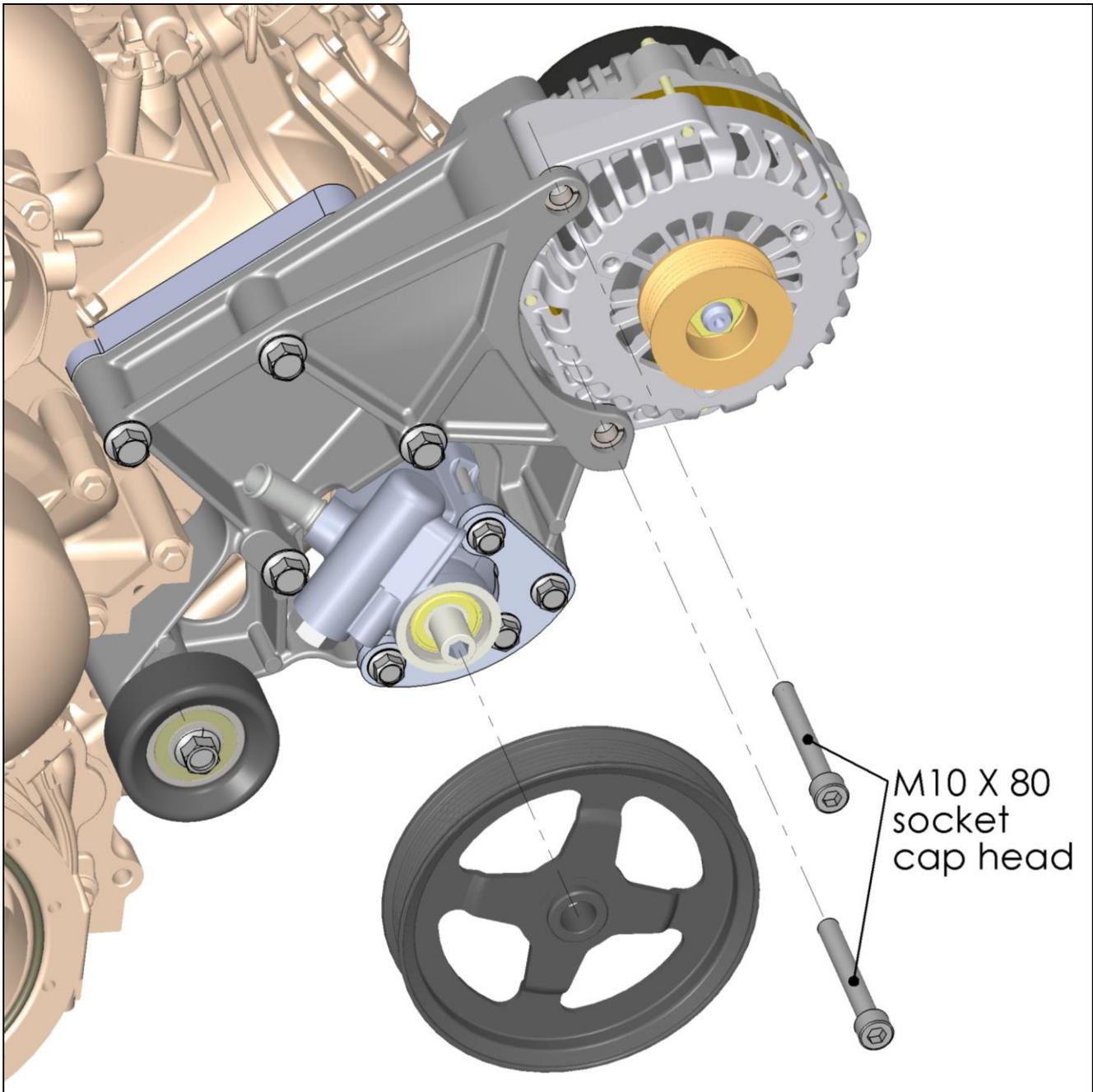
Power steering pump pulley
Holley P/N 97-154
OD to grooves: 5.45"
OD overall: 5.75"

**WARNING! Smaller power steering pulleys, such as a 97-154 can rotate the pump beyond recommended RPMs. To correct this, a 25% under-drive balancer should be used if choosing a pump pulley smaller than 6" OD.**

Belt Alignment Group	LS Application (Alignment Specific)	Balancer (25% under-drive)
		Powerbond P/N
Standard	Corvette/CTS-V/G8	PBU1117SS25
Middle	F-body/GTO	PBU1480SS25
Long	Camaro ('10-UP)/ Truck (all)	PBU1190SS25

**Helpful Hint:** If any of these smaller pulleys are used, the supplied belt will not work and a shorter size will have to be purchased at an auto parts store.

## ***P/S Pulley & Alternator Installation:***



**NOTE:** Torque M8 bolts to 18 ft./lbs. and M10 bolts to 36 ft./lbs.

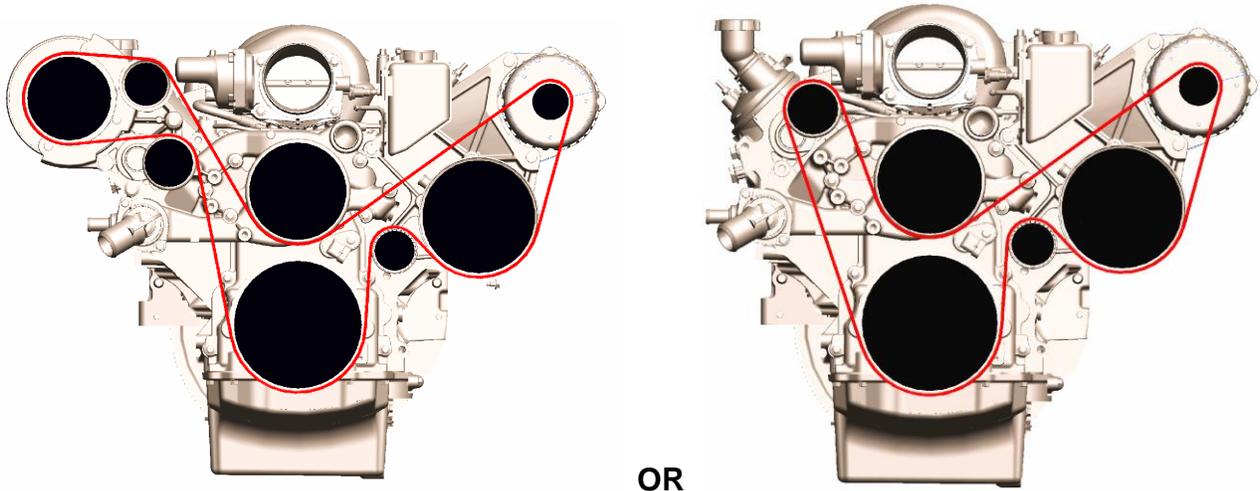
**Helpful Hint:** When wiring the alternator, install the included 197-400 plug into the alternator. Next connect the yellow wire to switched voltage that is “on” when the key is in the run position. If the vehicle has a “charge indicator light” the yellow wire can be connected to that circuit.

The P/S pulley must be installed using an installation tool that can be rented at most auto parts stores. Incorrect installation of this pulley may damage the P/S pump internals. When installed, the pulley bore face should be flush with the end of the pump shaft.

**Helpful Hint:** Open faced pulley part 97-152 can be installed onto pump before bracket assembly as bolts can be accessed through pulley windows.

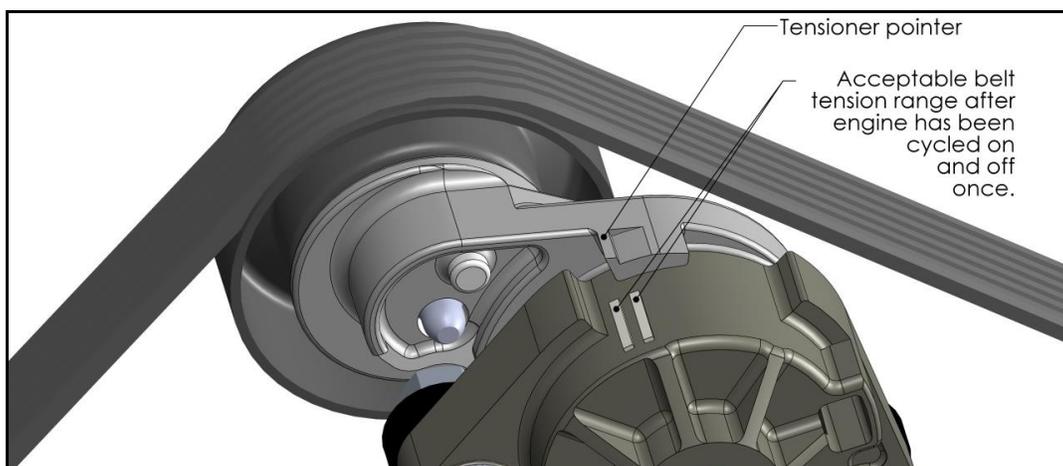
## ***Belt Routing & Length Calculation:***

**HELPFUL HINT:** When installing the belt, route around all the pulleys except the water pump pulley. While fully rotating the tensioner arm, slip the belt on the smooth water pump pulley last.



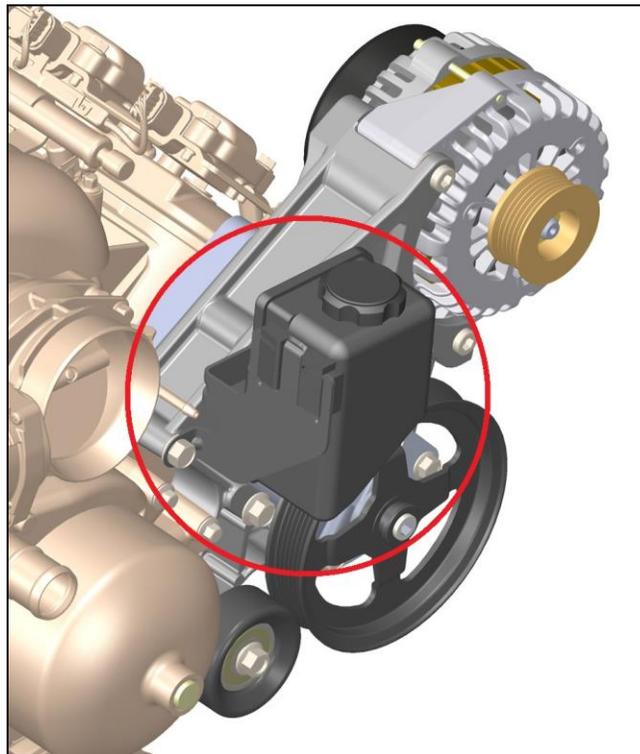
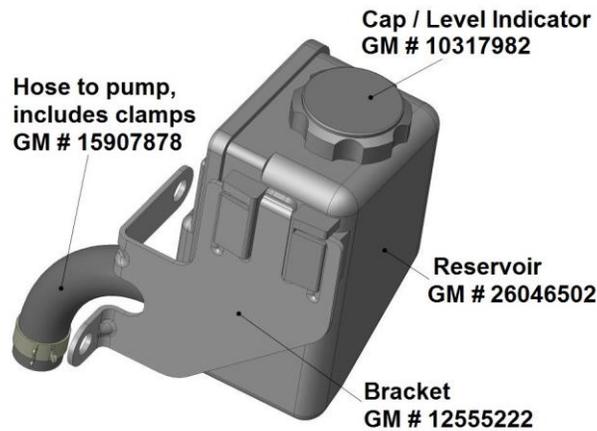
**Both the bracket application and pulley diameters vary and will directly affect belt length. To acquire the measurement for the correct belt, perform the following:**

After all brackets and accessories are installed, route masking tape or string around the belt path. Leave the tensioner in the un-sprung position for this measurement. Mark or cut the tape/string to length and remove from the pulleys. Subtract approximately 1 1/8" (28 mm) from the measured length to compensate for the un-sprung tensioner position. You will need to convert belt length to millimeters if measured in inches ( $\text{inches} \times 25.4 = \text{mm}$ ). Go to any auto parts store and ask for a 6PK0000 belt with the "0000" being the length in millimeters. For example, if you measured 2493 mm and then subtracted 28 mm, you would get 2465 mm, and the part number would be 6PK2465. Remember, if you miss on size, the driver's side idler can be moved to decrease the required belt length by 1/2".



## **Power Steering Pump Reservoir Options:**

The Holley driver's side bracket works with reservoirs found on '97-up Corvettes. Other remote reservoirs can be custom fitted with this bracket as well. All the below reservoir parts are included in **Holley kit # 198-200**.



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