



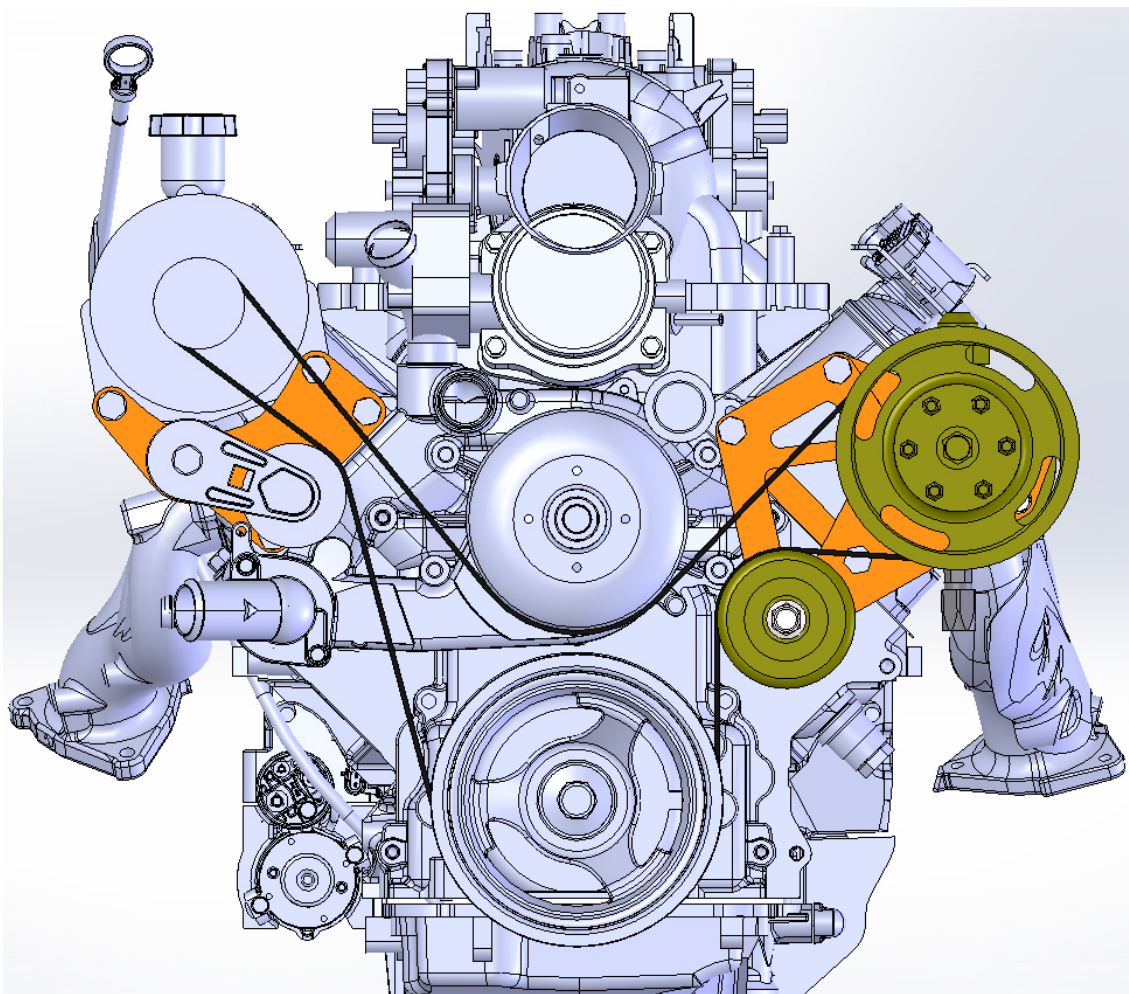
## GOAT BUILT TROPHY TRUCK-PUMP MOUNTING BRACKET

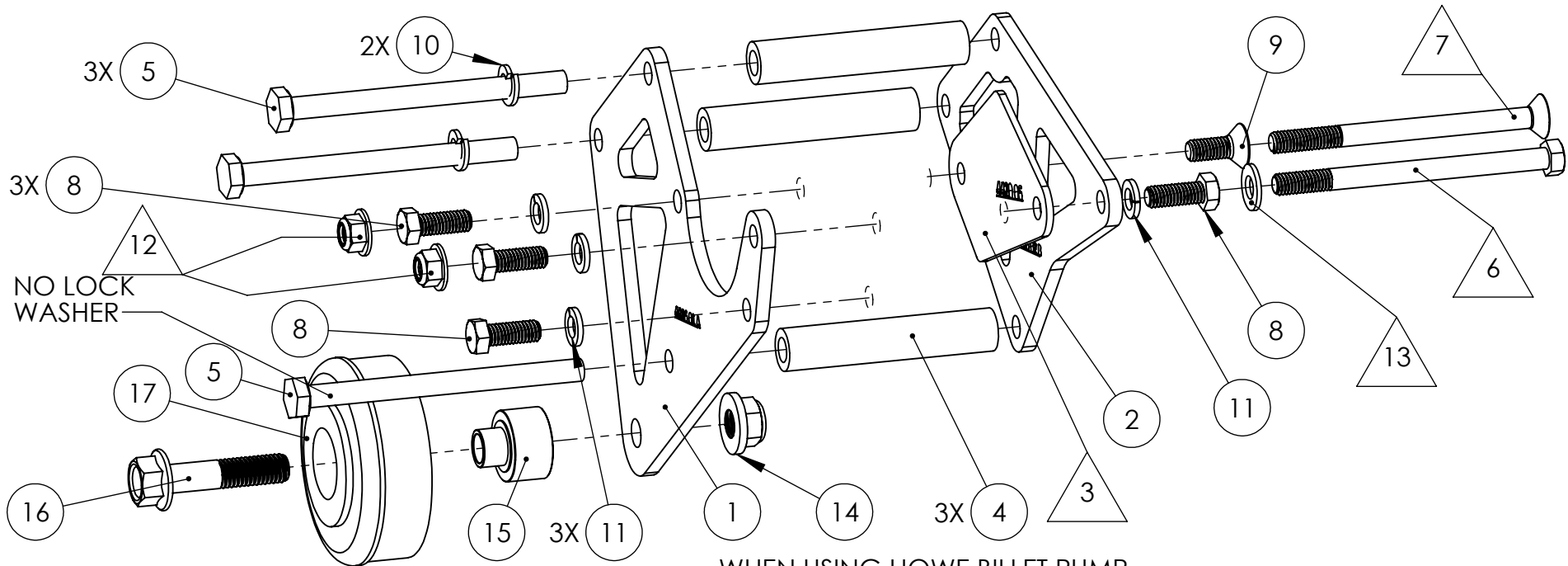
Thank you for purchasing Goat Built components, before starting your installation, we recommend that you read through these instructions to familiarize yourself with the steps and parts so you can plan and prepare for your install accordingly.

A few notes about the 4416 TT pump bracket:

- This bracket kit is intended for 99 to current GM truck Vortec 4.8/5.3/6.0 pulley spacing, including balancer, water pump, idler and Goat Built 4405 alternator bracket. If you want to use an F-body water pump, you will need 3/4" water pump spacers, another alternative to the truck water pump is the 2010+ Camaro water pump, it has truck spacing and front (upper) outlet, but the outlet is on the driver side
  - The bracket was developed around a Howe Trophy Truck pump with the dished pulley that places the belt closest to the pump, Howe P/N LS 340
  - The idler pulley is from any 2002-2013 GM truck/Tahoe application with a 4.8/5.3. or 6.0, Gates 36299, GM 12580771, Dorman 419602, Dayco 89006
  - A 90 degree pressure fitting is recommended at the back of the pump
  - Belt routing is shown below, the **belt length** varies based on which alternator and alternator pulley you are using. When using the Goat Built 4405-10 alternator bracket and 2005+ model alternator, a 78.25" belt is a good start. If you are using the Goat Built 4405 alternator bracket, a 81.25" belt is a good start. Based on these components, you can estimate the belt length for your specific configuration, 2005 and earlier alternator would use a smaller belt. Many of the belt manufacturers use the belt length as part of the part number, for example Dayco belt 5060805 would be a 6 rib, 80.5" length, the last 3 number are the length
1. It works best to bolt the pump to the brackets, and then bolt the complete bracket/pump assembly to the cylinder head.
  2. Howe has two different versions of the T pump, the older cast Iron body and a new billet aluminum body. They both interchange but the hardware is different. The billet pump will need the 1/8" thick shim between the rear of the pump and rear bracket. The cast iron pumps typically do not need the shim, but some might. You can compare the thickness of pump to the length of the steel spacers.
  3. Install the rear bracket to the rear of the pump. For the cast iron pump, use the 3/8 x 1" bolt, lock washer and the 1" flat head socket head bolt. For the billet pump, install the shim and use the 3/8 x 5" bolt with flat washer and the 3/8 x 5 flat head socket head bolt.
  4. Install the front bracket to the front of the pump. For the cast iron pump, use the three 3/8 x 1" bolts with lock washers and thread into the front of the pump. For the billet pump, install the 3/8 flange lock nuts to the 3/8 x 5" bolts.

5. Install the three 3.850 spacers between the brackets and hold them in place with the M10 x 130 bolts with lock washers. Do not use a lock washer on the lower bolt, the bolt head may interfere with the pulley.
6. Torque all the 3/8 bolts to 35 ft-lbs
7. You can install the pump pulley now or wait until the pump and bracket are installed on your engine.
8. Install the complete pump and bracket assembly to the head and torque the M10 bolts to 40 ft-lbs
9. Remove the stock bolt and spacer from the idler pulley if equipped. Install the idler to the front bracket using the 4400-05 spacer, 1/2" flange bolt and flange lock nut. Torque the idler bolt to 70 ft-lbs





WHEN USING HOWE BILLET PUMP

1. THESE PARTS ARE SHOWN ABOVE IN TRIANGLE
2. USE SHIM BEHIND PUMP
3. USE 3/8 X 5" BOLTS THRU PUMP AND BOTH BRACKETS WITH FLANGE LOCK NUTS ON THE FRONT

WHEN USING HOWE CAST IRON PUMP

1. USE ALL THE HARDWARE IN CIRCLES AND OMIT THE HARDWARE IN TRIANGLES
2. MAY OR MAY NOT NEED THE SHIM BEHIND PUMP
3. USE 3/8 X 1" BOLTS THREADED INTO PUMP

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	4416-01	FRONT PLATE	1
2	4416-02	REAR PLATE	1
3	4420-06	SHIM, TT PUMP BRACKET	1
4	4400-3850	3.850" SPACER	3
5	M10 X 130	M10 X 130 BOLT	3
6	3/8-5.00-8	3/8 X 5 BOLT	1
7	3/8-5.00-FHSS-8	3/8 X 5 FLAT HEAD BOLT	1
8	3/8-1.00-8	3/8 X 1 BOLT	4
9	3-1.00-8-FHSS	3/8 X 1 FLAT HEAD BOLT	1
10	M10-LW	M10 LOCK WASHER	2
11	3/8-LW	3/8 LOCK WASHER	4
12	3/8 FLN	3/8 FLANGE LOCK NUT	2
13	3/8 FW	3/8 FLAT WASHER	1
14	1/2 FLN	1/2-13 FLANGE LOCKNUT	1
15	4400-05	IDLER SPACER, .496 LONG	1
16	1/2-2.25-FB-8	1/2 X 2-1/4 FLANGE BOLT	1
17	IDLER (NOT INCLUDED)	90MM IDLER, 89006	1



TITLE:

LS TRUCK TT  
PUMP BRACKET

SIZE DWG. NO.

**A**

4416

SCALE: 1:1

WEIGHT:

SHEET 1 OF 1