



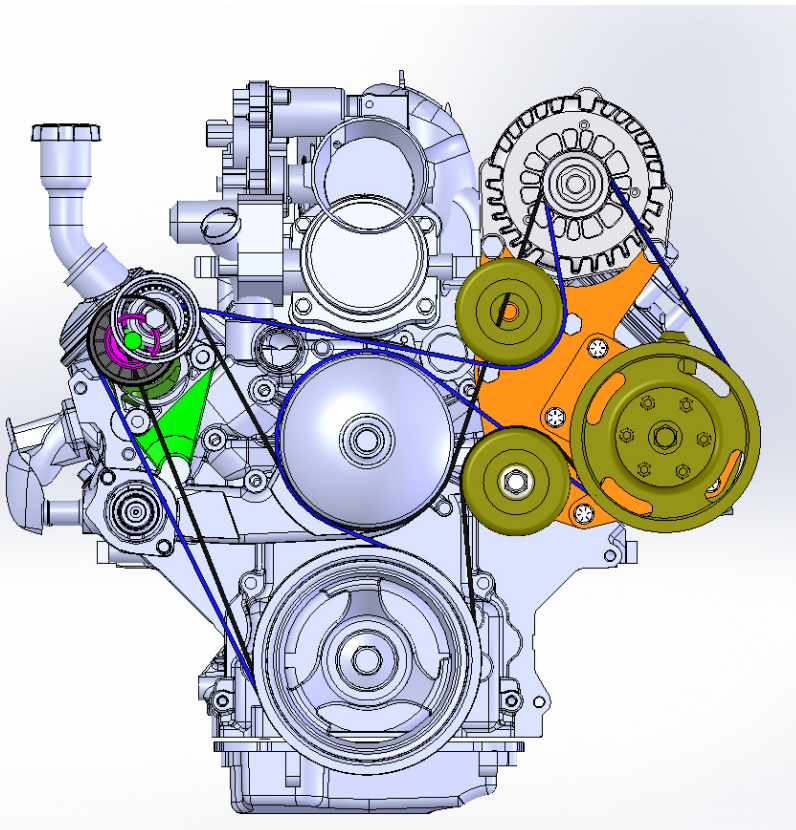
IBEX 4420 GM LS TT-PUMP AND ALTERNATOR BRACKET

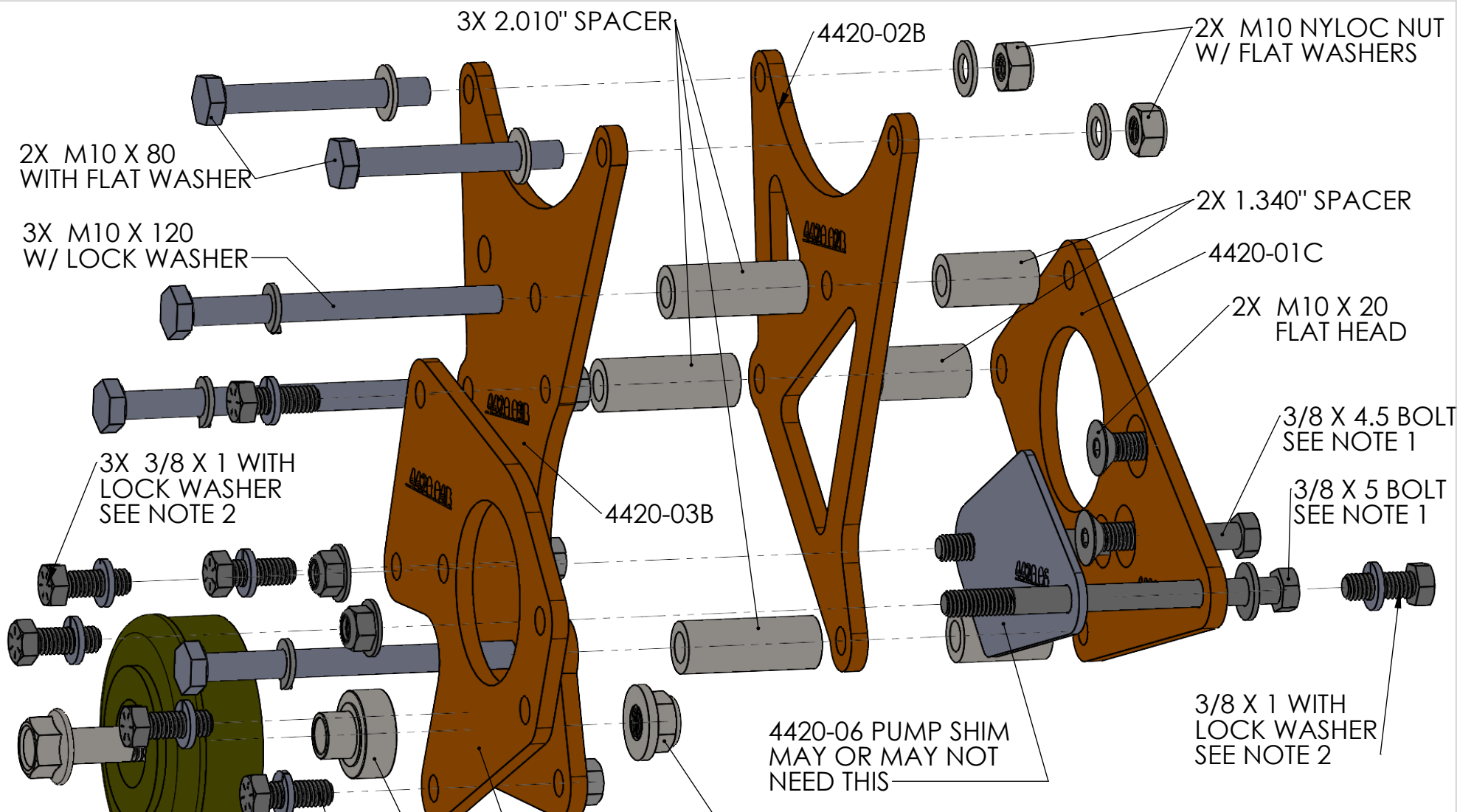
Thank you for purchasing Goat Built components, before starting your installation, we recommend that you read through these instructions to familiarize yourself with the steps and parts so you can plan and prepare for your install accordingly.

- This bracket kit is intended for 99 to 15 GM truck Vortec 4.8/5.3/6.0 or 2010+ Camaro LS3 pulley spacing, including balancer, water pump and alternator bracket. If you want to use an F-body water pump, you will need some 3/4" water pump spacers. You will use the OEM type belt tensioner mounted to the water pump.
 - This is based on the Howe TT pump, It will work on older cast iron version or newer billet aluminum version, however there are few install and hardware differences between the two.
 - The billet pump will likely need the 1/8" thick 4420-06 shim on the rear of the pump between pump and the 4420-01 bracket.
 - The cast iron pumps generally DO NOT need the shim but might. The pump should be about 3.84 mounting thickness that will not need the shim.
 - This was designed to use the HOWE LS 340 pulley; it is the one with more offset to put the belt closer to the pump.
 - The bracket was designed to leave the 4420-04 pump bracket attached to the pump and to remove or install together for easy pump changes with the pulley on the pump. If you buy an extra 4420-04 bracket you could have a spare pump, pulley and bracket assembled for an easy pump swap.
 - The idler pulley is from any 2002-2013 GM truck/Tahoe application with a 4.8/5.3. or 6.0, Goat Built 4462, Gates 36299, GM 12580771, Dorman 419602, Dayco 89006
 - Belt routing is shown below, the **belt length** varies based on what alternator and belt tensioner you are using. **YOU WILL HAVE TO MEASURE FOR YOUR 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. Refer to the included parts diagram for assembly
 2. Install the 4420-01 bracket to the head using the two M10 x 20 bolts flat head bolts, torque the bolts to 40 ft-lbs, we recommended blue Loctite on these fasteners. Check if you have clearance behind the outer hole to insert the 3/8 x 5 bolt thru this bracket from the back. This bolt attaches the pump, if you do not have clearance, you should install this bolt thru the bracket before you install it.
 3. Install the 4420-02 and 4420-03 brackets to the head using M10 x 120 bolts, lock washer, 2.010" spacers between the brackets and the 1.340 spacers between the rear bracket and the head.
 4. With the pulley removed, Install 4420-04 pump bracket to the front of the pump.
 - a. The older cast iron pumps should have all 3/8 threaded mounting holes. Use the 3/8 x 1 bolts with locknuts in the 3 holes in the front of the pump.
 - b. The billet pump should have two 3/8 thru holes. Use the 3/8 x 4.5 bolt thru the 4420-06 shim, thru the back of the pump and thru the back of the 4420-04 pump bracket, use

the 3/8 flange lock nut on the front of the bracket. Make sure the shim is aligned to the outer hole and torque this bolt and nut to 40 ft-lbs as you will not be able to tighten it after the pump is installed.

5. Install the pump and attached 4420-04 bracket to the 4420-03 front bracket, use the 3/8 x 1 bolts with lock washers to attach the 4420-04 bracket to the 4420-03 bracket, there are nuts welded to the back of the 4420-03 bracket to secure these 3/8 bolts.
 - a. If you are using the cast iron pump, use a 3/8 x 1 bolt with lock washer in the back of the pump thru the outer hole of the 4420-01 bracket
 - b. If you are using a billet pump, install the 3/8 x 5 thru the rear of the 4420-01 bracket, thru the shim and pump and thru the 4420-04 bracket. Use the 3/8 flange nut and torque to 40 ft-lbs. Depending on wrench access after you have the pulley on, you may consider tack welding that flanged lock nut to the front plate so you can remove the bolt and pump easily.
6. Torque the 10 MM bolts to 40 ft-lbs and 3/8 bolts to 40 ft-lbs
7. There are two possible locations for the idler, you only need to use one idler. Depending on the intake manifold and throttle body location and upper water pump outlet location, you will have to figure out which one works best. The two options and belt routing are shown below.
8. Remove the stock bolt and spacer from the idler pulley if installed. Install the idler to the 4420-03 bracket using the 4400-05 spacer, 1/2" flange bolt and flange lock nut. Torque the idler bolt to 70 ft-lbs.

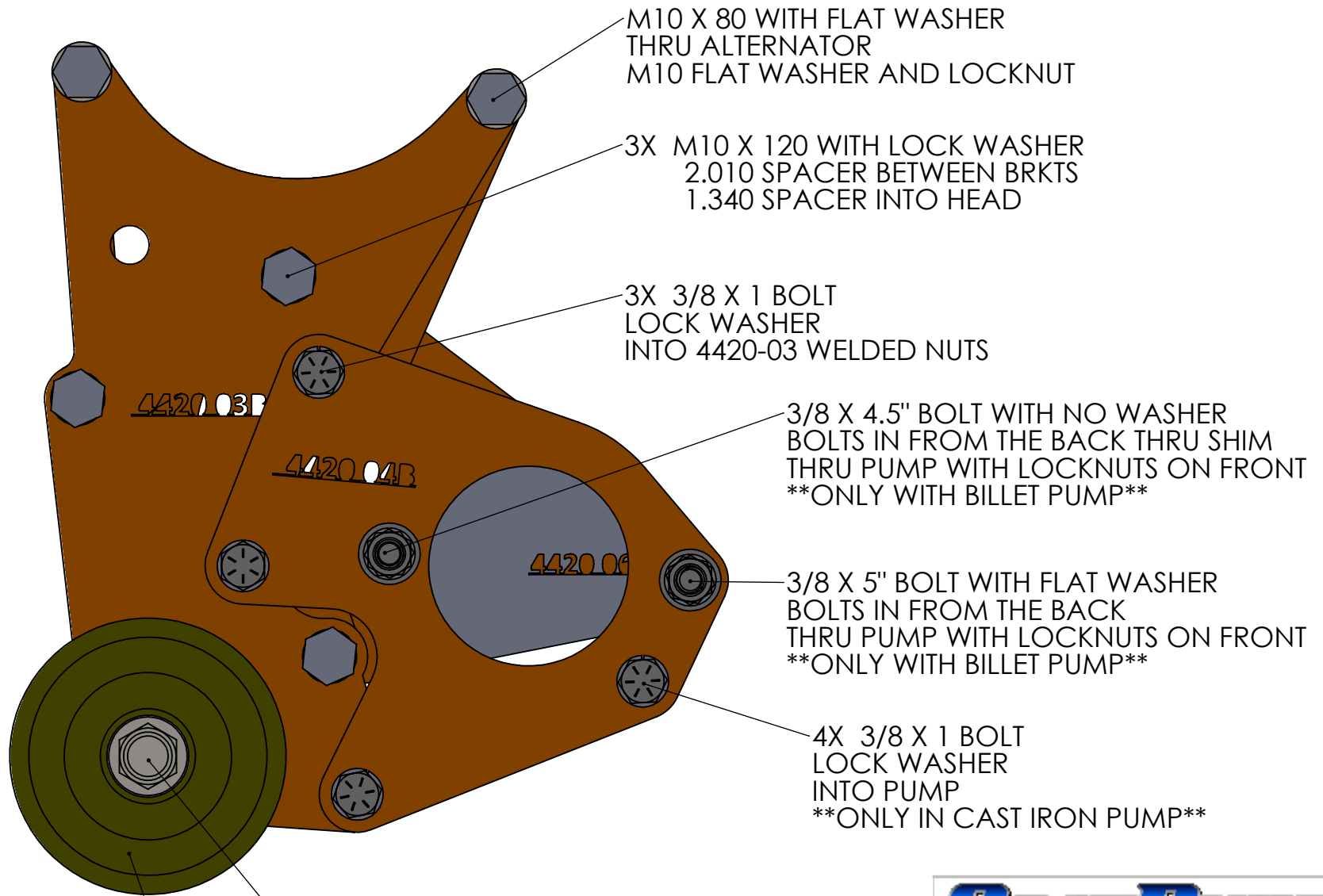




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TITLE: TT PUMP & ALTERNATOR BRACKET, LS TRUCK SPACING

SIZE	DWG. NO.
A	4420
SCALE: 1:1	WEIGHT:
	SHEET 1 OF 3



M10 X 80 WITH FLAT WASHER
THRU ALTERNATOR
M10 FLAT WASHER AND LOCKNUT

3X M10 X 120 WITH LOCK WASHER
2.010 SPACER BETWEEN BRKTS
1.340 SPACER INTO HEAD

3X 3/8 X 1 BOLT
LOCK WASHER
INTO 4420-03 WELDED NUTS

3/8 X 4.5" BOLT WITH NO WASHER
BOLTS IN FROM THE BACK THRU SHIM
THRU PUMP WITH LOCKNUTS ON FRONT
ONLY WITH BILLET PUMP

3/8 X 5" BOLT WITH FLAT WASHER
BOLTS IN FROM THE BACK
THRU PUMP WITH LOCKNUTS ON FRONT
ONLY WITH BILLET PUMP

4X 3/8 X 1 BOLT
LOCK WASHER
INTO PUMP
ONLY IN CAST IRON PUMP

THE IDLER PULLEY IS 2002-
2013 GM TRUCK/TAHOE
WITH 4.8/5.3. OR 6.0
GOAT BUILT 4462
GATES 36299, GM 12580771
DAYCO 89006

1/2 X 2-1/4 BOLT WITH
4400-04 IDLER SPACER
AND 1/2 LOCKNUT



TITLE:
TT PUMP & ALTERNATOR
BRACKET, LS TRUCK
SPACING

SIZE DWG. NO.
A 4420

SCALE: 1:1 WEIGHT: SHEET 2 OF 3

ITEM NO.	PART NUMBER	DESCRIPTION	4420-CAR BELT/QTY.
1	4420-01C	REAR PUMP BRACKET	1
2	4420-02B	MID BRACKET	1
3	4420-03B	FRONT BRACKET	1
4	4420-04B	FRONT PUMP BRACKET	1
5	4420-06	SHIM, TT PUMP BRACKET	1
6	M10-LN	M10 LOCK NUT	2
7	M10-LW	M10-SPLIT LOCK WASHER	3
8	M10-FW	M10-FLAT WASHER	4
9	3/8 FLN	3/8 FLANGE LOCK NUT	2
10	3/8 FW	3/8 GR 8 FLAT WASHER	1
11	3-8-LW	3/8 SPLIT LOCK WASHER	7
12	M10 X 120	M10 X 120 BOLT	3
13	M10 X 80	M10 X 80 BOLT	2
14	3/8-1.00-8	3/8 X 1 GR 8 BOLT	7
15	3-8-16-450	3/8 X 4.5" BOLT	1
16	3-8-16-500	3/8 X 5" BOLT	1
17	4400-2010	2.010" SPACER	3
18	4400-1340	1.340" SPACER	3
19	M10X20 FSHCS	M10 X 20 FLAT HEAD BOLT	2
20	1-2-13FLN	1/2-13 IDLER NUT	1
21	1-2-2.25-FB	1/2 X 2-1/4 FLANGE BOLT	1
22	4400-04	.729 IDLER SPACER	1

NOTE 1
WHEN USING HOWE BILLET PUMP

- USE SHIM BEHIND THE PUMP
- USE THE 3/8 X 5" & 3/8 X 4.5" BOLTS THRU THE PUMP AND BOTH BRACKETS WITH FLANGE LOCK NUTS

NOTE 2
WHEN USING HOWE CAST IRON PUMP

- MAY OR MAY NOT NEED THE SHIM
- USE THE 3/8 X 1" BOLT THREADED INTO THE PUMP, SHOULD BE 3 ON THE FRONT AND 1 IN THE BACK



TITLE:

TT PUMP AND ALTERNATOR
BRACKET, LS TRUCK SPACING

SIZE DWG. NO.

A

4420

SCALE: 1:1

SHEET 3 OF 3