ENERGY
MANUFACTURING

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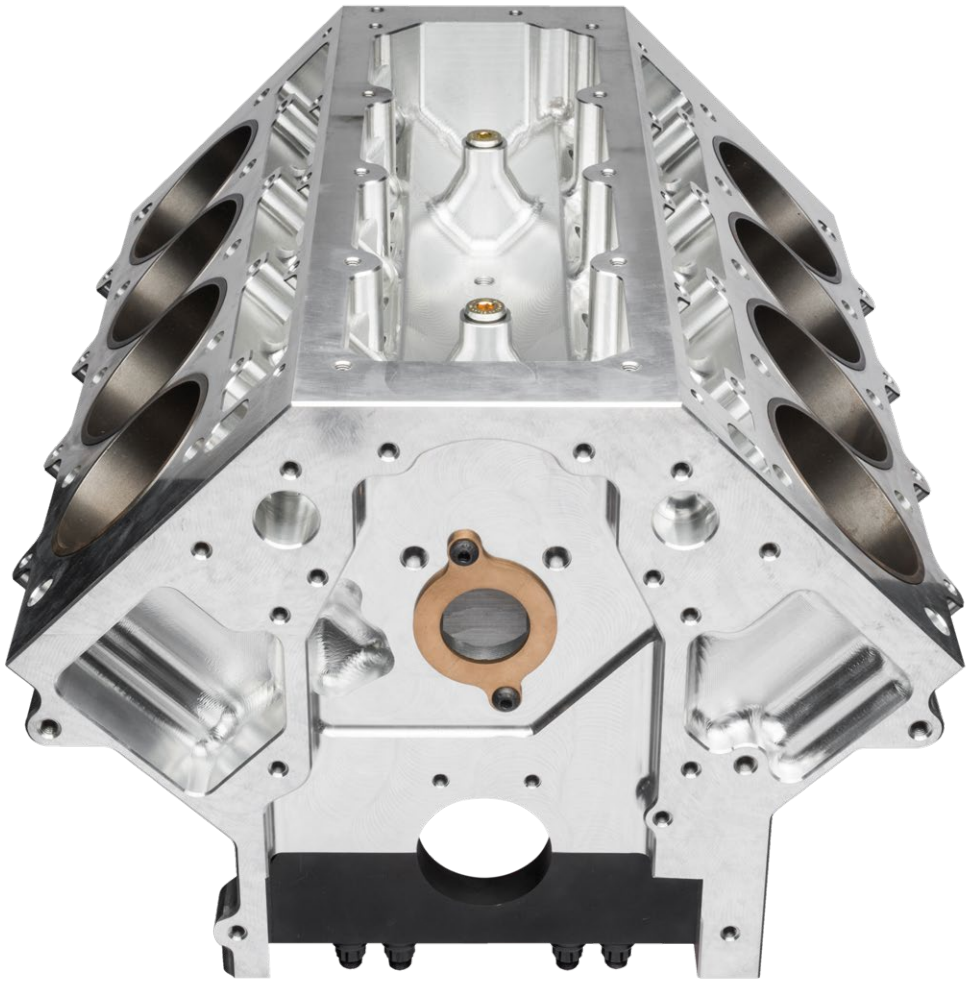
Customer Informational Packet

+0.388 Raised Cam LS, 9.24-10.2 Deck, 2.75 Main
Serial No.'s: 000830-Current



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Rotational Assembly Clearance

Max Stroke Clearance: 4.750”

This stroke clearance only includes the aluminum engine block for 90% of rotating assemblies. The sleeves are left unnotched to accommodate the wide range of rotating assemblies used in our billet aluminum block. This allows for the maximum amount of cylinder sleeve support in each customer’s build. The end user will need to notch the cylinder sleeves, the aluminum block should remain untouched or at most require only a minimum amount of material be removed.

Block Oiling

Please see illustration of the blocks oiling system and location of plugs included with block in Appendix E on page 8 labeled ‘Block Oiling Print’. Energy Manufacturing suggests plugging the crank to cam oil passageways with 1/4-20 set screws in position #1 through #5 if utilizing roller cam bearings (set screws not supplied, McMaster p/n: 94355A535 or similar, other lengths available). The block has (3) provisions for restricting oil to the lifter oil galleries, located at the lifter gallery crossover between the main oil gallery and driver deck oil gallery. (Oil restrictors not supplied, use McMaster p/n: 91979A658 or similar, other orifice sizes available). If utilizing a scavenge system, the oil drain backs in the lifter valley can be plugged with 1/4-18 NPT plugs for use with a pickup (plugs not supplied, McMaster p/n: 4638K512 or similar). Additionally, you can tap into the oil system just above the main inlet port as a 1/8-27 NPT port is provided. If not utilizing this port, you will need to install an 1/8 NPT plug (plug not supplied, McMaster p/n: 4638K511 or similar).

Oil Pan

The oil pan on your block retains the OEM rail width. Please see details of the fastener holes & locations named ‘Oil Pan Pattern’ in Appendix A. Verify that your oil pan will have clearance to your front & rear covers.

Cylinder Head Studs

Please see print with details of the cylinder head stud holes named ‘Cylinder Head Bolt Pattern’ in Appendix B on page 5. Use the ‘Cylinder Head Stud Order Form’, located in Appendix C on page 6, to simplify ordering head studs from your chosen provider. Your cylinder head stud provider should be able to provide you with torque specifications and installation instructions. We at Energy Manufacturing suggest completely coating the end of the stud going into the block with Marine Grade Anti-Seize to prevent dissimilar metal corrosion. To avoid damage to the threads, thread the fastener into the block hand tight without the use of power tools.

Timing Drive Options

***Jesel Belt Drive:* KBD-31666**

- Contact Jesel for additional accessories specific to your setup to accompany your gear drive.

***RCD Gear Drive:* 253500-0055**

- Contact RCD for additional accessories specific to your setup to accompany your gear drive.

***Innovators West Belt Drive:* 5202**

- Contact Innovators West for additional accessories specific to your setup to accompany your belt drive. Innovators West belt drive utilizes a stock type cam retaining plate, which will not work with the Energy Manufacturing block. You will need to source an SBC/LS cam retaining plate with a Ø3.300" bolt pattern and is secured with (2) ¼-20 bolts.

Main Caps

We at Energy Manufacturing suggest completely coating the end of the stud going into the block with Marine Grade Anti-Seize to prevent dissimilar metal corrosion. To avoid damage to the threads, thread the fastener into the block hand tight without the use of power tools. The ½" studs are designed to have the threads bottom out at the bottom of the threads. After installing main caps, and before torquing the main studs, verify that the caps are seated on the split line with a .001" shim. The main stud nuts should be hand tight before checking the caps. The torque specification is 120 ft-lbs. for the ½" studs. Energy Manufacturing suggests ARP Ultra Torque for the nut end of the studs. To help remove main caps, use a cap removal tool such as the one offered from Pro-Form p/n: 67485 or the like.

Miscellaneous Information

Max Cylinder Bore Size: 4.160"

Max Suggested Cam Tunnel Size: 60mm Roller Bearing

- When proceeding with a cam tunnel larger than a 60mm Roller Bearing housing size please contact Energy Manufacturing to review all of the required modifications and review the associated risks.

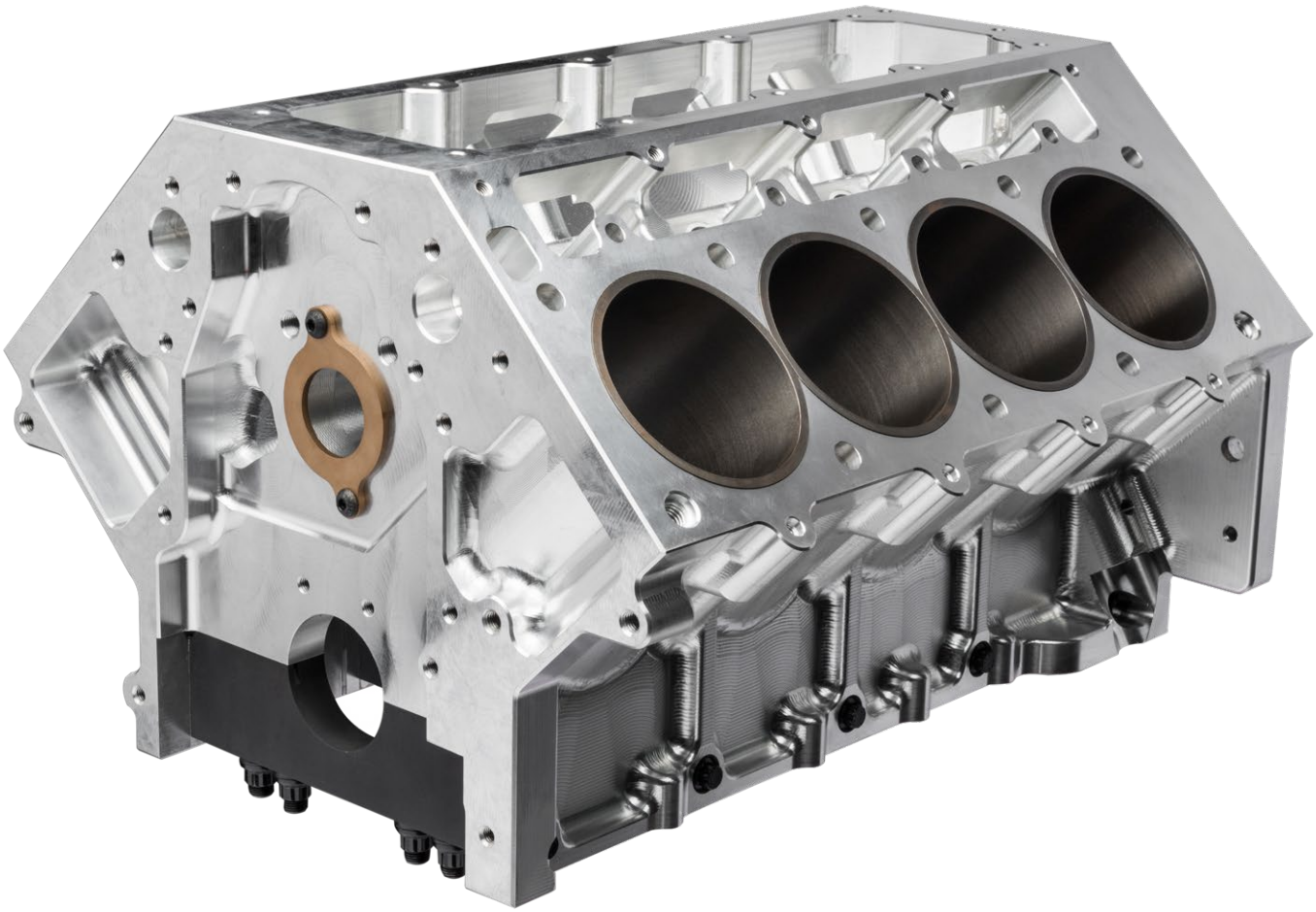
Suggested Cam Bearing Width: 20mm

Lifter Position: Standard, 45° Intake/45° Exhaust

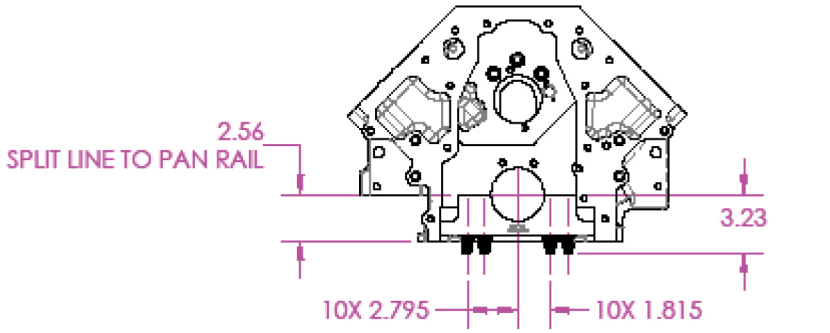
Rear Cover Plate: This block comes with a rear cover plate included in the packaging. It seals with an included O-ring and is fastened with (12) 5/16-18 socket head cap screws.

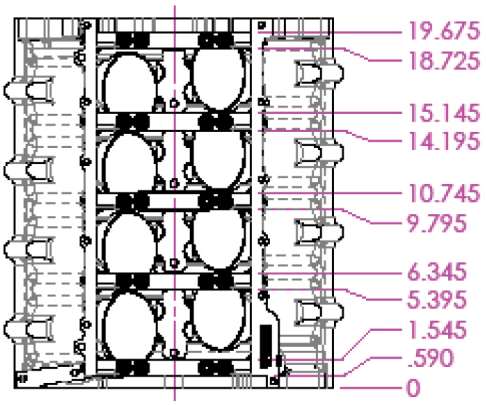
Miscellaneous Information (Continued)

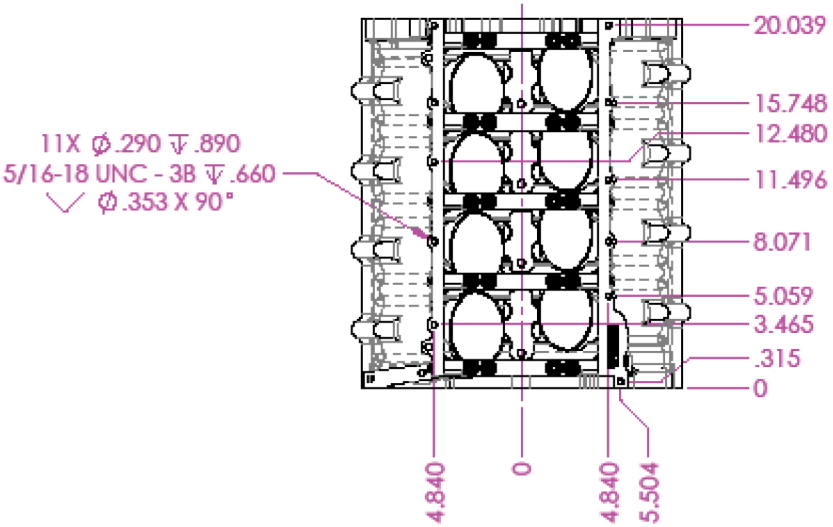
For details relevant to manufacturing an engine plate and mid plate, please view ‘Block Mounting Print’ in Appendix D.



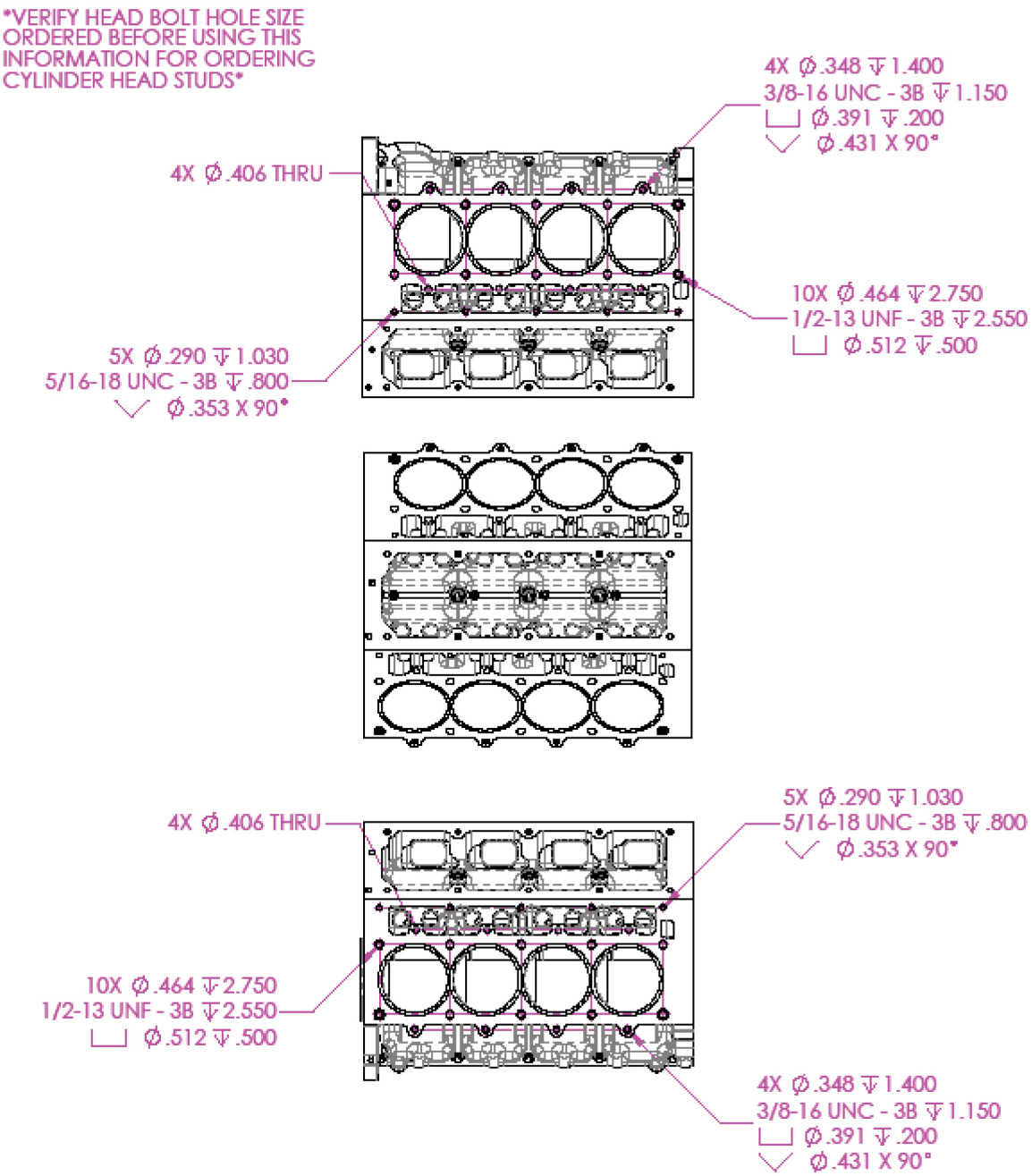
Appendix A: Oil Pan Pattern Print



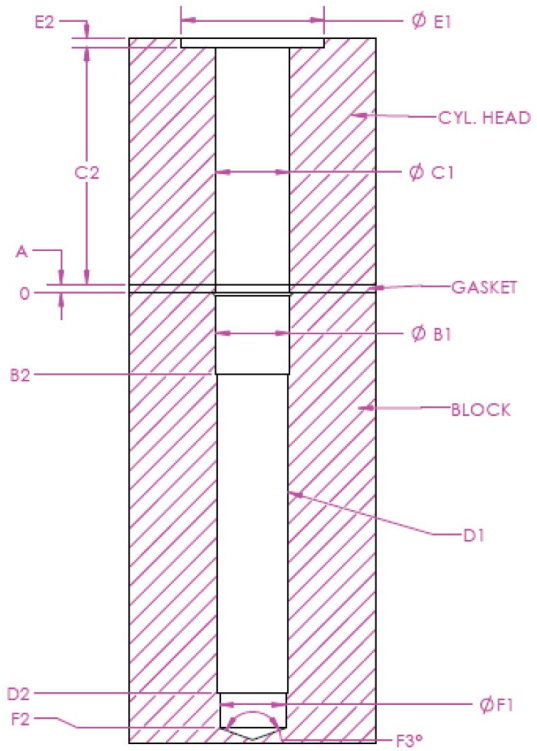


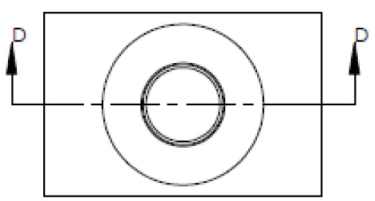


Appendix B: Cylinder Head Bolt Pattern Print - 1/2”



Appendix C: Cylinder Head Stud Order Form Print





Each stud should have part number associated.
Format part no. as follows:

"#" Stud
Designation_Energy
Customer #_UTS of
Material _ Date of
RFQ (MM_DD_YY)

Ex: #1_103_180_07_23_20

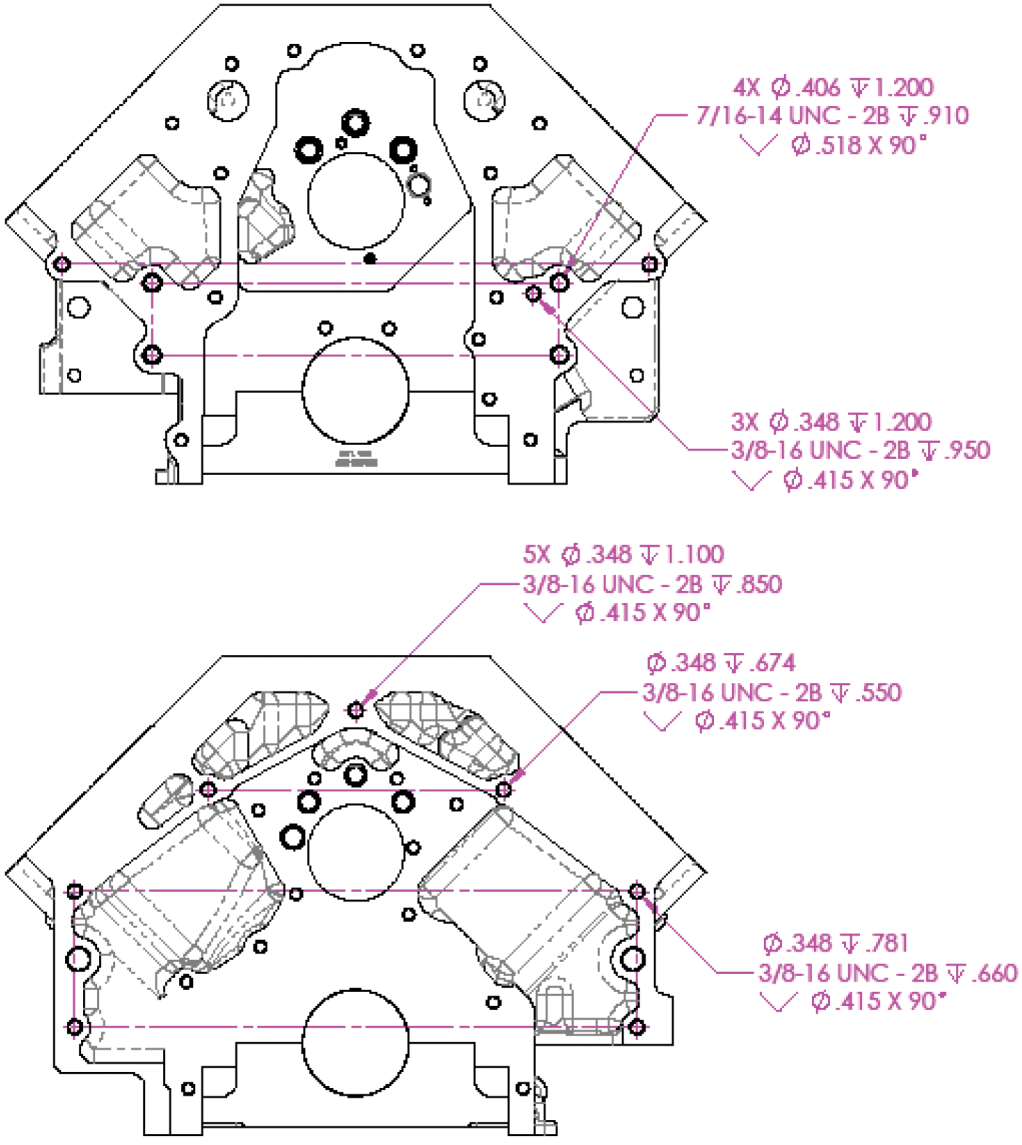
STUD DES.	QTY.	A (GASKET THK)	ØB1 (BLOCK CB Ø)	B2 (BLOCK CB ↧)	ØC1 (HEAD THRU Ø)	C2 (HEAD THRU ↧)	D1 (THD SIZE, PITCH & CLASS)	D2 (THD↧)	ØE1 (CBØ)	E2 (CLEAR ABOVE CB↧)	ØF1 (DRILL Ø)	F2 (DRILL ↧)	F3° (DRILL ANGLE)

0 represents deck surface

BLOCK MFG.	BLOCK REV./SERIAL #	BLOCK PART #	HEAD MFG.	HEAD PART #	ENERGY CUSTOMER #	STUD MFG.	RFQ DATE	TORQUE RATING

Appendix D: Block Mounting Print

NOTE:
Timing and bellhousing belt boles in OEM locations.



Appendix E: Block Oiling Print