

# HMS/ENFORCER ENGINE\*

2019

Sanctioning Body Specifications Handbook



\*This engine was developed to compete with the 347 SR Ford Crate Engine utilizing as many of the parts used in a GM version as possible.

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## Technical Specifications

Displacement	350 cubic inch to 355 cubic inch
Block	Dart HMS/ENFORCER
Bore	4.000 to 4.030 Plus Allowance for Wear of .005 Over Bore
Stroke	3.480
Crankshaft	Steel 4340 HMS/ENFORCER
Main Journal Size	SBC Stock # Large Journal 2.449
Rod Journal Size	SBC Stock # Large Journal 2.100
Crank Weight	Min. 47 lb with Crank Gear, Flywheel Bolts and Pilot Bushing
Balance Offset	Neutral
Vibration Damper	6 ¼ HMS/ENFORCER
Connecting Rod	HMS/ENFORCER 6.000 Inch
Piston	Forged HMS/ENFORCER
Dish or Dome Value	Flat Top – 5 cc
Ring Set	Any Brand Ring Set EXCEPT 0-Gap Rings measuring 1.0 1.0 2.0 mm / 1.5 1.5 3.0 mm
Compression Height	1.250
Pin Bore Diameter	.927 Stock SBC
Piston Material	Forged Aluminum
Camshaft	Mechanical Roller HMS/ENFORCER
Lifters	Mechanical Roller Link Bar HMS/ENFORCER
Cam. Timing ***see note below	ICL 104 + or – 2° as Run in Engine
Camshaft Lobe Lift	IN .3610 / EX .3630
Camshaft Duration @ .050	IN 230 / EX 236
Camshaft Lift Calculated @ Valve with 1.52 Rocker	IN .549 / EX .551 at 0 Lash
Valve Lash	Cold .003 to .004 / Hot .008 to .010 – Recommended, not for Tech
Cylinder Head	Aluminum HMS/ENFORCER
Chamber Volume	63cc + or - 2cc
Compression Ratio	10.5 : 1
Valves - Diameter	HMS/ENFORCER - IN 2.0200 / EX 1.600
Intake & Exhaust Valve Stem Diameter	11/32
Valve Spring/Locators	Steel
Approved Optional Springs	PSI LS-1511 PAC 1218X Comp 26918
Valve Spring Installed Height	1.750 to 1.800
Valve Spring Retainers	Beehive Steel HMS/ENFORCER 10°
Valve Lock	11/32 10° STD or +/- .050
Rocker Arms	HMS/ENFORCER 1.52 Ratio
Intake Manifold	Edelbrock Victor Jr. #2975 HMS/ENFORCER With Any 1" Solid Aluminum Straight Wall Open Spacer – No Lightening of the Spacer is Permitted
Push Rods	HMS/ENFORCER 7.950
Timing Chain Set	HMS/ENFORCER Double Roller Billet
Oil Pump	M55HV
Oil Pan	7qt – 8qt HMS/ENFORCER
***Cam Spec Notification*** Both Cams must run at the above specification	Early HMS ENFORCER Cams were ground with no advance – Later Cams were ground with 4° advance

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## Tech Specifications for Inspection

- No unapproved modifications, lightening, or changes of any kind will be allowed to any of the HMS ENFORCER parts.
- Max RPM 7000 – Recommended, not intended to be a CHIP Rule.
- The HMS ENFORCER Head must be run as manufactured without modifications other than the following:
  1. Head gasket surface may be milled/resurfaced for straightness and to achieve the minimum 61cc combustion chamber volume, however no angle milling of the head will be permitted.
  2. Any valve job will be permitted with a valve seat angle of 45° only. The top cut can extend past the edge of the seat into the combustion chamber. Cutting and preparation of the valve job may not extend below the valve seat insert. All seat cuts are concentric to the valve stem centerline. Back cutting of the valves is permitted. No modifications to the cylinder head below the valve seat insert will be allowed. The opening diameter at the bottom of the valve seat insert shall not exceed 1.837 for the intake and 1.382 for the exhaust. (it is not uncommon to have machine marks on the combustion chamber walls caused by performing the valve job)
- Intake manifold bolt holes can be slotted for alignment and the gasket surface may be milled/resurfaced for straightness and intake manifold sealing.
- Pistons must be installed .005" or more below the block deck surface.
- Engine block may be sleeved for repairs or to correct worn cylinders. Maximum bore allowed will be 4.030" plus up to an additional .005" for over bore. Cylinder spacing must maintain 4.400" cylinder to cylinder as per standard SBC specifications.
- No offset dowel pins or shifting of the head to block positioning will be permitted.
- Crankshaft may be balanced, counter throws can be ground, lathe turned or drilled for lightening. If grinding or turning is used the counter throws may not be cut completely round. Adding weight for the purposes of balancing only is allowed.
- Crankshaft Journals may be ground to a maximum of .010" under on rods and mains.
- Engine block can be chamfered and deburred on all corners and edges.
- All engine parts laser labeled "HMS/ENFORCER" along with the "QR-Code" must not be disturbed and must be readable at all times.
- Any main or rod bearings will be allowed. No coatings will be allowed on rod or main bearings.
- Any standard style cam bearings are allowed. Coatings are allowed on cam bearings.
- Any engine fasteners of choice are permitted.
- The only approved head gasket is Fel Pro 1043. It is allowed to enlarge the coolant flow holes, in the gasket, to reduce engine temperature, as described in the *Fel Pro Installation Tips*.
- The only approved intake gasket is Fel Pro 1206. All other gaskets are the builder's choice.
- Only metal timing covers are allowed.
- The approved oil pump is Melling M55HV and may be modified for oil pan clearance. The oil pump spring may be changed.
- Steel valve spring shims are allowed.
- Oil restrictors, All Star Performance Part # 90072, are permitted. As noted in the *Dart SHP Iron Small Block Chevy -Technical Notes*, under the Priority Main Oil System heading.
- **The specification data on all camshafts for the HMS ENFORCER Engines are tracked through Comp Cams. This data is available, upon request, to all tracks and technical personnel.**
- **Any questions on technical specifications not listed here should be addressed with HMS at the number below.**
- **No substitutions or modifications may be made unless authorized by HMS and listed in these rules.**

Questions – Please Call 1-828-632-783 or email [Harringtons90767@bellsouth.net](mailto:Harringtons90767@bellsouth.net)

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Due to sales of the Enforcer Engine exceeding projections we developed a substitute part to help ensure supply met demand at the time. Both are considered legal parts. Details are shown below:



The Crankshaft on the left is the original. The Crankshaft on the right was the alternate. Both will show the HMS ENFORCER logo and QR code.



The Lifter on the left is the original. The Lifter on the right is the alternate. Both will show the HMS ENFORCER logo and QR Code.