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Ireland Engineering in conjunction with Mahle Motorsports:

M20 (w/885 head) 2.9L Ultimate Street-Stroker Pistons

Thank you for purchasing the Ireland Engineering / Mahle Motorsport "Ultimate Street-Stroker" Piston Set for the BMW M20 engine (equipped w/885 cylinder head). These pistons are designed to offer a long streetable service life while maximizing potential power output.

PISTON ALLOY and DESIGN

These pistons are specially made using Mahle's proprietary M142 Forging Alloy. Other alloys require larger piston-to-bore clearances (like the 2618 alloy) or end up sacrificing strength (like the 4032 alloy). This alloy combines the strength of the 2618 alloy with the lower required piston-to-bore clearances needed with the 4032. The M142 alloy is used on several high-performance OEM applications (like the Corvette Z06).

Each piston dome is CNC-machined to match the correct-OEM style offset dish so as to maximize quench.

Deeper valve pockets have been cut into the domes to accept more aggressive camshafts (however you should ALWAYS double check your piston to valve clearance prior to starting your new motor. Over the years we have seen many a new engine destroyed due to passing over this step. Clearances are specified in the included MahleMotorsport information pamphlet).

These pistons feature "slipper-skirt" side skirts reducing friction between the piston and bore.

PISTON COATINGS:

Each piston is phosphate coated. This acts as a dry lubricant, and helps to reduce wear during your initial start up or engine break in. In addition, each piston has Grafal coating on the skirts. This coating is meant to reduce drag, friction, scuffing, and cylinder bore wear.

PISTON RINGS:

We use MahleMotorsport PowerPak ring sets. End gaps and other specifications are provided in the MahleMotorsport information pamphlet.

PISTON SPECIFICATIONS:

These pistons are designed with the following specs:

-85mm Bore (+1mm bore over stock)**Never have your block machined prior to receiving your pistons. Any good machinist will insist that they have the pistons in hand prior to boring the block.

-Piston-to-bore Clearance: .002 inches over the coating, measured at 7mm from bottom of skirts

-84mm Crankshaft Stroke (M52 crank for example)

-135mm Connecting Rods (M20, M52, S52, or length-specified H-beams)

-10:1 Compression (This is 91octane friendly with proper tuning).

2.9L STROKER INFORMATION:

As mentioned these pistons are designed to work with an 84mm stroke crank. When fitting the 84mm crankshaft clearancing on the block will need to be done.