Click to verify

(Image/Summit Racing – Mopar Replacement) When Chrysler announced it was bringing back the legendary Hemi in the early 2000s, it was a big deal. This new series of Hemi engines is often referred to as the “Gen. 3” after the first generation FirePower (1951-59) and second generation Elephant 426 (1964-71). Note: This Spec Guide is part of a series of Hemi Engine Spec guides we’re putting together. See Other Hemi Engine Spec Guides Here. The first edition of the third generation Mopar Hemi engine made its debut in 2003 Dodge Ram trucks and featured a 5.7 liter (345 cubic inch) displacement. Still considered a small-block engine based on displacement, the 5.7L Gen. III Hemi uses a hemispherical combustion chamber with two spark plugs per cylinder and small wedge flats along with excellent intake and exhaust ports. This 5.7L engine configuration would be the basis for future Hemi displacement variations. ... 2003-08 Mopar Gen. III 5.7L Hemi Engine Performance Mopar 5.7L Hemi Performance Ratings VersionTruckCar Displacement5.7L5.7L Compression Ratio9.6:19.6:1 Horsepower 345 hp340 hp Torque375 lb.-ft.390 lb.-ft. 2003-08 Mopar Gen. III 5.7L Hemi Engine Identification Mopar 5.7L 2003-08 Truck Engine Applications VIN Number DigitYearMakeModel 8th digit of VIN: “D” 2003-08DodgeRam 1500 2003-08 Mopar Gen. III 5.7L Hemi Engine Block Specs Mopar 5.7L Hemi Block Specs Casting Numbers53021319AG 53021319CB 50321314 DR MaterialIron Displacement5.7L / 345 c.i.d. Bore Dia.99.5mm / 3.92" Stroke90.9mm / 3.58" Deck Height9.25" Bore Spacing4.46" Thrust Bearing LocationNumber 3 Main Cap Style2 Bolts with 2 Lateral Cross-Bolts (All 5 Mains) Cam-to-Crank Centerline7.44" 2003-08 Mopar Gen. III 5.7L Hemi Engine Rotating Assembly Mopar 5.7L Hemi Rotating Assembly Specs Piston MaterialHypereutectic Piston StyleFlat Top with Valve Notches Piston Ring Package1.5mm, 1.5mm, 3.0mm Wrist Pin Diameter0.9456" Connecting Rod MaterialPowdered Metal Connecting Rod StyleI-Beam Connecting Rod Length6.242" Connecting Rod Bearing Bore2.125" Connecting Rod Bolts9.0mm x 1 Crankshaft MaterialNodular Iron Crankshaft Part Number53021302AD Crankshaft Casting Numbers53021319AG 53021319CB 53021300AA Crankshaft Main Journal Dia.2.559" Crankshaft Rod Journal Dia.2.126" BalanceInternal Crankshaft Reluctor Count32x Crankshaft Mounting Flange8 Bolts 2003-08 Mopar Gen. III 5.7L Hemi Engine Cylinder Heads Mopar 5.7L Hemi Cylinder Head Specs Casting Numbers53021300AJ (Right) 53021300BA (Left) Cylinder Head MaterialAluminum Combustion Chamber Volume85cc Combustion Chamber DesignHemispherical, with Quench & 2 Spark Plugs Per Cylinder Intake Port ShapeSquare, with Dimple Intake Runner Volume161cc Exhaust Port ShapeSquare Exhaust Port Volume50cc Intake Valve Diameter2.00" Exhaust Valve Diameter1.55" Cylinder Head Bolt StyleTorque to Yield (TTY) Cylinder Head Bolt SizeM12 x 1.5mm & 8mm 2003-08 Mopar Gen. III 5.7L Hemi Engine Camshaft Specs Mopar 5.7L Hemi Camshaft Specs DesignHydraulic Roller Advertised Duration (Intake/Exhaust)260 / 268 Valve Lift (Intake/Exhaust).0472" / .0460" Cam Journal Dia.2.24" / 57mm Front (Smaller to the Rear) 2003-08 Mopar Gen. III 5.7L Hemi Engine Valvetrain Specs Mopar 5.7L Hemi Valvetrain Specs Lifter DesignHydraulic Roller Lifter Link StylePlastic Guide x 4 Lifter Body Diameter0.842" Pushrod LengthVaries by Application Rocker Arm Mounting StyleShaft Rocker Arm StyleDie Cast, Roller Fulcrum Rocker Ratio1.60:1 (Intake) 1.66:1 (Exhaust) Rocker OffsetNone Valve Spring StyleBeehive Valve Angle18° (Intake) 16.5° (Exhaust) Intake Valve MaterialSteel, Solid Stem Intake Valve Diameter2.00" Exhaust Valve MaterialSteel, Solid Stem Exhaust Valve Diameter1.55" Valve Stem Diameter0.3125" Timing Chain Guide StyleSpring-Loaded Tensioner Other 2003-08 Mopar Gen. III 5.7L Hemi Engine Specs 5.7L Hemi Throttle Body, Fuel Injectors, Oil Pan Specs & More Intake ManifoldComposite, Fixed Runner Length Throttle Body80mm Throttle ControlElectronic Fuel Injector Part Number4591851AB (& Multiple Alternates) Fuel Injector Flow26 lb./hr. @ 58 PSI Flex Fuel CapableNo Fuel Injector ConnectorUSCAR, EV6 PCM NG3C / NGC4 Crankshaft Reluctor Ring32 Teeth Camshaft Sensor LocationPassenger Side, Front Oil PanVaries by Application Oil PumpGerotor Variable Valve Timing (VVT)No Multi-Displacement System (MDS)Yes, on 2005+ Models Firing Order1-8-4-3-6-5-7-2 Total Weight, Full Dress560 lbs. The 2005 Dodge Ram 1500 offers a range of engine options to suit different needs and preferences. Here are the engine configurations available for this model year: 1. 3.7L Magnum V6 Engine: – Displacement: 3.7 liters – Configuration: V6 – Power Output: 210 horsepower – Torque: 235 lb-ft 2. 4.7L Magnum V8 Engine: – Displacement: 4.7 liters – Configuration: V8 – Power Output: 235 horsepower – Torque: 300 lb-ft 3. 5.7L HEMI V8 Engine: – Displacement: 5.7 liters – Configuration: V8 – Power Output: 345 horsepower – Torque: 375 lb-ft Engine Oil Specs & Service Intervals Proper engine maintenance is crucial to ensure optimal performance and longevity. Here are the engine oil specifications and recommended service intervals for the 2005 Dodge Ram 1500: 1. Engine Oil Specifications: – Recommended Oil Type: SAE 5W-20 or SAE 5W-30 – Oil Capacity: – 3.7L V6 Engine: 6 quarts (with filter change) – 4.7L V8 Engine: 6 quarts (with filter change) – 5.7L V8 Engine: 7 quarts (with filter change) 2. Service Intervals: – Oil Change Interval: Every 3,000 to 5,000 miles or every 3 to 6 months, whichever comes first. – Oil Filter Replacement: It is recommended to replace the oil filter with every oil change to ensure proper filtration and engine protection. Detailed Engine Specifications Engine Displacement Configuration Power Output Torque 3.7L Magnum V6 3.7 liters V6 210 horsepower 235 lb-ft 4.7L Magnum V8 4.7 liters V8 235 horsepower 300 lb-ft 5.7L HEMI V8 5.7 liters V8 345 horsepower 375 lb-ft Dodge Charger SRT8: Power-Packed Engine Specs & Service Intervals In conclusion, the 2005 Dodge Ram 1500 offers three engine configurations: the 3.7L Magnum V6, 4.7L Magnum V8, and 5.7L HEMI V8. Each engine provides different power outputs and torque levels to suit various driving needs. It is important to follow the recommended engine oil specifications and service intervals to ensure proper maintenance and performance of your vehicle. Regular oil changes and filter replacements will help keep your engine running smoothly for years to come. What engine does a 2005 Dodge Ram 1500 have? It all depends on the trim level. To determine which engine is used in your 2005 Dodge Ram 1500, locate the VIN (found in the owner’s manual, under the hood, or on the windshield or driver’s side door), write it down, and decode it online. Below you can learn about the technical specifications for each 2005 Dodge Ram 1500 motor and explore the list of other vehicles using the same engines. 5.7L EZB 4.7L Magnum V8 3.7L EKG Magnum V10 Viper A car and its engine do not always share the same manufacturer. Sometimes the engine and other components can be borrowed from other manufacturers. Usually in the same family are engines with the same volume and layout. Some parts of the same engine family may be interchangeable with each other. Each individual engine series has its own design features and is installed on certain vehicles. The more cylinders in the engine and the higher their total volume, the more powerful the car is considered. On the other hand, the more cylinders an engine has, the higher the fuel consumption. This is the main indicator of the car's power. The higher the number of horsepowers, the faster the car is able to accelerate. Engine torque is a measure of the twisting force that an engine produces at its crankshaft. It is a key factor in determining an engine's power output, as well as its ability to accelerate and tow heavy loads. Keep an eye on the oil level in the engine. If it is too low, it can cause a breakdown, because all its elements must be abundantly lubricated during the operation. If it is too much oil, it will interfere with normal engine operation and create excessive resistance. Different engines require different viscosity grades of oil, which are specified by the engine manufacturer. These viscosity grades are typically denoted by a number and a letter, such as 5W-30 or 10W-40. The number represents the oil's viscosity at low temperatures, while the letter represents its viscosity at high temperatures. When changing the oil, make sure that you tighten the oil plug strictly with the necessary torque. If you screw it in too loosely, the oil may simply leak out, or if you apply too much force, you risk damaging the threads. Lack of coolant in the system can lead to engine overheating, which in turn leads to costly repairs. Ensure that the coolant amount is always at the level specified in the manual. There is a special area for the battery in your car. When selecting a battery, make sure that it will fit in its intended location and will not be too large. Other cars with Chrysler / V8 / HEMI - Petrol / Third Generation / 5.7L EZB engine Chrysler 300 2005, 2006, 2007, 2008, 2009, 2010 Dodge Durango 2004, 2005, 2006, 2007, 2008, 2009 Dodge Magnum 2005, 2006, 2007, 2008 A car and its engine do not always share the same manufacturer. Sometimes the engine and other components can be borrowed from other manufacturers. Usually in the same family are engines with the same volume and layout. Some parts of the same engine family may be interchangeable with each other. Each individual engine series has its own design features and is installed on certain vehicles. The more cylinders in the engine and the higher their total volume, the more powerful the car is considered. On the other hand, the more cylinders an engine has, the higher the fuel consumption. This is the main indicator of the car's power. The higher the number of horsepowers, the faster the car is able to accelerate. Engine torque is a measure of the twisting force that an engine produces at its crankshaft. It is a key factor in determining an engine's power output, as well as its ability to accelerate and tow heavy loads. Keep an eye on the oil level in the engine. If it is too low, it can cause a breakdown, because all its elements must be abundantly lubricated during the operation. If it is too much oil, it will interfere with normal engine operation and create excessive resistance. Different engines require different viscosity grades of oil, which are specified by the engine manufacturer. These viscosity grades are typically denoted by a number and a letter, such as 5W-30 or 10W-40. The number represents the oil's viscosity at low temperatures, while the letter represents its viscosity at high temperatures. When changing the oil, make sure that you tighten the oil plug strictly with the necessary torque. If you screw it in too loosely, the oil may simply leak out, or if you apply too much force, you risk damaging the threads. Lack of coolant in the system can lead to engine overheating, which in turn leads to costly repairs. Ensure that the coolant amount is always at the level specified in the manual. There is a special area for the battery in your car. When selecting a battery, make sure that it will fit in its intended location and will not be too large. Other cars with Chrysler / V8 / Power Tech - Petrol / 4.7L / 4.7L Magnum V8 engine Dodge Dakota 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011 Dodge Durango 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009 Jeep Commander 2006, 2007, 2008, 2009 Jeep Grand Cherokee 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009 RAM 1500 2012, 2013 A car and its engine do not always share the same manufacturer. Sometimes the engine and other components can be borrowed from other manufacturers. Usually in the same family are engines with the same volume and layout. Some parts of the same engine family may be interchangeable with each other. Each individual engine series has its own design features and is installed on certain vehicles. The more cylinders in the engine and the higher their total volume, the more powerful the car is considered. On the other hand, the more cylinders an engine has, the higher the fuel consumption. Keep an eye on the oil level in the engine. If it is too low, it can cause a breakdown, because all its elements must be abundantly lubricated during the operation. If it is too much oil, it will interfere with normal engine operation and create excessive resistance. Different engines require different viscosity grades of oil, which are specified by the engine manufacturer. These viscosity grades are typically denoted by a number and a letter, such as 5W-30 or 10W-40. The number represents the oil's viscosity at low temperatures, while the letter represents its viscosity at high temperatures. When changing the oil, make sure that you tighten the oil plug strictly with the necessary torque. If you screw it in too loosely, the oil may simply leak out, or if you apply too much force, you risk damaging the threads. Lack of coolant in the system can lead to engine overheating, which in turn leads to costly repairs. Ensure that the coolant amount is always at the level specified in the manual. There is a special area for the battery in your car. When selecting a battery, make sure that it will fit in its intended location and will not be too large. Other cars with Chrysler / V6 / PowerTech - Petrol / 3.7 L / 3.7L EKG Magnum engine Dodge Dakota 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011 Dodge Durango 2004, 2005, 2006, 2007, 2008, 2009 Dodge Nitro 2007, 2008, 2009, 2010, 2011 Jeep Commander 2006, 2007, 2008, 2009, 2010 Jeep Grand Cherokee 2005, 2006, 2007, 2008, 2009, 2010 Jeep Liberty 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012 RAM 1500 2012 A car and its engine do not always share the same manufacturer. Sometimes the engine and other components can be borrowed from other manufacturers. Usually in the same family are engines with the same volume and layout. Some parts of the same engine family may be interchangeable with each other. Each individual engine series has its own design features and is installed on certain vehicles. The more cylinders in the engine and the higher their total volume, the more powerful the car is considered. On the other hand, the more cylinders an engine has, the higher the fuel consumption. This is the main indicator of the car's power. The higher the number of horsepowers, the faster the car is able to accelerate. Engine torque is a measure of the twisting force that an engine produces at its crankshaft. It is a key factor in determining an engine's power output, as well as its ability to accelerate and tow heavy loads. Keep an eye on the oil level in the engine. If it is too low, it can cause a breakdown, because all its elements must be abundantly lubricated during the operation. If it is too much oil, it will interfere with normal engine operation and create excessive resistance. Different engines require different viscosity grades of oil, which are specified by the engine manufacturer. These viscosity grades are typically denoted by a number and a letter, such as 5W-30 or 10W-40. The number represents the oil's viscosity at low temperatures, while the letter represents its viscosity at high temperatures. When changing the oil, make sure that you tighten the oil plug strictly with the necessary torque. If you screw it in too loosely, the oil may simply leak out, or if you apply too much force, you risk damaging the threads. Lack of coolant in the system can lead to engine overheating, which in turn leads to costly repairs. Ensure that the coolant amount is always at the level specified in the manual. There is a special area for the battery in your car. When selecting a battery, make sure that it will fit in its intended location and will not be too large. Other cars with Dodge / V10 / Viper - Petrol / ZB / V10 Viper engine Dodge Viper 1999, 2000, 2001, 2002 Horsepower: 215 hp; Torque: 235 Lb-ft; 0-60mph 0-100kmh s: 9 sec; Fuel economy city: 16 mpg; Fuel economy highway: 21 mpg; Horsepower: 235 hp; Torque: 300 Lb-ft; 0-60mph 0-100kmh s: 9 sec; Fuel economy city: 14 mpg; Fuel economy highway: 18 mpg; Horsepower: 500 hp; Torque: 525 Lb-ft; 0-60mph 0-100kmh s: 5.4 sec; Fuel economy city: 9 mpg; Fuel economy highway: 15 mpg; Horsepower: 235 hp; Torque: 300 Lb-ft; 0-60mph 0-100kmh s: 10 sec; Fuel economy city: 14 mpg; Fuel economy highway: 18 mpg; Horsepower: 235 hp; Torque: 300 Lb-ft; 0-60mph 0-100kmh s: 10 sec; Fuel economy city: 14 mpg; Fuel economy highway: 18 mpg; Horsepower: 235 hp; Torque: 300 Lb-ft; 0-60mph 0-100kmh s: 9.8 sec; Fuel economy city: 14 mpg; Fuel economy highway: 18 mpg; Horsepower: 235 hp; Torque: 300 Lb-ft; 0-60mph 0-100kmh s: 9.8 sec; Fuel economy city: 14 mpg; Fuel economy highway: 18 mpg; Horsepower: 235 hp; Torque: 300 Lb-ft; 0-60mph 0-100kmh s: 9 sec; Fuel economy city: 14 mpg; Fuel economy highway: 18 mpg; Horsepower: 235 hp; Torque: 300 Lb-ft; 0-60mph 0-100kmh s: 8.9 sec; Fuel economy city: 14 mpg; Fuel economy highway: 18 mpg; Horsepower: 235 hp; Torque: 300 Lb-ft; 0-60mph 0-100kmh s: 8.7 sec; Fuel economy city: 14 mpg; Fuel economy highway: 19 mpg; Horsepower: 235 hp; Torque: 300 Lb-ft; 0-60mph 0-100kmh s: 8.9 sec; Fuel economy city: 14 mpg; Fuel economy highway: 18 mpg; Horsepower: 235 hp; Torque: 300 Lb-ft; 0-60mph 0-100kmh s: 10.1 sec; Fuel economy city: 14 mpg; Fuel economy highway: 19 mpg; Horsepower: 235 hp; Torque: 300 Lb-ft; 0-60mph 0-100kmh s: 10.1 sec; Fuel economy city: 14 mpg; Fuel economy highway: 19 mpg; Horsepower: 235 hp; Torque: 300 Lb-ft; 0-60mph 0-100kmh s: 9.8 sec; Fuel economy city: 14 mpg; Fuel economy highway: 19 mpg; Horsepower: 215 hp; Torque: 235 Lb-ft; 0-60mph 0-100kmh s: 10.2 sec; Fuel economy city: 16 mpg; Fuel economy highway: 21 mpg; Horsepower: 235 hp; Torque: 300 Lb-ft; 0-60mph 0-100kmh s: 9 sec; Fuel economy city: 14 mpg; Fuel economy highway: 19 mpg; Horsepower: 215 hp; Torque: 235 Lb-ft; 0-60mph 0-100kmh s: 9.4 sec; Fuel economy city: 16 mpg; Fuel economy highway: 21 mpg; Horsepower: 500 hp; Torque: 525 Lb-ft; 0-60mph 0-100kmh s: 8.1 sec; Fuel economy city: 9 mpg; Fuel economy highway: 12 mpg; Have you ever been among that type of people who is actually enthusiastic about speed and have a hunch for the engine power and the gust in the hair? Or maybe do you wish to go on a comfy road trip with your family? It makes no difference, as long as in both cases you must sort out all of the crucial details that affect engine functionality to find out how exactly your specific 2005 Dodge Ram 1500 wheels. And therefore, our company`s tables that are formed with the essential engine characteristics will assist a driver to gain time. Presently, a good deal of automobiles, and your 2005 Dodge Ram 1500 is not going to be the exception, suggest thrilling efficiency, still not every one of them may sign for reputable exploitation with a fair selling price. Nevertheless, the 2005 Dodge Ram 1500 engine generally has been created to ensure that travelers and a driver feel at ease while the auto is driving. Manufacturers of your own 2005 Dodge Ram 1500 always take efforts to design and upgrade not just car seats or chassis, but also its coordination overall. Here is why an automobile lover is offered to take a look at not just the 2005 Dodge Ram 1500 engine specs but even the transmitting and platform. The first aspect can possibly have an impact on your respective auto`s operation and may even give you foolproof supervision on the automobile. The second aspect may also have a particular influence on the model work. There are as well other variables that take their toll on any 2005 Dodge Ram 1500 engine productivity - temperature loss, petrol pumping, chemical substance energy loss, and far more. A car enthusiast definitely should know about every one of them in order to determine the problem with engine performance if needed. In conclusion, if a driver wishes to keep their 2005 Dodge Ram 1500 engine undamaged, the automobile owner has got to care for the engine duly. Probably the most typical upkeep procedures for boosting the engine's toughness infer replacing gas filters and examining air filters, interchanging the oil regularly at the right time, checking cooling down systems, and not moving on minimal gasoline signs. All these procedures will not only uphold your 2005 Dodge Ram 1500 engine fine but additionally save money. Click the area you are looking for!Dodge Ram 1500 4.7L SOHC Engine Repair InformationHere you can find information regarding the assembly of the Dodge 4.7L SOHC engine. In this guide we will start from the inside of the engine including the crankshaft, connecting rods, and piston ring installation and then move outwards all the way to the pulley belt system. Along the way correct procedures and torque specs will be given to aid in the assembly of the engine. Feel free to start from the beggining and work your way outwards or skip ahead to your current position in the engine for what you may need. Crankshaft Main Caps InstallationThe 4.7L engine block main bearing caps should be inspected for any defects or flaws before installation. Be sure to lubricate the bearing surfaces prior to installation. Once prepared you can place the caps onto the crankshaft and begin tightening the bolts down in a multi stage process. The first being 10 ft-lbs starting from the middle and going outwards. The second time around you turn each bolt an additional 90 degree turn. Be sure to go through each bolt during each step and work your way from the inside or middle caps to the outside or outwards bearing caps. Once finished you should be good to continue with the rest of the engine.Dodge Ram 1500 4.7L SOHC Main Cap Torque Specs : 10 ft-lbs + 90° Piston and Connecting Rod InstallationTo install the pistons and connecting rods you must first install the piston rings into each piston. Be careful not to stretch the rings or break them during installation. Make sure to put the correct rings in the correct positions, this can be determined by looking at the instructions given with the new rings. Each ring manufacturer is different so be sure to check for your specific rings. Once the rings have been installed you can now fit the connecting rod bearings into the end caps and lube them up with oil or lithium grease. The piston can now be lowered into the cylinder, make sure the dot or mark is facing the front of the engine and that you don't scratch the cylinder. Once installed you can match the connecting rod caps with the correct rods and start to torque the connecting rod bolts to 10 ft-lbs and then to 20 ft-lbs follwed by an additional 90 degree turn for each bolt. After all are done rotate the crank to ensure all pistons move smoothly in and out of their cylinders and nothing binds.Dodge Ram 1500 4.7L SOHC Connecting Rod Torque Specs : 20 ft-lbs + 90°Oil Pump InstallationWhen installing the oil pump be sure to use the proper sealant around the pump base if neccessary to ensure that oil pressure doesn't drop due to leakage. Both surfaces should be cleaned and preped prior to installing. After preparing the contact surfaces carefully install the oil pump onto the engine and torque down the pump mounting bolts to 20 ft-lbs. Be sure to tighten down the bolts in a cross pattern to ensure that even torque is applied to the pump. From here we can install the oil pump cover and torque down its bolts to 8 ft-lbs.Dodge Ram 1500 4.7L Oil Pump Mounting Bolt Torque Specs : 20 ft-lbsDodge Ram 1500 4.7L Oil Pump Cover Bolts Torque Specs : 8 ft-lbsDodge Ram 1500 4.7L Oil Pump Pickup Tube Torque Specs : 20 ft-lbsCylinder Head InstallationThe first thing you must do when installing cylinder heads is to ensure both the block and head surfaces are completely clean from dust, oil, and any debris. The next thing you must to is to set the camshafts to their correct positions to prevent any valves from hitting pistons during installation and torquing of the head bolts. Much the same you have to set the pistons to their correct locations, typically this means putting the #1 piston to TDC or Top Dead Center. Once everything is ready you can install the head gasket onto the engine block by aligning the alignment dowels. Something I usually do is spray down the head gasket with some engine copper spray from permatex which you can find here, this ensures that any gaps that could be present between the 2 surfaces gets filled with the spray. It also helps to transfer heat between the 2 metals. With the gasket in place you can set the cylinder head onto the gasket and block, if needed have someone assist with this process as the head can be heavy and you don't want to scratch anything or drop it! Once the head has been placed you will want to start installing the head bolts to make sure it doesn't move. Be sure to buy new head bolts as many manufacturers use TTY or Torque to Yield head bolts meaning they stretch during torqueing and cannot be used twice. Also make sure to lubricate the bolts in clean engine oil before installing them into the head. On Dodge SOHC engines there is occasionally bolt holes on the engine block that cross into water passages. Any hole that does this should be installed with some silicon sealant. A little goes a long way in this step and you can check holes by shining a flashlight down them and looking in the water jackets. Once all the head bolts have been installed and finger tightened you can start the torqueing process, almost all head bolts have a multi-step process for torqueing. The 4.7L SOHC engine uses a single size of cylinder head bolts with a total of 10 bolts being installed into the cylinder head. These head bolts should be tightened down to 20 ft-lbs and then two sets of 90 degree turn for a total of a 180 degree turn by going through each bolts during each step. The smaller cylinder head bolts can be torqued down to 10 ft-lbs and then 19 ft-lbs also going through each bolt during each step. Make sure to now overturn or underturn any bolt as this can cause an unbalance of surface pressure between the gasket and head.Dodge Ram 1500 4.7L SOHC Cylinder Head Main Bolts Torque Specs : 20 ft-lbs + 90° + 90°Dodge Ram 1500 4.7L SOHC Cylinder Head Small Bolts Torque Specs : 10 ft-lbs + 19 ft-lbsTiming Chain and Camshaft InstallationOn the Dodge 4.7 SOHC engine the timing system is ran by the use of two chains. This chain system consists of a sprocket on each camshaft located at the top of each cylinder head followed by a single double idler sprocket and a crankshaft sprocket. Each chain connects to the idler sprocket and then goes up to the cylinder head sprockets being timed by painted links lining up with dots on the sprockets. When installing new timing chains be sure that the engine is turned so that the number 1 cylinder is set to TDC or top dead center. From here simply install the camshafts into the cylinder heads and torque down the camshaft bearing cap bolts to 8 ft-lbs in a cross pattern. From here we can hold the camshafts with a large wrench or tool and install the camshaft timing sprockets and torque them down to 90 ft-lbs. The crankshaft timing sprocket can then be installed onto the crankshaft by aligning the woodruff key with the slot on the sprocket. The idler sprocket can be installed and torqued down to 25 ft-lbs. The idler sprocket timing chain to the crankshaft can be set in place by alinging the marks and tightened down with its tensioner. From here the chains can be set in place starting with the further inwards chain and by aligning the painted chain marks with the sprockets dots. With the first chain in place we can then install the second chain and begin to install the timing chain guides and tensioners to hold them in place. Starting with the guides install them onto the engine block and torque down the guide bolts to 20 ft-lbs. Next we can install the 2 tensioner guides and torque them down to 12 ft-lbs. Finally the tensioners themselves can be installed and torqued down to 20 ft-lbs. Be sure to double check all of the timing marks prior to releasing the tensioners tension. With the tension released you should check for extra slack in the timing chain system and lightly turn the engine clockwise with a wrench to take up any existing slack. From here we can move onto the next part of the engine.Dodge Ram 1500 4.7L Camshaft Sprocket Bolts Torque Spec: 90 ft-lbsDodge Ram 1500 4.7L Camshaft Bearing Cap Bolts Torque Spec : 8 ft-lbsDodge Ram 1500 4.7L Timing Chain Guide Bolts Torque Spec : 20 ft-lbsDodge Ram 1500 4.7L Timing Chain Tensioner Guide Bolts Torque Spec : 12 ft-lbsDodge Ram 1500 4.7L Timing Chain Tensioner Bolts Torque Spec : 20 ft-lbsDodge Ram 1500 4.7L Timing Chain Idler Sprocket Torque Spec : 25 ft-lbsDodge Ram 1500 4.7L Crankshaft Position Sensor Torque Spec: 8 ft-lbsTiming Cover InstallationThe timing cover on the 4.7L is used to cover up the internals of the engine and hold in massive amounts of oil. For this reason I recommend using some silicon sealant along with a new gasket during installation. Be sure to clean all of the metal surfaces prior to installation and placing the silicon onto the metal. With everything ready to install be sure to double check your timing and engine internals before placing the cover in place. Another tip is to lube up the crankshaft seal with some oil so it seats better. If everything is good to go then place the cover onto the engine block and begin to tighten down the bolts hand tight. Once all of the bolts have been set in place be sure to follow your sealants instructions by waiting the recommended time. Once ready you can torque down the timing cover bolts to 40 ft-lbs going in a cross pattern.Dodge Ram 1500 4.7L Timing Cover Bolts Torque Specs : 40 ft-lbsOil Pan InstallationMuch like the timing cover on the 4.7L the oil pan plays an important role in keeping the engine oil inside the engine. For this reason I recommend using a new gasket as well as some silicone sealant during installation. Using the same technique as before with the cover you clean the surfaces of both the oil pan and the engine block and then install the new gasket onto the block and then follow it up with some silicone sealant. Be sure to follow your sealants instructions to ensure you get the best seal from your application. The oil pan bolts can be torqued down to 10 ft-lbs following a cross pattern. Along with the pan is the oil pan drain plug, this gets removed and reinstalled quite frequently and can be torqued down to 25 ft-lbs.Dodge Ram 1500 4.7L Oil Pan Torque Specs : 10 ft-lbsDodge Ram 1500 4.7L Oil Drain Plug Torque Specs : 25 ft-lbsValve Covers InstallationThe valve cover installation is rather simple, there are rubber seals for each bolt hole and a silicone gasket that prevents oil from leaking out of the engine. It is recommended to replace both the seals and the gaskets although if they are in good condition you can reuse them. If you do choose to reuse them I would use some silicone sealant along with the silicon gasket to ensure it does not leak. The valve cover bolts torque down to 106 in-lbs or about 8 ft-lbs in a criss cross order. Be sure not to miss any bolts to avoid having oil leak out onto the exhaust pipes and cause a lot of smoking.Dodge Ram 1500 4.7L Valve Cover Torque Specs : 8 ft-lbsIntake Manifold and Fuel Rail InstallationWhen installing the intake manifold you want to make sure you have all the surfaces as well as intake holes cleaned out before placing the manifold into position. Once cleaned you can then place the intake manifold gaskets onto the alignment pins. If you want you can also use a little bit of sealant on the gaskets to help ensure there are no leaks. With the gaskets in place you can now put the manifold down onto the gaskets and begin to install the bolts. The intake manifold bolts torque to 10 ft-lbs and can be tightened in a cross pattern. The ignition coil assembly can be torque down to 8 ft-lbs and the spark plugs themselves can be torqued down to 13 ft-lbs, be careful not to overtorque these as they can snap and cause big problems. When installing the throttle body make sure that all of the gaskets are in good condition and will hold a seal as you do not want to be leaking gas fumes around the engine. If everything looks good you can tighten the throttle body bolts down to 8 ft-lbs.Dodge Ram 1500 4.7L Intake Manifold Torque Specs : 10 ft-lbsDodge Ram 1500 4.7L Ignition Coil Assembly Torque Spec : 8 ft-lbsDodge Ram 1500 4.7L Spark Plug Torque Specs : 13 ft-lbsDodge Ram 1500 4.7L Throttle Body Torque Specs : 8 ft-lbsExhaust Manifold InstallationThe exhaust manifold can be installed by cleaning the surface areas on both the head an the manifold itself and then by using the exhaust manifold gasket and putting it in place. Once the gasket is in its location you can put the manifold onto the heads and begin to torque them down to 18 ft-lbs. I always use some copper spray from permatex on the exhaust manifold gaskets to ensure I do not end up with any exhaust leaks once done. When you go to install the engine into the vehicle or if it is already in the vehicle the torque specs for the exhaust manifold to the exhaust pipes or catalytic converter is 25 ft-lbs.Dodge Ram 1500 4.7L Exhaust Manifold Torque Spec : 18 ft-lbsDodge Ram 1500 4.7L Exhaust Pipe Torque Specs : 25 ft-lbsWater Pump and Thermostat InstallationThe water pump on the Dodge 4.7L engine gets tightened down to the engine block on the serpentine belt side and is ran off of the drive belt. When removing the old water pump be sure that you drain out the coolant prior to removal otherwise the coolant will spill all over. Once drained you can remove the water pump mounting bolts and remove the old pump from the vehicle. From here we can clean up the engine blocks mating surface and prepare the new water pump for installation. Be sure to use a new gasket and some silicon sealant to ensure that no coolant ends up leaking and causes further engine damage down the road. Once prepared you can install the pump onto the engine and hand tighten the bolts down. Once all of the bolts have been installed you can then torque down the bolts to 30 ft-lbs. Make sure to follow your sealants instructions as they often require you to wait an extended amount of time before torqueing down the bolts. From here you can install the water pump pulley and fan and torque them down to 19 ft-lbs.Dodge Ram 1500 4.7L Water Pump to Case Torque Specs : 40 ft-lbsDodge Ram 1500 4.7L Water Pump Pulley Torque Specs : 19 ft-lbsFront Dress and Pulley belt InstallationMost of what is left on the engine is just place and tighten objects such as the belt pulleys, belt tensioner, throttle body, oil filter neck, crankshaft pulley, and motor mounts. If the items have a gasket and hold either oil or coolant inside the engine then feel free to add some sealant along with the gasket. Always be sure to inspect your gaskets and replace them if there is any deteriation or flaws with them. For the belt system the crankshaft pulley gets tightened down to the crankshaft at 130 ft-lbs. The drive belt tensioner can be tightened to 33 ft-lbs and the idler pulley can be torqued down to 16 ft-lbs. When installing be sure they both turn smoothly and if they do not then replace them with new ones as the bearings can go bad. The engine motor mount can be installed onto the engine block if it hasn't been already, the torques for the mount to the block is 59 ft-lbs and then when installing the mount to the vehicle or frame it can be torqued to 35 ft-lbs. Finally the throttle body can be installed on top of the intake manifold with a good gasket and some added sealant using 7 ft-lbs in a criss cross pattern. For installing the belt you can use a tool to move the tensioner into its springed state and install the belt as shown in the picture. The generator or alternator can be tightened down to the engine block using 30 ft-lbs of force. The power steering pump can be installed and torqued down to 18 ft-lbs and finally the A/C compressor can be torqued down to 15 ft-lbs of force.Dodge Ram 1500 4.7L Crankshaft Pulley Torque Specs : 130 ft-lbsDodge Ram 1500 4.7L Idler Pulley Bolt Torque Spec : 16 ft-lbs Dodge Ram 1500 4.7L Drive Belt Tensioner Torque Specs : 33 ft-lbsDodge Ram 1500 4.7L Motor Mount to Engine Torque Specs : 59 ft-lbsDodge Ram 1500 4.7L Motor Mount to Frame Torque Specs : 35 ft-lbsDodge Ram 1500 4.7L Alternator to Block Torque Specs : 30 ft-lbsDodge Ram 1500 4.7L Power Steering Pulley Torque Specs : 18 ft-lbsDodge Ram 1500 4.7L A/C Compressor to Block Torque Specs : 15 ft-lbs City 14/Hwy 19/Comb 16 MPG