Straight 6 engine jeep

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American Motors' first straight-six engine was the It was produced from through in both overhead valve OHV and flathead L-head side-valve versions. Sometimes referred to as the engine, this engine was originally designed by Nash and introduced in the Nash Ambassador model. It featured only four main bearings , unlike the 7-main-bearing flathead engine it replaced. It was a flathead design displacing It was redesigned as an OHV engine in The flathead version was discontinued for â€", but reemerged in as the economy engine for the "new" Rambler American. When the engine was changed to an OHV configuration the water pump was moved from the left side of the engine driven by a shaft extending from the back of the generator to the front above the timing chain. When the flathead model was reintroduced it also received the new water pump. Equipped with such high quality parts as forged crankshafts and connecting rods , these engines earned a reputation for remarkable durability. The flathead, however, was prone to the typical flathead problem of overheating under sustained heavy load. This was from the hot exhaust traveling through the cylinder block to the exhaust manifold. American Motors introduced a die-cast aluminum block version of the OHV It was produced through The cylinder heads for the two types of block aluminum and cast iron are of similar design, but are not interchangeable. The OHV requires more periodic maintenance than newer-model engines. The head bolts must be re-torqued retightening process regularly. The cause of the headbolts loosening over time is believed to be thermal expansion and contraction of the head due to the rather heavy design. The head expands and contracts by as much as 0. The cast-iron liners in the aluminum block version can also shift if the head bolts are not properly torqued and the engine is allowed to overheat. Good replacement heads and aluminum blocks for these engines are now difficult to find. The company designed an entirely new six-cylinder with a short stroke and seven main bearing crankshaft for This design was produced in various forms through To commemorate the engine's May introduction, 2, "Typhoon" cars were made on the Rambler Classic hardtop body. All other AMC options except engine options were available. The new engine replaced the Nash Road tests by Consumer Reports described the new powerplant as "a very smooth and quiet engine, which should give good performance. Increasingly stringent emission control regulations continued to decrease the engine's power output, making the smaller version inadequate as increasingly stringent safety regulations also made vehicles heavier. The was the base six-cylinder engine on many models through , and even towards the end of its usage was considered reasonably modern in design. After its midyear introduction in the "Typhoon" two-door hardtop as part of the mid-sized Rambler Classic line, the engine was adapted to fit into the smaller Rambler American by using a special short water pump, an adaptive piece also used in the â€" Jeep CJ Starting in , AMC raised the deck height to produce the , and the adopted the 's longer connecting rods and shared deck height with the Bore and stroke remained the same. In , the bell housing bolt pattern changed to match the larger version used on the V8 engines. Changes for the model year included fuel economy improvements that also reduced emissions and reduced warmup time. This was similar to a in stroke with a larger 3. Output for Rambler American Rally model gross :. This engine is considered reliable, inexpensive, and torquey. For , as part of a weight reduction program aluminum intake manifold, plastic rocker arm cover , the crankshaft was changed from a twelve counterweight design to four, saving approximately 20 pounds 9. This was similar to a in stroke, cast with a larger 3. The â€" units were measured under the new net rating system. The which had a larger bore is considered the ancestor of the 4. The new engine, which was introduced in for the model year, was a further evolution of AMC's six. The 4. Chrysler engineers continued to refine the engine to reduce noise, vibration, and harshness. The last in the line of the AMC inline sixes, the 4. Described "as reliable as a block of wood" by Popular Mechanics and ranked first among "the ten best car engines they stopped making in the past 20 years," the 4. When introduced, the block-mounted oil filter check valve was eliminated on the 4. The first 4. Unfortunately, there are few scan tools capable of interfacing with the system to pull diagnostics codes. RENIX systems also have no permanent memory for diagnostics codes thus making the diagnosis of intermittent problems more difficult. In , the 4. Chrysler also enlarged the throttle body and redesigned the intake and exhaust manifolds for more efficiency, and the fuel injectors were replaced with higher flow units. Camshaft timing was also changed. Badging on most Jeeps equipped with this engine read "4. Small changes were made to the cylinder head for the model year. In , the engine block was redesigned for greater strength. The new block had more webbing and a stud girdle for added rigidity of the crankshaft main bearings. Engines installed in Grand Cherokees carried the " PowerTech " name that had been used intermittently in prior years and on other Chrysler truck and SUV engines. The name was subsequently passed on to 4. The cylinder head was again changed for the model year to a more emissions-friendly design. Early heads are prone to cracking, causing coolant to contaminate the oil, which can lead to catastrophic engine failure. The head cracks in

the center between 3 and 4 cylinders. The crack is usually discernible with the valve cover removed as a "milky" tan line. This condition is usually discovered before catastrophic engine failure, but can lead there if not corrected in a timely manner. The casting was fixed in mid to late , but the same casting number was retained. The "fixed" heads have "TUPY" cast in the center where the cracks used to occur. Only two deck heights. Tall deck is 9. Short should be 9. Tall is from a AMC factory service manuals, prior to deck height was not printed. Deck height changed slightly over the years â€" service manuals state 9. Deck heights may have changed to accommodate slightly different compression ratios over the years. The and older blocks use a "small" bell housing bolt pattern that is exclusive to AMC and small Nash sixes. In the bell housing bolt pattern was changed to match the AMC V8's - its final use was in when the 4. Four bolts on the cylinder block are matched to the transmission bellhousing where an adapter plate serves both as a dust cover - two additional bolt holes on the transmission bellhousing used on the AMC V8 are used to secure the dust cover. The uses the "small" pattern, the only year to do so. From Wikipedia, the free encyclopedia. Main article: List of AMC engines. Motor vehicle engine. VAM Gremlin â€" U. VAM Javelin â€" U. Retrieved 13 September American Motors Corporation. June Society of Automotive Engineers. Popular Science. Retrieved 26 November Retrieved 22 June Consumer Reports. Archived from the original on 2 March Retrieved 17 August Retrieved 12 December Popular Mechanics. Retrieved 26 August Engine Info". Archived from the original on 29 May Retrieved 17 April Jp Magazine. Service Manual Jeep Cherokee. Jeep: Collector's Library. MBI Publishing. Four Wheeler. Motor Trend. Retrieved 24 May Jeeps Unlimited. Retrieved 4 November CS1 maint: location link. 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Back in November at the Los Angeles Auto Show, an event filled with a humdrum mix of cookie cutter crossovers and electrified SUVs, Mercedes-Benz blasted a big hole in the boring with the announcement it will once again offer an inline six-cylinder engine in the United States. An all-new turbocharged 3. The German automaker, as well as the rest of the industry, has a long love affair with the straight six, an engine design revered for its bottom end torque and smooth operation. Over the decades, however, the lust for the power and rumble of a V-8 and the more compact packaging afforded by a V-6 caused most automakers to toss the inline six pot aside. BMW stuck with the configuration, creating gems like its N54 and N55 as well as its 3. But elsewhere the inline six has been all but extinct. Over the decades the Stovebolt powered both cars and trucks until the optional overhead valve small block V-8 upstaged it in The first Stovebolt was cubic inches making 50 hp. In a cubic inch version called the Blue Flame with hp powered the first Corvettes. Fitted with a groundbreaking mechanical direct fuel injection system developed by Bosch, this inline six-cylinder engine won both the 24 Hours of Le Mans and the Carrera Panamericana in That car was equipped with a straight-eight engine. Despite horsepower ratings never cresting hp and the engine ending production in , the durable Slant-Six was easily modified and still has a rabid following today. In the M1 the dry sump, double overhead cam six made hp at 6, rpm and lb-ft of torque at 5, rpm. Monster power for the time, it easily outpowered larger V-8s and it revved out like a racecar. After the M1 mess BMW decided to crank up the engine to hp and stick it in its shark-nosed 6-Series coupe, creating the M6, a luxurious German muscle car that could corner and crest mph. And then in the combination with two more additional doors became the iconic M5 , at the time the best performing sedan in the world. The torquey, low rpm, large displacement motor began to power the YJ-generation Wrangler in and the Grand Cherokee in Output peaked at hp and lb-ft of torque when production finally ended in it was replaced by a V-6 , but the 4. Yamaha created the DOHC cylinder head, added three two-barrel Solex carburetors, and worked out a 7,rpm redline. Toyota only built about production versions of the GT with the hp engine. First introduced in , Turbo models packed hp and lb-ft of torque. Street racers and power junkies quickly began adding boost and other modifications and soon 1,hp Supras running 9-second quarter miles were no big deal. The DOHC engine uses a cast-iron block, an aluminum cylinder head and a unique intake with six individual throttle bodies. The final versions of the R34 were rumored to make closer to hp in reality. Like the Supra, 1, at the wheels on the street was no big deal for the Nissan. Oh, and it also won LeMans. Three Times in a row. This engine in various

displacements ranging from 3. One of the most beautiful engines of all time with its long and lean rocker covers, the XK6 was also durable with a robust cast iron block and a seven-bearing crankshaft. It also featured an aluminum cylinder head and it took well to modifications. Add higher compression, additional or larger carburetors and it made more power. The 9 best straight-six engines Scott Oldham. A Story About. Your weekly dose of car news from Hagerty in your inbox. See more newsletters Thanks for signing up. Sign up. More on this topic. Archived More essential pointers for safe winter car storage Mike Bumbeck. Archived 11 car and truck models born as trim levels Brandan Gillogly. Archived A tale of two-tones: Jeep Grand Wagoneer vs. Share Leave comment. These are the most expensive cars sold at auction in The Jeep straight six is one of the greatest engines of all time. But that doesn't mean it can't be improved. Newcomer Racing shows us how to put together a big power, naturally aspirated stroker 4. The basic recipe is to use the block and connecting rods from a 4. Of course, there's a lot more too it than that, and we'll spell it out there. Also, don't forget to scroll down to the end of this post. Newcomer recently followed up with pics of the engine installed in a Cherokee and even results of a tuning session on a chassis dyno. And if you want to get one of your own, check out Although not complete, here's a partial parts list. Note: For the stock replacement components they may not be the exact same brand Newcomer Racing uses. Sealed Pro pistons dropped into the block. The crank is from a 4. The 4. The NVH block from newer Jeeps uses a stud girdle for extra strength. For a stroker build you may need to add washers to create a little more space for the extra stroke. Sealed Power pistons go onto the stock connecting rods. The cam is a hydraulic flat tappet from Bullet Racing Cams. The head we will be using is a stock cast iron unit with some port work done to help flow. Stock valve springs will control the valves. The intake and exhaust flow off the same side of the cylinder head. On the engine dyno. Dyno results. The stroker engine back into its home in the Cherokee. Dyno results with a little tuning using the stock efi and fuel injection once the engine is in the Cherokee. Engines , Featured , Mopar. February 28, But every build is different. You can reach them at Please do something for those of us saddled with AMC 2. Come on and help fan out!!!! Something to get us super excited! Okay we challenge you to put together a horse 2. From a fan in need of power!!!!!!!! LOL Ray Kilsby. Rick Mudge. I was Engr in charge of airflow development. This is not a joke! Back in I developed a 4. Set National record in at 8. Runner Up at the U. Set Record at BEST stock cast head from production is either or 93 castings, New Haven foundry look for NH cast on top between rocker pedestals. Just want to let you know if I can help you on anything related to 4 cyl or 4. I also do Engine Computer modeling, engine combination, cam selection, intake manifold tuning, header tuning, etc. All variables investigated. Nice job! I enjoy your DYNO testing on the 4. Later, Rick. I won't drop anymore comments after this, promise! One from U. NO more e-mails! Cody Bess. Rick, I love reading comments , seem to always learn something new. Especially when "Facts" come from someone that knows first hand , such as yourself. How many of those NH heads were made? Any chance a guy in California might ever stumble across one at the local parts yard? Again great to hear the stories, great videos!! Congrats on the success. A million thanks for your work on one of the best motors ever made. In terms of reliability and longevity You sir are a pioneer and will always be remembered for your contributions. Best thing that ever happened to the 4. Sure would love to hear more of your stories. Would buy your book if you wrote one. Hi Cody! I haven't looked at this website until now? Explains why I didn't respond to your questions? The best 4. The 92 and NH are cast on top of the casting under the valve cover, can't miss it! You can find these 4. Using a small tootsie roll in a grinder you can touch-up the short side Intake and exhaust port radius just blend the machining around the corner to form a nice radius. This one simple operation will increase airflow, don't get carried away just a cleanup blending. Exhaust valve was a 1. Maximum porting on Intake ports but much less port work on Exh ports.. Havin

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g a naturally aspirated engine the CR was at Bearings easy to find. Used stock production main bearings, mains. Fingers are tired! To Bobby's Question? I did the 3. I will elaborate next time on a 4. Chris Jones. I still have that turd. Well oddly enough, I could use some of your expertise these days. If I had your number after all these years I would just call you. Hopefully you get this reply somehow Chris, my e-mail below. Bobby Wommack. Ricker Goldsborough. I am shopping for a motor and Auto trans to swap in my Jeep LJ 4. Saw your stroker motor and wanted to get more info. My existing 4. Frank Koba. Nice job and interesting info - I am looking for a stroker for my YJ I completely resorted over the last 3 years. The peak values are at different rpm s as well. If it is rear wheel power, assuming 64 PS for drivetrain losses seems to be very high.

Would appreciate your explanation - Thanks, Frank. Leave a comment Click here to cancel reply. Sorry, your blog cannot share posts by email.