



OIL PANS, PAN MODIFICATIONS AND AFTERMARKET OFFERINGS

Once you have found the correct motor mounts for your project, you need to determine if your oil pan is compatible with your engine and chassis setup. There are many stock oil pans available on LS engines—each one having been designed for a specific chassis. With so many different oil pan options, there is confusion as to what oil pans fit what chassis. The relationship between the front crossmember and the engine mounts determines the fit of the oil pan. Each brand of engine mount is different, and the engine-mount towers used on the frames can differ by application as well. While there are several stock pans that fit certain vehicles, they don't always fit as is, and there are different depths and clearances. In the end, there will probably be some trial-and-error test fitting to find just the right pan in some cases.

In regard to fitting an LS engine in a stock chassis, in most cases a stock oil pan and stock crossmember can be modified to a particular chassis. Cutting a small notch on the back side of the crossmember, then filling it with 1/4-inch steel and boxing it in, reinforces and strengthens the



The most commonly used LS oil pan is the 1998–2002 F-body LS1 pan. Typically referred to as the F-body, IROC, or Camaro pan, this pan works well with custom chassis crossmembers, and it is also the most often modified pan. It fits 1958–1964 cars as is. (Street & Performance)

engine crossmember while allowing the engine to sit in place.

Stock Oil Pans

Using a stock oil pan can greatly simplify your installation, provided you have the right one. There are many stock oil pan designs, but only a few are desirable for engine swaps. These are the 1998–2002 Camaro, the 2002–2006 truck, and the C5 Corvette “Y,” which is also referred to as the “batwing” due the dual kick-outs on the sides. The popular stock

oil pans fit many vehicles without modifications. There are, of course, many other pans available that might fit your vehicle. The GM-retrofit crowd is mainly concerned with oil pan fitment in a stock chassis, so most of the available information refers to GM cars using a stock chassis. If you are swapping an LS engine into something else, the oil pan issues must be addressed when mocking up the motor mounts and modifying or building the front crossmember. Sump depth also needs to be considered.

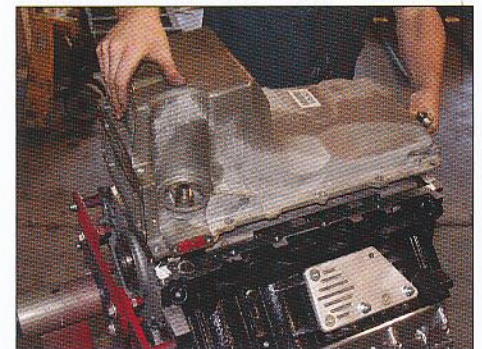
In a typical installation, you may find more than one pan that fits your vehicle. Case in point: the LH8 oil pan (a special pan for the 5.3-powered Hummer H3) easily fits GM A-body cars. However, with a typical adapter plate and motor mount installed, the LH8 pan rear sump hangs about 1½ inches below the engine crossmember. This is acceptable for standard-suspension-height cars, but if the car has a low ride height—especially on air-ride suspension—there may not be enough clearance between the pan and the

pavement, and it could be damaged. The BRP motor mount kits use the LH8 oil pan, but the motor mounts are specialized and position the engine differently in the car than most other adapter kit installations, allowing the LH8 pan to work quite well. Additionally, each oil pan requires its own specific windage tray, pick-up tube, and dipstick. When purchasing an oil pan, make sure you get these parts with it, so you don't have to get them later. There are also several blocks and oil pan configurations that place the dipstick tube in the pan rather than the block. If you have one of these engines and need to use a non-dipstick tube pan, then the machined boss on the passenger side of the block must be drilled out. Using a 3/8-inch drill bit, drill it through (about 1/8 inch of material), and then the tube will slide right in.

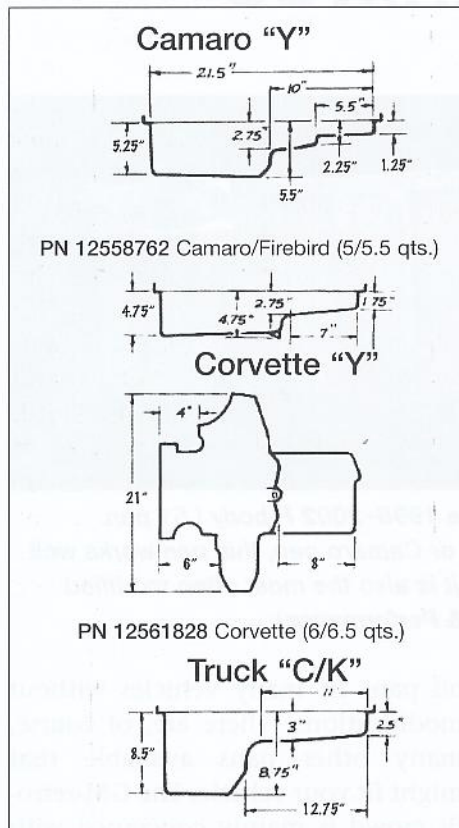
builders who have used the Camaro pan in 1965-later GM muscle cars without modification. These builders used their own custom-built motor mounts. It depends on your particular engine/transmission package and chassis as to whether or not this pan will fit unmodified. The Camaro oil pan also fits well, unmodified, in the C2 (1962–1967) and C3 (1968–1982) Corvettes. The F-body oil pan's rear sump measures 5 inches deep, 11½ inches long, and 9½ inches wide. The shallow front section is where most of the interference is at; the front-most section is flat for 4¼ inches, and then slopes down at a steep angle for 4¼ inches. About 1½ inches of the sump's depth must be removed from the first 4 inches of the front section of the rear sump to allow it fit into the 1967–1969 F-body.

2002–2006 C/K Truck/Escalade Pan (P/N 12579273)

This oil pan is fitted to all of the 4.8-, 5.3-, and 6.0-liter C/K trucks and Escalades. This pan features a long, shallow front section (12¼ inches) with a crossmember-friendly short 8¾-inch long rear sump. The rear sump is quite deep though (8½



The early Vortec oil pans fit many vehicles, but the deep rear sump can be problematic because it hangs down below the crossmember, exposing it to potential damage. Most trucks accept this pan with ease though. (Street & Performance)



This diagram shows dimensions of the three most common LS oil pans and their measurements. In order to select the right pan for your engine, you need to consider available engine bay space, transmission crossmember, and rack-and-pinion space considerations. Each pan requires its own oil pick up tube and windage tray. (Street & Performance)

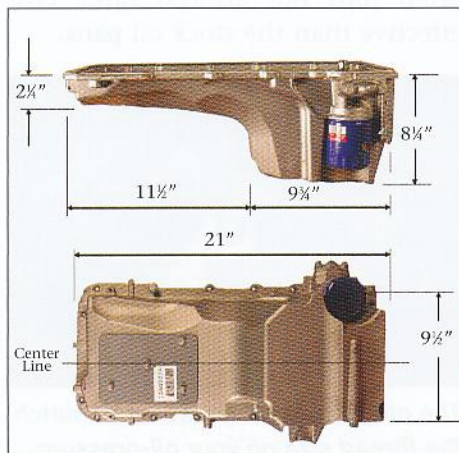
F-body Camaro/Firebird Oil Pan (P/N 12558762)

The most commonly used stock oil pan is the Camaro/Firebird pan. According to Street & Performance, the 1998–2002 Camaro/Firebird IROC pan fits 1958–1964 GM cars without modification, though the fit is tight. All 1955–1957 and 1965-up GM cars require modifications to the Camaro oil pan. The problem here is that the oil pan interferes with the front crossmember, keeping the engine from sitting down on the mounts. About 2 inches of depth must be removed from the front edge of the rear sump, along with a large section of the front of the sump. The aluminum oil pan must be TIG welded, and even an experienced welder can quickly ruin an oil pan. Therefore, unless you're an accomplished welder, you should consider buying a modified or custom aftermarket oil pan. However, there are some

inches), precluding it as a good candidate for most car applications. It is, however, a great pan for trucks, and it fits without modification in 1960-up Chevy and GMC trucks and SUVs (Blazer, Suburban, etc). This pan can be used in the GM A-body cars (Chevelle, GTO, Buick GS, etc), but have a tendency to become victims of road debris due to the deep sump.

2007-up GM Truck Oil Pan (P/N 12609074)

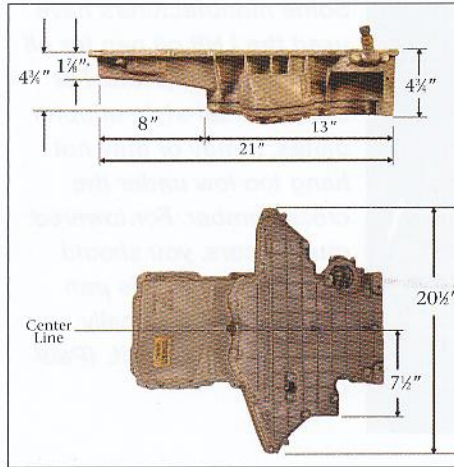
The 2007-up GM trucks with the 4.8-, 5.3-, 6.0-, and 6.2-liter Gen IV engines come with this oil pan. Basically the same as the 2002–2006 C/K truck pan, the later pan has a shorter shallow front section at 11½ inches, and a slightly longer rear sump at 9¼ inches. The rear sump depth remains the same at 8¼ inches. This pan fits all of the Chevy and GMC trucks from 1960-up.



The 2007-up Vortec pan also works well for swapping LS engines into 1960 and later GM trucks. (Paul Chiver)

C5 Corvette "Y" Oil Pan (P/N 12561828)

With one kickout on each side, this pan is typically referred to as the "batwing" pan because the kickouts resemble wings. This oil pan features a race-inspired design. The pan is

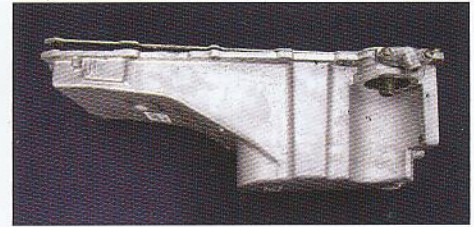


The famous batwing oil pan works well for street rods, 1955-1967 Corvettes (C1/C2), and just about anything using a Mustang II-style front crossmember and suspension. The design features sumps on both sides to keep the oil flowing and the main bearings well lubricated. (Paul Chiver)

very shallow (4¼-inches top to bottom), and it has 20½-inch-wide kickouts that preclude it from working in most stock muscle cars. This pan is widely used, however, because it is a perfect fit for any car with a Mustang II-style suspension. Consequently, it will fit a huge segment of street rods because the Mustang II suspension is one of the most popular suspension swaps. Most aftermarket street rod frames (TCL, Heidts, Fat Man Fabrications) use a Mustang II suspension, so this is the pan you want. This pan also fits the C4 Corvette (1984–1996), simplifying the LS swap for C4 Corvettes.

Cadillac CTS-V Oil Pan (P/N 12577901)

Available on the Cadillac CTS-V, this oil pan is basically a cross between the F-body and the C/K truck pans. The rear sump is 5½ inches deep, 3 inches less than the truck, 1/2 inch deeper than the F-body pan. The

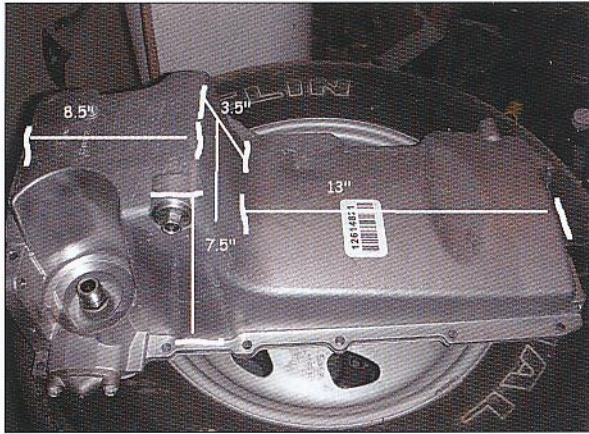


The CTS-V Cadillac oil pan works well in trucks and muscle cars, although the rear sump is deeper than the F-body pan. This means the pan might hang below the crossmember depending on your motor mounts, but it is still a great option for a stock pan. (Street & Performance)

shallow front section is 11 inches long, which is shorter than the truck pan, but longer than the F-body pan. In turn, you can use standard adapter plates, setting the motor low in the car, while clearing the engine crossmember. The CTS-V pan does hang below the front crossmember by about 1 inch on 1965–1972 GM A-body (Chevy Chevelle, Buick Gran Sport, Pontiac GTO, etc.) and 1978–1988 G-body (Buick Regal, Chevy Monte Carlo) models. It depends on which motor mounts are used, as some mounts, such as the Transdapt adapter plates, sit the engine slightly higher in the car, reducing the amount of overhang.

Hummer H3 Alpha 5.3 Oil Pan (P/N 12614821)

The H3 oil pan, commonly referred to as the LH8 (for the Hummer H3 5.3l LS engine code), is a relatively new oil pan. First available in late 2007, its measurements caused quite a stir in the LS-swap community because the shallow, 13-inch-long front section allows this pan to clear most stock GM crossmembers without modification. Again though, this pan has a 7½-inch-deep rear sump, making it hang about 1½ to 2 inches below the crossmember. A



Some manufacturers have used the LH8 oil pan for all of their LS swap kits. For the universal-style adapter plates, it may or may not hang too low under the crossmember. For lowered muscle cars, you should stay away from this pan unless it is specifically required for your kit. (Paul Chiver)

generation F-body (1967–1969 Chevy Camaro/Pontiac Firebird). Although this pan was designed for the F-body, it will also fit most GM muscle cars.

Aftermarket Gen III/IV Oil Pans

With so many options and potential pitfalls, many builders choose an aftermarket oil pan that fits specific vehicles. There are many versions, and most are centered around two platforms: the first-generation F-body 1967–1969 Chevy Camaro and Pontiac Firebird, and the 1965–1972 GM A-body cars, such as the Chevy Chevelle, Pontiac GTO, Buick GS/Skylark, and Oldsmobile Cutlass/442. In most cases, the aftermarket oil pans require the use of a remote oil filter. This is sometimes seen as a major drawback. As a side benefit, the aftermarket oil pans are often (but not always) more cost effective than the stock oil pans.

stock suspension on a car would be able to clear the road, but any lowering and this pan could be an issue.

Corvette LS2 Oil Pan (P/N 12581810)

The LS2 Corvette oil pan, not to be confused with the LS7 pan, falls in the “maybe” category of fitment. The 5-inch-deep rear sump would certainly clear the road, but the 13½-inch length of the sump prevents this pan from being used in most muscle car chassis. While it can be modified for a particular vehicle and could save some cash, it might not be worth it to buy this pan for a muscle car application, although the relatively flat and square rear sump area does make the pan easy to modify.

Corvette LS7 Dry-Sump Oil Pan

The LS7 is a specialized pan that only fits the LS7. This is a dry-sump oiling system and requires a lot of special consideration. If you are swapping an LS7 into a GM muscle car, you need an aftermarket oil pan. Modifying the stock pan is not a simple task because of the internal oil routing design. American Touring Specialties (ATS) offers a sheetmetal oil pan for the LS7 that fits the first-



Every engine must be monitored, and the Gen III/IV engines are certainly no exception. The stock oil pans feature a factory bypass plug, which may or may not be drilled and tapped for a sending unit. These two plugs represent the tapped and non-tapped versions. The third one does not have a boss—it is just a bubble. It can be drilled and tapped as well. (Street & Performance)



The plug needs to be drilled to match the thread size on your oil-pressure sending unit. Therefore, you must match the drill bit size to the threads. Use a drill and thread chart to ensure you use the right size drill bit. (Street & Performance)



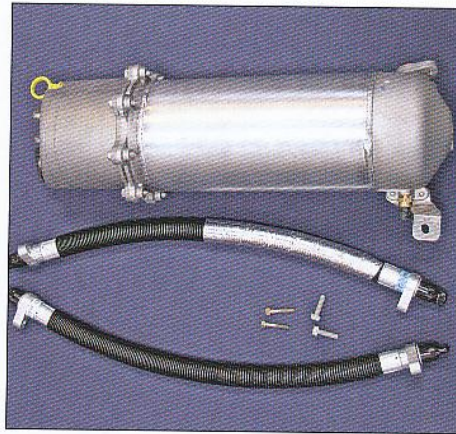
The LS2 Corvette oil pan must be modified for a particular GM muscle car chassis design, which is relatively simple for this mostly flat pan. The appropriate modifications depend on your specific application. (Street & Performance)



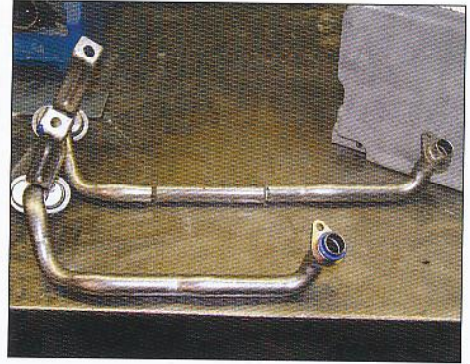
The inside of the factory non-tapped plug is solid, but it must be drilled and tapped to accept an oil pressure-sending unit. (Street & Performance)



The plug is tapped to match the threads. Cutting oil makes the tapping process easier and keeps the aluminum from galling on the tap. (Street & Performance)



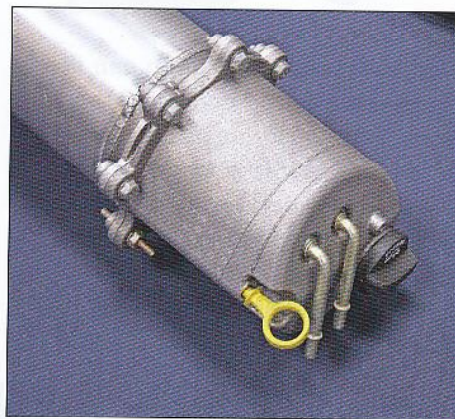
There are many different oil tanks available. This is the stock LS7 oil tank and its lines. The tank can be polished for show vehicles or hidden away, but must be easily accessed. (Street & Performance)



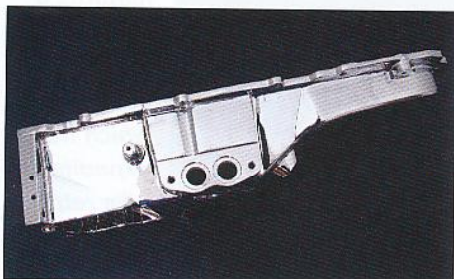
Each oil pan requires its own specific pickup tube. Here, we have a stock (bottom) pickup and a modified (top) pickup tube for the F-body. The oil pan sump has been cut down for proper fitment, and consequently, the top tube has been lengthened. (Street & Performance)



The bypass adapter and sending unit is installed. Each brand of sending unit typically has its own thread size. You need to use the size to tap the unit. (Street & Performance)



The dipstick is located in the external dry sump oil tank on LS7 engines. The tank can be mounted anywhere, but it needs to be accessible. Since this is a dry sump system, all engine's oil is located in the tank, and fed through the engine via the oil lines. In fact, the oil pan holds very little oil and cannot be used by itself. (Street & Performance)



This polished LS7 oil pan shows the dry sump output lines, which must run to the dry sump oil tank. You can mount the oil tank in any convenient location under the hood. (Street & Performance)

Canton LS1 Swap Pan (P/N 13-274A)

This aluminum sheetmetal oil pan holds 6½ quarts of oil. The rear sump on the pan is 5½ inches deep, 12½ inches wide, and 8¾ inches long. The front section is a shallow 12½ inches. With the exception of the depth of the rear sump, this pan's dimensions resemble the C/K truck stock pan so it sits flush with the bottom of the engine crossmember in most GM muscle cars. This pan features a narrow pair of kickouts on either side, which increase oil capacity, but at the expense of requiring a remote oil filter.



The Canton aluminum drag race oil pan for LS engine swaps fits GM A-, F-, Y-, and 1970s X-body cars. It is an aluminum sheetmetal pan, with trap door baffles for oil control. The required remote filter adapter is included. (Canton Racing Products)

Moroso Shallow LS Engine Swap Oil Pan (P/N 20140)

This stamped steel oil pan fits 1967–1992 F-body Camaro and Firebird, 1968–1978 Nova, 1965–1972 GM A-body, 1953–1996 Corvette, and 1978–1988 G-body cars as well as many potential others. The pan was designed to clear a 4¼-inch stroke with most steel rods while adding trap door baffling to improve oil control. In addition, this pan allows the use of the stock dipstick as well as -10AN fitting for the required remote oil filter. The rear sump measures 10¼ inches wide by 9.6875 inches long by 6 inches deep. The capacity for this pan is 7 quarts. This pan will not allow the use of a windage tray.

Moroso Deep Angled Front Section LS Swap Oil Pan (P/N 20141)

Moroso's deep-angled LS swap oil pan fits the same vehicles as the previous Moroso pan, but features a 7-quart deep-angle front section for the installation of a windage tray. This pan contains trap door baffling, clears 4¼ inches with most steel rods, and makes use of a stock dipstick and -10 AN oil filter fittings. The front section measures 2¼ inches deep at the

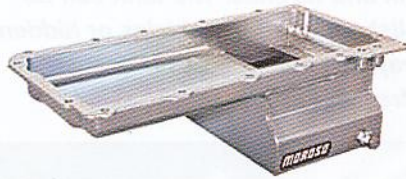


Every engine must be monitored, and the Gen III/IV engines are certainly no exception. The stock oil pans feature a factory bypass plug, which may or may not be drilled and tapped for a sending unit. These two plugs represent the tapped and non-tapped versions. The third one does not have a boss—it is just a bubble. It can be drilled and tapped as well. (Canton Racing Products)

front, and 3¼ inches at the rear. The rear sump measures 8.375 inches long by 10¼ inches wide by 6 inches deep.

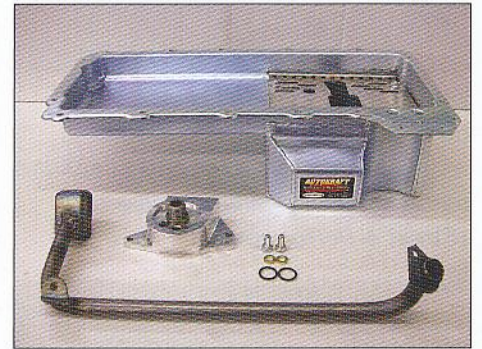
AutoKraft LS1/LS2 Oil Pan

Designed to fit the first-generation F-body Camaro and Firebird, the pan actually fits the whole range of GM muscle cars, which includes 1964-1972 A-, B-, F-, and X-bodied cars. The pan is a combination of stamped steel and welded construction. The rear sump is set up with a road race four-corner-style baffle system, ensuring the oil pickup is always

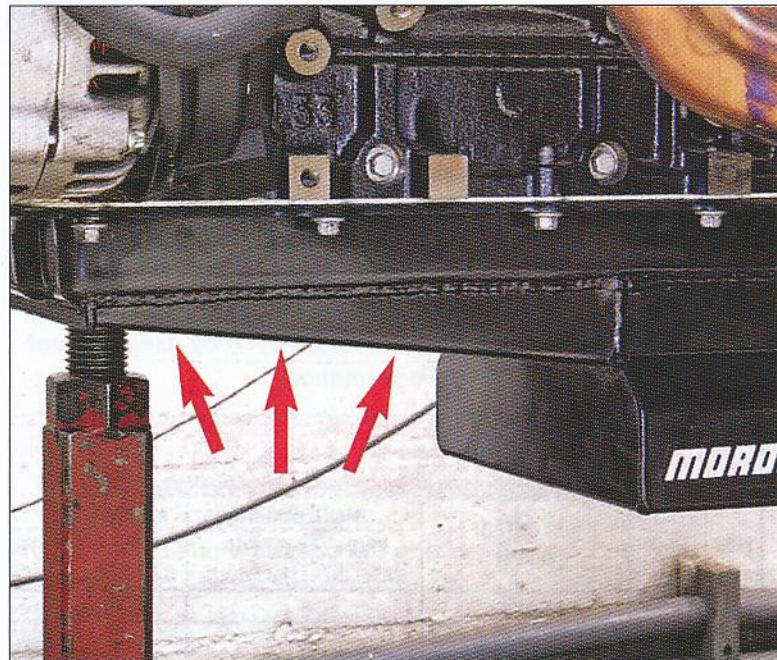


This Moroso shallow sump pan fits the majority of the popular GM cars from 1965-up. It requires a remote oil filter and has trap door baffling, which helps keep the oil pickup tube submerged under heavy acceleration and cornering. Without these baffles, the engine will experience brief and damaging oil starvation. (Moroso)

covered. The rear sump has the same basic kick-out design as most of the other aftermarket pans, but the AutoKraft pan does not require a remote oil filter. It includes a billet oil filter adapter that allows the oil filter to be on the motor in a traditional style. This pan is perfect for any swap project, but a good choice for any vehicle that will see road racing or heavy cornering.



AutoKraft uses stamped steel and sheetmetal fabrication on its LS swap oil pan. This pan was designed for road race applications and uses a four-corner baffling design to do so. It also can be installed with the oil filter adapter, allowing the filter to remain in the stock location. (AutoKraft)



This is basically the same as the shallow Moroso pan, but it features a deep-angled front sump section, which helps expedite the oil's return to the sump. (Moroso)

Milodon Low Profile Engine Swap LS Oil Pan (P/N 30915)

The Milodon LS swap oil pan allows installation of Gen III/IV engines into early 1968–1975 Chevy Camaros, 1968–1972 GM A-body, 1968–1975 Novas, and 1955–1957 Chevys. This pan is made from heavy-duty gold-iridited steel and features double-thick pan rails, yet it weighs 5½ pounds lighter than the factory aluminum F-body oil pan. The 7-quart capacity offers increased oil control and more consistent oil pressure under heavy use. This pan requires a remote oil filter set up and the fitting plate and fittings are included, but the remote filter kit is sold separately.

Milodon Low Profile LS Swap Oil Pan (P/N 30916)

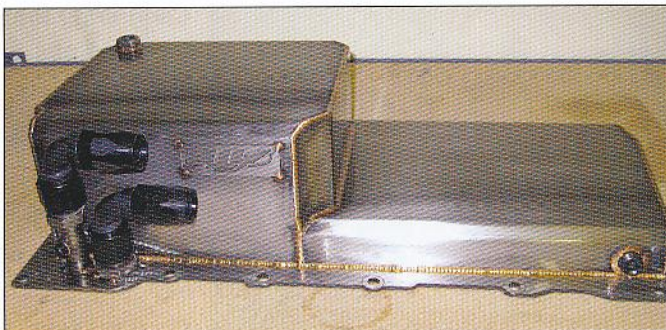
This pan is identical to the 30915 Milodon pan but has been modified to fit the 1955–1957 Tri-Five GM models as well as the 1962–1967 Chevy Novas.

ATS LSX Road Race Oil Pan

ATS engineered this race-inspired oil pan to fit first-generation Camaros and Firebirds. This welded sheetmetal pan features internal baffles to control oil under heavy acceleration and cornering, -10AN oil lines for a remote oil cooler and filter, and 1/4-inch oil bungs for turbocharged applications. ATS also provides the custom oil pickup tube, gasket, and a stud kit. This pan also fits most GM muscle cars.

ATS LS7 Retrofit Oil Pan

If you are installing an LS7, particularly in a GM muscle car, then this is the pan for you. Designed around the first-generation F-body chassis, this pan allows a drop-in installation when used with the ATS adapter

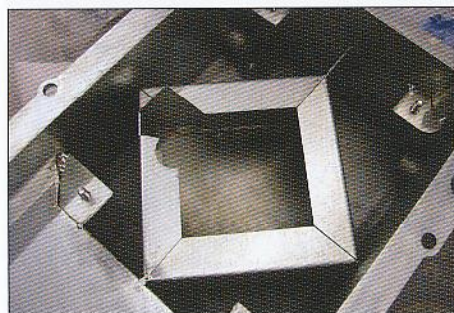


ATS's sheetmetal road race pan fits first-generation F-body cars with the ATS engine mounts. This high-performance pan also works well with street-driven GM A-body cars. (ATS)

plates. For other GM muscle cars, swapping the ATS mounts side-to-side positions the engine slightly higher in the vehicle, allowing this pan to clear all the components as well. The dry sump oil system remains stock with the same level of oil control, and the fittings, oil tanks, headers, and windage tray are retained.



For the LS7, ATS offers this pan for the 1967–1969 F-body cars with the ATS engine mounts. If you flip the ATS engine mounts upside down, this pan can be used in 1964–1967 GM A-body cars as well. (ATS)



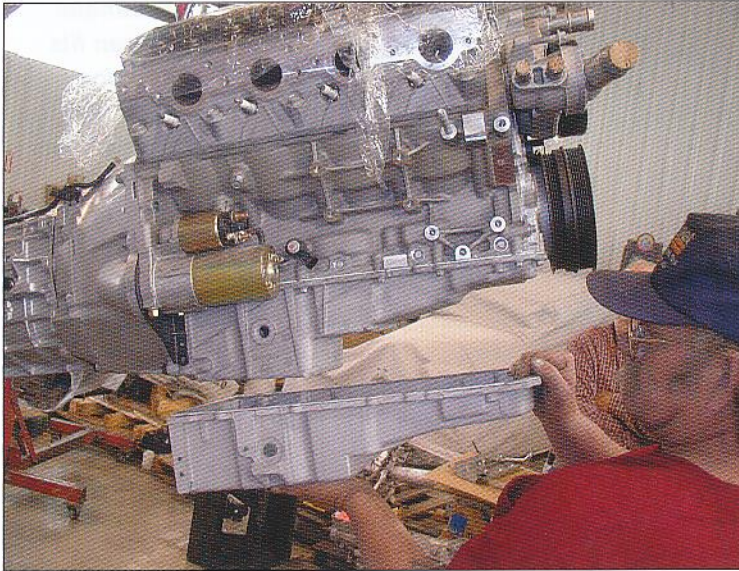
The ATS baffling design keeps the oil directly around the oil pickup, ensuring that there is no loss of oil pressure. (ATS)

Street & Performance Modified LS1 F-body Oil Pans

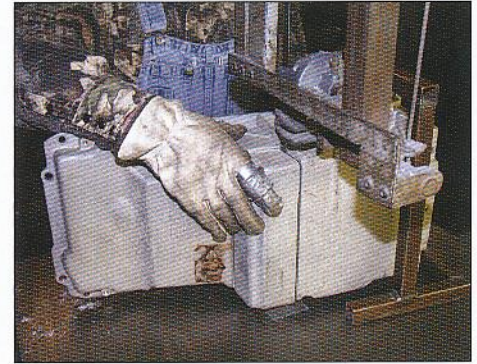
Although this is a modified version of a stock oil pan, it is a viable alternative for some applications. The Street & Performance-modified 1998–2002 oil pans offer a stock-style oil pan with the original oil filter fittings and placement with a sure-fit design in the most popular GM cars. There are two versions of this pan. One pan is modified to fit the 1965–1972 GM A-body and 1978–1988 GM G-body vehicles; the other pan is reworked for the 1955–1957 Tri-Five Chevy and 1967–1969 Camaro/Firebird. Both oil pans require a modified oil pickup tube and cannot be used with the factory windage tray.



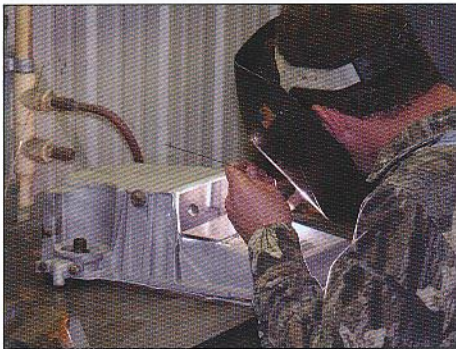
The Street & Performance modified oil pans are available to allow the use of the stock oil filter location and fit the application you are working on. From the left: Tri-Five Chevy/Buick/Olds; first-generation F-body; 1964–1972 GM A-body and 1978–1987 GM G-body. (Street & Performance)



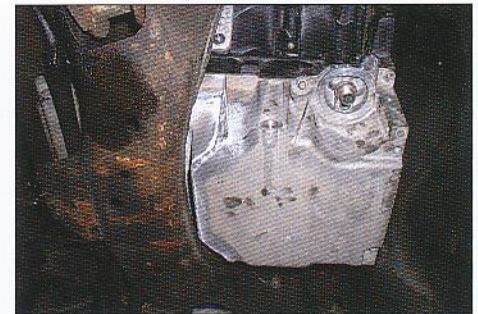
Comparing the modified pan to the stock F-body shows the alterations to increase clearance. The pan has been cut down on the front side of the sump, moving it back to clear the crossmember. (Street & Performance)



Street & Performance uses a jig to cut off the offending sections of the stock pan. It is important that the cuts are clean and even, to help make a solid seal when it is all welded back up. (Street & Performance)

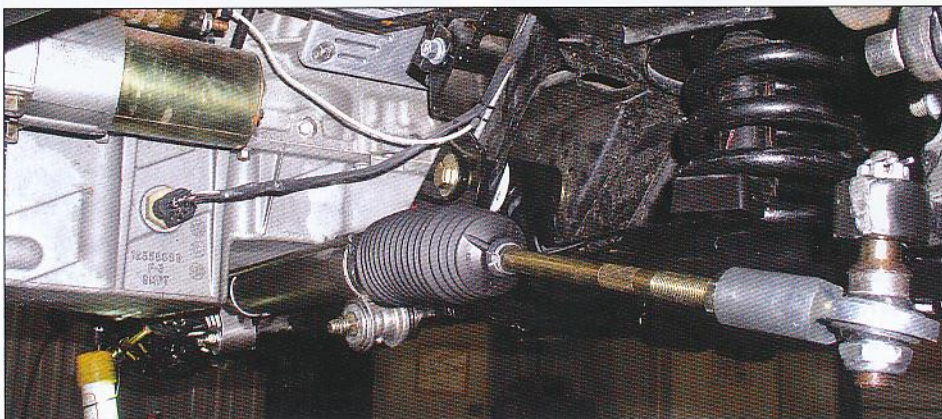


Properly welding an oil pan requires delicate and precise work so you do not burn a hole through it. Unless you are an experienced and skilled welder, you should not attempt to do the work yourself. The pans must be TIG welded, which is more difficult to master, but the welds are superior. (Street & Performance)



The pan is mounted on a Buick Grand National (G-body) and clears the crossmember with not an inch to spare. (Street & Performance)

Once finished, the completed pan is ready for use. The pickup tube must also be modified because it previously ran along the bottom of the pan and will not fit with the modifications. (Street & Performance)



The modified oil pans also work great for first-generation F-body cars with rack-and-pinion steering because they provide the necessary clearance for the steering components and crossmember. (Street & Performance)



LS Series Muscle Car Oil Pan Kit 19212593

SKU: 19212593

LS Series Muscle Car Oil Pan Kit 19212593 Description

19212593 LS Series Muscle Car Oil Pan Kit

This kit allows Muscle Car enthusiasts to use a LS Series engine in the older style car or trucks.

Fits virtually all 1955-1995 GM front engine, RWD, V-8 cars

5 qt capacity

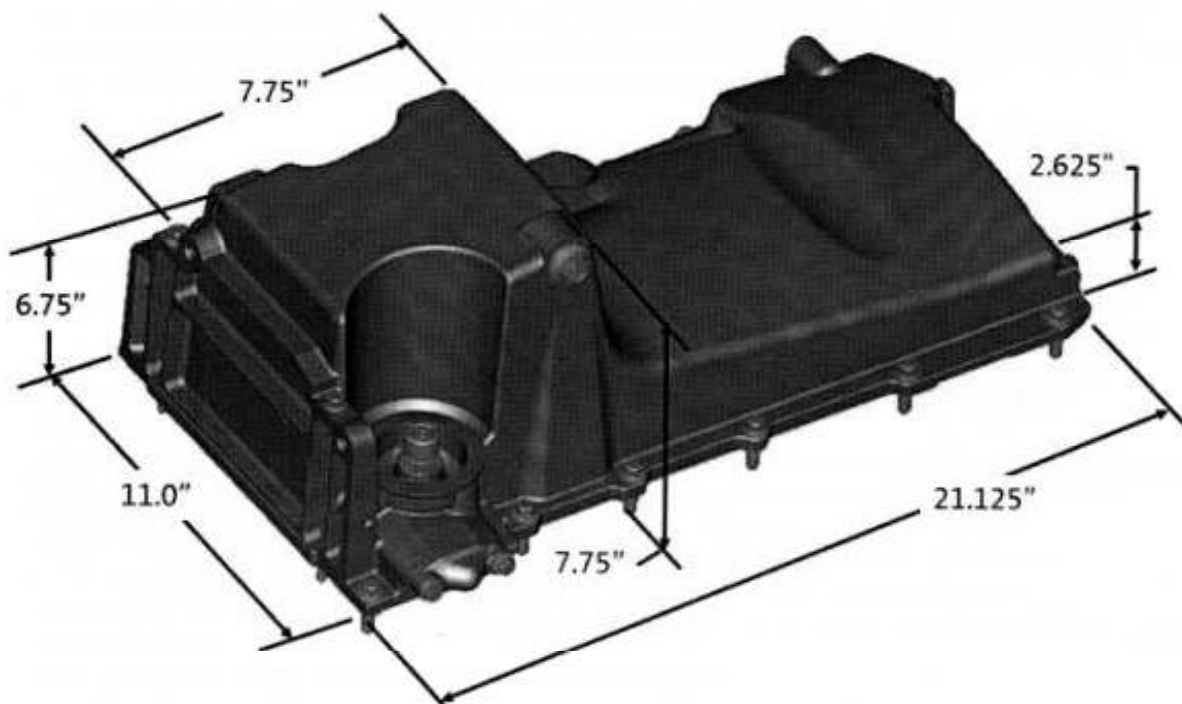
Includes oil pan, dipstick and tube, gaskets, pickup tube, windage tray, and all mounting hardware

Wet sump design

This kit is not a direct fit for the LS7, LSA or LS9 engines

Use oil filter P/N PF 48 89017524.

Oil Pan Dimensions



Sump Oil Capacity – 5.5 Quarts

Total Oil Capacity with stock oil filter – 6 Quarts

Requires use of LS3 dipstick (GM P/N 12634547) and tube (GM P/N 12625031)

*Engine location may need to be adjusted (up / down or fore / aft) for cross member or steering linkage clearance depending on the vehicle, steering configuration and chassis type.

DOES NOT work with G-body applications.