

# Ford Mustang Jacks

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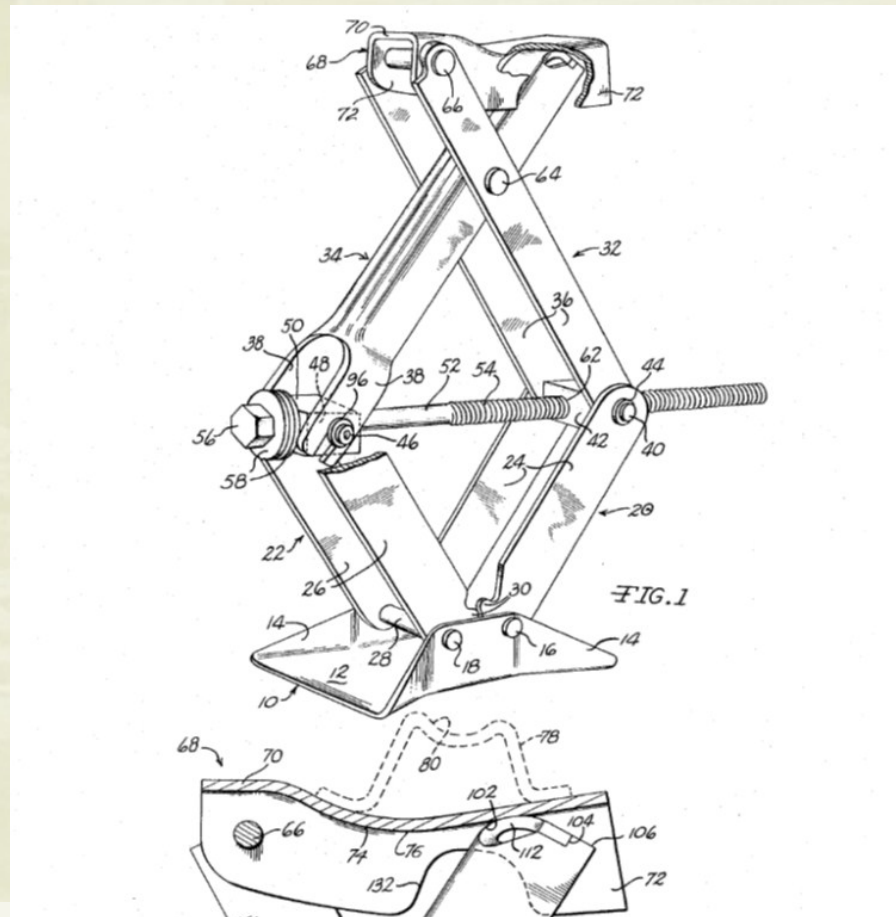
BRUCE KLIER

## INCLUDES:

- History of the Mustang jacks and changes thru the years
- Ford Part numbers and corresponding engineering numbers
- Manufacturers and suppliers of the jacks thru the years
- Detailed photos and quick reference guide

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## IDENTIFICATION GUIDE, 1964.5 TO 1978

From the very beginning, jacks were included as part of emergency equipment for tire changing. Going back to the days of the Model T (starting in 1908) a tire jack was standard equipment, especially since the condi-

tions of the roads were so poor that fixing flat tires was really common for owners. Other standard equipment that was included in the early days of automobiles included such odds and ends as leather gloves, tire repair

kits, and gasoline measuring sticks. Of course these eventually went away, but a tire jack has always been standard equipment with just about every automobile manufactured.

An example of early period correct Model A jack (left) and Model T jack (right) would have looked like this:



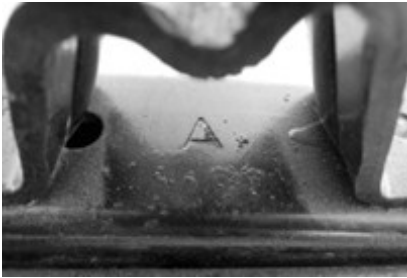
Designs of automobile jacks changed over the years, but leading up to the introduction of the 1964 Mustang all Ford's of the time period were using bumper jacks. Bumper jacks would consist of a jack base plate, handle/lift hook, and a ratcheting jack post, which could easily measure 3 feet in length. It was only with the introduction of the new "pony car" that Ford needed to design a different jack that was compact enough to fit in to a smaller trunk area. This led to the compact scissor jack that was first used and is still used today in the Mustang, although there have been numerous design changes over the years. A scissor jack is called such because it consists of diagonal metal pieces that expand or contract in a manner resembling a pair of scissors. This makes them very handy because they are compact when they are in their contracted position. The jack comes with the vehicle and is stored in the trunk of the car with the spare tire, and depending on year or model, under the spare tire or on top of the spare tire. Cost controls greatly influenced the design of the scissor jacks, therefore they are not very robust. It was common for them to be replaced over the years with an aftermarket jack.

Starting with the very first Mustang manufactured in April 1964 (serial number 5F08F100001) scissor jacks were standard equipment included with every single Mustang. It is one of the few pieces of equipment that is common regardless of different models, engine sizes, and trim

packages. A base six-cylinder Mustang, Boss 429 or a Shelby would all have the exact same jack as there was no distinction based on engine size. This in fact contradicts some Ford Master Parts Catalog's which claim there was a six-cylinder jack, as identified with the letter "A" stamped on the body. The "A" was simply the manufacturer's ID stamp and has nothing to do with the engine displacement. One jack would serve its purpose regardless of engine size.

The design itself was controlled by Ford but allowed for variations by the manufacturers. The scissor jack was model specific to Mustangs and Mercury Cougars, and in later years Ford Pintos/Mavericks and Mercury Bobcats/Comets. Ford wanted supplier competition, so they started in the beginning with three vendors in the Detroit area who had their production facilities there. None of the jack suppliers had production facilities in New Jersey or California area. These Ford specific design scissor jacks were not sold in the aftermarket industry. Today there are no longer any scissor jacks being manufactured in the USA due to the liability issues and the production cost.

## The manufacturers are listed as follows:



**Ausco** (Auto Specialties Manufacturing Company) in St. Joseph, Michigan, became US Jack in 1988 now in Benton Harbor, Michigan. Typically stamped with an "A" on the flip top portion. Always/only with a coarse thread drive screw this is the only manufacturer that used a coarse thread drive screw. Ausco supplied these jacks to Ford until about mid 1970.



**Ryerson & Haynes** in Jackson, Michigan - went into bankruptcy 1989. Different variations of an RH stamp used throughout all the years. Typically stamped with an "RH" on the flip top or the jack base. The logo is typically an RH, or an RH with a circle around it. They supplied jacks thru the entire period covered here.

**Universal Tool and Stamping** in Butler, Indiana - bought by Acme Metals Inc in 1987, became Acme Steel in 1991, acquired by Dura Corp in 1998. Research indicated these jacks were stamped with what appears to be a letter "I" or a number 1 on the base, or a "U" on the side of the base.



**Dura Corp** in Oak Park, Michigan. In 2007 Dura Corp sold its jack division to offshore India-based Autoline Industries. They started supplying jacks in mid 1970. We find this jack is typically stamped with an AD on the base or on the trunnion. Used from 1970 thru 1978.



All of these manufacturers supplied jacks and the jack handles to Ford's three Mustang production facilities. None of them had an exclusive supply to any one facility. These manufacturers were allowed to make basic design changes to Ford's design in the interest of reducing manufacturing costs, improving performance, and reducing delivery lead times. This accounts for many of the differences we see in the same style of jack (different drive screw threads, bases, saddles, rivets, trunnions etc). A scissor jack manufactured during this time period typically cost about \$5 to produce.

During the process of researching the original vendors I had the opportunity to speak with Dennis Houseworth who is currently the president and owner of US Jack located in Benton Harbor, Michigan. Dennis has

been working in this industry for most of his life and actually worked at Ford in the late 60's before being hired to work in sales with Ausco in 1970. He worked at Ausco from 1970 to 1974, and then again in 1984 until 1988, when he split off and formed US Jack with what was left of Ausco's jack division. Ausco had decided to sell off its jack manufacturing division as part of a restructuring program in the late 1980's. It was during the 1980's Detroit and the associated suppliers and vendors went thru a considerable turmoil with plenty of companies filing bankruptcy and closing down. Dennis supplied information and was able to verify a few different interesting facts, including that Ford owned the tooling that was provided to the vendors and that Ford production was driven most importantly by cost reduction as they did not like

to spend money on these items. He also confirmed that **all** Ausco manufactured jacks had a coarse thread adjusting screw, and it did not have anything to do with engine displacement. They used the same coarse thread adjusting screw design in Corvette jacks of the same period.

During Mustang production from 1964.5 thru 1978 Ford issued several service part numbers. However some of the Master Parts Catalog listings appear to be in error. The Ford service part number has little to do with identifying the actual jack assembly you would purchase at the dealer. To further confuse the issue, when you purchase a replacement jack from the dealer you did not know which version jack you would receive inside the box. So the actual service part number does not indicate what is correct for a car.

**Ford issued a basic part number for the scissor jack which is a 17080. This is broken down as follows:**

Years	Service Part Number	Engineering Number
1964.5 to 1966	C5ZZ-17080-A	C5ZF-17080-A
1967 to 1970	C5ZZ-17080-B C5ZZ-17080-C	C7ZF-17080-A C7ZF-17080-B
1970	DOZZ-17080-A	C7ZF-17080-B Although listed in some parts books as a 6 cylinder jack, this has never been documented. We believe this is a mistake that was shown in the master parts catalog, as the engineering cross is the same part number as for the C5ZZ-17080-C jack.
1970 Maverick only	D0DZ-17080-A	D0DA-17080-A
1971 to 1973	D1ZZ-17080-A	D1ZA-17080-AA, AB, AC
1974 to 1978	D4ZZ-17080-A	D4ZA-17080-A

The jack assembly itself is manufactured from flat steel sheet stock and fabricated, stamped, and bent to form the components of the jack. Rivets were spun or hammered. The jack is then assembled and painted.

Some of the major components of the jack include the following:

**Saddle:** The point where the undercarriage of the vehicle engages the jack and creates a load rest. The saddle will include a groove in which the undercarriage rests.

**Base:** Large flat area of the jack that rests on the ground and provides a solid jacking surface. The base has an hourglass shape with a narrow central section.

**Adjusting Screw:** Is a rod that has a hexagonal head on which a wrench, or handle having a socket head, is attached. The adjusting screw shank would be staked or pinned to prevent the screw from completely backing out. Coarse and fine thread versions exist and the threads would appear to be an Acme double lead thread. The threads are cut right handed so turning the head to the right raises the jack and to the left lowers the jack. The advantage of this type of thread is they are easy to machine and carry a large load carrying capacity.

**Thrust Bearing:** This could be a ball bearing or two steel washers (early jacks 1964.5 to 1965), or two steel washers and a nylon washer (inserted in between). This would be between the head of the adjusting screw and a block (trunnion) on the jack assembly. The nylon washer would be a Dupont Delrin washer (trade name for acetal homopolmer resin - similar to Teflon). This type of washer material is known for low wear and low friction.

**Trunnions:** The adjusting screw passes thru two trunnions, one of them having an unthreaded opening for the shank and the other being threaded. The unthreaded trunnion can be either a square block or a U shaped stamped and formed steel bar with the hole diameter slightly larger than the adjusting screw threads. The other trunnion is threaded, and can either be a block, or a nut which the adjusting screw threads into.

The date codes on jacks began in January of 1967. Prior to this date we have no evidence of date codes being stamped on jacks. As a comparison and not coincidentally, the jacks supplied to Corvettes (manufactured exclusively by Ausco from 1962 to 1973) also started using dates codes at the same time in January of 1967 for what appears to be the same reasons. One of the driving factors in date codes for jacks was a book published by Ralph Nader in November 1965 entitled "Unsafe At Any Speed – The Designed in Dangers of the American Automobile". This book created a public awareness during this time to the reluctance of auto manufacturers to improve safety on cars. This book lead to hearings by Congress in 1966 and the establishment of the Department of Transportation in October 1966. DOT then created the NHTSA (National Highway and Traffic Safety Administration). This had a big role in making seat belts mandatory, collapsible steering wheels, and more dash padding. They also pushed for date codes on safety equipment such as jacks because of the number of deaths and injuries caused by jacks. Unless carefully used according to owner's manual instructions, a jack can fail to hold the vehicle and endanger the user and sometimes cause fatal injuries. Scissor jacks are inclined to tip over or slide out especially when used on an unlevel ground surface. Also, the insurance industry was faced with an ever growing amount of claims which lead them to call for some traceability. A date code made it easier for manufacturing traceability, recall, warranty, and liability reasons. The date codes on jacks could be either in a month/year format, or a month/day/year format (and did use the letter "l" in the date code sequence) – but this was not done consistently over the years. Due to the fact of the high volume of jacks put into cars, we typically have seen date codes within 30 days of the actual build date.

### PAINT PROCESS

In examining many low mileage and NOS examples of jacks from the covered years, there clearly were variations between manufacturers' in the paint application process. The most common paint method was to dip the jack assembly (minus the drive screw) in a vat of black enamel paint. Evidence of the dipping process can be seen in original examples with the runs in the paint (see below). This was the preferred method of painting the jacks, as it was a quick, easy, and inexpensive method to cover the entire jack.

*“Ford only insisted on the black paint and not on the paint process.”*

One of the most common variations in the painting process described above, was to dip the entire assembly with the drive screw before it was assembled. This was described by Dennis Houseworth from US Jack (formerly Ausco), although this was not unique to Ausco jacks. The adjusting screw was installed backwards into the partially assembled jack and used to lower the whole assembly into the paint. Then the screw was removed when dry, greased up, washers/bearing applied to screw, and re-inserted into the jack for final test and QC approval. See picture below to illustrate this process.

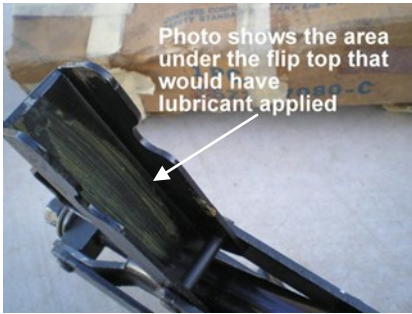
We have also seen a few examples where it appears the jack was spray painted, although this seems much less common. The drive screw was then added after painting. Additionally, it is certainly possible in some cases the entire jack assembly was painted black, since the vendors could change their manufacturing process at any time. Ford only insisted on the black paint and not on the paint process. In the end, 3 million jacks, and 10 years of production spread over four different supply companies, means there were variations in how the jacks were painted and assembled.



Shown here an original paint jack on the left, and drips and runs in the jack on the right illustrating the effects of the jack being dipped in paint.



Pictured here on the left is the method in which a jack would be dipped in paint before being assembled. The threaded portion of the drive screw at times would have been coated with grease to protect from paint. Afterwards it would be assembled.



The drive screw and the underside of the top plate (1964.5 to 1970) were lubricated with Lubriplate or equivalent grease. The grease that is applied to the underside of the “flip top” serves as a lubricant to minimize friction between the load rest undersurface and the convex bearing surface of the link base.

### JACKING INSTRUCTION STICKER



Ford asked the jack manufacturers to place a sticker on each and every jack that referred the owner to the owner’s manual for jacking instructions. Examples of some original stickers are shown. Originals usually had rounded corners, while the service replacements had square corners (as well as some reproductions).



## First Generation (1964.5 to end of 1966 model year):

The first generation Mustangs used three vendors (Ausco, Ryerson & Haynes, and Universal Tool and Stamping) for manufacturing jacks. The easiest way to identify a jack from this era, versus later years, is the flip top portion of the jack, the unique shape of the saddle, and the overall size of the jack.

The flip top itself has a unique concave curved design that was not used for the 67 to 70 style flip top jacks, as they had a flat design. This area is circled in the photo to the right.



The saddle was also unique in that it had a very basic design with a single channel to contact the undercarriage of the car:



Within this era it appears the earlier jacks **1964.5 to 1965** had a longer flip top, and then this feature was changed to a shorter flip top. Side by side shown.







Another important distinction on some of the earlier style jacks from **1964.5 to 1965** is the threaded trunnion is an actual nut that is tack welded to the outside of the jack assembly. For obvious reasons this was changed as it was a poor design.



The overall size of the jack in a fully closed position from the two opposite trunnion pivots is approximately 11 1/2 inches.



And in a fully opened state the overall lifting height of the jack is approximately 16 inches.



**Ball Bearing Style**

Another important change during this period is regarding the thrust bearing. The first jacks in 1964.5 had a ball bearing that was used for the thrust surface instead of the washer design. This was then transitioned to a two washer design that was much smaller than the eventual two washer with nylon insert design. These versions appear in the time period up to about mid to late 1965 production when the two washer with nylon washer design became standard. Since none of the first generation jacks had date codes it's impossible to say for sure when the transition happened, however photos and discussions with low mileage car owners indicate mid 65 production.



**Two Washer Design**



## Original jack from 5F08F100001—the first production Mustang ever made:

The first Mustang that was ever built on April 17 1964 (a Wimbeldon White convertible) today is on display at the Henry Ford Museum in Dearborn Michigan. The car has been preserved in as correct and original condition as possible with approximately 10,698 original miles. The following photos were obtained from the Henry Ford Museum in Dearborn, Michigan with the help of George Gunlock, who has maintained and worked on the car for many years. These pictures show what serial number 5F08F100001 Mustang has as a jack in the trunk. It is indeed a ball bearing style, and was manufactured by Ausco as seen by the coarse threads on the adjusting screw.



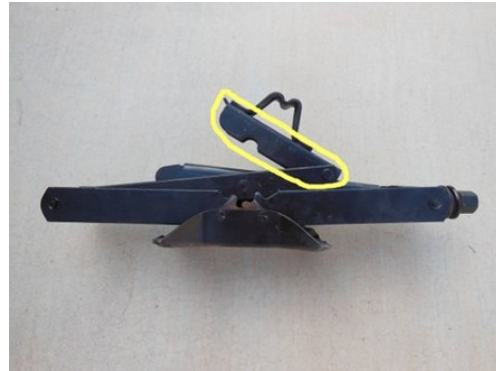
Close up of serial number 5F08F100001 jack:



Pictures courtesy of the Henry Ford Museum, Dearborn Michigan

## Second Generation (Beginning 1967 model year to end 1970 model year)

Starting in 1967 the next generation of the flip top jack was introduced with the two major distinct features being the flat flip top (circled below) and the overall size of the jack. Still the same three vendors were being used during this time (Ausco, Ryerson & Haynes, and Universal Tool and Stamping). The larger jack gave the ability to lift the car higher as new wheel and suspension options became available. Also now with the date code requirements, all jacks starting in approximately January 1967 will typically have a date code stamped on the side.



The overall size of the larger jack in a fully closed position from the two opposite trunnion pivots is approximately 13 to 13 ½ inches depending upon vendor.

The overall lifting height is now about 17 ½ inches, an increase of about 1 ½ inches from the first generation.



### Third Generation (mid 1970 model year to end of 1973 model year)

During mid to late 1969 Ford started pushing for cost reductions in the jacks, and as a result developed the “pinch weld” jack. This jack is significantly cheaper to produce as it has less unique and individual pieces than the previous generation. The earliest date coded example we have found is a October 1969 dated jack. The new pinch weld jack was introduced sometime during 1970 Mustang production. They are documented to have been included with mid to late '70 model year Mustangs as they were transitioning to the next generation. By the start of 1971 production, all models only received pinch weld jacks. At this point with the reduced production quantities, and in part Ausco not wanting to deal with constant frivolous lawsuits, they decided to pull out of the scissor jack manufacturing. There are no more jacks made with the distinct coarse threads that Ausco always used. It appears Dura replaced Ausco as the third supplier. Thereafter, the three manufacturers would have been (Dura Corp, Ryerson & Haynes, and Universal Tool and Stamping)



Overall the length of the pinch weld jack was about 10 inches from trunnion pivot points, but with still the same lifting height of about 17 ½ inches.



## Fourth Generation (1974 to 1978 model year)

The jacks in this generation are essentially the same as the previous generation with the addition of the saddle on the pinch weld. This saddle was added for more stability and to better engage the lift points on the car. Variations during this time period include a round trunnion that the adjusting screw would engage.



Round trunnion version:



## Related Variations: 1970 Maverick Jack

At first glance this jack is easily mistaken for a Mustang jack. This one year only Maverick jack was somewhat of a hybrid between the first generation and the second generation flip tops. The base and lower structure are identical in size and shape to the first generation jacks (lift height is also the same), while the flip top itself more closely resembles the second generation style top piece. Another clue to this part is the date codes are always either 1969 or 1970 only. With 579,000 Mavericks built in the first year, it is no wonder so many of them found their way into a Mustang trunk over the past 40+ years. Starting with the 1971 Maverick, Ford converted to the D1ZZ Mustang pinch weld scissor jack.



Unique flip top design



Side by side comparison with the first generation (top), second generation (middle) and Maverick jack (bottom).

### 1967 Shelby jack (unique $\frac{3}{4}$ inch drive nut)

In 1967 Shelby offered a Magstar wheel option. This wheel came with a  $\frac{3}{4}$  inch lug nut, and because of this they matched the jack handle and jack with the same  $\frac{3}{4}$  inch drive. The jack is identical to any other jack of the period except it would have a  $\frac{3}{4}$  inch drive head on the adjusting screw, and the adjusting screw itself would have been a fine thread. All other jacks during this time period had an  $\frac{13}{16}$  inch drive head on the adjusting screw.



### Examples of Date Codes:



January 1967



April 1967



November 1968



December 1969



March 1969



August 12, 1969



May 1972



January 1971



## Quick Visual Reference Guide to Mustang Jack Identification



First Generation (1964.5 to end of 1966 model year)



Second Generation (Beginning 1967 model year to end 1970 model year)



Third Generation (mid 1970 model year to end of 1973 model year)



Fourth Generation (1974 to 1978 model year)



1967 Shelby jack (unique 3/4 inch drive nut)



1970 Maverick jack:

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**SPECIAL THANKS :**

This article could not, and would not have come together without the help and effort of so many different people. I wanted to extend a special "thank you" to all involved. That would extend not only to the Ford Mustang and Cougar community, but also the Chevrolet, Mopar and AMC judges, restorers, and collectors as well. It would be beyond the scope of this article to list everyone here.

