

BORGESON

Mullins

Catalog and Tech Guide



THE OFFICIAL STEERING
COMPONENTS OF THE NSRA

*Supplying
the industry
since 1914 with:*

- ***Borgeson Quality***
- ***Borgeson Safety***
- ***Borgeson Pride in Workmanship.***
- ***The Fastest Shipping! We make it, so we stock it. We ship most orders the day they're called in.***



www.borgeson.com



An aerial photo of BORGESON's manufacturing facility.

Our first annual BORGESON Hot Rod Gathering May 30, 1998.



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Just some of our machining capabilities.



BORGESON

UNIVERSAL COMPANY, INC.

Founded in 1914, BORGESON began by manufacturing universal joints for lathes and milling machines. By the 1920s, Ford was using our universal joints for steering some unusual vehicles they were developing.

Prior to a change in ownership in 1982, BORGESON had been supplying steering universal joints for racing vehicles for many years. Since that time, we have developed our needle bearing universal joints into the most reliable, smoothest operating, strongest for their size, u-joints available today.

Today, BORGESON is the leading manufacturer and supplier of aftermarket steering universal joints in the Street Rod, Racing, Specialty Automotive and Pickup Truck markets. Seeking to expand, Borgeson purchased Mullins Steering Gears in 2001. Previous to the purchase, Mullins had been providing the street rod industry with quality remanufactured steering boxes and a full line of aluminum accessories for over 17 years. The first BORGESON Mullins project was the collapsible Rod Column which was honored with the National Street Rod Association 2001 Safety Product of the year award.

Our manufacturing facility is located at 187 Commercial Blvd., Torrington, Connecticut. The plant was designed and built to offer the highest efficiency and production capacity to better serve our customers. This modern facility contains 26,000 square feet of manufacturing and office space. We use the latest manufacturing and inventory control procedures, and take great pride in shipping most orders placed by 2:30 PM Eastern Time the same day we receive them. Our office hours are 7:30 AM to 5:00 PM Eastern Time. Our technical staff includes employees with over 45 years of experience in the design and application of steering assemblies.

We are a company that listens to our customers, whether an individual or a manufacturer. We respond to their input by developing needed innovations to help increase the safety of steering systems. This dedication to safety has been recognized by the National Street Rod Association's Safety Product of the Year Award in 1992 and Street Rod Manufacturer of the Year Award in 1995.

**Your vehicle's
safety ultimately
depends on you.**

Borgeson strives to make the steering components we manufacture as safe as possible.

You can't buy a stronger, safer u-joint anywhere in the world! However, its effectiveness is still up to you or the shop that builds your car. Over the years we have seen steering installations that should never have been installed in a car of any type.... from the use of 1/2" drive socket flex joints to amateur welding of u-joints to shafts or directly onto a steering box. Even u-joints operating at angles outside of their design parameters is a very dangerous situation. The steering and brake systems are the most important components of your car. Yet many times connecting the steering box to the steering column seems to be an afterthought. Your car must be designed as an integral unit with the steering box or rack and pinion, engine, exhaust, steering column and connecting shafts and u-joints in a safe working relationship. In this catalog, you will find many examples of installation suggestions that will help in the design of a safe steering setup. Following these guidelines will insure a safe, smooth operating steering system.

Remember, auto manufacturers have thousands of engineers and millions of miles of past experience with which to design cars. Without the benefit of those resources, the possibility of a malfunction is greater.

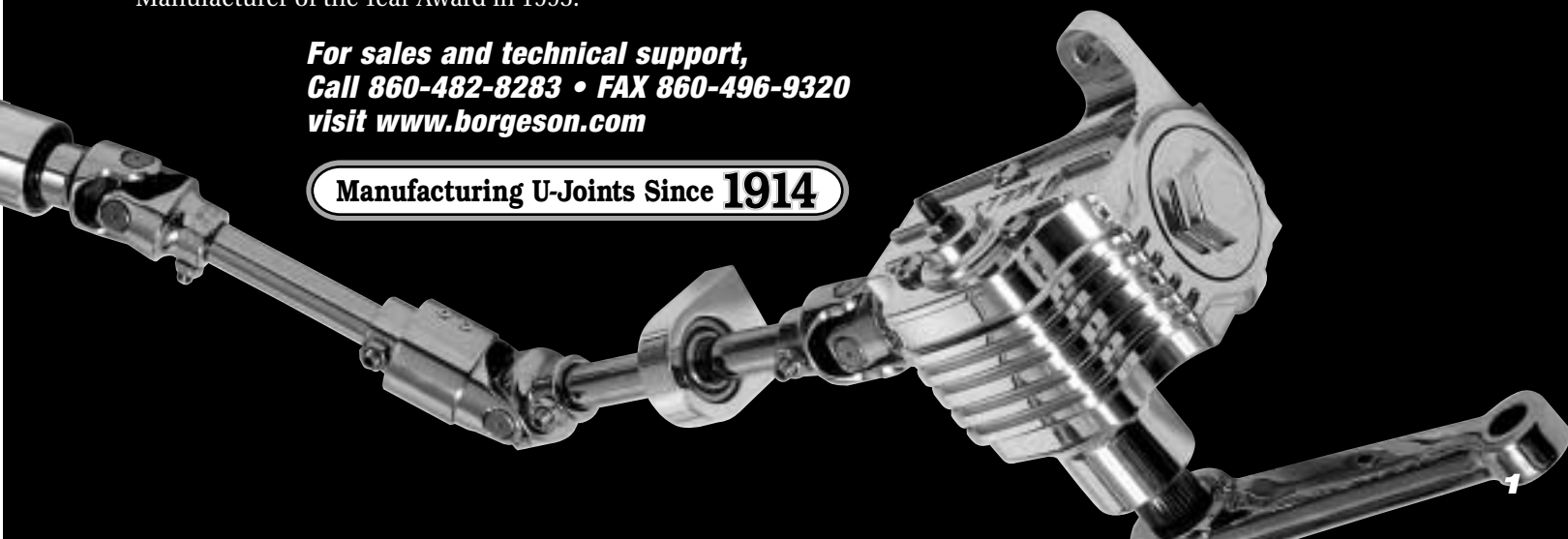
Overbuild your system and inspect it frequently! Safety should be your most important concern.

We attend many auto shows during the year. When you see our booth, stop by and visit. We will be happy to discuss your steering needs.

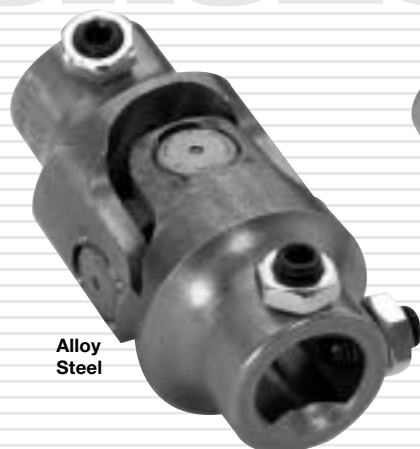


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visit www.borgeson.com**

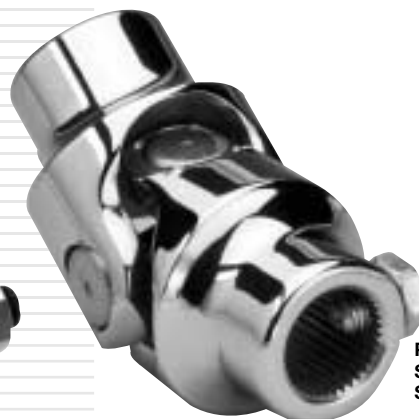
Manufacturing U-Joints Since 1914



BORGESON Single Needle Bearing Universal Joints



Alloy Steel



Polished Stainless Steel



Aluminum

Needle Bearing or Non-Needle Bearing U-Joints?

Needle bearing u-joints have the distinct advantage of lasting much longer than non-needle bearing u-joints. Borgeson recommends only the needle bearing u-joints for use on street vehicles.

Our u-joints are made of a specially selected steel and aluminum for strength and longevity and the sealed precision needle bearings never need maintenance.

Needle bearing u-joints outlast non-needle bearing joints by a factor of 10 to 1.

Our needle bearing joints have zero backlash (radial play) for more precise steering and a better feel for the road.

Although non-needle bearing joints are stronger than the same size needle bearing joint, this strength is offset by the maintenance required and the longevity factor.

Non-needle bearing joints should be lubricated with each use and a rubber boot should be used to retain lubrication.

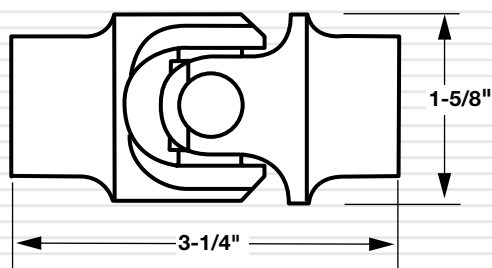
Boots are not recommended for use with needle bearing joints.

BORGESON u-joints are machined in our factory on state of the art CNC equipment from solid billet steel, stainless steel, or aluminum. Ongoing engineering and testing ensures our components meet or exceed current automotive production vehicle requirements. Any of our 3 Double D (a round shaft with two flats) sizes, 14 different spline size yokes, and the '94 and later Mustang "V" style can be combined to mate components from many different manufacturers. They operate at angles up to 35°. For example, with our components, you could easily connect a GM column to a new Mustang rack and pinion or a Ford column to a Saginaw box. Similar to OEM u-joints, the staked needle bearing caps prevent loosening and adjustment malfunction.

SINGLE NEEDLE BEARING UNIVERSAL JOINTS

Steel	Stainless Steel	Polished Stainless	Description
Smooth X Smooth bore			
016464	116464	126464	3/4 Smooth x 3/4 Smooth
Spline X Smooth bore			
010964	110964	120964	9/16-26 x 3/4 Smooth
011864	111864	121864	5/8-36 x 3/4 Smooth
013164	113164	123164	3/4-30 x 3/4 Smooth
013464	113464	123464	3/4-36 x 3/4 Smooth
014064	114064	124064	13/16-36 x 3/4 Smooth
014364	114364	124364	1-48 x 3/4 Smooth
014664	114664	124664	17MM DD x 3/4 Smooth
014964	114964	124964	3/4 DD x 3/4 Smooth
015264	115264	125264	1 DD x 3/4 Smooth
014949	114949	124949	3/4 DD x 3/4 DD
015255	115255	125255	1 DD x 7V
Spline X Spline			
014334	114334	124334	1-48 x 3/4-36
014349	114349	124349	1-48 x 3/4 DD
013409	113409	123409	3/4-36 x 9/16-26
013418	113418	123418	3/4-36 x 5/8-36
013431	113431	123431	3/4-36 x 3/4-30
013434	113434	123434	3/4-36 x 3/4-36
013440	113440	123440	3/4-36 x 13/16-36
013449	113449	123449	3/4-36 x 3/4 DD
013452	113452	123452	3/4-36 x 1 DD
014909	114909	124909	3/4 DD x 9/16-26
014918	114918	124918	3/4 DD x 5/8-36
014931	114931	124931	3/4 DD x 3/4-30
014940	114940	124940	3/4 DD x 13/16-36
014949	114949	124949	3/4 DD x 3/4 DD
014952	114952	124952	3/4 DD x 1 DD
015231	115231	125231	1 DD x 3/4-30

SINGLE U-JOINT



Double Needle Bearing Universal Joints

Excessive angles over 35° can be negotiated by using a BORGESON Double universal joint. Available in steel, stainless steel, and aluminum, these doubles accommodate angles up to 70° and are available in all spline and DD configurations.

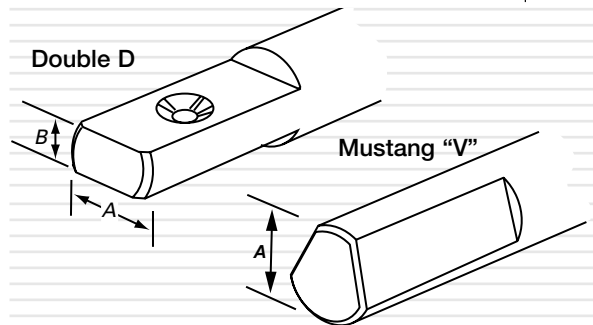
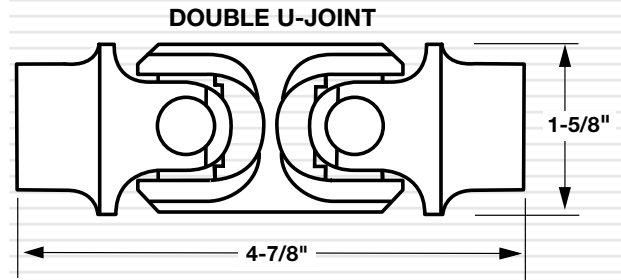
Tech Tip: Because a double joint used in combination with a single joint will function the same as a 3 joint system, a shaft support bearing is required to prevent the shaft from "looping" and binding.



POPULAR SPLINE SIZES AND BORGESON EQUIVALENTS

Nominal Spline Size	Approximate Diameter over Splines	Number of Splines in a Full Circle	Borgeson Designation
9/16-17	.562	17	517
9/16-26	.562	26	526
9/16-36	.562	36	536
5/8-29	.625	29	629
5/8-36 GM	.625	36	636*
5/8-36 Chrysler	.625	36	636C*
11/16-36	.687	36	11/16-36
11/16-40	.687	40	640
3/4-20	.745	20	720
3/4-30	.730	30	730
3/4-36	.735	36	736
3/4-48	.750	48	748
13/16-36	.820	36	836
1-48	.985	48	148

Actual size can measure .015" over or under the size listed
*636 and 636C are not interchangeable



DOUBLE NEEDLE BEARING UNIVERSAL JOINTS

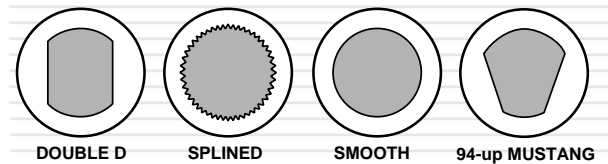
Steel	Stainless Steel	Polished Stainless	Description
Smooth X Smooth bore			
026464	136464	146464	3/4 Smooth x 3/4 Smooth
Spline X Smooth bore			
020964	130964	140964	9/16-26 x 3/4 Smooth
021864	131864	141864	5/8-36 x 3/4 Smooth
023164	133164	143164	3/4-30 x 3/4 Smooth
023464	133464	143464	3/4-36 x 3/4 Smooth
024064	134064	144064	13/16-36 x 3/4 Smooth
024364	134364	144364	1-48 x 3/4 Smooth
024664	134664	144664	17MM DD x 3/4 Smooth
024964	134964	144964	3/4 DD x 3/4 Smooth
025264	135264	145264	1 DD x 3/4 Smooth
024949	134949	144949	3/4 DD x 3/4 DD
Spline X Spline			
024334	134334	144334	1-48 x 3/4-36
024349	134349	144349	1-48 x 3/4 DD
023409	133409	143409	3/4-36 x 9/16-26
023418	133418	143418	3/4-36 x 5/8-36
023431	133431	143431	3/4-36 x 3/4-30
023434	133434	143434	3/4-36 x 3/4-36

Please Note: We have many more configurations than is possible to list here, so call if you don't see what you need.

DOUBLE D SIZES AND BORGESON EQUIVALENT

Nominal Size	Approx. Dia. (A)	Approx. Size Across Flats (B)	Borgeson Designation
17mm Double D	.670	.570	6DD
3/4" Double D	.750	.550	7DD
1" Double D	.993	.790	1DD
3/4" Mustang V	.750	n/a	7V

AVAILABLE U-JOINT ENDS



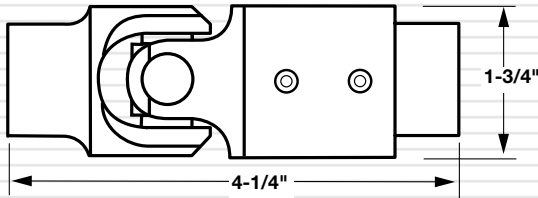
BORGESON

Vibration Reducers

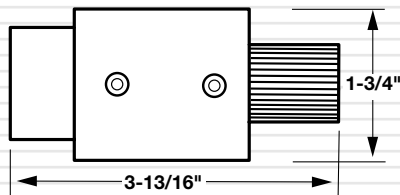
Polished Stainless Steel
U-Joint/Vibration Reducer
Combination



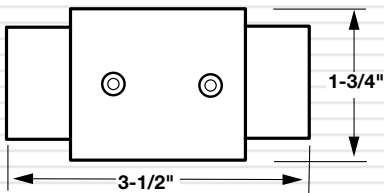
Steel Male/Female and
Female/Female Vibration Reducers.
Please call for part numbers and prices.



16 SERIES U-JOINT/ VIBRATION REDUCER



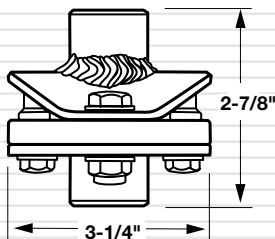
FEMALE/MALE VIBRATION REDUCER



FEMALE/FEMALE VIBRATION REDUCER

Design and installation tips:

Don't install a vibration reducer in the center of a length of shaft. It can cause excess flexing and possible binding. If your system requires the use of a support bearing, the vibration reducer must be used between the support bearing and the column. The support bearing can pick up chassis vibration and will transfer it up the steering shaft to the wheel reducing the effects of the vibration reducer.



Vibration Reducers

Noise, vibration, and harshness are on top of the list of concerns to all automotive enthusiasts. With the more frequent use of rack and pinions and low profile tires, there are more road vibrations transmitted to the steering wheel than in the past. Using urethane to isolate all the metal components, BORGESON has developed vibration reducers to diminish the annoying vibrations that are transmitted through the steering system and felt in the steering wheel. The use of the BORGESON vibration reducer results in immediate change in the steering feel. As an added benefit, this reduction in vibration has been shown to increase the overall life of the steering components, including the steering column.

Vibration Reducer/U-Joint Combination

The Vibration Reducer/U-Joint Combination (VJ) comes with a 9/16"-26, 5/8"-36, 3/4"-30, 3/4"-36, or 3/4"-DD coupler end and any spline or DD size on the u-joint end of the VJ. The VJ is also available in stainless steel with the same coupler options as steel and any spline or DD size on the u-joint end. Polished stainless is available as an option.

VIBRATION REDUCER/ UNIVERSAL JOINT COMBINATION*

Steel	Stainless Steel	Polished Stainless	Description
033434	153434	163434	3/4-36 x 3/4-36
033452	153452	163452	3/4-36 x 1DD
034934	154934	164934	3/4 DD x 3/4-36
034949	154949	164949	3/4 DD x 3/4 DD
034952	154952	164952	3/4 DD x 1DD
031843	151843	161843	5/8-36 x 1-48

*Vibration reducers are not available with smooth bores. They should not be pinned or welded.

Many other sizes are available and in stock.

Factory Style Rubber Coupling

On some factory applications, a flexible coupling was used to attach the column to the steering box when there was perfect alignment. If the original column or box is changed, the stock coupling may not work. If a conversion from a long input steering box to a short input with an aftermarket column is done, a flexible coupling needs to be added. BORGESON offers the largest variety of spline and Double D sizes to fit most applications. Flexible couplings are only available in steel.



RAG JOINTS

Steel	Description	Steel	Description
053143	3/4-30 x 1"48	053452	3/4-36 x 1"DD
053152	3/4-30 x 1"DD	054043	13/16-36 x 1"48
053443	3/4-36 x 1"48	054052	13/16-36 x 1"DD

Many other sizes are available and in stock.

Intermediate Steering Shaft

Splined and Double D Shafting

We recommend splined and double D shafting as it is a simple and safe method of attaching your steering components. If phasing needs to be slightly adjusted because of a "tight spot" in a u-joint, you can easily index or rotate a spline shaft in small increments. We offer splined shafts and 3/4" Double D shafts in steel and stainless steel and aluminum splined shafts to match the u-joints you will be using. The u-joint is locked onto the shaft using set screws and lock nuts.

The drawback to the Double D shaft is that the phasing is fixed. However, using Double D style is preferred over welding and/or pinning due to serious potential problems with those methods. If welding is the only option, it should be done by a certified welder. Overheating the u-joint bearings (which causes loss of lubrication) is often caused by welding. Pinning requires holes to be drilled in shafting causing a weakening of the shaft. Vibration may cause a pin to back out or become loose in the hole so it is necessary to use a safety backup such as a hose clamp or safety wire in conjunction with a pin. Never use a bolt to hold smooth shafts together.

Since we offer individual components to fit virtually any installation, we "custom fit" your steering shaft and joints to your car. Components should be mocked up to give you the best setup for your particular vehicle.

Steel 3/4" Splined Shafts are splined 2" on both ends. They are available in 2" increments from 2" to 36". Each end can be trimmed up to 1" for an exact fit. Steel 3/4" round shafts that are splined on one end only are available in 5", 16", and 36" lengths.

Steel DD Shafts are available in 18" and 36" lengths only. They are easy to trim to get an exact fit.

Stainless Steel 3/4" Splined Shafting is available in 1/4" increments from 3" to 16" lengths and one inch increments in 16" to 24" lengths, with 7/8" of spline on each end. Custom length stainless shafting is also available.

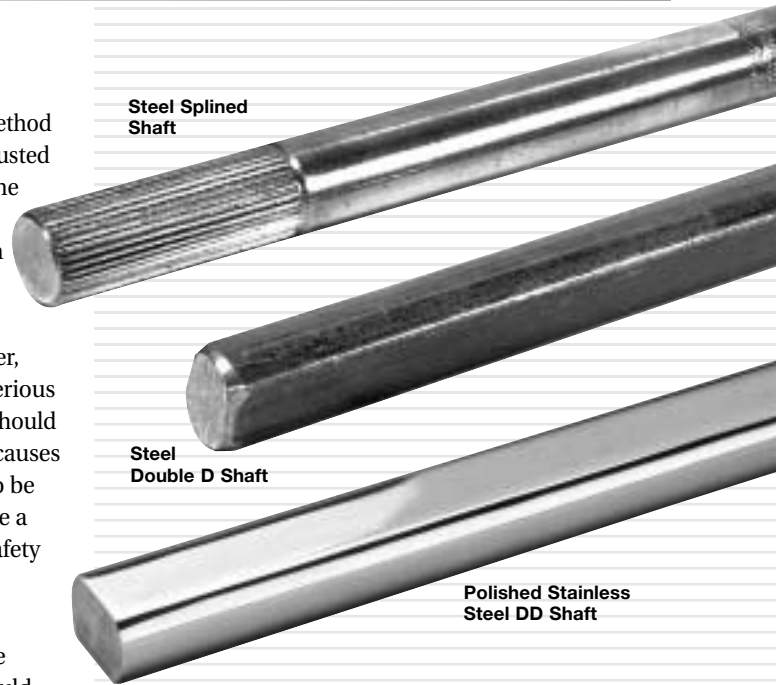
Stainless Steel Double D Shafting is available in 22" and 36" lengths. All stainless shafting is available polished or unpolished.

Aluminum 3/4" splined shafts have 2" of spline on each end and come in 2" increments from 4" to 36". Aluminum DD shafts are not available.

See our design section for information about measuring your system.

STEERING SHAFTING			
Steel	Stainless Steel	Polished Stainless	Description
Splined, 2 INCHES OF SPLINE EACH END			
409206	419206	429206	3/4-36 x 6" Long
409208	419208	429208	3/4-36 x 8" Long
409210	419210	429210	3/4-36 x 10" Long
409212	419212	429212	3/4-36 x 12" Long
409214	419214	429214	3/4-36 x 14" Long
409216	419216	429216	3/4-36 x 16" Long
Double D			
409418	N/A	N/A	3/4 DD x 18" Long
409436	419436	429436	3/4 DD x 36" Long
N/A	419422	429422	3/4 DD x 22" Long
Telescopic Shafting			
450024	N/A	N/A	24" Fully Extended Length
450036	N/A	N/A	36" Fully Extended Length

Many other lengths of splined shafts are available and in stock.

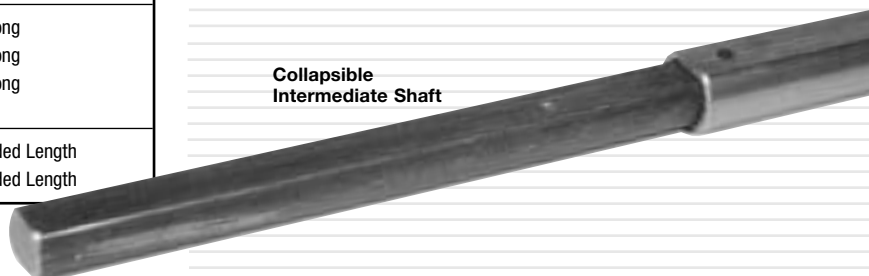


Collapsible Intermediate Shaft

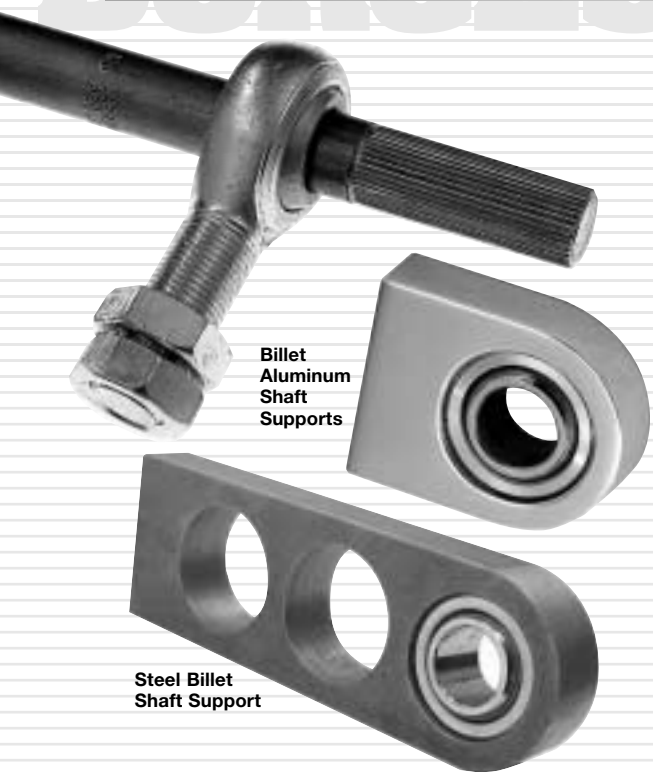
For even greater safety, we offer a collapsible intermediate shaft which can reduce the likelihood or severity of driver injury in a head-on collision. It meets NHTSA guidelines for collapsibility in passenger cars. This 18-1/2" shaft is designed to collapse 6-1/2" on impact lessening the chance of chest injury and allowing the driver to maintain control. The shaft can be shortened, but equal amounts must be taken off each end to maintain maximum collapsibility. One end of the collapsible shaft is a 3/4" Double D male. The other end is a 1" Double D tube. We recommend 7/8" of shaft engagement at each end of the collapsible shaft.

Telescoping Shaft

Borgeson offers two telescoping shaft assemblies in 24" and 36" overall lengths. These shafts can be used in a variety of applications and make installation and removal of steering system components simple and easy. By pulling or pushing on the assembly, the overall length can be shortened and lengthened. This telescopic shaft also meets NHTSA guidelines for collapsibility in passenger cars and adds a measure of safety. One end of the assembly is a 3/4" Double D and the other end is a 1" Double D tube which can be trimmed to fit shorter applications. Telescoping shafts are available in steel only.



Steering Shaft Support Bearings



If more than two joints are used in a steering system, a support bearing must be used to prevent "looping" and binding. Use of a vibration reducer and two u-joints will also call for a support bearing to be used. The support must be mounted to the frame, not to a sheet metal section of the body. Sheet metal will not withstand the stresses. The shaft should fit easily through the support with no binding. A system with a double u-joint and a single u-joint counts as a three joint system and would require a support bearing. Note: all support bearings work with round or DD shafting

Rod End Bearings

Rod end bearings with a 3/4" hole size are commonly used for supports. Rod end bearings are supplied with two jam nuts for mounting. They are available in steel, stainless steel and polished stainless steel.

Billet Support Bearings

All billet supports accommodate a 3/4" shaft. Our standard supports are 2-1/2" long with two threaded holes in the end for mounting and are available in steel, aluminum, polished aluminum, stainless steel, and polished stainless steel.

A 6" long steel billet support is also available, which can be cut at any angle for a perfect fit. The steel support has no mounting holes and must be welded in.

SHAFT SUPPORT BEARINGS

Steel	Stainless Steel	Polished Stainless	Description
700000	710000	720000	Steel Rod End Bearing
670000	680000	690000	Billet Support 2-1/2"
670600	N/A	N/A	Billet Support 6"

STEEL COUPLERS

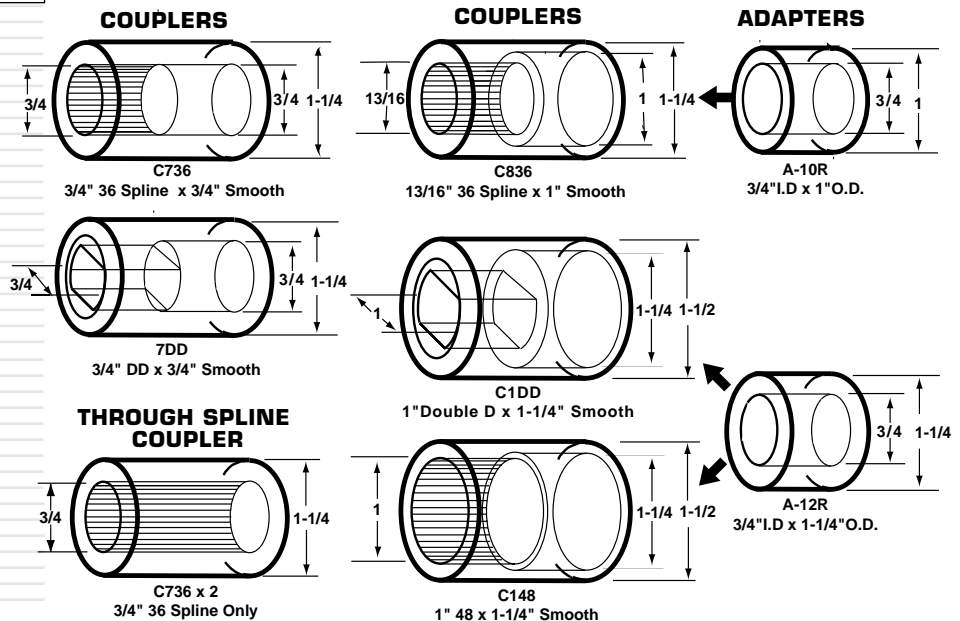
Steel	Stainless Steel	Polished Stainless	Description
313400	323400	N/A	3/4-36 x 3/4 Smooth
313434	323434	N/A	3/4-36 Through Spline
310900	320900	N/A	9/16-26 x 3/4 Smooth
314300	324300	N/A	1-48 x 1-1/4 Smooth
315200	325200	N/A	1 DD x 1-1/4 Smooth
314900	324900	N/A	3/4 DD x 3/4 Smooth
311800	321800	N/A	5/8-36
312100	322100	N/A	5/8-36 Chrysler

Many other sizes are available and in stock.



Couplers and Adapters

Often a u-joint can be eliminated by using a 2" straight extension, called a coupler, to extend either the steering box, R&P shaft or the column shaft. The coupler can be welded and/or pinned to the unsplined end of a shaft. We offer shafts that are splined only on one end in 3 lengths: 5", 16" and 36". The 1" - 48 and 1" - DD couplers have a 1-1/4" hole that will accept either an adapter to reduce inside diameter to 3/4" smooth or another splined or 3/4" DD coupler. The coupler assembly would have to be pinned and/or welded together. Welding the coupler is acceptable because there are no moving parts to damage, and the coupler's steel is less susceptible to heat damage from welding. As an alternative, you can use a Vibration Reducer as a coupler to extend a short shaft, since the VR now comes with female ends to fit many popular applications. Couplers are available in the same spline and Double D sizes as our u-joints. Couplers and adapters are available in steel and stainless steel. Aluminum couplers and adapters are not available.



Pin & Block Universal Joints-RACING ONLY



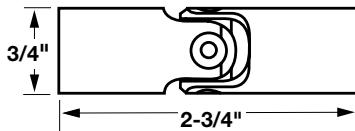
The advantage to the pin and block style of universal joint is a high strength to weight, size and cost ratio. These u-joints are manufactured from high strength billet alloy heat treated steel. Because the u-joints use pivot pins and blocks instead of sealed needle bearings, they must be checked and lubricated every time the vehicle is driven. A rubber boot is also available to retain lubrication. The smaller sizes are ideal for fabricating remote shift linkage. **These u-joints are not for street use.**

PIN & BLOCK RACING UNIVERSAL JOINTS 1-1/4" Outside Dia. – Oval Track, Drag Racing Steering	
Smooth X Smooth	
526464	3/4 Smooth x 3/4 Smooth
Spline X Smooth	
520964	9/16-26 x 3/4 Smooth
523164	3/4-30 x 3/4 Smooth
523464	3/4-36 x 3/4 Smooth

PIN & BLOCK RACING UNIVERSAL JOINTS 1" Outside Dia. – Drag Racing Steering, Shift Linkage	
Smooth X Smooth	
516464	3/4 Smooth x 3/4 Smooth
516262	5/8 Smooth x 5/8 Smooth
Smooth X Smooth	
510964	9/16-26 x 3/4 Smooth

Many other sizes are available and in stock.

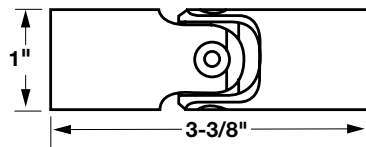
U7H — Shift Linkage Only



- 1/2 or 5/8" smooth bore each end

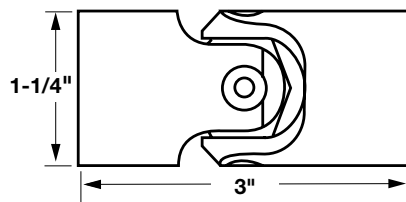
U10H — Formula Car Shift Linkage

Drag Racing Steering (not for circle track or road racing)



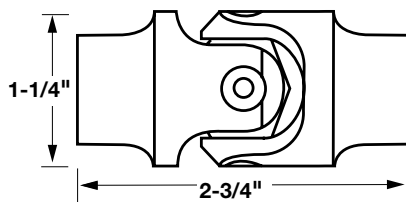
- 5/8 or 3/4" smooth bore each end
- smooth bore with either 9/16-36", 9/16-26" or 5/8-36" spline combination

U12H — Oval Track Steering



- 5/8" or 3/4" smooth bore each end
- smooth bore and any spline and DD (except 9/16-17", 9/16-36", 1-48", 1"-DD)

U12H Lightweight — Oval Track Steering



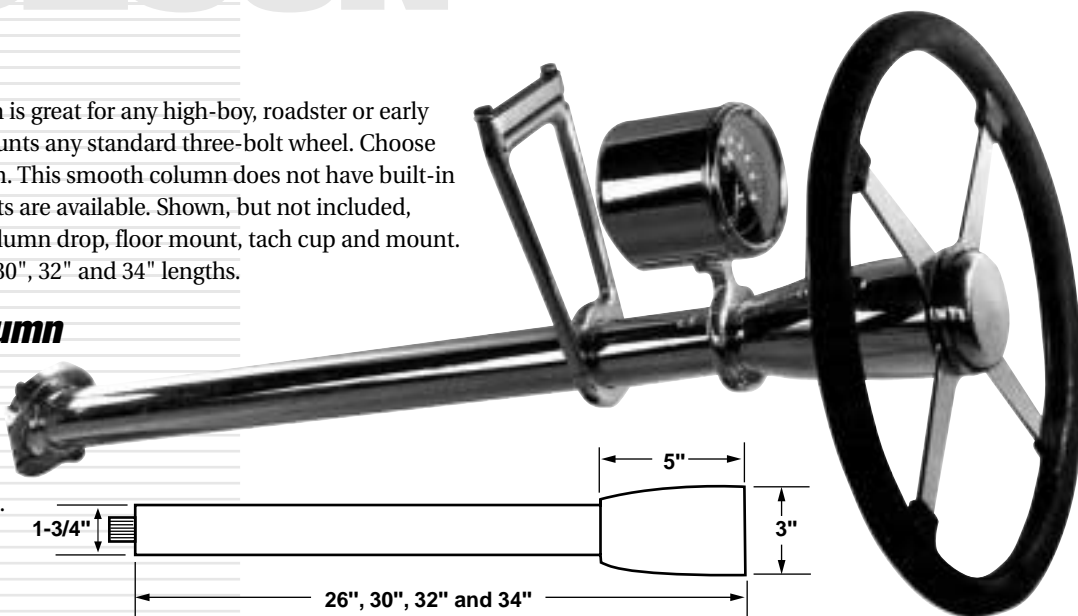
- 5/8" or 3/4" smooth bore each end
- Lightweight smooth bore and any standard spline and DD (except 9/16-17", 9/16-36", 1-48", 1"-DD)

Traditional Style Steering Columns

This beautiful aluminum column is great for any high-boy, roadster or early model truck application and mounts any standard three-bolt wheel. Choose from polished or machined finish. This smooth column does not have built-in turn signals or horn. Remote units are available. Shown, but not included, is our 4-spoke steering wheel, column drop, floor mount, tach cup and mount. Columns are available in of 26", 30", 32" and 34" lengths.

Collapsible Rod Column

This was the 2001 NSRA Safety Product of the Year. This column collapses on frontal impact and helps prevent further intrusion into the passenger compartment. The 32" column is not available as a collapsible rod column.



STEERING COLUMNS

Machined	Polished	Description
908001	908002	26" Aluminum Rod Column
908003	908004	30" Aluminum Rod Column
908005	908006	32" Aluminum Rod Column
908007	908008	34" Aluminum Rod Column
908009	908010	26" Collapsible Aluminum Rod
908011	908012	30" Collapsible Aluminum Rod
908013	908014	34" Collapsible Aluminum Rod



Solid or Split Floor Mount

Easy to install, solid full circle design, slides over the end of the steering column and provides a secure way to mount the column to the floor. Inner collar pivots to accommodate any floor angle. Available for 1-3/4", 2" and 2-1/4" columns. Also available in a split design that separates in half to clear the column shift lever. The split design can also be installed on a column already in the vehicle. Available in 2" and 2-1/4" sizes. Solid machined aluminum, choose polished or machined finish.

FLOOR MOUNTS

Machined	Polished	Description
909001	909002	Swivel Floor Mount 1-3/4" Column
909003	909004	Swivel Floor Mount 2" Column
909005	909006	Swivel Floor Mount 2-1/4" Column
909007	909008	Split Swivel Floor Mount 2" Column
909009	909010	Split Swivel Floor Mount 2-1/4" Column



Split Swivel Floor Mount

Swivel Floor Mount



Billet Column Drops

Smooth, Recessed and Open Styles

Machined from solid billet aluminum, these polished drops come in three styles and various hole diameters to fit most columns. Adjustable swivel easily compensates for different column and dash angles. Available in 1-3/4", 2", 2-1/4" and 2-3/8" diameter holes and lengths of 2", 3", 4", 5", 6" and 7". The 2-3/8" drop has a notch to clear the wire harness cover on GM columns.



Recessed

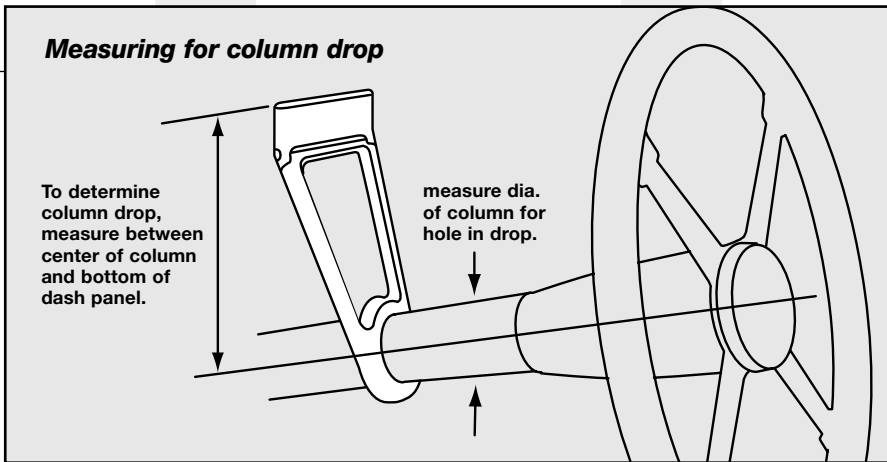


Open



Blank

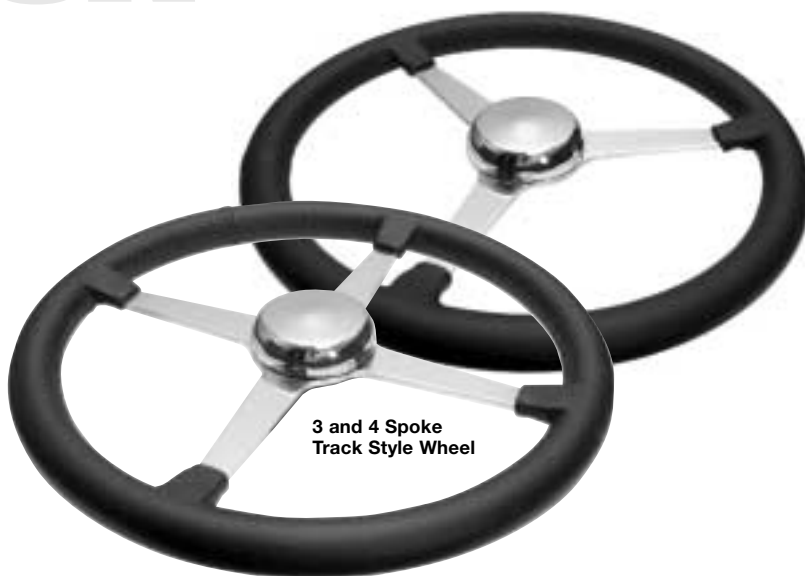
BLANK COLUMN DROPS			OPEN COLUMN DROPS			RECESSED COLUMN DROPS		
paintable	polished	sizes	paintable	polished	sizes	paintable	polished	sizes
910172	911172	1-3/4" Dia x 2"	912173	913173	1-3/4" Dia x 3"	914173	915173	1-3/4" Dia x 3"
910173	911173	1-3/4" Dia x 3"	912174	913174	1-3/4" Dia x 4"	914174	915174	1-3/4" Dia x 4"
910174	911174	1-3/4" Dia x 4"	912175	913175	1-3/4" Dia. x 5"	914175	915175	1-3/4" Dia. x 5"
910175	911175	1-3/4" Dia. x 5"	912176	913176	1-3/4" Dia x 6"	914176	915176	1-3/4" Dia x 6"
910176	911176	1-3/4" Dia x 6"	912177	913177	1-3/4" Dia x 7"	914177	915177	1-3/4" Dia x 7"
910177	911177	1-3/4" Dia x 7"	912183	913183	1-7/8" Dia X 3"	914183	915183	1-7/8" Dia X 3"
910182	911182	1-7/8" Dia X 2"	912184	913184	1-7/8" Dia X 4"	914184	915184	1-7/8" Dia X 4"
910183	911183	1-7/8" Dia X 3"	912185	913185	1-7/8" Dia X 5"	914185	915185	1-7/8" Dia X 5"
910184	911184	1-7/8" Dia X 4"	912186	913186	1-7/8" Dia X 6"	914186	915186	1-7/8" Dia X 6"
910185	911185	1-7/8" Dia X 5"	912187	913187	1-7/8" Dia X 7"	914187	915187	1-7/8" Dia X 7"
910186	911186	1-7/8" Dia X 6"	912203	913203	2" Dia x 3"	914203	915203	2" Dia x 3"
910187	911187	1-7/8" Dia X 7"	912204	913204	2" Dia x 4"	914204	915204	2" Dia x 4"
910202	911202	2" Dia x 2"	912205	913205	2" Dia x 5"	914205	915205	2" Dia x 5"
910203	911203	2" Dia x 3"	912206	913206	2" Dia x 6"	914206	915206	2" Dia x 6"
910204	911204	2" Dia x 4"	912207	913207	2" Dia x 7"	914207	915207	2" Dia x 7"
910205	911205	2" Dia x 5"	912223	913223	2-1/4" Dia x 3"	914223	915223	2-1/4" Dia x 3"
910206	911206	2" Dia x 6"	912224	913224	2-1/4" Dia x 4"	914224	915224	2-1/4" Dia x 4"
910207	911207	2" Dia x 7"	912225	913225	2-1/4" Dia x 5"	914225	915225	2-1/4" Dia x 5"
910222	911222	2-1/4" Dia x 2"	912226	913226	2-1/4" Dia x 6"	914226	915226	2-1/4" Dia x 6"
910223	911223	2-1/4" Dia x 3"	912227	913227	2-1/4" Dia x 7"	914227	915227	2-1/4" Dia x 7"
910224	911224	2-1/4" Dia x 4"	912233	913233	2-3/8" Dia x 3"	914233	915233	2-3/8" Dia x 3"
910225	911225	2-1/4" Dia x 5"	912234	913234	2-3/8" Dia x 4"	914234	915234	2-3/8" Dia x 4"
910226	911226	2-1/4" Dia x 6"	912235	913235	2-3/8" Dia x 5"	914235	915235	2-3/8" Dia x 5"
910227	911227	2-1/4" Dia x 7"	912236	913236	2-3/8" Dia x 6"	914236	915236	2-3/8" Dia x 6"
910232	911232	2-3/8" Dia x 2"	912237	913237	2-3/8" Dia x 7"	914237	915237	2-3/8" Dia x 7"
910233	911233	2-3/8" Dia x 3"						
910234	911234	2-3/8" Dia x 4"						
910235	911235	2-3/8" Dia x 5"						
910236	911236	2-3/8" Dia x 6"						
910237	911237	2-3/8" Dia x 7"						



Traditional Style Steering Wheels/ Adapters



Banjo Style Wheel



3 and 4 Spoke
Track Style Wheel

STEERING WHEELS

Description

804001	Bell Style Wheel, Rubber Grip, 3-Spoke
804002	Bell Style Wheel, Leather Grip, 3-Spoke
804003	Bell Style Wheel, Rubber Grip, 4-Spoke
804004	Bell Style Wheel, Leather Grip, 4-Spoke
804005	Banjo Wheel, Leather Grip
804006	40 Style Wheel, Painted Black

Traditional Style Steering Wheels

Our new 14" diameter traditional 3 or 4-spoke steering wheels are the perfect style and size for any hot rod. Comfortably padded and finished in rich black leather or UV protected urethane. These wheels bolt right up to our hot rod column and include center cap and hardware. Use the adapter below to use this wheel on a GM or aftermarket column.

Banjo Style Steering Wheels

Our new 15" diameter Banjo steering wheel is a beautiful combination of traditional styling and precision machining. The one piece wheel center is built to fit our traditional style column. Comfortably padded and finished in rich leather.

Forty Style Steering Wheels

This new 15" diameter wheel will look right at home on any hot rod, custom or early truck. Hard finished rim and wheel is painted gloss black.

Includes reproduction Ford Deluxe horn button and adapter to mount to our 3-bolt roadster column.



'40 Ford Style Wheel
w/adapter to our 3-bolt
steering column

STEERING WHEEL ADAPTERS

Machined	Polished	Description
908100	908101	Mullins Hub Adapter, 3 to 9 Borgeson Wheels to GM columns

9-bolt wheel
to 3-bolt
steering
column



3-bolt wheel to
GM steering
column



Billet Hub Adapter and Hardware

Designed for adapting our traditional style steering wheels to standard GM or ididit columns.

Hub Adapter

These billet aluminum hub adapters are designed to mount 9-bolt steering wheels to our three bolt traditional column. Available in polished or machined finish. Hardware included.

Accessories ■ Manual Steering Boxes

Billet Tach Cup

Cool polished or machined finish cup with choice of "connecting rod" style bracket for mounting on the dash or steering column. Steering column bracket fits 1-3/4", 2", 2-1/4" and 2-3/8" columns.

Cup accepts Stewart Warner Wings, Classic Instruments and VDO 3-1/8", SVO, Auto Meter Designer Series and Moon Tachs.



Manual Street Rod Steering Boxes

We remanufacture steering boxes to the highest standards surpassing the OEM standards. We've run across cases of people selling "rebuilt" boxes that were fresh from the junkyard and never actually rebuilt. We totally disassemble each unit, chemically clean all parts, refinish the housings, thoroughly inspect all components and replace any worn parts. Each is then carefully assembled and adjusted to factory specs.

GM Saginaw 140 (Vega)

Brand new OEM and remanufactured units are available. The GM 140 is only recommended for vehicles under 2500lbs.

Steering ratio is 22:1. All boxes carry a three year warranty. Chromed and reversed boxes are now available.

Chromed boxes are remanufactured units.



GM 140 Billet Box

Designed as a direct replacement for the GM 140 Vega Steering Box but with a stylish case CNC machined out of solid 6061-T6 billet aluminum. It's perfect for T-buckets and Hi-boys. Sector shaft diameters, input shaft splines and mounting bolt pattern are all the same as a standard 140 box so it's an easy, no hassle bolt-on. Available with a machined or polished finish. SS nut and pitman arm are sold separately.

MULLINS TACH CUPS

Fits Classic Instruments Tachs

Machine Finish	Polished	Description
901001	901002	Dash Mount
901003	901004	1-3/4" column
901005	901006	2" column
901007	901008	2-1/4" column
901009	901010	2-3/8" column

Fits SVO, VDO 3 1/8, Autometer Tachs

902001	902002	Dash Mount
902003	902004	1-3/4" column
902005	902006	2" column
902007	902008	2-1/4" column
902009	902010	2-3/8" column

Fits Stewart Warner Tachs

901001	901002	Dash Mount
901003	901004	1-3/4" column
901005	901006	2" column
901007	901008	2-1/4" column
901009	901010	2-3/8" column

Fits Moon Tachs

902001	902002	Dash Mount
902003	902004	1-3/4" column
902005	902006	2" column
902007	902008	2-1/4" column
902009	902010	2-3/8" column

STREET ROD STEERING BOXES

Description

920001	Mullins Billet Box, Saginaw 140 Replacement, Machined
920002	Mullins Billet Box, Saginaw 140 Replacement, Polished
920003	Reversed Mullins Billet Box, Saginaw 140 Replacement, Polished
920004	New OEM Saginaw Model 140 Box
920005	Reversed New OEM Saginaw 140 Box
920006	Remanufactured Saginaw 140 Steering Box
920007	Reversed Remanufactured Saginaw 140 Steering Box (Limited Availability)
920031	Chrome Saginaw Model 140 Box

GM 140/ VEGA SIDE COVERS

Machined	Polished	Description
921001	921002	Vega GM/Plain
921003	921004	Vega GM/Engraved

GM 140 (Vega) billet side covers

"Dress-up" side cover with a radiused edge design. Made from billet aluminum with your choice of polished or machined finish. Includes stainless steel fasteners and gasket.



Manual Street Rod Steering Boxes



Saginaw 525 Manual Steering Box

Brand New OEM and remanufactured units are available. The GM 525 steering box is a stout unit that has withstood the test of time. GM started producing this box in the 50's and still uses versions of it for production vehicles today. The GM 525 steering box is available with a 1" or a 3-1/2" long input shaft with 16:1 or 24:1 steering ratios. All steering boxes have a 3-year warranty. Reversed boxes are available.



Most GM 140, 525, 605 and 700 steering boxes use the same three hole mounting pattern.

STREET ROD STEERING BOXES

	Description
920008	Remanufactured Saginaw 525 Manual Box
920009	Reversed Remanufactured Saginaw 525 Manual Box
920010	New OEM Saginaw 525 Manual Box
920011	Mullins Built 525 Manual Box With Short Input
920018	Remanufactured Mustang Box 67-70, 4 Turn Ratio, 1" Sector Dia.
920019	Remanufactured Mustang Box 67-70, 4 Turn Ratio, 1-1/8" Sector Dia.
920020	Remanufactured Mustang Box 67-70, 5 Turn Ratio, 1" Sector Dia.
920021	Remanufactured Mustang Box 67-70, 5 Turn Ratio, 1-1/8" Sector Dia.

GM 140/155 SIDE COVERS

Machined	Polished	Description
921001	921002	Vega GM, Plain
921003	921004	Vega GM, Engraved
921005	921006	525 and 55-57

PITMAN ARM NUT

Polished	Description
806100	Polished SS Pitman Nut 3/4-16 fits Saginaw 140 & 1" Mustang
806101	Polished SS Pitman Nut 7/8-14 fits Saginaw 525 & 1-1/8" Mustang

STEERING BOX MOUNT BRACKETS

	Description
805001	P/S Box Mount Bracket/Accepts Saginaw 605
805002	Saginaw Box Mount Bracket 35-40 Ford - 35-41 Ford Pickup
805003	Saginaw Box Mount Bracket 35-48 Ford - Flat
805004	Saginaw Box Mount Bracket Weld-On Model A, 32, 34 Ford

See page 16 for OEM style remanufactured boxes with original long one piece steering shafts.

GM 140 and Saginaw 525 Billet Side Covers

"Dress-up" side cover with a radiused edge design. Made from billet aluminum with your choice of polished or machined finish. Includes stainless steel fasteners and gasket.



Ford Mustang Steering Box

Top quality remanufactured '65-'70 model Mustang steering box is available with two steering ratios, 4 or 5 turns lock-to-lock. Also available in two sector shaft diameters of 1" or 1-1/8".



Stainless Steel Pitman Nut

Polished stainless steel with stainless washer. Specify 3/4" or 7/8" sector shaft.



Steering Box Mounting Brackets

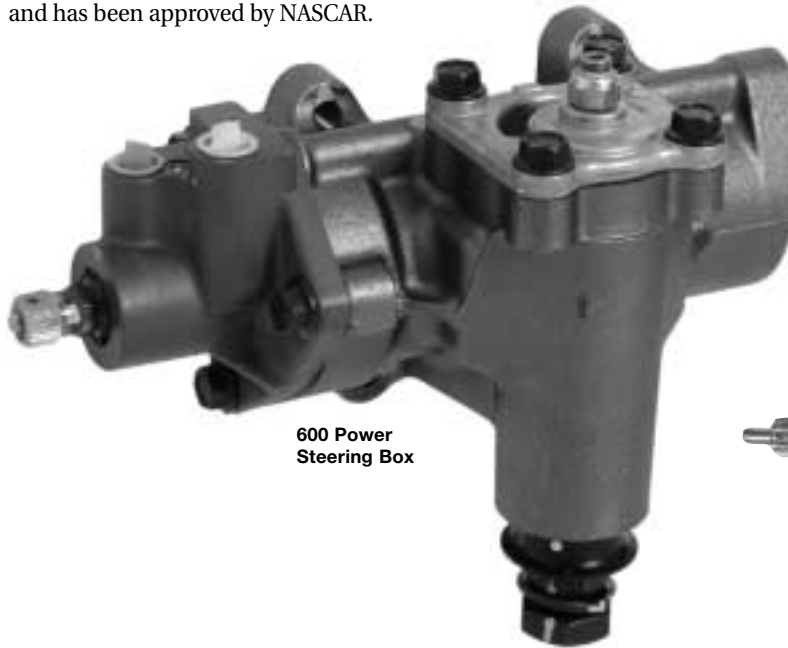
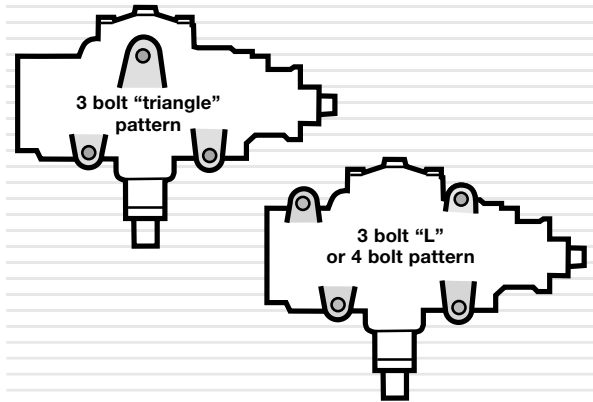
We have a wide selection of brackets to mount late-model steering boxes to the frames of older applications. Brackets either bolt-on or weld-on.



Power Steering Boxes and Pumps

New 600 Series "NASCAR" Gear

We now offer the "New Generation" 600 series steering gear from Delphi Saginaw. This gear is a new design, which is lighter, stronger and more durable than its older brother, the 700 gear. It is available with a 16:1, 14:1 or 12.7:1 ratio. The gear has a 3/4" diameter spline for easy hook up, the same output spline and the same mounting pad bolt pattern as a 700 gear. The mounting pattern accommodates both 3 bolt "triangle" pattern and the more common 3 bolt "L" shape and standard 4 bolt. Please call for more details. The 600 gear is 5 pounds lighter than a 700 gear and has been approved by NASCAR.



600 Power Steering Box

600 POWER STEERING BOX

Description

800209	New Saginaw 600 P/S Box, 12.7:1 ratio
800208	New Saginaw 600 P/S Box, 14:1 ratio
800207	New Saginaw 600 P/S Box, 16:1 ratio



605 Power Steering Box

GM Saginaw 605 Power Steering Box

The 605 is used in many applications where space is a concern. The smallest power steering box from Saginaw has approximately a 16:1 constant ratio. Why waste your time and trouble getting a unit out of the junkyard that might be shot, when you can get one from Borgeson with a guarantee.

Saginaw 700 Variable Ratio Power Steering Box

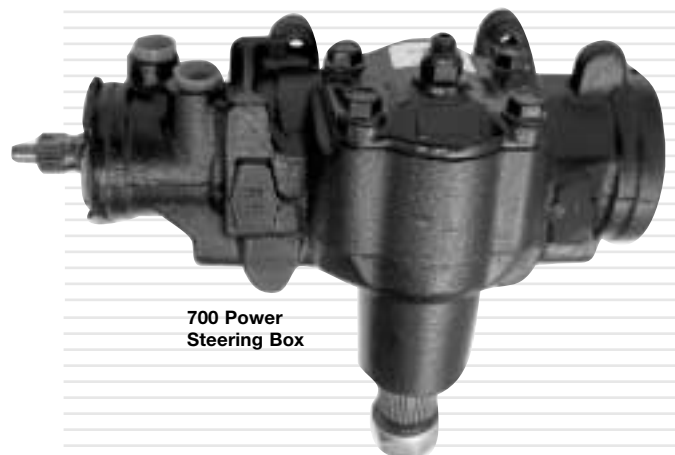
Brand new OEM variable ratio boxes are available. Enjoy the benefits of a quick ratio for easy parking and low speed cruising, plus the benefit of a slower ratio for highway driving. All Mullins boxes have a 3 year warranty.

See page 12 for brackets

605/ 700 POWER STEERING BOXES

Description

800100	Remanufactured Saginaw 605 P/S Box, 3/4-30 flare
800205	New Saginaw 700 P/S Box Variable Ratio, 3/4-30 O-ring



700 Power Steering Box

Power Steering Pumps & Accessories



Chromed
Self-Contained
GM Pump

Self-Contained Saginaw GM Power Steering Pump

These self-contained power steering pumps are available with either steel or aluminum pulleys. Remanufactured to OEM specs. Brackets are available for most popular applications.

Now available with a show winning chrome finish.



OEM Black
Self-Contained
GM Pump

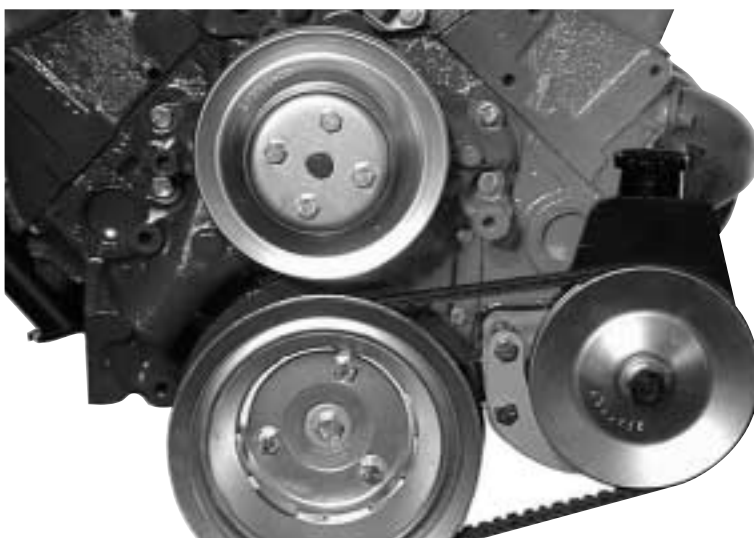
GM SELF-CONTAINED PS PUMP & BRACKETS

Part #	Description
800310	Remanufactured with Keyway
800311	Remanufactured Chrome with Keyway
800312	Remanufactured with Keyway Preset for Mustang Pressure
800313	Remanufactured Chrome with Keyway Preset for Mustang Pressure
802400	SBC/short water pump, Steel P/S Pump Bracket
802402	SBC/long water pump, Steel P/S Pump Bracket
802403	BBC/short water pump Steel P/S Pump Bracket
802404	SBC/long water pump, Steel P/S Pump Bracket (55-57 Chevy, front motor mount)
899001	Pressure Reducing Kit - GM Pump to Ford Rack and Pinion
801001	P/S Pump Pulley, Steel 2-Row with Keyway
801101	P/S Pump Pulley, Aluminum 1-row

IMPORTANT NOTE: All GM power steering pumps generate approximately 1,000 to 1,200 PSI of line pressure. This is compatible with GM steering boxes and GM rack and pinion units. If these pumps are used with a Mustang II rack & pinion, the steering will feel too sensitive on the highway. This can be corrected by adjusting the pump's flow control valve to generate the proper pressure for the Mustang rack.

GM Power Steering Pump Brackets

These brackets mount the GM self-contained power steering pumps low on the block for a compact installation and good looks. Available for small and big block Chevs with short or long water pumps. Uses existing bolt holes. Includes hardware.



Power Steering Pump Flow Valve Kit

You can adjust line pressure in GM self contained or remote-style pumps to be hydraulically compatible with Mustang II rack & pinion. The kit includes instructions, 6 shims, O-ring for nut union and a tool to hold unit in vise while installing shims.

Power Steering Pumps & Hose Kits

GM Power Steering Pumps

Power Steering Remote Pump Mounting Kit

Type-2 kits are for V-belt drives and type-3 for serpentine small and big block Chevy applications. Pump mounting kit includes: bracket, pulley and adjuster bar (pump not included).

Power Steering Remote Pump

New aluminum pump made for us by GM for street rod and custom applications. When ordering, specify Ford or GM steering box or rack and pinion. Choose slip-on low return hose end or AN fitting.



GM REMOTE PUMP MOUNTING KIT

Polished	Description
800500	For Small Block Chevy Type 2 System
800501	For Small Block Chevy Type 3 System
800502	For Big Block Chevy Type 2 System
800503	For Big Block Chevy Type 3 System



Polished Billet Power Steering Pump Remote Reservoir

Beautifully machined billet aluminum power steering reservoir. Classy, sleek design with O-ring sealed cap. Tapped for standard rubber hose fitting or AN fitting. Mounting bracket included.

REMOTE RESERVOIR

Polished	Description
800600	P/S Remote Reservoir/Billet Alum./Polished w/Bracket

GM ALUMINUM REMOTE PUMP

Unpolished	Polished	Description
800301	800302	GM psi, Slip on end
800303	800304	Preset for Mustang psi, Slip on end
800305	800306	GM psi, AN end
800307	800308	Preset for Mustang psi, AN end

Power Steering Hose Kits

One of the biggest hassles doing any work with power steering is coming up with custom hoses for your project. The local hydraulic hose place can probably braze some fittings together for you, but you know what that will look like!

BORGESON can plumb your project with these OEM rubber or braided stainless steel hose kits. We have the equipment to assemble any type factory swedged hose fitting and hose to your specifications. We have standard numbers to fit most projects or we can custom build hoses to fit almost anything if you fill out our spec sheet.

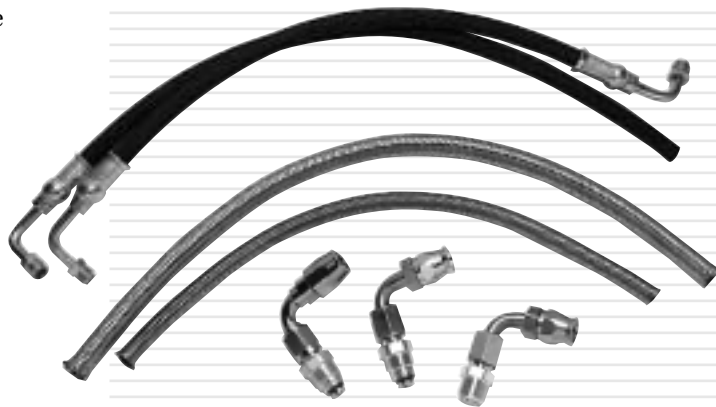
The braided stainless steel hose kits use a high-pressure, teflon lined, hydraulic fluid resistant hose on the high-pressure side .

Common hose kits:

- 2pc GM self-contained pump to 74-78 Mustang rack
- 2pc GM self-contained pump to 79-97 Mustang rack
- 2pc GM self-contained pump to GM box
- 2pc & 3pc Custom.

Custom Made OEM Style Rubber Hose Kits

We have the equipment to assemble any type factory swedged hose fitting and hose so we have many popular GM, Ford and Chrysler standard applications in stock that may fit your project. We can also custom assemble whatever you need. Hose kits include fittings and any necessary mounting hardware as shown.



HOSE KITS

Rubber	Stainless	Description
925101	925201	2 Pc, GM Pump-74-78 Mustang Rack
925102	925202	2 Pc, GM Self-Contained Pump to 79-97 Mustang Rack
925103	925203	2 Pc, GM Self-Contained Pump to GM Box
925104	925204	3 Pc, Custom*
925105	925205	2 Pc, Custom*

*(Completed spec sheet must be attached)

Steering Accessories



Black Steel Pulleys

Genuine GM steel pulleys available for small block Chevys with the short water pump. Two row water pump, two or three row crank and two row keyed power steering pump pulleys are available.



Billet Aluminum Power Steering Pulleys

Polished billet aluminum pulley for self-contained power steering pump.

PULLEYS	
Part #	Description
801100	Polished Mullins Serp-Fit Aluminum Pulley Converts A/C Compressor
801001	GM 2-Row P/S Pulley, Steel, Keyway
801004	GM 2-Row W/P Pulley, Steel, SBC, SWP
801002	GM 2-Row Crank Pulley, Steel, SBC, SWP
801003	GM 3rd Row Crank Pulley, Add to 2-Row
801101	Billet Aluminum Polished P/S Pulley, 1-Row, Keyway
801102	Billet Aluminum Polished P/S 4-5/8" Pulley, 1-Row, Keyway



Mullins Serp-Fit Pulley Adapter

This 6061-T6 billet aluminum piece allows you to convert your existing Sanden 508 compressor V-belt pulley to the serpentine belt system. The two-piece design bolts right over the existing V-belt pulley. This pulley saves the cost of a new compressor or, at the minimum, retrofitting a coil and clutch pulley assembly and it matches the look of other aluminum pulleys.

PITMAN ARMS AND NUTS	
Part #	Description
122/525/605, 800 GM	
806001	122/525/605 Stainless (6-1/4" between centers)
806002	122/525/605 Stainless Polished (6-1/4" between centers)
806003	122/525/605 Bendable Steel Flat (6" between centers)
806005	Used OEM 55-57 Chevy*
806008	Used OEM 800*
806009	Used OEM Misc*
806016	P&J, 122/525/605 Steel, Flat, Bendable (7" between centers)
806017	P&J 122/525/605 Chrome, Flat (7" between centers)
Vega/140	
806010	P&J, Steel, Flat, Bendable
806011	P&J, Chrome, Flat
806012	P&J, Steel, Pre-Bent
806013	P&J, Chrome, Pre-Bent
806004	OEM 140*
Mustang	
806006	Used OEM Mustang 1**
806007	Used OEM Mustang 1-1/8**
806014	P&J, 1-1/8" Sector, Steel
806015	P&J, 1-1/8" Sector, Chrome
*Cleaned, Inspected and Painted	



Pitman Arms

Made of cast iron, forged steel, chromed steel, stainless steel or steel plate depending on the application. Cleaned, inspected and painted used OEM units are also available.

PITMAN ARM NUT	
Polished	Description
806100	Polished SS Pitman Nut 3/4 x 16 fits Saginaw 140 & 1" Mustang
806101	Polished SS Pitman Nut 7/8 x 14 fits Saginaw 525 & 1-1/8" Mustang

Stainless Steel Pitman Nuts

Polished stainless steel with stainless washer. Specify 3/4" or 7/8" sector shaft.



Steering Conversion Kits

Power to Manual Steering Conversion Parts for GM Passenger Cars

A great way to go if you want to shed weight and free up some extra horsepower (and build up your arms too). We only use the GM 525 box. The Vega 140 steering box is not adequate for mid-size cars. The GM 525 uses a 3/4"-30 input shaft. Quick ratio steering boxes are also available.

GM PASSENGER CAR CONVERSION PARTS	
Part #	Description
Each application is different. Please call for the correct part numbers.	

Manual to Power Steering Conversion Parts for GM Passenger Cars

If you want to add power steering, we have all the parts you'll need: the right steering box, pitman arm, OEM flex joint, power steering pump, custom hoses and brackets. Variable ratio boxes are also available.



3
year
Warranty

'58-64 Chevy Power Steering Conversion

Now you can easily replace the leaky, numb feeling, old ram assembly and control valve power steering with a modern GM 605 power steering box. This compact power steering box bolts right in with the special bracket and hardware. The original pitman arm can be used with the new box. If the car originally had power steering, you must replace the P.S. drag link with a manual drag-link or use the drag-link adapter below. 605 boxes use a 3/4"-30 spline and have an approx. 16:1 ratio. This conversion requires a special pump pulley for clearance.

To use the original steering column, order a 18" shaft and u-joint or a 16" shaft and vibration reducer. The new shaft will use the original column coupler.

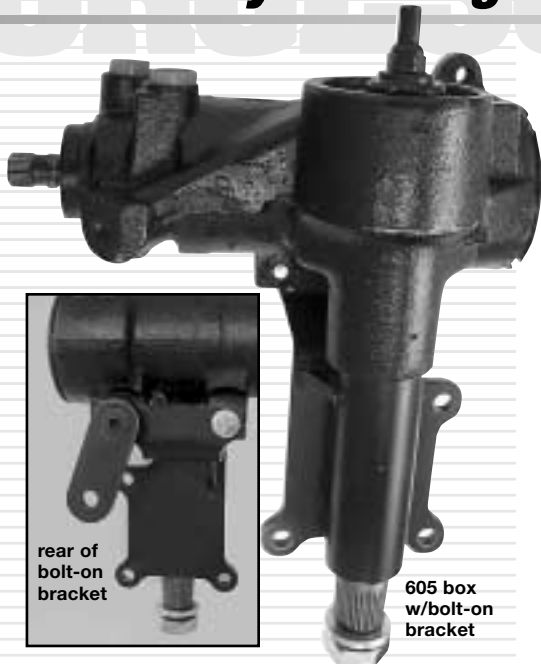
'58-64 Drag-Link Adapter

This adapter must be used when converting a power steering equipped '58-64 Chevy to a new GM 605 system. It allows the original power steering drag link and pitman arm to be used with the new box. Otherwise, you must replace the original drag link with one from a manual steering car.



'58-64 CHEVY CONVERSION PARTS	
Part #	Description
990007	Drag Link Adapter
805001	Mounting Bracket
800100	605 Power Steering Box
401692	16" Splined Shaft (steel)
033431	Vibration Reducer U-Joint (steel)

'55-57 Chevy Steering Components



rear of bolt-on bracket

605 box w/bolt-on bracket

55-57 CHEVY POWER STEERING CONVERSIONS

Part #	Description
800102	Bolt-In 605 P/S Conversion Box
800103	Weld-In 605 P/S Conversion Box for Seamed Frame
800104	Weld-In 605 P/S Conversion Box for Seamless Frame
990001	Drag Link Adapter
053149	Rag Joint -Modify 57 Chevy Steering Column Shaft for DD Rag Joint
053134	Rag Joint -for 57 Chevy Replacement Shaft (990008) Modified for use with Splined Rag Joint
053152	Rag Joint- for use with ididit Column
909011	Column Floor Mount Plate w/Machine Finish Ring
909012	Column Floor Mount Plate w/Polished Ring
925103	Hose Kit, Rubber
925203	Hose Kit, Stainless
990008	55-57 Chevy Modified Original Steering Shaft, Splined



Get rid of that old leaky ram assembly and control valve...

Bolt-On 605 Conversion

Vastly improve the steering feel of your classic Chevy with our new bolt-on GM 605 conversion kit. The 605 is GM's most compact power steering box and works great in the limited space available. The extended sector shaft is a sealed separate assembly with its own lubrication. The heavy-duty bracket bolts to the original three mounting holes in the frame and utilizes a second strap on the outside of the frame to stiffen the box. The original pitman arm can be used with the new box.

Weld-On Conversion

Same conversion as the bolt-on assembly except the upper bracket welds to the frame. The lower bracket bolts to the three original steering box bolt holes on the frame. Specify whether your car has the seamed or seamless style frame.



605 box with weld-on bracket

'55-57 Drag-Link Adapter

This adapter must be used when converting a power steering equipped '55-57 Chevy to a new GM 605 system. It allows the original power steering drag link and pitman arm to be used with the new box. Otherwise, you must replace the original drag link with one from a manual steering car.

Power Steering Conversion Flex Joints

The custom OEM style flex joints are designed to mate a '55-57 Chevy with original or custom column to the 605 conversion above.

'55-57 Chevy Pivoting Aluminum Floor Mount

Late-model steering columns are harder to mount in Classic Chevys because of the large irregular shaped hole in the firewall. This plate bolts to existing bolt holes in the floor and securely and neatly mounts the bottom of the column. Polished or machined finish center ring swivels for easy alignment. For 2" diameter GM or after market columns.

'55-57 Chevy Hose Kits

Stainless Steel or OEM style 2-piece rubber hose kits are available for late model power steering conversions with self-contained pumps. Remote style pumps use 3-piece hose kit that must be custom made for each application. Call for details.

'55-57 Chevy Steering Column Shaft

Use this shaft if you want to convert to late model power steering but want to use the original steering column. With this shaft, you don't have to cut up the original steering box and shaft. The shaft is splined to accept the factory style flex joint shown above. No other shafting or joints are needed.

'55-'57 Chevy Steering Components

55-'56 Chevy Gauge Dash Insert

This billet aluminum dash insert has a clear anodized machined finish. The insert accepts Classic Instrument's speedometer and quad gauges and fits directly into the original instrument bezel. Equipped with LED turn signal and high beam indicators. LED inserts for 3 or 4 speed automatics fit in the original shift indicator window (electronic remote shift indicator kit required, please inquire).

A matching cover for the dash speaker grille is also available.



ididit Tilt Steering Column

These columns are a direct bolt-in for the classic '55-'57 Chevys. They feature turn signals, 4-way flashers, full tilt and come with a 3/4" x 36" splined shaft on column shift models and 1" DD on floor shift models.



55-57 CHEVY

Part #	Description
990002	55-56 Chevy Aluminum Dash Insert
990003	55-56 Chevy Mullins Shift Indicator Kit, 3 Speed
990004	55-56 Chevy Mullins Shift Indicator Kit, 4 Speed
990005	55-56 Chevy Mullins Blank Shift Indicator
990006	55-56 Chevy Speaker Cover, Aluminum, Ball Milled

'55-'57 Chevy Manual Steering Boxes

BORGESON offers professionally remanufactured original steering boxes for '55-'57 Chevy cars. Steering boxes are available with the original long input shafts or short input shaft for use with aftermarket columns. Steering boxes are also available with stock 22:1 ratio or a quick steer 16:1 ratio. All Mullins boxes have a 3-year warranty.



55-'57 Chevy Steering Billet Side Covers

"Dress-up" side cover with a radiused edge design. Made from billet aluminum with your choice of polished or machined finish. Includes stainless steel fasteners and gasket.



55-57 CHEVY MANUAL STEERING BOXES

Part #	Description
920012	55-57 Chevy, Remanufactured Original
920013	55-57 Chevy, Quick Steer (4 Turn)
920014	55-57 Chevy, Short Input Shaft
920015	55-57 Chevy, Quick Steer, Short Input (4 Turn)
921005	55-57 Chevy, Steering Box Side Cover

BORGESON

OEM Manual Steering Boxes for Restorations

'65-70 Ford Mustang

Professionally remanufactured original steering boxes with either long or short input shafts. Specify 16:1 or 20:1 steering ratio and 1" or 1-1/8" sector shaft diameter. All remanufactured boxes have a 3-year warranty.

REMANUFACTURED MUSTANG MANUAL STEERING BOXES

Part #	Description
920016	65-66, 4 Turn Ratio, 1" Sector Diameter, Long Input
920017	65-66, 5 Turn Ratio, 1" Sector Diameter, Long Input
920018	67-70, 4 Turn Ratio, 1" Sector Diameter
920019	67-70, 4 Turn Ratio, 1-1/8" Sector Diameter
920020	67-70, 5 Turn Ratio, 1" Sector Diameter
920021	67-70, 5 Turn Ratio, 1-1/8" Sector Diameter



'66-77 Ford Bronco Manual Box

Professionally remanufactured and held to very rigid standards. This box carries BORGESON's standard 3-year unlimited mileage warranty.

'62-75 Dodge and Plymouth Manual Box

Professionally remanufactured original steering boxes have a 24:1 steering ratio and a aluminum housing. All remanufactured boxes have a 3-year warranty.



REMANUFACTURED MANUAL STEERING BOXES

Part #	Description
920022	68-82 Corvette Box
920023	68-78 Chevy Pick Up, 1/2 Ton, 2 WD
920031	66-77 Bronco
920032	62-75 Dodge

'68-83 Corvette

Mullins offers professionally remanufactured original steering boxes for '63-83 Corvettes. The steering box comes with the standard 16:1 ratio. All Mullins Boxes have a 3-year warranty.



Manual Steering Boxes/ Mustang Shaft Assemblies

'55-57 Chevy Manual Steering Boxes

Mullins offers professionally remanufactured original steering boxes for '55-57 Chevy cars. Steering boxes are available with the original long input shafts or a short input shaft for use with aftermarket columns. Steering boxes are also available with the stock 22:1 ratio or a quick-steer 16:1 ratio. All Mullins steering boxes have a 3-year warranty.

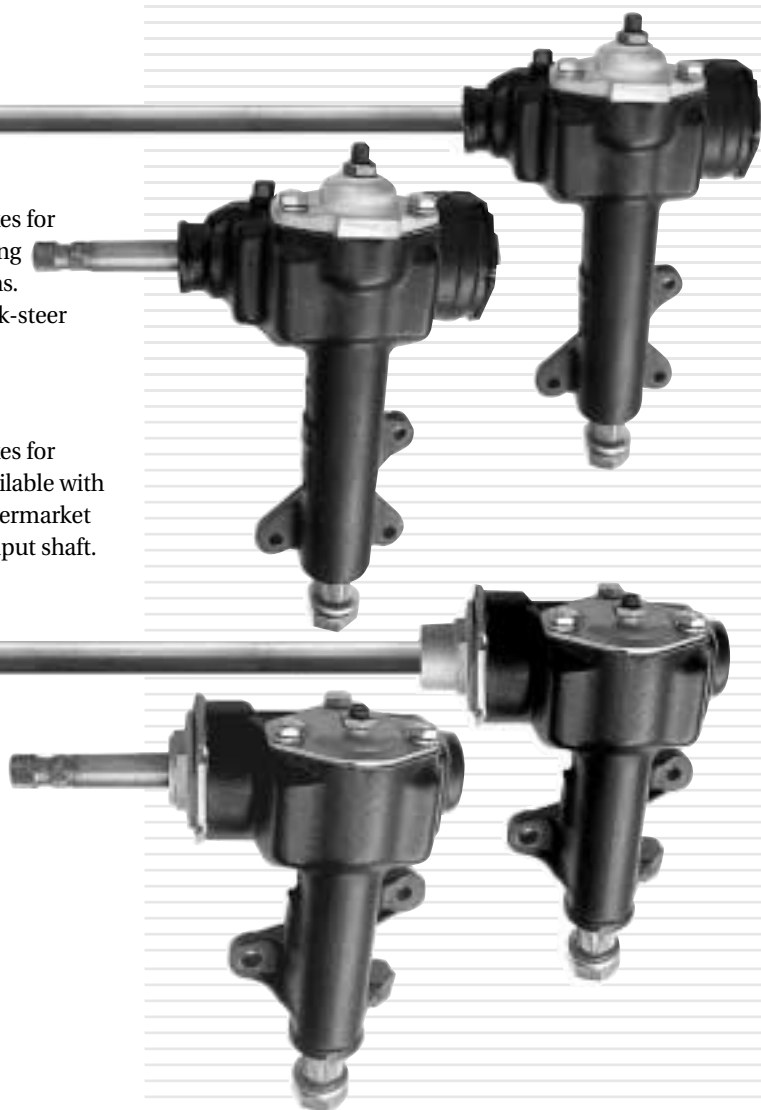
'63-67 Chevy II

Mullins offers professionally remanufactured original steering boxes for '63-66 and '67 Chevy II cars. For '63-66, the steering boxes are available with the original long input shafts or a short input shaft for use with aftermarket columns. The '67 steering box is available with the original short input shaft. All Mullins boxes have a 3-year warranty.

55-57 CHEVY MANUAL STEERING BOXES	
Part #	Description
920012	55-57 Chevy, Remanufactured Original
920013	55-57 Chevy, Quick Steer (4 Turn)
920014	55-57 Chevy, Short Input Shaft
920015	55-57 Chevy, Quick Steer, Short Input (4 Turn)
990008	55-57 Chevy, Steering Column Shaft, modified
921005	55-57 Chevy, Steering Box Side Cover

CHEVY II/NOVA MANUAL STEERING BOXES

Part #	Description
920024	63-66 Chevy II
920025	67 Chevy II
920026	68-72 Chevy II



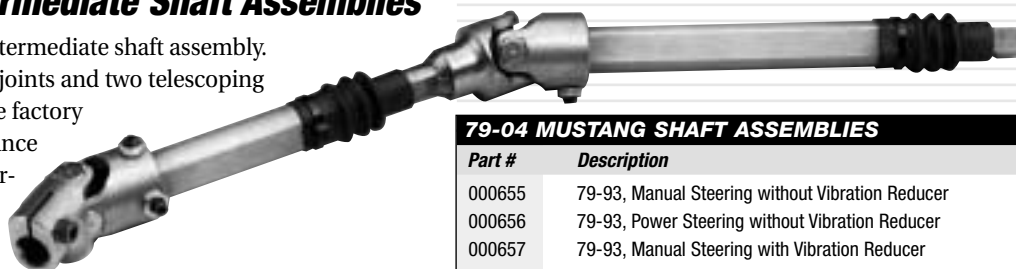
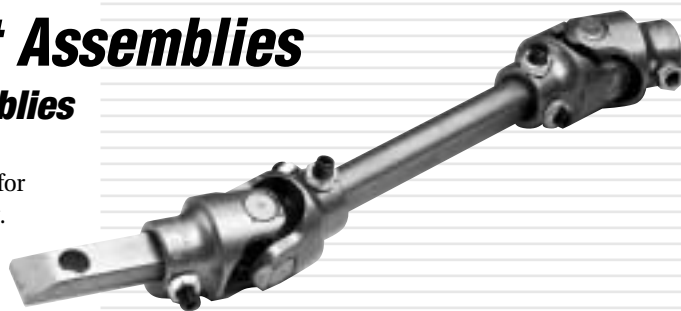
Replacement Mustang Shaft Assemblies

'79-93 Mustang Intermediate Shaft Assemblies

Designed to work with the rack and pinion of the '79-93 Mustang, the BORGESON assembly will give tight handling and a great positive feel for the road. Assemblies are available for both manual and power steering. A vibration reducer/u-joint combination assembly is also available to help take vibrations out of the steering system.

'94 & up Mustang Intermediate Shaft Assemblies

This assembly replaces the OEM intermediate shaft assembly. It consists of two needle bearing u-joints and two telescoping shaft assemblies. By eliminating the factory "rag joint", additional header clearance is gained. The precision needle bearing u-joints give a great positive feel to the steering with no backlash or radial play. The assembly is also available with a vibration reducer/u-joint combination.



79-04 MUSTANG SHAFT ASSEMBLIES

Part #	Description
000655	79-93, Manual Steering without Vibration Reducer
000656	79-93, Power Steering without Vibration Reducer
000657	79-93, Manual Steering with Vibration Reducer
000658	79-93, Power Steering with Vibration Reducer
000650	94-04 Rack to OEM Column without Vibration Reducer
000651	Rack to OEM Column with Vibration Reducer

BORGESON

Replacement Truck Steering Shafts

Full Size Dodge Trucks

Full size Dodge Pickups and Ramchargers have a type of steering coupler that can show signs of wear in as little as 4000 miles, depending on how the truck is used. This wear, which causes play in the truck's steering, is even more noticeable if your truck is used for plowing, towing or if oversized tires have been installed. Replacing the worn steering shaft with another OEM shaft only gives you a temporary fix, but BORGESON has engineered replacement steering shaft assemblies with precision needle bearing u-joints that will probably out last your truck.

NEW! 1979-1993 Dodge Two Joint Extreme-Duty Steering Shaft Assemblies

This BORGESON replacement for '79-93 Dodge trucks eliminates both the factory flex joint and the rag joint with a second u-joint. Use this assembly if you use your truck for very rough off-roading and worry about the rag joint failing. *You must verify that the rag joint flange can be removed from the column shaft before ordering.*

1979-1993 Dodge Full Size Trucks

This BORGESON replacement assembly incorporates a needle bearing u-joint, a flanged end to accept the OEM rag joint, and a telescoping shaft. The telescoping shaft is a safety feature not found in the stock OEM assembly and it will accommodate aftermarket body lift kits.

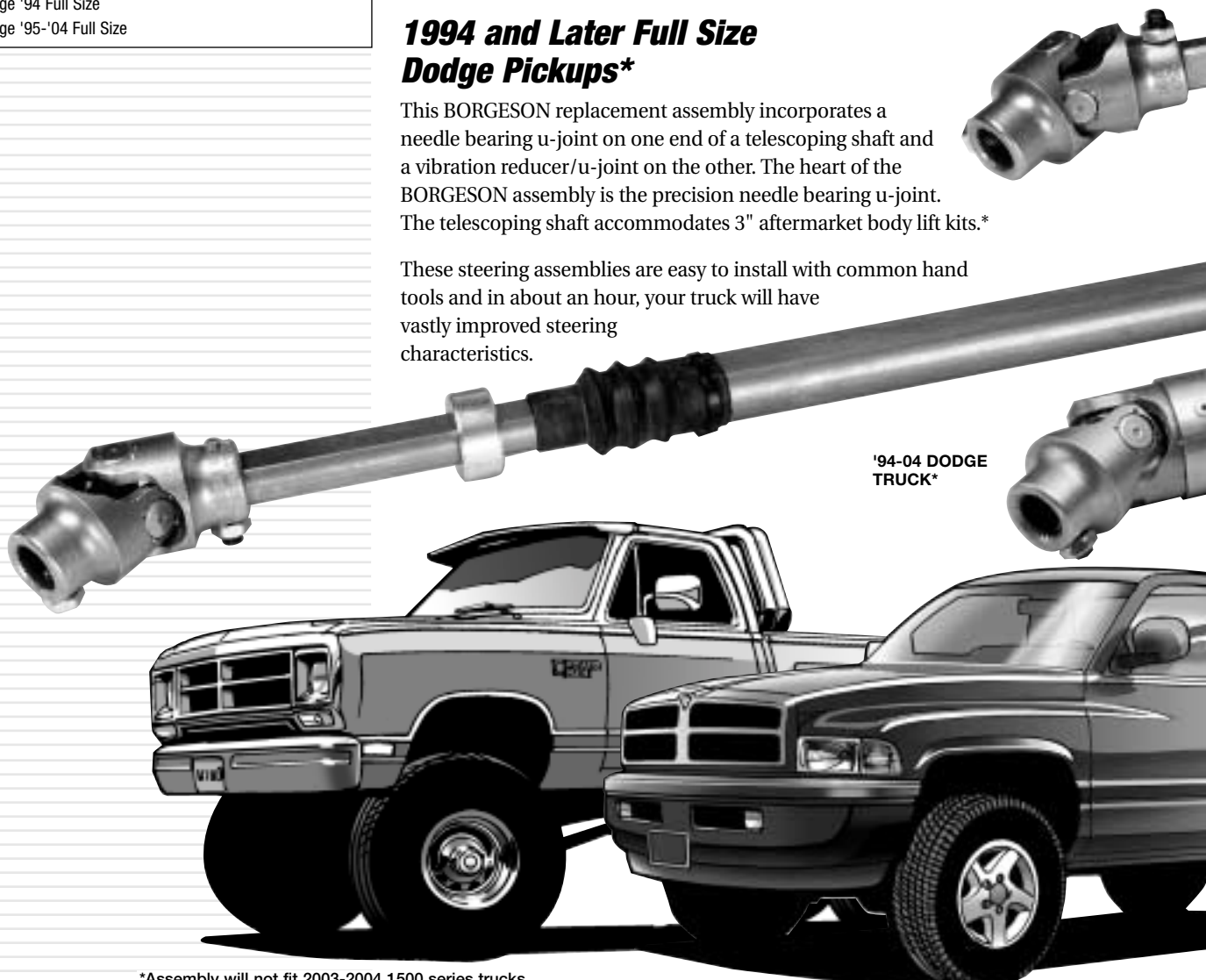
1994 and Later Full Size Dodge Pickups*

This BORGESON replacement assembly incorporates a needle bearing u-joint on one end of a telescoping shaft and a vibration reducer/u-joint on the other. The heart of the BORGESON assembly is the precision needle bearing u-joint. The telescoping shaft accommodates 3" aftermarket body lift kits.*

These steering assemblies are easy to install with common hand tools and in about an hour, your truck will have vastly improved steering characteristics.

DODGE PICK-UP & RAMCHARGER SHAFT ASSEMBLIES

Part #	Description
940	Dodge '79-'93 Full Size
941	Factory replacement rag joint rubber disc for #940
943	'79-'93 Extreme Two-Joint system, All Models
945	Dodge '94 Full Size
950	Dodge '95-'04 Full Size



*Assembly will not fit 2003-2004 1500 series trucks

Replacement Truck Steering Shafts

Full Size Ford Trucks

Full size Ford pickup and Bronco steering assemblies will wear out over time. Severe use such as towing, plowing, and off-roading speeds up this wear so that within a few years, there is noticeable play in the steering system.

In many cases, the OEM replacement steering assemblies are only available in wrecking yards. BORGESON manufactures bolt-in replacement assemblies for most model years of pickups and Broncos. BORGESON incorporates a telescoping shaft that adds a measure of safety to the steering system. Ford has had many length variations over the years and sometimes within model years. BORGESON has accommodated this by making an assembly which can be trimmed down to get the exact fit for your application. This added length will also accommodate aftermarket body lifts.

BORGESON also offers an upgrade to our standard assembly that incorporates a vibration reducer that greatly reduces the road shock felt in the steering wheel.

FORD & BRONCO FULL SIZE TRUCK SHAFTS

Part #	Description
970	Ford '70-'79 Full Size
975	Ford '70-'79 Full Size – with Vibration Reducer Upgrade
977	Ford '78-'79 F150, F250, Bronco – with Rag Joint
980	Ford '80-'87 Full Size
985	Ford '80-'87 Full Size – with Vibration Reducer Upgrade
941	Factory replacement rag joint rubber disc for #977

FORD TRUCK

'79-93 DODGE TRUCK

See
page 20
for Bronco
Boxes



BORGESON

Replacement Truck Steering Shafts

1972-86 Jeep CJ

Jeep's original steering shaft assembly was not designed for the added stress of body lifts and oversize tires. Either of these can cause premature wear of the steering shaft assembly. BORGESON has developed a replacement telescoping shaft assembly with two precision needle bearing u-joints.

The stock CJ steering system never had any type of dampening between the steering box and column so a lot of road shock was transmitted to the steering wheel. BORGESON offers an upgraded shaft assembly that includes a vibration reducer, similar to the one used in the newer YJ, to dampen the road shock.

The steering assembly is easy to install with common hand tools. Once installed, you will experience much tighter and more responsive steering. The steering will feel better than the original system ever did.

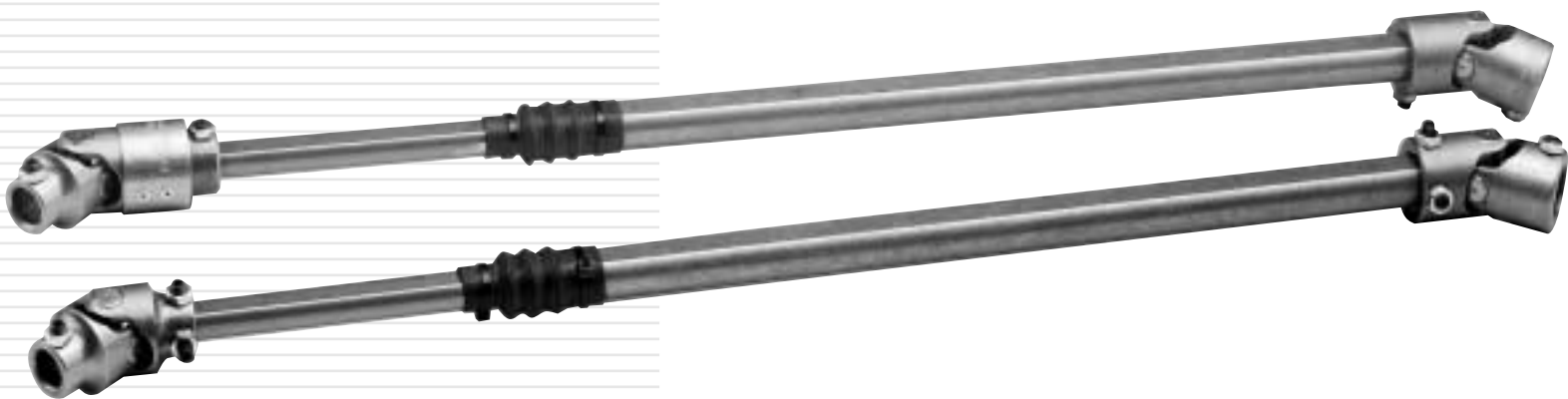
JEEP CJ & WRANGLER SHAFT ASSEMBLIES

Part #	Description
903	Jeep '72-'75 CJ-Manual
904	Jeep '72-'75 CJ-Power
905	Jeep '76-'86 CJ-Manual
910	Jeep '76-'86 CJ-Power
920	Jeep '76-'86 CJ-Power – with vibration reducer upgrade
925	Jeep '87-'95 Wrangler – Power & Manual
926	Jeep '87-'95 Wrangler – Power & Manual – w/o vibration reducer

1987-95 Jeep Wrangler

Though much improved over the original design, the newer Jeep Wrangler's steering shaft assembly was not designed for the added load placed on steering components by plowing, towing, body lifts and oversize tires. This added stress on components can cause premature wear of the steering shaft flex joints. BORGESON has developed a heavy-duty telescoping shaft assembly similar to that of the CJ with two precision needle bearing u-joints and a vibration reducer. For vehicles intended for offroad use only, BORGESON offers an assembly without the vibration dampener, which was standard equipment from Jeep.

All Jeep steering shaft assemblies are easy to change without any special tools, and once installed, you will notice much more positive and safer steering. Much better, in fact, than the original ever felt.



**Call about
our new and
remanufactured
Jeep steering
boxes.**



Replacement Truck Steering Shafts

Jeep Cherokee and Wagoneer

Cherokee and Wagoneer assemblies wear out over time. If the truck is lifted, used for towing, or is used offroad, the steering system will wear much quicker. In many cases, OEM replacements are not available for older vehicles. BORGESON has developed bolt-in replacements for many of these applications that are no longer available. The steering assembly can be installed with common hand tools.



JEEP CHEROKEE & WAGONEER SHAFT ASSEMBLIES

Part #	Description
890	1974-83 Cherokee SJ (power steering)
890	1974-91 Wagoneer SJ (power steering)
893	1984-00 Cherokee/Wagoneer XJL
896	1992-95 Grand Cherokee ZJ

1973-94 Chevy and GMC Full Size Trucks

Over time and when used in applications such as towing, plowing, and off-roading, Chevy truck steering shaft components will wear out. Although factory steering shafts for many models are no longer available from General Motors, your worn out steering shafts can now be replaced with BORGESON direct replacement assemblies. Using common hand tools, the BORGESON steering shaft assembly can be installed in about 1/2 hour. Consisting of a telescoping shaft, needle bearing u-joint and a rag joint, the BORGESON heavy-duty truck assembly will fix that loose, wandering steering for good.

Extreme Duty Two-joint Steering Assembly

A two-joint system that eliminates the factory rag joint is also available. You should use a two-joint system if you use your truck for extra heavy-duty off-roading or have a body lift installed.

Remanufactured GM Manual Steering Boxes Now Available



Custom Steering Shaft Assemblies

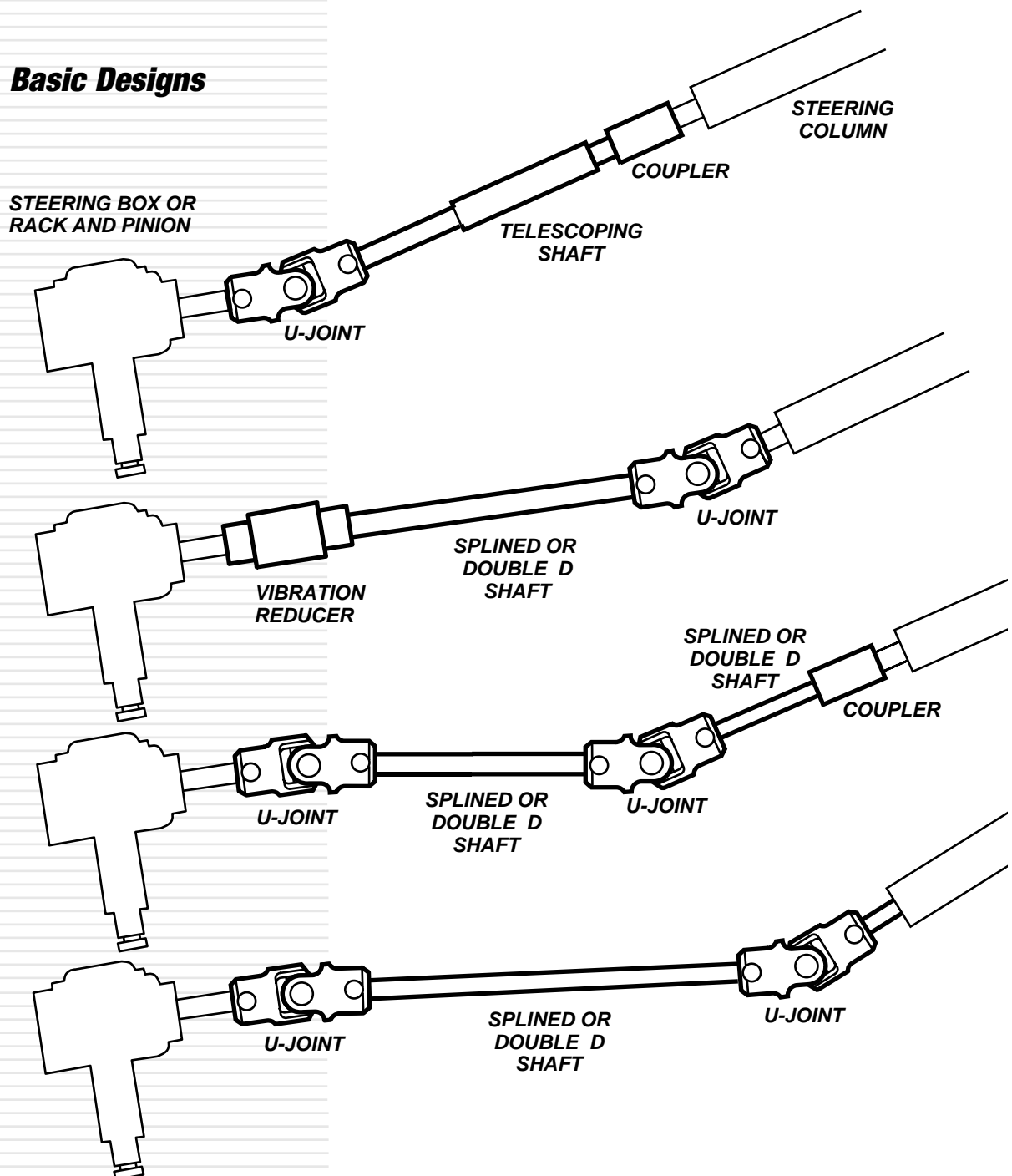
BORGESON can build a custom steering shaft assembly for virtually any type of car, truck or van. If your vehicle is not listed, please call us at **860-482-8283** and our sales and technical staff will be happy to design the appropriate assembly for your application. Since we most likely have the individual components available, with a little information from you regarding spline size and overall assembly length, we will be able to provide the assembly you require.

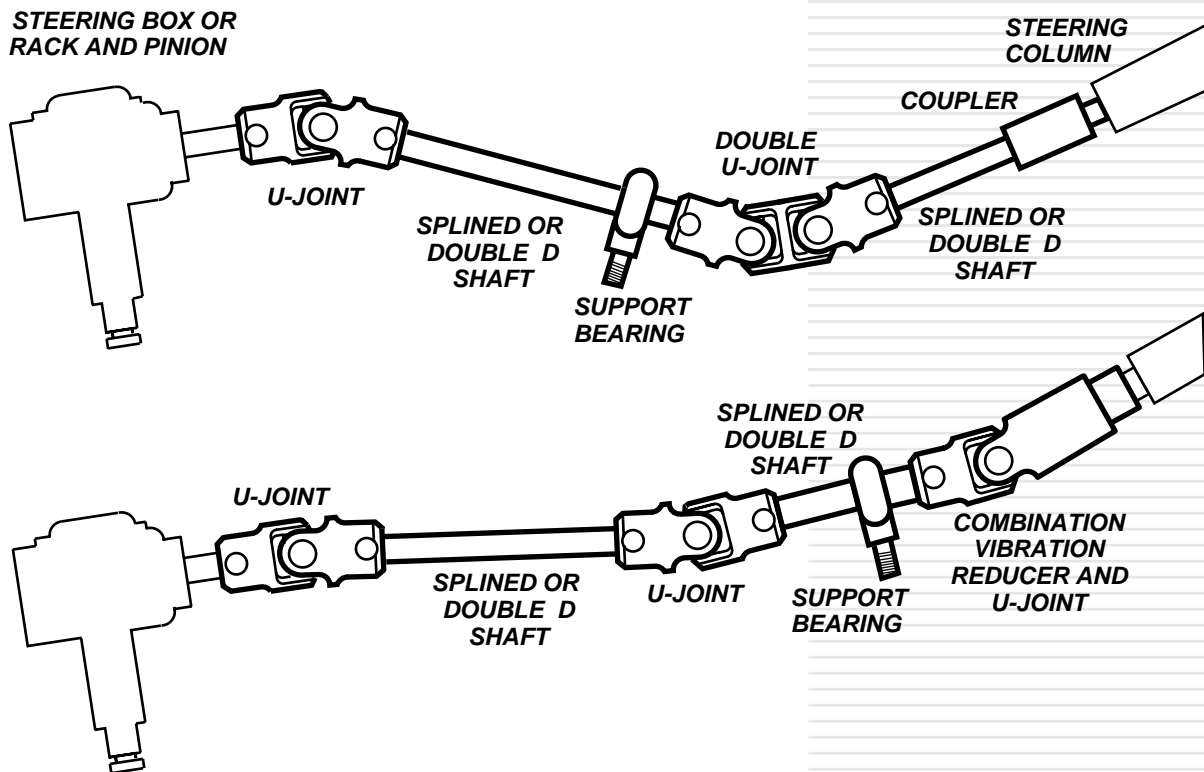
Designing your steering system

Often the steering system is designed late in the building process. We recommend that the steering be mocked up at the time the engine and exhaust components are installed. Positioning of the column, shafts, and u-joints with respect to the engine, exhaust and steering box early on can help in selecting the correct parts. With the wide selection of our u-joints, shafts, and vibration reducers, any system can be designed or modified to result in a car that is not only safe, but a pleasure to drive. Keeping a system simple is the best course, but even a system with up to 10 u-joints can be designed as long as the proper phasing and supports are used. Remember to use a support bearing if more than two joints are used.

Our tech support staff is only a phone call away if you have questions. Their experience can help you design the right system for your vehicle. You can reach us at **860-482-8283** Monday-Friday 7:30 AM to 5:00 PM Eastern Time.

Basic Designs



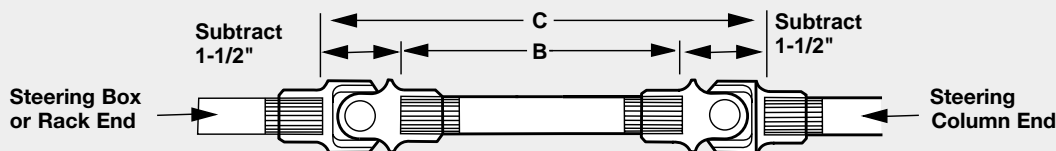


How to:

Determine splined shaft length with two u-joints.

Please keep in mind that we stock stainless and polished stainless shafting in 1/4" increments up to 16".

1. Measure the distance from the end of the column to the box/rack (Dimension C).
2. Subtract 3" from this measurement.
3. Order the next even size shaft (Dimension B).
EXAMPLE: If "C" is 18" —subtract 3" (1-1/2" for each joint). "B" is 15". Order a 16" shaft and trim a total of 1" from the shaft, either from one or both ends.



Determine splined shaft length with one u-joint and u-joint/vibration reducer combination.

1. Measure the distance from the end of the column to the box /rack (Dimension C).
2. Subtract 4" from this measurement.
3. Order the next even size shaft (Dimension B).
EXAMPLE: If "C" is 19" —subtract 4" (1-1/2" for a joint and 2-1/2" for the vibration reducer). "B" is 15". Order a 16" shaft and trim 1" from the shaft, either from one or both ends.

Determine splined shaft length with three or more u-joints.

1. Buy the u-joints first.
2. Install a joint on the column and one on the box/rack.
3. Use dowels or PVC pipe and mock up the system around obstacles.
Order the correct shaft lengths based on dowel/PVC lengths.

Adding a vibration reducer to an existing steering system.

There are various ways of adding a vibration reducer to a system. Because of the difference in shafts, u-joints, racks, boxes, and columns, we recommend you call our technical support staff. We can suggest options that will result in the best steering system for you.

Splines and Irregular Shapes... The Strongest Method

Detroit uses irregularly shaped shafts such as splined or a "Double D" configuration and inserts them into a similarly shaped hole with practically no play and then secures them by staking or clamping. Since steering failures are practically unheard of in modern production cars, one should strongly consider this method as having significant merit.

BORGESON offers splined shafts and joints which give the option of easy disassembly when repairs on the vehicle become necessary. Another advantage is the ability to rotate the shaft in relation to the u-joint in small increments. This makes it easier to position the u-joints in the correct relationship to each other.

A flat should be filed on the splined shaft where the set screw will clamp (figure A). This will prevent damage to the spline and allow for easier disassembly. Always lock the set screw with a lock nut, Loc-Tite or similar product. The shaft must be flush with the inside of the yoke (figure B), not so short that it sacrifices strength or so long that it interferes with the center workings of the joint.

To determine the spline size of a component, measure the outside diameter and count the number of splines. If there is a flat spot on the shaft and some of the splines are missing, (figure C) count halfway around where there are splines and double that number. We need to know how many teeth are in a theoretical full circle. If you have something unusual or you're unsure about measuring the spline, make an impression of it in clay and send it to us.

A "Double D" (figure D) shaft has two large flat spots machined on the shaft that correspond to two flats in the female end of the u-joint. The disadvantage of this style is the lack of adjustability because the shaft can only be rotated 180°. The Double D shaft should have a "dimple" machined on the shaft for the set screw to clamp to (figure D).

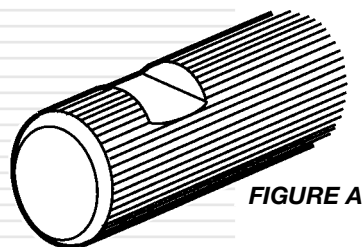


FIGURE A

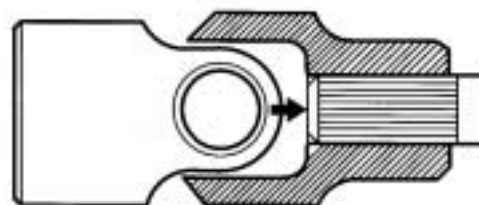


FIGURE B

COUNT THE NUMBER OF SPLINES OF HALF OF THE CIRCUMFERENCE AND DOUBLE THAT NUMBER FOR TOTAL

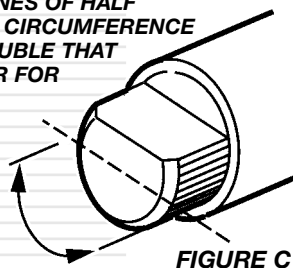


FIGURE C

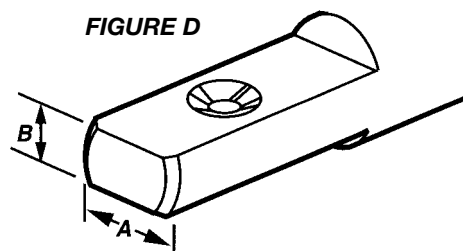


FIGURE D

Pinning

Common practice is to use two 3/16" diameter roll pins in each yoke at right angles to each other and approximately 3/8" apart (figure E). An even stronger connection can be made by using hardened shear pins. Pinning can be used when the shaft can be removed from the vehicle and supported properly when inserting the pins. Driving pins in while the assembly is in the car could cause damage. The major drawback to pinning is that a 3/4" diameter shaft is weakened by 30%, smaller shafts are weakened to an even greater extent.

CAUTION: It is unsafe to pin joints to 3/4" tubing.

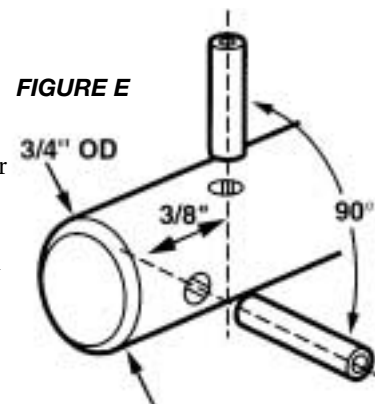


FIGURE E

CAUTION: Shaft Size: BORGESON DOES NOT RECOMMEND USING LESS THAN 3/4" DIAMETER SHAFTS

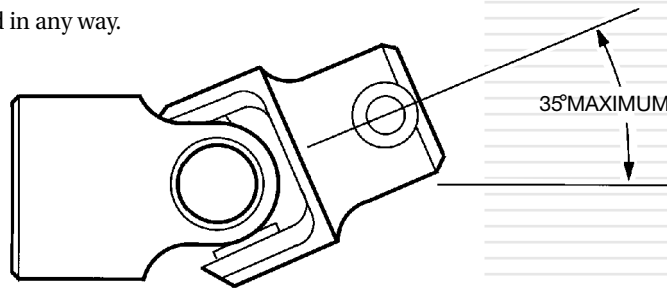
All Borgeson spline and DD shafts are 3/4" diameter. We will not sell a shaft with a smaller diameter due to safety considerations. A 5/8" shaft is 42% weaker than a 3/4" shaft and can be twisted with a 14" steering wheel.

Angle of U-joint Operation

The BORGESON 16 series u-joints will operate smoothly up to 35°. The 16 series double u-joints will operate smoothly up to 70°.

The u-joints must not be altered in any way.

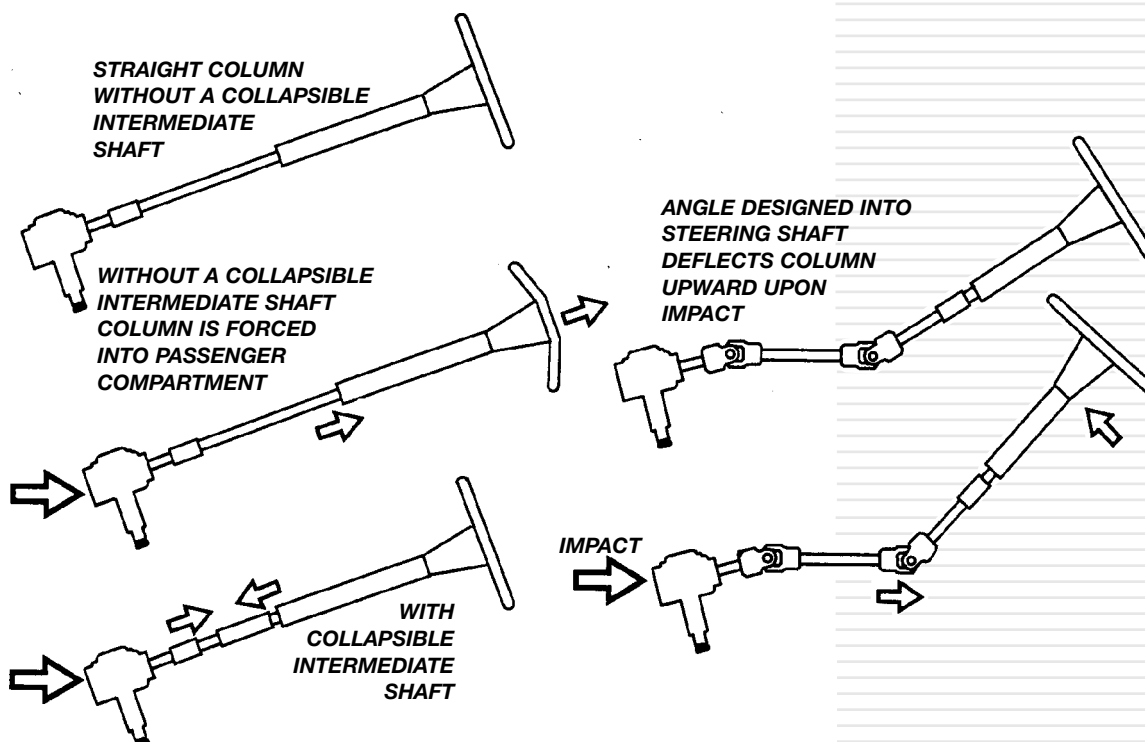
Pin and block style u-joints will operate at 30° smoothly.



CAUTION: Collapsibility

Every steering system should include some means of directing energy away from the driver in the event of a collision.

One method of reducing the chance of this happening is to intentionally design angles into the steering system so that the force of a collision deflects the column away from the driver. A second method is to use the BORGESON Collapsible Intermediate Shaft.



CAUTION: Welding

Welding joints is a common practice in racing, however, it is not a method we at BORGESON would recommend. Hairline cracks, which may be all but invisible to the unaided eye, could cause a weld to fail under severe stress. It may also be illegal in some states to weld steering system components on a car used on the street. Improper grounding can cause damage which will result in the failure of the steering. Overheating, which can occur at relatively low temperatures, can distort the yoke and melt the grease out of the needle bearings or damage the seals. This can prevent the joint from operating freely and it may fail. Cooling a weld too quickly can cause cracks, leading to sudden failure. Also, welding is a permanent connection that makes disassembly almost impossible should it become necessary.

Caution: Welding on steering components is illegal in some states. Check first.

CAUTION: WELDING PLATED MATERIALS CAN CAUSE SEVERE HEALTH PROBLEMS. If welding is the only option, it should only be done by a qualified welder. Remember, YOUR LIFE DEPENDS ON IT.

CAUTION: Keying and Set Screws

Using a key, as is done in many industrial applications, can transmit power effectively from the shaft to the joint. A key, however, is not suitable to take sudden shock (such as from a pot-hole or accident) which can distort or shear the key or shaft keyway. This may cause play to develop in the system or, even worse, failure. It should be noted that in industrial applications, **keys are designed to shear** to prevent damage to expensive components. **In automotive applications a sheared key will cause extensive damage** by causing a loss of control of the vehicle.

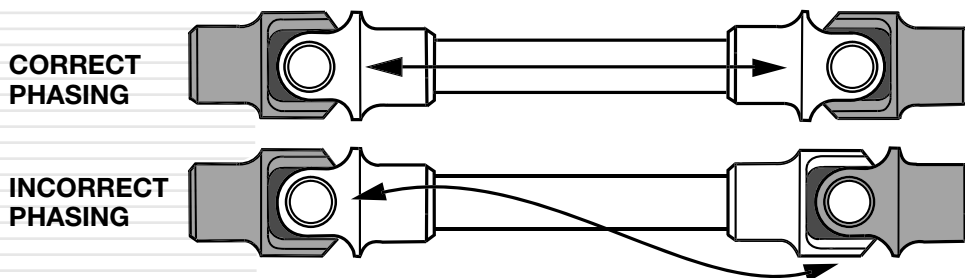
Set screws should never be used to secure smooth bore joints. They should only be used as a method to prevent a splined or "Double D" shaft from disengaging from the joint (an indentation or flat should be made for the set screw on splined or DD shafts).

CAUTION: Do Not Use Flex Cable

Another less common (and definitely not recommended) method of getting from the column to the rack or box is to use flex cabling from a Pinto (this cable is no longer available from Ford). Ford only used these for a couple of years before switching to joints and shafts, which should tell you something. When a heavier engine is put into a larger heavier car, a flex cable is not reliable.

U-Joint Orientation

When two joints are used on a shaft, the forks of the yokes closest to each other should be in line, or "in phase." Premature wear or binding can result if the u-joints are not phased properly. If the u-joints are at a severe angle, even if they are phased correctly, a hard spot in the steering may occur for no apparent reason. If this happens, index the u-joints two or three splines in one direction. The hard spot should disappear or be minimized.



CAUTION: Corvair Steering Boxes

Corvairs were rear-engined cars; this means there was very little weight on the front tires. The steering box used in these cars was a very light duty box. It is not recommended for use in a street rod with the engine in the front. Steering gear failure could cause a severe accident.

CAUTION: Vega Steering Boxes

We also recommend a maximum weight limit of 2500 lbs. for a vehicle using a Saginaw 140 (Vega) steering Box. **We recommend the 525 Saginaw box for vehicles exceeding 2500 lbs.**

Steering Box Adjustment

All Mullins boxes are set at the factory to the proper specifications. Any adjustments of the box beyond that will void the warranty and cause premature wear on the steering box. Please do not try to adjust your steering box. Please contact us if you feel your steering box needs adjustment.

Power Steering Tips

Diagnosing Power Steering Problems

When trying to determine what is causing a problem in your power steering, keep this in mind. If the problem occurs only in one direction, the problem is probably in the box or rack. If the problem is in both directions, it is most likely the pump, dirty fluid or hoses. Be sure there are no kinks or obstructions in your power steering hoses and that they are the right inside diameter for the application.

Dirty Steering System

Before changing any single component of the steering system, inspect the cleanliness of your system. Dirty or black fluid can quickly ruin new steering components. If changing the box or rack, rub your finger on the inside of the reservoir. If it isn't clean, you must flush the pump and hoses with clean fluid before installing new components.

Bleeding Power Steering

All power steering systems are designed to be self-bleeding, but sometimes they need a little help. After installing new components, fill the reservoir and let it sit for a few minutes. Raise the front end of the vehicle and turn the wheels back and forth slowly with the engine off to allow the steering box to draw fluid. Keep the reservoir full. When the fluid level stops dropping, start the vehicle and continue turning the wheels. When the fluid level remains constant the system is fully bled.

Put cardboard under the front tires while testing your steering system. The cardboard will slide on the floor and prevent wearing flat spots on the tires from excessive turning of the wheels while not moving.

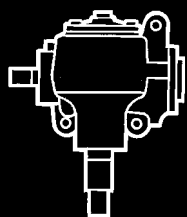
IMPORTANT NOTE: All GM power steering pumps generate approximately 1,000 to 1,200 PSI of line pressure. This is compatible with GM steering boxes and GM rack and pinion units. If these pumps are used with a Mustang II rack & pinion, the steering will feel too sensitive on the highway. This can be corrected by adjusting the pump's flow control valve to generate the proper pressure for the Mustang rack.

Hose Kit Spec Sheet

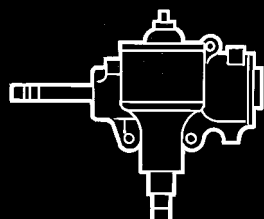
The following information is needed for ordering a custom hose kit.

Hose Type:	Rubber or Stainless Steel
Pump Type:	GM self-contained, GM remote or other (please specify)
If remote pump, reservoir type:	Mullins, March, Street & Perf., Zoops or other (please specify)
Box or Rack Type:	Specify
Hose Lengths:	Specify

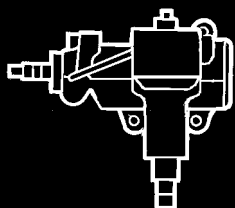
Popular Applications



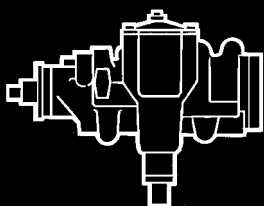
GM 140 (VEGA)



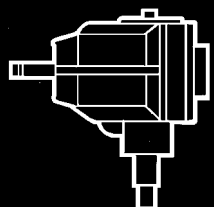
GM 122/525



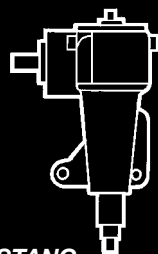
GM 605



GM 800



GM CORVAIR



MUSTANG

Popular Splines And Double D Applications

All Measurements can be $\pm .015"$. Precision measuring equipment should be used.

STEERING COLUMN

Application		Size	Spline Diameter	Splines	Double D Flats
GM Column	Small Spline	3/4-36	.735	36	
	Large Spline	1-48	.985	48	
	Small Double D	3/4" Double D	.750		.550
	Large Double D	1" Double D	.993		.790
Ford Column	Small Spline	3/4-36	.735	36	
	Small Double D	3/4" Double D	.750		.550
	Large Double D	1" Double D	.993		.790
Other Manufacturers	International Column	1-48	.985	48	
	ididit column (aluminum)**	1-48	.985	48	
	ididit column (steel)	1"-Double D	.993		.790
	ididit column (telescoping)	3/4-20	.735	20	
	Mullins Column	3/4-36	.735	36	

STEERING BOXES AND RACKS

Chrysler Box or Rack	Please measure; if 9/16" count teeth					
Chrysler	9/16-17	.562	17			
Chrysler	9/16-26	.562	26			
Chrysler	9/16-36	.562	36			
Chrysler	5/8-36	.625	36			
Chrysler	11/16-36	.687	36			
Chrysler	3/4-36	.735	36			
Chrysler	13/16-36	.820	36			
Chrysler Omni	9/16-26	.562	26			
GM Box Manual	Corvair	5/8-36	.625	36		
	Vega (Model 140)	5/8-36	.625	36		
	Corvette ('63-67)	3/4-30	.728	30		
	Corvette ('68-83)	3/4-36	.735	36		
	('58-64)	3/4-36	.735	36		
	Model 122 ('65-85)	3/4-30 or 3/4-36	.730	30 or 36		
	Model 525 ('86 & later)	3/4-30	.728	30		
	GM Box Power	Model 605 ('78-84)	3/4-30	.728	30	
		Model 800 ('77 & earlier)	13/16-36	.820	36	
		Model 800 ('78 & later)	3/4-30	.728	30	
GM Rack	'79 & Later	5/8-36	.625	36		
	Some Models	3/4-30	.728	30		
	Corvette ('84 & later)	17mm Double D	.670		.570	
	Fiero	17mm Double D	.670		.570	
Ford Box	Manual & Power	3/4-36	.735	36		
Ford Rack	Mustang & Pinto Manual	9/16-26	.562	26		
	Mustang & Pinto Power	3/4-36	.735	36		
	94-later Mustang	3/4-V	.740			
Other Manufacturers	Heidt's Super Ride Rack	9/16-26	.562	26		
	Independent Chassis Rack	9/16-17	.562	17		
	Jaguar & MGB	3/4-48	.750	48		
	Kugel Rack	9/16-26	.562	26		
	Mullins Billet Aluminum	5/8-36	.625	36		
	Woodward Rack	3/4-20	.735	20		
	Nissan	11/16-36	.687	36		
	Pacer (AMC)	Please measure and count splines-Could be either 636, 736 or 836				
	Volkswagen-Rabbit Rack	11/16-40	.687	40		
	VW Rabbit Rack-Diesel	3/4-36	.735	36		

*The 636C is not interchangeable with 636. **Ideal application for our aluminum and polished S.S. Joints. *** Please note: Ford intermediate shafts use a single "D" and two "Double D" configurations. We currently do not offer the single "D" or the tapered "Double D."

SHIPPING INFORMATION

It is our policy to charge only the actual shipping charges. We ship via U.P.S. Ground, 3 Day Select, 2nd Day Air or Next Day Air. On small shipments to the west coast, we recommend 3 Day because it cuts about 3 days in transit and is not much more expensive than the regular ground service.

WARRANTY

All our products are covered by the following warranty:

BORGESON and MULLINS STEERING GEARS will not be liable for personal or property damage caused by the use or misuse of any product that we manufacture or sell. We have no control over installation and/or use of our products. We will repair or replace, at our option, any product found to be defective in either material or workmanship subject to our inspection. Normal wear is excluded from this warranty. Any product that has been abused, altered, or incorrectly installed is not covered. Our sole remedy shall be repair or replacement, no monetary refund will be granted. Any parts used in competition are excluded from this warranty.

RETURN POLICY

It is our policy to accept any inventory product purchased directly from us and currently offered for sale in our catalog for exchange or, at our option, a refund. Non-inventory items will be subject to a 20% restocking charge. If a u-joint does not have a 3/4"-36, 3/4"DD, or a 3/4" smooth yoke on at least one end, it is considered a non-inventory u-joint. Products must be in resellable condition with no paint or alterations. If rework is necessary, the cost of the rework will be deducted from the credit allowed. If a product was purchased from a BORGESON dealer, the return must be handled through that dealer. Before any item can be returned to us, a Return Authorization Number must be obtained from us. COLLECT CALLS OR C.O.D. SHIPMENTS ARE NOT ACCEPTED. The Return Authorization Number must be clearly marked on the outside of the box and paperwork with replacement instructions must be included. Returns must be made within 30 days.

CLAIMS FOR DAMAGE IN SHIPPING

Claims for damaged or lost merchandise are to be made to the freight carrier. If you receive a damaged package or a package that looks like it has been tampered with, make a written note on this to the freight carrier when you sign for receiving the package. A verbal note to the driver is not sufficient. Carefully open and be sure to save the damaged container as visible proof. This is the first thing they will ask to see. Notify the local office of the freight carrier as soon as possible (within 48 hours).

MAINTENANCE AND INSPECTION

The steering system, like the brakes, must be in perfect operating condition at all times. These systems should be checked on a regular basis. Check all moving parts in the system periodically. They should move freely with no play. If play develops, replace worn parts as necessary. Check all set screws, clamp screws and pins for tightness. Welds are especially difficult to inspect by eye, but look for any visible cracks.

One final note: the major car manufacturers have thousands of engineers and billions of miles of past experience and they still have to recall cars to correct engineering mistakes. When an individual builds a car without the benefit of all that experience, the possibility of a malfunction is much greater. Frequent inspection of a non-factory steering system is a small price to pay for possibly saving a life.

Visit us online: www.borgeson.com

**For technical information and to order,
call: 860-482-8283, FAX: 860-496-9320**

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