

## How To Upgrade Steering For Heavy-Duty Use

Do you have a truck with too much play in the steering from rough roads and off-road travel? You can fix the problem with heavy-duty steering components from Borgeson Universal Co. The company offers bolt-in replacement assemblies for most model years of Ford, Chevy and Dodge full-size trucks. Similar components are available for Jeeps and older model cars. Components include steering shafts, remanufactured steering boxes, vibration reducers, couplers, adapters and more.

"OEM type shafts are usually done with low bidder mentality," explains Jeff Grantmeyer, sales manager, Borgeson Universal Co. "Stampings and bearings are not always made to last the life of vehicles, especially if they get heavy use and travel rough roads. All that vibration feeds back to the shaft and creates play in the bearings."

Borgeson has been in business since 1914, specializing in universal joints. Grantmeyer explains that when the company owners got involved in street rodding, they heard from fellow street rodders about poor quality steering shafts.

"We adapted our process for machining universal joints out of 1.5-in. billet steel," says Grantmeyer. "It makes a stronger universal joint, and we can tolerance our yokes to bearings down to 1/1000 of an inch

for radial play. We couple two universal joints to a heavy-duty, telescopic shaft assembly. The telescoping meets safety requirements for collapsibility plus it offers a point to absorb chassis flex."

Grantmeyer says attention to detail "builds a better mousetrap". The assemblies are treated for 350 ft./lb. of torque.

The company also heard about problems 1994 to 2002 Dodge truck owners had with steering box distortion. The distorted casting would allow the shaft to "walk around" in the bottom of the box, creating more play. Grantmeyer warns that a remanufactured box has probably only been resealed to eliminate leaks. However, if the distortion remains, the problem will recur.

"We adapted a Delphi 680 steering box, not used for production vehicles until 2006, as a direct bolt-in box," says Grantmeyer. "This gives us a heavier box with a larger bearing for more support on the shaft."

Borgeson parts are widely distributed at specialty 4-WD shops as well as specialty chains like Summit Racing. They also sell parts direct.

In addition, Borgeson offers a wide variety of power steering conversion kits and components, as well as Saginaw manual steering gears and gearboxes. Borgeson recently bought Saginaw and all tooling,



If you have a truck with too much play in the steering, you can fix the problem with heavy duty steering components from Borgeson. Photos show a replacement steering shaft and steering box.

drawings and manufacturing rights.

"Manual steering gearboxes are largely used for forklifts, airport ground support equipment and some tractors," says Grantmeyer. "We offer it for classic cars and for Chevy trucks from 1968 to 1978 and for Jeeps from 1972 to 1995."

Heavy-duty steering shafts range from

\$198 to \$284. Dodge truck steering boxes range from \$429 to \$509.

Contact: FARM SHOW Followup, Borgeson Universal Co., 91 Technology Park Dr., Torrington, Conn. 06790 (ph 860 482-8283; sales@borgeson.com; www.borgeson.com).



Bead blaster uses no. 80 glass beads to remove rust, oxidation and corrosion without damaging metal parts.

## Glass Bead Blasting Beats Sand

Tim Steele found a good sideline business cleaning engines and other metal parts with his bead blaster. He uses #80 glass beads to remove rust, oxidation and corrosion without damaging the metal.

"Unlike sand blasting, which can wear away metal, glass bead blasting leaves the metal unaffected," says Steele. "I can work with pieces nearly 3 ft. long and 2 ft. deep. I've done exhaust manifolds, carburetors, flywheels, generator casings - anything that's metal."

Cleaning with the glass beads is time consuming, notes Steele. He prices his work at \$40/hour, whether for parts cleaning and preparation or actual blasting. Hoods and covers are \$100 or more just for blasting.

"When finished, exterior covers come out

with a satin finish, suitable for sanding and polishing," says Steele.

He'll do an entire motorcycle engine for \$250, excluding exterior covers, if he doesn't have to clean them first. Shipping is not included.

"If the parts arrive dirt and grease free, all I have to do is to chase all the threads and plug all the holes," says Steele. "The job will be much cheaper than if I have to clean them of grease and dirt as well."

Steele does a lot of work with engines, but says he's available to bead blast a wide variety of parts, including tractor parts.

Contact: FARM SHOW Followup, Timothy Steele, 404 Stokes Airport Rd., Front Royal, Va. 22630 (ph 850 419-4521; shadowfe69@yahoo.com).

## Rolling "Tractor Seat" Shop Chair

Old tractor seats make nifty low-cost rolling shop chairs, says Verne Schlueter, Arlington, Minn., who mounted the seat and battery box off an old Deere tractor on a set of swivel caster wheels.

"I keep it in my workshop where it makes a great conversation piece," says Schlueter.

He welded swivel wheel brackets onto lengths of 1/2 by 2-in. tubing, which he bolted to the bottom of the battery box. He repainted

the seat frame and battery box and mounted decals and a small headlight on back.

"I store odds and ends in the box and simply lift up the seat cushion for access," says Schlueter. "The seat is actually off a Deere 49B tractor and was still in good shape. The light is just for decoration."

Contact: FARM SHOW Followup, Verne Schlueter, 25804 431<sup>st</sup> Ave., Arlington, Minn. 55307 (ph 507 964-5641).

## Gear Reduction Starter Kit For Deere Tractors

Abilene Machine has been helping convert Deere 3010, 3020, 4010 and 4020 diesel tractors from 24-volt to 12-volt for years. They recently introduced a new 24-volt to 12-volt conversion kit that includes a gear reduction starter developed especially for these tractors.

The kit includes an internally regulated 10-volt alternator with pulley and mounting bracket, 12-volt starter, safety relay and installation instructions. All the components are new.

"The kit sells for less than what it normally costs to have your old starter rebuilt, and the shipping cost to return the core is eliminated," says Jay Russell, Abilene Machine. "We also offer the starter individually for units that are 12 volt-ready. In comparison to the original 40-lb. starter, our gear reduction starter only weighs 20 lbs. and turns over faster and with more torque."

The 24-volt to 12-volt conversion kit sells for \$495 plus S&H. The gear reduction starter sells for \$250 plus S&H.

Contact: FARM SHOW Followup, Abilene Machine, P.O. Box 129, Abilene, Kan. 67410 (ph 800 255-0337; jrussell@abilenemachine.com; www.AbileneMachine.com).



Abilene Machine's 24-volt to 12-volt conversion kit for Deere tractors includes a gear reduction starter.



Rolling shop chair was made by mounting the seat and battery box off an old Deere tractor on a set of swivel caster wheels.