

“Toothed” Collars Protect Guard Dogs From Predators

Jesus Burgos Peñasco is a Spanish artisan blacksmith with a unique skill: He builds custom protective collars for any size or breed of livestock guard dog. His custom products are in demand all over the world.

Peñasco says that even though guard dogs are typically large, strong and well-trained to protect the livestock they’re guarding, they have limited defense against a large dominant wolf or a pack of wolves. He says a wolf will attack a dog’s neck or throat and can often maim or kill the dog.

Peñasco makes rigid metal collars that look like armour for a medieval warrior. The sturdy metal collars have razor-sharp metal teeth protruding around the outside, but they’re smooth on the inside with buffed edges so the collar doesn’t irritate the dog wearing it. Each one is custom-made to the exact size of a dog’s neck. The metal spikes are 3/8 to 1/2-in. long and circle the full collar. Peñasco also makes a custom-sized metal

chest and throat protector with protruding spikes.

Both of the devices have holes to allow the animal’s coat to protrude through. The collar is hinged and locked on with a padlock so the dog can’t accidentally lose it. The throat protector connects to the collar on top and is held on the bottom with a leather strap.

Peñasco says any dog wearing one of his custom collars will probably only get bitten in the neck or chest one time. Even though the razor sharp teeth are stationary, one hard bite to the device would cause serious damage to the attacker’s mouth. Even though the collars are rigid metal and provide serious protection for the guard dogs, Peñasco says the collars don’t inhibit the dog’s movement.

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Jesus Burgos Peñasco makes custom protective collars for any size or breed of livestock guard dog. The rigid metal collars have razor-sharp teeth protruding around the outside.

Powered Grinder Automates Sausage-Making

“We used to spend several hours grinding meat by hand to avoid taking it to the locker and spending a couple hundred dollars to get it done,” says Gene Sickler. “After a few years of that we decided to build a power grinder to save our arms.”

Sickler’s home-built meat grinder is driven by a 220-volt electric motor that powers a driveshaft through the transmission from a Datsun pickup. Sickler says, “To mate the two together I first torched off the outside of the transmission. Then I placed the inside of the clutch plate against a hub that fit the electric motor, and welded the two together. On the back of the transmission I cut the splined pipe out of the yolk that slid over the output shaft, then welded it to a 1-in. shaft.

I put a gear on that shaft and connected it with no. 50 chain to the gear that runs the grinders.”

Sickler has two grinders hooked to the motor. One of the grinders is chain-driven and the other is belt-driven with a tensioner lever. That lever also turns the grinder on and off. “We’ve used this setup for grinding several hundred pounds of meat every year,” says Sickler. “We’re always careful about sanitation, washing everything with a pressure washer, soap and a small amount of bleach. We lube the grinders with vegetable oil.”

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Sickler’s meat grinder is driven by a 220-volt electric motor that powers a driveshaft through the transmission from a Datsun pickup.

Deere 4020 Power, Reliability Boosted By EFI Conversion

David Kepner threw away the carburetor on his Deere 4020 gas tractor and replaced it with an electronic fuel ignition (EFI) system designed for a pickup.

“It made the engine come alive and results in about 10 percent more horsepower and a 20 percent savings in fuel. And it has no problems with ethanol,” says Kepner. “I can go out in 10 below zero weather and the tractor will start right up, without smoking at all. It’s beautiful. It’s all about using today’s technology to improve an already great tractor.”

“Changing the fuel delivery system on old time gas tractors is a good way to get them to start and run better. My 4020 gas tractor now starts and runs better than a 4020 diesel, which I think was the best tractor ever built. The 4020 gas models were never as fuel efficient as the diesel models, but when you put modern EFI technology on them it makes a real difference.”

Kepner is a retired 74-year-old Deere mechanic who says he still does a little farming with his 4020. “I came up with the idea because I wanted it to run as well as my pickup. I started looking around for anyone who makes an EFI kit for farm tractors. I couldn’t find any, but I did find a company in Memphis, Tenn., that supplies EFI kits for classic cars and pickups and adapted one

of their kits (www.fuelairspark.com; ph 901 260-3278). I made changes to the tractor’s intake manifold and to the throttle body that controls the air system.”

He replaced the tractor’s rusty steel fuel tank with a polyurethane tank. “These tractors are almost 50 years old and many of them haven’t been used for years, so their fuel tanks are often contaminated,” he notes.

An air intake hose leads from the air cleaner to the throttle body, which controls the air flow when you accelerate the tractor. “You want to maintain a 14:1 air-to-fuel ratio, so that when the tractor slows down it doesn’t suck as much air in,” says Kepner.

A fuel rail leads from the pump at the bottom of the tank, and then to a fuel pressure-regulating valve that regulates the fuel pressure to the injectors.

“Ethanol doesn’t evaporate like gas does. You can take a can of gas and pour it into a pan and 8 hrs. later all of it will have evaporated. But if you put an inch of alcohol in the same pan and come back 4 weeks later, it’ll still be there. Carburetors work on evaporation so gas is mixed in the manifold going to the engine, whereas with EFI the air and fuel are controlled so fuel is delivered right at the intake valve.

“When 4020’s were first made in the 1960’s, all our tractors were using 100



David Kepner equipped his Deere 4020 gas tractor with electronic fuel ignition to make it run better. “It’s all about using today’s technology to improve an already great tractor,” he says.

percent gas. Then gas with 10 percent ethanol came on the market, and that takes a whole different delivery system to run right. That’s one reason you don’t find carburetors on cars and trucks any more.”

After he equipped his 4020 with EFI, it didn’t take long for neighbors to start asking Kepner if he would convert their tractors. He plans to do that for about a half dozen local farmers. “When people ask me about the cost, I tell them it’s less than what it would cost to

have a body shop paint their tractor. It’ll cost at least \$3,500 but not more than \$5,000. I tell them I’m so confident in EFI that if they don’t like how their tractor runs when I’m done with it, I’ll buy the tractor from them.”

Kepner says he plans to make a kit available some day.

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