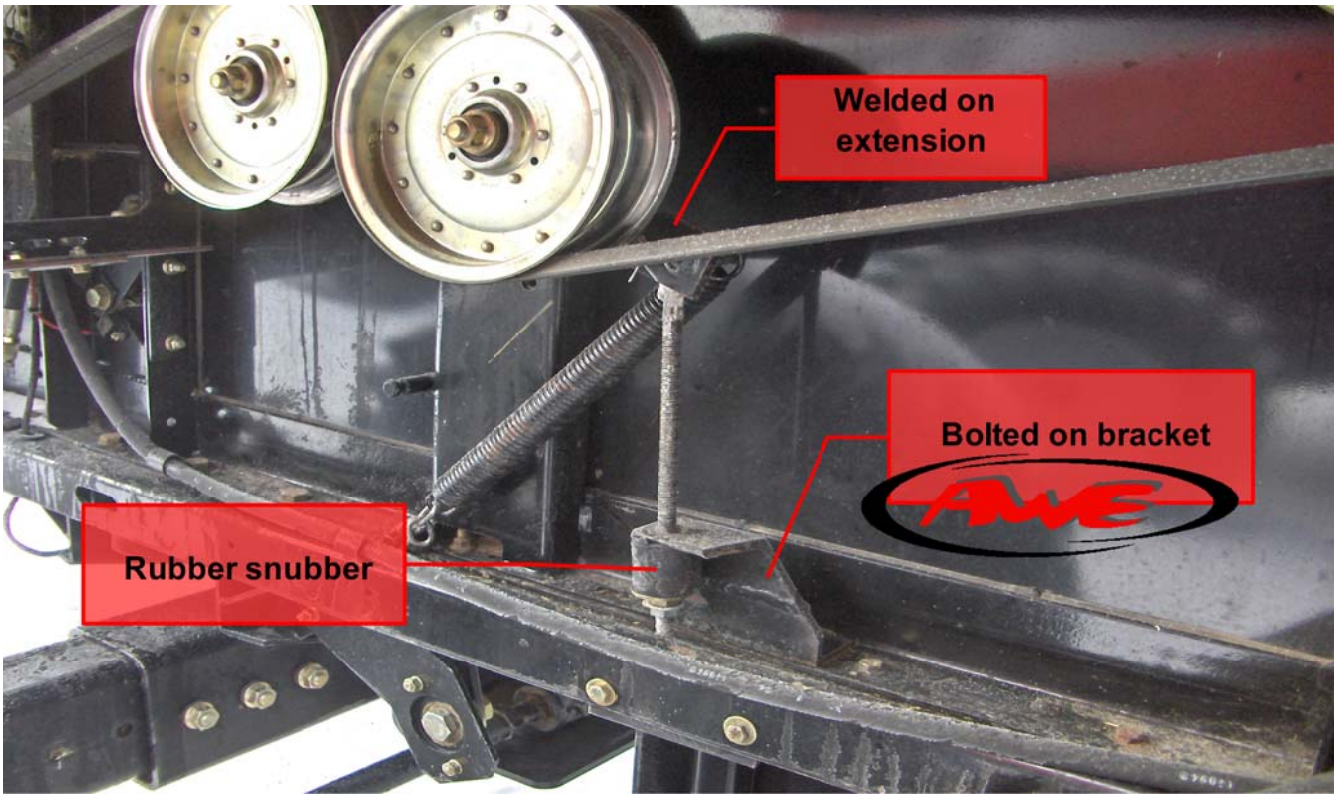
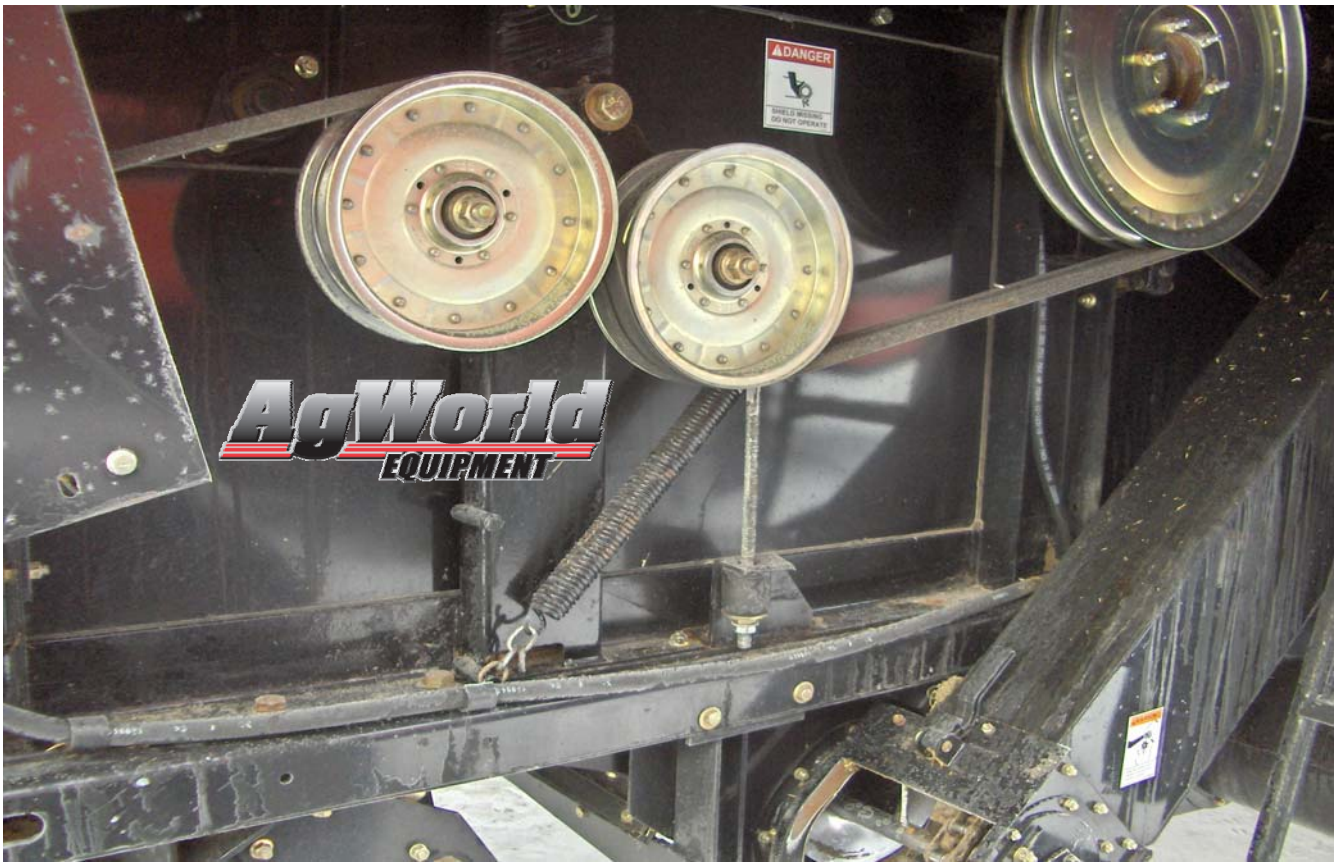
Massey-Ferguson 9000 series rotary combine straw chopper drive modification.

The original straw chopper drive on the Massey-Ferguson 8000/9000 series combines requires a daily check/adjustment to operate properly without any unwanted downtime due to belt failure. The chopper drive consists of a primary drive belt and a secondary drive belt. The primary belt is the first one off the main countershaft, and runs down to the chopper jackshaft. The secondary belt runs from the jackshaft to the chopper itself. The secondary belt is tensioned by an adjustable spring on two tightener pulleys. The arm that the tightener pulleys are attached to has an adjustable stop to act as a snubber. The snubber will stop the arm from rotating forward, to keep the belt tight. As the belt stretches, the snubber or mechanical stop has to be adjusted. Under tough or wet conditions, the belt will stretch a lot making the operator have to adjust the snubber a lot. When the combine is working properly, and is full with material, the chopper has a specific load in it. The top strand of the belt is pulling the chopper pulley, turning the chopper. This top strand is under load and is being pulled extremely tight by the jackshaft pulley, and the bottom strand is held tight by spring tension. If the operator is running the machine with the snubber not adjusted, what will happen is the tightener arm will be allowed to move forward, allowing the belt to run loose. With the combine operating under a comfortable load, there will be a specific load on the secondary chopper belt. Then, if the combine swallows a tough wad and when that wad goes through the chopper there is a increase in the load on the secondary chopper belt. The instant that the wad leaves the chopper, suddenly there is no load on the chopper belt. The chopper operates at such a high speed that when there is suddenly no load on the belt the chopper acts as a jackshaft and will momentarily try to drive the belt instead of the belt driving the chopper. This will, if the snubber is not adjusted right, allow the belt to loosen and whip. When the chopper load resumes the belt load will resume. If the load is sharp enough on the loose , whipping belt, it can physically break the belt or at the very least damage it.

The chopper modification consists of a bolt on bracket, adjustment rod , rubber snubber, and hardware. Holes are required to be drilled in combine body to mount the bracket, and a hole in the idler arm to attach the adjustment rod. The original metal snubber is removed and a rubber bushing installed in its place. The rubber takes up the shock loading and adjustments are infrequent. This modification will eliminate the belt problem described above.


Welded on extension
Bolted on bracket
Rubber snubber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