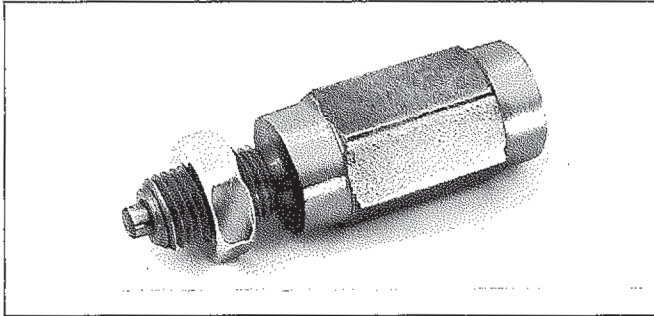




Installation Guide, User Manual, and Parts List

TightSteer[®]

Free play reducer for Ross[®] steering boxes
Design features protected by U.S. Patent 8,925,407



Description:

TightSteer is an aftermarket device that is designed to reduce the freeplay in steering systems that use Ross[®] steering boxes commonly found on Willys, Ford GPW, Studebaker, and similar early vehicles.

The **TightSteer** module is a spring-loaded mechanism that replaces the sector shaft's set screw in Ross steering boxes and provides constant pressure of the steering sector shaft into the worm gear through the entire rotation of the worm gear. This constant pressure of the **TightSteer** module ensures engagement of the sector shaft pins into the worm gear, which reduces free play and wobble except on the most worn or damaged steering systems.

In most installations, no modification or drilling is required to the body, frame or surrounding parts. **TightSteer** is a simple bolt-on installation that needs only one adjustment to properly set the freeplay.

TightSteer will fit:

Part #100: 7/16"-20 thread: MB, GPW, CJ-2A, CJ-3A, CJ-3B, CJ-5 (to 1967), CJ-6, DJ-3, M38, Jeepster, Willys Station wagon 2WD, American Bantam '39-'40, Auburn '35-'36, Crosley '39-'42, Pierce Arrow '35-'38, Reo '35-'36, Studebaker '39-'42, Willys Aero '41-'42, Willys FJ3A '60-'62.

Part #200: 1/2"-20 thread: CJ-5 (after 1967), M38A1, 54-65 Willys truck '54-'56, Willys station wagon 4WD, Willys sedan delivery 4WD.

Part #200-X: 1/2"-20 thread: with extended shaft: Fits Studebaker and vehicles after 1955, with later model Ross steering boxes.

Please visit our website for the most current listing.

CAUTION:

1. Follow installation instructions carefully. Improper installation can lead to greater freeplay and possible steering system failure.

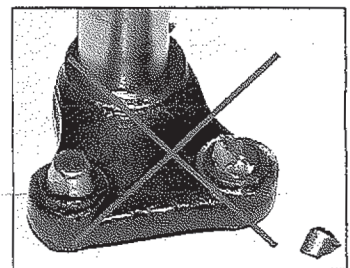
2. TightSteer cannot compensate for worn wheel bearings, worn kingpins or kingpin bearings, worn Pitman arms or Pitman arm bearings, improperly set camber, improperly set caster, improperly set toe-in, or worn tie rod ends. Ensure that these components and settings are correct before installing TightSteer.

3. TightSteer will **not** compensate for missing bearings or cracked races that secure the steering tube and worm gear in the steering box.

4. Do not make any adjustments to the internal parts of TightSteer. All parts are fitted and pre-loaded at our shop.

5. Do not remove the set screw from the end of the TightSteer module; an internal spring is set under moderate pressure.

6. Replace the sector shaft if it is badly worn or has broken steering pins. Do not use a sector shaft that has only one good pin. Do not try to repair or weld broken pins.



7. Do not modify or alter the TightSteer module in any way.

Installation:

1. Carefully read all instructions before installation. Ensure you have read and understand all the above CAUTION statements before proceeding.

2. Your steering box may be filled with oil. Place a pan or paper under the steering box to collect any leakage when the set screw is removed.

3. Turn the steering wheel so that the wheels are in the full left-turn or full right-turn position.

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Installation, continued:

4. Use either an adjustable or open-end wrench to loosen the adjusting screw's lock nut on the side of your Ross steering box.

5. Use a short slotted-screwdriver to remove the Ross set screw. (Put the set screw and its lock nut away for possible future use.) Your steering box should be filled with oil (rather than grease) so it is possible that some oil will escape when you remove the set screw. Be ready to insert the **TightSteer** promptly to avoid excessive leakage.

6. Thread the **TightSteer** into the steering box until you feel some resistance as the spring loaded plunger (A) begins to put pressure against the sector shaft. Then, hand tighten the **TightSteer** until it is very snug. **Turn steering wheel back and forth to allow sector shaft to seat firmly into cam (worm).** Resnug the **TightSteer**. At this point, the **TightSteer** housing at (B) is pressing the sector shaft against the cam (worm), just as the original set screw did.

7. Back off the **TightSteer** one turn. Hold it securely in place and tighten the lock nut against the steering box's housing to approximately 35 foot pounds (the equivalent of a firm pull).

8. Turn the steering through the entire range and ensure that it does not bind anywhere. If you do experience a tight point, loosen the **TightSteer** another 1/4 of a turn. If uneven binding still occurs through the range of turning, it suggests other problems with your steering box that may not be corrected with

TightSteer. Your steering box should be disassembled and examined for other damage.

9. Fill the steering box with 80w140 oil. Do not use grease. It is essential that oil - not grease - is used in the steering box for proper lubrication of sector shaft bushings, steering shaft bearings, and worm gear. If your steering box had a zerk fitting (a standard fitting that is used for grease) on top, replace it with a 1/8" NPT plug fitting.

10. Do not attempt to tighten or adjust the socket set screw (D). Exercise care if you need to remove the set screw to replace the spring. The internal spring is pre-loaded under moderate pressure and may jump out. If you need to change or inspect the spring, wear eye protection when opening the unit.

13. In some *custom* applications you may need to drill a hole in the inner fender to access or install the **TightSteer** module. Various types of hole plugs or caps are available from most hardware stores to close up the opening after the module is installed.

NOTES:

- You may see grey residue around the set screw; we use plumber's joint compound to seal the threads and prevent oil leakage past the set screw.
- If your steering box was filled with grease, it is advisable to dismantle the box, remove all grease, and refill with 80w140 oil.
- Recommended oils: Pennzoil GearPlus®, 80w-140 GL-5 heavy duty gear lubricant (#4973); John Deere 85W-140 GL-5 Gear Lubricant (#TY6345).

