



Operation Manual

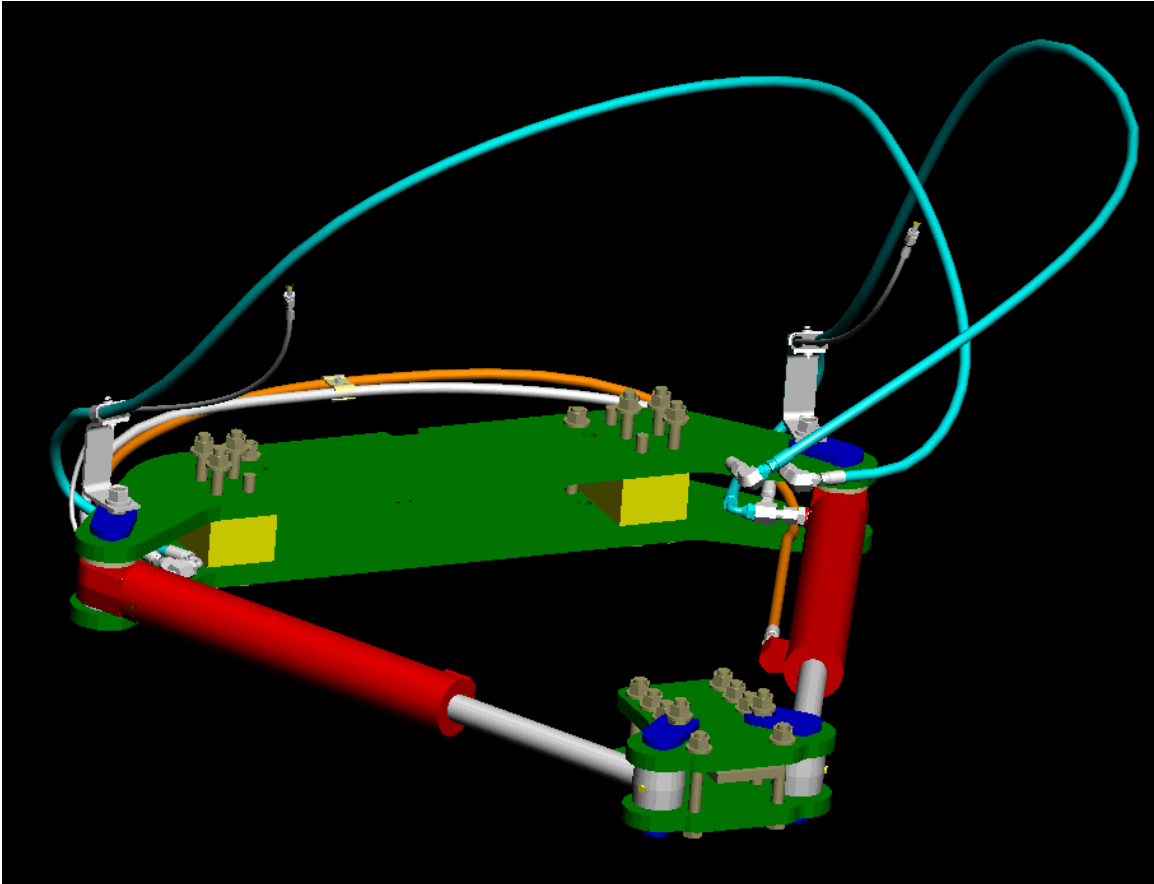
AJ1 Wide Swing Drawbar Controller

JD 9000T- 9RT Tracked Tractors

**AJ Equipment L.L.C.
35089-205th Ave
Goodhue, MN 55027**

AJE9Aug11 issue

AJ1 Wide Swing Drawbar Controller



Note:

Model and Serial Number can be found at the Bottom Center of the mainframe plate and should be referenced when ordering parts

Introduction

Read this manual to learn how to operate and service your drawbar attachment correctly. The following pages will instruct you on how to operate your drawbar attachment for long life and peak performance. Failure to do so could result in personal injury, equipment damage, reduced performance, and void any implied warranty of the attachment.

This drawbar attachment is intended solely for use in customary agricultural or similar operations. Use in any other way is considered contrary to the intended use. The manufacturer accepts no liability for damage or injury resulting from this misuse, and these risks must be borne solely by the user. Compliance with and strict adherence to the conditions of operation, service, and repair as specified by the manufacturer also constitute essential elements for the intended use.

The drawbar attachment should be operated, serviced, and repaired only by persons familiar with all its particular characteristics and acquainted with the relevant safety rules (accident prevention). The accident prevention regulations, all other generally recognized regulations on safety and occupational medicine, and the road traffic regulations must be observed at all times. Any arbitrary modifications carried out on this drawbar attachment will relieve the manufacturer of all liability for any resulting damage or injury.

Features of Drawbar

The AJ1 Wide Swing Drawbar Controller is intended to assist track tractor vehicle owners with control of wide swing drawbars. The drawbar is designed to help achieve control of three modes of drawbar operation. The damping mode is used to reduce excessive lateral back and forth drawbar motion called drawbar “dancing”. The lateral push feature is to allow a forced bias on the drawbar tongue in both left and right directions. The lock feature is used to provide drawbar position lock from cab. (It is recommended to place the drawbar position locks supplied by the tractor manufacturer in the most restricted mode when transporting)



Use of the AJ1 Wide Swing Drawbar Controller

Conditions benefiting from the use of the AJ1 Wide Swing Drawbar Controller occur on track tractors with un-pinned wide swing drawbars in most applications. The conditions may occur on level ground or on steep grades.

The use and primary need for an un-pinned wide swing drawbar on track tractors are to enhance turn capability of the tractor and reduced strain on implement tongues.

Drawbar “dancing” may result with un-damped wide swing drawbars pulling wide tillage equipment. Uncontrolled tongue and drawbar swing may also occur when changing from positive to negative draft or vice versa in steep terrain. Locking the drawbar into a fixed position, or forcing it to a more desired position is not generally possible without a drawbar controller. The above elements are an undesirable side effect of an un-damped drawbar design. Drawbar “dancing” can produce damaging loads on the implement tongue and uneven pull. Uncontrolled drawbar swing can be quite violent producing implement damage and “jackknifing” of tractor and implement. Operator comfort may also be affected from uncontrolled drawbar movement due to the resultant change in pull or “banging” of the drawbar against the stops.

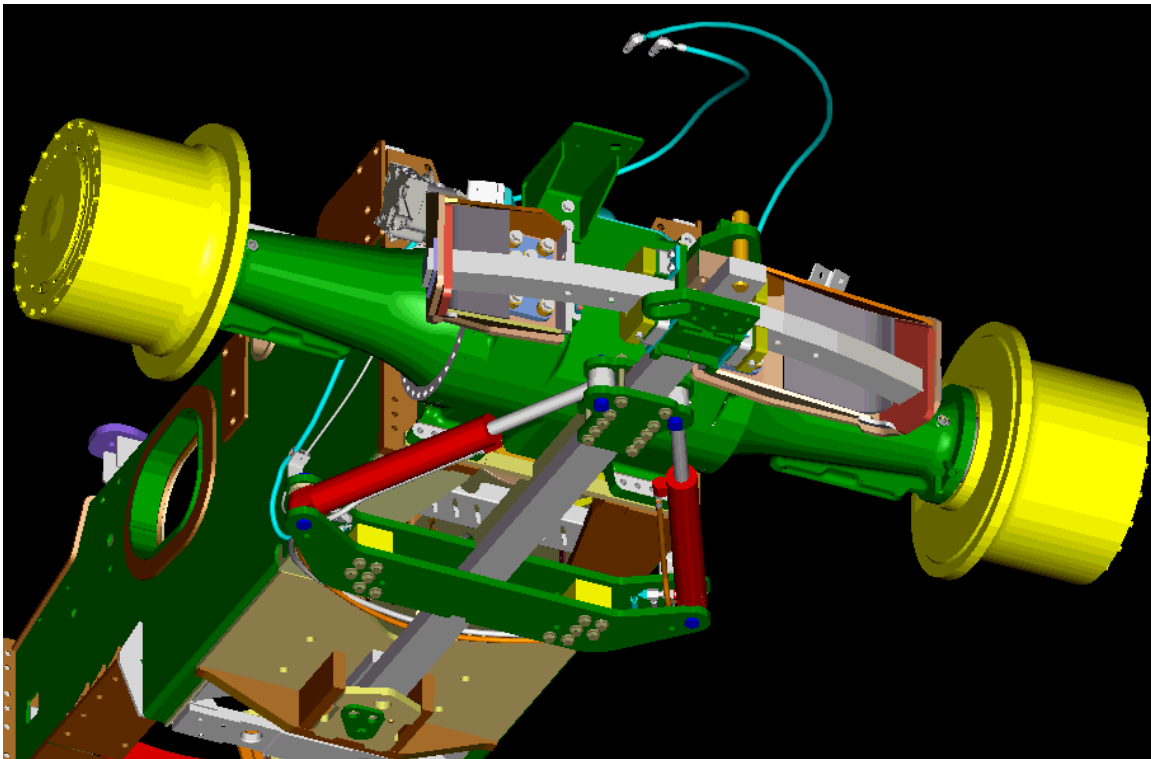
The AJ1 Wide Swing Drawbar Controller controls the undesirable side affects of an uncontrolled drawbar. In addition, it provides left and right drawbar powered swing, and drawbar lock in any location of the drawbar travel range by simply activating the SCV paddle pot control from the seat.

The drawbar was designed to react against loads seen by large track tractors and also has a very flat torque curve providing smooth, even damping throughout the swing range of the drawbar.

For whatever reason, the drawbar control range can be limited by simply placing the drawbar blocks provided with the tractor in the desired locations.

Control of Drawbar

AJ1 Wide Swing Drawbar control is provided by one tractor SCV of the owners choice to operate two opposed cylinders, each anchored to the tractor frame at one end and attached to the drawbar at the other. Damping is accomplished with sized orifices at the hydraulic cylinder inlet and outlet. Available control modes are “Damped”, “Powered”, and “Lock”.



The **Damped mode** is accomplished by placing the tractor SCV in the “Float” position. (*See tractor Owners Manual for Tractor Control information*) The Drawbar will now be allowed to float from side to side at a controlled rate within the limits of the tractor drawbar locking clamps provided with the tractor. Variable damping rates are available if other than what is provided is desired. (*Contact AJ Equipment for parts and installation information.*)

(“Damped only” mode may also be accomplished if tractor SCV is not available –See AJ Equipment for Parts and installation information)

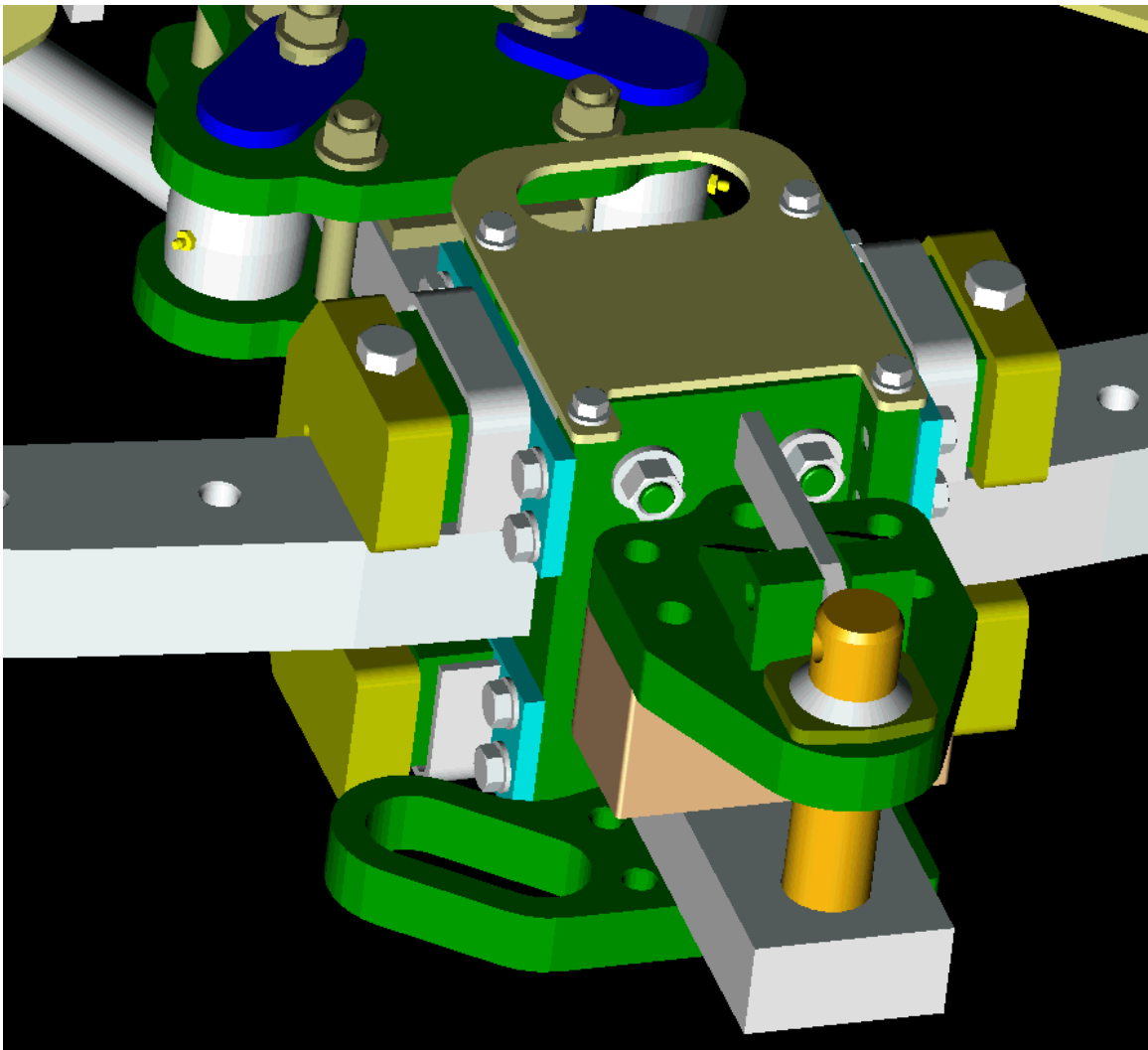
The **Powered mode** is accomplished by placing the tractor SCV in extend or retract. Drawbar commanded position is provided smoothly and

controllably throughout the entire swing range of the drawbar due to system damping. Modification to swing rate should not be required outside the limits of the SCV flow controls, but can be accomplished with variations of orifice control at the hydraulic cylinder inlet and outlets. Contact AJ Equipment for parts and information.

The **Lock Mode** is accomplished by placing the SCV in neutral.

Note:

Drawbar should always be pinned in position by the drawbar locks provided with the tractor during on-highway transport.



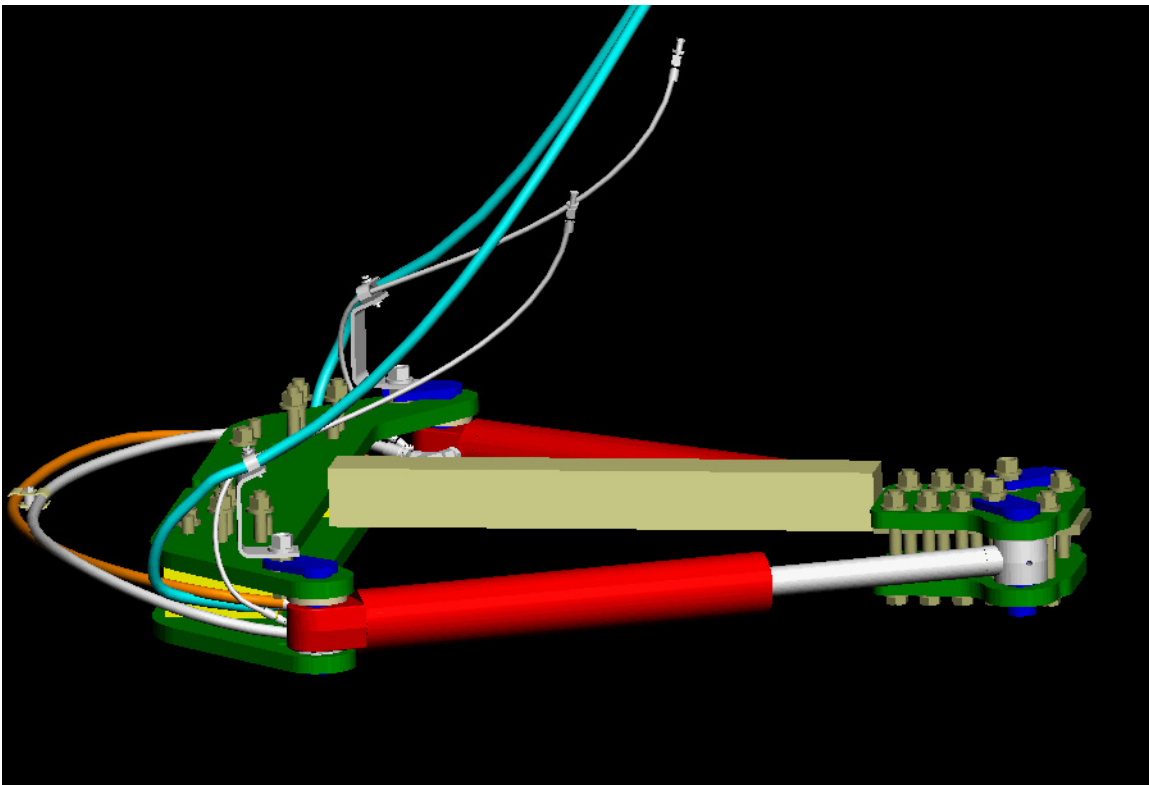
Service Guidelines

Strict attention to the easy and straight forward service instructions will assure reliable function and wear of drawbar components and high satisfaction with your purchase for years to come.

Re-Torque all M-20 mm Capscrews to 610 Nm (450 ft. lbs) after the first 10 hours of operation. No further re-tightening should be required under normal service.

Scheduled Service

Grease zerks are provided at hydraulic cylinder pivot points and are located for easy service. **(Four) grease points** are conveniently located at rear of tractor. Two are located on the rod-end eye of the cylinder just forward of the drawbar support and the other two are located at the top inner axle flange area on grease feed lines for the head-end pivots of the cylinders.



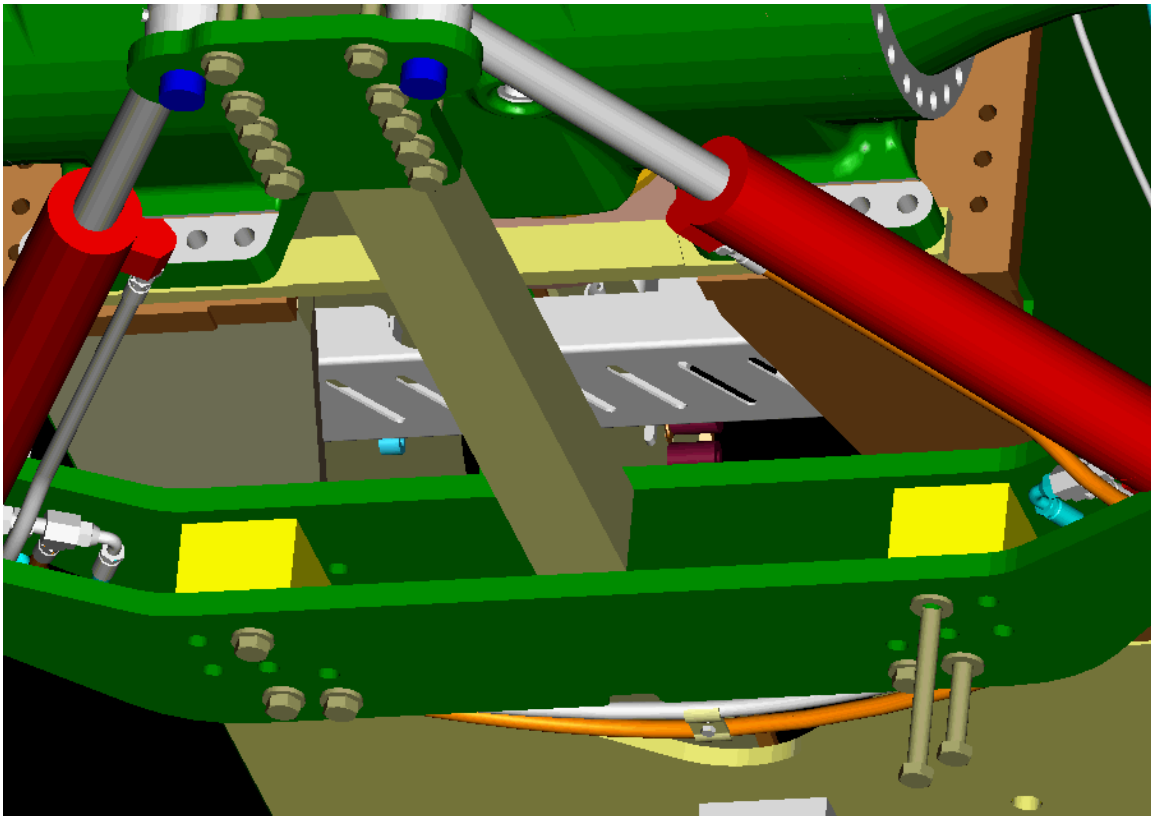
Recommended grease interval is;

50 hours Normal operation

10 hours If submerged in water or exposed to extreme conditions

It is also recommended to install the greasable front drawbar pin available from the tractor manufacturer at the time the AJ1 Wide Swing Drawbar Controller is installed.

The Tractor manufacturers “Cone Stand” attachment points under the tractor frame are used to help secure the AJ1 Wide Swing Drawbar Controller assembly. When cone stands are recommended by the tractor manufacturer for service there is no need to remove the AJ1 Wide Swing Drawbar Controller assembly. Simply remove the two bolts from the AJ1 Wide Swing Drawbar Controller normally used for attachment of the cone stands and place the cone stands directly under the recommended holes. Using the removed AJ1 Wide Swing Drawbar Controller attaching screws, secure the cone stands to the tractor through the AJ1 Wide Swing Drawbar Controller. Doing so alleviate removal of the damped drawbar itself.



The AJ1 Wide Swing Drawbar Controller design has used a significant number of parts available at your local dealer. Only 5 unique parts are not available through your tractor dealer. These high strength steel parts are available through AJ Equipment. The high degree of part quality and strength will allow your AJ1 Wide Swing Drawbar Controller to perform to your expectations for many thousands of hours. Made from high form 50 steel the components minimum yield strength and wear resistance exceed what the tractor manufacturer uses in similar applications.