GROENEVELD

UNDERSTANDING & MAINTAINING YOUR SINGLE LINE PNEUMATIC AUTOMATIC GREASING SYSTEM

This system uses grease that is NLGI 0 rated or EP 0

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GROENEVELD Automatic Greasing System

The Main Parts

The Groeneveld single line Pneumatic system is a very simple operating system , in many ways other than the electrically timed operation it can be compared to a simple hydraulic braking system ie. Both Containing a reservoir, a booster piston, a master cylinder and Slave cylinders “in the case of the greasing system these are our metered Injectors”

The timer

Normally mounted behind the dash in a relatively easily accessable position such as close by the fuse panel the timer is only active with the Ignition turned on.
The main increment step position switch sets the duration of time between grease cycle activations . When a cycle commences the timer will provide power to activate the air solenoid on the base of the pump. “*for more detailed Info refer to applicable user instructions”*

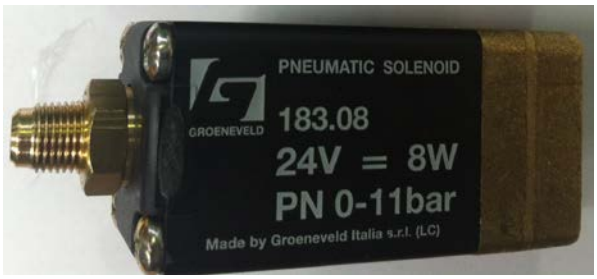
“Old Version”

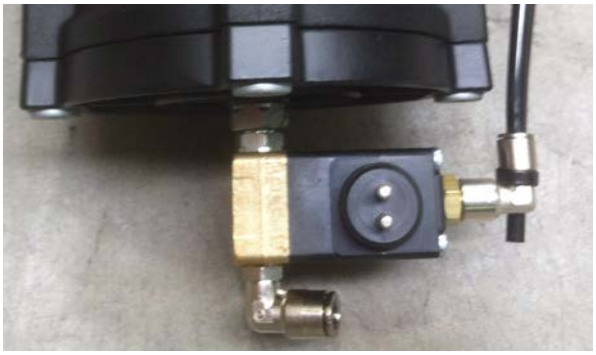
To activate a test cycle leave increment selector dial in an hour position turn on ignition and depress test button for one second. This will start a grease cycle which will take approximately 3 mins to complete. A bad cycle will sound an alarm after 2mins to alert you that the cycle failed. No Alarm signal is given on a good cycle which ends after 3mins with the air exhausting from the pump

“New Version”

To Activate a Test cycle press and hold the test button until a soft audible Beep is heard “Approx 3 seconds”. This will start a test cycle. After approximately 10-20 seconds, if pressure has been achieved the timer will advise you by sounding a pulsing beep at 0.5 second intervals for appximately 15 seconds, If a bad cycle occurs the timer will set off an audible alarm buzzer after 2 mins to alert you the cycle has failed . At the end of the 3mins the air pressure will be heard exhausting from the pump. No alarm buzzer sounds @ 2mins on a good cycle.

The Air Solenoid

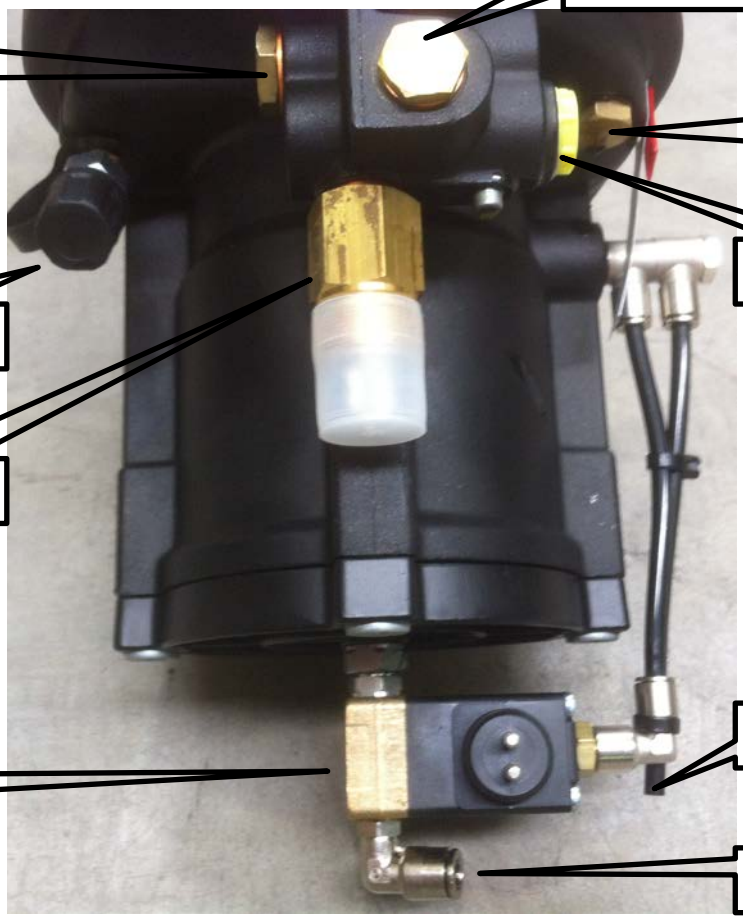


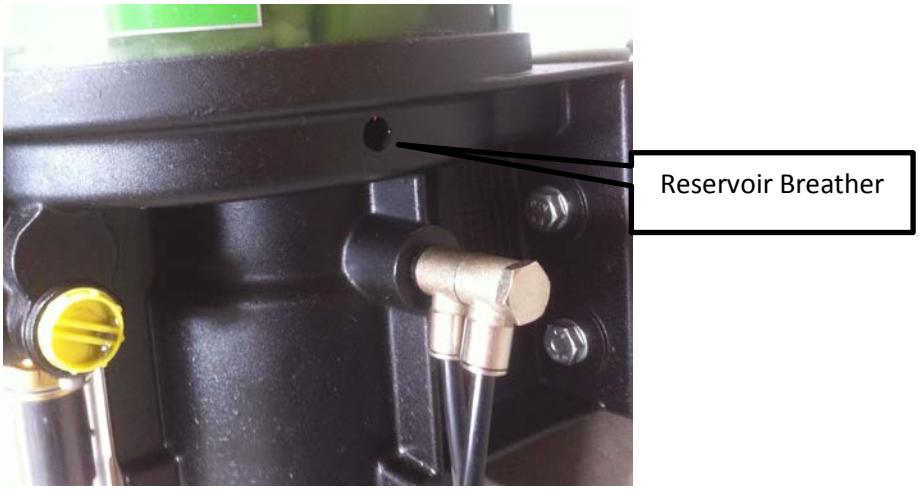


Normally mounted directly on the base of the pump the air solenoid controls the air flow to the booster piston. When activated the piston will do a single stroke applying the effort of the air pressure with a 9:1 mechanical advantage to the master cylinder of grease mounted internally in the pump. When deactivated the solenoid blocks incoming air and allows the airpressure to escape from the pump

!Caution! Mainline grease pressure can exceed 800 psi. Always ensure suitably rated line is used.

The Pump





!Caution! If over filled, leakage from the reservoir breather is normal. This is a design of the system to allow air to be removed from the reservoir without dismantling and to minimise the risk of damage to your reservoir if it is inadvertently slightly over filled. The breather will act as an overflow to release any pressure build up, but be aware the breather cannot cope with the pressure and flow rates of high volume/ pressure filler stations, "do not leave unattended when filling the reservoir could be damaged". Leakage after overfilling can take a long time to clear as the breather tube slowly drains the excess away.

Maintaining your system

The auto greasing system will give you a long trouble free life and maintain a good flow of lubrication to the connected points, provided a few simple tasks are undertaken to maintain it .

1. Ensure the reservoir is always kept above the minimum level! *If it drops below? Then after refilling ensure that you test the system functions before returning back into service. Bleed system if required!*
2. Before refilling ensure the connection of the pump & the filling station are thoroughly cleaned to avoid contaminating the grease
3. During servicing inspect for breakages, leaks and rubbing or wearing of any parts of the greasing system. Rectify if defects are found
4. During servicing visually inspect all lubrication points to ensure there is a moist quantity of grease present at the point signifying a working system.
5. During servicing performing a routine system cycle test is recommended *"depressing timer test button and waiting 3 mins"* thus ensuring the system completes a cycle without alarming
6. If mainline repairs are undertaken bleed line & check or bleed entire system to ensure proper operation
7. If secondary line repairs are undertaken ensure you completely prime the secondary line. *It is recommended that you use only Groeneveld supplied line which comes prefilled ready for use*
8. If for any reason the components at a point that the system is connected to are dismantled, ensure it is properly prefilled with appropriate grease before final reconnection of the lube system.

Testing your system

Below are some tests that will help you quickly ascertain if your system is functioning correctly or not and assist to diagnose a fault with only basic tools.

Note:- always ensure full air pressure is available before doing any testing

1. **Quick test of power to Pump**, Locate timer, turn on ignition and energise a test cycle *"see relevant timer user instruction"* wait 5 seconds and switch off ignition, you should hear air escape from pump air vent? If not there is a defect in the electrical wiring / components, test individually for correct operation!

2. **Full system test** Locate timer , turn on ignition and energise a test cycle*"see relevant timer user instruction"* Wait in cabin. If alarm buzzer sounds after 2 mins this indicates the cycle failed as there wasn't enough grease pressure achieved to trigger the pressure switch! *On a good cycle there would be no buzzer after 2 mins and air pressure would be released from pump after 3 mins*

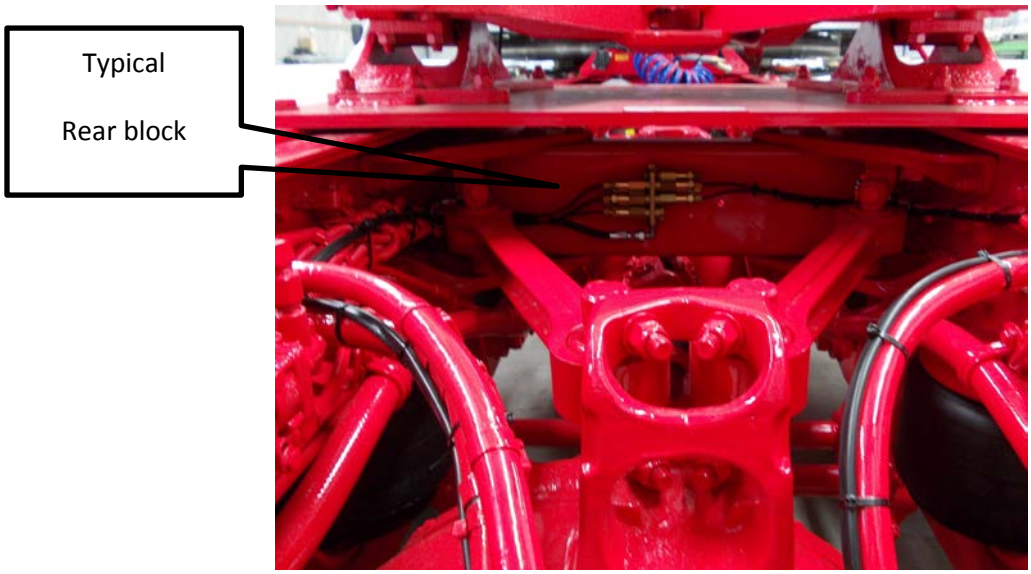
3. **If step one is ok and step 2 fails.** Reactivate system whilst watching reservoir. If follower plate in reservoir rises when cycle initially starts this indicates a contaminated master cylinder non return valve, *"Strip clean and reseat or take pump to your local Groeneveld Branch/agent for rectification"*

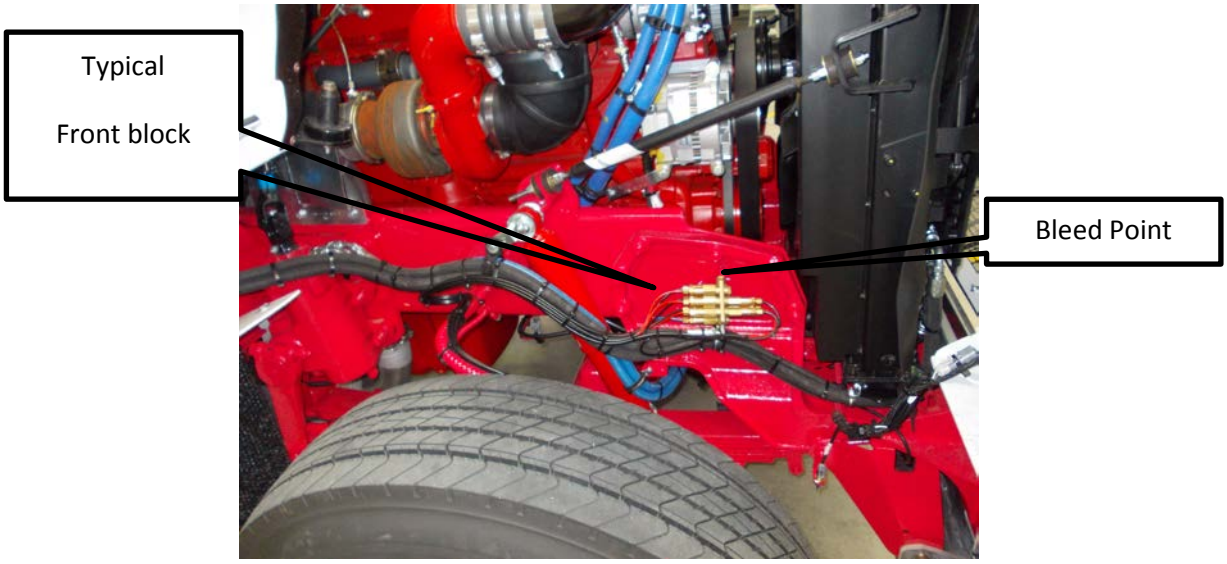
4. **Pressure switch test**, disconnect wiring from pressure switch , Activate system test cycle. With a multimeter check for continuity across pressure switch terminals. If switch closed check wiring for defect. If switch does not close, check for leaks in mainline and or bleed system.

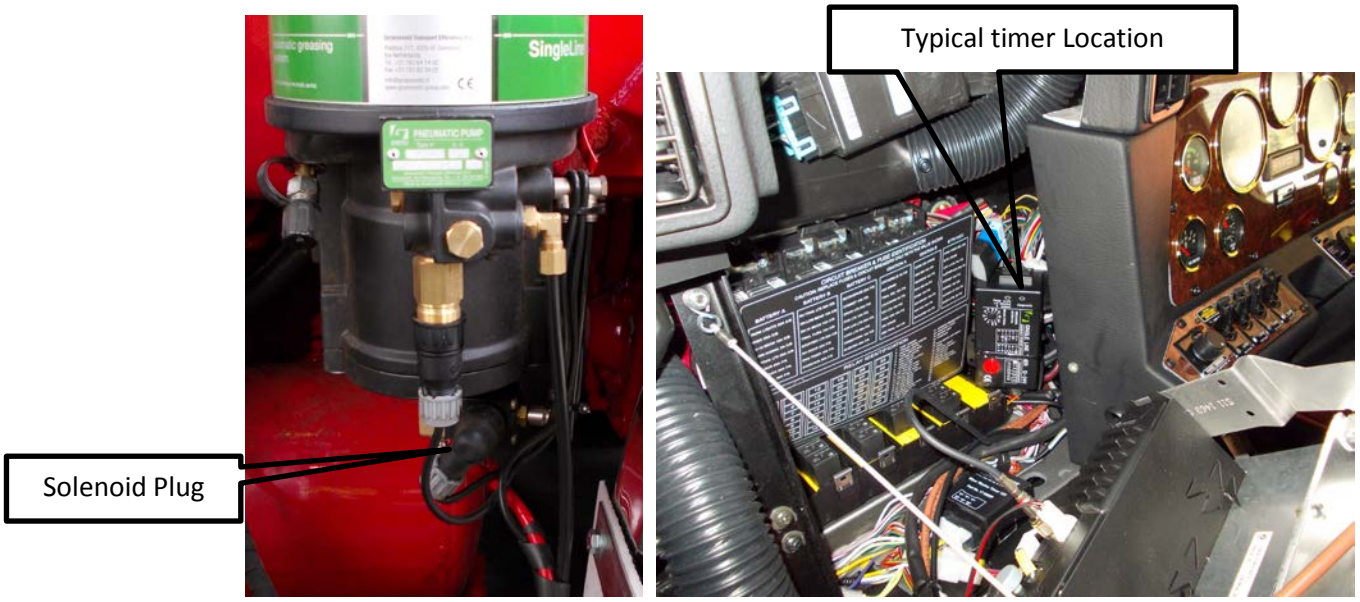
Continued:

5. **System bleed**, like Brakes we have to pump the system to force the air through the mainline, to do this quickly follow the steps below and refer to the following images.

    a. Locate end of mainline @ rear of vehicle “block of grease meter injectors where mainline is only attached at one side”
    b. Remove Blanking plug from unattached side of block
    c. We now need to pump the system to bleed it. We can accomplish this quickly by simply interrupting the power to the solenoid in 5 second bursts. This can be done by turning the ignition on & off or better still by disconnecting the power supply to solenoid after the timer, this can be done close to the timer by following the harness and disconnecting at the white 3 pin connector plug or at the plug going to the solenoid itself
    d. Energise a test cycle then disconnect your selected plug after 5 seconds, wait 5 seconds and reconnect, continue repeating this for approximately 15 – 20 times to ensure fresh grease from the reservoir has reached all the way to the removed plug
    e. Once bleed to the rear is complete repeat the process bleeding to the end of the mainline on the front of the vehicle
    f. Note that you must allow enough pumps to completely flush the mainline of the system. All air must be expelled to ensure pressure can be achieved.







Basic Fault Finding

Fault	Cause	Remedy	
Grease leaking from reservoir breather	Over filling	When filling leave a 1-2cm air gap above follower plate	
System Over greasing	Timer set on too short a time increment or bad power/ earth connection	Adjust timer increment or check quality of power and earth connections	
System undergreasing	Timer set on too large a time increment	Adjust timer	
System not greasing but Solenoid operates	Air in mainline	Bleed System	
System not greasing solenoid doesn't operate	Fault in electrics	Test wiring & timer outputs when test cycle activated	

Wiring Diagram