

## GUIDELINES FOR THE USE OF THE BIRRANA A9570-1 FRONT WHEEL GROUP FILTER CART

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### CAUTION

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Read and be familiar with these guidelines and any relevant truck manufacturer's instructions or Risk Assessments before commencing work. Follow all site safety procedures.

Not every risk or hazard associated with these procedures or operation of this equipment will have been foreseen. Every precaution must be taken to ensure the work area is safe and that you do not place yourself or others at risk.

Hot oil may cause scalding. Take care when removing plugs. Wear suitable PPE including gloves and eye protection.

Check that the wheel group is fitted with a breather before attempting to filter the oil. If no breather is fitted, or if the breather is blocked, the wheel group may be over-pressured during filtering and wheel group seal damage may result. (Note that the filter cart may still be used if no wheel group breather is fitted, but the oil will need to be recirculated via the cart reservoir which is vented. Consult Birrana Engineering for further information).

Ensure that only the correct oil (i.e. the oil specified for the wheel groups) is used in the filter cart. Do not substitute or switch between oil types or wheel group damage could occur.

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### 1. DESCRIPTION & TYPICAL OPERATION

The Birrana A9570-1 filter cart has been designed for filling and "kidney looping" front wheel group oil in off-highway trucks. It is suitable for use with mineral and synthetic oils up to ISO VG1000 oils (e.g. Mobil SHC 639).

The filter cart utilises a large capacity (just under 2 litres per cycle) double diaphragm air pump to circulate the oil. The pump should be operated SLOWLY, typically at no more than 10 or 12 cycles per minute, to avoid cavitating and/or foaming the oil. Pump speed (oil flow rate) is controlled by adjusting the air pressure regulator setting on the cart.

The air pressure required to set the pump speed will vary depending the viscosity of the oil. To pump at the correct speed, warm oil will require a lower air pressure regulator setting than cold oil.

The filter cart incorporates twin "spin-on" filter elements to filter the oil. To avoid wheel-end contamination should the filter elements block or clog, the filter has no by-pass. The filter body is fitted with a visual clogging indicator and a pressure gauge to assist with monitoring of filter condition. Pressure on the pressure gauge will increase as the filters clog.

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### NOTE

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**The filter clogging indicator may show "red" when pumping cold, high viscosity oil. This is normal and does not indicate that the filters are clogged.**

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The cart incorporates a vented reservoir with a level indicator. The reservoir is typically only used when filling or topping up wheel groups. When "kidney looping", oil is recirculated, typically by-passing the reservoir.

The path taken by the oil is controlled via two 3-way ball valves mounted on the reservoir. Typically to select between "filling" or "kidney looping" modes, only the bottom ball valve is used.

The upper ball valve is not normally used. It is only required when "kidney looping" a wheel group via the vented reservoir in the case of wheel groups not fitted with a breather. Refer to Birrana for further information if required.

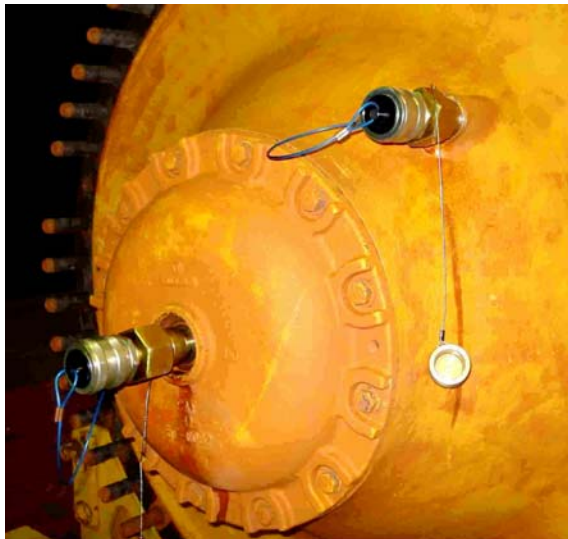
## 1. USING THE BIRRANA A9570-1 FILTER CART TO FILTER (“KIDNEY LOOP”) THE WHEEL GROUP OIL.



1. Park the truck with the wheel hub drain plug positioned above the oil level of the front wheel group.



3. Drive the truck forwards or backwards to position the drain port to the bottom of the wheel group.



2. Remove the plugs and fit the adaptors to the fill and drain ports. Do not over tighten.



4. Connect the suction hose to the bottom drain plug adaptor.



5. Connect the return line to the central "Fill" plug adaptor.



6. Ensure the valve handle on the lowermost ball valve on the filter cart is in the "Filter" position.



7. Turn on the air to start filtering the oil.

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**NOTE**

The pump should only operate at LOW speed, e.g. typically around 10 or 12 cycles per minute, or one cycle every 5 or 6 seconds or so.

At this rate, it should take approximately 20 minutes to filter the volume of oil in the wheel group approx ten times.

Extending filtering time will continue to filter the oil, but to diminishing advantage.

Pump speed will vary with oil viscosity and air pressure regulator setting. Pump speed may be adjusted by adjusting the air pressure regulator on the unit.

If the pressure regulator has not already been set, unscrew the regulator before connecting the air supply line and then slowly increase the pressure to achieve the desired flow rate.

It is recommended that air pressure regulator setting not exceed 30 psi if possible. This will eliminate the possibility of the wheel group being over-pressured under any circumstances.

Filtering when the oil is warm will reduce the pressure setting required.

8. Check the clogging indicator and pressure gauge on the filter housing. The pressure on the gauge will increase as the filter elements clog.

## 2. USING THE BIRRANA A9570-1 FILTER CART TO FILL OR TOP UP THE OIL IN THE FRONT WHEEL GROUP.

1. Fill the reservoir on the filter cart with a sufficient quantity of the correct oil for the wheel group.

### CAUTION

Ensure that only the correct type of oil (i.e. the oil specified for the wheel groups) is used in the filter cart. Do not substitute oils or switch between oil types or wheel group damage may occur



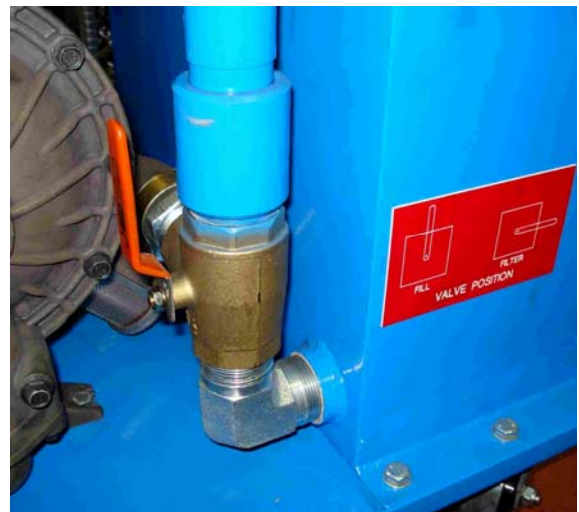
2. Remove the level plug from the centre of the cover.



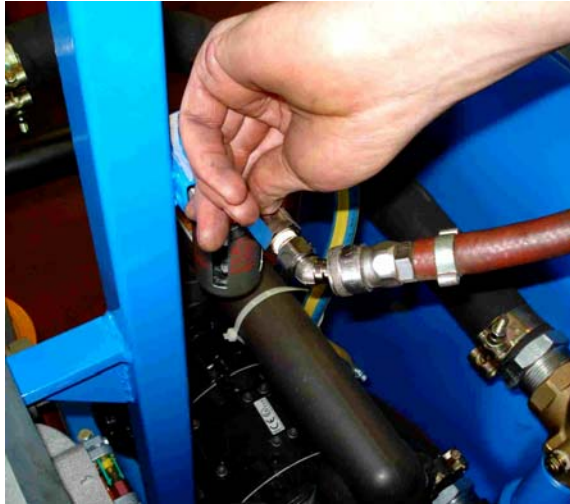
3. Remove the "Suction" hose from the drain plug adaptor in the drain port.



4. Connect the "Return" line to the drain plug adaptor.



5. Set the lower ball valve to the "Fill" position.

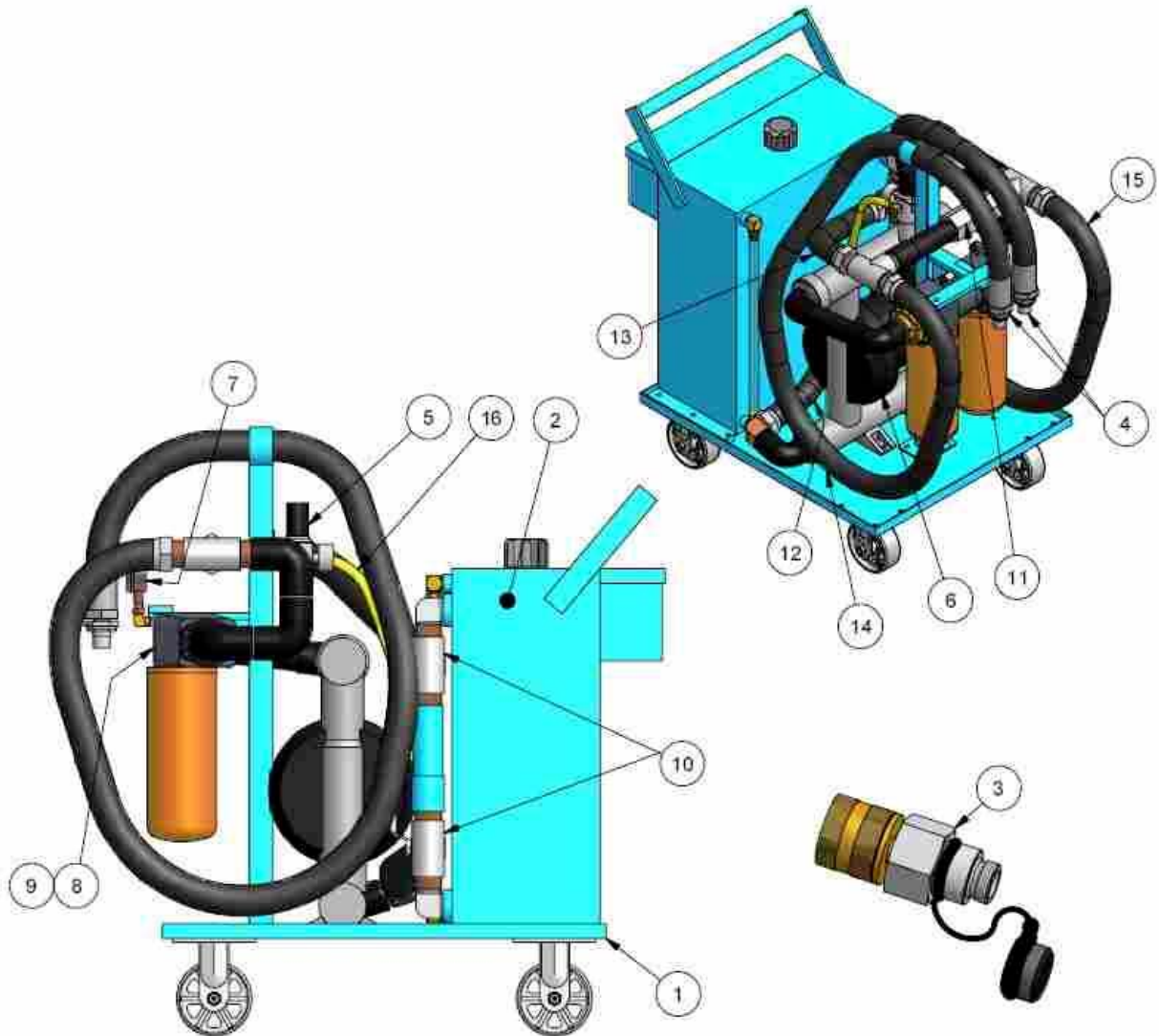


6. Turn on the air to start pumping oil into the wheel group .



7. When oil begins to flow out of the level plug port, turn off the air supply to stop the pump and install the level plug.
8. Finish by driving the truck forwards or backwards until the drain plug is positioned above the oil level. Remove the adaptor and fit the drain plug.

### 3. PARTS ILLUSTRATION.



PARTS LIST			
ITEM	PART NUMBER	TITLE	QTY
1	A9570-1-01	CART	1
2	A9570-1-02	TANK/RESERVOIR	1
3	A8868	WHEEL END DRAIN CONNECTOR ASSY.	2
4	B8871	RECEIVER, FAST FILL	2
5	B4117	REGULATOR	1
6	B10055	PUMP	1
7	B10056	GAUGE	1
8	B10057	FILTER ASSEMBLY	1
9	B10058	FILTER ELEMENT	2
10	B10059	VALVE, BALL - 3 WAY	2
11	B10060	VALVE, RELIEF	1
12	B10061	HOSE ASSY. #1	1
13	B10062	HOSE ASSY. #2	1
14	B10063	HOSE ASSY. #3	1
15	B10064	HOSE ASSY. #4	1
16	B10065	HOSE ASSY. #5	1