



TSB # 23-2018

April 20, 2018

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TO: All Bourgault Dealers
ATTN: Service Manager, Parts Manager, Sales Manager
SUBJECT: Meter Rate Fluctuation on 7000 series air-seeders

INFORMATION BULLETIN (Information code 23.18)

BACKGROUND:

The 7000 series air-seeders have a fully electro-hydraulic controlled metering circuit. Under a very specific set of operating conditions (tractors hydraulic system plus the air seeders system), one or more of the metering augers can experience a continuous cyclical rate fluctuation (oscillating from above to below the target rate an equal amount). This oscillation is being caused by small pressure fluctuations introduced by the tractors hydraulic system (pump) and the natural frequency of the components in the metering circuit (where we can have up to 6 springs in series – priority valve + 5 metering auger compensator spools). It is very difficult to design the metering circuit to eliminate this problem as it is the combination of that specific tractor's hydraulic system and a specific hydraulic demand on the air seeders metering system based upon the different metering rates, different products being metered, fans speeds, seeding speeds, etc...

CORRECTIVE ACTION:

When faced with this problem the following series of steps should be taken to eliminate the rate fluctuation(s):

STEP #1:

The first step in attempting to resolve meter rate fluctuations is to “shift” the operating point of the system by:

- Temporarily adjusting the seeding speed by ½ mph – if the fluctuation is eliminated then proceed to adjusting the drive range on one or more metering augers.
 - Resume your original seeding speed
 - Where these types of “adjustments” are not possible (ensure all rates can be maintained down to 1-section open when configured with ASC) or are not successful in removing the rate fluctuations, it is suggested to proceed to step #2.

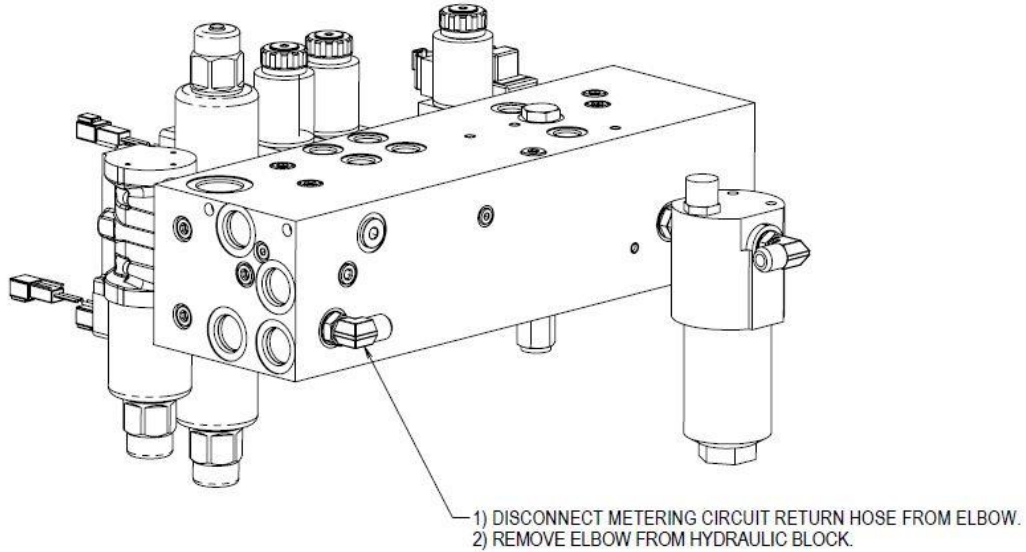
STEP #2:

- 7000 series air-seeders after sn: 42594AS-01 are equipped with a metering circuit back-pressure kit.
 - This kit provides the ability to add back-pressure directly to the metering circuit (with the use of a needle valve) which “shifts” the systems operating point further than a simple range or seeding speed change.
 - To add back-pressure
 - Engage fan1 hydraulic circuit
 - Slowly turn needle valve in clockwise direction until 450-500psi is displayed on the pressure gauge - lock needle valve knob in this position
 - Resume seeding
 - if meter rate fluctuations still exist – increase pressure by 100 psi increments until rate fluctuations are eliminated or pressure on the gauge reaches 1100psi.
 - If meter rate fluctuations are still present proceed to step #3

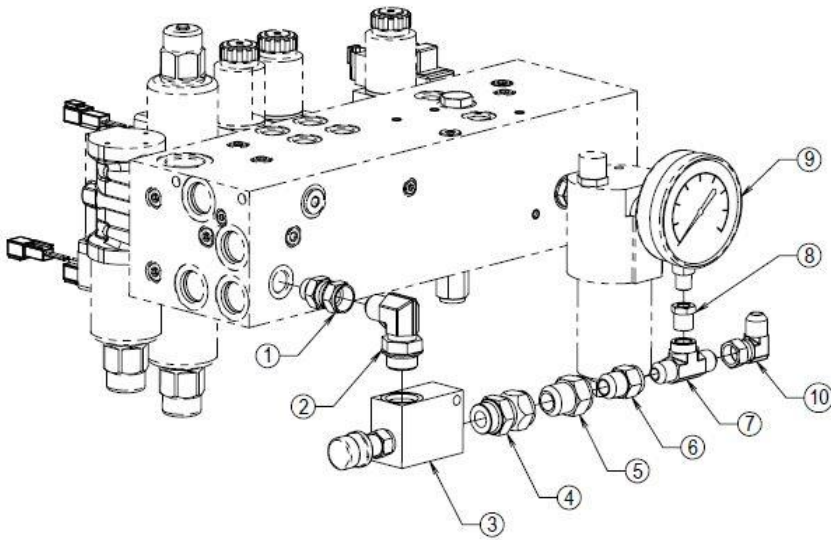
****Important note: 7000 series air-seeders prior to sn: 42594AS-01 were not equipped with this metering circuit back-pressure kit, however it can be purchased and installed. See page 2 for installation instructions.**

Part Number	Description	Reference Price	List Price
6298-79	Metering Circuit Back-Pressure Kit	\$	\$

Removal



Installation



- 1) INSTALL FITTINGS AS SHOWN.
- 2) CONNECT METERING CIRCUIT RETURN HOSE TO ELBOW (#10).
- 3) TURN NEEDLE VALVE ALL THE WAY OUT (CCW) SO FLOW IS UNRESTRICTED.
- 4) ENGAGE FAN 1 HYDRAULIC CIRCUIT.
- 5) SLOWLY TURN NEEDLE VALVE IN (CW) UNTIL 500 ± 50 PSI IS DISPLAYED ON THE PRESSURE GAUGE.
- 6) LOCK NEEDLE VALVE KNOB IN THIS POSITION.

ITEM #	PART #	DESCRIPTION	QTY.
1	3345-82	ADPTR 3/4MORB X 7/8FJIC	1
2	3346-12	ADPTR 90 1-1/16MORB X 7/8MJIC	1
3	3440-58	NEEDLE VLV 5 TURN NFCD-KFN	1
4	3346-07	SWVL #12MORB X 1-1/16-12FJIC	1
5	3346-30	ADPTR UN 7/8FJIC X 1-1/16MJIC	1
6	3345-96	UN 3/4 FJIC X 7/8 MJIC	1
7	3345-21	TEE M/F/M 3/4 MJIC X 3/8 FNPT	1
8	3340-25	RDCR 1/4 F NPTFX3/8 M NPTF	1
9	3440-65	PRES GA 3000 PSI FF 1/4 MNPT	1
10	3345-19	ADPTR HYD 90 DEG 3/4 WF JIC	1

STEP #3:

7000 series air-seeders built after Jan 1, 2018 after sn: 43063AS-01 are equipped with revised hydraulic motor valve blocks on each metering auger – these new valve blocks are equipped with an orifice and check valve that work to balance the pressure between the PWM valve and counterbalance cartridge therefore fluctuations within the metering circuit have no impact on metering rates and rate fluctuations are eliminated.

7000 series air-seeders built prior to sn: 43063AS-01 that are encountering meter rate fluctuations that cannot be removed by adding up to 1100psi with the metering circuit back-pressure kit can install a couple of the new valve blocks to remove the meter rate fluctuations.

- Adjust the metering circuit backpressure down to 0 psi
- It is recommended to install the new valve block on meter #1 and meter #3.
 - if meter rate fluctuations still exist – increase meter circuit backpressure pressure to 450-500 psi
 - resume seeding
 - If rate fluctuations persist increase backpressure in 100 psi increments until rate fluctuations are eliminated or pressure on the gauge reaches 1100psi.
 - If the meter rate fluctuations cannot be eliminated install the new valve block on the remaining meters.
 - Adjust the metering circuit backpressure down to 0 psi
 - Resume seeding



*****Important – the 3441-69 valve is a bare valve block – all cartridges from the existing block must be removed and installed into the new block.**

Part Number	Description	Reference Price	List Price
3441-69	Revised Hydraulic Motor Block –(block only)	\$	\$

WARRANTY DETAIL:

Contact your local Bourgault dealer for parts warranty details.