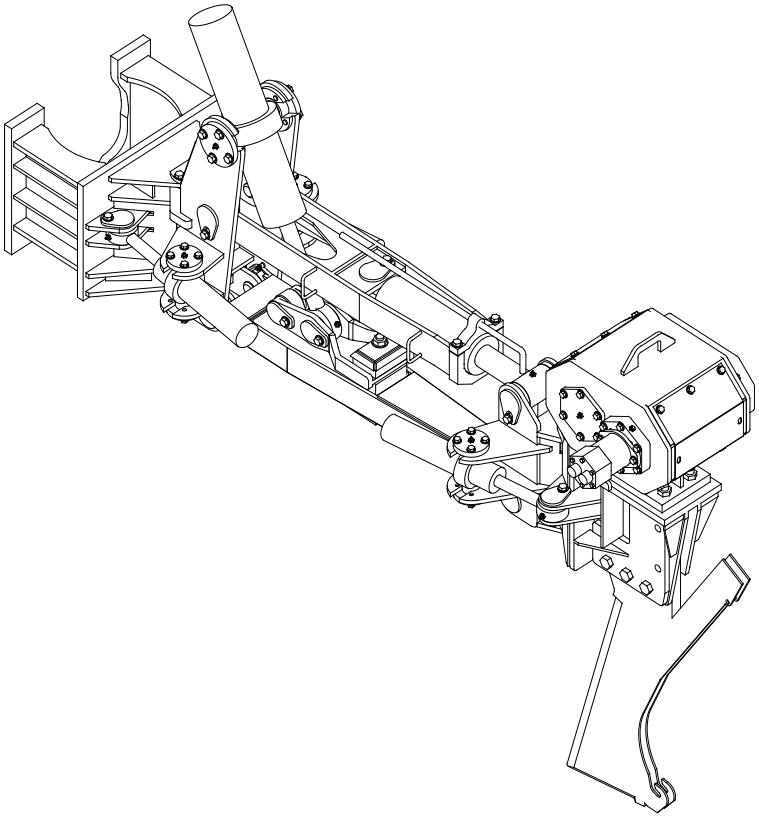
V65 PLOW

OPERATOR'S MANUAL



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INTRODUCTION

This manual contains pre-operational checklist and operating procedures for the BRON Vibratory Plows.
Some items and procedures listed in this manual may not apply to the practical plow package purchased or the tractor it is mounted on.

WARNINGS

WARNING

DO NOT WELD ON THE SHANK OR LINKAGES.
(They are made from heat-treated alloy steel)

WARNING

APPLYING DRAWBAR PULL OF MORE THAN 38,000 LBS TO THE V65 PLOW WILL VOID THE WARRANTY.

WARNING

ALL HYDRAULIC LINES, VALVE, ETC. INSTALLED WITHIN THE TRACTOR CAB SHOULD HAVE GUARDS INSTALLED TO PROTECT THE OPERATOR IN CASE OF ANY HYDRAULIC OIL RUPTURES.

RWF INDUSTRIES RESERVES THE RIGHT TO MAKE IMPROVEMENTS IN DESIGN, MATERIAL AND/OR CHANGES IN SPECIFICATIONS AT ANY TIME WITHOUT INCURRING ANY OBLIGATION RELATED TO SUCH CHANGES.

INSTALLATION

Plow Assembly to Tractor

A. Remove all attachments and studs / bolts from the rear of the transmission case.
B. Remove all paint (on the tractor) from the area to be covered by the plow's backplate. Grind off all burrs and rough spots.
C. Clean out tapped stud / bolt holes to remove any dirt or rust. If possible run a tap into the holes to remove any burrs, or foreign material in the bottom of the threads.
D. Attach the plow's backplate to the housing using the correct length and diameter studs / bolts.
E. Studs should be threaded into the full depth available in the housing.

NOTE

Seal any openings in the transmission that are covered by backplate with silicone seal. This is to prevent water contamination in the transmission.

TORQUE CHART (guideline)

Diameter	DRY - NC	DRY - NF	LUB - NC	LUB - NF
¾"	370	415	200	225
⅞"	600	660	330	360
1"	900	990	495	545
1¼"	1800	1995	990	1095
1½"	3150	3550	1730	1950

F. Hi-torque washers and Grade 8 nuts or equivalent should be used where required.
G. Apply Loctite to studs, bolts and hole threads.
H. Torque all studs, bolts and nuts according to the original tractor manufacturer's specifications.

NOTE

Some tractor installations may have a pinned connection between the tractor and the plow's backplate. For this attachment, the backplate will be designed for same. Dealer supplied pins will be required in lieu of mounting bolts and/or studs.

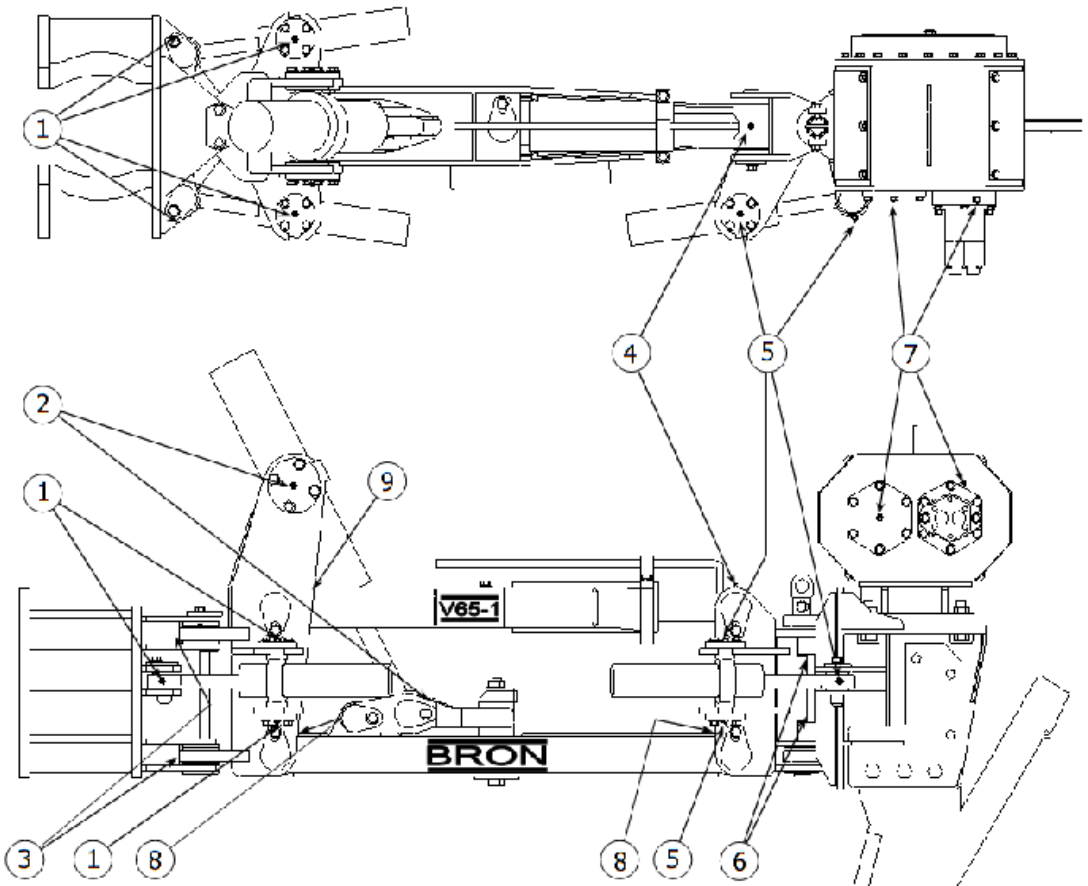
PRE-OPERATION CHECKLIST

1. **Prior to any movement of the plow functions, lubricate all points as per lubrication guide.**
2. Ensure that all hydraulic lines, valves, etc. that may have been installed within the tractors cab are properly guarded to protect the operator in case of any hydraulic ruptures.
3. **Check the hydraulic oil system to ensure that it is filled to the tractor manufacturer's specifications.**
4. **Prior to operation of hydraulics, ensure that no air is trapped in the circuit.**
5. Start tractor and engage each control of the plow and related accessories to ensure that the proper connections have been made and that there are no interference fits.
6. **Check all hydraulic connections for leaks.**
7. **Check all fasteners to insure that they are properly torqued.**
8. To protect hydraulic circuit and pump, line pressure must not exceed 2500 PSI.
   To set pressure at 2500 PSI:
   a. Install pressure gauge in pressure line between tractor pump and directional control valve.
   b. Activate main lift cylinder to raise plow to maximum position. **Hold** control lever open to build up line pressure.
   c. Adjust relief setting in manifold inlet section of directional control valve to obtain 2500 PSI reading in the pressure gauge.

VIBRATORY PLOW OPERATION – VALVE SECTIONS

1. **MAIN LIFT**
   This section controls the lift cylinder(s) and raises/lowers the plow assembly. This section also contains a float detent; float should only be used with tamper feet which work like skis. To place main lift cylinder into float, pull control lever hard towards operator. If directional control valve has been incorrectly mounted, in upside down position, then the float detent position will be in opposite direction. Operator preference and experience will determine ultimate use of float detent.

2. **FRONT SWING**
   This section controls the two front swing cylinders connected to the backplate and main mast of the plow assembly. These cylinders activate the offsetting of the plow, right and left center. This section contains a float detent. To place front swing cylinder into float, pull the control lever hard towards operator. If directional control has been incorrectly mounted, in upside down position, then the float detent position will be in the opposite direction. Front swing cylinders should be in float during all plowing conditions. Operator preference and experience will determine ultimate use of the float detent.



Location	Description	# of Points	Frequency
1	Front Swing Cylinders	6	twice daily
2	Main Lift Cylinder	3	twice daily
3	Front Mast	2	twice daily
4	Attitude Cylinder	1	twice daily
5	Rear Swing Cylinder	3	twice daily
6	Rear Mast	4	twice daily
7	Shaker Box	2	twice daily
8	Lower Link	4	twice daily
9	Upper Link	2	twice daily

3. **REAR SWING**

This section controls the parallel direction of the shank and chute. The shank and chute should be parallel to the tractor during plowing mode. If front swing cylinders are in float, the shank will always find the parallel position.

4. **ATTITUDE**

This section controls the angle or attitude of the shank. By angling the point of the shank towards the tractor, the shank will want to ride out of the ground. If the shank point is angled back away from the tractor, the shank will want to plow deeper into the ground. Once the plow depth has been achieved, the shank attitude should only be used to maintain desired depth.

5. **ADJUSTABLE BLADE LIFT**

This section raises and lowers the shank. When the directional valve section is in neutral, the shank is held in position with a double lock valve.

6. **SHAKER MOTOR**

The motor is omni-directional. A control cable is provided to the shaker motor flow control to control the speed of the shaker.

NOTE: Lubrication frequencies provided in the adjacent chart are minimums; the more you grease these points, the longer your components will last.

BRON V65 PLOW WARRANTY

BASE WARRANTY (6 months or 600 hours):
RWF Industries a Division of Roberts Welding & Fabricating Ltd. (RWF) warrants that the new BRON **Power Unit** sold by RWF will be free from defects in material or workmanship for a period of 6 months or 600 operating hours, whichever occurs first, starting from the date of delivery to the first user.

THIS WARRANTY DOES NOT APPLY TO:
HYDRAULIC and MOUNTING INSTALLATION KIT PARTS, HOSES, OR REPLACEMENT PARTS, which are covered by other warranties

RWF RESPONSIBILITY:
RWF will, at its option, repair or replace with a new or reconditioned part, any warranted part that fails by reason of defective material or workmanship, free of charge delivered at a place of business of an RWF Dealer. Note: parts replaced under warranty become the property of RWF. During the 6 month or 600 hour BASE WARRANTY period, RWF will pay the reasonable cost of labor that is necessary to install any repaired or replacement part during normal working hours. Overtime rates and travel expenses will not be reimbursed.

USER RESPONSIBILITY:
- The installer, operator, or service person, assumes responsibility to read, understand and comply with RWF's written INSTALLATION, OPERATOR, SERVICE AND WELDING INSTRUCTIONS
- All costs associated with transporting the attachment and/or equipment to an authorized location.
- RWF is not responsible for any expense incurred in field repair.
- Supplying a hydraulic oil sample from the carrier machine based on the following schedule:
- 1st SAMPLE at the 100 HOUR SERVICE (break-in period)
- 2nd SAMPLE at the 3 MONTH period (±4 weeks)
- 3rd SAMPLE at the 6 MONTH period

THESE WARRANTIES DO NOT COVER FAILURES RESULTING FROM:
- Installation, alteration, operation, maintenance, repair or storage which RWF judges improper.
- Not performing DAILY VISUAL INSPECTIONS AND RETIGHTENING as specified in RWF Manuals.
- Not following RWF's recommended welding procedure.
- Operation after discovery of defective or worn parts.
- Unreasonable delay in making a repair after being notified of a potential problem.
- Acts of God, war, vandalism, riot, theft, explosion, and any other act of nature or man

THESE WARRANTIES SPECIFICALLY EXCLUDE:
- Installations not approved by RWF.
- Hardface welding to build up wear on surfaces.
- Replacement due to wear.
- Ground engaging tools. Points, guards, blades etc
- Repairs by other than an authorized RWF Dealer.
- Any alteration to BRON products.

- Use of parts not sold by RWF.
- Labor charges deemed excessive by RWF.
- Parts shipping charges in excess of those, which are usual and customary.
- Duty and local taxes.

LIMITATIONS AND EXCLUSIONS:

Violation of any federal, provincial, state or local laws, ordinances, rules or regulations, or removal or alteration of product serial numbers void RWF's written product warranties. The written product warranties made by RWF set forth RWF's only obligations with respect to any claims of failure, defects or deficiencies in products sold by RWF. RWF MAKES NO OTHER WARRANTIES OR REPRESENTATIONS WHATSOEVER, EXPRESS OR IMPLIED, OF THE QUALITY, PERFORMANCE, DURABILITY, MATERIALS, WORKMANSHIP, SUITABILITY, CONDITION, DESIGN OR UTILITY OF PRODUCTS SOLD BY RWF, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OR MERCHANT ABILITY AND FITNESS. ALL SUCH OTHER WARRANTIES AND REPRESENTATIONS BEING HEREBY EXPRESSLY EXCLUDED. RWF SHALL NOT BE LIABLE FOR SPECIAL INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING WITHOUT LIMITATION, COSTS, LOSSES, OR LIABILITIES ON ACCOUNT OF DELAY OR DOWNTIME.

DISCLAIMER REGARDING OTHER REPRESENTATIONS OR WARRANTIES:

No person is authorized to grant any other warranties or to assume any other liability on RWF's behalf unless made or assumed in writing by an officer of RWF. No person to grant any warranties or to assume any liabilities on the seller's behalf unless made or assumed in writing by the seller. As used in this warranty the term RWF means, RWF Industries, a division of Roberts Welding and Fabricating Ltd, Woodstock, Ontario, Canada.

SOME ITEMS NOT COVERED BY WARRANTY:

Items and service related functions that are not covered by warranty include, but are not limited to:

- Issues resulting from misuse, negligence or accident.
- Issues arising from the use of non-approved parts.
- Repair or adjustment by other than RWF or its authorized dealers.
- Issues resulting from the installation of unauthorized attachments or modifications.
- Tightening of nuts, bolts, screws, etc. or adjustments.
- Natural wear or defects caused by natural wear.
- Issues due to use of improper oil, grease, or other lubricant.
- Daily allowances and overtime labor rates.
- Indirect damages such as loss of earning, etc.
- Normal maintenance services. Maintenance services not directly involved with defective parts are considered normal service and should be excluded from a claim.