



Operator's Manual



CANADIAN AGRI TECHNOLOGIES INC.

Sabre
Crop Divider

Sabre – Operator's Manual

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TOLL FREE PARTS LINE
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12 MONTH LIMITED WARRANTY

Canadian Agri Technologies Inc. warrants to the original retail purchaser that should this product or any part there of, under normal use and conditions, be proven defective in material or workmanship within 12 months from the date of original purchase, such defect(s) will be replaced.

To obtain the replacement within the terms of this warranty, return the item (shipping prepaid) to Canadian Agri Technologies Inc., 47 Halparin Drive, Winnipeg, MB. Canada R3X 1Z9, together with proof of warranty coverage (e.g. dated bill of sale) and a new part(s) will be shipped to you. Canadian Agri Technologies Inc. will pay the packaging, shipping and handling costs to ship the replacement part(s) to you.

This warranty does not apply to any product or part thereof which in the opinion of the Company has been damaged through alteration, improper installation, mishandling, misuse (exceeding RPM), neglect or accident. THE EXTENT OF THE COMPANY’S LIABILITY UNDER THIS WARRANTY IS LIMITED TO THE REPLACEMENT PROVIDED ABOVE AND, IN NO EVENT, SHALL THE COMPANY’S LIABILITY EXCEED THE PURCHASE PRICE PAID BY THE PURCHASER OF THE PRODUCT.

This warranty is in lieu of all other expressed warranties or liabilities. ANY IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANT ABILITY, SHALL BE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY, ANY ABILITY FOR BREACH OF ANY WARRANTY HEREUNDER INCLUDING ANY IMPLIED WARRANTY OF MERCHANT. ABILITY MUST BE BROUGHT WITHIN A PERIOD OF 12 MONTHS FROM THE DATE OF ORIGINAL PURCHASE. IN NO CASE SHALL THE COMPANY BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGE FOR BREACH OF THIS OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, WHATSOEVER.

Serial #: _____ Date of Purchase: _____

Review the safety precautions and operating instructions in this manual with all operators before they use this machine.
Make certain that all operators know and follow the information on safety decals.



SAFETY DECAL

NOTE:
There is an extra Safety Decal supplied with the unit. Affix the decal to the header in a prominent position.

Make sure that all moving parts are free of crop debris before operating. Check that the *Sabre* is securely mounted before operating.

Keep yourself and others well clear of the *Sabre* while it is running.

MAINTENANCE SAFETY

Do not oil or adjust the cutterbar while it is running.

Do not wear loose clothing around moving parts.

Disconnect hydraulic lines from the motor before starting any maintenance. Use heavy gloves when handling the cutterbar. Remember that the sickle sections are sharp and can cause injury even if the machine is not running.

HYDRAULIC SAFETY

Escaping hydraulic fluid under pressure can have sufficient force to penetrate the skin, causing a possible toxic reaction. Relieve all pressure before disconnecting the hydraulic lines.

Hydraulic fluid escaping from a small hole can be almost invisible. Use a piece of cardboard or wood to search for suspected leaks. Wear protective gloves and safety glasses when looking for leaks.

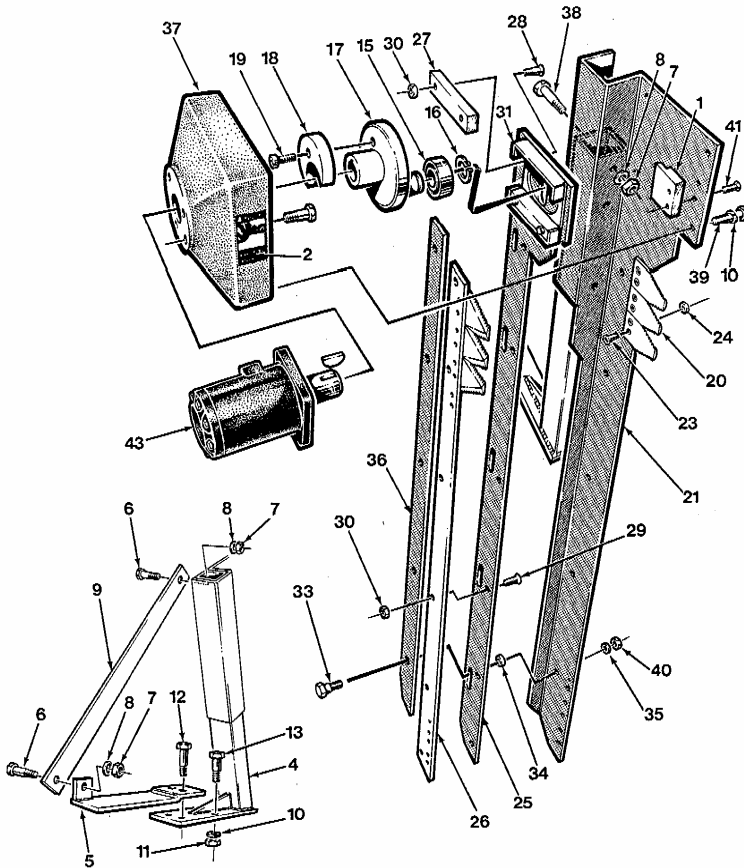
If injured by escaping hydraulic fluid, see a doctor at once. Serious infection can result if medical treatment is not administered immediately.

Before applying pressure to the system, be sure that all connections are tight and that no hoses are damaged. Do not attempt to fix leaks with tape, cements or epoxy compounds. Under operating pressures such repairs can burst suddenly.

| Item | Number | Description | QTY |
|------|--------|--|-----|
| 1 | 088 | BLOCK - Hold Down, Siding Cutterbar, Plastic | 1 |
| 2 | 134 | DECAL - Danger, Stay Clear of Moving Knives | 1 |
| 3 | 067 | DECAL - FUMA Sabre | 1 |
| 4 | 095 | Mounting Bracket | 1 |
| 5 | 090 | PLATE - Mounting | 1 |
| 6 | 138 | SCREW - Hex Head Cap. 1/2 NC x 1 1/4 | 2 |
| 7 | 128 | NUT - Hex Head, 1/2" | 4 |
| 8 | 101 | LOCKWASHER - 1/2" Standard | 4 |
| 9 | 091 | BAR - Support, Mounting Bracket | 1 |
| 10 | 116 | LOCKWASHER - 3/8" Standard | 13 |
| 11 | 135 | NUT - Hex Head, 3/8 NC | 5 |
| 12 | 140 | SCREW - Hex Head Cap, 3/8 NC x 1 3/4 | 2 |
| 13 | 136 | SCREW - Hex Head Cap, 3/8 NC x 1 1/2 | 3 |
| 15 | 206 | BEARING | 1 |
| 16 | 208 | SNAP RING | 1 |
| 17 | 073 | CAM - Knife Drive, Casting | 1 |
| 18 | 074 | COUNTER WEIGHT - Cam | 1 |
| 19 | 125 | SCREW - Hex Socket, 5/16 - 18 NC x 5/8 | 1 |
| 20 | 072 | SICKLE SECTION | 38 |
| 21 | 082 | PLATE - Mounting, Stationary Cutterbar, R.H. | 1 |
| 21 | 200 | PLATE - Mounting, Stationary Cutterbar, L.H. | |
| 23 | 122 | SCREW - F. H. Hex Socket, #10 - 24 NC x 5/8 | 76 |
| 24 | 124 | NUT - Self locking, #10 - 24 NC | 76 |
| 25 | 188 | PLATE - Mounting, Sliding Cutterbar, R.H. | 1 |
| 25 | 212 | PLATE - Mounting, Sliding Cutterbar, L.H. | |
| 26 | 094 | BAR - Knife, Sliding Cutterbar | 1 |
| 27 | 092 | GUIDE - Cam Housing, Plastic | 2 |
| 28 | 141 | SCREW - F. H. Hex Socket, 1/4 NC x 1 1/4 | 4 |
| 29 | 142 | SCREW - F. H. Hex Socket, 1/4 NC x 3/4 | 6 |
| 30 | 113 | LOCKNUT - Hex Head, 1/4 NC | 10 |
| 31 | Ref | CHANNEL - Guide, Cam | |
| 33 | 086 | SCREW BEARING - Hex Head, 5/16 NC | 5 |
| 34 | 087 | SPACER - Knife Guide, Plastic | 5 |
| 35 | 121 | WASHER - Flat, 5/16" Standard | 5 |
| 36 | 093 | PLATE - Hold Down, Knife Guide | 1 |
| 37 | 099 | HOUSING - Knife Drive, R.H. | 1 |
| 37 | 201 | HOUSING - Knife Drive, L.H. | |
| 38 | 100 | SCREW - Hex Head Cap, 1/2 NC x 3 | 2 |
| 39 | 144 | SCREW - Hex Head Cap, 3/8 NC x 1 Full Threaded | 8 |
| 40 | 131 | LOCKNUT - Hex Head, 5/16 NC | 5 |
| 41 | 137 | SCREW - Hex Head Cap, 1/4 NC x 1 Full Threaded | 2 |
| 43 | 056 | Motor - Hydraulic c/w Woodruff Key, (FUMA 7191) | 1 |
| 45 | 204 | MOUNTING BRACKET - S-Shaped | 1 |
| | | END OF MOTOR - F. H. Hex Socket, 1/4 - 20 NC x 3/4 | 1 |

Parts List & Assembly

CROP DIVIDER ASSEMBLY



Specifications subject to change without notice. Right Hand Version Illustrated

MOUNTING BRACE FABRICATION INSTRUCTIONS

The *Sabre* is supplied with some material to assist you in fabricating Fig. 1 (a) or Fig. 1 (b), the mounting bracket to suit your header.

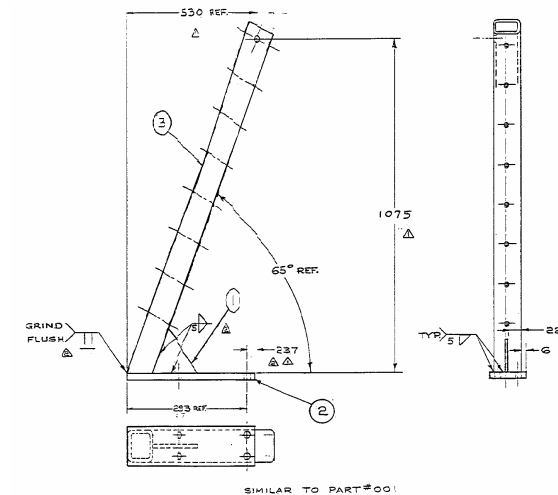


Fig 1 (a)

(a) Fabricate the base plate to suit your swather from the flat bar supplied. Drill base plate as required for attachment to the header. Weld the 2" X 2" tubing flush with the point so that adjustment of the *Sabre* will not be impeded.

Additional material (not supplied) might be required to build a secure base plate and solid bracing on your swather for the *Sabre*.

MOUNTING BRACE FABRICATION INSTRUCTIONS CONTINUED

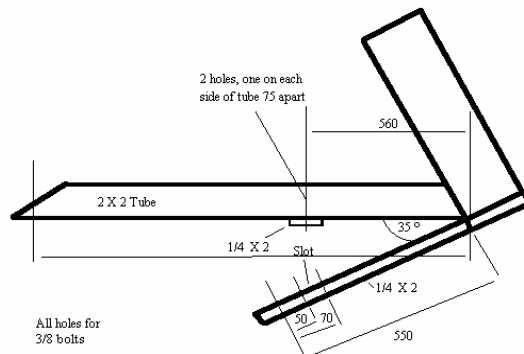




Fig 1 (b)

(b) Make mounting for top of end strut out of square tubing long enough to extend to the reel lift cylinder. Have a bolt on shoe to go from the cutter bar to the bottom of the mounting bracket. Rather than removing the *Sabre* for standing cereal crops, add a “V” shaped cover over the knife. This would also double as a safety shield.

TORQUE CHART

| BOLT TORQUES (Coarse and Fine Threads) | | | | |
|--|-------|--|-------|---------|
| Imperial Sizes | | | | |
|  Grade 5 (3 marks) | |  Grade 8 (6 marks) | | |
| Bolt Diameter (in.) | N - m | lb - ft | N - m | lb - ft |
| 1/4 | 14 | 10 | 19 | 15 |
| 5/16 | 28 | 20 | 40 | 30 |
| 3/8 | 50 | 35 | 70 | 55 |
| 7/16 | 80 | 60 | 110 | 85 |
| 1/2 | 120 | 90 | 170 | 130 |
| 9/16 | 180 | 130 | 250 | 190 |
| 5/8 | 250 | 180 | 340 | 250 |
| 3/4 | 430 | 320 | 610 | 450 |
| 7/8 | 700 | 520 | 980 | 730 |
| 1 | 1050 | 770 | 1480 | 1090 |

Before operating your new *Sabre*, check the tightness of all fasteners. Tighten according to the torque specifications. Check all bolts for tightness after the first hour of operation. Torque again when necessary.

HYDRAULIC MOTOR

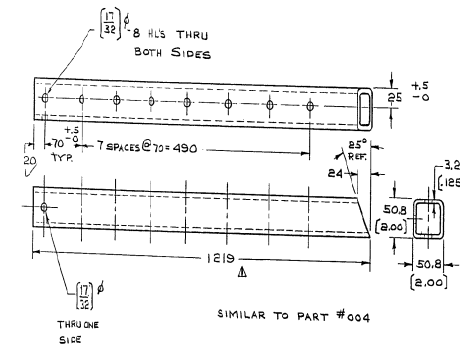
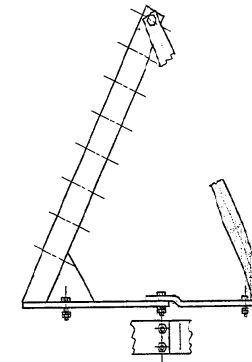
- High torque
- Displacement - 3.0 cubic inches/revolution
- RPM - 885 @ Maximum flow and continuous PSI
- Hydraulic Pump requirements - minimum flow of 10 GPM @ 500 psi
- Motors can be mounted singly or connected in series for multiple motor applications

CUTTERBAR

Knives - one stationary, one sliding, 38 replaceable sickle sections

MOUNTING BRACE FABRICATION INSTRUCTIONS CONTINUED

Drill appropriate holes on 2" X 2" tubing to allow for height adjustments. Make sure that gussets and mounting is well secured to the header before attaching the *Sabre* with the 2 - 3" inch bolts supplied.

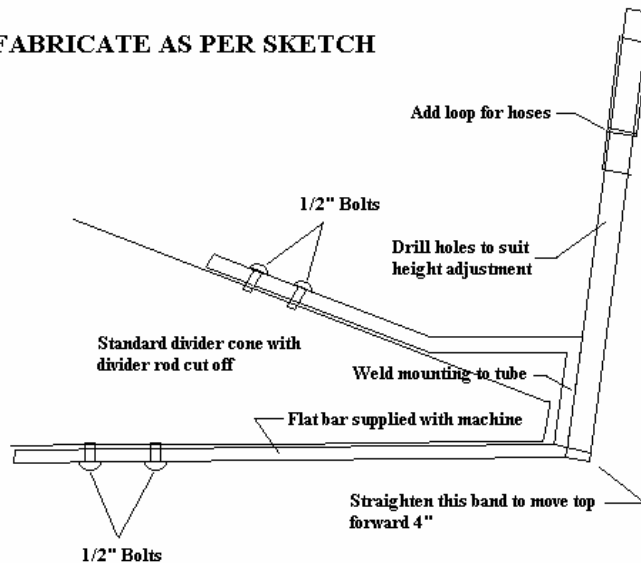


NOTE:

The *Sabre* should sit with the bottom knife just above the table knife height and should be perpendicular or slightly tilted forward.

BRACKET FOR MACDON MODEL 9600

FABRICATE AS PER SKETCH



PREPARATION FOR STORAGE

If possible, the *Sabre* should be removed from the header and stored in a sheltered area.

1. Thoroughly clean the *Sabre* of chaff, straw and crop debris.
2. Touch up all damaged painted surfaces.
3. Oil all exposed unpainted or machined surfaces - including bolt threads.

IMPORTANT:

If the *Sabre* is being stored - do NOT drain the hydraulic fluid from the motor.

REMOVAL FROM STORAGE

1. Install the *Sabre* on the header.
2. Oil the cutterbar.
3. Hook up hydraulic lines.
4. Follow the procedure in the **Operation Section**.

CUTTERBAR



CAUTION!

Stop the traction unit engine, set the park brake, and disconnect the hydraulics from the cutterbar motor before working on the *Sabre*. The sickle sections are sharp - wear heavy gloves when handling the cutterbar.

To remove rust buildup from the sickle sections, apply penetrating oil to the rusted areas and run the cutterbar.

To obtain the best results, the sickle sections should be replaced if worn or broken.

In areas where the soil is sandy or gritty, the cutterbar should not be oiled. In normal soil conditions, use SAE 30 oil on the cutterbar daily. When in use, the cutterbar should be inspected daily for knife damage or loose fasteners.

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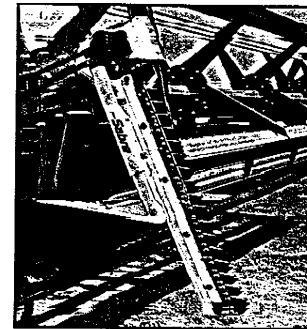
NOTE:

When replacing knives, use only correct fasteners. See Parts List.

HOSE REQUIREMENTS

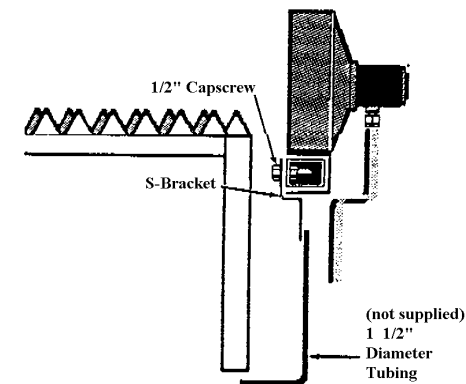
100 RI ½ diameter ½ NPT to 7/8 – 14 JIC 37, 3.4 m long
100 RI ½ diameter ½ NPT to 7/8 – 14 JIC SW10 female, 3.0 m long

SUPPORT BRACKET



NOTE:

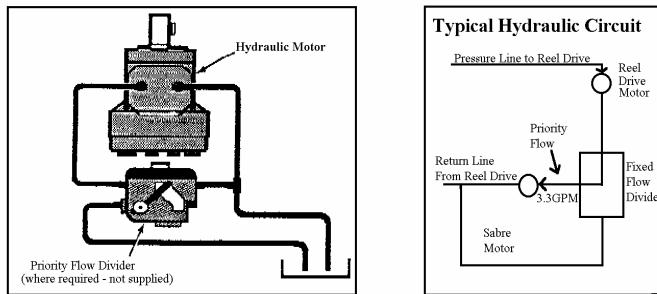
Depending on the construction of your particular header – reinforcement of the mounting area may be necessary before installing the *Sabre*.



SUPPORT BRACKET - TOP VIEW

FLOW DIVIDER

Typical installations should not require the use of a flow divider. If your dealer or hydraulics specialist has determined that a flow divider should be used, mount it in a place where it is convenient for the operator, preferably in the tractor cab. Install as illustrated using 1/2" hydraulic fittings.



FLOW DIVIDER - TYPICAL INSTALLATION

Ensure that hydraulic hoses are securely mounted and kept well clear of moving parts.

The *Sabre* is also available in a left hand version. Both L.H. and R.H versions are installed in a similar manner.

DAILY INSPECTION

The following check list should be carried out daily or every ten hours, whichever comes first.

1. Clear all crop and dirt buildup from the *Sabre*, especially around the cutterbar.
2. Check the cutterbar for worn or broken parts. Replace any unserviceable parts.

IMPORTANT:

Spacer - Knife Guide (part #087) running on Screw Bearing (part #086) must be checked frequently and replaced immediately if worn or missing to avoid damage to Plate - Mounting, Sliding Cutterbar (part #188).

3. Check all moving parts for wear.
4. Check all mounting hardware for tightness, especially the drive motor mounting bolts.
5. Check the Hydraulic lines and connections for leaks.

IMPORTANT:

When tightening hydraulic connections, always use two wrenches to prevent damage to hoses and fittings. Tighten fittings only enough to eliminate leaks. Do NOT over tighten.

NOTE:

To function correctly, the *Sabre* requires 0.4 to 1.0 hp (0.3 to 0.8 kW). The hydraulic oil flow required at an operating speed of 250 rpm is 3.3 gal/min (0.21 L/s). Hydraulic pressure during normal operation is less than 500 psi (3 450 kPa). A hydraulic pump supplying at least 5 gal/min (0.3 L/s) should have adequate flow to operate the *Sabre*. Most tractor and windrower hydraulic systems can easily supply this oil flow without affecting the performance of other hydraulically driven components.

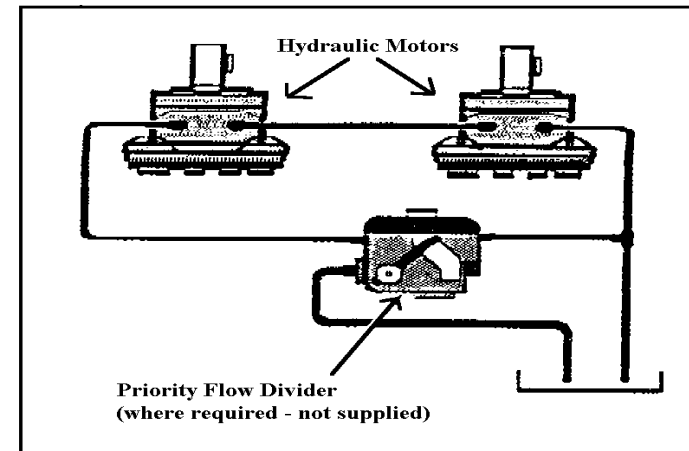
Maximum RPM must not exceed 400!

When first operating the *Sabre*, be prepared to shut down quickly. Usually if something is going to happen it will happen in the first few minutes.

Before operating, make sure that all hydraulic connections to the *Sabre* are properly connected. Lubricate the sickle sections with oil to ease the initial run-in (except in areas where the soil is sandy or abrasive).

DUAL MOUNTED CONFIGURATION

In some applications you may want to use more than one *Sabre*. If so, the hydraulic motors should be connected in series as illustrated.



MULTIPLE MOTOR CONNECTIONS

PRE-START INSPECTION

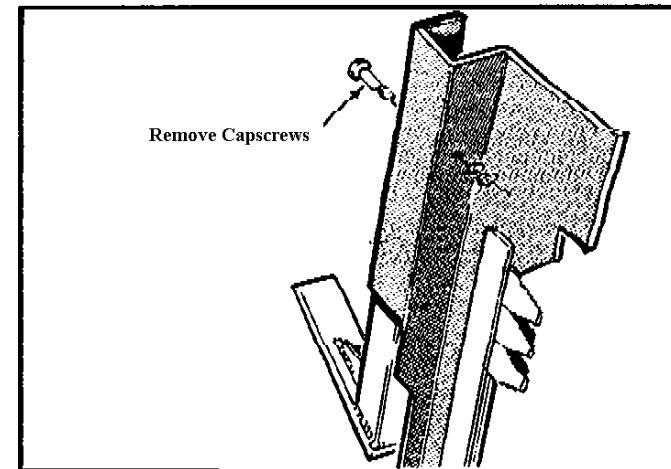


CAUTION!

Shut off traction unit and set park brake before doing any pre-start inspections. Relieve pressure and disconnect hoses from hydraulic motor before pre-start or daily inspections.

1. Remove any crop debris build-up. Clean and check sickle sections for breakage. Remove and replace any broken or badly worn sickle sections.
2. Check all nuts and bolts for looseness or damage before operating the crop divider. Retorque all bolts after the first hour of operation and check daily.
3. Check hydraulic hoses and fittings for leaks and wear on a regular basis. Ensure that hoses are kept well clear of moving parts.

INITIAL ADJUSTMENTS



Sabre HEIGHT ADJUSTMENT

When operating the *Sabre*, be careful to maintain header height so that the knife does not strike the ground. Adjust the cutterbar height by removing the two capscrews illustrated and lifting up on the hydraulic motor until the next set of holes in the channel line up. Reinstall capscrews and torque correctly. See **Torque Chart**.

Your motor will last longer if you run it for approximately one hour at 30% of rated speed before application of full load. Be sure that the motor is filled with hydraulic fluid before operating.