

Evaluation Report

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Brunetti Separ "B" Crop Divider

A Co-operative Program Between



BRUNETTI SEPAR "B" CROP DIVIDER

MANUFACTURER:

A. Brunetti
Tournage sur Metaux
Rue de l'Epineuil
17100 Saintes
France

DISTRIBUTOR:

Canadian distributor to be appointed. Further information may be obtained from:
French Trade Commissioner
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304 - 8th Avenue S.W.
Calgary, Alberta
T2P 1C2

RETAIL PRICE:

Approximately \$850.00 (April 1981, f.o.b. France)

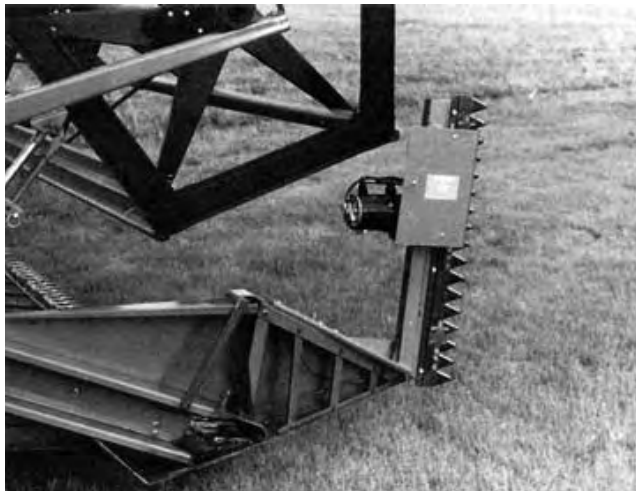


FIGURE 1. The Separ B Crop Divider mounted on a Windrower.

SUMMARY AND CONCLUSIONS

Overall functional performance of the Brunetti Separ B crop divider was excellent in rapeseed and lodged wheat. Ease of operation was excellent.

Under normal working conditions, current draw of the 12 V electric drive motor ranged from 17 to 25 A, depending on crop conditions and ground speeds. The electrical power required to operate the Separ was about 0.25 kW (0.33 hp). The motor had ample power for all crop conditions encountered and ground speeds of up to 12 km/h (8 mph).

The Separ was easy to mount on the windrower, and when not in use it was easily removed for safe storage. The cutterbar drive components were adequately shielded.

No mechanical problems occurred during the test.

RECOMMENDATIONS

It is recommended that the manufacturer consider:

1. Affixing a decal to the powered divider to warn of potential safety hazards.

2. Providing a more comprehensive operator manual.

Chief Engineer - E.O. Nyborg

Senior Engineer - J.C. Thauberger

Project Engineer - R.R. Hochstein

THE MANUFACTURER STATES THAT:

With regard to recommendation number:

1. We agree with this recommendation and we will supply decals with machines in future.
2. We plan to prepare a new, more complete, operator manual.

Note: This report has been prepared using SI units of measurement. A conversion table is given in APPENDIX III.

GENERAL DESCRIPTION

The Brunetti Separ B is a vertical cutterbar attachment designed to mount on the right divider on combine or windrower headers. It consists of two contacting knives, with replaceable sections, one stationary, the other powered by a 12 V electric motor. The motor is controlled by a switch mounted at the operator station.

Detailed specifications are given in APPENDIX I, while FIGURE 1 shows a typical windrower installation. Adaptation to a large variety of combines and windrowers is possible.

SCOPE OF TEST

The Separ was mounted on the draper header of a Versatile 4400 self-propelled windrower. It was operated in the conditions shown in TABLE 1 for 65 hours while windrowing about 150 ha. It was evaluated for ease of installation, quality of work, power requirements, ease of operation and adjustments, operator safety and suitability of the operator manual.

TABLE 1. Operating Conditions

Crop	Average Yield t/ha	Hours	Field Area ha
Rapeseed	1.0 - 2.0	40	100
Peas	1.2	20	40
Lodged Wheat	1.5	5	10
Total		65	150

RESULTS AND DISCUSSION

EASE OF INSTALLATION

Installation time: It took about four hours to attach the Separ to the windrower. About two hours were spent reinforcing the divider (FIGURE 1) to reduce flexing and vibration when the windrower was in operation, while the mounting of the Separ to the divider took about one hour. Wiring and mounting the switch also took about one hour. A power drill and additional hardware were required. The manufacturer recommended that current overload protection be used, however none was supplied. A 30 A fuse and holder were added to provide this protection.

QUALITY OF WORK

Crop Loss: In rapeseed, there was no appreciable crop loss at the divider due to crop separation when the Separ divider was used. When using a standard divider in rapeseed, the crop was separated by pushing it down beneath the divider. This left a path of flattened crop which was retrievable only by cutting in the opposite direction on the next pass. The Separ, however, left a clean standing edge, without any significant loss of rapeseed pods (FIGURE 2).



FIGURE 2. Standing crop at edge of swath when Separ divider was used.

Windrow Uniformity: When using standard dividers and a standard bat reel, rapeseed often bunched near the divider, causing subsequent bunching and non-uniformity in the windrow. These bunching problems could be reduced by using a pickup reel. When the Separ divider was used, bunching never occurred and the resulting windrows were uniform (FIGURE 3).

Lodged Wheat: The Separ divider eliminated hairpinning in lodged wheat and reduced windrow bunching when using a standard bat reel.

Peas: Field tests conducted in peas were inconclusive due to the closeness of the crop to the ground.



FIGURE 3. Windrowing rapeseed with the Separ Attachment.

POWER REQUIREMENTS

The current required to operate the Separ varied from 17 A, at no load, to 25 A in severely tangled or lodged crops at normal operating speeds. The stalling current was about 48 A. A 30 A in-line fuse provided ample overload protection when attempting to start the motor after the cutterbar had already engaged the crop, or when it was otherwise obstructed during operation. The average power requirement of the Separ was about 0.25 kW (0.2 hp).

EASE OF OPERATION AND ADJUSTMENT

The Separ could be quickly removed or adjusted vertically by removing two bolts on the upper leg of the mounting bracket. The range of six possible height adjustments, in increments of 70 mm (2.7 in), and the cutterbar length, were sufficient for all crop conditions encountered.

Clearance between the tips of the knife sections on the contacting cutter bars occasionally had to be adjusted. Proper clearance could be maintained by bending individual knife sections. The first adjustment was necessary after 40 hours of operation in rapeseed when there was a gap of about 3 mm (0.12 in) at the knife tips.

The only servicing needed was lubrication of the pillow block on the oscillating knife and maintenance of the tension on the drive belt.

OPERATOR SAFETY

Although the Separ drive components were adequately shielded, it is recommended that the manufacturer consider affixing a decal on the powered divider to warn operators of potential hazard.

OPERATOR MANUAL

Installation and operating instructions were limited. The single sheet provided, did not adequately cover installation aspects of the Separ. A parts diagram was not supplied, and safety recommendations were not given. It is recommended that the manufacturer supply a more comprehensive operator manual.

DURABILITY RESULTS

The Separ B was operated in the field for 65 hours. The intent of the test was functional performance. An extended durability evaluation was not conducted. No durability problems occurred during field use, however the cutterbar pillow block wore slightly, resulting in about 1 mm (0.04 in) play between the connecting rod and the cutterbar bearing. The manufacturer suggested lubrication of this bearing only once, before initial operation.

APPENDIX I SPECIFICATIONS	
MAKE:	SEPAR
MODEL:	B
SERIAL NO.	none
OVERALL DIMENSIONS:	
-- height	870 mm
-- width	55 mm
-- length	450 mm
-- mass	28.8 kg
CUTTERBAR:	
-- cutting length	870 mm
-- knife sections	
- number	17
- width	50 mm
- length	55 mm
- overall length	75 mm
-- knife speed	355 cycles/min
-- height adjustment	6 at 70 mm increments
MOTOR:	
-- voltage rating	12 V
-- current rating	not available
-- speed	750 rpm
OPTIONAL EQUIPMENT:	
-- Hydraulic motor drive	

APPENDIX II MACHINE RATINGS	
The following rating scale is used in PAMI Evaluation Reports:	
(a) excellent	(d) fair
(b) very good	(e) poor
(c) good	(f) unsatisfactory

APPENDIX III CONVERSION TABLE	
1 Hectare (ha)	= 2.5 acres (ac)
1 kilometre/hour (km/h)	= 0.6 miles/hour (mph)
1 metre (m)	= 3.3 feet (ft)
1 millimetre (mm)	= 0.04 inches (in)
1 kilowatt (kW)	= 1.3 horsepower (hp)
1 kilogram (kg)	= 2.2 pounds mass (lb)

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