

Fandrich Powerrake
for Douglas fir, spruce, larch



Fandrich selfdumping/manual shear
for Lodgepole pine, spruce, true fir



Fandrich Branch Collector
true fir, cedar, redwoods



for more information contact your local helicopter company or



Fandrich Cone Harvesters Ltd.

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Fandrich Aerial Cone Rake Specifications

Condition	Fandrich Shear		Fandrich Branch Collector	Fandrich Powerrake
	Manual Unloading	Self-Dumping		
Weight	350 lbs	425 lbs	310 lbs	365lbs
Size for Transport	7.1'x 8.1' x 4' high	7.1' x 11.8' x 4' high	8.2'dia. x 4' high	7.0' x 7.0' x 6' high
Unloading	20-90 sec	none	20-60 sec	20-40 sec.
People Under Helicopter	Yes, to unload tops	No, load dumps itself	Yes, to latch up & clear	Yes, unlatch & clear
Source of Power	Honda engine	Honda engine	Helicopter lift	Honda engine
Switch Required	to cut	to cut to dump	None	to rake to lift up

Fandrich Branch Collector Cone Collection Data for 1985

Species	Collecting rate	
	Average	Highest*
 bu./hr.	
Grand fir	50	94
Pacific silver fir	50	63
White fir	45	67
Redwood	26	37
Douglas-fir	20	44
White spruce	16	22
Lodgepole pine	13	17
Mountain hemlock	12	15
Western hemlock	9	10
Western redcedar	9	22

*Conditions for high collecting rates: heavy cone crop near top of crown, good crop on most trees in stand, heliport close by, and good external-load pilot.

Synopsis of a successful cone collection

Location: Fort Bragg, California	Average collecting rate: 30 bu/hr (11 hl/h)
Project co-ordinator: Rich Mabie, Georgia-Pacific	One day picked 218 bu in 6 hours: 36 bu/hr (13 hl/h)
Date: September 1997	Last day picked 181 bu in 4 hrs: 45 bu/hr (16 hl/h)
Species: Douglas fir	Seed count: "Outstanding". Germination rate: 98%
Cone rake equipment: one Fandrich powerrake	NOTE: This has been the most successful Douglas fir cone collection to date and shows an efficient aerial collection in a heavy crop. The project was efficiently organized, the crop was extremely heavy, the dumping sites were moved often to keep travelling distance short and the pilot was fast. Trees were at their optimum age, the helicopter was suited to the job and a ground crew of four was quick, taking only seconds to clean out the cone basket.
Helicopter: Hughes 500	
Crop: "Biggest crop people around here have seen"	
Age of trees: 40-60 years old.	
Unloading crew: four	
Travelling distance: "Very short".	
Total volume collected: 1480 bushels in 8 days	

Fandrich Aerial Shear 1988 Cone Collection Data

Species	Volume hL	Rate* hL/hr
Grand fir	90	12.2
Englemann spruce	29	7.0
Spruce	52	5.2
Spruce	114	3.0
Spruce	150	3.0
Douglas fir	291	2.9
White pine	32	4.4

*Factors affecting rate: crop density, flight distance, quantity of rejected tops or cones

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Fandrich Cone Harvesters

Fandrich aerial cone rakes rapidly and efficiently collect cones from the tops of trees, where the best cones grow. Fandrich aerial desailleurs reduce crown size to help trees remain upright, even during exposure to severe winds. Fandrich aerial grapples clean creeks and move material at 80-120 loads per hour.



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Fandrich Aerial Cone Rakes Cone Collection Data for 2003

Fandrich Rake	species	volume collected/rate
Branch Collector	Balsam	163 hl (462bu)
Manual Shear	White spruce	61 hl (175bu)
Selfdump Shear	White spruce	109 hl (308bu)
		34 hl at 7.4 hl/h (21 bu/h)
		26 hl at 4.7 hl/h (13 bu/h)
		48 hl at 9.4 hl/h (27 bu/h)
Powerrake	White spruce	972 hl(2761bu)
		23 hl at 4.0 hl/h (11 bu/h)
		82 hl at 4.5 hl/h (13 bu/h)
		11 hl at 5.2 hl/h (15 bu/h)
		19 hl at 7.6 hl/h (21 bu/h)
		11 hl at 7.6 hl/h (22 bu/h)
		19 hl at 9.6 hl/h (27 bu/h)
		45 hl at 13.3 hl/h (38 bu/h)

Fandrich Topper (reduces wind resistance of trees)

9,959 tops cut in 2003 -- one tree every 20 seconds



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