

CHAINSAW POWERED PORTABLE WINCHES

There are several chainsaw powered portable winches currently available on the New Zealand market. LIRO was given the opportunity to test three portable winches

in a controlled situation - a Lewis Series 400, a KBF and a Zollern PW17 Muli. All winches were powered by a Husqvarna 268XP chainsaw.

WINCH SPECIFICATIONS

LEWIS SERIES 400



Price - Including winch assembly and 50 metres of 5mm cable - NZ\$960 plus G.S.T.

Weight :

Winch and 50 metres	=	18 kgs
5mm cable	=	8 kgs
Husqvarna 268XP chainsaw (less bar and chain)	=	8 kgs

Total operating weight = 26 kgs

ZOLLERN PW17 MULI



Price - Including C/W remote control, cable container with extension, 60 metres 7mm cable, tree belt, lifting sling, choker chain, twist chain, cable pulley and 2 adaptors - NZ\$5,000 plus G.S.T.

Weight :

Cable container and	=	18 kgs
60 metres 7 mm cable	=	5 kgs
Tree belt and	=	17 kgs
fastening clamp	=	8 kgs
Winch assembly	=	8 kgs
Husqvarna 268XP chainsaw (less bar and chain)	=	8 kgs

Total operating weight = 48 kgs

KBF WINCH



Price - Including winch assembly - NZ\$2955 plus G.S.T.

Weight :

Winch Assembly and	=	39 kgs
80 metres 5mm cable	=	8 kgs
Husqvarna 268XP chainsaw (less bar and chain)	=	8 kgs

Total operating weight = 47 kgs

TESTING PROCEDURE

Straight Line Pull

The winch was assembled and anchored to the base of a tree. A load cell was connected to the end of the line which was in turn attached to a truck. As the truck was pulled towards the winch, the vehicle's brakes were gradually applied until maximum straight line pull was achieved (i.e. chainsaw engine stalled). The load cell information was recorded during this procedure using a Husky Hunter field computer.

This procedure was repeated three times at empty, mid and full line capacity for the Lewis and KBF winches. It should be noted

that the KBF had been geared for fast line speeds. The Zollern winch was tested using this same procedure on each of the 4.5 KN (fast) and 17 KN (slow) settings. Empty, mid and full drum testing is not applicable in this case as the capstan drum does not accumulate line.

Line Speed

Line speed was measured for the Lewis and KBF winches at empty, mid and full drum. Line speed was calculated over a measured ten metre distance and converted to metres/second. The testing procedure was the same as for straight line pull.

RESULTS

MAXIMUM STRAIGHT LINE PULL (KILOGRAMS)

WINCH	EMPTY	MID	FULL	4.5 KN	17 KN
LEWIS	850	707	663		
KBF	952	638	541		
ZOLLERN				469	2100

LINE SPEED (METRES/SECOND)

WINCH	EMPTY	MID	FULL	4.5 KN	17 KN
LEWIS	0.27	0.49	0.57		
KBF	0.62	0.68	0.86		
ZOLLERN				0.57	0.21

CONCLUSIONS

The following is a brief summary of the main features relating to each winch :

Lewis Series 400 - Light, robust, easily assembled without a manual but had relatively small line capacity.

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KBF Winch - Heavy, easily assembled without a manual, good lines speeds and large line capacity.

Zollern PW17 Multi - Heavy, modular construction, relatively difficult to assemble without a manual, unlimited line capacity, versatile having two gear ratio settings.