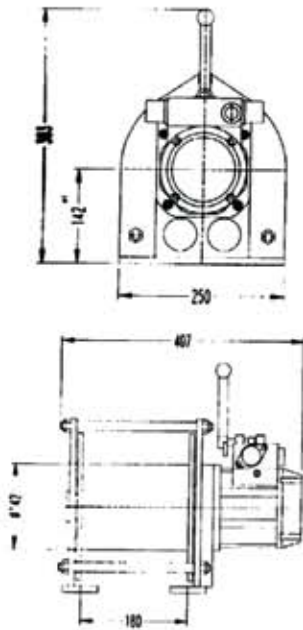


## WAI 1500 & WAI 1000

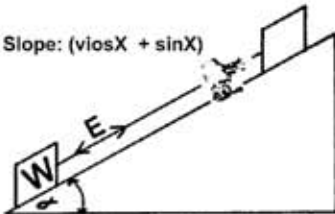


Mathematical method of calculating the effort to move a given load.

Horizontally:  $E+uW$



On Slope:  $(\cos X + \sin X)W$

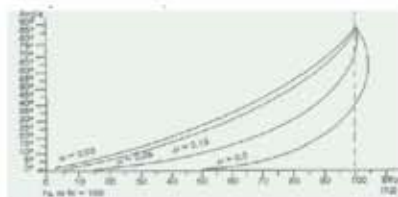


Where E is the effort to pull a load lying on the ground  
 W is weight of the load  
 E is the friction between load and ground which depends upon the area of contact of the load with the ground and the nature of the ground (presence of wheels, rollers, sand, mud, concrete, ect...)  
 X is the angle of the slop

The value of u, the coefficient of friction, must be known or estimated.

We give hereafter some general values of this coefficient u:

- Steel on steel 0.04-0.6
- Leather on metal 0.6
- Wood on stone 0.4
- Iron 0.3 - 0.7
- Continuously lubricated surface 0.15
- Load on wheels 0.02 - 0.05



Model	WAI 500	WAI 1000
Rated Line Pull (kg)	500	1000
Rope Speed at Rate load (m/min)	15.0	7.5
Max. Stall pull 1st layer (kg)	1000	2000
Full Drum No Load speed (m/min)	35.8	16.2
Air Consumption (m <sup>3</sup> /min)	2.1	2.1
Air connection	1/4"	1/4"
Supply hose (inside O)(mm)	16.0	16.0
Sound Level (dB(A))	76	70
Recommended Rope Size (mm)	7.0	10.0
Rope Storage (mm)	106	54
Max. Working Length (m)	70	29
Height without wire rope (kg)	30	30

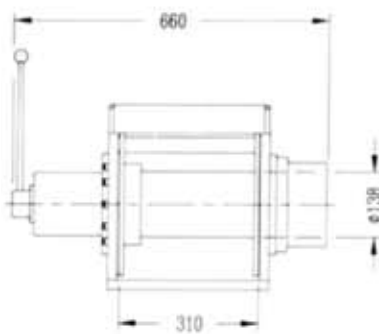
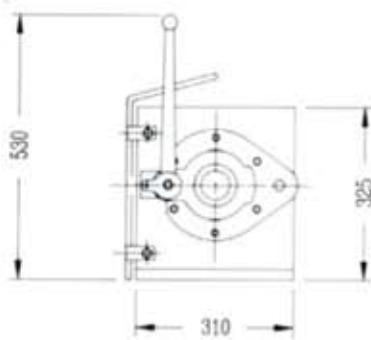
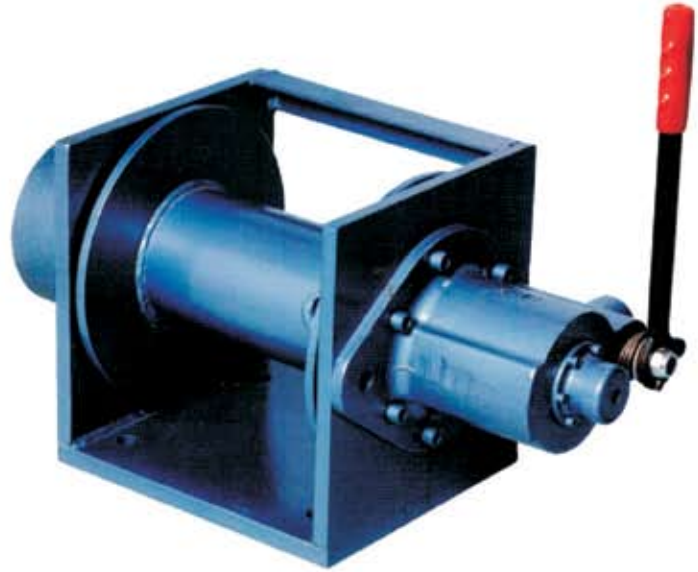
### Features and Characteristics:

Precise Control:	Lever control, pilot pendant and direct pendant control offer variable speed control. Accurate and precise poisee positioning of loads is standard for all models.
Automatic Fail Safe Brake:	Non-asbestos self adjusting disc brake is applied automatically when air supply to the hoist is shut off. The brake is self adjusting for the life of the brake.
Internal Silencer	The exhaust air silencer is built into the winch housing and limits the noise level to 76dB (A)
Lighweight Frame	Compact high strength aluminum housing ensures portability and corrosion resistance. The Construction ensures easy mounting
Vane Motor	Air ported, spring assisted vane lifting ensures maximum torque when starting under load.
Sealed Gearbox	The sealed planetary gearbox ensures that the most stringent duty cycle can be met. The gears are heat treated and mounted on high strength, low friction bearings

### Options

Options include lever control, pilot pendant or direct pendant control and drum guard.

The South African mining industry is constantly calling for more efficient and cost effective equipment. It was with these criteria in mind; WAR series of winches were developed. The winches adhere to the Minerals Act and Regulations (Act 50/1991) and have a factor of safety of six. The WAR winches are multi purpose, compressed air vane motor driven winches, providing high starting torque and fast lifting speeds.



Technical Specifications Model	WAR 500	WAR 1000	WAR 2000	WAR 3000
Rated air pressure (kPa)	600	600	600	600
Half drum line pull (kg)	500	1000	2000	3000
Rope speed at rated load (m/min)	25.50	12.60	6.10	4.20
Max. stall pull 1st layer (kg)	1100	2540	3900	7970
Full drum no load speed (m/min)	57.40	26.80	17.50	8.60
Air consumption (m <sup>3</sup> /min)	4.0	4.0	4.0	4.0
Supply hose nominal bore (mm)	25	25	25	25
Recommended rope size (mm)	13.0	13.0	15.0	18.0
Rope Length (m)	80.0	80.0	59.0	52.0
Weight without wire rope (kg)	114	114	114	114

All the above winches are available in a long drum version for additional rope capacity. The standard winches are controlled by means of a manual single lever which is spring loaded and returns to its neutral position when released. The winches can also be controlled remotely by means of a push button pendant control or a lever type pendant control.

**Features and Characteristics:**

Precise Control:	Variable speed control for accurate and precise positioning of loads is possible, from very slow to fast.
Automatic Fail Safe Brake:	Should the supply of compressed air be stopped the brake will automatically stop the winch.
Flame Proof:	The winches can be used in areas where only flame proof equipment may be used.
Dust Proof & Durable:	The motor and gearbox are totally dust proof and are therefore particularly well suited for foundries, cement factories, mills, galvanizing plants, shipyards, chemical industry and underground mining. The robust construction was developed through 15 years experience obtained by using the winches underground in harsh mining conditions.
Ease of Maintenance:	The winches are designed to give easy access to internal components. Modular construction allows for access either to the gearbox, motor or centre section using semi-skilled labour.
Service and Spares:	As the winches are manufactured in Carletonville, Rep. of South Africa, spares, accessories and service are readily available.

## WAP2500 & WAP4500

**Features and Characteristics:**

- 1) Totally enclosed design keeps dirt and corrosion out and lubrication in. The gearbox assembly is virtually maintenance free.
- 2) Critical components have a factor of safety of six.
- 3) Protected band type brake ensures safe stopping at all times.
- 4) Rope is attached safely and easily in the Hawse hole in the rope drum and secured by means of two grub screws.
- 5) The fail safe throttle valve shuts off automatically when released, thereby stopping the supply of compressed air to the motor.
- 6) The winch is mounted on a solid steel frame which makes it rigid and easy to transport and install and can be installed upside down.
- 7) Variations include "hands on" or remote control, hand or automatic brake.
- 8) The automatic brake is applied automatically when the air supply is shut off.

**Note:**

The standard winch is supplied with "hands on" control, hand brake, positive jaw clutch but without wire rope. When ordering a winch with a non standard item, add the following letters as suffixes to the model number as required.

A=Automatic Brake      R=Remote control  
 example: WAP4500AR is a 4,5 tonne winch with an automatic brake and remote control.



Model	WAP 2500	WAP 4500
Drum length (mm)	250	250
Drum diameter (mm)	300	300
Length (mm)	A	935
Width (mm)	B	530
Height (mm)	C	785
Centre height (mm)	D	320
Air pressure (kPa)	620	620
Half drum line pull (kg)	2500	4500
Rope speed at rate load (m/min)	18.0	16.5
Rope stall pull 1 <sup>st</sup> layer kg	7500	9000
Recommended rope size (mm)	16	18
Rope length (m)	100	80
Weight without wire rope (kg)	110	195

