

		ROLLING ON				SLIDING				
		RAILS (STEEL WHEELS)	STEEL HARD RUBBER WHEELS	DUAL RAIL CON- VEYORS	PNEU- MATIC TIRES	TRACKS	ON GREASED SHOR- ING	ON DRY SHOR- ING	SKIDS ON NON- SKID SUR- FACES	ON NON- SKID SUR- FACES
FRICTION COEFFICIENT		0.005	0.018	0.020	0.030	0.080	0.260	0.490	0.815	1.000
WINCH	ANGLE (DE- GREEES)	MAXIMUM CARGO WEIGHT (POUNDS)								
HOOVER/ BULLDOG	11.5	19,607	18,433	18,264	17,515	14,336	8,810	5,890	4,008	3,392
	15.0	15,151	14,475	14,370	13,890	11,895	7,840	5,462	3,820	3,265

NOTE

- This table is based on a maximum single cable pull of 4,000 pounds for the Hoover/Bulldog winch and 6,500 pounds for the HCU-9/A winch with the red load limiting plug installed.
- Compute value for a double- or triple-line configuration by multiplying table value by two or three, respectively.
- Compute horizontal winching (level surface) value by multiplying cargo weight times friction coefficient.
- If the computed ramp angle falls between 11.5 and 15 degrees, use the 15-degree column to determine the maximum cargo weight that may be loaded.



SUBJECT TO THE CABLE PULL FORCES, THE SNATCH BLOCKS IN USE MUST BE ABLE TO WITHSTAND THE MAXIMUM CABLE PULL.

Flat ground

Example: You are winching a 22,000 pound truck that is inoperable. On flat ground, determine the required pull of the winch you would take 22,000X.030 (coefficient for Pneumatic tires) = 660 pounds of cable pull.

On a hill

The max weight that can be pulled up an 11.5 degree angle Grade single line pull is 17,515 so the 22,000 pound truck is too heavy for our 4,000 lbs pull winch so we can use a snatch block to use a double line pull. By using a double line pull now you have doubled you max single line pull 17,515.

17,515x2=35,030 pounds 35,030 becomes our new max with a double line pull. Now there is more than enough pull for the 22,000 pound truck.

Side effect of using snatch blocks

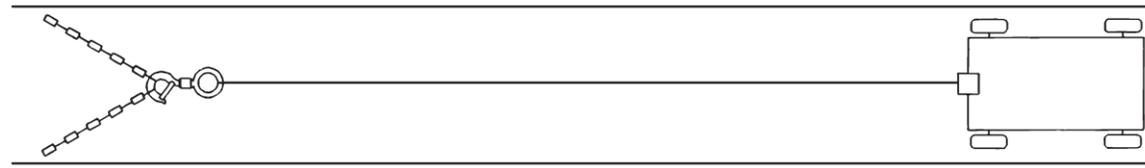
If you winch max speed is 36 feet per min and you use one snatch block making it a double line pull, it will cut you winch speed to 18 feet per min.

IF you use two snatch blocks making it a triple line pull it will cut you winch speed to 12 feet per min.

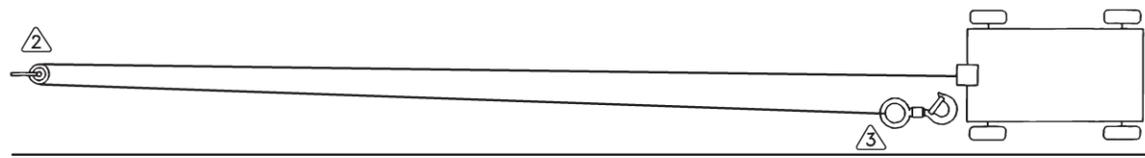
CAUTION

SUBJECT TO THE CABLE PULL FORCES, THE SNATCH BLOCKS IN USE MUST BE ABLE TO WITHSTAND THE MAXIMUM CABLE PULL.

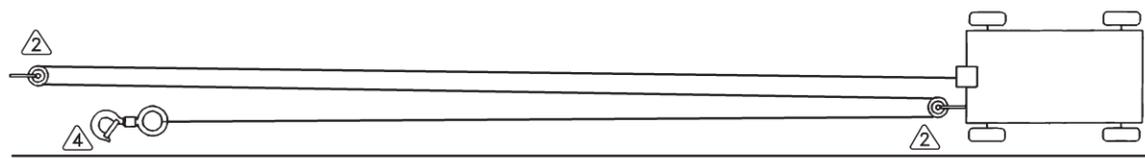
Vehicle Self-Winching



WINCH LOADING
(FOR LOADS UP TO WINCH CAPACITY)



WINCH LOADING
(FOR LOADS UP TO TWO-TIMES WINCH CAPACITY)



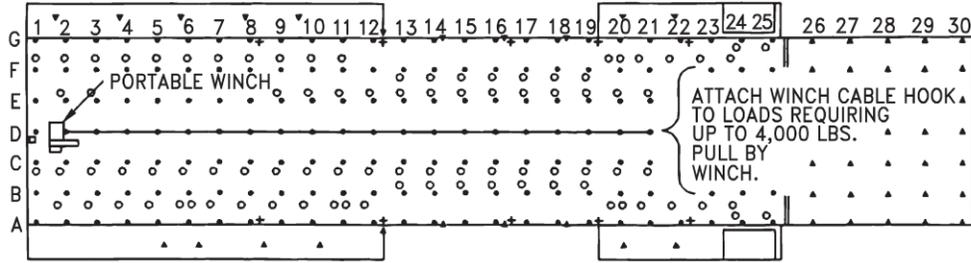
WINCH LOADING
(FOR LOADS UP TO THREE-TIMES WINCH CAPACITY)

(Portable) Winch

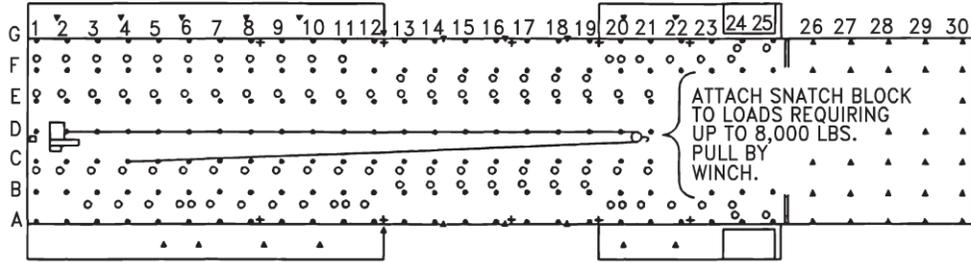
CAUTION

CAUTION

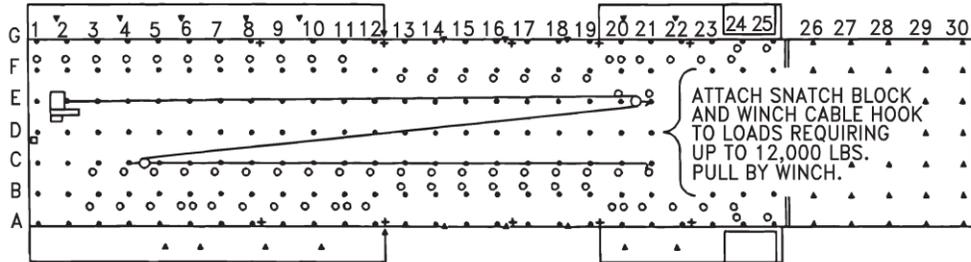
SUBJECT TO THE CABLE PULL FORCES, THE SNATCH BLOCKS IN USE MUST BE ABLE TO WITHSTAND THE MAXIMUM CABLE PULL.



SINGLE LINE CONFIGURATION



DOUBLE LINE CONFIGURATION



TRIPLE LINE CONFIGURATION