

A Self-Test Of Your Winch Knowledge

HYDRAULIC WINCHES FOR STRONG PULL, PRECISE CONTROL

When should I use a hydraulic winch instead of a PTO winch?

What should I be looking for in a hydraulic winch?

Is a fairlead needed in all applications?

These are the most often asked questions about winches. Let's take a brief review of some basic winch information.

There are two types of winches for bulldozers: hydraulic winches driven by the dozer hydraulic circuit such as ripper hydraulics, and PTO winches driven by the dozer PTO output. Hydraulic winches typically offer good line pull at precise and controllable line speed. PTO winches, on the other hand, give brute pulling force and, depending on gear ratio, can deliver fast or slow line speed.

Allied winches feature "Plug and Play" design on both their hydraulic and PTO winch families. The winch comes with all the mounting hardware, hoses and controls as required, and the dozer-specific mounting bracket.

Installing the winch is a simple matter of lining up the mounting bracket holes drilled specifically to match the mounting holes on your dozer rear mounting face. Then bolt the winch to the dozer, install the controls we supply, and connect the controls to the winch. The installation can be completed in about a day in most cases.

The Allied hydraulic winch family consists of 5 models: H4A, H5C, H6H, H8L and H12E. The parallel PTO winch family includes W3C, W5C, W6F/G, W8L and W12E. These winches are sized for dozers from D3 through D10 for Caterpillar, D37 to D275 for Komatsu, 450 to 1050 for John Deere, 650 to 2050 for Case, and TD7 to TD25 for Dressta dozers. The skidder winch also comes in PTO and hydraulic versions, WH400 for hydraulic or W400 for PTO. See the chart on the next page for the appropriate winch model to match your dozer.

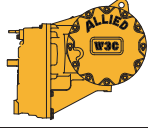
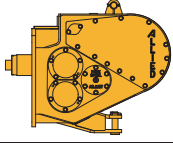
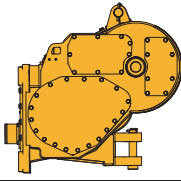
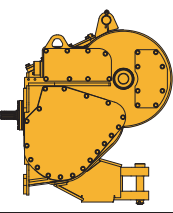
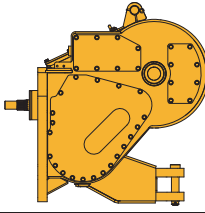
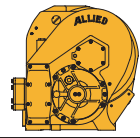
Q: When should you consider hydraulic winches?

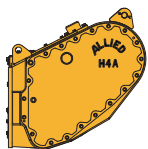
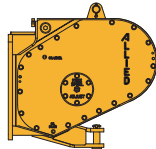
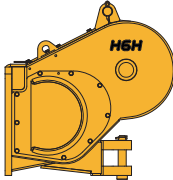
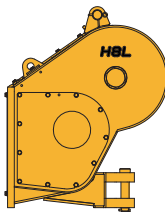
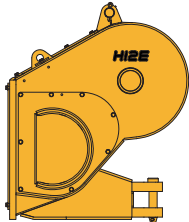
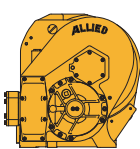
When you need precise line speed control.

(Continued on page 3)



Allied Hydraulic Winches for dozers from 70 to 400 hp.

PTO Winches						Skidder Winch	
Model:	W3C	W5C	W6F/G	W8L	W12E	W400	
							
Maximum Line Pull* (Bare Drum)(lbs/kg)	34,700 lbs 15,740 kg	69,200 lbs 31,390 kg	88,800 lbs 40,279 kg	112,500 lbs 51,029 kg	138,800 lbs 62,959 kg	40,000 lbs 18,144 kg	
For	Caterpillar	D3-5	D5-6	D6	D7	D8-9-10	525, 535
	Komatsu	D37-39	D41	D61-D65	D85, D155	D155, D275	
	John Deere	650	700-750	750-850			
	Dressta	TD8-10	TD14	TD15	TD20	TD25	
	Case	650-850	1150-1650	1850			
	Shantui			SD16	SD20		

Hydraulic Winches						Skidder Winch	
Model:	H4A	H5C	H6H	H8L	H12E	WH400	
							
Maximum Line Pull* (Bare Drum)(lbs/kg)	38,000 lbs 17,509 kg	67,000 lbs 30,391 kg	88,800 lbs 40,279 kg	112,500 lbs 51,029 kg	138,800 lbs 62,959 kg	40,000 lbs 18,144 kg	
For	Caterpillar	D3-5	D6	D6	D7	D8-9-10	
	Komatsu	D37-39	D51	D61-D65	D85	D155, D275	
	John Deere	450-650, 700	700-750	750-850	950	1050	
	Dressta	TD8-10	TD14	TD15	TD20	TD25	
	Case	650-850	1150	1650-2050			
	Liebherr			PR724-734	PR744	PR754-764	
	Tigercat						620, 630

* Limited by available power from vehicle and breaking strength of maximum wire rope. Continuous loads should be below vehicle GVW.

(Continued from page 1)

Sometimes, your choice between hydraulic and PTO winch is limited by whether there is a PTO option on your dozer. Some dozers come with PTO as standard, others offer it as an option, still others not at all. If your dozer is not equipped or can't be equipped with PTO, hydraulic winch is the only choice.

Hydraulic winches offer finger-tip precision speed control via your tractor control lever. Actuating the control lever meters hydraulic flow to power the winch at the desired speed. Hydraulic winches excel in pipe setting, power-line sagging and equipment rescue applications where slow and precise line speed control is critical.

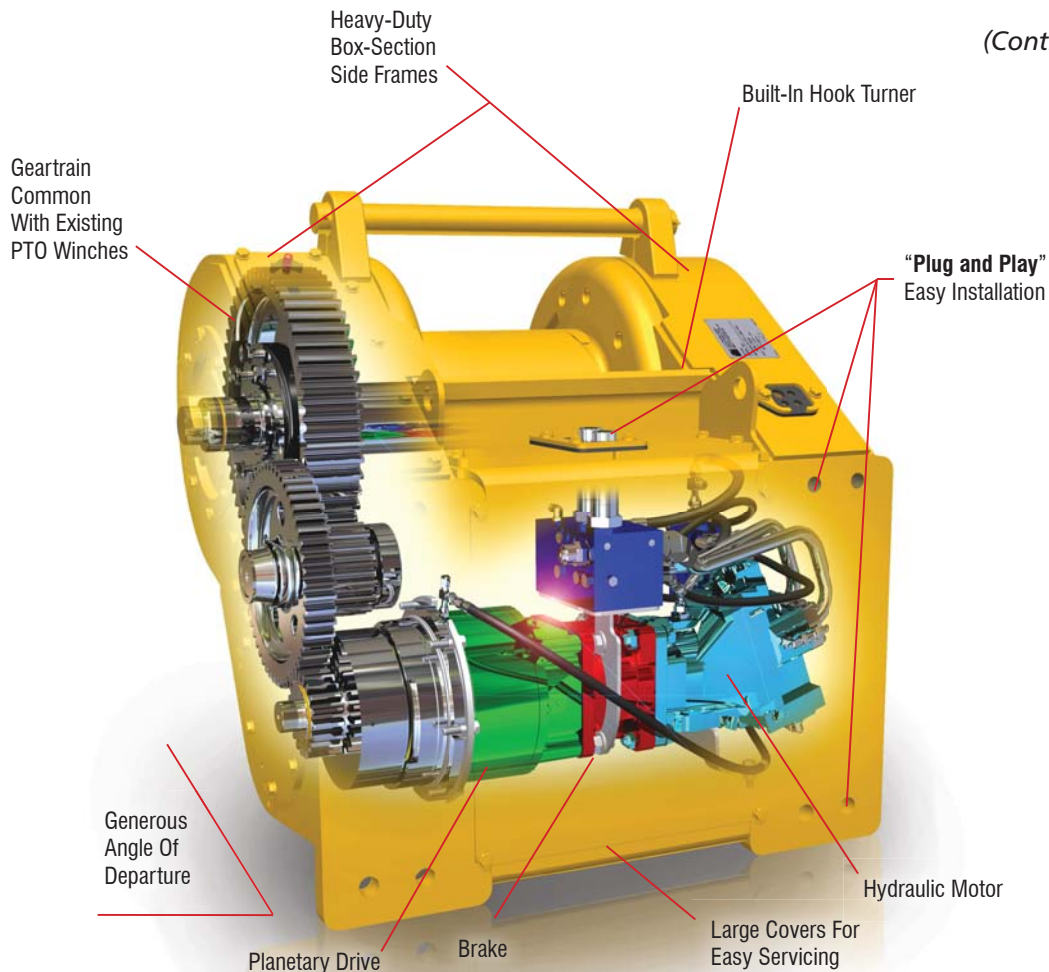
All Allied hydraulic winches are sized to pull more than the dozer GVW. For self-rescue when the dozer gets stuck in mud or can't move up a slope under its own power, the operator can tie the wire rope to a heavy or stationary object and winch itself to better ground conditions. Rescue of other equipment is much the same. Controllable line speed assures smooth pulling, and minimizes shock loads.

Q: What should you be looking for in a hydraulic winch?

First and foremost, check to see if the winch is designed specifically for bulldozers, not a winch adapted from crane, ship or stationary platform. You can tell by the angle of departure of the winch frame. This is the angle of frame profile relative to the ground line. A purpose-designed dozer winch would feature a higher angle of departure with the winch drum located higher and closer to the dozer to form a wedge-shaped frame profile (see below). This allows the dozer to drive uphill or onto a trailer without the lower rear edge of the winch frame scraping the ground. This contrasts with a winch with a "square-ish" profile where the angle of departure is lower and the drum extends further back from the dozer. This moves the winch center of gravity further back and risks making the dozer "tippy," imposing more load and wear on the rear track sprockets and track shoes.

Allied winches are designed from the ground up for dozers. All models feature generous angle of departure, and mount closer to the dozer for better weight balance. They provide excellent line of sight to the drum and more balanced weight distribution to the dozer.

(Continued on page 4)



Hydraulic Winch

(Continued from page 3)

The other tell-tale feature is the presence or absence of box sections on both sides of the winch frame (see below). A frame with box-section structure on both sides will withstand side pulls without requiring a fairlead. You still have the choice of optional fairlead for frequent side pulls to reduce cable damage and frame wear. All Allied winches for dozers of 130 horsepower and above use box sections on both sides of the frame to withstand heavy pulling from all angles. The smallest models—H4A hydraulic winch and W3C PTO winch for dozers of 70-100 horsepower—feature box-section structure on one side and heavy duty side wall on the other.

Because a hydraulic winch adapted from crane is originally designed for straight-line pulling only, a fairlead is required to prevent side loading on the non-box section side of the frame. While a fairlead is useful in logging for frequent and repetitive side pulls, many applications such as pipelaying do not take a fairlead, opting for better visibility and more balanced weight distribution.

Q: When do you consider PTO winches?

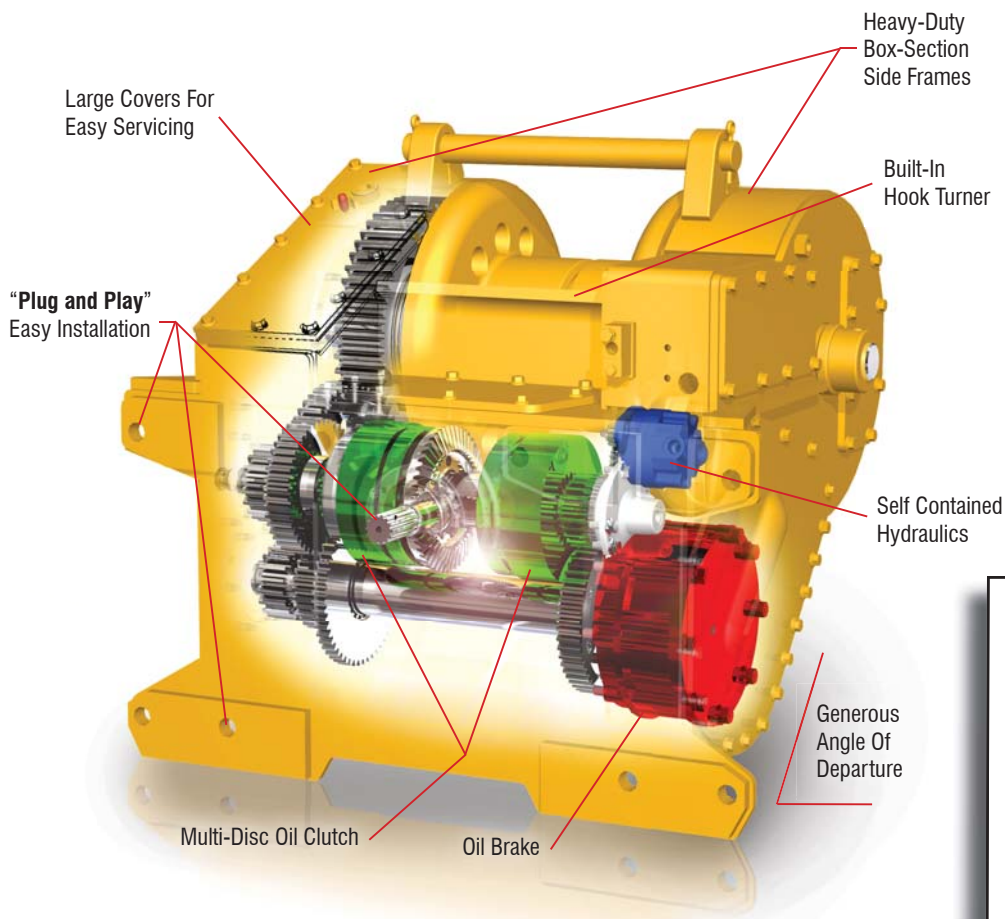
If the PTO is available, select a PTO winch when fast speed for load towing productivity is the primary concern of the job, or when only brute force pulling is required.

Because the PTO transmits virtually all the available engine power to the winch, it allows the winch to pull maximum load and at high speed when needed. This is critical for applications such as logging and repetitive equipment marshaling, where power and speed yield higher productivity.

Q: Which type of winch would pull more?

PTO winches typically pull more. Both types of winches are designed to pull at least the dozer GVW and more. For practical purpose, both winches will pull all the load the dozer is designed to pull anyway. On the same tractor and under the same load, a PTO winch tends to deliver faster line speed than the hydraulic winch can.

As you can see, each type of winch has its advantages. It is important to choose the right winch for the job. Unlike some winch manufacturers who produce only one type of winch or the other, and therefore can offer only one type of winch regardless of your needs, Allied produces both families of winches. Allied can recommend without bias the right winch for your job. Download the [Allied winch brochure](#), which explains the differences between these two types of winches, or contact Allied Winch at +1-503-625-2560 or at marketing@alliedsystems.com.



PTO Winch

Allied WINCH LINES
A newsletter published by
Allied Systems Company
Winch Division
21433 SW Oregon Street
Sherwood, OR 97140-9799 U.S.A.
Telephone: 503.625.2560
Fax: 503.625.7269
www.alliedsystems.com
marketing@alliedsystems.com