

**PipeLine  
Machinery**



**VP 72Gs2**



Pipelayer equipment designed and  
manufactured by:

**VANGUARD**  
EQUIPMENT, INC.

# VP 72Gs2 Pipelayer

PipeLine Machinery International (PLM) has developed a new pipelaying solution to enhance its pipelayer offerings. With the support of Caterpillar and the engineering expertise of Vanguard Equipment Inc., the challenge was met to create a mid-range pipelayer that is economical to purchase and designed for ease of operation and service. The VP 72Gs2 combines the proven capabilities of the Caterpillar D7G base tractor with the Vanguard expertise in sideboom systems. Vanguard has many years experience with pipelayer design and the manufacture of hydraulic pipelayer attachments and welding systems for Caterpillar and PLM.

PLM presents the VP 72Gs2 - Caterpillar quality without compromise.

## Winches

- Boom and hook drawworks are driven by independent hydraulic winches.
- Oil-disc brakes provide smooth operation and positive retention of boom and hook positions
- Modular design allows fast replacement, easy field service and testing
- Infinitely variable speed controls for boom and hook allow for precise operator control
- Emergency 'quick drop' function on load line control allows the operator to drop the load quickly
- Independent manual external brake release enables load lowering in the event the engine or hydraulics are inoperable



## Boom

- 6.1 m (20 ft) boom is standard with large box section
- Replaceable, boom-mount bearings
- High tensile strength steel construction
- Light-weight for increased payload
- Durable for long life



## Blocks & Hook

- Heavy-duty, serviceable hook and boom blocks
- Forged hook with latch and serviceable handle
- Ductile iron sheaves
- High-performance cable for flexibility, strength and crush resistance





## Counterweight

- Counterweight is extended hydraulically for better load balance and clearance
- Counterweight is sculpted to fit over track for ease of shipment
- Integrated counterbalance valves in the hydraulic counterweight cylinders prevent unwanted counterweight extension, especially during transport
- Manual mechanical safety lock provides additional counterweight restraint for secure transportation



## Drawbar

- Robust tow bar is able to accommodate a wide range of attachments
- Solid frame-bolted design is secure for train attachment or anchor tractor use



## Power Train

The Caterpillar D7G Series 2 Track Type Tractor is the base of the VP 72Gs2 pipelayer. The VP 72Gs2 is powered by the 3306 direct injection turbocharged and after-cooled diesel engine, featuring:

- Six-cylinder, four-stroke diesel engine delivering 150 net flywheel kW (202 net flywheel hp) at 2,000 rpm.
- Maintains good productivity per unit of fuel burned by using direct injection to control fuel consumption.
- Provides optimum weight-to-horsepower ratio to minimize cycle times.
- Will maintain the specified power up to 4100 m (13,450 ft) altitude without need to de-rate.



## Clutch & Brakes



Steering the machine either left or right is done invoking clutches that 'brake' either side in the direction of turning.

- Steering clutches are hydraulically actuated, multiple-disc oil clutch require no adjustment.
- Brakes are oil-cooled, hydraulically boosted contracting band brake.
- Clutch and brakes can be serviced as a complete unit.
- Handle leavers, located on the operator left hand side, combine steering clutch disengagement and braking in one control.
- Direction and speed control (2) is located close to the steering clutch control (1).

## Pipelayer Controls

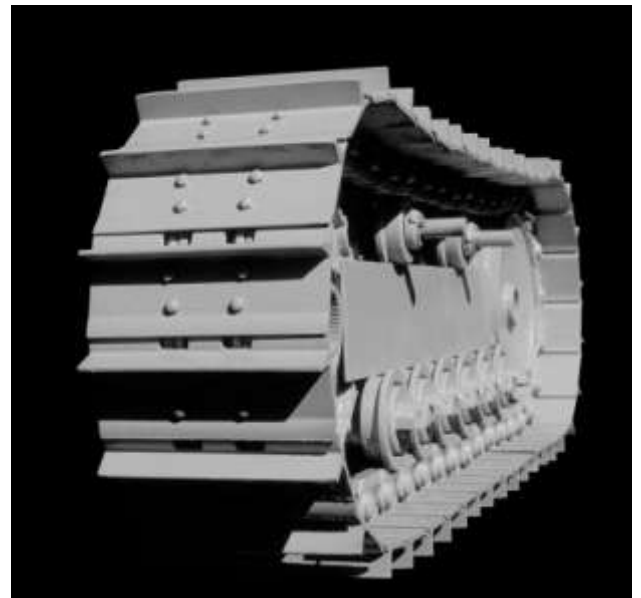


- Can be operated with one hand for enhanced operator comfort and precise control.
- Pipelayer controls are low effort and allow simultaneous, precise positioning of the load line and boom with one hand.

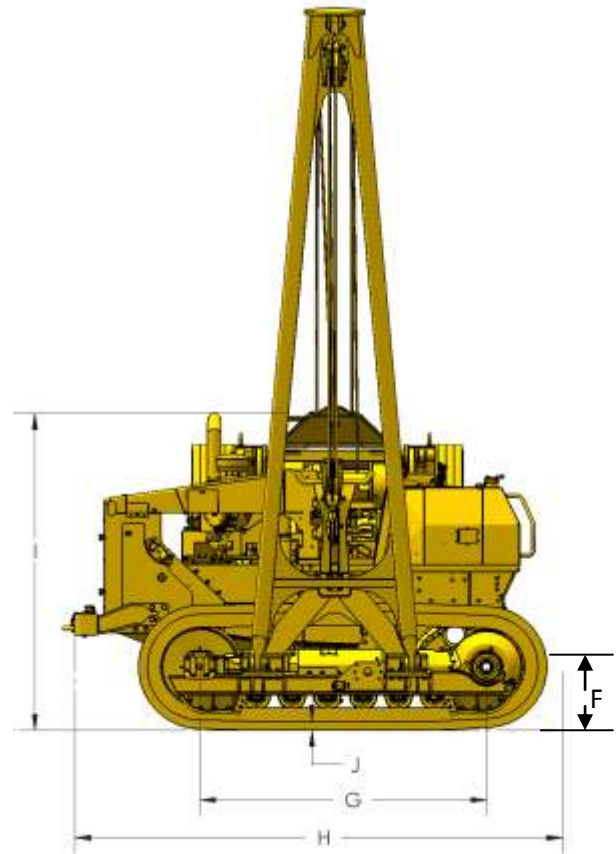
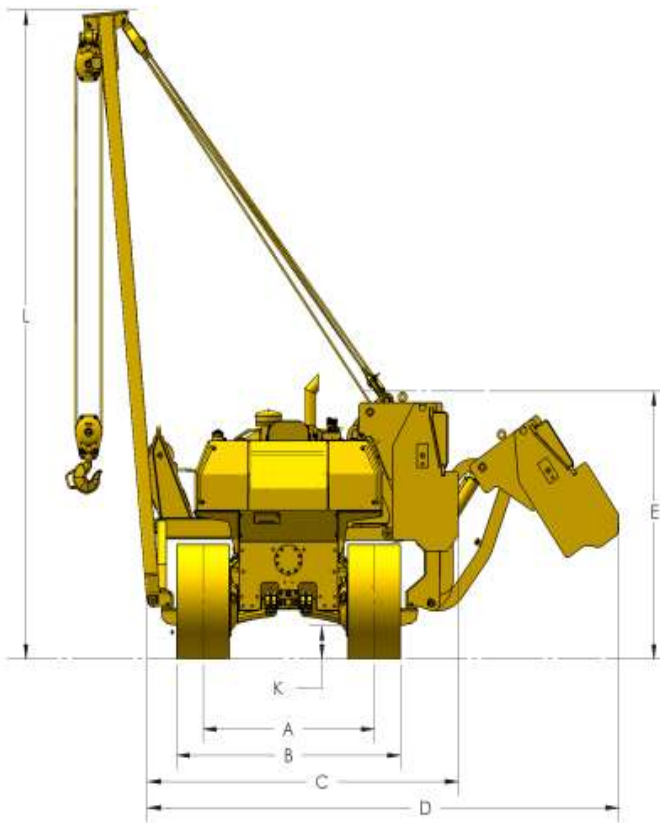
## Undercarriage

- Reinforced box section construction in track roller frame
- Lifetime lubricated rollers.
- 6 track rollers and 2 outside mounted carrier rollers per side.
- Fixed track frames ensure rigid stability for lifting operations.
- 610 mm (24 in) single grouser shoe.

- Track features sealed and lubricated links eliminating internal bushing wear.
- 2-piece master links for easy track removal.
- Hydraulic track-adjusters used to maintain correct track tension.
- Segmented sprocket sections for easy replacement and servicing .



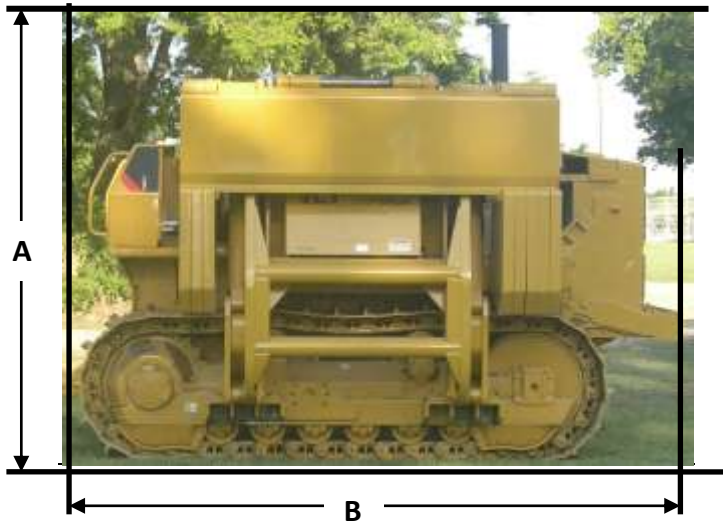
# Dimensions



A	Track Gauge	1981 mm	78 in
B	Width of Tractor- 24 in (610 mm) Shoes	2591 mm	102 in
C	Width of Tractor- Boom Removed	3658 mm	144 in
D	Width of Tractor- Counterweight Extended	5454 mm	214.7 in
E	Machine Height - Tip of Grouser to Top of Winch	2819 mm	111 in
F	Drawbar Height - to Center of Clevis	540 mm	21.25 in

G	Length of Track on Ground	2718 mm	107 in
H	Operating Length - With Drawbar	4623 mm	182 in
I	Height to Top of Exhaust Stack	3050 mm	120 in
J	Grouser Height	84 mm	3.3 in
K	Ground Clearance (SAE J1234)	349 mm	13.7 in
L	Boom Height - Tip of Grouser at SAE 4 ft (1.22 m) Overhang	6833 mm	269 in

## Standard Shipping Specifications



Approximate operating weight of the standard machine, including boom and blocks <sup>1</sup>	29910 kg (65940 lb)
Approximate shipping weight of the standard machine, including boom and blocks <sup>2</sup>	29593 kg (65240 lb)
Weight of the 6.1 meter boom (20 ft)	1174 kg (2585 lb)
Weight of blocks (Luff + Load + Hook + pins)	234 kg (515 lb)
Height of the machine without the boom (A)	3050 mm (10 ft)
Length of the machine (B)	4623 mm (15 ft 2 in)
Width of the machine without the boom (C)	3658 mm (12 ft)
Height of the machine with the boom	6833 mm (22 ft 5 in)
Ground clearance of the machine	349 mm (1 ft 1.75 in)

<sup>1</sup> Operating Weight: Includes lubricants, coolant, 100% fuel, hydraulic controls and fluids, backup alarm, seat belt, 610 mm (24 in) single grouser shoes, drawbar, counterweight, boom and pulley blocks and cable, and operator.

<sup>2</sup> Shipping Weight: Includes lubricants, coolant, 10% fuel, hydraulic controls and fluids, backup alarm, seat belt, 610 mm (24 in) single grouser shoes, drawbar, counterweight, and pulley blocks and cable.





### Winch Dimensions

	Hook		Boom	
Drum diameter	10.0 in	254.0 mm	8.5 in	215.9 mm
Flange diameter	19.0 in	482.6 mm	16.0 in	406.4 mm
Drum length	17.0 in	431.8 mm	10.0 in	254.0 mm
Capacity - 3/4" (19.05mm) diameter	407.0 ft	124.0 m	170.0 ft	51.8 m

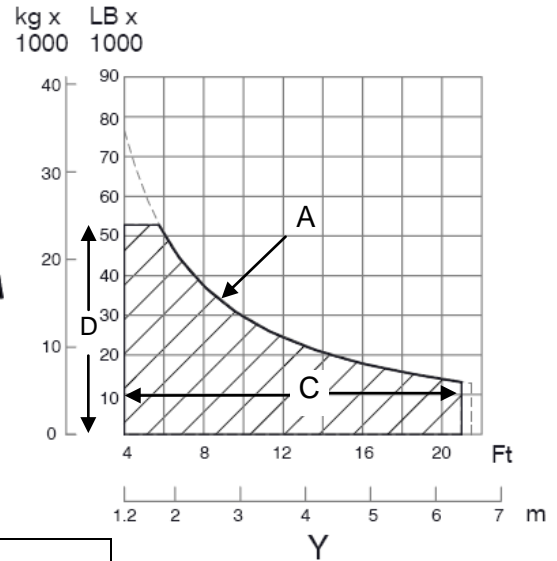
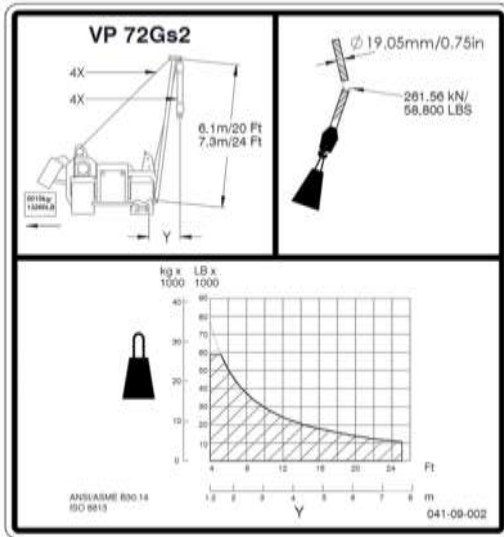
### Winch Speeds

(Nominal line speed, no load)	Hook speed		Boom line speed	
Bare drum 572	Hi 300 ft/min	91.4 m/min	241 ft/min	73.4 m/min
	Low 155 ft/min	47.2 m/min		

### Safety Features

- Boom and hook drawworks are driven by independent hydraulic winches
- Oil disc brakes provide smooth operation, positive retention of boom and hook positions
- Infinitely variable speed controls for both boom and hook allow precise control
- Emergency free fall function on load line control allows the operator to drop the load quickly
- Independent manual external brake release enables load lowering in the event the engine or hydraulics are inoperable

# Lifting Capacities



VP 72G Pipelayer	
Wire rope diameter	19.05 mm ( 0.75 inch)
Minimum breaking strength of the wire	261.56 kN (58,800 lb)
4 part load line	
4 part boom line	
Mass of the extended counterweight	6015 kg ( 13260 lb)
Standard boom length	6.1 m (20 ft)
Total operating weight of the machine	29910 kg (65940 lb)

The following are as per ANSI/ASME B30.14, ISO 8813: 1992:  
 (A) Rated load/lift capacity  
 (Y) W12 Load overhang  
 (C) Rated load/lift capacity working range  
 (D) Maximum load/lift capacity range

## Intended Use

This machine is a Pipelayer that is described in ISO 6165:2001. The machine is intended to perform the following functions: lift, handle, and lay down pipe with a side mounted boom.

## Restrictions to Application and Configuration

The maximum lift capacity is 40820 kg (90,000 lb).

The maximum fore and aft slope is 45 degrees or a 100 percent grade for the proper lubrication of the pipelayer components.

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