

# **Prime Force**

Models PF310, PF416, PF516, PF520, PF616-6, PF621-6, PF625, PF630 and Trailer Jack with Hoist

**Operator's Manual and Installation Instructions** 

# **Primary Mover**

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#### INTRODUCTION

This manual covers proper hoist installation, hydraulic connections, wiring and service of the Primary Mover hoists..

# NOTICE: READ THIS ENTIRE MANUAL BEFORE ATTEMPTING TO INSTALL ANY COMPONENT CONTAINED IN THE HOIST KIT.

This manual should be kept at all times with the trailer, jack, hoist or other equipment or device(s) with which this Primary Mover product is used or installed. NOTE: Installation of Primary Mover products on your truck or trailer or other equipment may void or affect the truck or trailer or equipment warranty – contact the manufacturer to ensure continued warranty coverage or conditions or exceptions to warranty that may be affected.



#### IMPORTANT INFORMATION

Jack Model Number:	
Pump Installation and Operation Manual	
Number:	
In Service Date:	
Dealer:	
Address:	
City, State, Zip:	
Dealer Phone Number:	

# STANDARD WARRANTY AND WARRANTY EXTENSIONS

#### → STANDARD WARRANTY

Primary Mover makes no express warranty for this product except those specifically set forth herein. Primary Mover warrants its products to be free from defect in design, material and workmanship for a period of 36 months from original date of purchase, and to be suitable for and to perform in accordance with the use(s) and specifications stated in product materials. This warranty supersedes all other warranties. Except for warranties herein stated, there are no other warranties.

EXCLUSION OF IMPLIED WARRANTIES: PRIMARY MOVER MAKES NO WARRANTY OF MER-CHANTABILITY OF THE GOODS SOLD UNDER THIS AGREEMENT. PRIMARY MOVER not manufactured by Primary Mover shall be covered under the original manufacturer's warranty. Primary Mover will assist in administering all such warranties. If a defect in a product is discovered and is covered by this warranty, Primary Mover will have the option to repair, refurbish or replace any warrantied item(s), such option to be exercised in Primary Movers's sole discretion. This warranty inures to the benefit of the original purchaser only, is non-transferable, and has no cash value

#### → WARRANTY EXTENSIONS

If the following conditions are met, the standard warranty will be extended as stated below if (1) the hydraulic oil is purchased from Primary Mover and (2) all single acting circuits are plumbed with a hydraulic hose installed on both sides of the cylinder.

**4 years** for battery maximizer kit that include: 20 amp. road charger with 7 way 8 amp battery charger SP-3 – 3watt SolarPulse panel

**5 years** for battery maximizer heavy duty kit that includes: 20 amp. road charger with 7 way 8 amp, battery charger SP-7-7 watt SolarPulse panel

6 years for battery maximizer extreme heavy duty kit that includes:
20 amp. road charger
18 amp. battery charger
SP-12-12 watt SolarPulse panel

#### $\rightarrow$ EXCLUSIONS

This warranty covers only defects in design, manufacturing and/or materials discovered while using the product as recommended by the manufacturer. The warranty does not cover: (1) loss or theft; (2) product failure or damage caused by user abuse or neglect, improper use, improper installation, improper maintenance, improper storage, or improper or unauthorized modification(s); (3) parts that are subject to normal wear and tear; (4) paint, finishes or paint preparation performed by anyone other than Primary Mover; (5) deterioration of paint and/or appearance caused by normal wear and tear and/or exposure to natural elements; (6) modifications not authorized by Primary Mover; and/or (7) loss brought about by natural disaster or acts of God. This warranty becomes VOID and of no force or effect upon modifications to prod-uct component performed by anyone other than Primary Mover if such modifications are not authorized by Primary Mover.

#### $\rightarrow$ LIMITS OF LIABILITY

Should the product fail, the sole recourse is repair or replacement, as described in the preceding paragraphs. Primary Mover is not liable to any party for direct, indirect or consequential damage(s) resulting from failure of the product. Under no circumstances will Primary Mover be responsible for lost profit, lost savings, damage to other equipment, rental or replacement costs, or other incidental or conse-quential damages arising from use or inability to use the product. Damages, if any, recoverable against Primary Mover shall under no circumstances exceed the current list price of the product excluding tax, shipping and handling charges

By using the product, user accepts all terms stated herein. Primary Mover reserves the right to make improvements to any model or product without notice.

#### SAFETY FIRST

IT IS YOUR DUTY AND RESPONSIBILITY TO COMPLETELY READ THROUGH AND UNDERSTAND THIS MANUAL AND ALL OTHER MATERIALS PROVIDED WITH PRIMARY MOVER PRODUCT(S)(INCLUDING MATERIALS PROVIDED BY THIRD PARTY MANUFACTURERS) BEFORE ATTEMPTING ANY INSTALLATION OR OPERATION OF PRIMARY MOVER OR THIRD PARTY PRODUCT(S) SUPPLIED BY PREMIUM SUPPLY. IF AT ANY TIME YOU HAVE QUESTIONS ABOUT THE INSTALLATION OR OPERATION OF PRIMARY MOVER OR PRIMARY MOVER SUPPLIED PRODUCT(S) OR ABOUT THE CONTENTS OF THIS MANUAL, CONTACT PRIMARY MOVER BEFORE PROCEEDING WITH THE CONTEMPLATED INSTALLATION OR OPERATION. PRIMARY MOVER IS NOT RESPONSIBLE FOR PROPERTY DAMAGE OR PERSONAL INJURY OR DEATH THAT MAY OCCUR FOR YOUR FAILURE TO COMPLY WITH THESE REQUIREMENTS.

This symbol is used to call attention to instructions concerning personal safety. Be sure to observe and follow these instructions. Take time to read thoroughly and to be careful!

A brief description of signal words that are used in this manual follows:



**ADANGER** Indicates an imminently hazardous situation which, if not avoided, WILL result in property damage, death or serious injury.



**WARNING** Indicates a potentially hazardous situation which, if not avoided, COULD result in property damage, death or serious injury and includes hazards that are exposed when guards are removed.



**ACAUTION** Indicates a potentially hazardous situation which, if not avoided, MAY result in property damage or minor or moderate person injury including death. It is also used to alert against unsafe practices.

#### SAFETY SIGN LOCATIONS

Installing or operating this equipment without first understanding proper installation and operation procedures could lead to serious property damage, personal injury or even death. Always read and fully understand all installation and operation manuals before installing or operating this equipment. Contact Primary Mover with any questions. Read all safety signs on the trailer and those included with or stated in this manual. Keep these signs clean and replace any lost, damaged or destroyed signs.



Part 080031 Locate as shown

Locate in an easy to read location here and on

#### SAFETY PRECAUTIONS

Installing or operating this hoist without first understanding proper installation and operation procedures could lead to serious injury or death. Always read and fully understand all installation and operation manuals before installing or operating this equipment. Contact Primary Mover with any questions.

#### WARNING

Overloading a trailer could cause vehicle or trailer component damage resulting in injury or death. NEVER exceed the gross vehicle weight (GVW) or gross axle weight (GAW) rating of the trailer or your vehicle.

WARNING Damage to brake lines during manufacturing and installation of the hoist, as well as installing any hardware (bolts, nuts, brackets) in a way that they may rub and damage the brake system, could lead to brake failure. This can cause an accident that could cause injury or death. ALWAYS take adequate steps to prevent brake system damage during installation of the hoist, and take precaution to ensure that installed equipment does not interfere with brake system.

**AWARNING** Malfunctioning equipment could cause property damage, injury or death. ALWAYS have faulty equipment repaired before continuing use. Consult the trailer manufacturer if required.

WARNING Welding, oxy-fuel cutting, or grinding could cause fuel to ignite. This could lead to injury or death. ALWAYS take adequate steps to avoid the ignition of fuel from fuel tanks when welding, oxy-fuel cutting, and/or grinding during installation. Heat from the vehicles exhaust system could cause hydraulic component failure. This could lead to a fire that can lead to injury or death. ALWAYS install equipment in locations where the exhaust system heat will not damage any components critical to operation.

**AWARNING** Never attempt to jerk or shock the trailer body with the body raised to remove a stuck load. Jerking or shocking the trailer in this position can cause damage that could result in injury or even death. NEVER drive forward or reward and stop quickly to "un-stick" the load. If load is stuck, lower trailer body and free load.

Primary Mover Mandeville, Louisiana					
HOIST KIT					
Hydraulic Power Lipit	Hinge (Styles Vary)				
Safety Arm	Hoist Assembly				
	Į.				
Safety Arm Cup	Safety Arm Storage Bracket				
Rubber Battery Strap	Hydraulic Hose Between HPU and Cylinder				
	- Co				
Hydraulic Fittings	Bridon Load Control				
en en					
Battery Cables	Locking Collars				

## SAFETY ARM INSTALLATION AND USE

**Always support an unloaded body with the safety arm.** The safety arm is meant to support the weight of an unloaded body only.

**CANGER** Being under a raised body could result in serious injury or death should the body unexpectedly descend. Never position yourself or allow others to position themselves under a loaded body. Always support an unloaded body with the supplied safety arm. NEVER use the safety arm on a loaded body. Safety Arm Use:

- 1. Raise trailer body to sufficient height and shut off hydraulic power to hoist.
- 2. Grasp safety arm and rotate into the up/vertical position.
- 3. Once vertical position is accomplished, push arm down into the support bracket at base of arm.
- 4. SLOWLY lower the hoist and body until the cup contacts the vertical facing arm.
- 5. Reverse the above procedure to place arm back in its hanger for transport (be sure to lower hoist to full down position upon placing arm back in hanger).

#### Maximum Unloaded Tilt Body Weight in Pounds Using One Safety Arm

Trailer tilt body length in feet								
		8	10	12	14	16	18	20
	50	3854	3083	2569	2202	1927	1713	1542
S	60	4625	3700	3083	2643	2313	2056	1850
che	70	5396	4317	3597	3083	2698	2398	2158
ing	80	6167	4933	4111	3524	3083	2741	2467
u in	90	6938	5550	4625	3964	3469	3083	2775
arn	100		6167	5139	4405	3854	3426	3083
ety	110		6783	5653	4845	4240	3769	3392
saf	120		7400	6167	5286	4625	4111	3700
pu	130			6681	5726	5010	4454	4008
е 9	140			7194	6167	5396	4796	4317
ing	150				6607	5781	5139	4625
ar h	160				7048	6167	5481	4933
rea	170					6552	5824	5242
sen	180					6938	6167	5550
twe	190					7323	6509	5858
þe	200						6852	6167
Jce	210						7194	6475
star	220							6783
Di	230							7092





NOTE: Style of hinge could vary from that shown.









## HOIST MOUNTING DIMENSIONS

Nearest frame member

	А	В
PF310	5.5	
PF416	7.00	
PF516	7.00	
PF520	7.00	
PF616	8.00	
PF621	7.00	
PF625	8.00	13.00
PF630	8.00	13.00







Lubricate the joint with EP3 grease every 6 months

## SINGLE AND DUAL ACTING HYD. POWER UNIT INSTALLATION

If included with the kit, mount HPU (hydraulic power unit) in a weather tight enclosure on the trailer. See additional instructions supplied with the HPU for mounting, electrical, wireless remote and hydraulic fluid requirements.

ACAUTION Hydraulic components that are not provided by Primary Mover and are used in the hydraulic circuit that are incompatible with Primary Mover components may cause damage to, or failure or malfunction of, the direct push cylinder or other components of the Primary Mover product(s). Such damage, failure or malfunction may cause property damage, personal injury or even death, It is the purchaser's responsibility to verify the compatibility of components not provided by Primary Mover.

Connecting the jack to a hydraulic system with more pressure (PSI) or flow (GPM) than is recommended by Primary Mover could cause the jack to fail during operation. Such failure could cause property damage, personal injury, or even death. Ensure that you have pressure that does not exceed tolerances and limits stated for your Primary Mover product(s)/component(s), and that there is no restriction or issue concerning flow before operation. Consult Primary Mover if you are unsure about the limits, capacities and/or tolerances of your hydraulic system.

Adjusting the hydraulic pressure to exceed the recommended limits or setting could cause the jack to fail during operation. Such failure could cause property damage, personal injury, or death. Pressure should ONLY be adjusted by a trained and qualified technician or mechanic, and should never exceed stated limits or settings of components used.

#### Hydraulic System Pre-Operation

The hydraulic system supplied by Primary Mover consists of components (pump, valves, reservoir, hoses, cylinder, etc.) that are designed to be compatible with each other.

All Primary Mover's liability and warranty will be voided if determined by Primary Mover that substituted hydraulic components (i.e., hydraulic components not provided by Primary Mover as part of the kit) were used and such components were incompatible with components of the kit provided by Primary Mover. Hydraulic parameters are shown below. These are listed as a general guide to ensure proper compatibility (when using other hydraulic components). If you have any questions about component compatibility, please contact Primary Mover

before installation, use or maintenance.

Maximum Working Pressure---3200 PSI Hydraulic Port Type--#6 JIC

#### Single Acting HPU Connections



Maximum Hydraulic Flow Rate	2 GPM	Port
Maximum Pressure For "Raising" Portion of Cycle	3200 PSI	А

#### **Dual Acting HPU Connections**



Maximum Hydraulic Flow Rate	2 GPM	Port
Maximum Pressure For "Raising" Portion of Cycle	3200 PSI	А
Maximum Pressure For "Lowering" portion of Cycle	1500 PSI	В

# **TYPICAL BATTERY HOOKUP**

**WARNING** Shorting of the electrical system brought about by installation, servicing or repairing battery related connection and electrical components can cause sparks, ignition of combustible material and/or fire which in turn can lead to property damage, personal injury or death. ALWAYS disconnect the battery prior to installing, servicing, or repairing power unit.

Mount battery in a weather tight enclosure on the trailer. <u>See additional instructions supplied with the HPU for mounting, electrical and hydraulic fluid requirements.</u>



It is highly recommended that the trailer battery be kept charged using one of the Pulse-tech products shown on Primary Mover website at <u>Primarymover.com</u>

#### **TRAILER JACK KIT**



# SINGLE HYDRAULIC TRAILER WELD-ON JACK INSTALLATION



#### DUAL HYDRAULIC TRAILER WELD-ON JACK INSTALLATION



## DUAL DOUBLE ACTING JACK AND HOIST HPU CONNECTIONS







# PF310 HOIST DIMENSIONS AND CAPACITY



Maximum Dump Angle ± 2°	М
45°	52.00"
50°	47.00"

#### PF-310 Trailer Hoist Conversion Class A (Capacity in Tons)

**IMPORTANT:** Because of variations in application, the data contained in these tables is provided as a general guide only.

PF310 Hoist Capacity (Tons)				
"A"	"B"	Dump Angle (Degrees)		
Body	Overhang			
(Feet)	(Inches)			
		45°	50°	
8	12	3.7	3.3	
8	18	4.4	4.0	
8	24	5.5	4.9	
9	12	3.2	2.8	
9	18	3.7	3.3	
9	24	4.4	4.0	
10	12	2.8	2.5	
10	18	3.2	2.8	
10	24	3.7	3.3	



- 1. Water level non-diminishing load.
- 2. The vertical height between the rear hinge pivot and the floor is no less than 3 inches.
- 3. The hydraulic relief pressure set at 3,200 psi.

# **PF416 HOIST DIMENSIONS AND CAPACITY**





Maximum Dump Angle ± 2°	М
45°	75.00"
50°	68.00"

#### PF-416 Trailer Hoist Conversion Class A (Capacity in Tons)

**IMPORTANT:** Because of variations in application, the data contained in these tables is provided as a general guide only.

PF416 Hoist Capacity (Tons)				
"A" Body (Feet)	"B" Overhang (Inches)	Dump Angle (Degrees)		
		45°	50°	
10	12	9.3	8.4	
10	18	10.6	9.6	
10	24	12.4	11.2	
12	12	7.4	6.7	
12	18	8.3	7.5	
12	24	9.3	8.4	
14	12	6.2	5.6	
14	18	6.8	6.1	
14	24	7.4	6.7	



- 1. Water level non-diminishing load.
- 2. The vertical height between the rear hinge pivot and the floor is no less than 3 inches.
- 3. The hydraulic relief pressure set at 3,200 psi.

# **PF516 HOIST DIMENSIONS AND CAPACITY**





Maximum Dump Angle ± 2°	М
45°	73.00"
50°	66.00"

#### PF-516 Trailer Hoist Conversion Class A (Capacity in Tons)

**IMPORTANT:** Because of variations in application, the data contained in these tables is provided as a general guide only.

PF516 Hoist Capacity (Tons)			
"A" Body (Feet)	"B" Overhang (Inches)	Dump Angle (Degrees)	
		45°	50°
10	12	9.7	8.8
10	18	11.1	10.0
10	24	12.9	11.7
12	12	7.7	7.0
12	18	8.6	7.8
12	24	9.7	8.8
14	12	6.5	5.8
14	18	7.0	6.4
14	24	7.8	7.0



- 1. Water level non-diminishing load.
- 2. The vertical height between the rear hinge pivot and the floor is no less than 3 inches.
- 3. The hydraulic relief pressure set at 3,200 psi.

# **PF520 HOIST DIMENSIONS AND CAPACITY**





Maximum Dump Angle ± 2°	М
45°	97.00"
50°	88.00"

#### PF-520 Trailer Hoist Conversion Class A (Capacity in Tons)

**IMPORTANT:** Because of variations in application, the data contained in these tables is provided as a general guide only.

PF520 Hoist Capacity (Tons)			
"A" Body (Feet)	"B" Overhang (Inches)	Dump Angle (Degrees)	
		45°	50°
12	12	10.3	9.3
12	18	11.4	10.4
12	24	12.9	11.7
14	12	8.6	7.8
14	18	9.3	8.5
14	24	10.3	9.3
16	12	7.3	6.7
16	18	7.9	7.2
16	24	8.6	7.8



- 1. Water level non-diminishing load.
- 2. The vertical height between the rear hinge pivot and the floor is no less than 3 inches.
- 3. The hydraulic relief pressure set at 3,200 psi.

# **PF616-6 HOIST DIMENSIONS AND CAPACITY**





Maximum Dump Angle ± 2°	М
45°	70.00"
50°	63.00"

# PF-616 Trailer Hoist Conversion Class A

(Capacity in Tons)

**IMPORTANT:** Because of variations in application, the data contained in these tables is provided as a general guide only.

PF616-6 Hoist Capacity (Tons)			
"A"	"B" Dump Angle (Degrees)		
Body	Overhang		
(Feet)	(Inches)		
		45°	50°
12	12	12.6	11.3
12	18	14.0	12.6
12	24	15.7 14.1	
14	12	10.5	9.4
14 18		11.4	10.3
14	14 24		11.3
16	16 12		8.1
16 18		9.6	8.7
16	24	98	94



- 1. Water level non-diminishing load.
- 2. The vertical height between the rear hinge pivot and the floor is no less than 3 inches.
- 3. The hydraulic relief pressure set at 3,200 psi.

# PH621-6 HOIST DIMENSIONS AND CAPACITY





Maximum Dump Angle ± 2°	М
45°	93.00"
50°	84.00"

#### PH-621 Trailer Hoist Conversion Class A (Capacity in Tons)

**IMPORTANT:** Because of variations in application, the data contained in these tables is provided as a general guide only.

PH621-6 Hoist Capacity (Tons)			
"A"	"B"	Dump Angle (Degrees)	
Body	Overhang		
(Feet)	(Inches)		
		45°	50°
16	12	11.9	10.7
16	18	12.8	11.6
16	24	13.9	12.5
18	12	10.4	9.4
18	18	11.1	10.0
18	24	11.9	10.7
20	12	9.2	8.3
20	18	9.8	8.8
20	24	10.4	94



- 1. Water level non-diminishing load.
- 2. The vertical height between the rear hinge pivot and the floor is no less than 3 inches.
- 3. The hydraulic relief pressure set at 3,200 psi.

# **PF625 HOIST DIMENSIONS AND CAPACITY**









Maximum Dump Angle ± 2°	М
45°	105.00"
50°	95.00"

#### PF-625 Trailer Hoist Conversion Class A (Capacity in Tons)

**IMPORTANT:** Because of variations in application, the data contained in these tables is provided as a general guide only.

PF625 Hoist Capacity (Tons)			
"A" Body (Feet)	"B" Overhang (Inches)	Dump Angle (Degrees)	
		45°	50°
16	12	11.3	10.2
16	18	12.1	11.0
16	24	13.2	11.9
18	12	9.9	8.9
18	18	10.5	9.5
18	24	11.3	10.2
20	12	8.8	7.9
20	18	9.3	8.4
20	24	9.9	8.9



- 1. Water level non-diminishing load.
- 2. The vertical height between the rear hinge pivot and the floor is no less than 3 inches.
- 3. The hydraulic relief pressure set at 3,200 psi.

# **PF630 HOIST DIMENSIONS AND CAPACITY**





Maximum Dump Angle ± 2°	М
45°	128.00"
50°	116.00"

#### PF-630 Trailer Hoist Conversion Class A (Capacity in Tons)

**IMPORTANT:** Because of variations in application, the data contained in these tables is provided as a general guide only.

PF630 Hoist Capacity (Tons)			
"A" Body (Feet)	"B" Overhang (Inches)	Dump Angle (Degrees)	
		45°	50°
18	12	13.5	12.2
18	18	14.4	13.1
18	24	15.4	14.0
20	12	12.5	10.9
20	18	12.7	11.5
20	24	13.5	12.2
24	12	9.8	8.9
24	18	10.3	9.3
24	24	10.8	9.8



- 1. Water level non-diminishing load.
- 2. The vertical height between the rear hinge pivot and the floor is no less than 3 inches.
- 3. The hydraulic relief pressure set at 3,200 psi.