

# PDR

Power Drive  
Heavy Duty  
Reach Trucks



## Power Drive Heavy Duty Reach Trucks

## STANDARD EQUIPMENT

■ **Reach Mechanism.** Heavy-duty, pantograph-type reach mechanism extends 24". Dual reach and tilt cylinders with chrome plated rods used on all units.

**■ Interlocked I-beam Mast.** The premium-grade steel mast construction features interlocked steel channel and I-beam design and roller-bearing surfaces for long mast life. Interlocked channel and I-beam mast accommodates high lifting stresses and maintains maximum load stability.

**Large Direction Reversing “Belly-button” Impact Switch.** Provides operator protection when maneuvering. Upon body contact, switch activates low speed in the opposite direction.

■ **Versatile Braking Systems.** Two-way mechanical linkage actuates an automotive-type disc brake when the handle is positioned in the top or bottom of its arc. "Dead-man" feature returns the handle to its upright position, cuts out travel power, and automatically engages the brake if the handle is inadvertently released.

■ **Easy Access Service Panel.** All Big Joe models are designed to make maintenance fast and easy. Hinged doors and removable panels permit access to battery, electrical circuitry, drive train and hydraulic components for all normal maintenance. Most major components can be serviced without special tools.

■ **Fully Protected Electrical System.** Fully fuse protected, heavy-duty 100 ampere industrial contactors are standard. All wiring is coded for easy servicing.

■ **Transmission.** Heavyweight ductile iron housing protects large, heat-treated spur gears; premium ball and tapered roller-bearings are fully bathed in oil.

■ **Drive Motor.** Ball bearings and Class H insulation provide maximum performance with long life.

■ **Steering.** The entire drive train pivots on a thrust bearing to ensure long service life and low steering effort. Power is delivered to the floor through a large, smooth rolling polyurethane tire for positive traction and long life.

**■ Construction.** Interlocked channel and I-beam on mast and solid bar straddles provide extra rigidity.

■ **Tilt.** Carriage tilts 3° forward and 6° backward and is designed to operate in all reach positions and at all lifting heights.

**■ Chrome Plated Lift Cylinder.** For long, maintenance-free lift cylinder life.

**Special Alloy Forks.** Heavy-duty I.T.A. forks are heat-treated alloy steel and formed to preserve full strength at the fork heel. Bottom taper of 14 inches and beveled fork tips allow easy pallet entry and exit.

**■ I.T.A. Class II Carriage.** I.T.A. Class II Carriage makes changing fork spacing simple. No tools or pin removal are required.

■ **Emergency Power Disconnect.** Externally mounted quick-release battery disconnect is readily accessible to remove all power from truck circuits in the event of an emergency.

■ **Tandem Load Wheels.** 4" tandem polyurethane load wheels standard on all models.



**OPTIONS** (other options available, consult factory)

■ **Full Free Lift.** Allows fork carriage to extend to the top of the first stage before the second stage begins to extend. For lifting in areas limited by overhead clearance. Reduces lift and collapsed height 2" (consult factory).

■ **Stepless Speed Control.** Infinitely variable speed control is available.

## SPECIFICATIONS

### Models:

**PDR 20**   **Lifting Capacity:** 2,000 at 24" load center  
**Lift Range:** 106" - 154"  
**Power System:** 12V/24V, with fully automatic charger  
**Turning Radius:** From 65"

**PDR 20 Tri-mast®**    **Lifting Capacity:** 2,000 at 24" load center  
**Lift Range:** 158" - 194"  
**Power System:** 24V, with fully automatic charger  
**Turning Radius:** From 68"

**PDR 30**   **Lifting Capacity:** 3,000 at 24" load center  
**Lift Range:** 106" - 154"  
**Power System:** 12V/24V, with fully automatic charger  
**Turning Radius:** From 65"

**PDR 30 Tri-mast®** Lifting Capacity: 3,000 at 24" load center  
Lift Range: 158" - 194"  
Power System: 24V, with fully automatic charger  
Turning Radius: From 68"

**Battery Compartment Size:** 6<sup>11/16"</sup> x 30<sup>7/8"</sup>, 11<sup>1/8"</sup> x 31<sup>5/8"</sup>, 13" x 30<sup>7/8"</sup>

**Fork Length x Width x Thickness:** Choice of 36", 42", 48" x 4" x 1 1/2"

**Fork Lowered Height (max.):** 2<sup>3</sup>/<sub>4</sub>" (2" for Tri-Mast® and Full Free Lift Models)

**Fork O.D. Range: 8" (min.) - 32" (max.)**

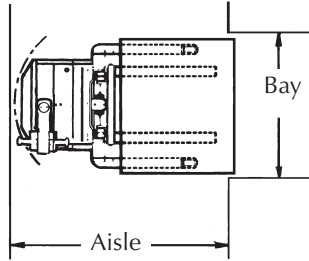
**Fork Tilt:** 3° forward, 6° backward

**Fork Reach: 24"**

Performance:	PDR20				PDR30			
	Empty		Loaded		Empty		Loaded	
	12V	24V	12V	24V	12V	24V	12V	24V
Lift Speed (FPM), up to	15	32	10	22	17	35	10	21
Lowering Speed (FPM), up to	30	30	51	51	30	30	51	51
Travel Speed (MPH), up to	2.5	3.0	2.2	2.7	2.5	3.0	2.0	2.5
Grade Clearance:	10% (Tri-Mast® 9%)							
Gradeability:	10% (12V 8%)							

# DIMENSIONS

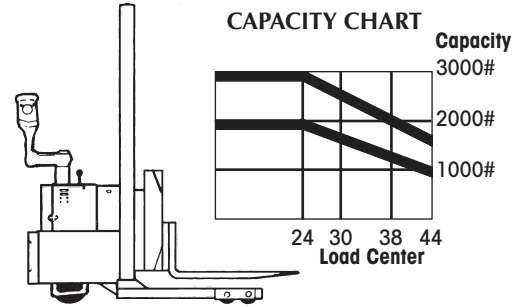
## MINIMUM AISLE STACKING REQUIREMENTS



6<sup>11</sup>/<sub>16</sub>" WIDE  
BATTERY COMPARTMENT\*\*

RIGHT ANGLE STACKING			
Load Length	Load Width		
	36	42	48
36	79	78	77
42	86	85	85
48	93	92	92

## CAPACITY CHART



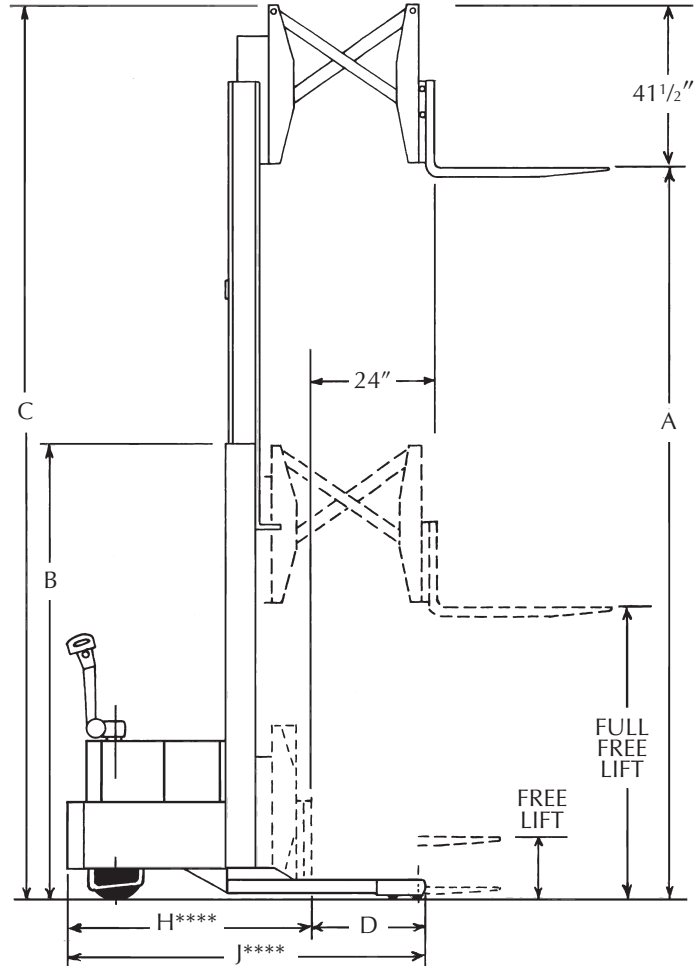
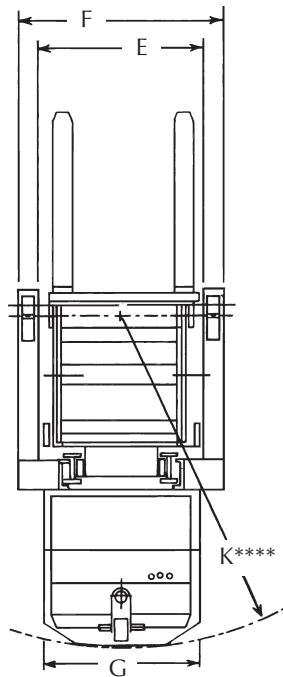
Aisle dimensions are zero clearance. 12" should be added for efficient operations.

Bay widths are pallet widths plus 6".

\*\*With 11<sup>1</sup>/<sub>8</sub>" wide battery compartment, aisle dimension should be increased 4<sup>5</sup>/<sub>8</sub>".

\*\*With 13" wide battery compartment, aisle dimension should be increased 6<sup>1</sup>/<sub>4</sub>".

For Tri-Mast® models, aisle dimension should be increased 5".



MODEL NO.	CAPACITY AT 24" LOAD CENTER	LIFT HT.	COLL. HT.	EXT. HT.	FREE LIFT HT.	STRADDLES			OVERALL WIDTH	POWER HEAD LENGTH		OVERALL LENGTH		TURN RADIUS		APPROX. SHPG. WEIGHT W/O BATTERY	STANDARD BATTERY		STANDARD CHARGER	
						LENGHT **	I.D.	O.D.		12V	24V	12V	24V	12V	24V		12V	24V	12V	24V
		A	B	C		D	E	F	G	H		J		K						

### PDR 20 SERIES

PDR-20-106	2000	106	71	147 <sup>1</sup> / <sub>2</sub>	12	23 <sup>5</sup> / <sub>16</sub>	34	42	32	45 <sup>1</sup> / <sub>2</sub>	50 <sup>1</sup> / <sub>8</sub>	68 <sup>13</sup> / <sub>16</sub>	73 <sup>1</sup> / <sub>16</sub>	65 <sup>1</sup> / <sub>16</sub>	69 <sup>21</sup> / <sub>32</sub>	3100	450 A.H. (505 LBS.)	300 A.H. (693 LBS.)	65 amp. (60 LBS.)	40 amp. (60 LBS.)
PDR-20-130	2000	130	83	171 <sup>1</sup> / <sub>2</sub>	12	23 <sup>5</sup> / <sub>16</sub>	34	42	32	45 <sup>1</sup> / <sub>2</sub>	50 <sup>1</sup> / <sub>8</sub>	68 <sup>13</sup> / <sub>16</sub>	73 <sup>1</sup> / <sub>16</sub>	65 <sup>1</sup> / <sub>16</sub>	69 <sup>21</sup> / <sub>32</sub>	3380				
PDR-20-154	2000	154	95	195 <sup>1</sup> / <sub>2</sub>	12	23 <sup>5</sup> / <sub>16</sub>	34	42	32	45 <sup>1</sup> / <sub>2</sub>	50 <sup>1</sup> / <sub>8</sub>	68 <sup>13</sup> / <sub>16</sub>	73 <sup>1</sup> / <sub>16</sub>	65 <sup>1</sup> / <sub>16</sub>	69 <sup>21</sup> / <sub>32</sub>	3500				

### PDR 20 SERIES TRI-MAST®

PDR-20-158	2000	158	77	199 <sup>1</sup> / <sub>2</sub>	35 <sup>1</sup> / <sub>2</sub>	23 <sup>5</sup> / <sub>16</sub>	38	46	32	N/A	54 <sup>7</sup> / <sub>16</sub>	N/A	77 <sup>3</sup> / <sub>4</sub>	N/A	73 <sup>15</sup> / <sub>16</sub>	3980	N/A	300 A.H. (693 LBS.)	N/A	40 amp. (60 LBS.)
PDR-20-194	2000*	194	89	235 <sup>1</sup> / <sub>2</sub>	47 <sup>1</sup> / <sub>2</sub>	23 <sup>5</sup> / <sub>16</sub>	50	58	32	N/A	54 <sup>7</sup> / <sub>16</sub>	N/A	77 <sup>3</sup> / <sub>4</sub>	N/A	73 <sup>15</sup> / <sub>16</sub>	4160				

### PDR 30 SERIES

PDR-30-106	3000	106	71	147 <sup>1</sup> / <sub>2</sub>	12	23 <sup>5</sup> / <sub>16</sub>	34	42	32	45 <sup>1</sup> / <sub>2</sub>	50 <sup>1</sup> / <sub>8</sub>	68 <sup>13</sup> / <sub>16</sub>	73 <sup>1</sup> / <sub>16</sub>	65 <sup>1</sup> / <sub>16</sub>	69 <sup>21</sup> / <sub>32</sub>	3700	510 A.H. (526 LBS.)	340 A.H. (721 LBS.)	65 amp. (60 LBS.)	40 amp. (60 LBS.)
PDR-30-130	3000	130	83	171 <sup>1</sup> / <sub>2</sub>	12	23 <sup>5</sup> / <sub>16</sub>	34	42	32	45 <sup>1</sup> / <sub>2</sub>	50 <sup>1</sup> / <sub>8</sub>	68 <sup>13</sup> / <sub>16</sub>	73 <sup>1</sup> / <sub>16</sub>	65 <sup>1</sup> / <sub>16</sub>	69 <sup>21</sup> / <sub>32</sub>	3460				
PDR-30-154	3000	154	95	195 <sup>1</sup> / <sub>2</sub>	12	23 <sup>5</sup> / <sub>16</sub>	34	42	32	45 <sup>1</sup> / <sub>2</sub>	50 <sup>1</sup> / <sub>8</sub>	68 <sup>13</sup> / <sub>16</sub>	73 <sup>1</sup> / <sub>16</sub>	65 <sup>1</sup> / <sub>16</sub>	69 <sup>21</sup> / <sub>32</sub>	4100				

### PDR 30 SERIES TRI-MAST®

PDR-30-158	3000	158	77	199 <sup>1</sup> / <sub>2</sub>	35 <sup>1</sup> / <sub>2</sub>	23 <sup>5</sup> / <sub>16</sub>	38	46	32	N/A	54 <sup>7</sup> / <sub>16</sub>	N/A	77 <sup>3</sup> / <sub>4</sub>	N/A	73 <sup>15</sup> / <sub>16</sub>	4150	N/A	340 A.H. (721 LBS.)	N/A	40 amp. (60 LBS.)
PDR-30-194	3000*	194	89	235 <sup>1</sup> / <sub>2</sub>	47 <sup>1</sup> / <sub>2</sub>	23 <sup>5</sup> / <sub>16</sub>	50	58	32	N/A	54 <sup>7</sup> / <sub>16</sub>	N/A	77 <sup>3</sup> / <sub>4</sub>	N/A	73 <sup>15</sup> / <sub>16</sub>	4340				

\*Derate capacity 500 lbs. above 158" \*\*Face of fork to end of load wheels. \*\*\*To face of fork. \*\*\*\*Add 1<sup>1</sup>/<sub>2</sub>" to 24V dimension when 13" battery compartment is used.





## Power Drive Heavy Duty Reach Trucks

### TECHNICAL DATA

#### ELECTRICAL SYSTEM

All power is routed via "SB" type connector (standard) to primary fuse protection, where power then is separated to drive and lift system subcircuits.

Modular drive control panel has premium, industrial-grade contactors with replaceable silver-alloy tips.

All cables and wiring are color coded and/or numbered for easy service tracing.

High-torque, Class H insulated drive motor has copper-graphite brushes for peak electrical efficiency and long life.

Hydraulic pump motor(s) are specially selected for peak electrical efficiency at specific torque and rpm lift pump requirements.

Driver-control-module circuits are routed to the control head via multiple conductor cable.

**PDR-20:** 2,000 lb. capacity at 24" load center. Standard equipment includes Job-Mated, steel-clad, 12-volt, 450 amp. hour at 6 hr. rate battery (5.238 kwh) and separate, fully automatic 65 amp. charger. 24-volt units include steel-clad 300 amp. hour at 6 hr. rate battery (6.924 kwh) and 40 amp. fully automatic charger.

**PDR-30:** 3,000 lb. capacity at 24" load center. Standard equipment includes Job-Mated, steel-clad, 12-volt, 510 amp. hour at 6 hr. rate battery (5.934 kwh) and separate, fully automatic 65 amp. charger. 24-volt units include steel-clad 340 amp. hour at 6 hr. rate battery (3.954 kwh) and 40 amp. fully automatic charger.

#### STRUCTURAL SYSTEM

Mast construction is interlocked channel and I-beam, rolled of premium-grade steel specifically for lift truck use.

Fully rolled inner mast and lift carriage.

Forged, ITA undertapered forks are standard. Full upset heel standard.

Unit-construction chassis, mast, and straddles form an integral, welded, steel structure built to take heavy-duty use by distributing stresses. All surfaces prone to receive accidental impact are heavy gauge steel plate. Continuous welding is used throughout the chassis at all critical points.

#### Reach Mechanism

Heavy-duty, pantagraph-type reach mechanism extends 24". Dual reach and tilt cylinders with chrome plated rods are used on all units.

#### DRIVE SYSTEM

The entire drive train steers the truck via a bearing-mounted pivot tube. Pivot tube is mounted to internal structural member for maximum protection.

Direct drive full oil bath transmission operates through 22:1 gear reduction in ductile-iron transmission case with heat-treated, alloy steel gears and premium industrial bearings.

#### HYDRAULIC SYSTEM

3-spool infinitely variable valve provides full-range operator control over lift, extension and tilt.

Gear pumps are matched to lift cylinders to provide good lift performance at modest power-draw levels.

Full system filtration is provided on the intake side of the pump which prevents foreign matter from entering any part of the system.

Relief valve protects entire system from overload.

Pressure-compensating flow control valve at base of lift cylinder regulates lowering speed.

Reservoir comes equipped with highly efficient sump filter cap and dipstick.

#### SAFETY FEATURES

Automatic speed cut-off circuit locks out high speed when forks are elevated above 18".

Large direction reversing "Belly-button" impact switch provides operator protection when maneuvering. Upon body contact, switch activates low speed in the opposite direction.

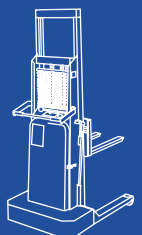
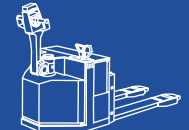
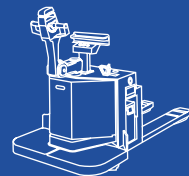
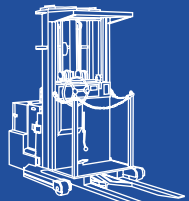
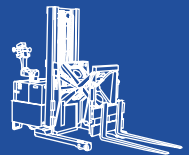
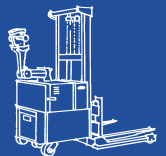
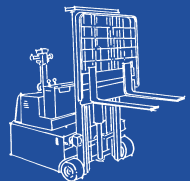
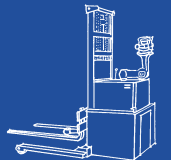
"Dead-man" mechanical braking action occurs when spring loaded control handle is released, turning off electrical power and applying disc brake in the process.

Externally-mounted battery connector is accessible to operator for emergency power disconnect.

All power and control circuits are fuse-protected.

#### CERTIFICATION

All units certified to be in compliance with the Occupational Safety and Health Act (OSHA).



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