

PDIH

Power Drive
Heavy-Duty
Straddle Trucks



Big Joe PDH The Walkie That Works Like a Rider

This series has many of the capabilities of a rider. Long duty cycles over multi-shift operations, capacity for heavy loads — up to 4,000 pounds — the ability to operate in narrow aisles and other congested areas not normally accessible to riders. And because it is a Walkie, it costs significantly less.

The PDH is effective for special applications requiring hydraulic attachments. These include devices like sidershifters, roll clamps, carton clamps, and die pullers. The design and construction of this series makes it ideal for use in extreme industrial environments such as foundries and freezers.

The Big Joe PDH is the appropriate series for those with special needs or requirements. It is a heavy-duty performer at a cost efficient price.





Power Drive Heavy-Duty Straddle 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-graphitic brushes for peak electrical efficiency and long life.

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

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

PDH-20: Job-Mated steel-clad, 12-volt 375 amp. hour at 6 hr. rate battery (4.326 kwh) and separate, fully automatic 65 amp. charger; 24-volt units include steel-clad 200 amp. hour at 6 hr. rate battery (5.136 kwh) and 40 amp. fully automatic charger.

PDH-25: 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 (6.984 kwh) and 40 amp. fully automatic charger.

PDH-30: 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 (6.984 kwh) and 40 amp. fully automatic charger.

PDH-40: 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 510 amp. hour at 6 hr. rate battery (11.844 kwh) and 75 amp. fully automatic charger.

STRUCTURAL SYSTEM

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

Fully rollered inner mast and carriage.

Forged forks with undertaper and full upset heel are standard.

Rigid, low profile chassis is continuous welded and distortion-free.

Hook-mounted forks for maximum safety and easy adjustment. Permits easy interchangeability of Big Joe attachments.

DRIVE SYSTEM

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

Disc brake is mounted to drive motor armature. This arrangement multiplies the braking force by the 22:1 transmission ratio, providing powerful stopping action.

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

HYDRAULIC SYSTEM

Infinitely variable ball-type lowering and tilt valve with ball checks provides full-range operator control and no-drift, positive system check in neutral.

Lift cylinder is manufactured by Big Joe to suit specific payload capacities.

Gear pumps are mated to lift cylinders to provide top lift performance at relatively low 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.

Built-in relief valve protects system from overload.

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

Reservoir is removable, and comes equipped with foam-filter cap and dipstick.

SAFETY FEATURES

Automatic high-speed cut-off limits travel speed when forks are elevated above 18".

Large direction reversing "Belly-button" impact switch provides operator protection when traveling. Upon body contact, switch activates low speed away from the operator.

Slip-resistant handgrips provide firm control of steering arm.

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

Externally mounted battery disconnect is accessible to the operator for emergency power interrupt.

All power and control circuits are fuse-protected.

CERTIFICATION

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



Big Joe Manufacturing Company

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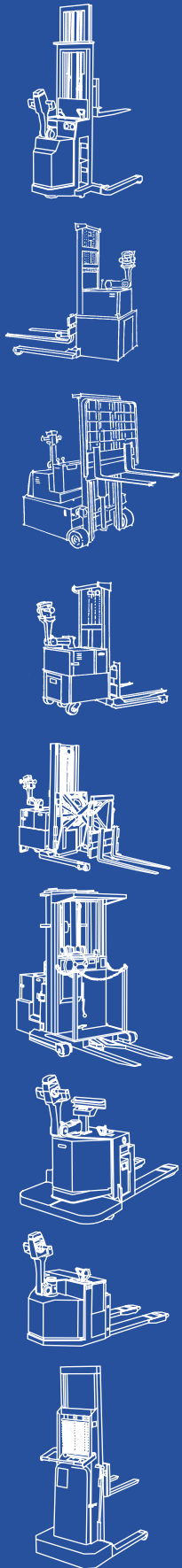
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Power Drive Heavy-Duty Straddle Trucks

STANDARD EQUIPMENT

- **Interlocked I-beam Mast.** The premium steel mast construction features interlocked steel channel and I-beam design with roller-bearing surfaces for long mast life. Interlock channel and I-beam mast accommodates high lifting stresses and maintains load stability.
- **Large Direction Reversing “Belly-button” Impact Switch.** Provides operator protection when traveling. Upon body contact, switch activates low speed away from the operator.
- **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 auto-mechanically engages the brake if the handle is inadvertently released.
- **Industrial Rated Batteries.** Built to withstand deep-discharge and recharging, industrial rated batteries contain heavy plates and separators. Hinged battery compartment covers provide easy access to batteries for maintenance.
- **Fully Protected Electrical System.** Fully fuse protected, heavy-duty industrial contactors are standard. All wiring is coded and has quick-disconnect terminals for easy servicing.
- **High Strength Construction.** Unitized continuous welded steel in every Big Joe frame minimizes structural deterioration.
- **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.
- **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 from forks to attachments simple. No tools or pin removal are required. Changing outside fork dimension is equally easy.
- **Chrome Plated Lift Cylinder.** For long life and low ram maintenance.
- **Pressure-Compensated Flow Control Valve** at base of lift cylinder regulates lowering speed.
- **V-Boxed Load Wheels on Straddle Legs.** This straddle leg design not only protects load wheels, but its angular shape aids in positioning.
- **Wheels.** 4” polyurethane load wheels standard on all models. 3”, 6” and tandem wheels are optional. 4” tandem standard on 4000 lb. trucks. Standard drive tire is 10-1/2” x 5” solid rubber, lug-type cushion tires. Drive wheel traction force and steering effort remain constant regardless of payload.

OPTIONS

- **Adjustable Straddle Option*.** Available for the straddle I.D. range of 38” to 50”. Adjusts in 4” increments. Will allow the truck to work with a variety of pallet sizes. Ideal if future pallet requirements change.
- **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.

Consult factory for other options and special configurations.

*Not available on PDH-40 or on Tri-Mast® models.



SPECIFICATIONS

- Lifting Capacity:** 2,000 - 4,000 lbs. at 24” load center
- Lift Range:** 60” - 194”
- Power System:** 12V/24V
- Turning Radius:** From 62”
- Travel:** 3 speeds forward and reverse

Travel speeds (in mph) up to					
SYSTEM	PDH-20	PDH-25	PDH-30	PDH-40	Empty
12V	2.8	2.8	2.7	2.7	3.2
24V	3.1	3.1	3.0	3.0	3.5
Lift speeds (fpm) up to					
12V	15	12	10	9	18
24V	30	25	22	19	36

Lower speed (fpm) 33
Gradeability 10%
Grade Clearance 10-15% (consult factory)



Power Drive Heavy-Duty Straddle Trucks

FEATURES

■ Advanced Handle Control.

Big Joe Power Drive Heavy-Duty Straddle models come equipped with the industry's most versatile control handle. Forward and reverse speed may be controlled with detent action twist grip or thumb control. Horn and dynamic brake controlled with thumb. Large direction reversing "Belly-button" impact switch, at end of handle provides operator protection when traveling. Upon body contact, switch activates low speed away from the operator.

■ Exclusive Power Train Design.

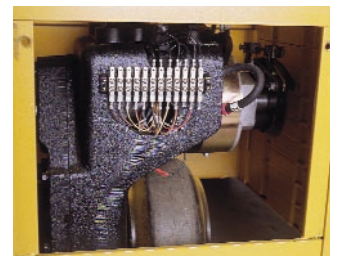
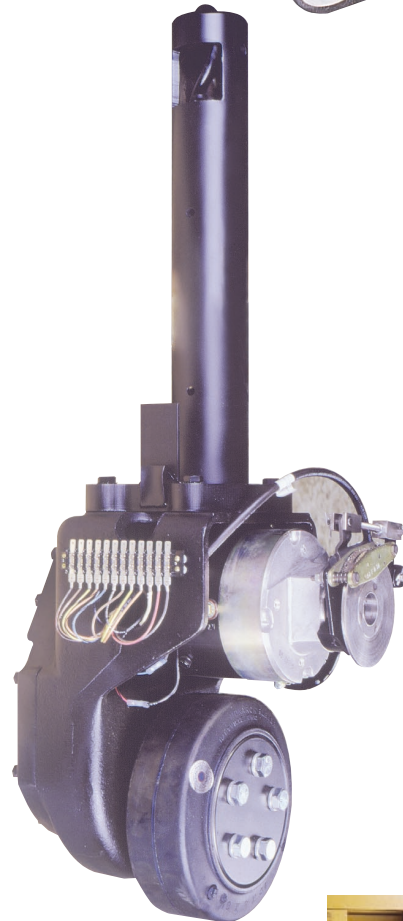
Engineered for smooth, dependable performance.

Includes:

- *Drive Motor.*
Ball bearings and *Class H* insulation provide maximum performance with long life. Disc brake on armature shaft multiplies braking force through the gear reduction to drive wheel.
- *Steering.*
The entire drive train pivots on a thrust bearing to ensure longer service life and low steering effort. Power is delivered to the floor through a large, solid rubber, lug-type cushion tire for more positive traction and long life.
- *Transmission.*
Heavy-weight ductile iron housing protects wide-faced, heat-treated spur gears; premium ball and tapered roller-bearings, fully oil bathed in a ductile iron housing.

■ Easy Access Service Panel.

Full-access design makes maintenance fast and easy. Hinged doors and removable panels permit quick access to battery, electrical circuitry, drive train and hydraulic components for all normal maintenance. Most major components can be serviced without special tools.





Power Drive Heavy-Duty Straddle Trucks

Specifications For All PDH Models

Straddle I.D. and O.D.:

Straddles are built to order. Consult chart for minimums. Consult factory for O.D. greater than 58".

Battery 6¹¹/₁₆" x 30⁷/₈"
Compartment 11¹/₈" x 31⁵/₈"
Sizes: 13¹/₈" x 30⁷/₈"

Fork Length x Width x Thickness:

PDH-20, 25, 30:
 Choice of 36", 42", 48" x 4" x 1¹/₂"
PDH-40:
 Choice of 36", 42", 48" x 4" x 1³/₄"

Fork Lowered Height (min.):

PDH-20, 25, 30:
 2" Standard; 2¹/₂" for full free lift;
 3" for Tri-Mast®

PDH-40:

2³/₄" Standard; 2" for Tri-Mast®,
 non-telescopic and full free lift masts

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

Wheel Diameter: Load Wheels 4"*
 Caster Wheels 6"
 Drive Wheel 10¹/₂"

* Tandem Load Wheels Standard
 on PDH-40

MODEL NO.	CAPACITY AT 24" LOAD CENTER	LIFT HT.	COLL. HT. †	EXT. HT.	FREE LIFT HT.	STRADDLE LENGTH **	OVERALL WIDTH	POWER HEAD LENGTH ***		OVERALL LENGTH		TURN RADIUS		APPROX. SHPG. WEIGHT W/O BATTERIES	STAND. BATTERY (WT. LBS)		STAND. CHARGER (WT. LBS)	
		A	B	C	12V			24V ****	12V	24V ****	12V	24V ****	12V		24V	12V	24V	
PDH 20 SERIES																		
PDH-20-60	2000	60	77	80	57	26½	32	34 ¹³ / ₁₆	39 ⁷ / ₁₆	61 ⁵ / ₁₆	65 ¹⁵ / ₁₆	61 ³¹ / ₃₂	66 ¹⁷ / ₃₂	1655	375A.H. (439)	200A.H. (480)	65amp. (60)	40amp. (60)
PDH-20-106	2000	106	71	123	12	26½	32	34 ¹³ / ₁₆	39 ⁷ / ₁₆	61 ⁵ / ₁₆	65 ¹⁵ / ₁₆	61 ³¹ / ₃₂	66 ¹⁷ / ₃₂	1910				
PDH-20-130	2000	130	83	147	12	26½	32	34 ¹³ / ₁₆	39 ⁷ / ₁₆	61 ⁵ / ₁₆	65 ¹⁵ / ₁₆	61 ³¹ / ₃₂	66 ¹⁷ / ₃₂	2038				
PDH-20-154	2000	154	95	171	12	26½	32	34 ¹³ / ₁₆	39 ⁷ / ₁₆	61 ⁵ / ₁₆	65 ¹⁵ / ₁₆	61 ³¹ / ₃₂	66 ¹⁷ / ₃₂	2100				
PDH-20-168	2000*	168	102	185	12	26½	32	34 ¹³ / ₁₆	39 ⁷ / ₁₆	61 ⁵ / ₁₆	65 ¹⁵ / ₁₆	61 ³¹ / ₃₂	66 ¹⁷ / ₃₂	2152				
PDH 20 TRI-MAST®																		
PDH-20-158	2000	158	71	178	51	26¾	32	N/A	43 ⁹ / ₁₆	N/A	70 ⁹ / ₁₆	N/A	72½	2289	N/A	300A.H. (693)	N/A	40amp. (60)
PDH-20-194	2000*	194	83	214	63	26¾	32	N/A	43 ⁹ / ₁₆	N/A	70 ⁹ / ₁₆	N/A	72½	2379				
PDH 25 SERIES																		
PDH-25-60	2500	60	77	80	57	26½	32	34 ¹³ / ₁₆	39 ⁷ / ₁₆	61 ⁵ / ₁₆	65 ¹⁵ / ₁₆	61 ³¹ / ₃₂	66 ¹⁷ / ₃₂	1693	450A.H. (505)	300A.H. (693)	65amp. (60)	40amp. (60)
PDH-25-106	2500	106	71	123	12	26½	32	34 ¹³ / ₁₆	39 ⁷ / ₁₆	61 ⁵ / ₁₆	65 ¹⁵ / ₁₆	61 ³¹ / ₃₂	66 ¹⁷ / ₃₂	1952				
PDH-25-130	2500	130	83	147	12	26½	32	34 ¹³ / ₁₆	39 ⁷ / ₁₆	61 ⁵ / ₁₆	65 ¹⁵ / ₁₆	61 ³¹ / ₃₂	66 ¹⁷ / ₃₂	2082				
PDH-25-154	2500	154	95	171	12	26½	32	34 ¹³ / ₁₆	39 ⁷ / ₁₆	61 ⁵ / ₁₆	65 ¹⁵ / ₁₆	61 ³¹ / ₃₂	66 ¹⁷ / ₃₂	2149				
PDH-25-168	2500*	168	102	185	12	26½	32	34 ¹³ / ₁₆	39 ⁷ / ₁₆	61 ⁵ / ₁₆	65 ¹⁵ / ₁₆	61 ³¹ / ₃₂	66 ¹⁷ / ₃₂	2204				
PDH 25 TRI-MAST®																		
PDH-25-158	2500	158	71	178	51	26¾	32	N/A	43 ⁹ / ₁₆	N/A	70 ⁹ / ₁₆	N/A	72½	2345	N/A	300A.H. (693)	N/A	40amp. (60)
PDH-25-194	2500*	194	83	214	63	26¾	32	N/A	43 ⁹ / ₁₆	N/A	70 ⁹ / ₁₆	N/A	72½	2440				
PDH 30 SERIES																		
PDH-30-60	3000	60	77	80	57	26½	32	34 ¹³ / ₁₆	39 ⁷ / ₁₆	61 ⁵ / ₁₆	65 ¹⁵ / ₁₆	61 ³¹ / ₃₂	66 ¹⁷ / ₃₂	1723	510A.H. (550)	340A.H. (721)	65amp. (60)	40amp. (60)
PDH-30-106	3000	106	71	123	12	26½	32	34 ¹³ / ₁₆	39 ⁷ / ₁₆	61 ⁵ / ₁₆	65 ¹⁵ / ₁₆	61 ³¹ / ₃₂	66 ¹⁷ / ₃₂	1992				
PDH-30-130	3000	130	83	147	12	26½	32	34 ¹³ / ₁₆	39 ⁷ / ₁₆	61 ⁵ / ₁₆	65 ¹⁵ / ₁₆	61 ³¹ / ₃₂	66 ¹⁷ / ₃₂	2122				
PDH-30-154	3000	154	95	171	12	26½	32	34 ¹³ / ₁₆	39 ⁷ / ₁₆	61 ⁵ / ₁₆	65 ¹⁵ / ₁₆	61 ³¹ / ₃₂	66 ¹⁷ / ₃₂	2189				
PDH-30-168	3000*	168	102	185	12	26½	32	34 ¹³ / ₁₆	39 ⁷ / ₁₆	61 ⁵ / ₁₆	65 ¹⁵ / ₁₆	61 ³¹ / ₃₂	66 ¹⁷ / ₃₂	2254				
PDH 30 TRI-MAST®																		
PDH-30-158	3000	158	71	178	51	26¾	32	N/A	43 ⁹ / ₁₆	N/A	70 ⁹ / ₁₆	N/A	72½	2394	N/A	340A.H. (721)	N/A	40amp. (60)
PDH-30-194	3000*	194	83	214	63	26¾	32	N/A	43 ⁹ / ₁₆	N/A	70 ⁹ / ₁₆	N/A	72½	2489				
PDH 40 SERIES																		
PDH-40-60	4000	60	77½	80	57	27 ³ / ₈	32	36 ¹ / ₁₆	41 ⁵ / ₁₆	68 ¹ / ₁₆	72 ¹³ / ₁₆	62 ¹¹ / ₃₂	66 ¹⁵ / ₁₆	1885	510A.H. (550)	510A.H. (1042)	65amp. (60)	75amp. (90)
PDH-40-106	4000	106	71½	123	12	26 ⁹ / ₁₆	32	37½	42¼	68 ¹ / ₁₆	72 ¹³ / ₁₆	62 ¹¹ / ₃₂	66 ¹⁵ / ₁₆	2328				
PDH-40-130	4000	130	83½	147	12	26 ⁹ / ₁₆	32	37½	42¼	68 ¹ / ₁₆	72 ¹³ / ₁₆	62 ¹¹ / ₃₂	66 ¹⁵ / ₁₆	2410				
PDH-40-154	4000	154	95½	171	12	26 ⁹ / ₁₆	32	37½	42¼	68 ¹ / ₁₆	72 ¹³ / ₁₆	62 ¹¹ / ₃₂	66 ¹⁵ / ₁₆	2520				
PDH 40 TRI-MAST®																		
PDH-40-158	4000	158	77	184	51	26 ⁹ / ₁₆	32	N/A	46 ¹ / ₈	N/A	75¾	N/A	72½	3224	N/A	510A.H. (1042)	N/A	75amp. (90)
PDH-40-194	4000*	194	89	220	63	26 ⁹ / ₁₆	32	N/A	46 ¹ / ₈	N/A	75¾	N/A	72½	3340				

*Derate capacity 500 lbs. above 158"

**Face of fork to center of load wheels

***To face of fork

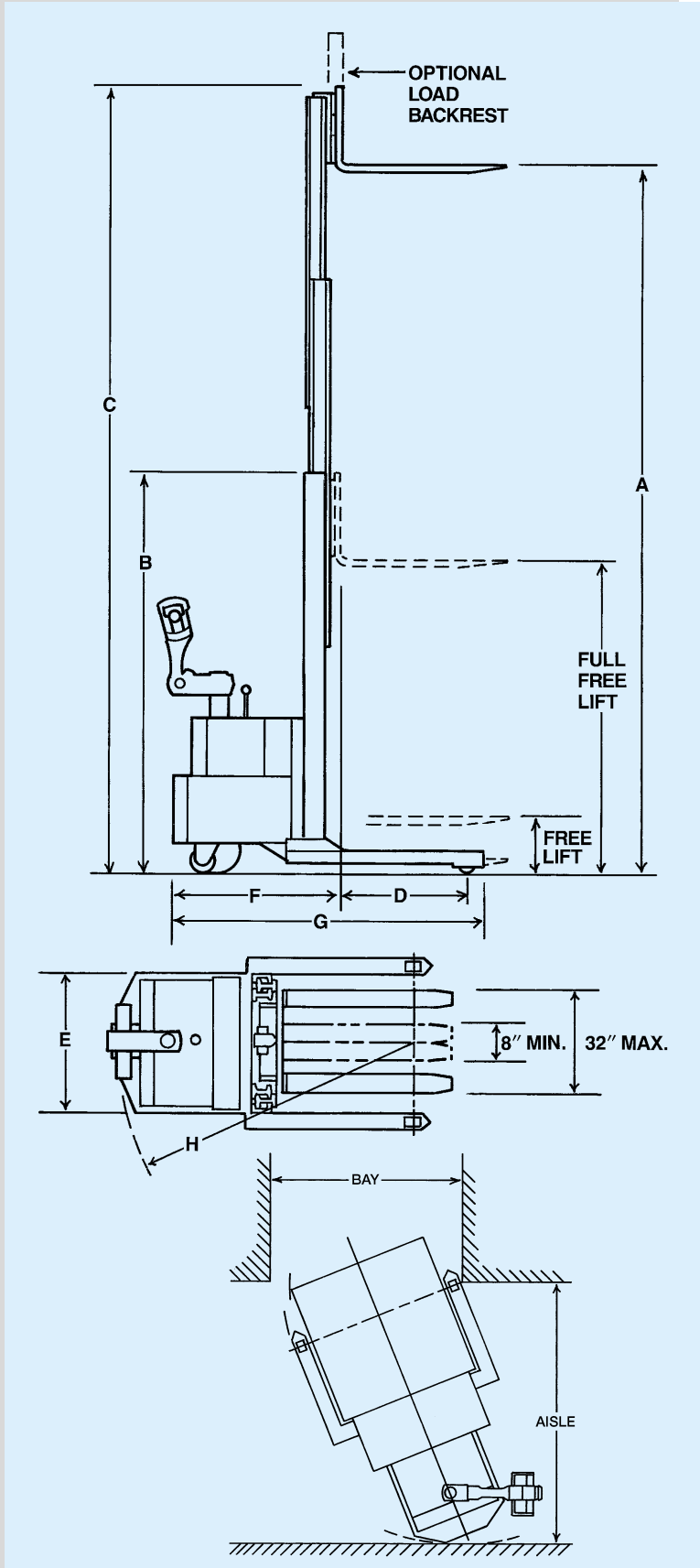
****Add 1⁵/₈" when 13" batt. comp. is used

†Add 4.5" with adjustable straddle
 (Adjustable straddle not available
 on PDH-40 or Tri-Mast®)

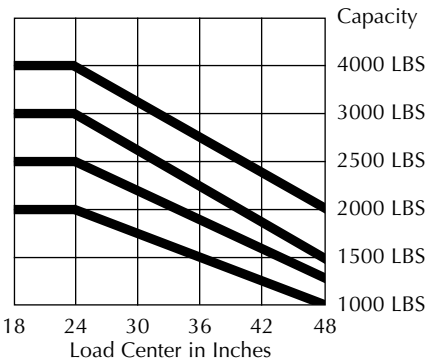


Power Drive Heavy-Duty Straddle Trucks

DIMENSIONS



CAPACITY CHART



MINIMUM STRADDLE WIDTH CHART
(Inches)

TRUCK MODEL	STRADDLE I.D.	STRADDLE O.D.
PDH 20-60	12	20
PDH 20-106	18	26
PDH 20-130	22	30
PDH 20-154	29	37
PDH 20-158	30	38
PDH 20-168	38	46
PDH 20-194	46	54
PDH 25-60	13	21
PDH 25-106	19	27
PDH 25-130	24	32
PDH 25-154	30	38
PDH 25-158	32	40
PDH 25-168	40	48
PDH 25-194	48	56
PDH 30-60	14	22
PDH 30-106	22	30
PDH 30-130	25	33
PDH 30-154	32	40
PDH 30-158	34	42
PDH 30-168	42	50
PDH 30-194	50	58
PDH 40-60	14	22
PDH 40-106	22	30
PDH 40-130	28	36
PDH 40-154	34	42
PDH 40-158	38	46
PDH 40-194	50	58

MINIMUM AISLE STACKING REQUIREMENTS

6 1/16" WIDE BATTERY COMPARTMENT**			
RIGHT ANGLE STACKING			
Load Length	Load Width		
	36	42	48
36	69	70	71
42	70	71	72
48	71	72	73

Aisle dimensions are zero clearance; 12" should be added for ease of operation.
Aisle dimensions assume bay width to be the straddle O.D. plus 2" (1" on each side) where straddle O.D. is the load width plus 10".
**With 11 1/8" wide battery compartment, aisle dimension should be increased 4 5/8".
**With 13" wide battery compartment, aisle dimension should be increased 6 1/4".
**For Tri-Mast® models, aisle dimension should be increased 4".