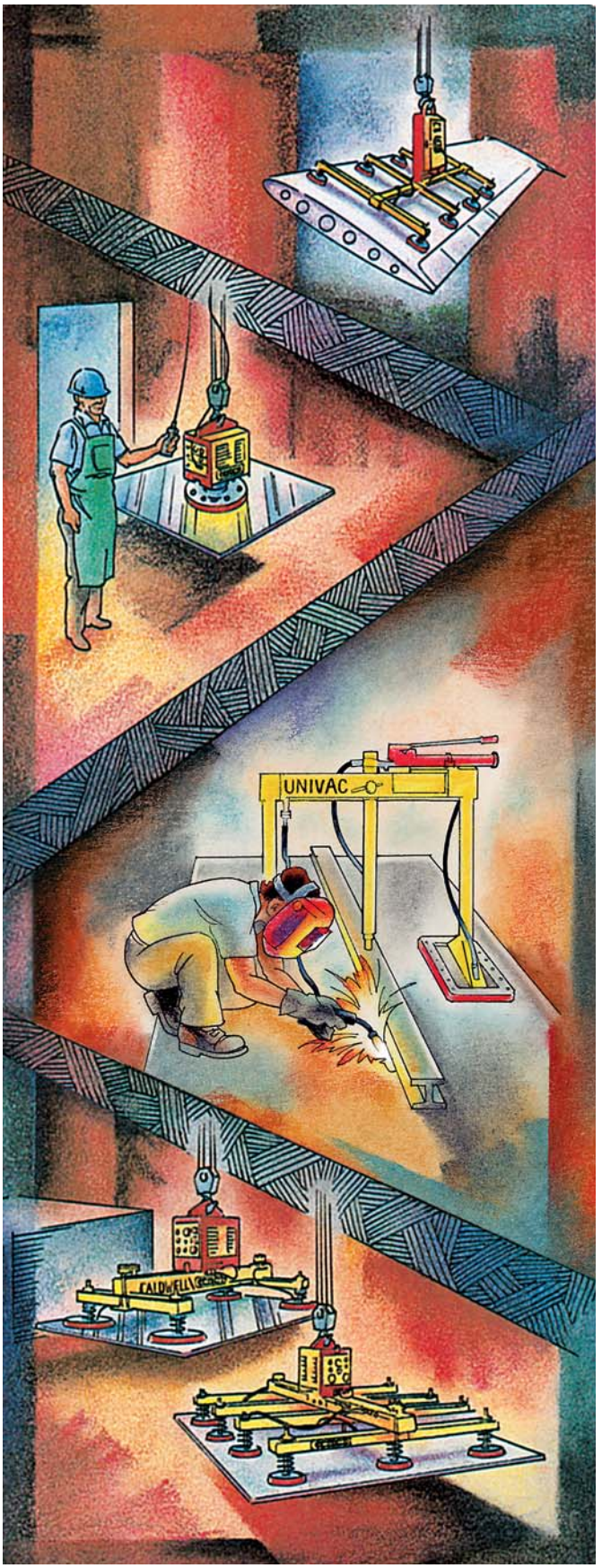
UNIVAC®
Vacuum Lifters



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Quality & Engineering

The Caldwell Group has been manufacturing lifting equipment since 1954. It is our goal to manufacture high quality, long lasting lifting products that will safely increase productivity and reduce operating costs.

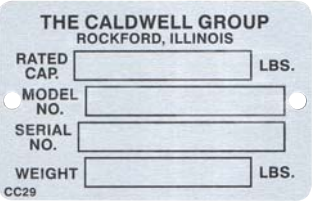
UNIVAC® Vacuum Lifters are designed for efficient, one-person operation in lifts of semi-porous and non-porous material. Unlike magnets or edge grabs, vacuum units will not mark or scratch material surfaces or edges. Additionally, vacuum lifters can easily lift nonferrous metals and thin sheets (under ¼").

Benefits your company will receive with UNIVAC® Vacuum Lifters:

- Increase productivity, reducing cost.
- One person operation.
- Eliminate material damage.
- Precision handling made easier.
- Versatile handling of most materials.
- Improve storage space.
- Provide a low maintenance lifter.
- Durable for long lasting service.

All UNIVAC® Lifters Have:

- Identification nameplate as required by ASME.
- Rated capacities and product safety labels.



I.D. Nameplate

Industry Standards

The American Society of Mechanical Engineers (ASME) has developed standards that apply specifically to these types of devices. ASME B30.20 provides detailed information on the classifications, marking, construction, installation, inspection, testing, maintenance and operation of below the hook lifting devices. ASME BTH-1 provides detailed information on the design criteria of below the hook lifting devices. These standards serve as a guide to government authorities, manufacturers, purchasers and users of lifting devices. For a summary of these standards, please see pages 7-10 in the front of this catalog or visit our web site at www.caldwellinc.com/standards.

ASME BTH-1
lifter designation:
Design Category . . . **B**
Service Class **2**

BTH Tag

UNIVAC® Vacuum Lifters adhere to the highest quality standards in the industry and all units conform to **ASME standards**. All UNIVAC® Vacuum Lifters are designed to a structural safety factor of 3:1 and a vacuum pad safety factor of 2:1.

Product Safety Label

Caldwell Delivery Program

Look for the red QUICKSHIP logo on our standard products. The specific QUICKSHIP model number is shown in red. QUICKSHIP products ship in 7 to 10 days (excluding weekends and holidays).

QUICKSHIP PROGRAM

Caldwell Service

We offer solutions that will increase the productivity and effectiveness of your lifter, while ensuring the safety, reliability, and compliance of your equipment. Our services include: training & maintenance, inspection, repairs and modernizations. See page 6 in the front of this catalog for more details.

DISCLAIMER:
All product designs are subject to change without notice. Products pictured in this catalog are a representation of a specific design. The product you purchase will be designed for your specific application and may not look exactly like the picture in this catalog.

Model Number Breakdown & Options

BREAKDOWN OF MODEL NUMBER

7 PART CODE

MODEL TYPE	●	VACUUM POWER	●	CAPACITY (LBS.)	●	PAD CODE	●	LOAD BEAM LENGTH (FT.)	●	# OF CROSSARMS	●	CROSSARM LENGTH (FT.)
A-F, T (see pgs. D.6 - D.17, D.20 - D.21)		A (Shop air) E (Electric) (see pg. D.5)		Omit "OO"		All standard pads are neoprene except Model T for glass is mold-on		4-20		D (two) T (three) Q (four) Note: two pads per crossarm (standard)		3,4 or 5

EXAMPLE MODEL NUMBER: D • E • 12 • V8 • 5 • D • 3

D = Twin crossarms with 4 pads
E = Electric power
12 = 1200 lbs. capacity
V8 = Neoprene pad, 10-5/8" in diameter
5 = Load beam length, 5 feet
D = Two crossarms
3 = Crossarm length, 3 feet

OPTIONS FOR STANDARD MODELS:

Description	Code
• Parking Stand - mounted to each end of unit except Model A.	P
• Side Handle (one side) - electric units except Model A.	HS
• Fork Pockets.	FP
• Low Vacuum Warning System - electric only.	W
• Silicone pads for temperatures - over 200°F to 600°F (Replaces neoprene pads).	S
• Transformers for AC voltage - other than 115 volt.	T
• Custom Pendant - controls all crane and vacuum lifter functions.	Z
• Special vacuum power units. - Battery - Gas - Propane	CONSULT FACTORY

ADD CODE AS SUFFIX TO MODEL NUMBER
EXAMPLE: DE12V85D3-P to add parking stand

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Power-Pac - The Heart of The System

VACUUM POWER-PAC, is in a self contained cabinet that mounts to the top of the load beam and is powered by either electric motor or shop air (venturi unit).

ELECTRIC UNITS FEATURE:

- Vacuum reserve tank - maintains holding power temporarily in the event of a power failure.
- Two button pendant control with 10' cord and plug to user power supply (except Univac® 250).
- Power cabinet has removable covers for easy access.
- Red/green indicator lights (except Univac® 250).
- Circuit breakers for electrical overload protection.

Univac® 250

Univac® 330 -
showing indicator lights, gauge,
circuit breakers, and power connections.

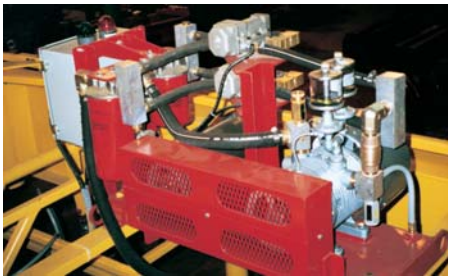
Electric Motor Driven Pumps Available

UNIVAC® - 250 vacuum generator - 4 C.F.M., dry piston pump, power supply - 115V-1PH-60HZ.

UNIVAC® - 330 vacuum generator - 1/4 H.P., non-lubricated, 4 C.F.M., rotary vane pump, power supply - 115V-1PH-60HZ.

UNIVAC® - 1500 vacuum generator - 1-1/2 H.P., non-lubricated, 21 C.F.M., rotary vane pump, power supply - 230/460V-3PH-60HZ.

UNIVAC® - 3000 vacuum generator - 5 H.P., non-lubricated, 55 C.F.M., rotary vane pump, power supply - 230/460V-3PH-60HZ, 230VDC.



Univac® 3000

SHOP AIR (VENTURI) UNITS FEATURE:

- Visual indicator gauges.
- Check valve for positive holding in case of air hose or compressor failure.
- No electric service required.

Shop Air (venturi unit)
V-40 vacuum generator - operates on approximately 50 PSI shop air.

Model "F" with
venturi power pac
(air powered).

Model A - Single Pad - Standard Duty

For lightweight material with small square shaped surface. Neither the width or the length should exceed 5 times the pad diameter (see specifications below for pad diameter).

QUICKSHIP PROGRAM

PRODUCT FEATURES - ECONOMY & INDUSTRIAL:

- Ball mounted vacuum pads.
- Brass fittings.
- Push lock hose (designed for 250 psi).
- Muffler/filter is spin on type for easy change out.

SPECIFICATIONS

Rated Capacity (lbs.)	Wt. (lbs.)	Model Number	Power-Pac	Flared Diameter (in.)
Electric				
170	78	AE1S6	UNIVAC-250	7-1/4
310	80	AE3S8	UNIVAC-250	9-5/8
400	84	AE4V8	UNIVAC-250	10-5/8
600	87	AE6V10	UNIVAC-250	12-1/4
800	95	AE8V12	UNIVAC-250	14-1/4
1000	108	AE10V14	UNIVAC-250	16
1500	202	AE15V16	UNIVAC-250	19
2000	213	AE20V20	UNIVAC-250	23
Shop Air - Venturi				
170	20	AA1S6	V-40	7-1/4
310	22	AA3S8	V-40	9-5/8
400	28	AA4V8	V-40	10-5/8
600	30	AA6V10	V-40	12-1/4
800	33	AA8V12	V-40	14-1/4
1000	51	AA10V14	V-40	16
1500	53	AA15V16	V-40	19
2000	55	AA20V20	V-40	23

Other sizes available, consult factory.

Model A - Single Pad - Heavy Duty

Single pad units with large or small capacities are used when surface area is at a minimum.

QUICKSHIP PROGRAM

Univac® 330 unit - side view showing vacuum indicator lights and power/control connections.

Single pad unit shown with a 10" diameter sponge pad for lifting semi-porous material.

SPECIFICATIONS

Rated Capacity (lbs.)	Wt. (lbs.)	Model Number	Power-Pac	Flared Diameter (in.)
Electric				
3000	384	AE30V24	UNIVAC-330	27-5/8
Shop Air - Venturi				
3000	71	AA30V24	V-40	27-5/8

Other sizes available, consult factory.

Model B - Twin Pad Load Beam - Standard Duty

For lifting smaller rectangular shaped material. Width should not exceed 5 times the pad diameter (see specifications below for pad diameter).

QUICKSHIP PROGRAM

PRODUCT FEATURES - ECONOMY & INDUSTRIAL:

- Ball mounted vacuum pads.
- Brass fittings.
- Push lock hose (designed for 250 psi).
- Slide valves allow for manual isolation of vacuum pads.
- Muffler/filter is spin on type for easy change out.

SPECIFICATIONS

Add FEET to blank Model Number box to complete code.
Example: 4' load beam BE1S4- LENGTH

Rated Capacity (lbs.)	Base Wt. @ 4' (lbs.)	Model Number	Power-Pac	Flared Diameter (in.)	Load Beam Length (ft.)			
					4	5	6	8
Electric								
160	130	BE1S4	UNIVAC-250	5	4	5	6	8
340	135	BE3S6	UNIVAC-250	7-1/4	4	5	6	8
620	140	BE6S8	UNIVAC-250	9-5/8	4	5	6	8
800	150	BE8V8	UNIVAC-250	10-5/8	4	5	6	8
1200	230	BE12V10	UNIVAC-250	12-1/4	4	5	6	8
1600	240	BE16V12	UNIVAC-250	14-1/4	4	5	6	8
2000	260	BE20V14	UNIVAC-250	16	4	5	6	8
Shop Air - Venturi								
160	140	BA1S4	V-40	5	4	5	6	8
340	170	BA3S6	V-40	7-1/4	4	5	6	8
620	175	BA6S8	V-40	9-5/8	4	5	6	8
800	180	BA8V8	V-40	10-5/8	4	5	6	8
1200	190	BA12V10	V-40	12-1/4	4	5	6	8
1600	200	BA16V12	V-40	14-1/4	4	5	6	8
2000	210	BA20V14	V-40	16	4	5	6	8

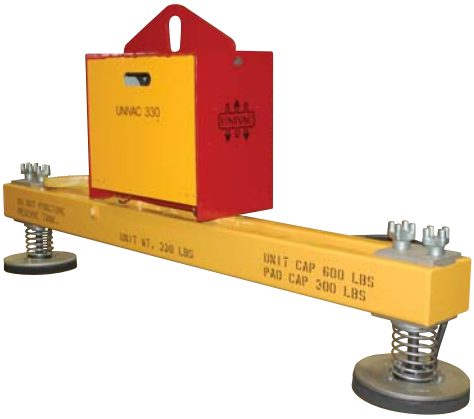
Other sizes available, consult factory.

Model B - Twin Pad Load Beam - Heavy Duty

For lifting smaller rectangular shaped material. Width should not exceed 5 times the pad diameter (see specifications below for pad diameter).

QUICKSHIP PROGRAM

Custom designed bail for large crane hook.



Shown with sponge pads for handling rough or semi-porous material.

Twin pad unit with sling for long heavy rigid material and silicone vacuum pads for handling hot plate.

SPECIFICATIONS

Add FEET to blank Model Number box to complete code.
Example: 4' load beam BE30V16 LENGTH

Rated Capacity (lbs.)	Base Wt. @ 4' (lbs.)	Model Number	Power-Pac	Flared Diameter (in.)	Load Beam Length (ft.)			
					4	5	6	8
Electric								
3000	355	BE30V16	UNIVAC-330	19	4	5	6	8
4000	375	BE40V20	UNIVAC-330	23	4	5	6	8
Shop Air - Venturi								
3000	225	BA30V16	V-40	19	4	5	6	8
4000	250	BA40V20	V-40	23	4	5	6	8

Other sizes available, consult factory.

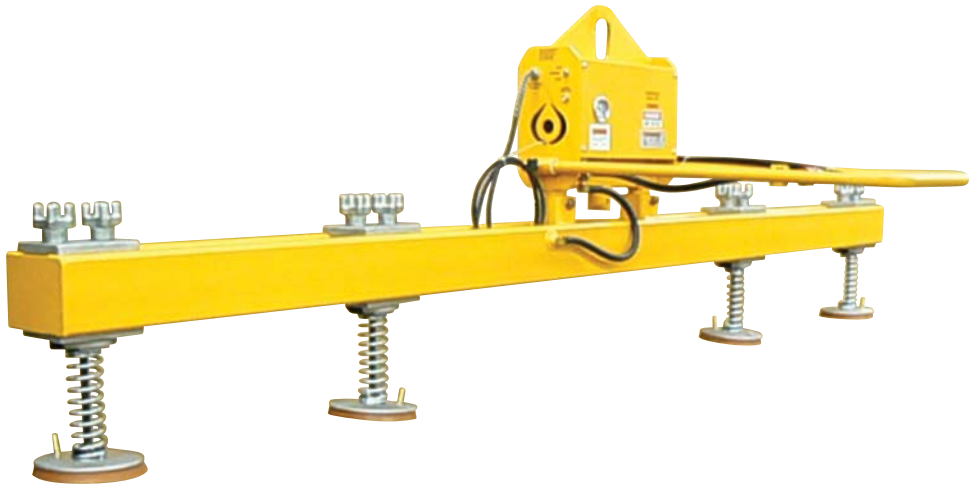
Model C - Load Beam with 4 Inline Pads - Standard Duty

For lifting long, narrow sized material. Width should not exceed 5 times the pad diameter (see specifications below for pad diameter).

QUICKSHIP PROGRAM

PRODUCT FEATURES - ECONOMY & INDUSTRIAL:

- Ball mounted vacuum pads.
- Brass fittings.
- Push lock hose (designed for 250 psi).
- Slide valves allow for manual isolation of vacuum pads.
- Muffler/filter is spin on type for easy change out.



SPECIFICATIONS

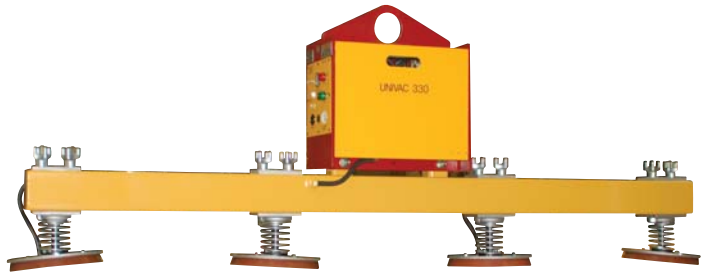
Add FEET to blank Model Number box to complete code.
Example: 5' load beam - CE12S8 LENGTH

Rated Capacity (lbs.)	Base Wt. @ 5' (lbs.)	Model Number	Power-Pac	Flared Diameter (in.)	Load Beam Length (ft.)						
					5	6	8	10	12	15	20
Electric											
680	203	CE6S6	UNIVAC-250	7-1/4	5	6	8	10	12	15	20
1240	223	CE12S8	UNIVAC-250	9-5/8	5	6	8	10	12	15	20
1600	280	CE16V8	UNIVAC-250	10-5/8	5	6	8	10	12	15	20
2400	295	CE24V10	UNIVAC-250	12-1/4	5	6	8	10	12	15	20
Shop Air - Venturi											
680	225	CA6S6	V-40	7-1/4	5	6	8	10	12	15	20
1240	230	CA12S8	V-40	9-5/8	5	6	8	10	12	15	20
1600	250	CA16V8	V-40	10-5/8	5	6	8	10	12	15	20
2400	265	CA24V10	V-40	12-1/4	5	6	8	10	12	15	20

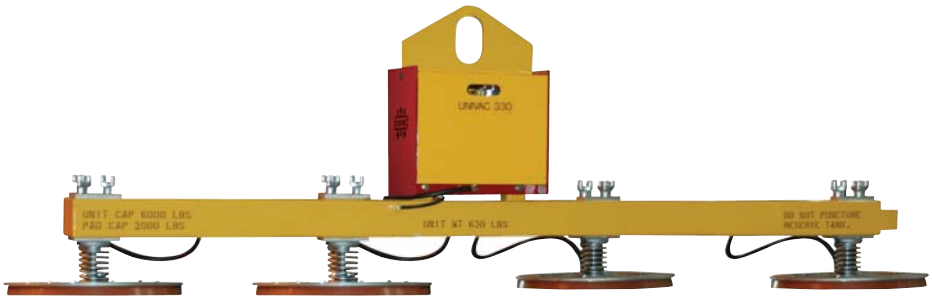
Other sizes available, consult factory.

Model C - Load Beam with 4 Inline Pads - Heavy Duty

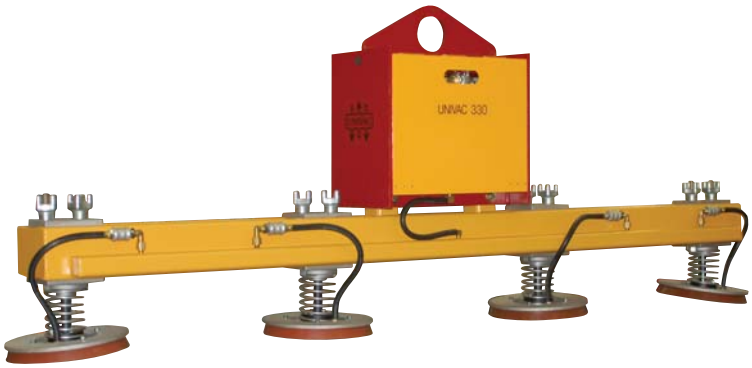
For lifting long, narrow sized material. Width should not exceed 5 times the pad diameter (see specifications below for pad diameter).



QUICKSHIP PROGRAM



In line units to handle long narrow material.



Individual pads can be isolated from the system with the standard manual slide valves.

Add FEET to blank Model Number box to complete code.
Example: 5' load beam - CE32V12 LENGTH

SPECIFICATIONS

Rated Capacity (lbs.)	Base Wt. @ 5' (lbs.)	Model Number	Power-Pac	Flared Diameter (in.)	Load Beam Length (ft.)						
					5	6	8	10	12	15	20
Electric											
3200	410	CE32V12	UNIVAC-330	14-1/4	5	6	8	10	12	15	20
4000	430	CE40V14	UNIVAC-330	16	5	6	8	10	12	15	20
6000	465	CE60V16	UNIVAC-330	19	—	6	8	10	12	15	20
Shop Air - Venturi											
3200	280	CA32V12	V-40	14-1/4	5	6	8	10	12	15	20
4000	315	CA40V14	V-40	16	5	6	8	10	12	15	20

Other sizes available, consult factory.

Model D - Twin Crossarms with 4 Pads - Standard Duty

For lifting wide or thin material. The crossarms make the load easier to balance.

QUICKSHIP PROGRAM

PRODUCT FEATURES - ECONOMY & INDUSTRIAL:

- Ball mounted vacuum pads.
- Brass fittings.
- Push lock hose (designed for 250 psi).
- Slide valves allow for manual isolation of vacuum pads.
- Muffler/filter is spin on type for easy change out.

Univac® 250 for capacities less than 2,400 pounds.

Univac® 1200 for capacites of 1,220 to 2400 pounds.

SPECIFICATIONS

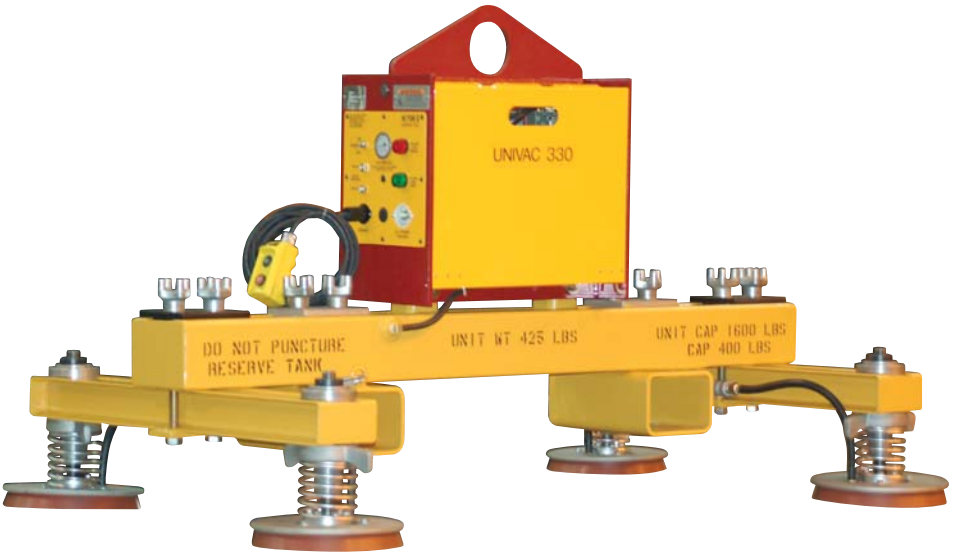
Add FEET to blank Model Number box to complete code.
Example: 5' load beam - DA16V8-[LENGTH]-D3

Rated Capacity (lbs.)	Base Wt. @ 5' (lbs.)	Model Number	Power-Pac	Flared Diameter (in.)	Load Beam Length (ft.)		
					5	6	8
Electric							
With 3' Crossarm Beams							
680	290	DE6S6 [ ]D3	UNIVAC-250	7-1/4	5	6	8
1200	310	DE12S8 [ ]D3	UNIVAC-250	9-5/8	5	6	8
1600	350	DE16V8 [ ]D3	UNIVAC-250	10-5/8	5	6	8
2400	365	DE24V10 [ ]D3	UNIVAC-250	12-1/4	5	6	8
With 4' Crossarm Beams							
680	300	DE6S4 [ ]D4	UNIVAC-250	7-1/4	5	6	8
1200	315	DE12S8 [ ]D4	UNIVAC-250	9-5/8	5	6	8
1600	360	DE16V8 [ ]D4	UNIVAC-250	10-5/8	5	6	8
2400	375	DE24V10 [ ]D4	UNIVAC-250	12-1/4	5	6	8
Shop Air - Venturi							
With 3' Crossarm Beams							
680	315	DA6S6 [ ]D3	V-40	7-1/4	5	6	8
1200	315	DA12S8 [ ]D3	V-40	9-5/8	5	6	8
1600	320	DA16V8 [ ]D3	V-40	10-5/8	5	6	8
2400	335	DA24V10 [ ]D3	V-40	12-1/4	5	6	8
With 4' Crossarm Beams							
680	325	DA6S6 [ ]D4	V-40	7-1/4	5	6	8
1200	325	DA12S8 [ ]D4	V-40	9-5/8	5	6	8
1600	330	DA16V8 [ ]D4	V-40	10-5/8	5	6	8
2400	345	DA24V10 [ ]D4	V-40	12-1/4	5	6	8

Other sizes available, consult factory.

Model D - Twin Crossarms with 4 Pads - Heavy Duty

For lifting wide or thin material. Crossarms allow for extra stability for wider material and reduce amount of deflection for thinner material.



Battery powered unit with fork pockets allows lifter to be used with a lift truck.

SPECIFICATIONS

Add FEET to blank Model Number box to complete code.
Example: 5' load beam - DE32V12 LENGTH D3

Rated Capacity (lbs.)	Base Wt. @ 5' (lbs.)	Model Number	Power-Pac	Flared Diameter (in.)	Load Beam Length (ft.)		
					5	6	8
Electric							
With 3' Crossarm Beams							
3200	485	DE32V12 ☐D3	UNIVAC-330	14-1/4	5	6	8
4000	520	DE40V14 ☐D3	UNIVAC-330	16	5	6	8
6000	535	DE60V16 ☐D3	UNIVAC-330	19	5	6	8
8000	970	DE80V20 ☐D3	UNIVAC-1500	23	5	6	8
With 4' Crossarm Beams							
3200	495	DE32V12 ☐D4	UNIVAC-330	14-1/4	5	6	8
4000	520	DE40V14 ☐D4	UNIVAC-330	16	5	6	8
6000	545	DE60V16 ☐D4	UNIVAC-330	19	5	6	8
8000	980	DE80V20 ☐D4	UNIVAC-1500*	23	5	6	8
Shop Air - Venturi							
With 3' Crossarm Beams							
3200	355	DA32V12 ☐D3	V-40	14-1/4	5	6	8
4000	380	DA40V14 ☐D3	V-40	16	5	6	8
With 4' Crossarm Beams							
3200	365	DA32V12 ☐D4	V-40	14-1/4	5	6	8
4000	390	DA40V14 ☐D4	V-40	16	5	6	8

Other sizes available, consult factory.

* **NOTE:** 230/460V Power Pac.

Model E - Triple Crossarms with 6 Pads - Standard Duty

For lifting long, wide, and moderate weight material or to provide increased support of thin material.

PRODUCT FEATURES - ECONOMY & INDUSTRIAL:

- Ball mounted vacuum pads.
- Brass fittings.
- Push lock hose (designed for 250 psi).
- Slide valves allow for manual isolation of vacuum pads.
- Muffler/filter is spin on type for easy change out.

SPECIFICATIONS

Add FEET to blank Model Number box to complete code.
Example: 5' load beam - EE24V8 LENGTH T4

Rated Capacity (lbs.)	Base Wt. @ 5' (lbs.)	Model Number	Power-Pac	Flared Diameter (in.)	Load Beam Length (ft.)					
					5	6	8	10	12	15
Electric										
With 3' Crossarm Beams										
480	405	**EE4S4 ☐ T3**	UNIVAC-250	5	5	6	8	10	12	15
1200	410	**EE10S6 ☐ T3**	UNIVAC-250	7-1/4	5	6	8	10	12	15
1860	420	**EE18S8 ☐ T3**	UNIVAC-250	9-5/8	5	6	8	10	12	15
2400	435	**EE24V8 ☐ T3**	UNIVAC-250	10-5/8	5	6	8	10	12	15
With 4' Crossarm Beams										
480	415	**EE4S4 ☐ T4**	UNIVAC-250	5	5	6	8	10	12	15
1200	420	**EE10S6 ☐ T4**	UNIVAC-250	7-1/4	5	6	8	10	12	15
1860	430	**EE18S8 ☐ T4**	UNIVAC-250	9-5/8	5	6	8	10	12	15
2400	445	**EE24V8 ☐ T4**	UNIVAC-250	10-5/8	5	6	8	10	12	15
Shop Air - Venturi										
With 3' Crossarm Beams										
480	380	**EA4S4 ☐ T3**	V-40	5	5	6	8	10	12	15
1200	385	**EA10S6 ☐ T3**	V-40	7-1/4	5	6	8	10	12	15
1860	400	**EA18S8 ☐ T3**	V-40	9-5/8	5	6	8	10	12	15
2400	420	**EA24V8 ☐ T3**	V-40	10-5/8	5	6	8	10	12	15
With 4' Crossarm Beams										
480	390	**EA4S4 ☐ T4**	V-40	5	5	6	8	10	12	15
1200	395	**EA10S6 ☐ T4**	V-40	7-1/4	5	6	8	10	12	15
1860	420	**EA18S8 ☐ T4**	V-40	9-5/8	5	6	8	10	12	15
2400	430	**EA24V8 ☐ T4**	V-40	10-5/8	5	6	8	10	12	15

Other sizes available, consult factory.
NOTE: All venturi units include a side handle.

Model E - Triple Crossarms with 6 Pads - Heavy Duty

For lifting long, wide, and moderate weight material or to provide increased support of thin material.

Manual slide valves shut off individual crossarms allowing the operator to easily customize the lifter to match the load.

Vacuum lifter can be easily stored and pads protected with the optional parking stand.

Above lifter utilizing a parking stand (Option P), side handle (Option HS), and transformer (Option T).

SPECIFICATIONS

Add FEET to blank Model Number box to complete code.
Example: 5' load beam - EE36V10 LENGTH T4

Rated Capacity (lbs.)	Base Wt. @ 5' (lbs.)	Model Number	Power-Pac	Flared Diameter (in.)	Load Beam Length (ft.)					
					5	6	8	10	12	15
Electric										
With 3' Crossarm Beams										
3600	560	**EE36V10 ☐ T3**	UNIVAC-330	12-1/4	5	6	8	10	12	15
4800	580	**EE48V12 ☐ T3**	UNIVAC-330	14-1/4	5	6	8	10	12	15
6000	910	**EE60V14 ☐ T3**	UNIVAC-330	16	5	6	8	10	12	15
9000	930	**EE90V16 ☐ T3**	*UNIVAC-1500	19	5	6	8	10	12	15
12000	1216	**EE120V20 ☐ T3**	*UNIVAC-1500	23	5	6	8	10	12	15
With 4' Crossarm Beams										
3600	570	**EE36V10 ☐ T4**	UNIVAC-330	12-1/4	5	6	8	10	12	15
4800	590	**EE48V12 ☐ T4**	UNIVAC-330	14-1/4	5	6	8	10	12	15
6000	920	**EE60V14 ☐ T4**	UNIVAC-330	16	5	6	8	10	12	15
9000	940	**EE90V16 ☐ T4**	*UNIVAC-1500	19	5	6	8	10	12	15
12000	1226	**EE120V20 ☐ T4**	*UNIVAC-1500	23	5	6	8	10	12	15
Shop Air - Venturi										
With 3' Crossarm Beams										
3600	430	**EA36V10 ☐ T3**	V-40	12-1/4	5	6	8	10	12	15
With 4' Crossarm Beams										
3600	440	**EA36V10 ☐ T4**	V-40	12-1/4	5	6	8	10	12	15

Other sizes available, consult factory.
***NOTE:** 230/460V

Model F - Quad Crossarms with 8 Pads - Standard Duty

For lifting longer, wider and heavier weight material or to provide increased support of thin material.

PRODUCT FEATURES - ECONOMY & INDUSTRIAL:

- Ball mounted vacuum pads.
- Brass fittings.
- Push lock hose (designed for 250 psi).
- Slide valves allow for manual isolation of vacuum pads.
- Muffler/filter is spin on type for easy change out.

SPECIFICATIONS

Add FEET to blank Model Number box to complete code.
Example: 6' load beam - FA6S4 LENGTH Q3

Rated Capacity (lbs.)	Base Wt. @ 6' (lbs.)	Model Number	Power-Pac	Flared Diameter (in.)	Load Beam Length (ft.)					
					6	8	10	12	15	20
Electric										
With 3' Crossarm Beams										
640	525	**FE6S4 ☐Q3**	UNIVAC-250	5	6	8	10	12	15	20
1360	530	**FE13S6 ☐Q3**	UNIVAC-250	7-1/4	6	8	10	12	15	20
2400	540	**FE24S8 ☐Q3**	UNIVAC-250	9-5/8	6	8	10	12	15	20
With 4' Crossarm Beams										
640	535	**FE6S4 ☐Q4**	UNIVAC-250	5	6	8	10	12	15	20
1360	540	**FE13S6 ☐Q4**	UNIVAC-250	7-1/4	6	8	10	12	15	20
2400	550	**FE24S8 ☐Q4**	UNIVAC-250	9-5/8	6	8	10	12	15	20
With 5' Crossarm Beams										
640	545	**FE6S4 ☐Q5**	UNIVAC-250	5	6	8	10	12	15	20
1360	550	**FE13S6 ☐Q5**	UNIVAC-250	7-1/4	6	8	10	12	15	20
2400	570	**FE24S8 ☐Q5**	UNIVAC-250	9-5/8	6	8	10	12	15	20
Shop Air - Venturi										
With 3' Crossarm Beams										
640	475	**FA6S4 ☐Q3**	V-40	5	6	8	10	12	15	20
1360	490	**FA13S6 ☐Q3**	V-40	7-1/4	6	8	10	12	15	20
2400	520	**FA24S8 ☐Q3**	V-40	9-5/8	6	8	10	12	15	20
With 4' Crossarm Beams										
640	485	**FA6S4 ☐Q4**	V-40	5	6	8	10	12	15	20
1360	500	**FA13S6 ☐Q4**	V-40	7-1/4	6	8	10	12	15	20
2400	530	**FA24S8 ☐Q4**	V-40	9-5/8	6	8	10	12	15	20
With 5' Crossarm Beams										
640	495	**FA6S4 ☐Q5**	V-40	5	6	8	10	12	15	20
1360	510	**FA13S6 ☐Q5**	V-40	7-1/4	6	8	10	12	15	20
2400	540	**FA24S8 ☐Q5**	V-40	9-5/8	6	8	10	12	15	20

Other sizes available, consult factory.
NOTE: All venturi units include a side handle.

Model F - Quad Crossarms with 8 Pads - Heavy Duty

For lifting longer, wider and heavier weight material or to provide increased support of thin material.

Sponge vacuum pads used to handle rough material such as tread plate.

Crossarms are adjustable along load beam; and pads can be adjusted along the crossarms, providing maximum flexibility.

SPECIFICATIONS

Add FEET to blank Model Number box to complete code.
Example: 6' load beam - FE32V8 LENGTH Q3

Rated Capacity (lbs.)	Base Wt. @ 6' (lbs.)	Model Number	Power-Pac	Flared Diameter (in.)	Load Beam Length (ft.)					
					6	8	10	12	15	20
Electric										
With 3' Crossarm Beams										
3200	670	**FE32V8 ☐Q3**	UNIVAC-330	10-5/8	6	8	10	12	15	20
4800	700	**FE48V10 ☐Q3**	UNIVAC-330	12-1/4	6	8	10	12	15	20
6400	735	**FE64V12 ☐Q3**	UNIVAC-330	14-1/4	6	8	10	12	15	20
8000	795	**FE80V14 ☐Q3**	UNIVAC-330	16	6	8	10	12	15	20
12000	1260	**FE120V16 ☐Q3**	*UNIVAC-1500	19	6	8	10	12	15	20
15200	1490	**FE152V20 ☐Q3**	*UNIVAC-1500	23	—	8	10	12	15	20
With 4' Crossarm Beams										
3200	680	**FE32V8 ☐Q4**	UNIVAC-330	10-5/8	6	8	10	12	15	20
4800	710	**FE48V10 ☐Q4**	UNIVAC-330	12-1/4	6	8	10	12	15	20
6400	745	**FE64V12 ☐Q4**	UNIVAC-330	14-1/4	6	8	10	12	15	20
8000	810	**FE80V14 ☐Q4**	UNIVAC-330	16	6	8	10	12	15	20
12000	1270	**FE120V16 ☐Q4**	*UNIVAC-1500	19	6	8	10	12	15	20
15200	1500	**FE152V20 ☐Q4**	*UNIVAC-1500	23	—	8	10	12	15	20
With 5' Crossarm Beams										
3200	690	**FE32V8 ☐Q5**	UNIVAC-330	10-5/8	6	8	10	12	15	20
4800	720	**FE48V10 ☐Q5**	UNIVAC-330	12-1/4	6	8	10	12	15	20
6400	755	**FE64V12 ☐Q5**	UNIVAC-330	14-1/4	6	8	10	12	15	20
8000	820	**FE80V14 ☐Q5**	UNIVAC-330	16	6	8	10	12	15	20
12000	1280	**FE120V16 ☐Q5**	*UNIVAC-1500	19	6	8	10	12	15	20
15200	1510	**FE152V20 ☐Q5**	*UNIVAC-1500	23	—	8	10	12	15	20
Shop Air - Venturi										
With 3' Crossarm Beams										
3200	540	**FA32V8 ☐Q3**	V-40	10-5/8	6	8	10	12	15	20
With 4' Crossarm Beams										
3200	550	**FA32V8 ☐Q4**	V-40	10-5/8	6	8	10	12	15	20
With 5' Crossarm Beams										
3200	560	**FA32V8 ☐Q5**	V-40	10-5/8	6	8	10	12	15	20

Other sizes available, consult factory.
***NOTE:** 230/460V

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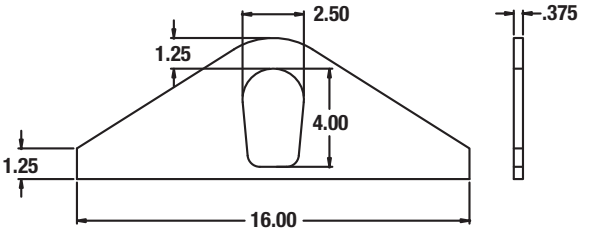
Model U - 90° Tilt Upender/Downender - Standard Duty

Caldwell's new Vacuum Upender can be used to handle numerous non-porous materials. Eliminate the additional work pieces and manpower required to properly position your product.

PRODUCT FEATURES:

- Standard 110V plug-in style power supply for easy installation.
- Vacuum reservoir maintains load in the event of power loss.
- Fully adjustable to handle varying lengths/widths of material.
- Linear actuator provides smooth, continuous tilting.
- Color-coded vacuum level indicator gauge is easy to read.
- Adjustable guide handle for ergonomic operation.
- Non-marking neoprene vacuum pads protect the load from damage.



Bail Dimensions

Twin Crossarm

Twin Crossarm Models have four pads and are available with main beam lengths of 4', 6', or 8' and crossarm lengths of 3', 4' or 5'.

SPECIFICATIONS

Rated Capacity (lbs.)	Number of Pads	Pad Diameter (in.)	Model Number
Non-Glass Material			
100	4	4	**UE1S3-__-D__**
340	4	7-1/4	**UE3S6-__-D__**
620	4	9-5/8	**UE6S8-__-D__**
800	4	10-5/8	**UE8V8-__-D__**
1200	4	12-1/4	**UE12V10__-D__**
1600	4	14-1/4	**UE16V12-__-D__**
2000	4	16	**UE20V14-__-D__**
Glass Only			
180	4	6-7/8	**UE1M5-__-D-__**
500	4	9-1/4	**UE5M8-__-D-__**

Other sizes available, consult factory.

Please specify desired length where __ is in the Model Number i.e. UE6S8-8-D4 has an 8' main beam and two 4' crossarms.

Quad Crossarm

Quad Crossarm Models have eight pads and are available with main beam lengths of 6', 8', or 10' and crossarm lengths of 3', 4' or 5'.

SPECIFICATIONS

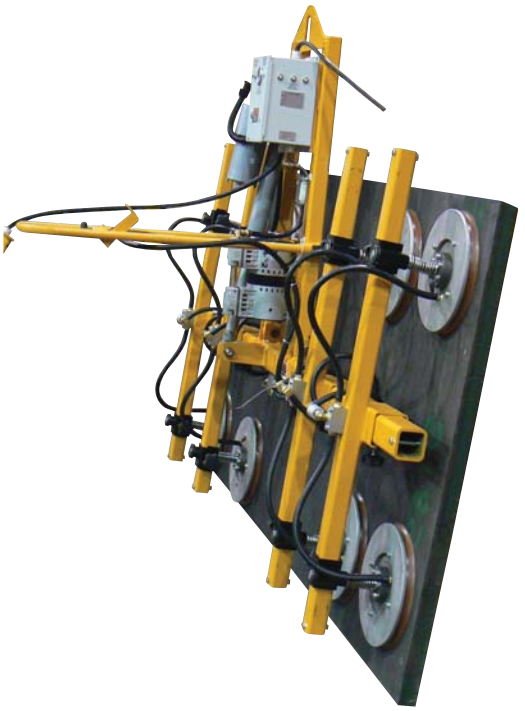
Rated Capacity (lbs.)	Number of Pads	Pad Diameter (in.)	Model Number
Non-Glass Material			
200	8	4	**UE2S3-__Q__**
320	8	5	**UE3S4-__Q__**
680	8	7-1/4	**UE6S6-__Q__**
1240	8	9-5/8	**UE12S8-__Q__**
1600*	8	10-5/8	**UE16V8-__Q__**
2000*	8	12-1/4	**UE24V10-__Q__**
Glass Only			
180	8	4-7/8	**UE1M4-__-Q-__**
360	8	6-7/8	**UE3M5-__-Q-__**
1000	8	9-1/4	**UE10M8-__-Q-__**

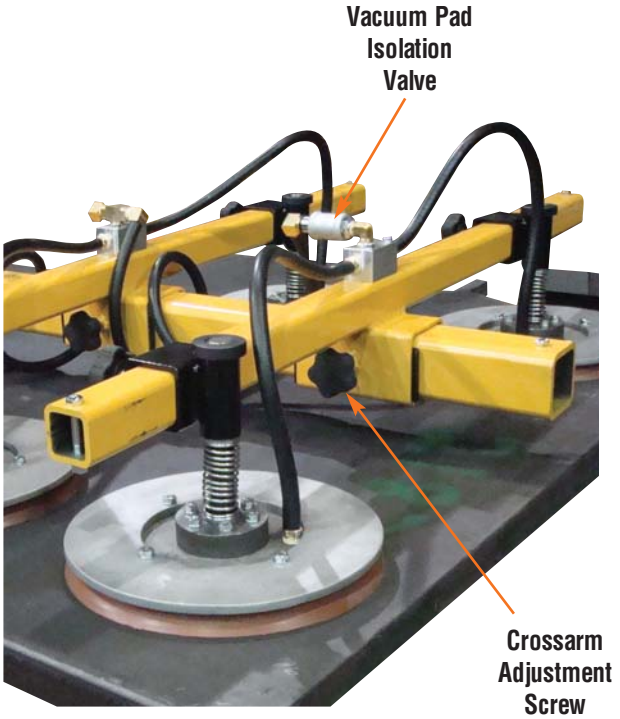
Other sizes available, consult factory.

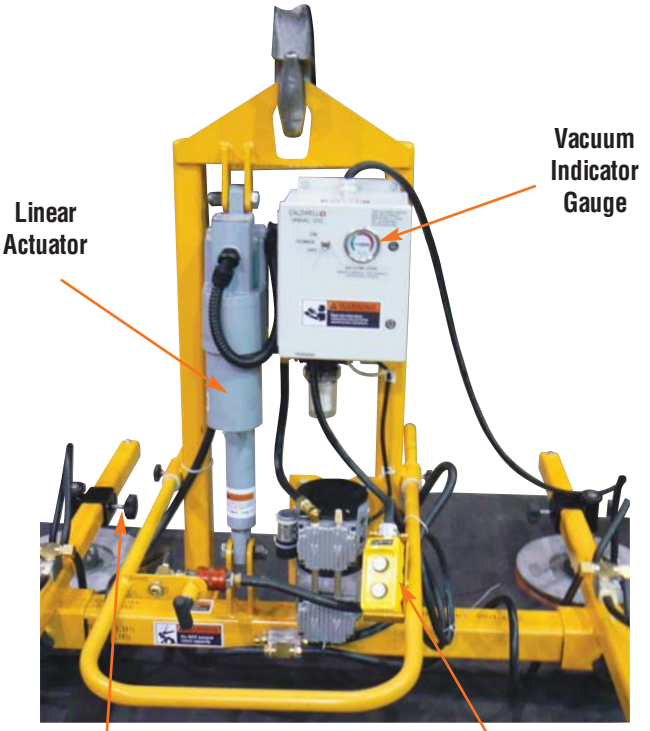
Please specify desired length where __ is in the Model Number i.e. UE12S8-10-Q3 has a 10' main beam and two 3' crossarms.

*10' main beam will be our industrial duty design.

Model U - 90° Tilt Upender/Downender - Standard Duty







OPTION: Audible Low Vacuum Warning Device.

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Model T - 90° Tilt Upender/Downender - Heavy Duty

Lifting and rotation to 90° for assembly area, vertical storage, inspection, and glass handling applications.

PRODUCT FEATURES:

- Linear actuator provides smooth continuous tilting.
- Electric powered only.
- Mold on pads are used for glass applications.

SPECIFICATIONS

Rated Capacity (lbs.)†	Model Number	Power-Pac	Neoprene Pad Diameter (in.)	To Complete Model Number Code: Add FEET to 1st Blank Model Number Box — Load Beam Length (ft.) 6	8	10	12	15	Add FEET to 2nd blank Model Number Box — Crossarm Beams Length (ft.) 3	4	5
Non-glass material											
Twin crossarms with 4 pads											
680	**TE6S6 ☐ D ☐**	UNIVAC-330	7-1/4	6	8	10	12	15	3	4	5
1600	**TE16V8 ☐ D ☐**	UNIVAC-330	10-5/8	6	8	10	12	15	3	4	5
2400	**TE24V10 ☐ D ☐**	UNIVAC-330	12-1/4	6	8	10	12	15	3	4	5
3200	**TE32V12 ☐ D ☐**	UNIVAC-330	14-1/4	6	8	10	12	15	3	4	5
5600	**TE56V16 ☐ D ☐**	UNIVAC-330	19	6	8	10	12	15	3	4	5
8000	**TE80V20 ☐ D ☐**	UNIVAC-330	23	—	8	10	12	15	3	4	5
Quad crossarms with 8 pads											
640	**TE6S4 ☐ Q ☐**	UNIVAC-330	5	6	8	10	12	15	3	4	5
1360	**TE13S6 ☐ Q ☐**	UNIVAC-330	7-1/4	6	8	10	12	15	3	4	5
3200	**TE32V8 ☐ Q ☐**	UNIVAC-330	10-5/8	6	8	10	12	15	3	4	5
4800	**TE48V10 ☐ Q ☐**	UNIVAC-330	12-1/4	6	8	10	12	15	3	4	5
6400	**TE64V12 ☐ Q ☐**	UNIVAC-330	14-1/4	6	8	10	12	15	3	4	5
11200	**TE112V16 ☐ Q ☐**	*UNIVAC-1500	19	6	8	10	12	15	3	4	5
16000	**TE160V20 ☐ Q ☐**	*UNIVAC-1500	23	—	8	10	12	15	3	4	5
Glass only											
Twin crossarms with 6 pads			Mold on Pad								
540	**TE5M5 ☐ D ☐**	UNIVAC-330	6-7/8	6	8	10	12	15	3	4	5
1500	**TE15M8 ☐ D ☐**	UNIVAC-330	9-1/4	6	8	10	12	15	3	4	5
Quad crossarms with 12 pads											
1080	**TE10M5 ☐ Q ☐**	UNIVAC-330	6-7/8	6	8	10	12	15	3	4	5
3000	**TE30M8 ☐ Q ☐**	UNIVAC-330	9-1/4	6	8	10	12	15	3	4	5

† Rated capacity is only horizontal position. Vertical capacity is 50% of horizontal capacity.

Other sizes available, consult factory.

***NOTE:** 230/460V

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Model T - 90° Tilt Upender/Downender - Heavy Duty

Ideal for material that needs to be tilted up or down for inspection or placement into shipping containers.

Steel plate shown horizontal.

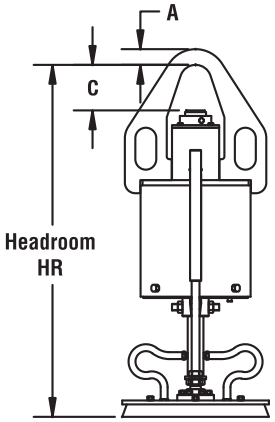
Electric upenders allow the operator to position the plate anywhere from 0 to 90 degrees.

Electric upender shown horizontal.

Electric upender shown at 90° position.

Mechanical Vacuum Lifter

The patented, revolutionary design of our vacuum generator requires no electrical or air line connections, just hang it on your hook and go! This is an economical solution for a wide range of applications where bringing power to the lifter is not practical or feasible—even the warning system requires no power. This virtually maintenance free design conforms to ASME standards.



Patent No. 7,543,868

QUICKSHIP PROGRAM

PRODUCT FEATURES:

- No outside power source is required.
- Color-coded vacuum indicator rods alert the operator of vacuum level.
  GREEN = Safe to lift with additional vacuum available.
  YELLOW = Minimum vacuum remaining, begin to set load down.
  RED = Hazardous condition.
- Auto cycling valve provides a hands-free attach and release function.
- Large lifting bail accommodates a wide range of hook sizes.
- The Caldwell Mechanical Vacuum Lifter has very few moving parts that will need attention from the maintenance department.
- Standard sizes shown, please contact factory for additional capacities and configurations.

SPECIFICATIONS - Single Pad Models

Rated Capacity (lbs.)	Number of Pads	Pad Diameter (in.)	Dimensions (in.)			Weight (lbs.)	Model Number
			A	C	HR		
300	1	9-5/8	0.75	3.34	35	75	AM3S8
800	1	14-1/4	1.5	4.3	37.75	115	AM8V12
2000	1	23	1.5	4.3	39.39	290	AM20V20

SPECIFICATIONS - Twin Pad Inline Models

Rated Capacity (lbs.)	Number of Pads	Pad Diameter (in.)	Main Beam Length (ft.)	Dimensions (in.)			Weight (lbs.)	Model Number
				A	C	HR		
300	2	7-1/4	4	0.75	3.34	44-1/4	100	BM3S6-4
			6				105	BM3S6-6
800	2	10-5/8	4	1.5	4.3	52-1/4	215	BM8V8-4
			5				226	BM8V8-5
			6				237	BM8V8-5
1600	2	16	4	1.5	4.3	63	424	BM16V14-4
			6				466	BM16V14-6
			8				508	BM16V14-8

SPECIFICATIONS - Four Pad Inline Models

Rated Capacity (lbs.)	Number of Pads	Pad Diameter (in.)	Main Beam Length (ft.)	Dimensions (in.) A	C	HR	Weight (lbs.)	Model Number
600	4	7-1/4	5	1.5	4.3	52-1/4	230	CM6S6-5
			6				241	CM6S6-6
			8				262	CM6S6-8
800	4	9-5/8	5	1.5	4.3	52-1/4	235	CM8S8-5
			6				246	CM8S8-6
			8				267	CM8S8-8
1500	4	12-1/4	6	1.5	4.3	63	482	CM15VIO-6
			8				524	CM15V10-8
			10				566	CM15VIO-10

SPECIFICATIONS - Twin Crossarm Models

Rated Capacity (lbs.)	Number of Pads	Pad Diameter (in.)	Main Beam Length (ft.)	Dimensions (in.) A	C	HR	Weight (lbs.)	Model Number*
300	4	5	4	0.75	3.34	44-1/4	110	DM3S4-4-D_
			6				115	DM3S4-6-D_
600	4	7-1/4	4	1.5	4.3	54-1/2	240	DM6S6-4-D_
			6				256	DM6S6-6-D_
			8				272	DM6S6-8-D_
800	4	9-5/8	4	1.5	4.3	54-1/2	245	DM8S8-4-D_
			6				261	DM8S8-6-D_
			8				277	DM8S8-8-D_
1500	4	12-1/2	4	1.5	4.3	66	532	DM15V1O-4-D_
			6				558	DM15V10-6-D_
			8				600	DM15V1O-8-D_
			10				642	DM15V10-1O-D_

SPECIFICATIONS - Triple Crossarm Models

Rated Capacity (lbs.)	Number of Pads	Pad Diameter (in.)	Main Beam Length (ft.)	Dimensions (in.) A	C	HR	Weight (lbs.)	Model Number*
1500	6	10-5/8	4	1.5	4.3	66	550	EM15V8-4-T_
			6				568	EM15V8-6-T_
			8				610	EM15V8-8-T_
			10				652	EM15V8-1O-T_

* Specify crossarm length where _ is in Model Number.
i.e. DM6S6-6-D3 would have a 6' main beam and 3' crossarms.
Other sizes available, please consult factory.

Specialty Vacuum Applications

Heavy duty vacuum lifter with vacuum pads mounted on wheeled trolleys for ease of pad adjustment.

Vacuum unit with rectangular vacuum pads for long narrow steel plate applications.

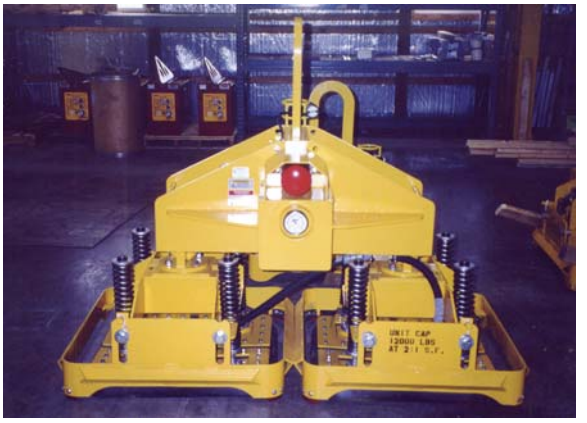
Hi-temperature vacuum lifter for moving hot aluminum from the rolling line to the cooling stack.

This six-pad vacuum lifter, dedicated to a finish shear, has high twin bails for added stability.

Specialty Vacuum Applications

Submersible vacuum lifter can pick and place aircraft aluminum plate from under water in an ultrasonic testing tank.

Custom 33" square pad vacuum lifter used on a shear line.



Auto-attach/release bail on this vacuum lifter allows for hands-free operation. Available as 6,000 pounds single pad or 12,000 pound dual pad units, these 33" square pads are designed for handling material in steel and aluminum mills.

Radio controlled, 20,000 pound capacity unit for loading a burn table for a major steel producer.

Bridge truss type unit used by a major aluminum producer to load finished aircraft wing skins into shipping container.

Side Grab Manipulator Vacuum Lifter

Designed to manipulate 180° for production, inspection and assembly applications.

PRODUCT FEATURES:
- Electric or venturi power available.
- Manual or motorized product rotation.
- Adjustable for various load widths.
- Simple push button controls.

Custom designed per application

Variable Size Sheet Vacuum Lifter

Designed to handle the wide range of steel plates typical in a shearing operation.

Custom designed per application

PRODUCT FEATURES:
- Standard UNIVAC® electric vacuum Power-Pac.
- Standard options see page D.4.
  (consult factory for availability)

Univac® Application Evaluation

Material To Be Handled:

❑ Steel ❑ Aluminum ❑ Glass ❑ Stone Slabs ❑ Plastic/Fiberglass

❑ Other: _____ (Provide detailed sketch)

Material Temperature Is:

❑ Under 200° F

❑ 200° to 600° F

❑ Over 600° F (Specify temperature)

Material Dimensions:

Minimum: Length _____ Width _____ Thickness _____ (required)

Maximum: Length _____ Width _____ Thickness _____

Maximum Capacity Required _____

Material Orientation During Lift:

❑ Horizontal Only ❑ Vertical Only

❑ Horizontal to Vertical

Power Available:

❑ Electric Specify: ❑ 115v/1ph/60hz

❑ 230-460v/3ph/60hz

❑ 230v dc

❑ Compressed Air

❑ No External Power - Battery operated required

Options Required:

❑ Side Handle

❑ Parking Stand

❑ Audible Low Vacuum Warning

❑ Custom Pendant Control (Standard is 2-button)

❑ Wireless Pendant Control

Headroom Available: _____

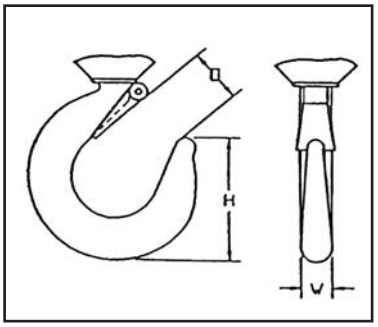
Hook Size or Hook Opening:

Required for crane hook

H_____

O_____

W _____



Contact: _____

Company: _____

Address: _____

City, State, Zip: _____

Phone: _____

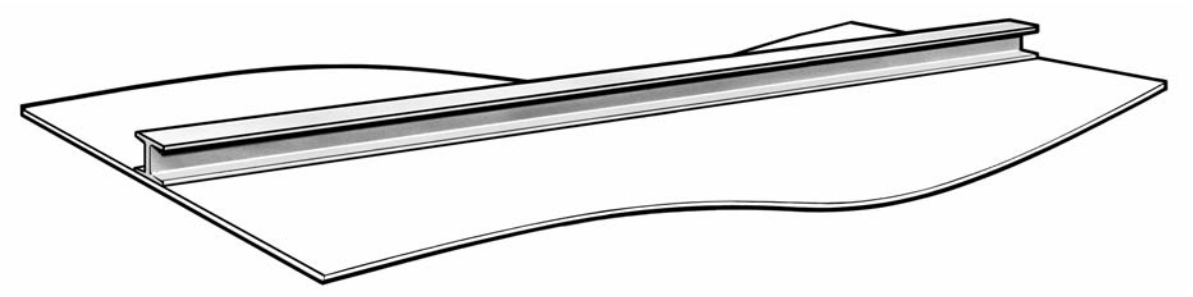
Fax: _____

Email: _____

For a price quote on your specific application, please complete the above form and fax to The Caldwell Group at **815-229-5686** or you can complete this form online at www.caldwellinc.com/applications.

Uniclamp™ Welding Hold Down Clamp

WHAT IT DOES:



UNICLAMP™ ELIMINATES THE GAP BETWEEN THE PLATE AND THE STIFFENER!

That was then…

This conventional setup can take up to two hours to complete. The process includes welding lugs, dogs and bridges in place - positioning awkward and heavy equipment - then removing these setups and cleaning up the attachment points.

This is now…

The Uniclamp™ takes less than 30 seconds to set up - increasing productivity, safety and quality.

HOW IT WORKS:

The simple connection of a standard plant-supplied compressed air line and the flick of a switch allows the clamp's built-in, high speed generator to create a powerful vacuum, permitting the vacuum pads to immediately attach themselves directly to the work surface. The clamp's manual screw or hydraulic ram can then be operated to instantly secure the proper alignment of parts.

UNICLAMPS™ will meet your clamping requirements without the tedious, time consuming and sometimes dangerous paraphernalia associated with traditional methods of fabrication assembly techniques. *NO MORE LUGS, DOGS, BRIDGES, WEDGES, CHAINS, JACKS, C-CLAMPS, TACK WELDS, OR REGRINDING REQUIRED!*

UNICLAMPS™ Are Powered by Compressed Air and Leave No Marks!

NOTE: UNICLAMPS™ ARE NOT DESIGNED FOR LIFTING PURPOSES.

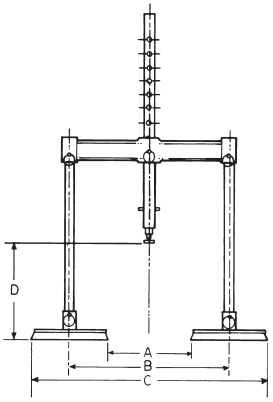
The Lightweights...

WHD-1 and WHD-2 models are constructed of a high-strength aluminum bringing lightweight portability to workpiece positioning and clamping.

The UNICLAMPS™ have proved to be invaluable in transportation industry applications. These easy to position clamps are ideally suited for sheet and light plate fabrication. Lightweight UNICLAMPS™ are used to secure "skin" materials to ribbed structures at aircraft, aerospace, bus, trailer, and truck manufacturing facilities.

The WHD-1 and WHD-2 UNICLAMPS™ feature capacities up to 1,200 lbs with clamp weights not exceeding 18 lbs! Features include round or rectangular vacuum pads, varying headframe widths, and varying height under the ram to suit special requirements.

QUICKSHIP PROGRAM



SPECIFICATIONS

Model Number	Holding Force (lbs.)	D Height Under Ram (in.)	Dimensions (in.)						Estimated Weight (lbs.)
			Round Vacuum Pads			Rectangular Vacuum Pads			
			A	B	C	A	B	C	
WHD-1	750	8-3/4	8-1/4	15-1/2	22-3/4	12	15-1/2	19	15
WHD-2	1200	8-3/4	5-7/8	15-1/2	25-1/8	12	15-1/2	19	20

NOTE: Weights and dimensions are approximate.

UNICLAMPS™ Disassemble in Seconds Without Tools!

NOTE: UNICLAMPS™ ARE NOT DESIGNED FOR LIFTING PURPOSES.

The Middleweights...

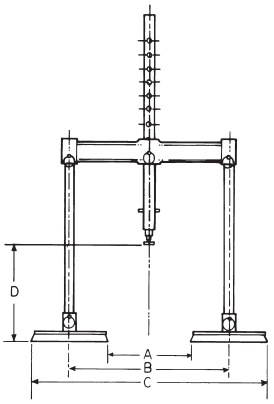
Like their smaller counterparts, the UNICLAMP™ Models WHD-18, WHD-24, WHD-32 and WHD-40 are constructed of high-strength aluminum affording these clamps the identical advantage of reduced weight for heavier duty positioning and clamping requirements.

The clamp models are used extensively in aircraft, ship building, bridge construction, tank manufacturing and the steel fabrication industry. They excel whenever larger assemblies need to be drawn into alignment or held in position for a welding process.

The WHD-18 and WHD-24 UNICLAMP™ features include round or rectangular vacuum pads, varying headframe widths, and varying height under the ram to suit special requirements.

The WHD-32 and WHD-40 are available with round, rectangular or square vacuum pads, varying headframe widths, and varying height under the ram to suit special requirements.

QUICKSHIP PROGRAM



SPECIFICATIONS

Model Number	Holding Force (lbs.)	D Height Under Ram (in.)	Dimensions (in.)						Estimated Weight (lbs.)
			Round Vacuum Pads			Rectangular Vacuum Pads			
			A	B	C	A	B	C	
WHD-18	1800	15-3/4	13-3/4	24	34-1/4	20	24	28	45
WHD-24	2400	15-3/4	12	24	36	19	24	29	50
WHD-32	3200	15-3/4	10	24	38	15	24	33	50
WHD-40	4000	15-3/4	8	24	40	15	24	33	60

NOTE: Weights and dimensions are approximate.

Concave or Convex Surfaces, No Problem for UNICLAMPS™!

NOTE: UNICLAMPS™ ARE NOT DESIGNED FOR LIFTING PURPOSES.

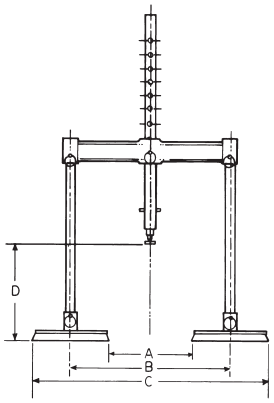
The Heavyweights...

UNICLAMP™ Steel Constructed Models WHD-60, WHD-80 and WHD-100 answer industry's heaviest application requirements.

Used in ship building, heavy plate fabrication, plant construction, bridge building, and large tank fabrication, these clamps bring incredible amounts of clamping power to bear on the largest of fabrication application requirements. These easy-to-use, portable, high-speed clamps draw oversize materials into position for welding, assembly, or alignment procedures.

The WHD-60, WHD-80, and WHD-100 welding and fabrication clamps, boast holding force up to 10,000 lbs. with a venturi vacuum generator and a hydraulic powered ram as standard features. Vacuum pads in round, rectangular, or square are available to suit custom requirements.

QUICKSHIP PROGRAM



SPECIFICATIONS

Model Number	Holding Force (lbs.)	D Height Under Ram (in.)	Dimensions (in.)						Weight (lbs.)
			Round Vacuum Pads			Rectangular Vacuum Pads			
			A	B	C	A	B	C	
WHD-60	6000	24	19	37	56	17	26	35	150
WHD-80	8000	24	14	37	60	15	29	43	160
WHD-100	10000	24	12-1/2	37	64	17	38	59	175

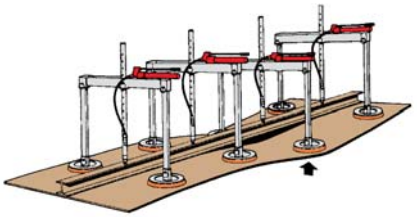
NOTE: Weights and dimensions are approximate.

UNICLAMPS™ Work on Rough Textured or Uneven Surfaces!

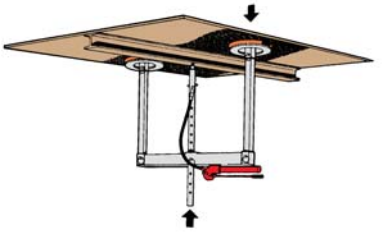
NOTE: UNICLAMPS™ ARE NOT DESIGNED FOR LIFTING PURPOSES.

Uniclamp™ Applications

Whether work surfaces are angled, inclined, right angles, convex or concave, UNICLAMPS™ provide the best solution for your positioning and clamping needs.

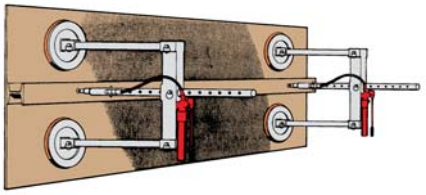


GANG CLAMPS FOR LONG LOADS

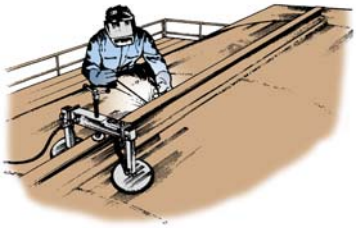


OVERHEAD APPLICATION

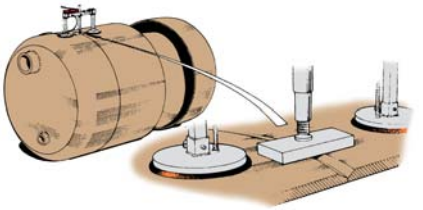
CURVED SECTION WELDING



VERTICAL CLAMPING OF BEAM



SURFACE WELDING STIFFENER



ALIGNING CURVED SURFACES

Special Sizes and Designs Are Available for All UNICLAMPS™

Replacement Parts & Repairs

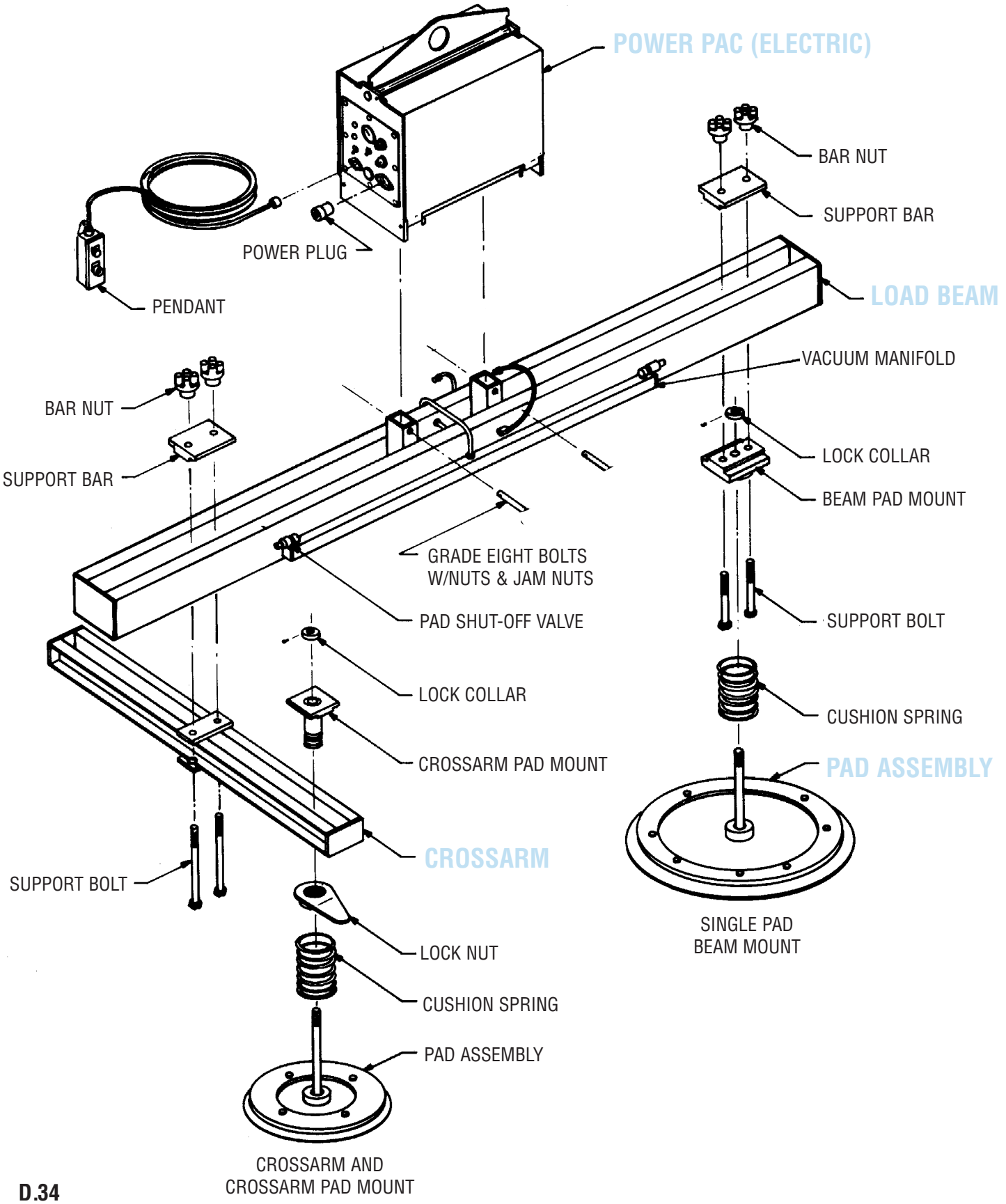
Many commonly needed parts are in stock, ready for immediate delivery. Other special components are produced on order. Caldwell gives priority to replacement parts to insure minimum downtime.

Repairs

Vacuum lifting products, of many brands, can be sent to Caldwell for repair. Units are completely disassembled, inspected, worn parts replaced, reassembled and tested. You get a “like new” vacuum lifter at considerable savings over the cost of a new unit. See our service information on page 6 in the front of this catalog.

UNIVAC® Vacuum Lifter Sample Parts Schematic

This is a sample vacuum lifter parts schematic, please refer to your instruction manual for specific information regarding your Univac® Vacuum Lifter.



The Caldwell Group • 800-628-4263 • www.caldwellinc.com

Reference from: UNIVAC® operation maintenance & parts manual (included with each order).

INSTALLATION

Vacuum Lifters shall be assembled and installed in accordance with the manufacturer's instructions, unless other specific arrangements have been approved in writing by manufacturer. When lifter/auxiliary power supply is required, user inspection shall ensure that the power source complies with ANSI/NFPA 70, National Electrical Code and shall include a power disconnect switch as required in accordance with ANSI/NFPA 70 based on the lifters requirements. If electrical connections are made, the power supply and corresponding power disconnects shall be connected to the line side (power supply side) of the crane disconnect or to an independent circuit as specified in the manufacturer's operating instructions.

Check for correct rotation of all pumps and power units, lubrication of moving parts, and filling of reservoirs, all in accordance with manufacturer's instructions.

OPERATOR TRAINING

Lifters shall be operated in accordance with manufacturer's instruction manual, and by personnel who have received instructions described in the "Operating Practices" section of these guidelines. Training shall also include instruction regarding:

1. Details of the lifting cycle.
2. Application of the lifter to the load including (according to the manufacturer's instructions) adjustments to the lifter, if any, to adapt it to various sizes and kinds of loads.
3. Instruction in any special operations or precautions that may be required.
4. Recognition of proper load configuration. For example, preferred operation requires an orderly pattern of stacking.
5. Before assuming responsibility for using the lifter, an operator shall demonstrate his understanding of the lifting procedure to the instructor. The instructor should record notes of operator's demonstrated ability.

INSPECTION

Defects to look for include but are not limited to:

1. Structural deformation.
2. Cracks in the structural frame, welds, hoist hook attachment points, mechanically operating parts, and attached slings, clevises and hooks.
3. Wear of hoist hooking points, load supporting clevises, pins, slings, linkages and mechanical parts.
4. Missing nameplates and markings. Contact Caldwell for replacements.

Daily:	Perform filter and muffler check. Perform a preliminary test lift of several inches.
Weekly:	Check seal rings, hoses and fittings. Check for loose bolts and nuts, as well as for structural damage. Test vacuum gauge reading. Test vacuum switch setting.
Quarterly:	Clean vacuum pump. Check vacuum gauge. Check Red and Green indicator lights.

MAINTENANCE AND REPAIRS

1. A preventive maintenance program should be established for each lifter by a qualified person based on recommendations made by its manufacturer.
2. A qualified person should have responsibility for repairs. Dated records and details of repairs and parts replacement should be carefully maintained by a qualified person, and copies kept in your possession.
3. Replacement parts shall be at least equivalent to the original manufacturer's specifications.

OPERATING PRACTICES

DO'S

1. The operator shall receive, read and understand the manufacturer's instruction manual.
2. The operator shall watch carefully that the lifter is performing properly during the lifting procedure.
3. The operator shall know the standard crane hand signals.
4. The operator shall only respond to signals from an appointed person. However, stop signals from anyone shall be obeyed.
5. The operator shall notify a designated person when he considers a load to be unsafe.
6. The operator shall inspect the lifter before using. Any defect observed shall be examined by a qualified person to determine if it is a hazard.

DON'TS

1. The operator shall not operate a malfunctioning lifter or one with an "out of service" tag attached.
2. The operator shall not use the lifter for any purpose(s) other than those designated by the manufacturer's instruction manual.
3. The operator shall not use a lifter when the capacity, weight or product safety labels are missing or are no longer legible.
4. No one shall make alterations or modifications to lifters without consulting the manufacturer.
5. No one shall obscure or paint over the manufacturer's capacity, weight, or product safety labels.
6. Loads shall not be lifted higher than necessary or be left suspended unattended.
7. The lifter shall not lift a load that is not properly balanced for safe lifting.

HANDLING THE LOAD

1. The lifter shall not be loaded in excess of its rated load.
2. Ensure the load can withstand the forces applied by the lifter.
3. The combined weight of the lifter and load shall not exceed the rated load of the crane or hoist.
4. The lifter shall be applied to the load in accordance with the manufacturer's recommended operating procedure.
5. Lifter ropes and chains shall not be kinked, and multiple part lines shall not be twisted about each other.
6. The lifter shall not touch obstructions during load movement.
7. The lifter shall not be loaded with loose material that might fall during movement.
8. The operator or other personnel shall not place themselves or any part of their bodies beneath suspended loads.
9. The load or lifter shall not be slid on the floor or other surface.
10. The lifter shall not be used for loads for which it is not designed.
11. If suspended loads are moved manually, they shall be pushed, not pulled.
12. A preliminary lift of a few inches shall be made to establish that the load is stable.
13. All loads shall be accelerated and decelerated smoothly and slowly.

Modifications or repairs performed on your lifting equipment without prior written approval from The Caldwell Group, Inc. voids your warranty. Refer to ASME standards for information regarding the liability of repaired or modified lifters.

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