



Unit Selection Guide

Effective 4-6-98 • Supersedes 4-15-91

The ACCO VAC-U-LIFT line of lifting equipment is designed as a modular system, where standard components can be readily selected to meet the requirements of most vacuum lifting applications. The following procedure outlines a recommended method of VAC-U-LIFT component selection.

SELECTION OF BEAM LENGTH, CROSS ARM LENGTH & LIFTING PAD CONFIGURATION

1. Identify the type of material to be lifted, the minimum and maximum load dimensions, and the maximum weight of the load.

Example:

Type of Material	Min-Max Thickness (inches)	Min-Max Width (inches)	Min-Max Length (inches)	Maximum Weight (lbs.)
Steel	0.0598-0.5	24-72	72-120	1,225

2. Determine the allowable amount of load overhang ("L") and spacing between pads ("2L") based on the minimum thickness of materials. The following two tables (one for steel, the other for aluminum) supply acceptable overhang values. The thinnest material to be lifted is always used to determine allowable overhang.

STEEL

Thickness		"L"	"2L"
GA	IN		
25	.0209	20	40
24	.0239	20	40
23	.0269	25	50
22	.0299	25	50
21	.0329	25	50
20	.0359	25	50
19	.0418	30	60
18	.0478	30	60
17	.0538	30	60
16	.0598	30	60
15	.0673	40	80
14	.0747	40	80

Thickness		"L"	"2L"
GA	IN		
13	.0897	40	80
12	.1046	40	80
11	.1195	50	100
1/8	.125	50	100
10	.1345	50	100
3/16	.1875	60	120
1/4	.25	70	140
3/8	.375	90	180
1/2	.5	100	200
5/8	.625	100	200
3/4	.75	100	200
1	1.00	100	200

NOTE: Aluminum table for overhang values is shown on back of page.

ALUMINUM

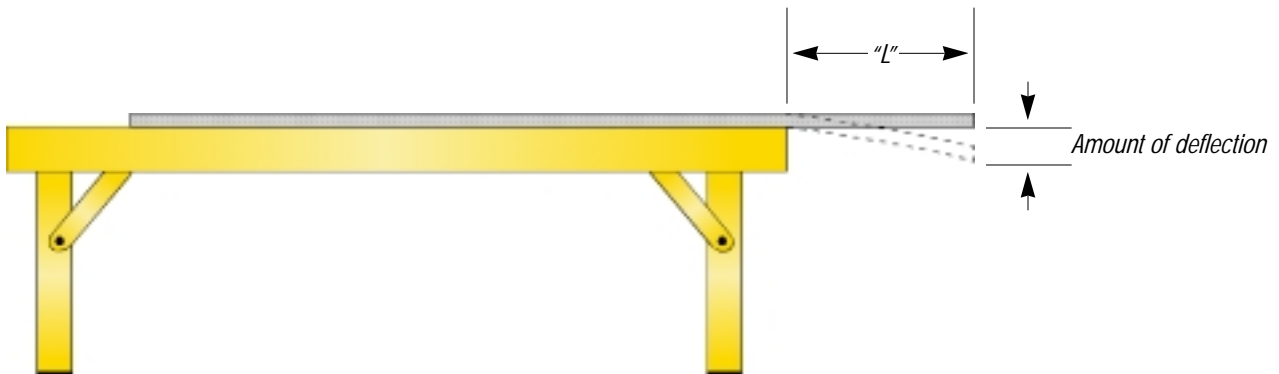
Thickness		"L"	"2L"
GA	IN		
24	.020	20	40
	.025	20	40
20	.032	25	50
	.040	25	50
	.050	30	60
1/16	.063	30	60
	.071	30	60
	.080	40	80
	.090	40	80
	.100	40	80
1/8	.120	50	100
	.160	50	100
	.190	60	120

Thickness		"L"	"2L"
GA	IN		
1/4	.250	70	140
5/16	.310	80	160
3/8	.375	80	160
13/32	.408	90	180
1/2	.500	100	200
9/16	.562	100	200
5/8	.625	100	200
3/4	.750	100	200
7/8	.875	100	200
1	1.00	100	200
1-1/2	1.125	100	200
1-1/4	1.250	100	200

Notes Regarding Deflection (Bending):

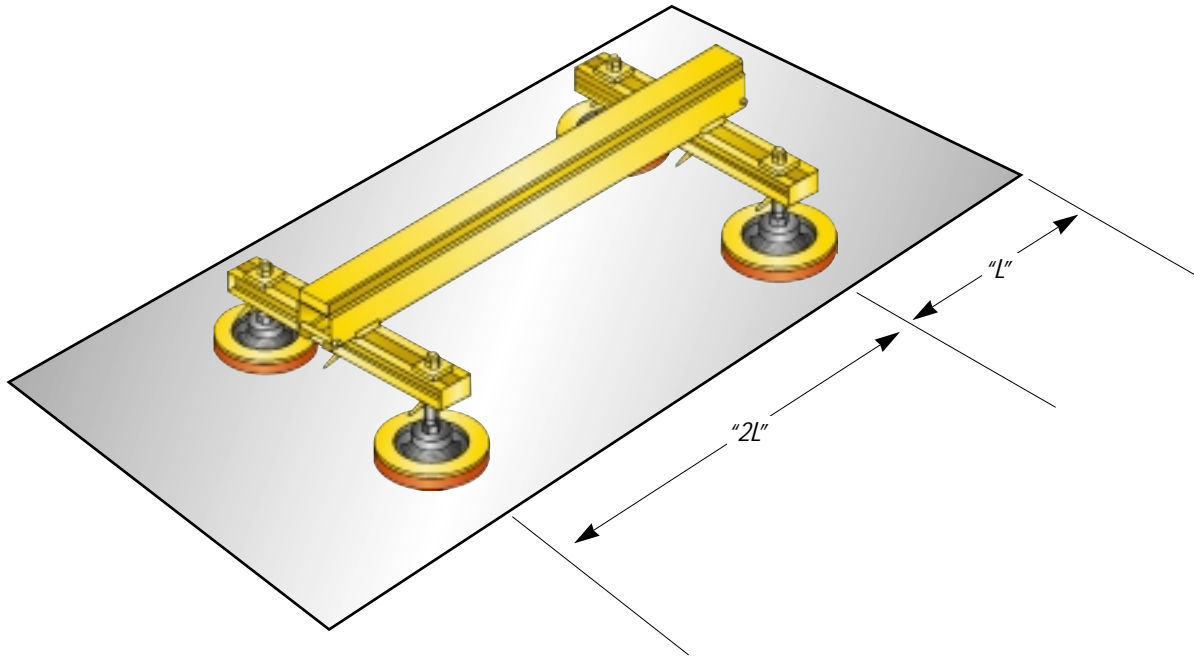
- Brittle materials such as glass should be held nearly flat.
- For other materials such as wood, particleboard, etc. deflection can be estimated by direct measurement.

Deflection Example:



3. The material in this example is steel sheet with a minimum thickness of .0598" (16 GA), a maximum width of 72", and a maximum length of 120". Referring to the steel deflection table, an overhang ("L") of 30" and spacing between pads ("2L") of 60" is recommended.

Example:



4. Determine the minimum number of lifting pads required for the maximum load length by dividing the maximum load length by 2L as selected in step 3, and rounding to the next higher number.

Example:

Maximum example load length is 120 inches. $120/60 = 2$; therefore 2 will be the minimum number of pads used to lift along the load length.

5. Determine the minimum number of lifting pads required for the maximum load width by dividing the maximum load width by 2L as selected in step 3, and rounding to the next higher number.

Example:

Maximum example load width is 72 inches. $72/60 = 1.2$; therefore 2 will be the minimum number of pads used to lift along the load width.

6. Determine required minimum load beam length by subtracting 2L (from step 3) from the maximum load length, adding 6 inches and rounding up to the next even number of feet.

Example:

Maximum load length is 120 inches. $(120 - 60) + 6 = 66$ inches = 5.5 feet. Rounding up to the next even length in feet yields a minimum required load beam length of 6 feet.

7. Determine required minimum cross arm length by subtracting 2L (from step 3) from the maximum load width, adding 6 inches and rounding up to a whole number.

Example:

Maximum load width is 72 inches. $(72 - 60) + 6 = 18$ inches = 1.5 feet. Rounding up to a whole number yields a minimum cross arm length of 2 feet. A 3 ft. cross arm will be used as this is the shortest cross arm available in catalog.

8. Determine the series of **Vac-U-Lift** for your application by comparing the maximum material weight to the **Vac-U-Lift** series. For this example, the maximum weight of 1,225 pounds dictates the use of a **3200 Series Vac-U-Lift**, having a maximum capacity of 3200 lbs.

Selection Of Lifting Pad Number, Size, and Style

9. In selecting lifting pads the following main points are considered:

- The maximum weight of the load to be lifted.
- The minimum number of pads required as determined in the preceding section.
- The lifting surface characteristics of the load.

In addition, the following guidelines are indicated:

- Use as few lifting pads as necessary.
- Use larger diameter pads wherever possible.
- Load width should *never* exceed 5 times the lifting pad width or diameter when handling the load with a single row of pads.
- Pad capacities must be derated by 50% when used in vertical handling or upending applications.
- Neoprene seal rings are recommended for general use at temperatures up to 200 degrees Fahrenheit. Silicone seal rings are recommended for temperatures up to 500 degrees Fahrenheit.
- Silicone seal rings are also recommended for applications where load surface marring may be a concern.

Even when multiple rows of lifting pads are not indicated as being required, they should be considered where there is a concern regarding load "tipping". When choosing the number of cross arm members on a vacuum lift designed for up-ending, an even number (ie. 2, 4, 6,) must be specified to prevent interference with the up-ending yoke.

Example:

It has been determined that a minimum of two pads will be used along the length of the load and a minimum of two pads will be used along the width of the load. Therefore, a total of four lifting pads will be used in this application. The maximum capacity required is 1,225 lbs. Individual pad capacity is calculated as follows: $1,225\text{lbs.}/4 \text{ pads} = 306 \text{ lbs. per pad}$.

After referring to the product descriptions on page 1 of the **Vac-U-Lift Vacuum Pad Selection Guide**, Standard Number series pads with neoprene seal rings are selected as appropriate for the example application. The #10 Series Pad with a capacity of 415 lbs. is selected for this example.

Final Example Results:

A 6 foot load beam with two rows of two (2) #10 Standard Number lifting pads with neoprene seal rings will be an acceptable configuration for this application. Equipment selected would be as follows:

- | | |
|---------------------------|----------------------------|
| (1) 3200 Series Power Pac | (2) 3'-0" Cross Arms |
| (1) 6'-0" Load Beam | (4) B10-N30 Pad Assemblies |

STEEL DEFLECTION TABLE

Gauge or Thickness		Overhang "L" Length (in.)													L Max.
GA	IN.	5	10	15	20	25	30	40	50	60	70	80	90	100	IN.
25	.0209	.020	.32	1.63	5.16	12.6	26.1	-							27
24	.0239	.015	.25	1.25	3.95	9.64	20.0	-							29
23	.0269	.012	.19	.99	3.12	7.61	15.8	49.9	-		(E - 10 x 10 ⁶ P.S.I.)				31
22	.0299	.010	.16	.80	2.52	6.16	12.8	40.4	-		(W - 0.282 lb./in.)				32
21	.0329	.008	.13	.69	2.08	5.09	10.6	33.3	-						34
20	.0359	.007	.11	.55	1.75	4.27	8.86	28.0	-						36
19	.0418	.005	.081	.41	1.29	3.15	6.54	20.6	-						38
18	.0478	.004	.062	.31	.99	2.41	5.0	15.8	38.6	-					41
17	.0538	.003	.049	.25	.78	1.90	3.4	12.5	30.4	-					44
16	.0598	.002	.039	.20	.68	1.54	3.19	10.1	24.6	-					46
15	.0673	.002	.031	.16	.50	1.22	2.52	7.97	19.4	-					49
14	.0747	.002	.025	.13	.40	.99	2.05	6.47	15.8	32.7	-				51
13	.0897	.001	.018	.09	.28	.68	1.42	4.42	11.0	22.7	-				56
12	.1046	.001	.013	.085	.21	.50	1.04	3.30	8.05	16.7	30.9	-			61
11	.1195	.001	.010	.050	.16	.43	.80	2.53	6.17	12.8	23.7	-			65
1/8	.125	.001	.009	.045	.14	.35	.73	2.31	5.84	11.7	21.7	-			67
10	.1345	.000	.007	.039	.12	.30	.63	2.00	4.87	10.1	18.7	-			69
3/16	.1875	.000	.004	.020	.054	.16	.32	1.03	2.51	5.20	9.63	16.4	25.3	-	81
1/4	.25	.000	.002	.011	.036	.088	.18	.58	1.41	2.92	5.42	9.24	14.8	22.6	94
3/8	.375	.000	.001	.005	.016	.039	.081	.26	.63	1.30	2.41	4.11	6.58	10.0	115
1/2	.5	.000	.001	.003	.009	.022	.046	.14	.35	.73	1.35	2.31	3.70	5.64	133
5/8	.625	.000	.000	.002	.006	.014	.029	.032	.22	.47	.87	1.48	2.37	3.61	149
3/4	.75	.000	.000	.001	.004	.010	.020	.054	.16	.32	.60	1.03	1.64	2.51	163
1	1.00	.000	.000	.001	.002	.006	.011	.036	.088	.18	.34	.58	.92	1.41	188

Numbers in **bold print** are recommended deflection values which are used to select proper overhang "L". For example, if handling 12 gauge material, you would select 3.3" of deflection. This would allow an overhang dimension of 40". If less deflection was desired, a smaller "L" dimension could be chosen and deflection could be found on the chart.

ALUMINUM DEFLECTION TABLE

Gauge or Thickness		Overhang "L" Length (in.)												L Max.	
GA	IN.	5	10	15	20	25	30	40	50	60	70	80	90	100	IN.
24	.020	.023	.037	1.88	5.94	14.5	-								41
	.025	.015	.024	1.20	3.80	9.28	19.2	-							46
20	.032	.009	.014	.73	2.82	5.66	11.7	37.1	-						52
	.040	.009	.009	.47	1.48	3.62	7.51	23.8	-						58
	.050	.004	.006	.30	.95	2.32	4.81	15.2	37.1	-					65
1/16	.063	.002	.004	.19	.60	1.48	3.03	9.57	23.4	48.5	-				73
	.071	.002	.003	.15	.47	1.15	2.38	7.54	13.4	38.2	-				77
	.080	.001	.002	.12	.37	.91	1.88	5.94	14.5	30.1	55.7	-			82
	.090	.001	.002	.008	.29	.72	1.48	4.69	11.4	23.8	44.0	75.1	-		87
	.100	.001	.001	.075	.24	.58	1.20	3.80	9.28	19.2	35.6	60.8	97.4	-	92
1/8	.120	.001	.001	.048	.15	.37	.77	2.43	5.93	12.3	22.8	38.9	62.4	95.0	102
	.160	.000	.001	.029	.093	.23	.47	1.48	3.62	7.52	13.9	23.8	35.0	58.0	116
	.190	.000	.000	.021	.066	.16	.33	1.05	2.57	5.33	9.88	16.8	27.0	41.1	145
1/4	.250	.000	.000	.012	.038	.093	.19	.61	1.48	3.08	5.70	9.73	15.6	23.8	
5/16	.310	.000	.000	.008	.024	.059	.12	.39	.95	1.96	3.64	6.71	9.94	15.2	
3/8	.375	.000	.000	.005	.017	.041	.086	.27	.66	1.37	2.54	4.32	6.98	10.6	
13/32	.408	.000	.000	.004	.012	.030	.083	.20	.48	1.00	1.86	3.17	5.08	7.74	
1/2	.500	.000	.000	.003	.010	.023	.048	.15	.37	.77	1.43	2.34	3.90	5.94	
9/16	.562	.000	.000	.002	.008	.018	.038	.12	.29	.61	1.13	1.92	3.08	4.70	
5/8	.625	.000	.000	.002	.006	.015	.031	.097	.24	.49	.91	1.56	2.40	3.80	
3/4	.750	.000	.000	.001	.004	.010	.021	.068	.16	.34	.63	1.08	1.73	2.64	
7/8	.875	.000	.000	.001	.003	.008	.016	.050	.12	.25	.46	.79	1.27	1.94	
1	1.00	.000	.000	.001	.002	.006	.012	.038	.093	.19	.36	.61	.97	1.48	
1-1/3	1.125	.000	.000	.001	.002	.004	.010	.030	.073	.25	.28	.48	.77	1.17	
1-1/4	1.250	.000	.000	.000	.002	.004	.008	.024	.059	.12	.23	.39	.62	.95	

Numbers in **bold print** are recommended deflection values which are used to select proper overhang "L". For example, if handling 1/16 gauge material, you would select 3.03" of deflection. This would allow an overhang dimension of 30". If less deflection was desired, a smaller "L" dimension could be chosen and deflection could be found on the chart.

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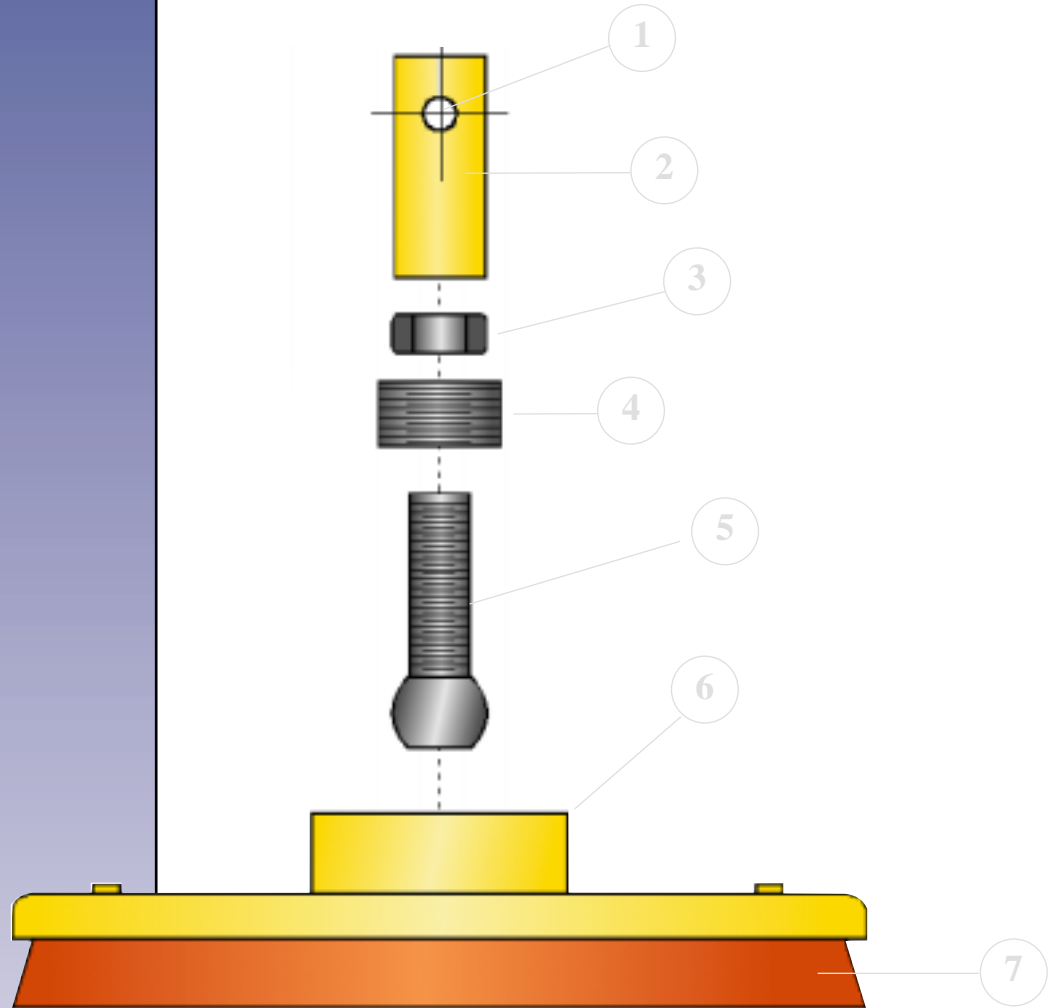
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VAC-U-LIFT®

Standard VacuumPad

Selection Guide

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VAC-U-LIFT PAD DESCRIPTIONS

SP, SPEL AND M (SMALL SIZE):

SP pads are used for lightweight, thin material that must be supported at many points to keep deflection at a minimum. The patented slip-on seal can be replaced easily with no tools. This makes it ideal on material where pad wear is excessive.

SPEL pads are used in similar applications. The advantage of this pad is its ability to seal on wavy, warped material.

M pads are used in three general areas: glass, stainless steel and very thin material. Because of its molded design across the bottom of the pad and its soft seal, it supports evenly with no pressure points to distort material being handled.

STANDARD NUMBER:

STANDARD NUMBER pads are used on most applications. These pads are the backbone of the **VAC-U-LIFT** line and cover 60% of all applications.

EL:

EL pads are used for wavy or curved material. They will seal on a much smaller radius than the standard number pads. Due to the large volume of this series, attach and release time is increased significantly. Therefore, these pads should only be used when necessary.

SPONGE:

SPONGE pads are made of closed cell sponge with a beveled lip seal. This series of pads is used primarily on rough surfaces such as concrete and cut stone.

VL:

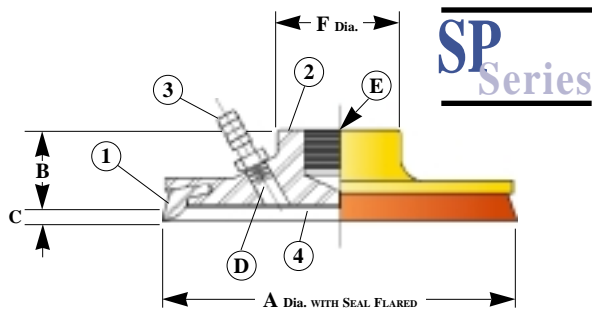
VL pads are rectangular in shape and allow you to adapt the pad to the specific shape or form of the material to be handled such as narrow strips, beams, channel sections or corrugated materials. They offer the same performance and physical characteristics as the pads listed above.

SEAL RINGS:

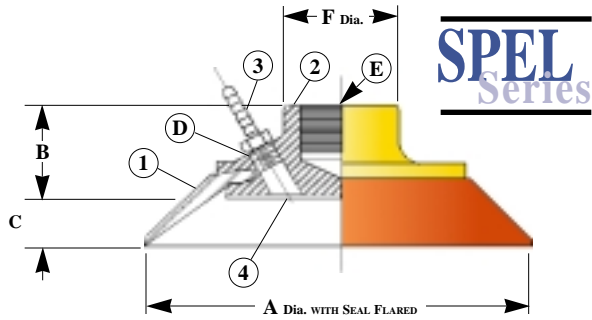
A **SEAL RING** is just that -- and nothing more. It does not perform any weight lifting function whatsoever. Its function is to establish an air tight seal between the vacuum pad and the material to be handled. Standard pads are supplied with red, 30 durometer neoprene seals, and can withstand a temperature range of -20°F to +212°F. White silicone seals can be supplied for materials with temperatures up to 500°F. Consult factory for other materials available.

SCUFF PADS:

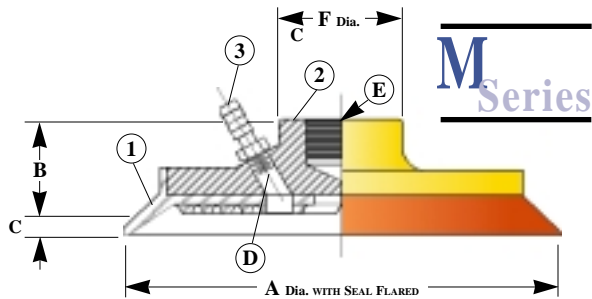
SCUFF PADS prevent the metal pad body from contacting the material being lifted. They are made of silicone or neoprene to match the seal ring material of the vacuum pad.



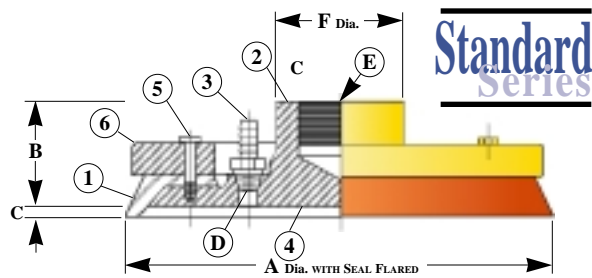
PAD	*PAD CAP. LBS.	DIMENSIONS						**PAD WEIGHT LBS.
		A IN.	B IN.	C IN.	D IN.	E IN.	F DIA.	
4SP	65	5	1 ⁹ / ₁₆	5/32	1/4 N.P.T.	1 1/2-12	2	1
6SP	135	7 1/4	1 ⁹ / ₁₆	5/32	1/4 N.P.T.	1 1/2-12	2 1/2	2
8SP	245	9 5/8	2 ⁵ / ₁₆	5/16	3/8 N.P.T.	2-12	3	4



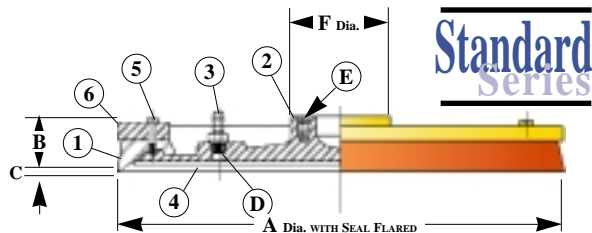
PAD	*PAD CAP. LBS.	DIMENSIONS						**PAD WEIGHT LBS.
		A IN.	B IN.	C IN.	D IN.	E IN.	F DIA.	
3SPEL	45	5 1/2	1 ³ / ₈	1/2	1/4 N.P.T.	1/2-13	1	1
4SPEL	80	7 3/4	1 ⁹ / ₁₆	1	1/4 N.P.T.	1 1/2-12	2	2



PAD	*PAD CAP. LBS.	DIMENSIONS						**PAD WEIGHT LBS.
		A IN.	B IN.	C IN.	D IN.	E IN.	F DIA.	
4M	33	4 3/4	1 ¹³ / ₁₆	3/8	1/8 N.P.T.	1/2-13	1	1
5M	85	6 3/4	1 ⁷ / ₈	7/16	1/4 N.P.T.	1 1/2-12	2	2
8M	190	9 1/4	1 ⁷ / ₈	7/16	1/4 N.P.T.	1 1/2-12	2 1/2	3



PAD	*PAD CAP. LBS.	DIMENSIONS						**PAD WEIGHT LBS.
		A IN.	B IN.	C IN.	D IN.	E IN.	F DIA.	
8	300	10 1/4	2 ⁵ / ₁₆	3/16	3/8 N.P.T.	2-12	3	8
10	415	12	2 ¹³ / ₁₆	1/4	3/8 N.P.T.	2-12	4 ³ / ₁₆	12
12	530	14	2 ¹³ / ₁₆	5/16	3/8 N.P.T.	2-12	4 ³ / ₁₆	16
16	1105	19	2 ¹⁵ / ₁₆	5/16	3/8 N.P.T.	2-12	4 ³ / ₁₆	29



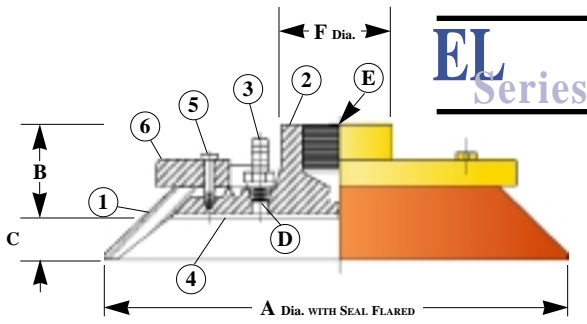
PAD	*PAD CAP. LBS.	DIMENSIONS						**PAD WEIGHT LBS.
		A IN.	B IN.	C IN.	D IN.	E IN.	F DIA.	
20	1600	22 3/4	2 ⁵ / ₁₆	7/16	1/2 N.P.T.	1/2-13	5	38
24	2280	27 1/2	2 ⁵ / ₁₆	3/8	1/2 N.P.T.	1/2-13	5	54

- 1 = Seal Ring
- 2 = Lift Plate
- 3 = Hose Stem
- (4SP, 6SP, 3SPEL, 4SPEL, 4M, 5M = 1/4 I.D. hose)
- (8SP, 8M, 8, 10, 12, 16 = 3/8 I.D. hose)
- (20 = 1/2 I.D. hose)
- (24 = 3/4 I.D. hose)

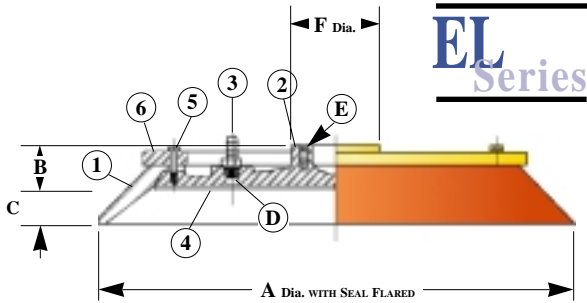
- 4 = Scuff Pad
- 5 = Clamping Ring Cap Screw
- 6 = Clamping Ring

*Pad Cap. = Working load limit for lifting speeds to 30 feet per minute with material in the horizontal plane.

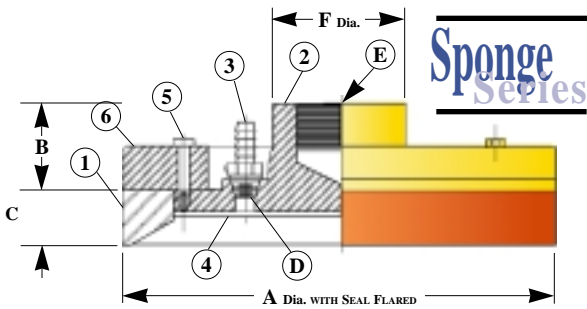
**Pad Weight = Weight is for pad as shown.



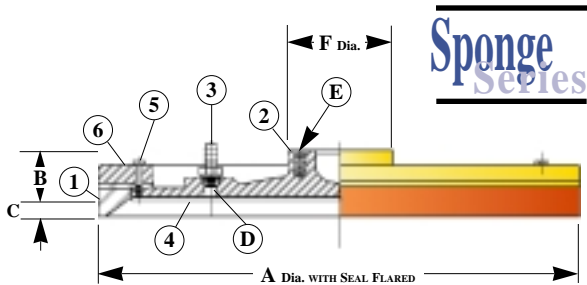
PAD	*PAD CAP. LBS.	DIMENSIONS						**PAD WEIGHT LBS.
		A IN.	B IN.	C IN.	D IN.	E IN.	F DIA.	
8EL	400	13 ³ / ₄	2 ⁵ / ₁₆	1	3/8 N.P.T.	2-12	3	9
12EL	630	17 ³ / ₄	2 ¹³ / ₁₆	1 ¹ / ₄	3/8 N.P.T.	2-12	4 ³ / ₁₆	18
16EL	1240	24 ¹ / ₂	2 ¹⁵ / ₁₆	1 ⁹ / ₁₆	3/8 N.P.T.	2-12	4 ³ / ₁₆	33



PAD	*PAD CAP. LBS.	DIMENSIONS						**PAD WEIGHT LBS.
		A IN.	B IN.	C IN.	D IN.	E IN.	F DIA.	
20EL	1765	30	2 ⁵ / ₁₆	2 ⁵ / ₁₆	1/2 N.P.T.	1/2-13	5	52



PAD	*PAD CAP. LBS.	DIMENSIONS						**PAD WEIGHT LBS.
		A IN.	B IN.	C IN.	D IN.	E IN.	F DIA.	
8S	200	9 ³ / ₄	2 ⁵ / ₁₆	3/4	3/8 N.P.T.	2-12	3	8
10S	340	12	2 ¹³ / ₁₆	3/4	3/8 N.P.T.	2-12	4 ³ / ₁₆	12
12S	450	14 ¹ / ₁₆	2 ¹³ / ₁₆	1	3/8 N.P.T.	2-12	4 ³ / ₁₆	16
16S	930	18 ⁹ / ₁₆	2 ¹⁵ / ₁₆	7/8	3/8 N.P.T.	2-12	4 ³ / ₁₆	28



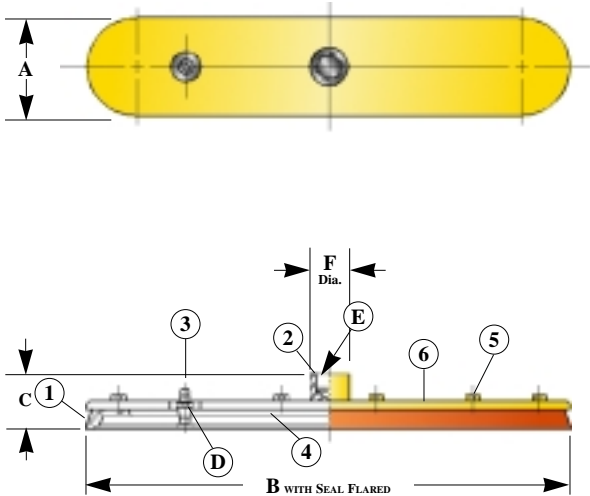
PAD	*PAD CAP. LBS.	DIMENSIONS						**PAD WEIGHT LBS.
		A IN.	B IN.	C IN.	D IN.	E IN.	F DIA.	
20S	1400	22 ¹ / ₂	2 ⁵ / ₁₆	13/16	1/2 N.P.T.	1/2-13	5	34
24S	2080	27	2 ⁵ / ₁₆	3/4	1/2 N.P.T.	1/2-13	5	50

- 1 = Seal Ring
- 2 = Lift Plate
- 3 = Hose Stem
(8EL, 12EL, 16EL, 8S, 10S, 12S, 16S = 3/8 I.D. hose)
(20EL, 20S = 1/2 I.D. hose)
(24S = 3/4 I.D. hose)

- 4 = Scuff Pad
- 5 = Clamping Ring Cap Screw
- 6 = Clamping Ring

*Pad Cap. = Working load limit for lifting speeds to 30 feet per minute with material in the horizontal plane.
 **Pad Weight = Weight is for pad as shown.

VL Series



PAD	*PAD CAP. LBS.	DIMENSIONS						**PAD WEIGHT LBS.
		A IN.	B IN.	C IN.	D IN.	E IN.	F DIA.	
1.12VL	65	2	14	3	1/4 N.PT.	1 1/2 -12	2	6
1.22VL	90	2	24	3	1/8 N.PT.	1 1/2 -12	2	10
2.12VL	130	4	13	3	3/8 N.PT.	1 1/2 -12	2	12
2.24VL	300	4	26	3	3/8 N.PT.	1 1/2 -12	2 1/2	25
3.13VL	220	5	15	3	3/8 N.PT.	1 1/2 -12	2	27
3.23VL	400	5	25	3	3/8 N.PT.	1 1/2 -12	2	35
5.13VL	330	7	15	3	3/8 N.PT.	2-12	3	10
5.18VL	465	7	20	3	3/8 N.PT.	2-12	3	46
7.28VL	1030	9	30	3	3/8 N.PT.	2-12	3	38
12.26VL	1465	14	29	4	3/8 N.PT.	2-12	3	43
19.19VL	1600	21	21	4	3/8 N.PT.	1 1/2 -13	3 1/2	40

- 1 = Seal Ring
- 2 = Lift Plate
- 3 = Hose Stem

(1.12VL, 1.22VL, 2.12VL = 1/4 I.D. hose)

(2.24VL, 3.13VL, 3.23VL, 5.13VL,

5.18VL, 7.28VL = 3/8 I.D. hose)

(12.26VL, 19.19VL = 1/2 I.D. hose)

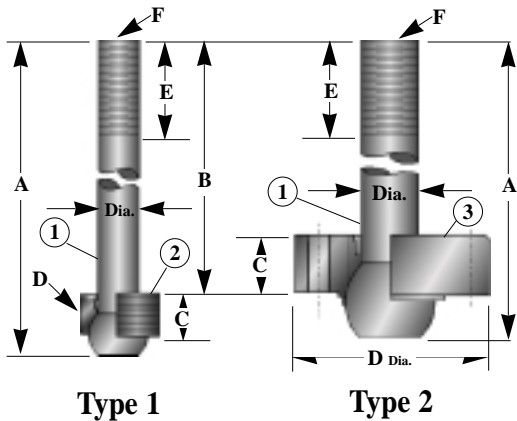
- 4 = Scuff Pad

- 5 = Clamping Ring Cap Screw

- 6 = Clamping Ring

*Pad Cap. = Working load limit for lifting speeds to 30 feet per minute with material in the horizontal plane.

**Pad Weight = Weight is for pad as shown.



Type 1

Type 2

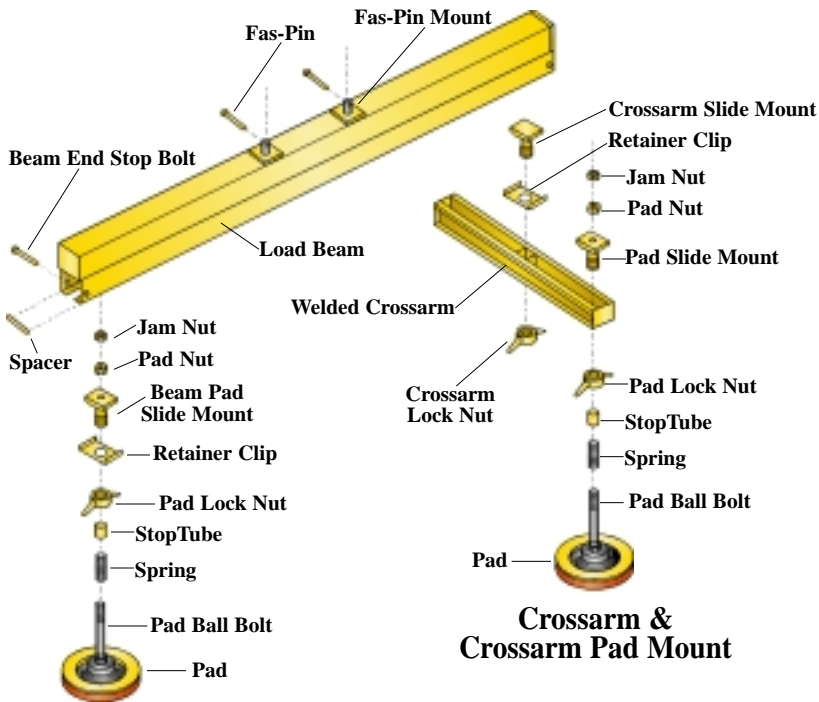
- 1. Ball Bolt Stem
- 2. Ball Bolt Insert
- 3. Ball Bolt Cap

Ball Bolt Specifications

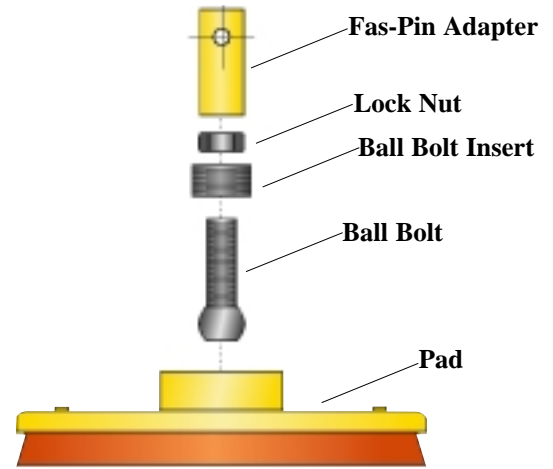
PAD	* MOUNT SERIES	DIMENSIONS							TYPE
		DIA. IN.	A IN.	B IN.	C IN.	D IN. THD.	E IN.	F IN. THD.	
4SP, 6SP	B7	1/2	7	6	3/4	1 1/2 -12	2 3/4	1/2 -12	1
5M, 8M	B12	1/2	12	11	3/4	1 1/2 -12	2 3/4	1/2 -13	1
1.12VL-3.23VL	B15	1/2	15	14	3/4	1 1/2 -12	2 3/4	1/2 -13	1
8SP	B4	1	4 1/4	3	1	2-12	3 1/8	1-14	1
8-16	B12	1	12	11	1	2-12	3	1-14	1
8EL-16EL									
8S-16S	B15	1	15	14	1	2-12	3	1-14	1
5.13VL-12.26VL									
20, 24	B12	1 1/2	12	11	9/16	5	3 3/4	1 1/2 -12	2
20EL									
20S, 24S	B15	1 1/2	15	14	9/16	5	3 3/4	1 1/2 -12	2
19.19VL									

* Any mount series to the right of a pad group is compatible with any pad listed within the group.

PARTS DESCRIPTION



Beam Pad Mount



Typical Fas-Pin Single Mount

PAD BALL BOLT: The Standard ball bolt mount can pivot any direction 7 1/2 degrees to allow for surface curvature. Rigid mounts also available.

BEAM PAD SLIDE MOUNT: For mounting vacuum pads in a single row under a beam.

CROSSARM PAD SLIDE MOUNT: For mounting vacuum pads on crossarms. Also, fully adjustable.

CROSSARM SLIDE MOUNT: For mounting crossarm on beam. Crossarms are also adjustable along beam.

CROSSARM LOCK NUT: For use with crossarm slide mount for locking crossarm in position after adjustment is made.

PAD LOCK NUT: For use with Beam and Crossarm slide mounts for locking pads in position after adjustment is made.

BEAM END STOP BOLT: Limits maximum crossarm adjustment.

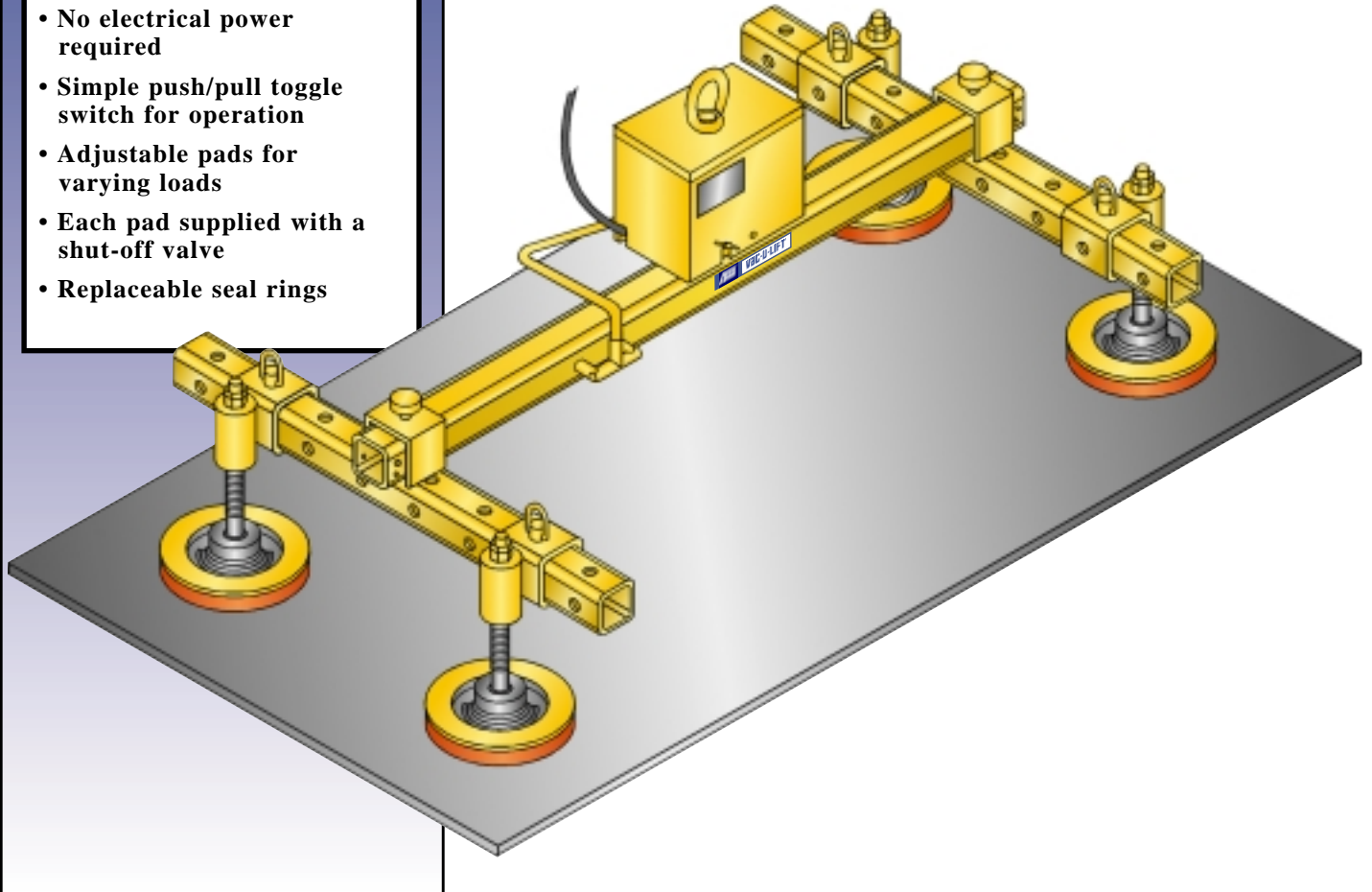
FAS-PIN CONNECTION: Standard on all standard load beams for quick connection and removal of powerpac.

VAC-U-LIFT

- Capacities to 1100 lbs.
- No electrical power required
- Simple push/pull toggle switch for operation
- Adjustable pads for varying loads
- Each pad supplied with a shut-off valve
- Replaceable seal rings

VP Series

STANDARD VACUUM LIFTER



The Light-Duty, Versatile, Modular Lifter for Loads up to 1100 lbs. Operates on Normal Plant Air Supply.

The VP Series Standard Vac-U-Lift Vacuum Lifter is designed for the efficient handling of a large variety of non-porous loads weighing up to 1100 lbs. Such materials as steel, aluminum, glass, polished granite, hardboard, plastic sheet, and many types of irregular shaped objects may be handled. Lifter is normally used to move material for relatively short distances.

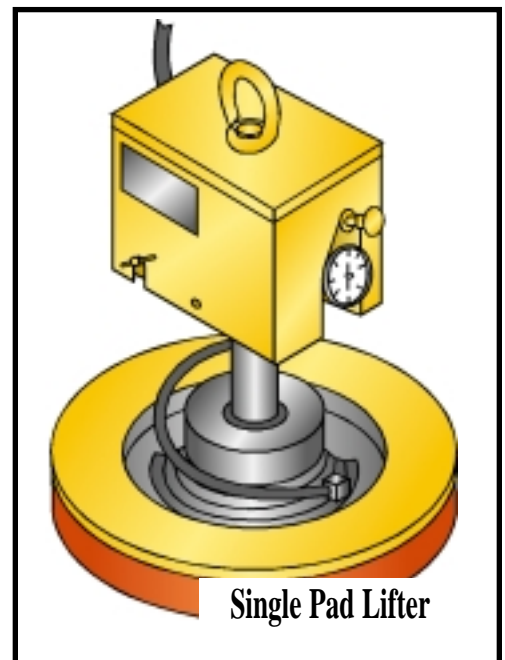
A single-pad unit may be used individually for fast, mar-free material handling or, because of its modular design, it may be used in custom multiple-pad lifter designs when required by the size, shape, and type of material to be handled. VP Series Lifter features a patented, uniquely-designed Venturi Power Pac and provide a highly-effective attachment and holding force when

operating on normal plant air supply. **No electrical power supply is required.** Air consumption is extremely low: 2 to 3 cfm at 50 to 60 psi.

Load beams, cross arms, and pads are easy to attach, remove, or adjust to accommodate changes in material size or shape. The entire Power Pac can be quickly disconnected to change load beams or accessories between operations. Depending on handling constraints, the entire Power Pac may be remotely mounted.

Extremely-low Operation and Maintenance Requirements

Each VP Series Lifter is equipped with simple push-pull vacuum attach-and-release control knob, plus an integral air-pressure regulator and vacuum gauge. The modular design of the VP Series Lifter, plus readily-available standard, interchangeable components, means simple, low-cost maintenance.



Single Pad Lifter

** Product specifications on reverse side*

VP

Series

STANDARD VACUUM LIFTER

Specifications

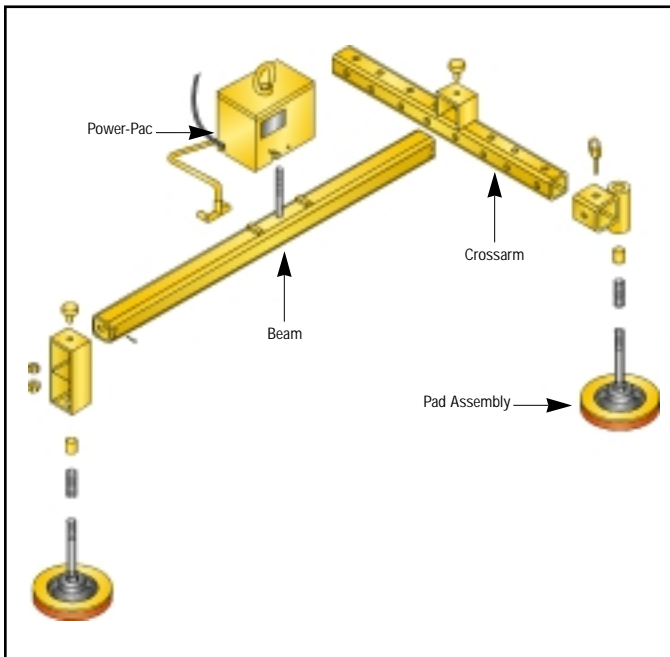
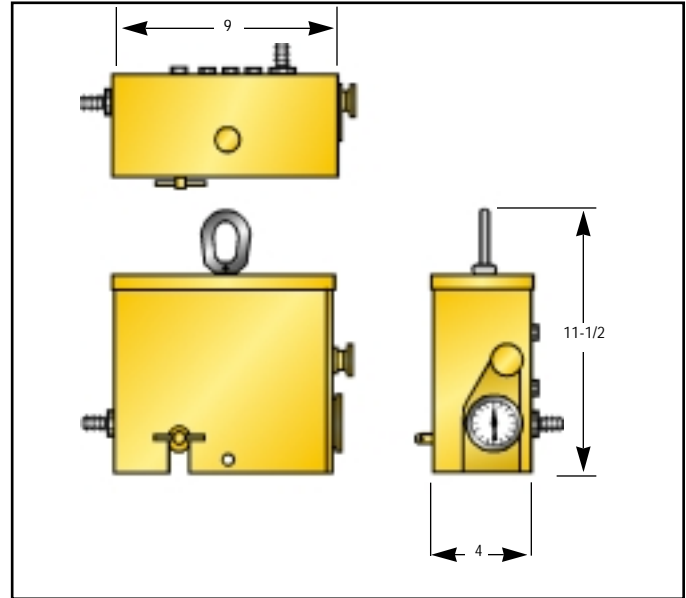
VP Power Pac

Equipped with two venturis, a manual control valve, air regulator, vacuum gauge, air line quick disconnect and other standard, related components assembled within a protective sheet metal housing. Operates at normal plant air pressure: 50 psi minimum, 200 psi maximum. Recommended operating pressure: 50 to 60 psi. Releasing the vacuum and allowing removal of the pads from the load is accomplished by venting the vacuum pads to atmosphere.

- Weight: 14 lbs.

Headroom Requirements

Single pad unit:	18"
Single row of pads:	27"
With cross arms:	23"



Load Beam

All load beams are standard structural formed steel with through bolt connection for the Power Pac. Cross arms or pads can be adjusted along the beam length to match load requirements.

- Standard beam lengths are 4', 6', 8', and 10'.
- Longer beams available for special applications.

Cross Arms

All cross arms are standard structural formed steel construction. They provide pad adjustment along cross arms and can be locked in position to match load requirements.

- Standard cross arm lengths are 3', 4', 5', and 6'.

Pads

For further information on pads, refer to: Vac-U-Lift Standard Vacuum Pad Selection Guide.

Optional Accessories

For further information on optional accessories, refer to: Vac-U-Lift Accessories Page.

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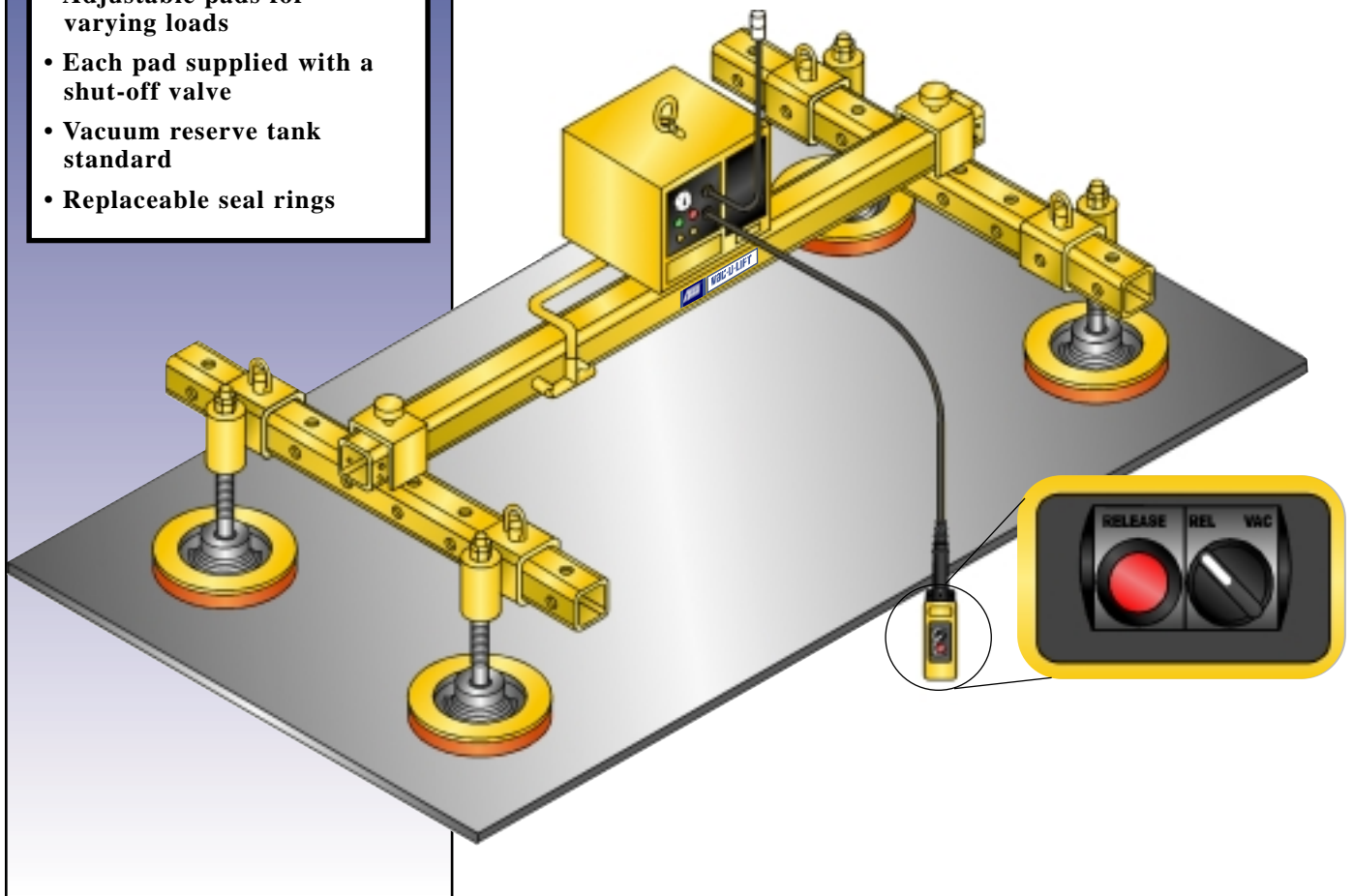
PART OF THE  FKI GROUP OF COMPANIES

VAC-U-LIFT®

- Capacities to 1100 lbs.
- Adjustable pads for varying loads
- Each pad supplied with a shut-off valve
- Vacuum reserve tank standard
- Replaceable seal rings

1100 Series

STANDARD VACUUM LIFTER



The Light-Duty, Versatile, Modular Lifter for Loads up to 1100 lbs.

The 1100 Series Standard Vac-U-Lift Vacuum Lifter is designed for the efficient handling of a large variety of non-porous loads weighing up to 1100 lbs. Such materials as steel, aluminum, glass, polished granite, hardboard, plastic sheet, and many types of irregular shaped objects may be handled.

A single-pad unit may be used individually for fast, mar-free material handling or, because of its modular design, it may be used in custom multiple-pad lifter designs when required by the size, shape, and type of material to be handled. Load beams, cross arms, and pads are easy to attach, remove, or adjust to accommodate changes in material size or shape. The entire Power Pac can be quickly disconnected to change load beams or accessories

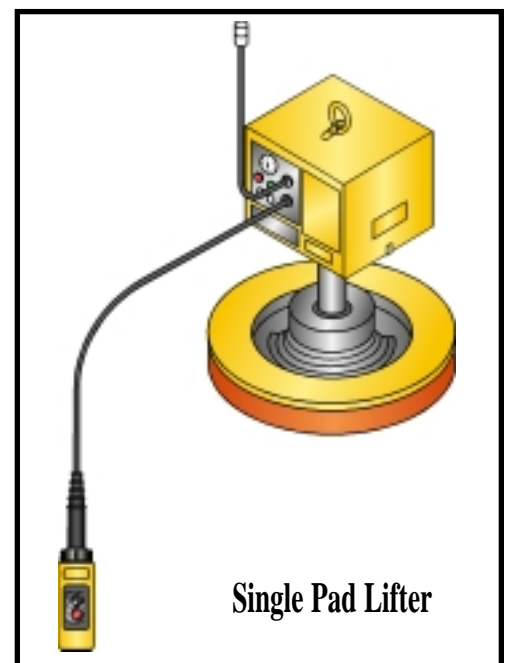
between operations. Depending on handling constraints, the entire Power Pac may be remotely mounted.

In case of an inadvertent power interruption, a reserve vacuum tank takes over which can hold the load up to 30 minutes under normal conditions with non-porous materials.

Time to attach lifter to loads is between 3 and 10 seconds, depending on number and type of pads.

Extremely-low Maintenance Requirements

The modular design of the 1100 Series Lifter, plus readily-available standard, interchangeable components, means simple, low-cost maintenance. The air filter is easily accessible for cleaning, and change-over between operation is fast, simple, and requires no special tools.



* Product specifications on reverse side

1100 Series

STANDARD VACUUM LIFTER

Specifications

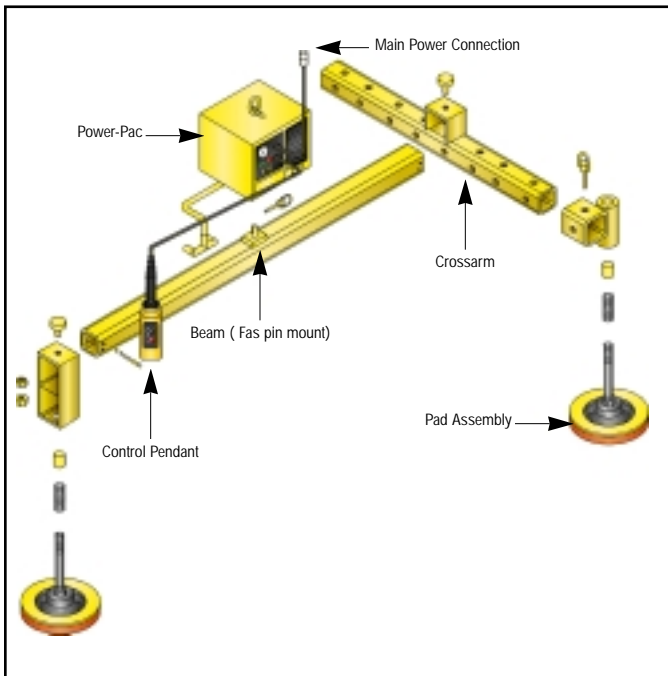
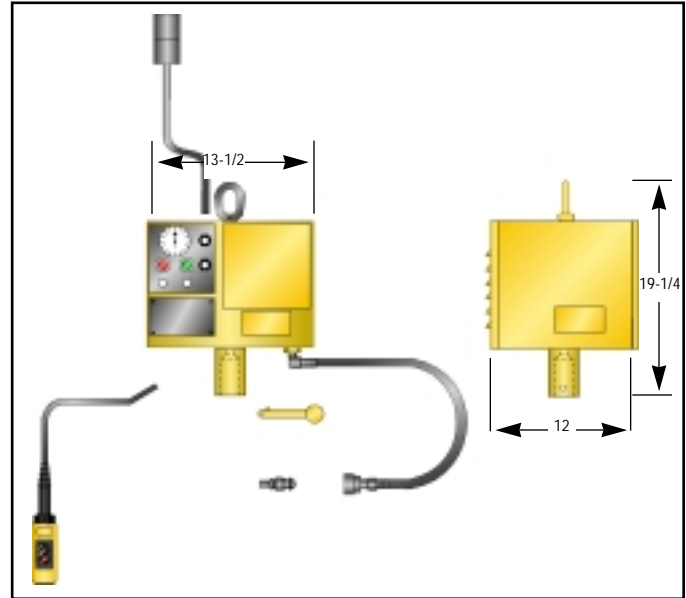
1100 Power Pac

Equipped with 3 ft pigtail power cord for a variety of AC power sources; 10 ft two-button push button station; 1/8 hp, 1575 rpm integral electric motor; 1.1 cfm, oil-less, diaphragm vacuum pump; 2-way vacuum control valve; air line filter; vacuum gauge; vacuum switch; 77 in.³ reserve tank for positive holding in case of power failure; red/green vacuum level visual indicator lights; on-off power switch and other related controls and accessories. Releasing the vacuum and allowing removal of the pads from the load is accomplished by venting the vacuum pads to atmosphere.

- Weight: 60 lbs.
- 500 watt power draw
- Power sources available:
 - 115 volt, single-phase, 60 hertz, 4.2 F.L.A.
 - Transformer for 230/460/575 volt AC

Headroom Requirements

Single pad unit	22"
Single row of pads:	34"
With cross arms:	30"



Load Beam

All load beams are standard structural formed steel with fas-pin connection for the Power Pac. Cross arms or pads can be adjusted along the beam length to match load requirements.

- Standard beam lengths are 4', 6', 8', and 10'.
- Longer beams available for special applications.

Cross Arms

All cross arms are standard structural formed steel construction. They provide pad adjustment along cross arms and can be locked in position to match load requirements.

- Standard cross arm lengths are 3', 4', 5', and 6'.

Pads

For further information on pads, refer to: Vac-U-Lift Standard Vacuum Pad Selection Guide.

Optional Accessories

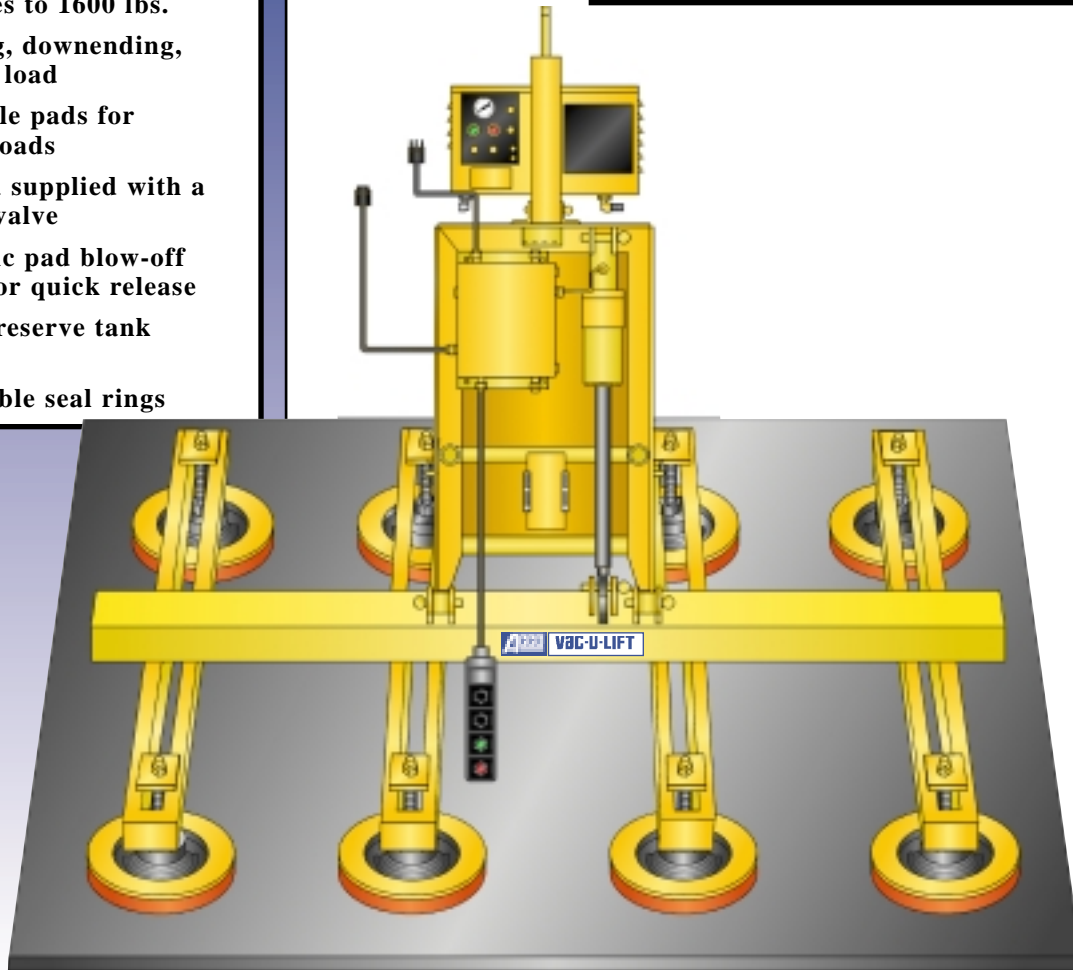
For further information on optional accessories, refer to: Vac-U-Lift Accessories Page.

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PART OF THE  FKI GROUP OF COMPANIES

- Capacities to 1600 lbs.
- Upending, downending, tilting of load
- Adjustable pads for varying loads
- Each pad supplied with a shut-off valve
- Automatic pad blow-off feature for quick release
- Vacuum reserve tank standard
- Replaceable seal rings



The Intermittant-Duty Linear Actuator or Continuous-Duty Hydraulic 90° Upender Vacuum Lifter for Loads up to 1600 lbs.

The 1600 Series 90° Upender Vacuum Lifter combines the standard 3200U Series Vacuum Lifter with a linear actuator or hydraulic 90° upender attachment for the efficient intermittent or continuous duty lifting and positioning of a large variety of non-porous loads weighing up to 1600 lbs. The unit can handle a wide range of ferrous and non-ferrous sheet or plate material minimizing damage to delicate polished or burnished surfaces, and without deformation to thin, preformed, or machined sections.

Simple push-button controls let the operator quickly attach, lift, and upend (through a 90° arc) any sheet or plate material.

Back-breaking effort and extra, time consuming labor normally required to lift and position a wide range of material into storage racks, inspection and assembly jigs, installation and welding fixtures, and machine processes can be eliminated.

The self-contained Upender has a simple faspin connection and power cord connectors to the standard 3200U Series Power Pac. Load beams, cross arms, and pads are easy to attach, remove, or adjust to accommodate changes in material size or shape.

Vacuum pad selection is the same as for the 3200 Series Standard Lifter. However, the pad capacities must be de-rated 50% to provide adequate capacity when the load is in the vertical, upended position.

In case of an inadvertent power interruption, a reserve vacuum tank takes over which can

hold the load up to 30 minutes under normal conditions with non-porous materials.

Time to attach lifter to loads is between 3 and 10 seconds, depending on number and type of pads.

Extremely-low Maintenance Requirements

The modular design of the 1600 Series 90° Upender Vacuum Lifter, plus readily-available standard, interchangeable components, means simple, low-cost maintenance. The air filter is easily accessible for cleaning, and change-over between operation is fast, simple, and requires no special tools.

* *Product specifications on reverse side*

1600 Series

STANDARD VACUUM LIFTER

Specifications

3200U Power Pac

Equipped with 3 ft pigtail power cord with twist lock connector for a variety of AC power sources; 10 ft four-button push button station; 1/3 hp, 1800 rpm integral electric motor; 4-1/2 cfm, oil-less, rotary vane vacuum pump; 4-way vacuum control valve; air line filter; vacuum gauge; vacuum switch; reserve valve; uses load beam as a reserve tank for positive holding in case of power failure; red/green vacuum level visual indicator lights; on-off power switch and other related controls and accessories. Releasing the vacuum and allowing removal of the pads from the load is accomplished by forcing air to the vacuum pads.

- Weight: 115 lbs.
- 1000 watt power draw
- Power sources available:
 - 115 volt, single-phase, 60 hertz, 6.1 F.L.A.
 - Transformer for 230/460/575 volt AC

1600 Series Continuous-Duty

Hydraulic 90° Upender Attachment

This complete unitized attachment assembly can be easily attached or removed from the standard 3200U Series Power Pac with a fas-pin connection and quick disconnect power and pendant plugs.

The Upender assembly is equipped with a reservoir with a 10" X 2" bore hydraulic cylinder, reservoir, .20 gpm pump and motor, power cord with connector for 115 volt, single-phase, 60 hertz; connector cords for 3200U Series power and control pendant; pivot pin connections for load beam and cylinder arm.

- Weight: 230 lbs.

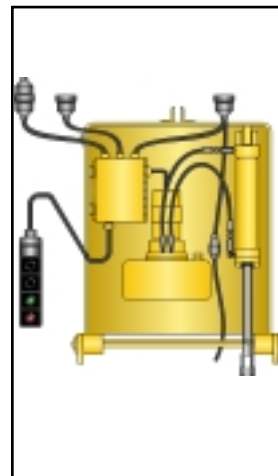
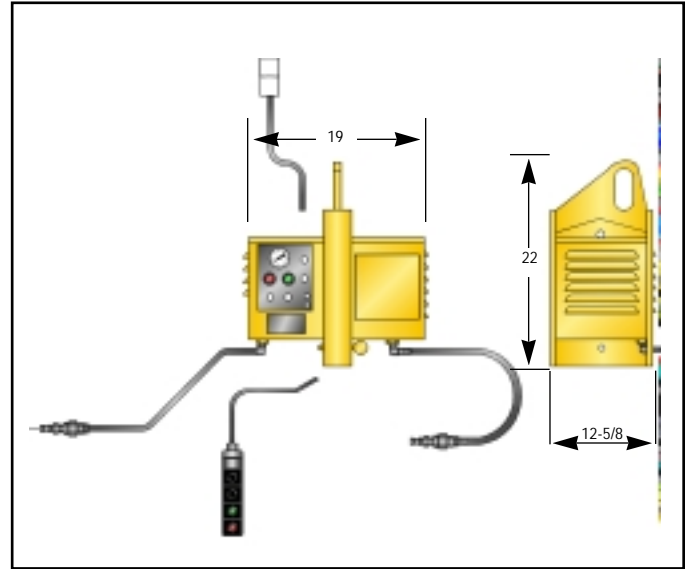
1600 Series Intermitant-Duty

Linear Actuator 90° Upender Attachment

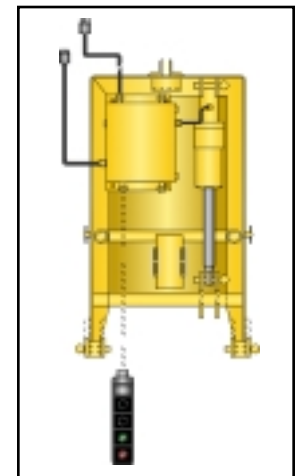
This complete unitized attachment assembly can be easily attached or removed from the standard 3200U Series Power Pac with a fas-pin connection and quick disconnect power and pendant plugs.

The Upender assembly is equipped with a linear actuator, power cord with connector for 115 volt, single-phase, 60 hertz; connector cords for 3200U Series power and control pendant; pivot pin connections for load beam and cylinder arm.

- Weight: 180 lbs.



Hydraulic 90°
Upender Attachment



Linear Actuator 90°
Upender Attachment

Load Beam

All load beams are standard structural formed steel, all-welded construction with pivot pin connection and secondary pivot pin connection for cylinder arm attachment to Upender assembly. Cross arms or pads can be adjusted along the beam length to match load requirements. A vacuum reserve tank is incorporated into the beam for positive holding in case of power failure.

- Standard beam lengths are 4', 6', 8', and 10'.

Cross Arms

All cross arms are standard structural formed steel construction and attach to load beam with an integral bracket. They provide full pad adjustment along cross arms and can be locked in position to match load requirements. The offset position of the bracket on the cross arm

provides the proper leverage to balance the entire Upender Lifter and load in both the vertical and horizontal positions. An even number of cross arms should be used to insure proper balance.

- Standard cross arm lengths are 3', 4', 5', and 6'.

Pads

For further information on pads, refer to: Vac-U-Lift Standard Vacuum Pad Selection Guide.

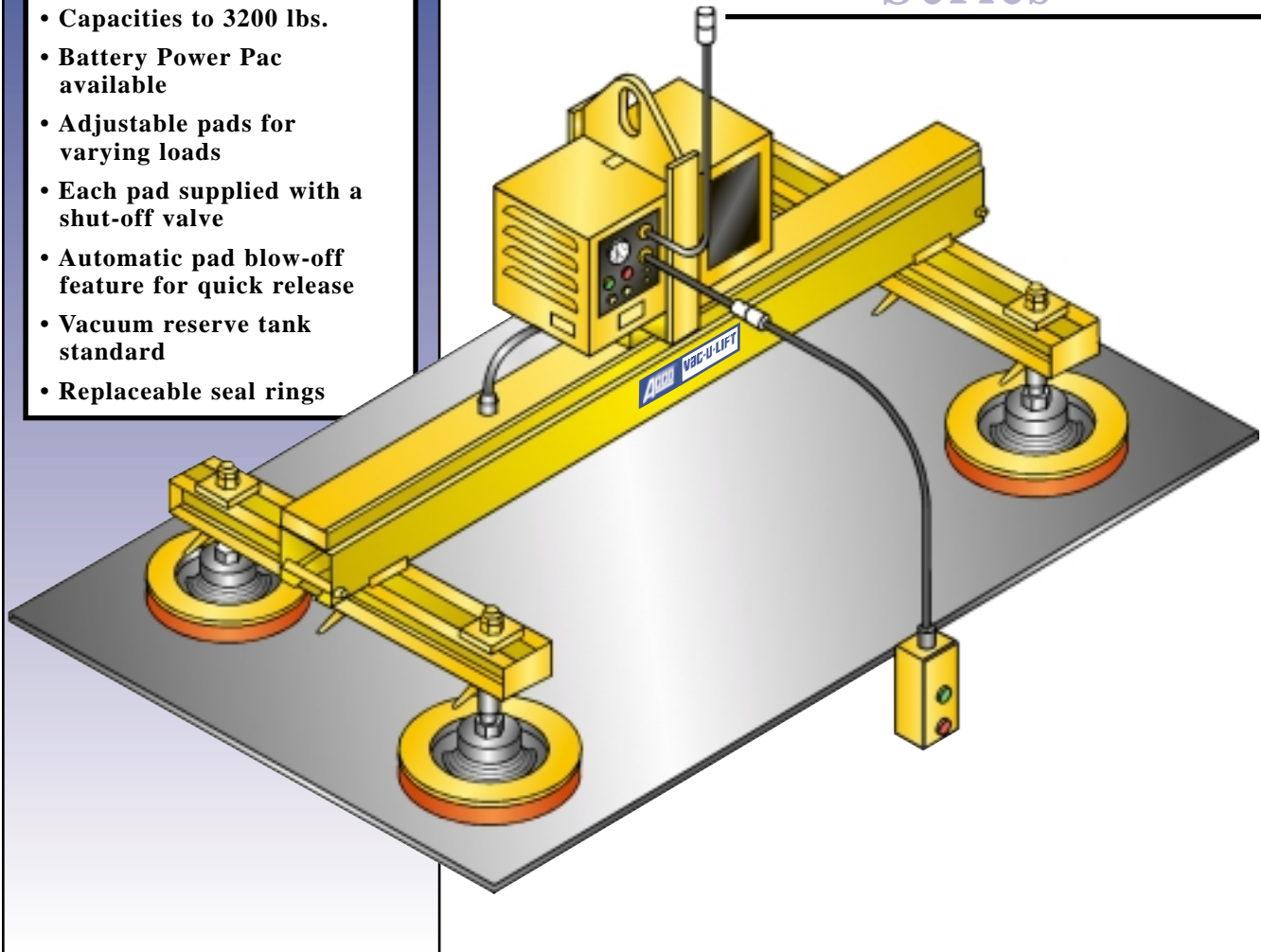
Optional Accessories

For further information on optional accessories, refer to: Vac-U-Lift Accessories Page.

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PART OF THE  FKI GROUP OF COMPANIES

- Capacities to 3200 lbs.
- Battery Power Pac available
- Adjustable pads for varying loads
- Each pad supplied with a shut-off valve
- Automatic pad blow-off feature for quick release
- Vacuum reserve tank standard
- Replaceable seal rings



The Heavy-Duty, Versatile, Modular Lifter for Loads up to 3200 lbs.

The 3200 Series Standard Vac-U-Lift Vacuum Lifter is designed for the efficient handling of a large variety of non-porous loads weighing up to 3200 lbs. Such materials as steel, aluminum, glass, polished granite, non-porous stone, slate, smooth concrete, hardboard, plastic sheet, and many types of irregular shaped objects may be handled.

A single-pad unit may be used individually for fast, mar-free material handling or, because of its modular design, it may be used in custom multiple-pad lifter designs when required by the size, shape, and type of material to be handled. Load beams, cross arms, and pads are easy to attach, remove, or adjust to accommodate changes in material size or shape. The entire Power Pac can be quickly disconnected to change load beams or accessories

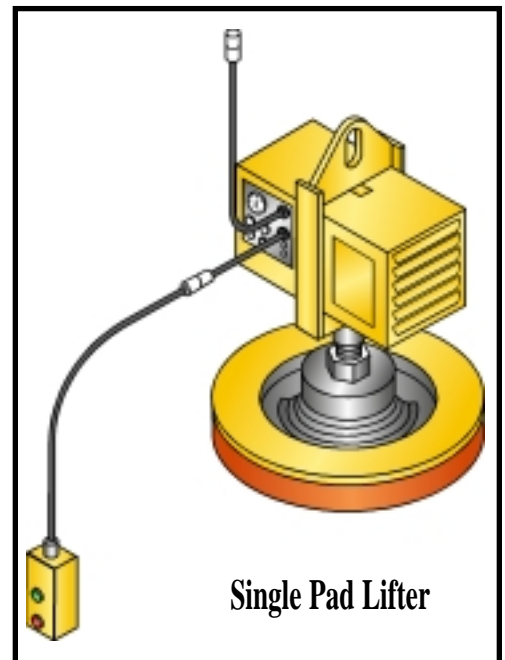
between operations. Depending on handling constraints, the entire Power Pac may be remotely mounted.

In case of an inadvertent power interruption, a reserve vacuum tank takes over which can hold the load up to 30 minutes under normal conditions with non-porous materials.

Time to attach lifter to loads is between 3 and 10 seconds, depending on number and type of pads.

Extremely-low Maintenance Requirements

The modular design of the 3200 Series Lifter, plus readily-available standard, interchangeable components, means simple, low-cost maintenance. The air filter is easily accessible for cleaning, and change-over between operation is fast, simple, and requires no special tools.



Single Pad Lifter

* Product specifications on reverse side

3200 Series

STANDARD VACUUM LIFTER

Specifications

3200S Power Pac

Equipped with 3 ft pigtail power cord with twist lock connector for a variety of AC power sources; 10 ft two-button push button station; 1/3 hp, 1800 rpm integral electric motor; 4-1/2 cfm, oil-less, rotary vane vacuum pump; 4-way vacuum control valve; air line filter; vacuum gauge; vacuum switch; reserve valve; uses load beam as a reserve tank for positive holding in case of power failure; red/green vacuum level visual indicator lights; on-off power switch and other related controls and accessories. Releasing the vacuum and allowing removal of the pads from the load is accomplished by forcing air to the vacuum pads.

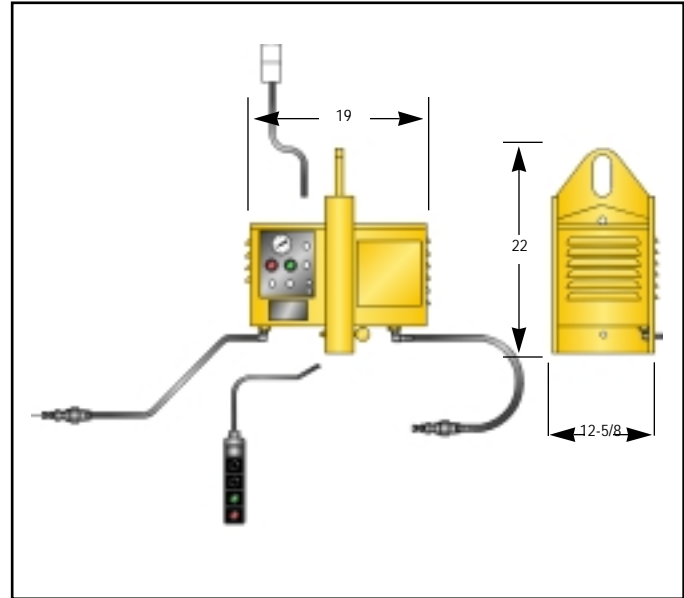
- Weight: 115 lbs.
- 1000 watt power draw
- Power sources available:
115 volt, single-phase, 60 hertz, 6.1 F.L.A.
Transformer for 230/460/575 volt AC

3200B Power Pac

12 volt DC battery-powered version of 3200S unit. Similar features as the standard 3200S without external power requirements. Unit utilizes a 1/4 hp, 3600 rpm integral electric motor; 4 cfm, oil-less, rotary vane vacuum pump. Operates up to 16 hours or 800 lifts under normal conditions without recharging. Panel-mounted plug for standard 12 volt DC charger. Using recommended 70 amp battery, unit is capable of being recharged in eight hours. Releasing the vacuum and allowing removal of the pads from the load is accomplished by venting the vacuum pads to atmosphere. Battery and charger are sold separately.

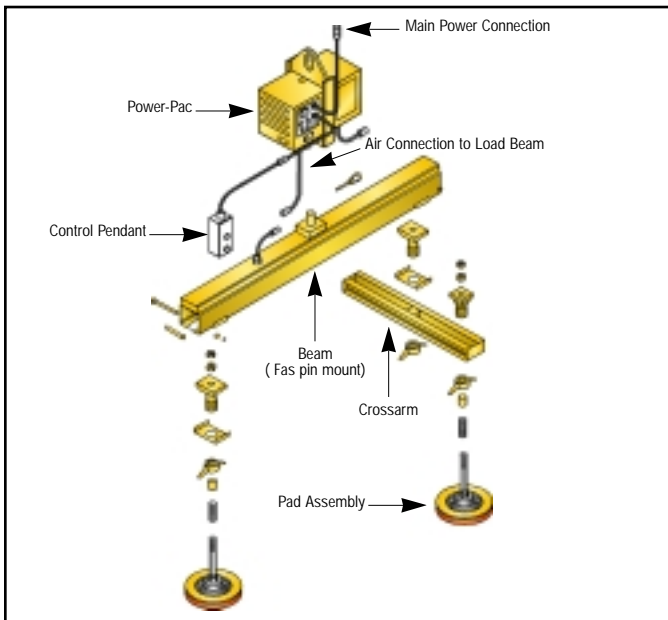
3200R Power Pac

Unit has the same features as the standard 3200S with the addition of an internal 50 in.³ reserve tank for positive holding in case of power failure. This unit is to be used with single pad units.



Headroom Requirements

Single pad unit:	24"
Single row of pads:	36"
With cross arms:	39"



Load Beam

All load beams are standard structural formed steel, all-welded construction with fas-pin connection for the Power Pac. Cross arms or pads can be adjusted along the beam length to match load requirements. A vacuum reserve tank is incorporated into the beam for positive holding in case of power failure.

- Standard beam lengths are 4', 6', 8', and 10'.
- Longer beams available for special applications.

Cross Arms

All cross arms are standard structural formed steel construction. They provide full pad adjustment along cross arms and can be locked in position to match load requirements.

- Standard cross arm lengths are 3', 4', 5', and 6'.

Pads

For further information on pads, refer to: Vac-U-Lift Standard Vacuum Pad Selection Guide.

Optional Accessories

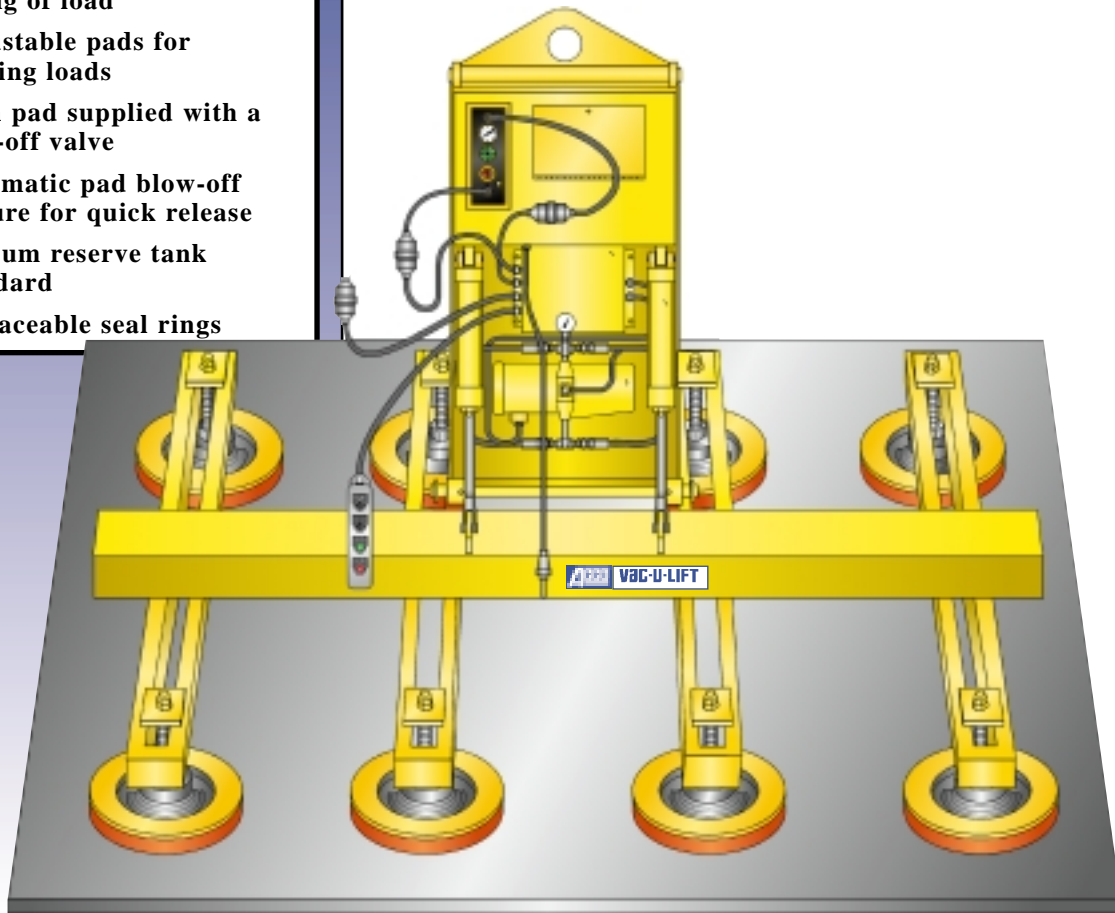
For further information on optional accessories, refer to: Vac-U-Lift Accessories Page.

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PART OF THE  FKI GROUP OF COMPANIES

- Capacities to 3600 lbs.
- Upending, downending, tilting of load
- Adjustable pads for varying loads
- Each pad supplied with a shut-off valve
- Automatic pad blow-off feature for quick release
- Vacuum reserve tank standard
- Replaceable seal rings



The Heavy-Duty, Hydraulic 90° Upender Vacuum Lifter for Loads up to 3600 lbs.

The 3600 Series 90° Upender Vacuum Lifter combines the standard 5600 Series Vacuum Lifter with a hydraulic 90° upender attachment for the efficient lifting and positioning of a large variety of non-porous loads weighing up to 3600 lbs. The unit can handle a wide range of ferrous and non-ferrous sheet or plate material minimizing damage to delicate polished or burnished surfaces, and without deformation to thin, preformed, or machined sections.

Simple push-button controls let the operator quickly attach, lift, and upend (through a 90° arc) any sheet or plate material.

Back-breaking effort and extra, time consuming labor normally required to lift and position a wide range of material into storage racks, inspection and assembly jigs, installation and welding fixtures, and machine processes can be eliminated.

The self-contained Upender has a simple faspin connection and power cord connectors to the standard 5600 Series Power Pac. Load beams, cross arms, and pads are easy to attach, remove, or adjust to accommodate changes in material size or shape.

Vacuum pad selection is the same as for the 5600 Series Standard Lifter. However, the pad capacities must be de-rated 50% to provide adequate capacity when the load is in the vertical, upended position.

In case of an inadvertent power interruption, a reserve vacuum tank takes over which can hold the load up to 30 minutes under normal conditions with non-porous materials.

Time to attach lifter to loads is between 3 and 10 seconds, depending on number and type of pads.

Extremely-low Maintenance Requirements

The modular design of the 3600 Series 90° Upender Vacuum Lifter, plus readily-available standard, interchangeable components, means simple, low-cost maintenance. The air filter is easily accessible for cleaning, and change-over between operation is fast, simple, and requires no special tools.

3600 Series

STANDARD VACUUM LIFTER

Specifications

5600 Power Pac

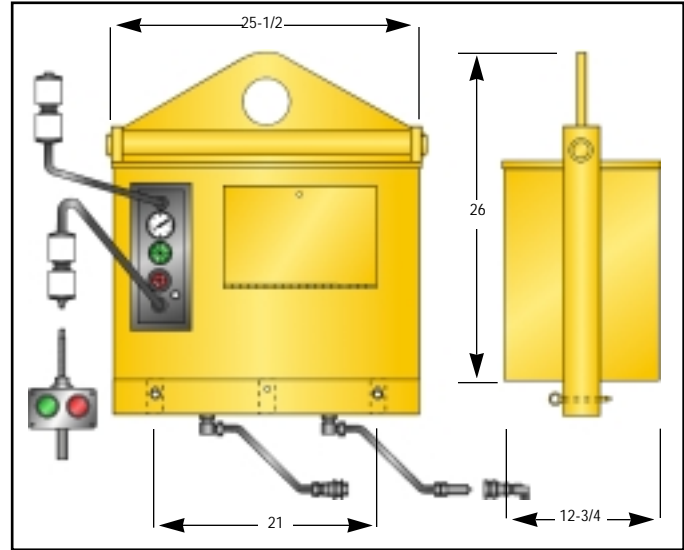
Equipped with 3 ft pigtail power cord with twist lock connector for a variety of AC power sources; 15 ft four-button push button station; 3/4 hp, 1800 rpm integral electric motor; 10 cfm, oil-less, rotary vane vacuum pump; 4-way vacuum control valve; air line filter; vacuum gauge; vacuum switch; reserve valve; 680 in.³ reserve tank for positive holding in case of power failure; red/green vacuum level visual indicator lights; on-off power switch and other related controls and accessories. Releasing the vacuum and allowing removal of the pads from the load is accomplished by forcing air to the vacuum pads.

- Weight: 210 lbs.
- 1000 watt power draw
- Power sources available
 - 115 volt, single-phase, 60 hertz, 18.0 F.L.A.
 - 230 volt, three-phase, 60 hertz, 3.0 F.L.A.
 - 460 volt, three-phase, 60 hertz, 1.5 F.L.A.
 - 575 volt, three-phase, 60 hertz, 1.2 F.L.A.

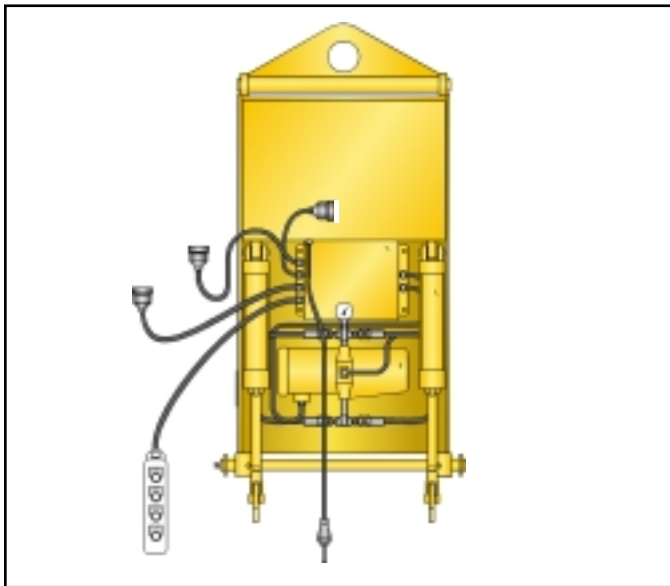
3600 Series 90 Upender Attachment

This complete unitized attachment assembly can be easily attached or removed from the standard 5600 Series Power Pac.

The Upender assembly is equipped with a reservoir with twin 10" X 2" bore hydraulic cylinders, reservoir, .65 gpm pump and motor, power cord with connector for a variety of AC power sources; connector cords for 5600 Series power and control pendant; pivot pin connections for load beam and cylinder arm.



- Weight: 265 lbs.
- Power sources available:
 - 230 volt, three-phase, 60 hertz
 - 460 volt, three-phase, 60 hertz
 - 575 volt, three-phase, 60 hertz



Optional Accessories

For further information on optional accessories, refer to: Vac-U-Lift Accessories Page.

Load Beam

All load beams are standard structural formed steel, all-welded construction with pivot pin connection and secondary pivot pin connection for cylinder arm attachment to Upender assembly. Cross arms or pads can be adjusted along the beam length to match load requirements. A vacuum reserve tank is incorporated into the beam for positive holding in case of power failure.

- Standard beam lengths are 10', 12', 14', 16', 18', and 20'.

Cross Arms

All cross arms are standard structural formed steel construction and attach to load beam with an integral bracket. They provide full pad adjustment along cross arms and can be locked in position to match load requirements. The offset position of the bracket on the cross arm provides the proper leverage to balance the entire Upender Lifter and load in both the vertical and horizontal positions. An even number of cross arms should be used to insure proper balance.

- Standard cross arm lengths are 4', 5', and 6'.

Pads

For further information on pads, refer to: Vac-U-Lift Standard Vacuum Pad Selection Guide.

Canadian Standards Association

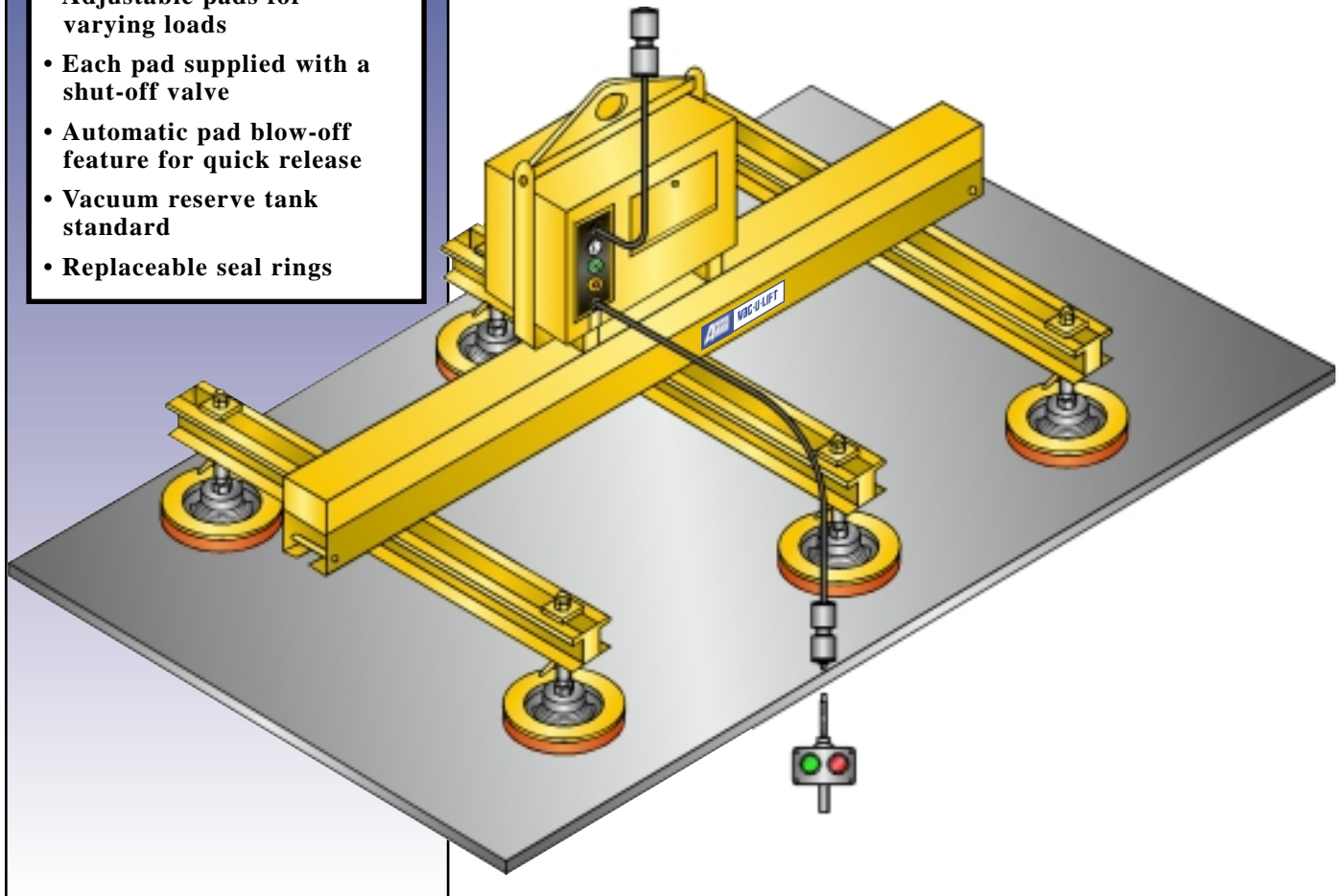
This equipment is in compliance with all applicable requirements.

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PART OF THE  FKI GROUP OF COMPANIES

- Capacities to 5600 lbs.
- Adjustable pads for varying loads
- Each pad supplied with a shut-off valve
- Automatic pad blow-off feature for quick release
- Vacuum reserve tank standard
- Replaceable seal rings



The Heavy-Duty, Versatile, Modular Lifter for Loads up to 5600 lbs.

The 5600 Series Standard Vac-U-Lift Vacuum Lifter is designed for the efficient handling of a large variety of non-porous loads weighing up to 5600 lbs. Such materials as steel, aluminum, glass, polished granite, non-porous stone, slate, smooth concrete, hardboard, plastic sheet, and many types of irregular shaped objects may be handled.

Load beams, cross arms, and pads are easy to attach, remove, or adjust to accommodate changes in material size or shape. The entire Power Pac can be quickly disconnected to change load beams or accessories between operations. Depending on handling

constraints, the entire Power Pac may be remotely mounted.

In case of an inadvertent power interruption, a reserve vacuum tank takes over which can hold the load up to 30 minutes under normal conditions with non-porous materials.

Time to attach lifter to loads is between 3 and 10 seconds, depending on number and type of pads.

Extremely-low Maintenance Requirements

The modular design of the 5600 Series Lifter, plus readily-available standard, interchangeable components, means

simple, low-cost maintenance. The air filter is easily accessible for cleaning, and change-over between operation is fast, simple, and requires no special tools.

5600 Series

STANDARD VACUUM LIFTER

Specifications

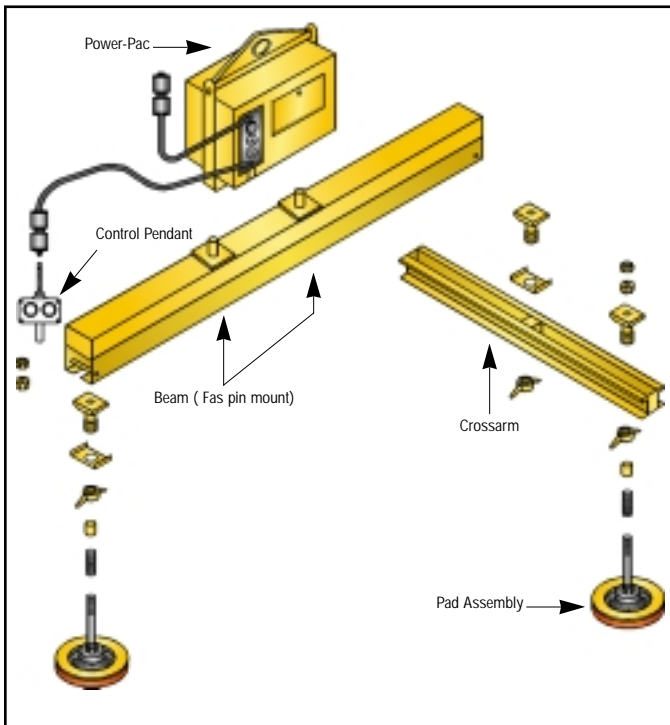
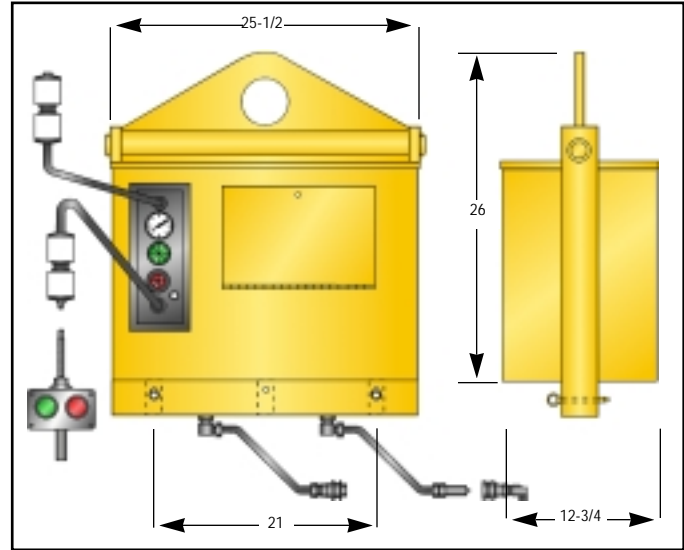
5600 Power Pac

Equipped with 3 ft pigtail power cord with twist lock connector for a variety of AC power sources; 10 ft two-button push button station; 3/4 hp, 1800 rpm integral electric motor; 10 cfm, oil-less, rotary vane vacuum pump; 4-way vacuum control valve; air line filter; vacuum gauge; vacuum switch; reserve valve; 680 in.³ reserve tank for positive holding in case of power failure; red/green vacuum level visual indicator lights; on-off power switch and other related controls and accessories. Releasing the vacuum and allowing removal of the pads from the load is accomplished by forcing air to the vacuum pads.

- Weight: 210 lbs.
- 1000 watt power draw
- Power sources available:
 - 115 volt, single-phase, 60 hertz, 18.0 F.L.A.
 - 230 volt, three-phase, 60 hertz, 4.0 F.L.A.
 - 460 volt, three-phase, 60 hertz, 2.0 F.L.A.
 - 575 volt, three-phase, 60 hertz, 1.6 F.L.A.

Headroom Requirements

Single pad unit:	32"
Single row of pads:	50"
With cross arms:	52"



Load Beam

All load beams are standard structural formed steel, all-welded construction with fas-pin connection for the Power Pac. Cross arms or pads can be adjusted along the beam length to match load requirements. A vacuum reserve tank is incorporated into the beam for positive holding in case of power failure.

- Standard beam lengths are 6', 8', 10', 12', and 14'.
- Longer beams available for special applications.

Cross Arms

All cross arms are standard structural formed steel construction. They provide full pad adjustment along cross arms and can be locked in position to match load requirements.

- Standard cross arm lengths are 4', 5', and 6'.

Pads

For further information on pads, refer to: Vac-U-Lift Standard Vacuum Pad Selection Guide.

Canadian Standards Association

This equipment is in compliance with all applicable requirements.

Optional Accessories

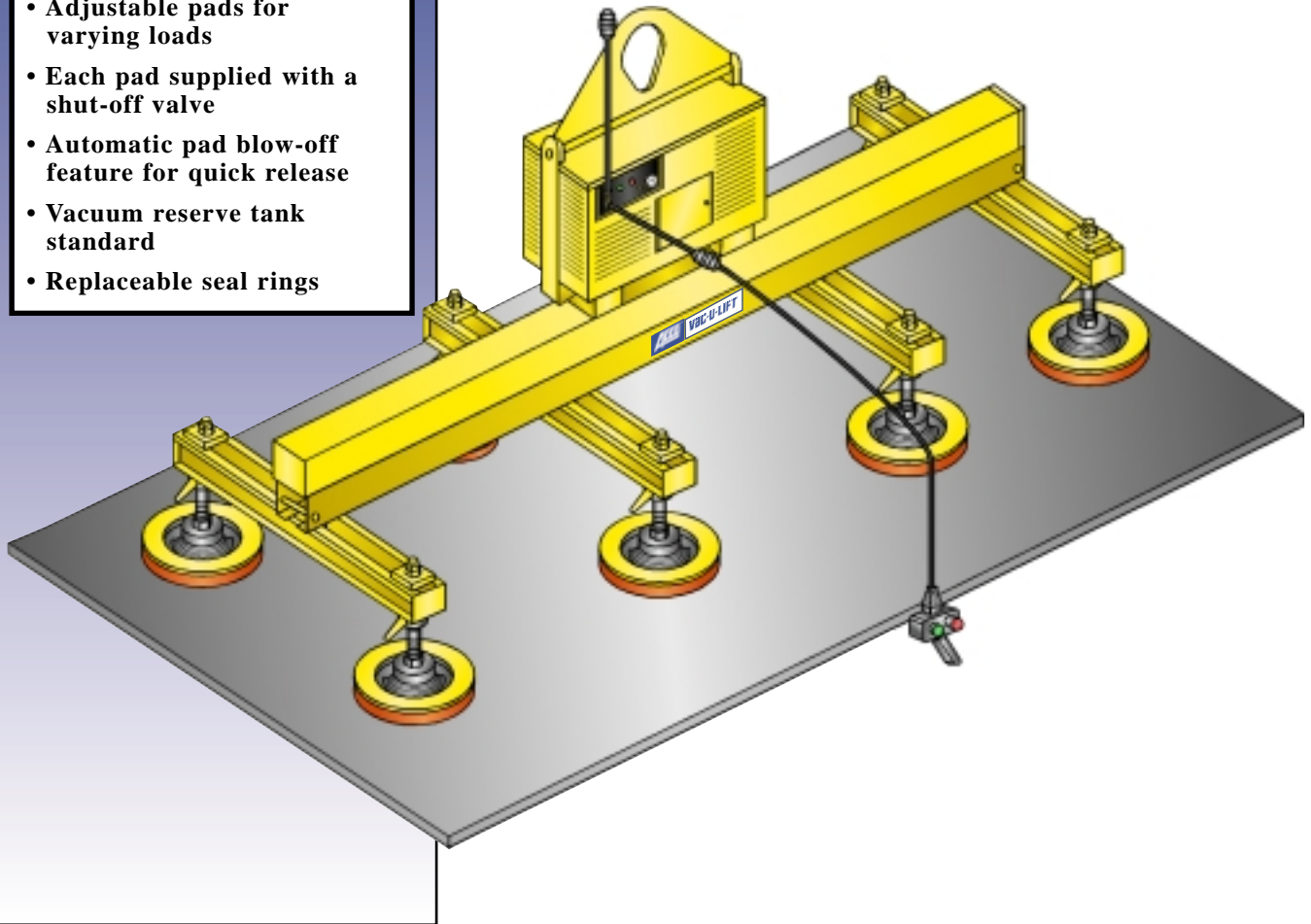
For further information on optional accessories, refer to: Vac-U-Lift Accessories Page.

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PART OF THE  FKI GROUP OF COMPANIES

- Capacities to 7600 lbs.
- Adjustable pads for varying loads
- Each pad supplied with a shut-off valve
- Automatic pad blow-off feature for quick release
- Vacuum reserve tank standard
- Replaceable seal rings



The Heavy-Duty, Versatile, Modular Lifter for Loads up to 7600 lbs.

The 7600 Series Standard Vac-U-Lift Vacuum Lifter is designed for the efficient handling of a large variety of non-porous loads weighing up to 7600 lbs. Such materials as steel, aluminum, glass, polished granite, non-porous stone, slate, smooth concrete, hardboard, plastic sheet, and many types of irregular shaped objects may be handled.

Load beams, cross arms, and pads are easy to attach, remove, or adjust to accommodate changes in material size or shape. The entire Power Pac can be quickly disconnected to

change load beams or accessories between operations. In case of an inadvertent power interruption, a reserve vacuum tank takes over which can hold the load up to 30 minutes under normal conditions with non-porous materials.

Time to attach lifter to loads is between 3 and 10 seconds, depending on number and type of pads.

Extremely-low Maintenance Requirements

The modular design of the 7600 Series Lifter, plus readily-available standard, interchangeable components, means

simple, low-cost maintenance. The air filter is easily accessible for cleaning, and change-over between operation is fast, simple, and requires no special tools.

7600 Series

STANDARD VACUUM LIFTER

Specifications

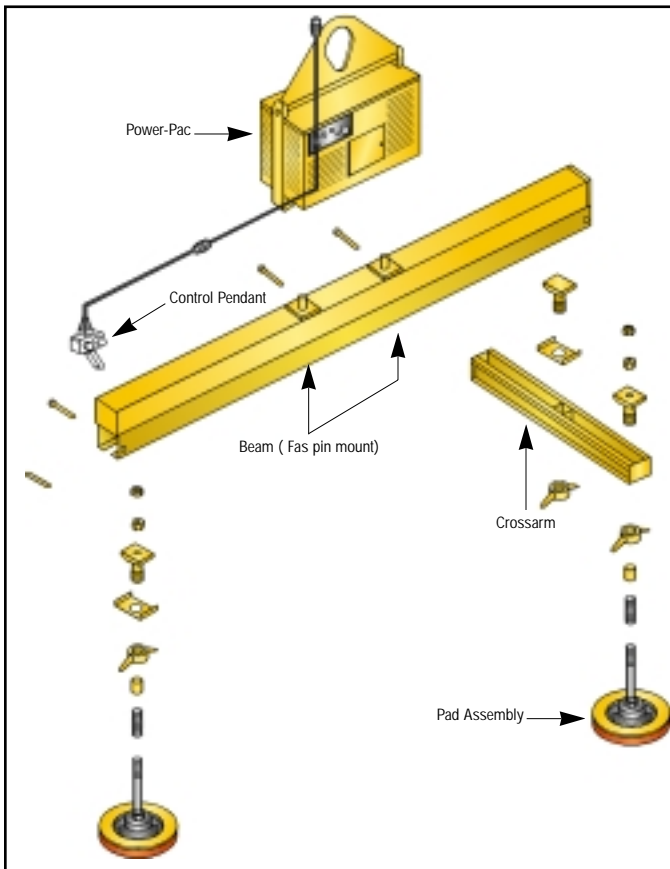
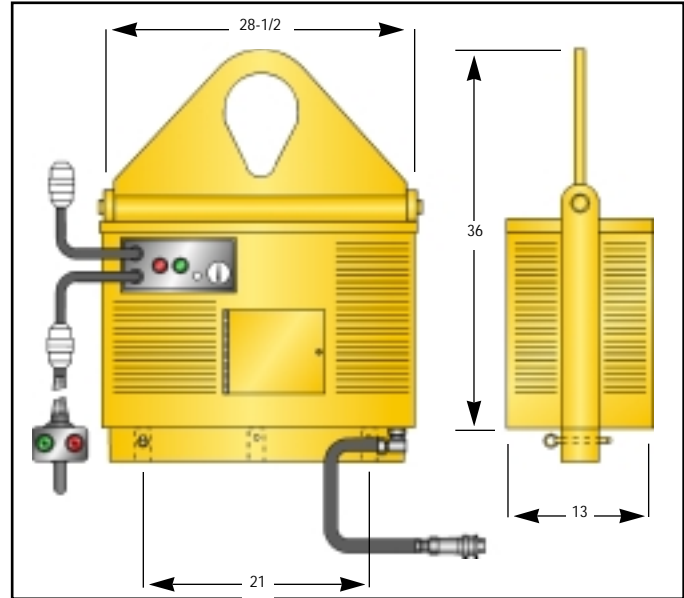
7600 Power Pac

Equipped with 3 ft pigtail power cord with twist lock connector for a variety of AC power sources; 10 ft two-button push button station; 1-1/2 hp, 1800 rpm integral electric motor; 21 cfm, lubricated, rotary vane vacuum pump; 4-way vacuum control valve; air line filter; vacuum gauge; vacuum switch; reserve valve; 760 in.³ reserve tank for positive holding in case of power failure; red/green vacuum level visual indicator lights; on-off power switch and other related controls and accessories. Releasing the vacuum and allowing removal of the pads from the load is accomplished by forcing air to the vacuum pads.

- Weight: 275 lbs.
- 1800 watt power draw
- Power sources available:
 - 230 volt, three-phase, 60 hertz, 7.0 F.L.A.
 - 460 volt, three-phase, 60 hertz, 4.0 F.L.A.
 - 575 volt, three-phase, 60 hertz, 3.2 F.L.A.

Headroom Requirements

Single pad unit:	42"
Single row of pads:	62"
With cross arms:	64"



Load Beam

All load beams are standard structural formed steel, all-welded construction with fas-pin connection for the Power Pac. Cross arms or pads can be adjusted along the beam length to match load requirements. A vacuum reserve tank is incorporated into the beam for positive holding in case of power failure.

- Standard beam lengths are 12', 14', 16', 18', and 20'.
- Longer beams available for special applications.

Cross Arms

All cross arms are standard structural formed steel construction. They provide full pad adjustment along cross arms and can be locked in position to match load requirements.

- Standard cross arm lengths are 4', 5', and 6'.

Pads

For further information on pads, refer to: Vac-U-Lift Standard Vacuum Pad Selection Guide.

Canadian Standards Association

This equipment is in compliance with all applicable requirements.

Optional Accessories

For further information on optional accessories, refer to: Vac-U-Lift Accessories Page.

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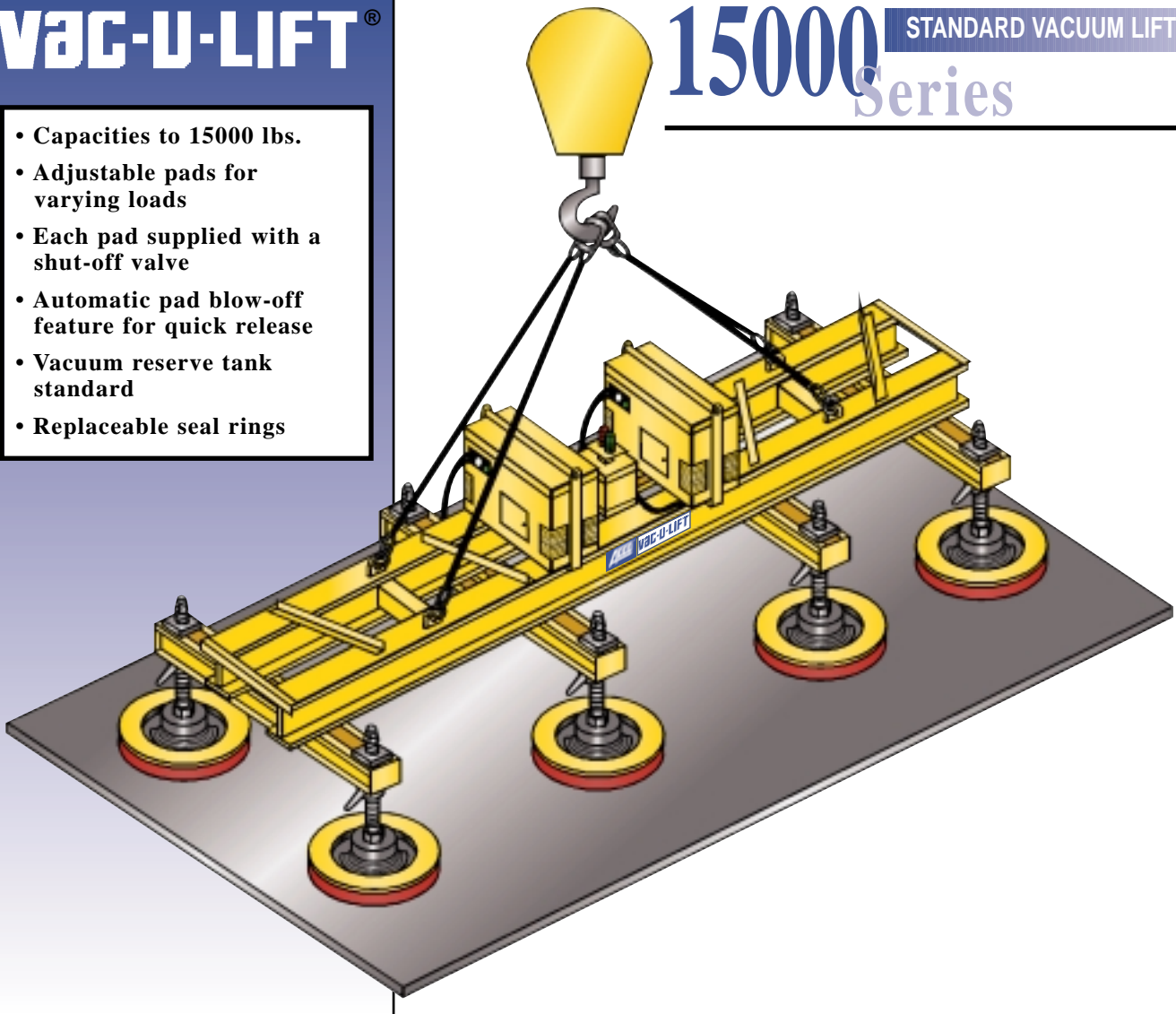
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VAC-U-LIFT®

15000 Series

STANDARD VACUUM LIFTER

- Capacities to 15000 lbs.
- Adjustable pads for varying loads
- Each pad supplied with a shut-off valve
- Automatic pad blow-off feature for quick release
- Vacuum reserve tank standard
- Replaceable seal rings



The Heavy-Duty, Versatile, Modular Lifter for Loads up to 15000 lbs.

The 15000 Series Standard Vac-U-Lift Vacuum Lifter is designed for the efficient handling of a large variety of non-porous loads weighing up to 15000 lbs. 15000 Series Lifter consist of dual, interchangeable 7600 Series Power Pacs or a PP300 Series Power Pac mounted on a cross-reinforced, steel double-girder load beam.

Because 15000 Series Lifters are of a totally modular design, cross arms and vacuum pads can be rearranged to fit various material specifications without modifications or design changes required in the unit itself. Trolley-mounted cross arms are pin-locked and completely adjustable along the beam length. Re-positioning of vacuum pads on cross

arms can also be accomplished quickly and easily.

In case of an inadvertent power interruption, a reserve vacuum tank takes over which can hold the load up to 30 minutes under normal conditions with non-porous materials.

Time to attach lifter to loads is between 3 and 10 seconds, depending on number and type of pads.

Extremely-low Maintenance Requirements

The modular design of the 15000 Series Lifter, plus readily-available standard, interchangeable components, means simple, low-cost maintenance. The air filters are easily accessible for cleaning, and change-over between operation is fast, simple, and requires no special tools.

** Product specifications on reverse side*

15000 Series

STANDARD VACUUM LIFTER

Specifications

7600 Power Pac (2 required)

Power Pacs are coupled by common controls to operate in unison, yet each has an independent safety reserve system. Equipped with 6 ft pigtail power cord with twist lock connector for a variety of AC power sources; 15 ft two-button push button station. Each Power Pac consists of a 1-1/2 hp, 1800 rpm integral electric motor; 21 cfm, lubricated, rotary vane vacuum pump; 4-way vacuum control valve; air line filter; vacuum gauge; vacuum switch; reserve valve; 760 in.³ reserve tank for positive holding in case of power failure; on-off power switch and other related controls and accessories. Large red/green vacuum level visual indicator lights with 360 visibility is also included. Releasing the vacuum and allowing removal of the pads from the load is accomplished by forcing air to the vacuum pads.

- Weight: 275 lbs. each
- 1800 watt power draw each
- Power sources available:
 - 230 volt, three-phase, 60 hertz, 7.0 F.L.A.
 - 460 volt, three-phase, 60 hertz, 4.0 F.L.A.
 - 575 volt, three-phase, 60 hertz, 3.2 F.L.A.

PP300 Power Pac (1 required)

Equipped with 3 ft pigtail power cord with twist lock connector for a variety of AC power sources; 15 ft two-button push button station. Power Pac consists of a 3 hp, 1800 rpm AC or DC integral electric motor, or belt driven by a gasoline engine; 48 cfm, lubricated, rotary vane vacuum pump; 4-way vacuum control valve; air line filter; vacuum gauge; vacuum switch; reserve valve; 2,280 in.³ reserve tank for positive holding in case of power failure; on-off power switch and other related controls and accessories. Large red/green vacuum level visual indicator lights with 360 visibility are also included. Releasing the vacuum and allowing removal of the pads from the load is accomplished by forcing air to the vacuum pads.

- Weight: 600 lbs.
- 3400 watt power draw
- Power sources available:
 - 230 volt, three-phase, 60 hertz, 9.0 F.L.A.
 - 460 volt, three-phase, 60 hertz, 5.0 F.L.A.
 - 575 volt, three-phase, 60 hertz, 3.2 F.L.A.
 - Gasoline engine

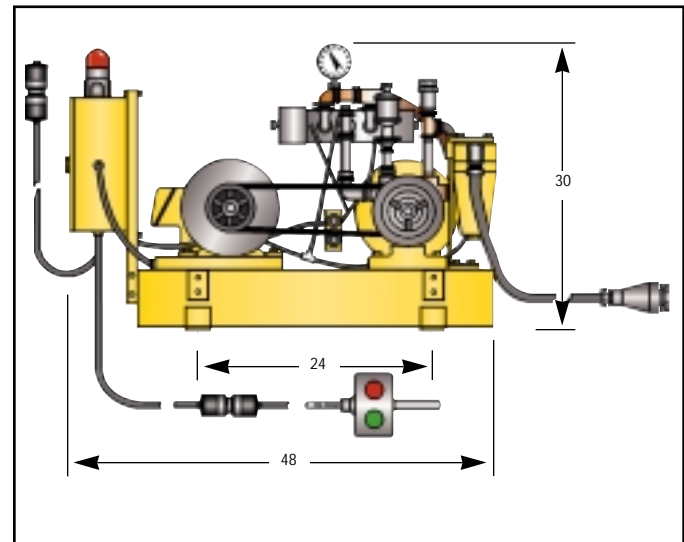
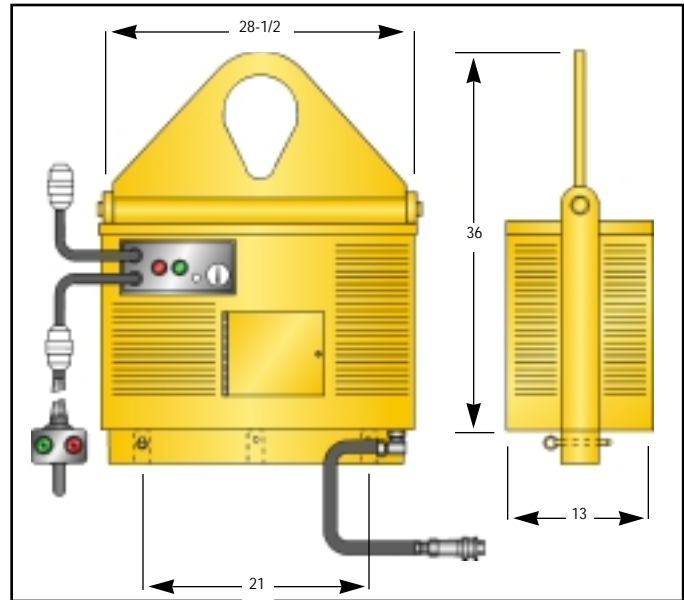
Headroom Requirements

Unit is available with either single point or twin hook suspension. Unit is suspended from wire rope slings.

Load Beam

All load beams are constructed with standard structural steel I-beam longitudinal members, cross-reinforced for strength and rigidity. Load beams are of all-welded construction with fas-pin connection for the Power Pacs. Beams are piped for vacuum pad connections, with manual shut-off valves at all pad and Power Pac attachment points. A vacuum reserve tank is incorporated into the beam for positive holding in case of power failure.

- Standard beam lengths are 14', 18', 22', 26', and 30'.
- Longer beams available for special applications.



Single hook suspension: 7'-0"
Twin hook suspension: 9'-6"

Cross Arms

All cross arms are standard structural formed steel construction and can be adjustable or fixed. Adjustable cross arms are equipped with trolley assembly to provide full pad adjustment along cross arms and can be locked in position to match load requirements. Fixed cross arms are welded to the load beam.

- Standard cross arm lengths are 6', 8', and 10'.

Pads

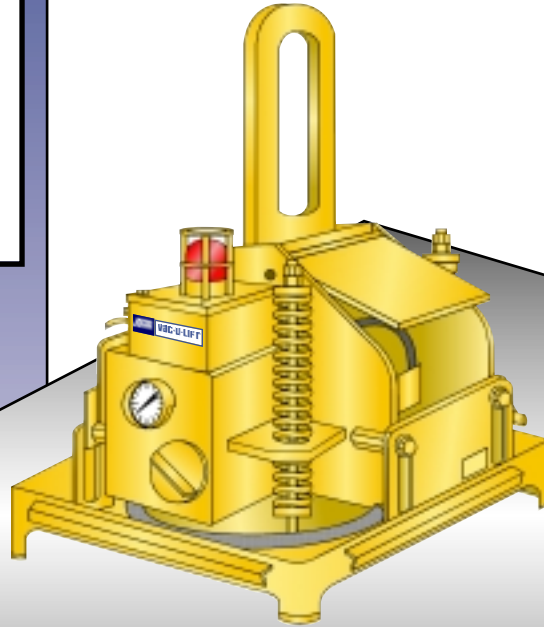
For further information on pads, refer to: Vac-U-Lift Standard Vacuum Pad Selection Guide.

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- Capacities to 4000 lbs.
- Gasoline model available
- Automatic pick-up and disengagement of material
- No pendant required
- Vacuum reserve tank standard
- Replaceable seal ring



A single 2 Ton IP Vacuum Lifter used with overhead crane, provides automatic vacuum pick-up and disengagement when handling non-porous materials up to 4,000 lbs.

The easy-to-operate Vac-U-Lift 2 Ton IP Standard Vacuum Lifter is designed for handling a wide variety of non-porous materials weighing up to 4,000 lbs. by overhead crane. It provides automatic pick-up and disengagement of materials through a uniquely-designed limit switch vacuum-control system actuated by the bail of the unit. No on/off vacuum pendant controls are required.

Materials handled may be steel, aluminum, lead sheets, brass, polished granite and non-porous stone, smooth concrete, metal and plastic containers, and many others. The unit is also capable of handling various types of contoured or wavy materials.

The 2 Ton IP Lifter is particularly suited for moving these materials to or from storage,

between stacks and process lines, and on or off trucks. Typical in plant applications include handling materials in conjunction with shears, burn or layout tables, conveyor lines, assembly fixtures, drill presses, polishers, buffers, washers, stretcher levelers, stretch formers, roller levelers, saws, roll coaters and formers, sanders, and other types of production operations.

In case of an inadvertent power interruption, a reserve vacuum tank takes over which can hold the load up to 30 minutes under normal conditions with non-porous materials.

Time to attach lifter to loads is between 5 and 10 seconds. A patented, segmented, flexible pad is designed to conform to contours of materials being lifted.

Extremely-low Operating and Maintenance Requirements

Due to absence of jaws and hooks, the 2 Ton IP Vacuum Lifter greatly reduces possibility of damage to materials being

handled. Plate and sheet need not be separated or blocked prior to lifting, thus saving handling time.

Ruggedly built and fully-encased to protect components, the 2 Ton IP Lifter is designed to operate with a minimum of maintenance, even under severe use conditions. When periodic maintenance is required, unit is designed for convenient access to operating parts. An extra-large air filter element also contributes to reduced cost of maintenance. All components are standard and readily available from stock.

2 Ton IP Vacuum Lifters are furnished with a parking stand and are available for all standard AC and DC voltages. Gasoline engine-powered models are also available.

** Product specifications on reverse side*

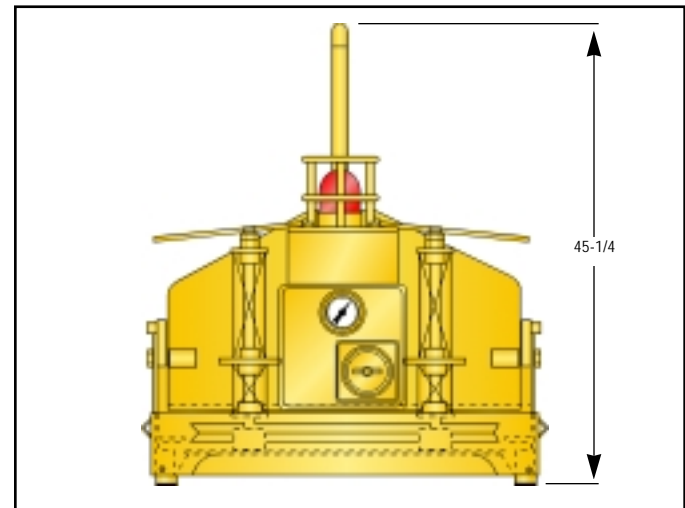
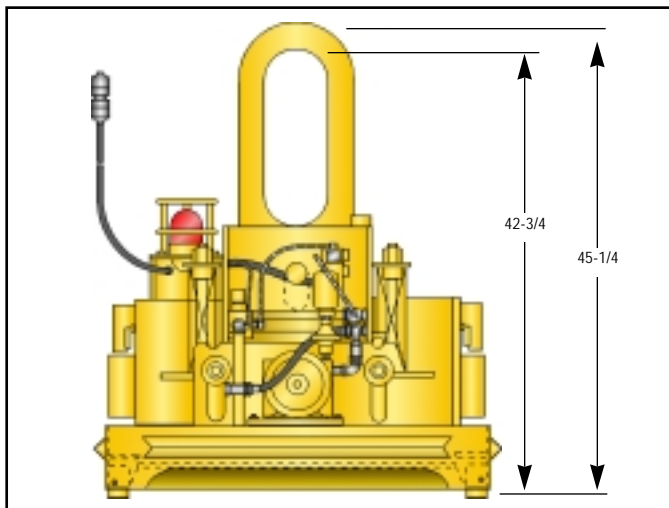
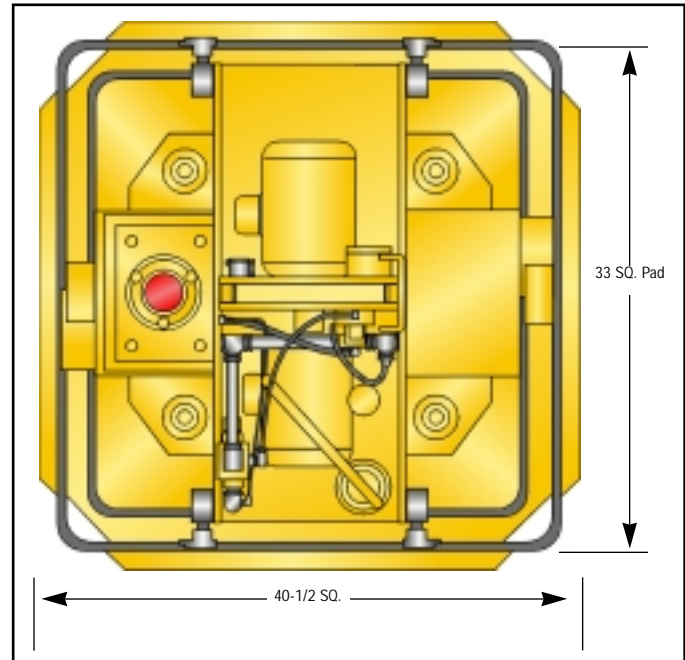
2 Ton-IP Lifter Power Pac

Equipped with 3 ft pigtail power cord with twist lock connector for a variety of AC and DC power sources. 2 Ton IP Lifter consists of a 1 hp, 1750 rpm AC or DC integral electric motor, or belt driven by a gasoline engine; 17 cfm, lubricated, rotary vane vacuum pump; 4-way vacuum control valve; air line filter; two vacuum gauges; vacuum switch; automatic on/off vacuum control (no pendant); reserve valve; vacuum level green indicator light; 2,120 in.³ reserve tank for positive holding in case of power failure; on-off power switch and other related controls and accessories. 2 Ton IP Lifter is constructed of a rugged, mill-duty, fabricated steel frame. Also equipped with a parking stand and pad guard. Releasing the vacuum and allowing removal of the pads from the load is accomplished by forcing air to the vacuum pads.

- Weight: 1,200 lbs.
- 1000 watt power draw
- Power sources available:
 - 230 volt, three-phase, 60 hertz, 2.6 F.L.A.
 - 460 volt, three-phase, 60 hertz, 1.3 F.L.A.
 - 575 volt, three-phase, 60 hertz, 1.0 F.L.A.
 - Gasoline engine

Headroom Requirements

Headroom Requirement: 47"
 Bail Opening: 6" X 18"



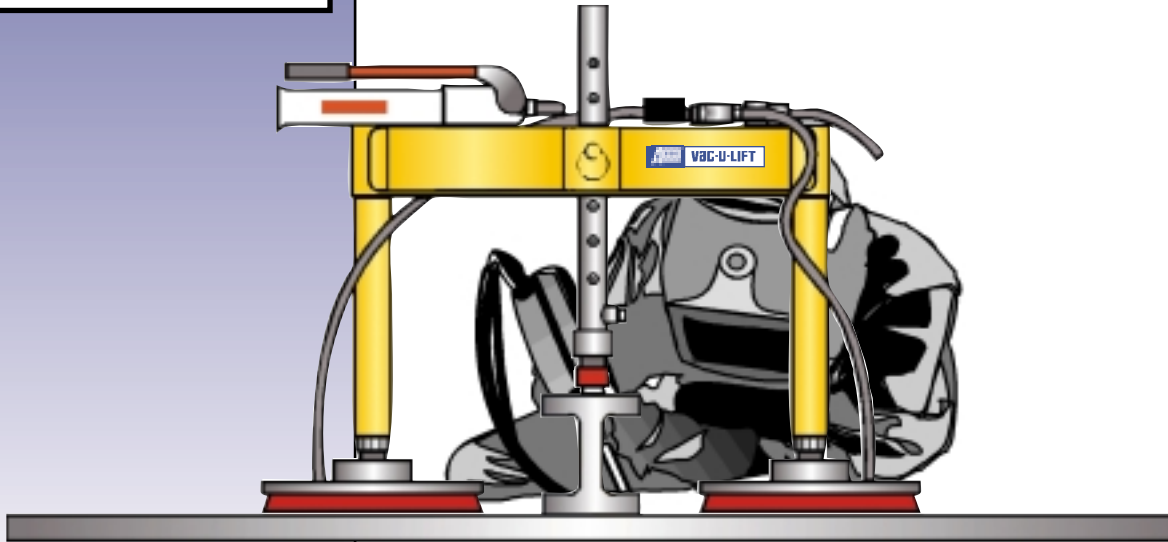
Pad

The 2 Ton IP Lifter consists of a 32" X 32" segmented vacuum pad. Neoprene seal rings are standard. Silicone seal rings are available for operating temperatures between 200° -500° F and are nonmarking.

VAC-U-LIFT®

- Exerts clamping force of 2400 to 6000 lbs.
- Available with AC or air powered vacuum power pac
- Manual or hydraulic ram operation available
- Replaceable seal rings

Hold Down Clamp



How the Hold-Down Clamp Operates

The Vac-U-Lift Hold-Down Clamp with self contained hydraulic ram and pump develops compressive force that can help increase welding production by as much as 150%. This vacuum attachment hold-down clamp can significantly reduce time and labor costs on a variety of welding operations, such as welding beams to plate or in the fabrication of tanks, cylinders, and heavy structural sections. It is also an ideal means of raising sagging plate to beam level.

Welding of U-brackets and the use of wedges can be eliminated. There are no brackets to knock off or tack welds to grind when the welding operation is completed.

The Vac-U-Lift Hold-Down Clamp is positioned over the members to be welded. The vacuum attachment pads are then activated, creating the holding force. The operator is able to accurately position the pieces to be welded while the ram holds the

pieces tight, helping to make a secure weld possible. A simple vacuum and release valve eliminates unnecessary work and permits movement of the unit to the next welding point, quickly and easily.

Hydraulic Ram

The hydraulic ram is mounted on the central beam connecting the vacuum pads of the hold-down clamp. After the clamp is positioned with one pad on each plate to be welded, the ram is lowered as close to the plates as possible. This is accomplished using a telescoping pole with holes. The ram is brought into position, lined up with a hole and a pin inserted to keep the ram in place.

Once the ram is in place, the operator, using a hand operated hydraulic pump, increases pressure on the clamp, forcing the plates into a level position for butt welding.

Power Pacs

Two power pacs are available for the Vac-U-Lift Hold-Down Clamp. The electric powered, 115

volt, single-phase, 60 hertz, 1/3 hp, 4 cfm, oil-less, vacuum pump with power cord is available on all models. On the 2,400 pound and 4,000 pound capacity models, a Venturi power pac is available. This trouble free power pac uses normal plant air supply, 2 to 3 cfm at 50 to 60 psi pressure, to generate vacuum power.

Vacuum Pad Styles

The 2400 Vac-U-Lift Hold-Down Clamp comes with a round style #10 pad. Seal rings are held with a protective clamp ring that is bolted to the pad body. The pads consist of an aluminum lift plate, aluminum clamp ring, clamp ring bolts and Neoprene seal rings.

The 4000 and 6000 Vac-U-Lift Hold-Down Clamps come with rectangular pads which allow the use of the Vac-U-Lift hold-down clamp in narrow space applications. The seal ring is held in place with a protective flange that is bolted to the pad body. Pads consist of a metal body, clamp ring, clamp ring stud, threaded pad bolt and Neoprene seal ring.

* *Product specifications on reverse side*

Hold Down Clamp Specifications

Capacity lbs.	A	B	C	Maximum Fixture Weight Hydraulic Ram (lbs.)
2,400	11-1/2"	24"	36-1/2"	63
4,000	14-1/2"	24"	33-1/2"	93
6,000	14-1/2"	24"	33-1/2"	110

Maximum fixture weights do not include power pac weight. Add 1 lb. for Venturi power pac which mounts on the fixture. The fixture weight remains the same if an electrical power pac is used because it is not mounted on the fixture.

2400 Lb. Capacity Hold-Down Clamp

Cat. No.	Description	Total Weight (lbs.)
102-2-1-20-2	Hydraulic Ram, Venturi Power Pac, 20" Max. Ht.	64
102-2-2-20-2	Hydraulic Ram, Electric Power Pac, 20" Max. Ht.	119
102-2-1-20-2M	Manual Ram, Venturi Power Pac, 20" Max. Ht.	60
102-2-2-20-2M	Manual Ram, Electric Power Pac, 20" Max. Ht.	115

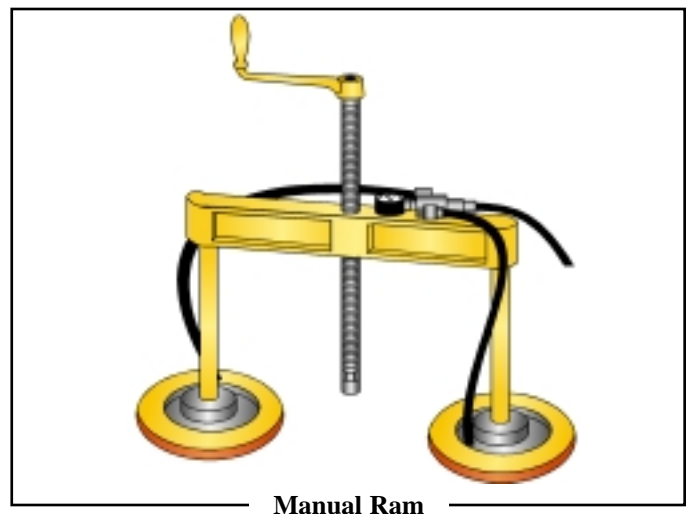
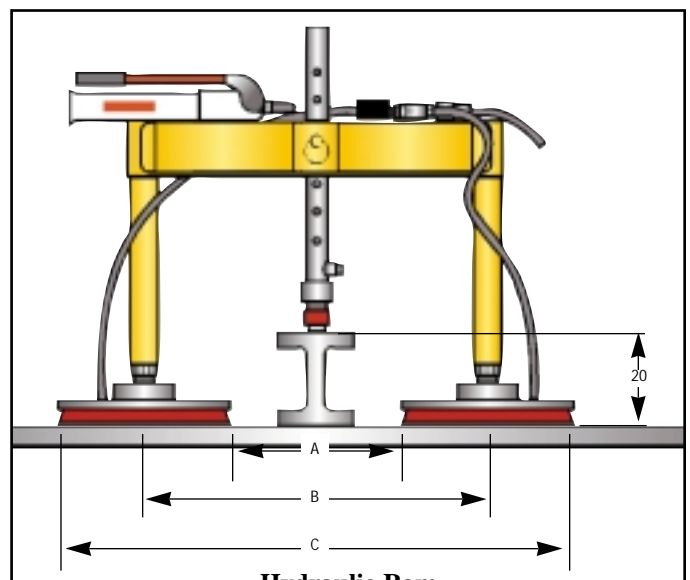
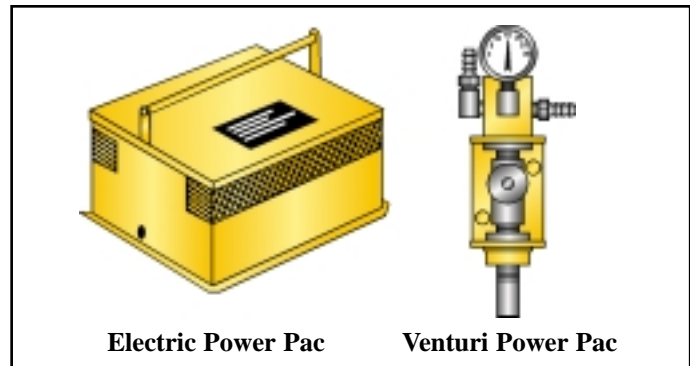
4000 Lb. Capacity Hold-Down Clamp

Cat. No.	Description	Total Weight (lbs.)
102-2-1-20-4	Hydraulic Ram, Venturi Power Pac, 20" Max. Ht.	94
102-2-2-20-4	Hydraulic Ram, Electric Power Pac, 20" Max. Ht.	149
102-2-1-20-4M	Manual Ram, Venturi Power Pac, 20" Max. Ht.	90
102-2-2-20-4M	Manual Ram, Electric Power Pac, 20" Max. Ht.	145

6000 Lb. Capacity Hold-Down Clamp

Cat. No.	Description	Total Weight (lbs.)
102-2-2-20-6	Hydraulic Ram, Electric Power Pac, 20" Max. Ht.	163

Necessary vacuum hose and fittings for connection to power pac are supplied with unit.

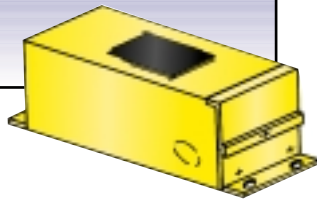


*A, B & C dimensions are the same as the hydraulic ram unit.

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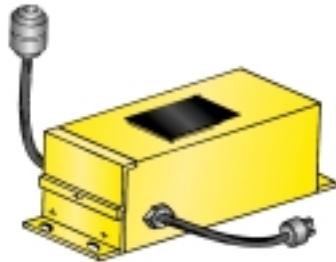
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Transformer

Transformer for 230/460/575 vac to 115 vac mounted to the lifter which is hardwired into power pac.

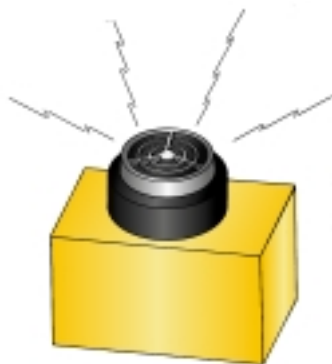
- 22929: 230 vac to 115 vac
- 22939: 460 vac to 115 vac
- 22949: 575 vac to 115 vac



Transformer Assembly

Transformer for 230/460/575 vac to 115 vac mounted to the lifter with pigtail power cords **with twist lock connectors** for connection to power pac and power supply. This assembly allows the transformer to be disconnected for single pad operation.

- 61001: 230 vac to 115 vac
- 61002: 460 vac to 115 vac
- 61003: 575 vac to 115 vac

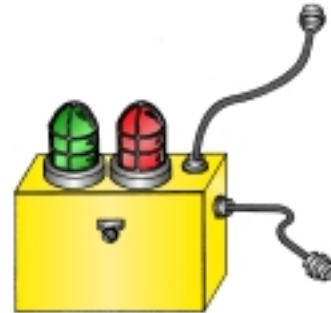


Low Vacuum Warning Device

A battery-operated low vacuum audible alarm that “whines” if vacuum pressure drops while unit is in vacuum attach mode or if there is a power supply failure to the vacuum pump.

70811: Low Vacuum Alarm

STANDARD VACUUM LIFTER Accessories



Auxiliary Lights

Large red and green vacuum level indicator lights. Can be mounted on load beam of 3200, 5600, and 7600 Series lifters, or on Power Pac yoke of 5600 and 7600 Series lifters. Includes 3 ft pigtail power cord and power supply line to vacuum Power Pac.

70812: Auxiliary Light Assembly

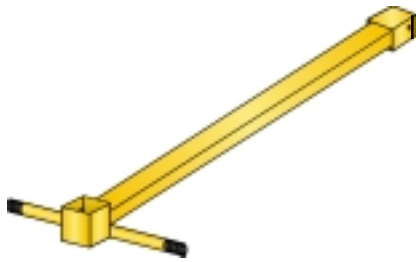


Radio Control

The radio remote control system is a 900 Mhz system which utilizes a small antenna, provides long range operation (up to 500 feet), long transmitter battery life (up to 120 hours continuous operation or 1 month to 1 year depending on application and usage) and no FCC license required. In addition, 900 Mhz systems are not affected by electrical noise and interference typically found in a factory environment. The receiver will be mounted to the power-pac yoke. A hand held transmitter with a leather belt holster is included. Transmitter includes on/off and vacuum/release buttons. Radio can be used on 3200, 5600, 7600, and 15000 Series vacuum lifters.

70810: Radio Control

Accessories



Guide Handle Bar

Attaches to load beam with welded mounting, giving the operator an easy-to-control "Handle Bar". Simplifies the positioning and movement of the lifter, with or without load. Comes equipped with a hanger for standard push button station.

Fits 1100, 3200, 5600, 7600, and VP Series vacuum lifters.

61027: 36" Handle

61028: 48" Handle



Upender Guide Handle Bar

Attaches to upender yoke with bolt-on mounting, giving the operator an easy-to-control "Handle Bar". Simplifies the positioning and movement of the upender, with or without load. Comes equipped with a hanger for standard push button station.

Fits 1600 and 3600 Series vacuum upenders.

70720: 24" Upender Handle



#70624



#70807

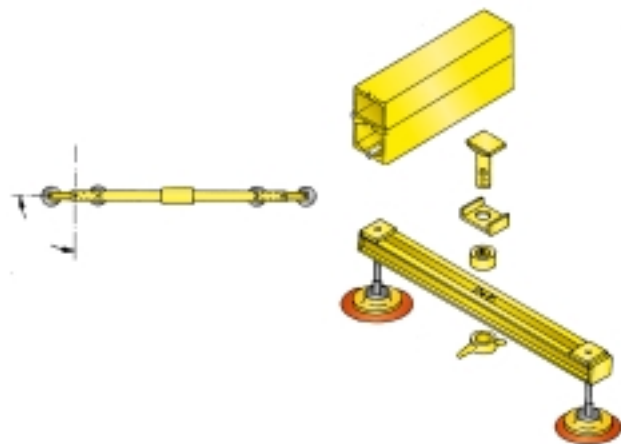
Storage Stand and Guide Handle Bars

A support leg mounted at each end of the load beam for storage of the vacuum lifter. Fas-Pin locks in place and folds up to be used as a guide handle when unit is in use. Support leg adds 4 ft to the overall length of the unit, when in the up position.

Fits 1100, 3200, 5600, 7600, and VP Series vacuum lifters.

70624: Fits 1100 and VP Series Lifters

70807: Fits 3200, 5600, and 7600 Series Lifters



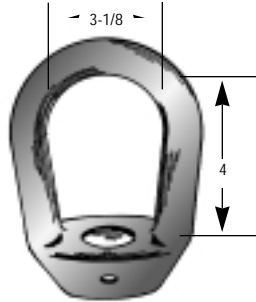
Special Cross Arm Mount

To allow cross arm to rotate 90 degrees under load beam.

Fits 3200, 5600, and 7600 Series vacuum lifters.

70809: Cross Arm Swivel

STANDARD VACUUM LIFTER Accessories



Fas-Pin Hook Eye (4 Ton Capacity)

For installation on the load beam where the Power Pac is to be remotely located. Fits 5 ton to 20 ton carbon steel hooks.

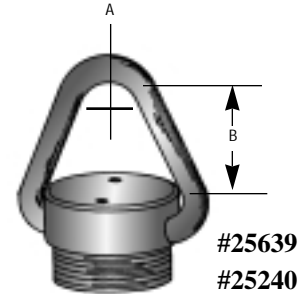
24325: Hook Eye



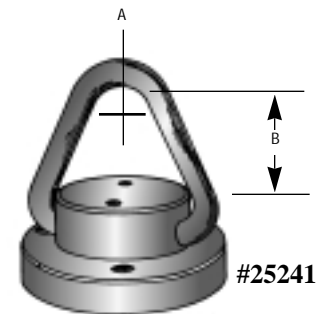
Single Pad Chain Mount

This flexible mount is for applications where lifting and turn-over motion is required. Chain length includes fas-pin connection to Power Pac.

25235-1: 27" long
25235-2: 36" long
25235-3: 45" long



Insert Hoist Ring



Pad Cap Hoist Ring

Single Pad Hoist Rings

These hoist rings are for straight lifting and positioning applications where a single pad is being used with a remotely located Power Pac.

25639: 1 ton capacity, fits 1/2 to 5 ton carbon steel hooks.
1-1/2" X 12 insert for 5M, 8M, 4SP, 6SP, 8SP, and 4SPEL vacuum pads.

A: 1/2" B: 2"

25240: 1-1/4 ton capacity, fits 1/2 to 10 ton carbon steel hooks.
2" X 12 insert for 8, 10, 12, and 16 vacuum pads.

A: 5/8" B: 2-1/2"

25241: 2-1/2 ton capacity, fits 1/2 to 10 ton carbon steel hooks.
Pad Cap hoist ring for 20 and 24 vacuum pads.

A: 3/4" B: 3"

Accessories

STANDARD VACUUM LIFTER



Vacuum Hose

Sections are available in any length. 3/8" ID for 1100, 1600, 3200, 3600, 5600, and VP Series lifters. 3/4" ID for 7600 and 15000 Series lifters.

Vacuum Hose Assemblies

Prefabricated vacuum hose assemblies consisting of hose and quick disconnect fittings at each end are available per customer's request.

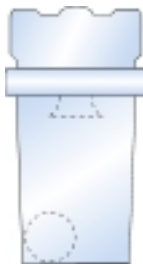
29199: 3/8" I.D.
29183: 3/4" I.D.



Coil Hose

Sections are available in varying lengths. 3/8" ID for 1100, 1600, 3200, 3600, 5600, and VP Series lifters. 3/4" ID for 7600 and 15000 Series lifters.

29212: 14' long, 3/8" I.D.
29213: 22' long, 3/8" I.D.
29214: 12' long, 3/4" I.D.
29215: 18' long, 3/4" I.D.



Water Trap (Manual)

This manual water trap fits 1100, 1600, 3200, 3600, and 5600 Series vacuum lifters. The trap collects moisture until the float blocks the air passage. This prevents water from entering the vacuum pump. When the trap is full, the bowl assembly must be removed to empty the contents.

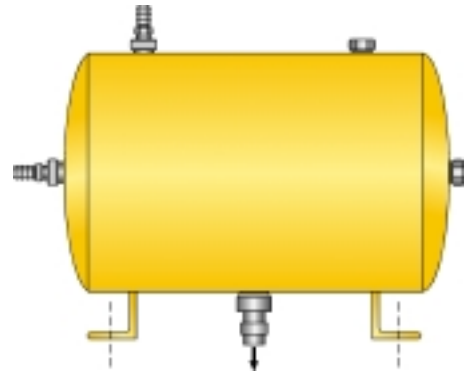
70813: Manual Water Trap



Water Trap (Automatic)

This automatic water trap fits the 1600, 3200, 3600, 5600, and 7600, Series vacuum lifters. The trap collects moisture during the vacuum on cycle and uses the exhaust from the vacuum pump to automatically drain the bowl assembly during the vacuum release cycle. This eliminates the need to manually empty the water trap bowl.

70808: Automatic Water Trap



Water Trap (Automatic)

This automatic water trap fits the 7600 and 15,000 Series vacuum lifters. The trap collects moisture during the vacuum on cycle and uses the exhaust from the vacuum pump to automatically drain the bowl assembly during the vacuum release cycle. This eliminates the need to manually empty the water trap bowl.

70833: Automatic Water Trap

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