



**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION**

**APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)**

OFFICE USE ONLY

APPLICATION #: OSP-0811

HCAI Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Pattons Medical

Manufacturer's Technical Representative: Tony DeWeese

Mailing Address: 4610 Entrance Drive, Suite H, Charlotte, NC 28273

Telephone: (704) 529-5442

Email: tony.deweese@pattonsmmedical.com

Product Information

Product Name: Medical Gas and Vacuum Systems

Product Type: Medical Air and Vacuum Systems

Product Model Number: See Attachment

General Description: Medical/Lab Air Systems (HTM & Modular) and Medical/Lab Vacuum systems (Space Saver, Modular, and VFD) with pumps, receiver, controller, and dryers (for air). Medical/Lab Dryer systems. All Base Mounted.

Mounting Description: Rigid, Floor Mounted

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

Applicant Information

Applicant Company Name: Dynamic Certification Laboratories

Contact Person: Daniel Rodgers

Mailing Address: 1315 Greg Parkway #109, Sparks, NV 89431

Telephone: (775) 358-5085

Email: daniel.rodgers@Shaketest.com

Title: Laboratory Project Manager





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California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

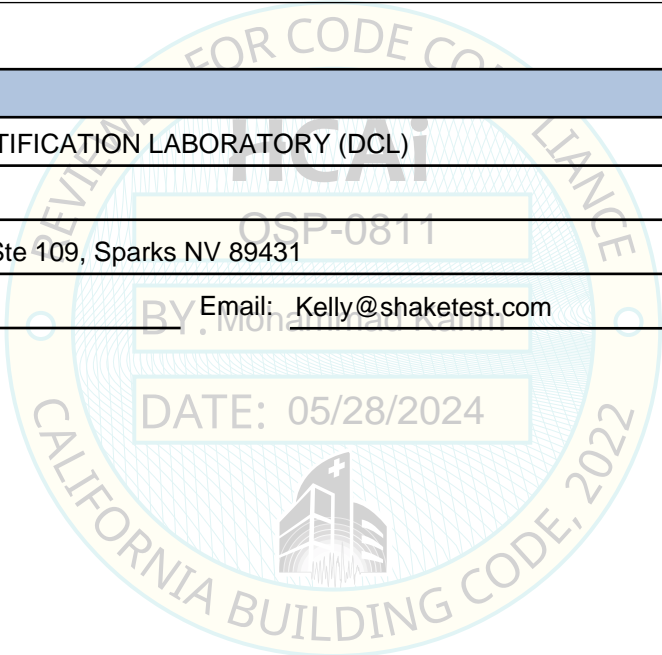
Company Name: THE VMC GROUP
Name: Kenneth Tarlow California License Number: S2851
Mailing Address: 980 9th Street, 16th Floor, Sacramento, CA 95814
Telephone: (832) 627-2214 Email: ken.tarlow@thevmcgroup.com

Certification Method

GR-63-Core ICC-ES AC156 IEEE 344 IEEE 693 NEBS 3
 Other (Please Specify): _____

Testing Laboratory

Company Name: DYNAMIC CERTIFICATION LABORATORY (DCL)
Contact Person: Kelly Laplace
Mailing Address: 1315 Greg St., Ste 109, Sparks NV 89431
Telephone: (775) 358-5085 Email: Kelly@shaketest.com





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 4.5 (Internal Isolation), 1.5 (Without Internal Isolation) at Sds 2.0g, z/h=1; 1.88 (Internal Isolation), 1.13 (Without Internal Isolation) at Sds 2.5g, z/h=0

SDS (Design spectral response acceleration at short period, g) = Sds 2.0g, z/h=1; Sds 2.5g, z/h=0

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 2.0 (Internally Isolated Rigid Base Mounted Systems); 6.0 (Rigid Base Mounted Systems without Internal Isolation)

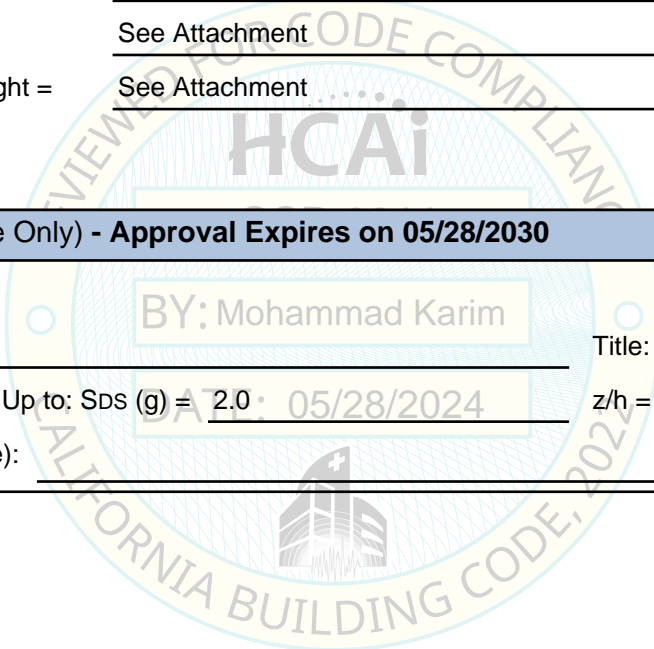
Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1 and 0

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment



HCAI Approval (For Office Use Only) - Approval Expires on 05/28/2030

Date: 5/28/2024

Name: Mohammad Karim

Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = 2.0; 05/28/2024

z/h = 1

Condition of Approval (if applicable):



Special Seismic Certification

Table 1 - Certified Components - Horizontal Tank Scroll Systems



DCL Project: 39223-2201

Manufacturer: Pattons Medical

Product Line: Horizontal Tank Scroll Systems

Mounting Configuration: Rigid Base Mount

Certified Seismic Level: Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

Medical Model Number	Lab Model Number ^{1,2}	HP	Receiver Size (Gallons)	System	Maximum Dimensions (in)			Max. Operating Weight (lb)	Unit
					Length	Width	Height		
62-21-dd2vX-gzzzSA0-yyy	68-21-dd2vX-gzzzSA0-yyy	2, 3	80	Duplex	89.1	29.5	60.8	1,200	Extrapolated
62-21-032AX-MM00SA0-000	N/A	3	80	Duplex	89.1	29.5	60.8	1,200	UUT-01
62-21-dd2vX-gzzzSA0-yyy	68-21-dd2vX-gzzzSA0-yyy	5, 7.5, 10	80	Duplex	91.3	35.6	74.4	1,950	Interpolated ³
62-21-dd3vX-gzzzSA0-yyy	68-21-dd3vX-gzzzSA0-yyy		120						
62-21-dd4vX-gzzzSA0-yyy	68-21-dd4vX-gzzzSA0-yyy		200						
62-21-104CX-MKM0SA0-N60	N/A	10	200	Duplex	91.3	35.6	74.4	1,950	UUT-02

1. Lab models don't feature the remote intake filters for smaller filters. The control panels for lab models don't feature subcomponents for the remote intake and DP/CO sensors.
2. Lab models are 10 pounds lighter than the corresponding medical model. Listed maximum weights reflect the listed medical models.
3. Interpolated models will have the pre-test retrofits made for UUT-02 as described in Table 13.



Special Seismic Certification
Table 2 - Certified Options - Horizontal Tank Scroll Systems



DCL Project Number: 39223-2201

Manufacturer: Pattons Medical

Product Line: Horizontal Tank Scroll Systems

Mounting: Rigid Base Mount

Standalone Control Panel Model Chart

A-BC-DEvF-GzzzHJK-yyy

Variable	Definition	Allowable Value	Allowable Value Description	Unit
A	Technology and Product Line	62	Scroll - Medical	UUT-01, UUT-02
		68	Scroll - Lab	Extrapolated
B	Number of Pumps Controlled (Initial)	2	Duplex	UUT-01, UUT-02
C	Configuration	1	Horizontal Tank Mount	UUT-01, UUT-02
		02	2 HP	Extrapolated
D	HP	03	3 HP	UUT-01
		05	5 HP	Interpolated
		07	7.5 HP	Interpolated
		10	10 HP	UUT-02
E	Receiver Size	2	80 Gallon	UUT-01
		3	120 Gallon	Interpolated
		4	200 Gallon	UUT-02
v	Voltage	A	208V/3ph/60Hz	UUT-02
		B	230V/3ph/60Hz	Interpolated
		C	460V/3ph/60Hz	UUT-01
		F	380-415V/3ph/50Hz	Interpolated
F	Expandable to Size	X	Not Expandable	UUT-01, UUT-02
		A	No Dryers or Sensors	Extrapolated
G	Dryer Configuration ¹	F or G	Dual Desiccant, Without DP/CO Sensors	Extrapolated
		H, J, M, or N	Dual Desiccant With DP/CO Sensors	UUT-01, UUT-02
		K, L, P, or Q	Dual Desiccant With DP Sensor Only	UUT-01
OPTIONS (can choose up to 3 for "z" and "y")				
z	System Options	0	No Options	Extrapolated
		G	Galvanized Receiver (Tank Coating)	Same as UUT-01, UUT-02
		K	Add Carbon Filters	UUT-02
		M	TEFC Motors	UUT-01, UUT-02
H	Seismic Build	145 psi Discharge Pressure	UUT-01 ²	
J	Component Setup	Seismic	UUT-01, UUT-02	
K	Special Layout	A	Compressor/Dryer Design	UUT-01, UUT-02
		0	Standard Layout	UUT-01, UUT-02
y	Panel Options	0	No Options	Extrapolated
		E	Multiple Power Source (Remove Terminal Block)	Extrapolated
		H	Add Remote Intake (68 series)	UUT-01, UUT-02
		N	BACnet Controller	UUT-02 ³
6	65KA SCCR Circuit Breaker	UUT-02 ⁴		

1. Dryer size is interpolated between UUT-01 and UUT-02 dryers (5-30 SCFM) for Horizontal Tank Mount Systems.

2. Option only changes the programming and spring type, weight and dimensions are equivalent to default option.

3. The optional BACnet Controller that would feature in a control panel is less than one pound.

4. Option has the same weight and dimensions as the default circuit breaker.

Special Seismic Certification
Table 3 - Certified Components - Modular Scroll Systems



DCL Project: 39223-2201

Manufacturer: Pattons Medical

Product Line: Modular Scroll Systems

Mounting: Rigid Base Mount

Certified Seismic Level: Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

Certified Medical Air Systems (Scroll)																	
Medical Model Number	Lab Model Number ^{1,2}	HP	Receiver Size (Gallons)	System ^{3,4,5}	Control Panel Size	# Pump Skids	Total Number of Pumps	Horizontally Arrayed Pumps	Maximum Number of Vertically Stacked Pumps	Pump Skid Maximum Dimensions (in)			Panel/Tank/Dryer Skid Maximum Dimensions (in)			Max. Operating Weight (lb)	Unit
										Length	Width	Height	Length	Width	Height		
62-x4-xx3vg-gzzzSA0-yyy	68-x4-xx3vg-gzzzSA0-yyy	7.5, 10	120	Duplex - Hexaplex	Duplex - Hexaplex	1-2	2-6	2	2	70.4	33.0	72.7	70.0	32.5 - 35.4	74.2 - 93.4	1,840 - 3,900	Extrapolated ^{7,8}
62-x4-xx4vg-gzzzSA0-yyy	68-x4-xx4vg-gzzzSA0-yyy		200														
62-x4-xx5vg-gzzzSA0-yyy	68-x4-xx5vg-gzzzSA0-yyy		240														
62-44-xx5CH-PKMHSA0-N60	N/A	7.5, 10	240	Quadplex	Hexaplex	1	4	2	2	70.4	33.0	72.7	70.0	35.4	93.4	3,900 ⁶	UUT-04 ^{9,6} 10
62-x4-xx3vg-gzzzSA0-yyy	68-x4-xx3vg-gzzzSA0-yyy	15, 20	120	Duplex - Hexaplex	Duplex - Hexaplex	1-2	2-6	1	3	70.4	33.0	85.9	70.0	32.5 - 35.4	74.2 - 93.4	2,246 - 7,700 ¹²	Extrapolated ^{7,8}
62-x4-xx4vg-gzzzSA0-yyy	68-x4-xx4vg-gzzzSA0-yyy		200														
62-x4-xx5vg-gzzzSA0-yyy	68-x4-xx5vg-gzzzSA0-yyy		240														
62-34-xx3CX-MM00SA0-000	N/A	15, 20	120	Triplex	Triplex	1	3	1	3	70.4	33.0	85.9	70.0	32.5	74.2	3,450 ⁶	UUT-03 ^{11,5}

1. Lab models don't feature the remote intake filters for smaller filters. The control panels for lab systems don't feature subcomponents for the remote intake and DP/CO sensors.
2. Lab models are 10 pounds (7.5/10hp) or 20 pounds (15/20hp) lighter than the corresponding medical model. Listed maximum weights reflect the listed medical models.
3. Skids are structurally independent and flexibly connected.
4. 7.5 or 10 HP systems can feature combinations of up to two-high by two-wide pump skids. Any depopulated pump skids will have the pumps removed from the top positions.
5. 15 or 20 HP systems can feature combinations of three-high by one-wide pump skids. Any depopulated pump skids will have the pumps removed from the top positions.
6. Weights listed are the combination of the UUTs in the corresponding unit column combined.
7. Extrapolated pump skids will feature the same pre-test retrofits as described for UUT-03 and UUT-04 in Table 13.
8. Panel/tank/dryer skids with panels, tanks, and dryers larger than what was tested in UUT-05 will feature all pre-test retrofits described for UUT-06 in Table 13. Panels equivalent in size and weight or lighter than that was tested in UUT-05 will feature the same panel retrofit described for UUT-05 in Table 13.
9. UUT-04 was tested with (2) 7.5 HP Pumps in the bottom position and (2) 10 HP Pumps in the top position. UUT-04 represents the most seismically vulnerable two-high by two-wide pump skid.
10. UUT-06 represents the subcomponents of the largest hexaplex Panel/Tank/Dryer skid.
11. UUT-03 was tested with (1) 20 HP Pump in the top position, (1) 20 HP Pump in the middle position, and (1) 15 HP Pump in the bottom position. UUT-03 represents the most seismically vulnerable three-high by one-wide pump skid.
12. Systems with more mass than the tested systems feature additional flexibly attached and structurally independent skids that are less than or equivalent in seismic vulnerability and weight than the tested upper bookends UUT-03, UUT-06.

Special Seismic Certification

Table 4 - Certified Options - Modular Scroll Systems



DCL Project: 39223-2201

Manufacturer: Pattons Medical

Product Line: Modular Scroll Systems

Mounting: Rigid Base Mount

Modular Medical Scroll Systems Model Chart

A-BC-DEvF-GzzzHJK-yyy

Variable	Definition	Allowable Value	Allowable Value Description	Unit
A	Technology and Product Line	62	Scroll - Medical	UUT-03, UUT-04, UUT-05, UUT-06
		68	Scroll - Lab	Extrapolated ^{1,2}
B	Number of Pumps Controlled (Initial)	2	Duplex	Extrapolated
		3	Triplex	UUT-03, UUT-05
		4	Quadruplex	UUT-04
		5	Pentaplex	Interpolated
		6	Hexaplex	UUT-06
C	Configuration	4	Modular	UUT-03, UUT-04, UUT-05, UUT-06
D	HP	07	7.5 HP	UUT-04
		10	10 HP	UUT-04
		15	15 HP	Interpolated
		20	20 HP	UUT-03
E	Receiver Size	3	120 Gallon	UUT-05
		4	200 Gallon	Interpolated
		5	240 Gallon	UUT-06
v	Voltage	A	208V/3ph/60Hz	UUT-05
		B	230V/3ph/60Hz	Interpolated
		C	460V/3ph/60Hz	UUT-03
		F	380-415V/3ph/50Hz	Interpolated
F	Maximum Number of Pumps Controllable by Panel (If More Than Initial)	T	Triplex	UUT-05
		Q	Quadruplex	Interpolated
		P	Pentaplex	Interpolated
		H	Hexaplex	UUT-06
G	Dryer Configuration	X	Not Expandable	Interpolated
		A	No Dryers or Sensors	Extrapolated
		F or G	Dual Desiccant Without DP/CO Sensors	Extrapolated
		H, J, M, or N	Dual Desiccant With DP/CO Sensors	UUT-03, UUT-04, UUT-05, UUT-06
		K, L, P, or Q	Dual Desiccant With DP Sensor Only	UUT-04

Table Continued on Next Page

1. Lab models don't feature the remote intake filters for smaller filters. The control panels for lab systems don't feature subcomponents for the remote intake and DP/CO sensors.

2. Lab models are 10 pounds (7.5/10HP) or 20 pounds (15/20HP) lighter than the corresponding medical model.

Special Seismic Certification

Table 4 - Certified Options - Modular Skid Scroll Systems (Continued)



DCL Project: 39223-2201

Manufacturer: Pattons Medical

Product Line: Modular Scroll Systems

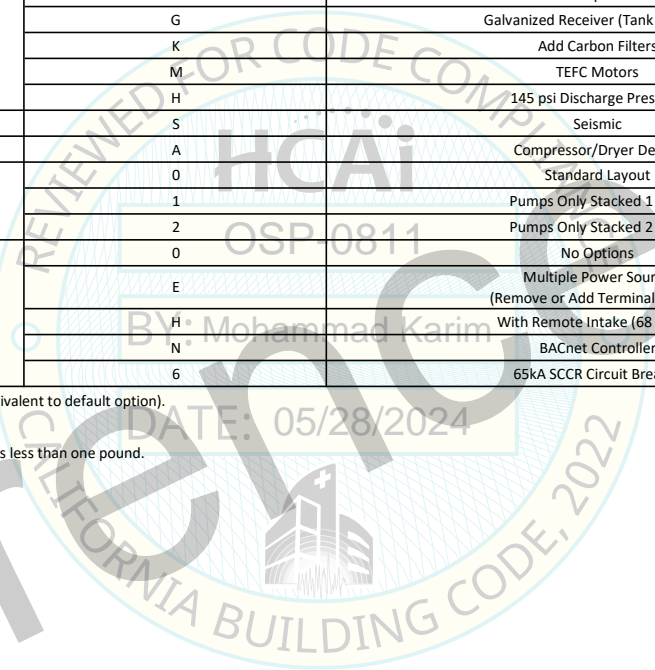
Mounting: Rigid Base Mount

Modular Scroll Systems Model Chart

OPTIONS (can choose up to 3 for "z" and "y")

Variable	Definition	Allowable Value	Allowable Value Description	Unit
z	Options	0	No Options	UUT-03, UUT-04
		G	Galvanized Receiver (Tank Coating)	Extrapolated
		K	Add Carbon Filters	UUT-06
		M	TEFC Motors	UUT-03, UUT-04
		H	145 psi Discharge Pressure	UUT-04 ¹
H	Seismic Build	S	Seismic	UUT-03, UUT-04, UUT-05, UUT-06
J	Component Setup	A	Compressor/Dryer Design	UUT-03, UUT-04, UUT-05, UUT-06
K	Special Layout	0	Standard Layout	UUT-03, UUT-04, UUT-05, UUT-06
		1	Pumps Only Stacked 1 High	Extrapolated ²
		2	Pumps Only Stacked 2 High	Extrapolated ²
y	Panel Options	0	No Options	Extrapolated
		E	Multiple Power Source (Remove or Add Terminal Blocks)	Extrapolated ³
		H	With Remote Intake (68 series)	UUT-03, UUT-04, UUT-05, UUT-06
		N	BACnet Controller	UUT-06
		6	65kA SCCR Circuit Breaker	UUT-06

- Option only changes the programming and spring type (weight and dimensions are equivalent to default option).
- Standard layout has a maximum of three-high pump skids.
- A maximum of (2) terminal blocks can be added to a system. Each terminal block weighs less than one pound.



Reference

Special Seismic Certification

Table 5 - Certified Components - Modular Scroll Systems, Extended Dryer Skids



DCL Project: 39223-2201

Manufacturer: Pattons Medical

Product Line: Extended Dryer Skids for Modular Scroll Systems

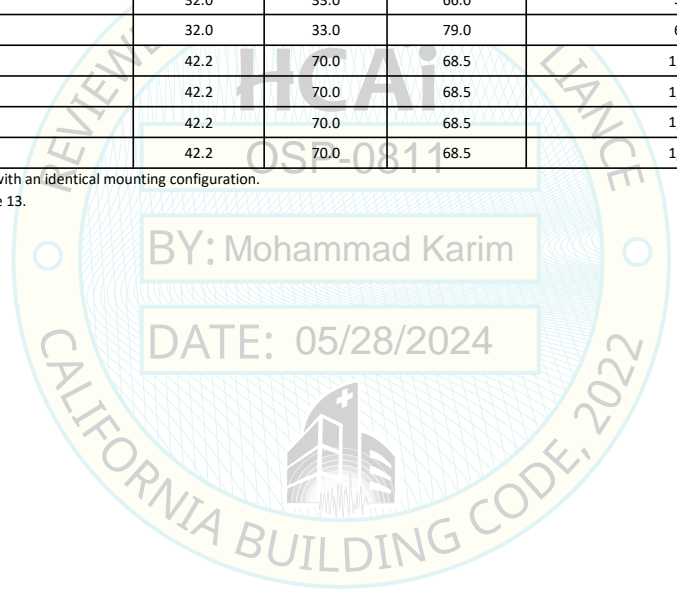
Mounting: Rigid Base Mount

Certified Seismic Level: Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

Extended Dryer Modular Skids						
Model Number	Description	Maximum Dimensions (in)			Max. Operating Weight (lb)	Unit
		Length	Width	Height		
64-B-045HX-xx00000-000	Duplex 45 SCFM Dryer	32.0	33.0	62.0	315	Extrapolated ^{1,2}
64-B-060HX-xx00000-000	Duplex 60 SCFM Dryer	32.0	33.0	62.0	342	Extrapolated ^{1,2}
64-B-100HX-xx00000-000	Duplex 100 SCFM Dryer	32.0	33.0	66.0	590	Extrapolated ^{1,2}
64-B-125HX-xx00000-000	Duplex 125 SCFM Dryer	32.0	33.0	79.0	648	Extrapolated ^{1,2}
64-B-200HX-xx00000-000	Duplex 200 SCFM Dryer	42.2	70.0	68.5	1,120	Extrapolated ^{1,2}
64-B-250HX-xx00000-000	Duplex 250 SCFM Dryer	42.2	70.0	68.5	1,220	Extrapolated ^{1,2}
64-B-300HX-xx00000-000	Duplex 300 SCFM Dryer	42.2	70.0	68.5	1,390	Extrapolated ^{1,2}
64-B-300HX-KW00000-000	Duplex 300 SCFM Dryer	42.2	70.0	68.5	1,390	UUT-14

1. Lower models of dryers were tested in UUT-05 (45 SCFM) and UUT-06 (125 SCFM) with an identical mounting configuration.

2. Extrapolated models will feature the pre-test retrofits described for UUT-14 in Table 13.



Special Seismic Certification

Table 6 - Certified Options - Modular Scroll Systems, Extended Dryer Skids



DCL Project: 39223-2201

Manufacturer: Pattons Medical

Product Line: Extended Dryer Skids for Modular Scroll Systems

Mounting Description: Rigid Base Mount

Retrofit Dryer System Model Chart

A-B-CD-H

Variable	Definition	Allowable Value	Allowable Value Description	Unit
A	Technology and Product Line	64	Dryer - Medical	UUT-14
B	Type of Control	02	Duplex Dryer, DP/CO sensors	UUT-14
		04	Duplex Dryer, DP sensor	Same as UUT-14
		06	Duplex Dryer, On/Off Only	Extrapolated ¹
		08	Duplex Dryer, Junction Box	Extrapolated ¹
C	Configuration	045	45 SCFM Dryers	Extrapolated ²
		060	60 SCFM Dryers	Extrapolated ²
		100	100 SCFM Dryers	Extrapolated ²
		125	125 SCFM Dryers	Extrapolated ²
		200	200 SCFM Dryers	Extrapolated ²
		250	250 SCFM Dryers	Extrapolated ²
D	Voltage/Expansion	300	300 SCFM Dryers	UUT-14
		HX	120VAC/No Expansion	UUT-14
H	Options	0000000-000	No Options	Extrapolated
		K000000-000	Carbon Filter	UUT-14
		W000000-000	Water Separator	UUT-14
		KW00000-000	Carbon Filter & Water Separator	Same as UUT-14

1. Option is equivalent to the tested option, but with a smaller control box.

2. Lower models of dryers were tested in UUT-05 (45 SCFM) and UUT-06 (125 SCFM) with an identical mounting configuration.

Special Seismic Certification
Table 7 - Certified Components - Space Saver Vacuum Systems, Rotary Claw



DCL Project: 39223-2201

Manufacturer: Pattons Medical

Product Line: Space Saver Vacuum Systems, Rotary Claw Pumps

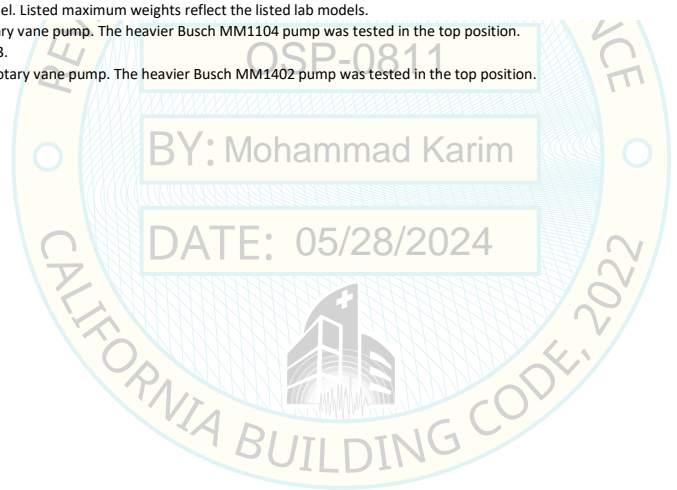
Mounting: Rigid Base Mount

Certified Seismic Level: Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

Certified Medical Vacuum Systems (Rotary Claw)

Medical Model Number	Lab Model Number ^{1,2}	HP	Receiver Size (Gallons)	System	Maximum Dimensions (in)			Max. Operating Weight (lb)	Unit
					Length	Width	Height		
N/A	7x-25-026CX-VLLOSBO-000	2	60	Duplex	67.0	32.5	81.6	1,700	UUT-07 ³
74-25-xx6vX-gnzzSB0-yyy	75-25-xx6vX-gnzzSB0-yyy	2, 3, 4, 5.4, 6.4, 7.5, 8.7, 10	60	Duplex	74.4	34.0	91.1	1,700 - 2,950	Interpolated ⁴
74-25-xx2vX-gnzzSB0-yyy	75-25-xx2vX-gnzzSB0-yyy		80						
74-25-xx3vX-gnzzSB0-yyy	75-25-xx3vX-gnzzSB0-yyy		120						
N/A	7x-25-103CX-VKLOSBO-N60	10	120	Duplex	74.4	34.0	91.1	2,950	UUT-08 ⁵

1. Lab models replace the ball valve in the medical models with a motorized ball valve and include a solenoid valve in front of the filter housing. The panels for lab models feature (2) extra relays per module.
2. Lab models are 10 pounds heavier per module than the corresponding medical model. Listed maximum weights reflect the listed lab models.
3. UUT-07 was tested with (1) 2 HP contactless claw pump and (1) 2 HP lubricated rotary vane pump. The heavier Busch MM1104 pump was tested in the top position.
4. Interpolated units will feature the pre-test retrofits described for UUT-08 in Table 13.
5. UUT-08 was tested with (1) 10 HP contactless claw pump and (1) 10 HP lubricated rotary vane pump. The heavier Busch MM1402 pump was tested in the top position.



Special Seismic Certification

Table 8 - Certified Components - Space Saver Vacuum Systems, Lubricated Rotary Vane



DCL Project: 39223-2201

Manufacturer: Pattons Medical

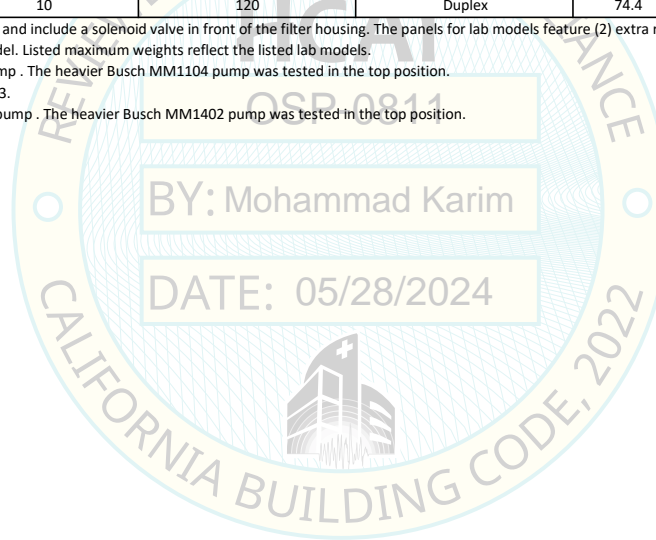
Product Line: Space Saver Vacuum Systems, Lubricated Rotary Vane Pumps

Mounting: Rigid Base Mount

Certified Seismic Level: Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

Certified Medical Vacuum Systems (Lubricated Vane)									
Medical Model Number	Lab Model Number ^{1,2}	HP	Receiver Size (Gallons)	System	Maximum Dimensions (in)			Max. Operating Weight (lb)	Unit
					Length	Width	Height		
N/A	7x-25-026CX-VLLO5B0-000	2	60	Duplex	67.0	32.5	81.6	1,700	UUT-07 ³
72-25-xx6vX-gnzz5B0-yyy	73-25-xx6vX-gnzz5B0-yyy	2, 3, 5, 7.5, 10	60	Duplex	74.4	34.0	91.1	1,700 - 2,950	Interpolated ⁴
72-25-xx2vX-gnzz5B0-yyy	73-25-xx2vX-gnzz5B0-yyy		80						
72-25-xx3vX-gnzz5B0-yyy	73-25-xx3vX-gnzz5B0-yyy		120						
N/A	7x-25-103CX-VKLO5B0-N60	10	120	Duplex	74.4	34.0	91.1	2,950	UUT-08 ⁵

1. Lab models replace the ball valve in the medical models with a motorized ball valve and include a solenoid valve in front of the filter housing. The panels for lab models feature (2) extra relays per module.
2. Lab models are 10 pounds heavier per module than the corresponding medical model. Listed maximum weights reflect the listed lab models.
3. UUT-07 was tested with (1) 2 HP rotary claw pump and (1) 2 HP lubricated vane pump. The heavier Busch MM1104 pump was tested in the top position.
4. Interpolated units will feature the pre-test retrofits described for UUT-08 in Table 13.
5. UUT-08 was tested with (1) 10 HP rotary claw pump and (1) 10 HP lubricated vane pump. The heavier Busch MM1402 pump was tested in the top position.



Special Seismic Certification

Table 9 - Certified Options - Space Saver Vacuum Systems



DCL Project: 39223-2201

Manufacturer: Pattons Medical

Product Line: Space Saver Vacuum Systems

Mounting Description: Rigid Base Mounted

Space Saver Medical Vacuum System Model Chart

A-BC-DEvF-GNzzHJK-yyy

Variable	Definition	Allowable Value	Allowable Value Description	Unit
A	Technology and Product Line	72	Lubricated Vane - Medical	Extrapolated ^{1,2}
		73	Lubricated Vane - Lab	UUT-07, UUT-08
		74	Claw - Medical	Extrapolated ^{1,2}
		75	Claw - Lab	UUT-07, UUT-08
		B	Number of Pumps Controlled (Initial)	2
C	Configuration	5	Space Saver	UUT-07, UUT-08
D	HP	02	2 HP	UUT-07
		03	3 HP	Interpolated
		04	4 HP (Claw Only)	Interpolated
		05	5 HP	Interpolated
		H5	Larger 5 HP (Lube only)	Interpolated
		06	6.4 HP (Claw only)	Interpolated
		07	7.5 HP	Interpolated
		08	8.7 HP (Claw only)	Interpolated
		10	10 HP	UUT-08
		E	Receiver Size	6
2	80 Gallon			Interpolated
3	120 Gallon			UUT-08
v	Voltage ³			A
		B	230V/3ph/60Hz	Extrapolated
		C	460V/3ph/60Hz	UUT-07, UUT-08
		F	380-415V/3ph/50Hz	Extrapolated
		F	Expandable	X
G	Drive Method	F	Fixed Speed	UUT-07
		V	Variable Speed Drive	UUT-08
		N	Filter/ O2 safe/ Purge Options	X
H	HEPA Filter			Extrapolated
L	Purge (Lab Only)			UUT-07
O ⁴	O2 Safe Vacuum			Same as UUT-07 ⁵
D ⁴	O2 Safe Vacuum & HEPA filter			Same as UUT-08 ⁵
K	Purge and HEPA filter (Lab Only)			UUT-08

Table Continued on Next Page

1. Lab models replace the ball valve in the medical models with a motorized ball valve and include a solenoid valve in front of the filter housing. The panels for lab models feature (2) extra relays per module.
2. Lab models are 10 pounds heavier per module than the corresponding medical model.
3. Voltage options only change the wiring in the motor.
4. Larger motorized isolation valves are replaced with standard ball valves on non-purge systems.
5. Option has the same vacuum system, but uses different oil.

Special Seismic Certification
Table 9 - Certified Options - Space Saver Vacuum Systems (Continued)



DCL Project: 39223-2201

Manufacturer: Pattons Medical

Product Line: Space Saver Vacuum Systems

Mounting Description: Rigid Base Mounted

Space Saver Medical Vacuum System Model Chart

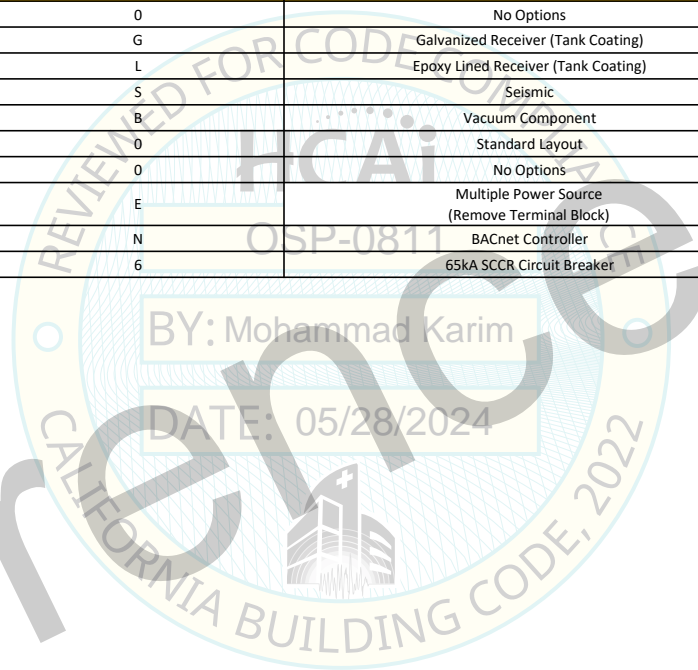
A-BC-DEvF-GNzzHJK-yyy

OPTIONS (can choose more than 1 for "z" and "y")

Variable	Definition	Allowable Value	Allowable Value Description	Unit
z	Options	0	No Options	Same as UUT-07, UUT-08
		G	Galvanized Receiver (Tank Coating)	Same as UUT-07, UUT-08
		L	Epoxy Lined Receiver (Tank Coating)	UUT-07, UUT-08
H	Seismic Build	S	Seismic	UUT-07, UUT-08
J	Component Setup	B	Vacuum Component	UUT-07, UUT-08
K	Special Layout	0	Standard Layout	UUT-07, UUT-08
y	Panel Options	0	No Options	Extrapolated
		E	Multiple Power Source (Remove Terminal Block)	Extrapolated
		N	BACnet Controller	UUT-08
		6	65KA SCCR Circuit Breaker	UUT-08

BY: Mohammad Karim

DATE: 05/28/2024



Reference

Special Seismic Certification

Table 10 - Certified Components - Modular Mounted Vacuum Systems, Contactless Claw



DCL Project: 39223-2201

Manufacturer: Pattons Medical

Product Line: Modular Vacuum Systems, Contactless Claw Pumps

Mounting: Rigid Base Mount

Certified Seismic Level: Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

Certified Medical Vacuum Systems (Contactless Claw)																	
Medical Model Number	Lab Model Number ^{1,2}	HP	Receiver Size (Gallons)	System ^{3,4,5}	Control Panel Size	# Vacuum Skids	Total Number of Pumps	Horizontally Arrayed Pumps	Maximum Number of Vertically Stacked Pumps per Skid	Vacuum Skid Maximum Dimensions (in)			Panel/Tank Skid Maximum Dimensions (in)			Max. Operating Weight (lb)	Unit
										Length	Width	Height	Length	Width	Height		
74-x4-xx3vf-gnzzSB0-yyy	75-x4-xx3vf-gnzzSB0-yyy	2, 3, 4, 5, 6, 7.5, 8.7, 10	120	Duplex - Hexaplex ⁴	Duplex - Hexaplex	1 - 2	2 - 6	1	3	60.4	33.0	89.5	60.0	36.0	77.2 - 95.2	2,280 - 6,970 ¹³	Extrapolated ^{7,8}
74-x4-xx4vf-gnzzSB0-yyy	75-x4-xx4vf-gnzzSB0-yyy		200														
74-x4-xx5vf-gnzzSB0-yyy	75-x4-xx5vf-gnzzSB0-yyy		240														
N/A	7x-34-xx3CX-VKLOSBO-N60	2, 10	120	Triplex	Triplex	1	3	1	3	60.4	33.0	89.5	60.0	36.0	77.2	3,600 ⁶	UUT-10 ^{9,11}
74-x4-153vf-gnzzSB0-yyy	75-x4-153vf-gnzzSB0-yyy	15	120	Duplex - Hexaplex ⁵	Duplex - Hexaplex	1 - 3	2 - 6	1	2	69.0	33.0	89.9	60.0	36.0	77.2 - 95.2	2,280 - 7,010 ¹³	Extrapolated ^{7,8}
74-x4-154vf-gnzzSB0-yyy	75-x4-154vf-gnzzSB0-yyy		200														
74-x4-155vf-gnzzSB0-yyy	75-x4-155vf-gnzzSB0-yyy		240														
N/A	7x-24-xx5CH-VKLOSBO-000	15	240	Duplex	Hexaplex	1	2	1	2	69.0	33.0	89.9	60.0	36.0	95.2	3,910 ⁶	UUT-09 ^{10,12,12}

1. Lab models replace the ball valve in the medical models with a motorized ball valve and include a solenoid valve in front of the filter housing. The panels for lab models feature (2) extra relays per module.
2. Lab models are 10 pounds heavier per module than the corresponding medical model. Listed maximum weights reflect the listed lab models.
3. Skids are structurally independent and flexibly connected.
4. For 2 - 10 HP systems, Duplex models feature (1) two-high pump skid, Triplex models feature (1) three-high pump skid, Quadplex models feature (2) two-high pump skids. Pentaplex models feature (1) three-high and (1) two-high pump skid, and Hexaplex models feature (2) three-high pump skids.
5. For 15 HP systems, Duplex models feature (1) two-high pump skid, Triplex models feature (1) two-high and (1) one-high pump skid, Quadplex models feature (2) two-high pump skids, Pentaplex models feature (2) two-high pump skids and (1) one-high pump skid, and Hexaplex models feature (3) two-high pump skids.
6. Weights listed are the combination of the UUTs in the corresponding unit column combined.
7. Extrapolated pump skids will feature the pre-test retrofits described for UUT-09 and UUT-10 in Table 13.
8. Extrapolated panel/tank skids that have larger tanks and panels than what was tested in UUT-11 will have the pre-test retrofits described for UUT-12 in Table 13. Panels equivalent to or smaller in size than what was tested in UUT-11 will feature the pre-test retrofit described for UUT-11 in Table 13.
9. UUT-10 was tested with a 10 HP contactless claw pump in the top position, a 10 HP lubricated vane pump in the middle position, and a 2 HP contactless claw pump in the bottom position.
10. UUT-09 was tested with (2) 15 HP contactless claw pumps.
12. UUT12 is representative of the subcomponents of the largest hexaplex Panel/Tank skid.
13. Systems with more mass than the tested systems feature additional flexibly attached and structurally independent skids that are less than or equivalent in seismic vulnerability and weight than the tested upper bookends UUT-09, UUT-12.

Special Seismic Certification

Table 11 - Certified Components - Modular Mounted Vacuum Systems, Lubricated Rotary Vane



DCL Project: 39223-2201

Manufacturer: Pattons Medical

Product Line: Modular Vacuum Systems, Lubricated Rotary Vane Pumps

Mounting: Rigid Base Mount

Certified Seismic Level: Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

Certified Medical Vacuum Systems (Lubricated Vane)																	
Medical Model Number	Lab Model Number ^{1,2}	HP	Receiver Size (Gallons)	System ³	Control Panel Size	# Vacuum Skids	Total Number of Pumps	Horizontally Arrayed Pumps	Maximum Number of Vertically Stacked Pumps per Skid	Vacuum Skid Maximum Dimensions (in)			Panel/Tank/Dryer Skid Maximum Dimensions (in)			Max. Operating Weight (lb)	Unit
										Length	Width	Height	Length	Width	Height		
72-x4-xx3vf-gnzzSB0-yyy	73-x4-xx3vf-gnzzSB0-yyy	2, 3, 5, 7.5, 10	120	Duplex - Hexaplex ⁴	Duplex - Hexaplex	1 - 2	2 - 6	1	3	60.4	33.0	89.5	60.0	36.0	77.2 - 95.2	1,610 - 5,790 ¹³	Extrapolated ^{7,8}
72-x4-xx4vf-gnzzSB0-yyy	73-x4-xx4vf-gnzzSB0-yyy		200														
72-x4-xx5vf-gnzzSB0-yyy	73-x4-xx5vf-gnzzSB0-yyy		240														
N/A	7x-34-xx3CX-VKLOSBO-N60	10	120	Triplex	Triplex	1	3	1	3	60.4	33.0	89.5	60.0	36.0	77.2	3,600 ⁶	UUT-10 ^{9,11}
72-x4-xx3vf-gnzzSB0-yyy	73-x4-xx3vf-gnzzSB0-yyy	15, 20, 25	120	Duplex - Hexaplex ⁵	Duplex - Hexaplex	1 - 3	2 - 6	1	2	75.8	36.9	88.7	60.0	36.0	77.2 - 95.2	1,610 - 12,170 ¹³	Extrapolated ^{8,10}
72-x4-xx4vf-gnzzSB0-yyy	73-x4-xx4vf-gnzzSB0-yyy		200														
72-x4-xx5vf-gnzzSB0-yyy	73-x4-xx5vf-gnzzSB0-yyy		240														
N/A	7x-24-xx5CH-VKLOSBO-000	25	240	Duplex	Hexaplex	1	2	1	2	75.8	36.9	88.7	60.0	36.0	95.2	5,900 ⁶	UUT-13 ^{11,12,12}

1. Lab models replace the ball valve in the medical models with a motorized ball valve and include a solenoid valve in front of the filter housing. The panels for lab models feature (2) extra relays per module.
2. Lab models are 10 pounds heavier per module than the corresponding medical model. Listed maximum weights reflect the listed lab models.
3. Skids are structurally independent and flexibly connected.
4. For 2 - 10 HP systems, Duplex models feature (1) two-high pump skid, Triplex models feature (1) three-high pump skid, Quadplex models feature (2) two-high pump skids. Pentaplex models feature (1) three-high and (1) two-high pump skid, and Hexaplex models feature (2) three-high pump skids.
5. For 15 - 25 HP systems, Duplex models feature (1) two-high pump skid, Triplex models feature (1) two-high and (1) one-high pump skid, Quadplex models feature (2) two-high pump skids, Pentaplex models feature (2) two-high pump skids and (1) one-high pump skid, and Hexaplex models feature (3) two-high pump skids.
6. Weights listed are the combination of the UUTs in the corresponding unit column combined.
7. Extrapolated pump skids will feature the pre-test retrofits described for UUT-10 in Table 13.
8. Extrapolated panel/tank skids that have larger tanks and panels than what was tested in UUT-11 will have the pre-test retrofits described in the UUT-12 Summary Sheet. Panels equivalent to or smaller in size than what was tested in UUT-11 will feature the pre-test retrofit described in the UUT-11 Summary Sheet.
9. UUT-10 was tested with a 10 HP contactless claw pump in the top position, a 10 HP lubricated vane pump in the middle position, and a 2 HP contactless claw pump in the bottom position.
10. Extrapolated pump skids will feature the pre-test retrofits described in the UUT-13 Summary Sheet.
11. UUT-13 was tested with a (2) 25 HP lubricated rotary vane pumps.
12. UUT12 is representative of the subcomponents of the largest hexaplex Panel/Tank skid.
13. Systems with more mass than the tested systems feature additional flexibly attached and structurally independent skids that are less than or equivalent in seismic vulnerability and weight than the tested upper bookends UUT-13, UUT-12.

Special Seismic Certification

Table 12 - Certified Options - Modular Vacuum Systems



DCL Project: 39223-2201

Manufacturer: Pattons Medical

Product Line: Modular Vacuum Systems

Mounting Description: Rigid Base Mounted

Modular Medical Vacuum System Model Chart

A-BC-DEvF-GNzzHJK-yyy

Variable	Definition	Allowable Value	Allowable Value Description	Unit
A	Technology and Product Line	72	Lubricated Vane - Medical	Extrapolated
		73	Lubricated Vane - Lab	UUT-10, UUT-13
		74	Claw - Medical	Extrapolated
		75	Claw - Lab	UUT-09, UUT-10, UUT-11
B	Number of Pumps Controlled (Initial)	2	Duplex	UUT-09, UUT-13
		3	Triplex	UUT-10, UUT-11
		4	Quadruplex	Interpolated
		5	Pentaplex	Interpolated
		6	Hexaplex	UUT-12
		C	Configuration	4
D	HP	02	2 HP	UUT-10
		03	3 HP	Interpolated
		04	4 HP (Claw Only)	Interpolated
		05	5 HP	Interpolated
		H5	larger 5HP (Lube Only)	Interpolated
		06	6.4 HP (Claw Only)	Interpolated
		07	7.5 HP	Interpolated
		08	8.7 HP (Claw Only)	Interpolated
		10	10 HP	UUT-10
		15	15 HP	UUT-09, UUT-13
		20	20 HP (Lube Only)	Interpolated
		25	25 HP (Lube Only)	UUT-13
		E	Receiver Size	3
4	200 Gallon			Interpolated
5	240 Gallon			UUT-12
v	Voltage ¹	A	208V/3ph/60Hz	Extrapolated
		B	230V/3ph/60Hz	Extrapolated
		C	460V/3ph/60Hz	UUT-09, UUT-10, UUT-11, UUT-12, UUT-13
		F	380-415V/3ph/50Hz	Extrapolated
F	Maximum Number of Pumps Controllable by Panel (If More Than Initial)	T	Triplex	UUT-11
		Q	Quadruplex	Interpolated
		P	Pentaplex	Interpolated
		H	Hexaplex	UUT-12
		X	Not Expandable	Interpolated

Table Continued on Next Page

1. Voltage option only changes the wiring of the motor.

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Table 12 - Certified Options - Modular Vacuum Systems (Continued)



DCL Project: 39223-2201

Manufacturer: Pattons Medical

Product Line: Modular Vacuum Systems

Mounting Description: Rigid Base Mounted

Modular Medical Vacuum System Model Chart

A-BC-DEvF-GNzzHJK-yyy

Variable	Definition	Allowable Value	Allowable Value Description	Unit
G	Drive Method	F	Fixed Speed	UUT-11
		V	Variable Speed Drive	UUT-11, UUT-12
N	Filter/ O2 safe/ Purge Options	X	Standard Filter	Extrapolated
		H	HEPA Filter	UUT-09, UUT-10, UUT-13
		L	Purge (Lab Only)	UUT-09, UUT-10, UUT-13
		O ¹	O2 Safe Vacuum	Extrapolated ²
		D ¹	O2 Safe Vacuum & HEPA Filter	Same as UUT-09, UUT-10, UUT-13 ²
		K	Purge and HEPA Filter (Lab Only)	Extrapolated
OPTIONS (can choose more than 1 for "z" and "y")				
z	Options	0	No Options	UUT-09, UUT-10, UUT-13
		G	Galvanized Receiver (Tank Coating)	Same as UUT-11, UUT-12
		L ³	Epoxy Lined Receiver (Tank Coating)	UUT-11, UUT-12
H	Seismic Build	S	Seismic	UUT-09, UUT-10, UUT-11, UUT-12, UUT-13
J	Component Setup	B	Vacuum Component	UUT-09, UUT-10, UUT-11, UUT-12, UUT-13
K	Special Layout	0	Standard Layout	UUT-09, UUT-10, UUT-11, UUT-12, UUT-13
		1	Pumps Only Stacked 1 High	Extrapolated
		2	Pumps Only Stacked 2 High	Extrapolated
y	Panel Options	0	No Options	UUT-09, UUT-10, UUT-11, UUT-12, UUT-13
		E	Multiple Power Source (Remove or Add Terminal Block)	Extrapolated ⁴
		N	BACnet Controller	UUT-11
		6	65kA SCCR Circuit Breaker	UUT-11 ⁵

1. Larger motorized isolation valves are replaced with standard ball valves on non-purge systems.
2. Option has the same vacuum system, but uses different oil.
3. The Epoxy Lined Receiver is standard, but not required so it is not included in the standard part number.
4. A maximum of (2) terminal blocks can be added to a system. Each terminal block weighs less than one pound.
5. Option has the same weight and dimensions as the default circuit breaker.

**Special Seismic Certification
Table 13 - Pre-Test Retrofits**



DCL Project: 39223-2201

Manufacturer: Pattons Medical

Unit	Retrofit Descriptions
UUT-01	No pre-test retrofits were made.
UUT-02	Both pumps were retrofitted with ATC J-20922-23 isolators for all pumps. Each isolator was attached to the skid with (2) 5/16" Grade 5 bolts, nuts, and (4) flat washers spaced 3.5" on-center.
UUT-03	All pumps were retrofitted with VMC TTB-10-500 isolators attached to the skid with (2) 3/8" Grade 5 bolts, nuts, and (4) flat washers spaced 5" on-center.
UUT-04	All pumps were retrofitted with VMC TTB-10-500 isolators attached to the skid with (2) 3/8" Grade 5 bolts, nuts, and (4) flat washers spaced 5" on-center.
UUT-05	One Unistrut brace was added connecting to the back of each controller and the top of each right-side skid rail. The Unistrut used was 1 5/8" x 1 5/8" with a length of 48.5". On either end of the Unistrut, a 1.5" x 2" x 6" carbon steel c-channel, 3/16" thick, was attached with (2) 5/16" Grade 5 bolts, lock / flat washers, and spring nuts spaced 1.8" on-center. This was used to interface with a second pair of steel c-channels which connect to either the controller or skid rail. The carbon steel c-channels that connect to the top of the skid rail and back of the controller are 1.5" x 2" x 4" with a thickness of 3/16" and interface with the first set of steel c-channels with (1) 1/2" Grade 5 bolt and lock nut on each end. The second set of steel c-channels are attached to the skid or controller with (2) 5/16" Grade 5 bolts, nuts, and (4) flat washers spaced 2.5" on-center along the length of the channel.
UUT-06	The controller was braced with (2) 60.5" Unistrut on each side of the controller. The Unistrut used was 1 5/8" x 1 5/8" with a length of 48.5". On either end of the Unistrut, a 1.5" x 2" x 6" carbon steel c-channel, 3/16" thick, was attached with (2) 5/16" Grade 5 bolts, lock / flat washers, and spring nuts spaced 1.8" on-center. This was used to interface with a second pair of steel c-channels which connect to either the controller or skid rail. A 4" x 6" x 3/4" strip of McMaster-Carr 93375K693 neoprene foam was added to the back of controller at the center point of the top edge. The top side of each tank-to-skid connection was retrofit with (1) 2" x 2" x 3/16" carbon steel plate washer, (4) plate washers total. The bottom side of the only tank-to-skid connection that did not pass through a weld nut was retrofit with additional (5) cut flat washers. The top of the dryer stacks were rigidly connected with a (3) bracket assembly. (2) 3.8" x 2.5" x 1/8", 7.0" long carbon steel c-channel brackets were attached to the dryers, (1) on each dryer stack, with (2) M8 Grade 8.8 bolts and flat washers per bracket spaced approximately 6.0" on-center in the lateral direction. Both mounting brackets were attached to (1) 2.0" x 2.8" x 1/8", 25.5" long carbon steel c-channel with (4) 5/16" Grade 8 bolts and flat washers spaced 4.8" in the lateral direction and 2.8" in the longitudinal direction on-center per mounting bracket.
UUT-07	The top pump was retrofitted with VMC TTB-10-500 isolators attached to the skid with (2) 3/8" Grade 5 bolts, nuts, and (4) flat washers spaced 5" on-center.
UUT-08	All pumps were retrofitted with VMC TTB-10-500 isolators attached to the skid with (2) 3/8" Grade 5 bolts, nuts, and (4) flat washers spaced 5" on-center.
UUT-09	All pumps were retrofitted with VMC TTB-10-500 isolators attached to the skid with (2) 3/8" Grade 5 bolts, nuts, and (4) flat washers spaced 5" on-center.
UUT-10	All pumps were retrofitted with VMC TTB-10-500 isolators attached to the skid with (2) 3/8" Grade 5 bolts, nuts, and (4) flat washers spaced 5" on-center.
UUT-11	One Unistrut brace was added connecting to the back of each controller and the top of each right-side skid rail. The Unistrut used was 1 5/8" x 1 5/8" with a length of 48.5". On either end of the Unistrut, a 1.5" x 2" x 6" carbon steel c-channel, 3/16" thick, was attached with (2) 5/16" Grade 5 bolts, lock / flat washers, and spring nuts spaced 1.8" on-center. This was used to interface with a second pair of steel c-channels which connect to either the controller or skid rail. The carbon steel c-channels that connect to the top of the skid rail and back of the controller are 1.5" x 2" x 4" with a thickness of 3/16" and interface with the first set of steel c-channels with (1) 1/2" Grade 5 bolt and lock nut on each end. The second set of steel c-channels are attached to the skid or controller with (2) 5/16" Grade 5 bolts, nuts, and (4) flat washers spaced 2.5" on-center along the length of the channel.
UUT-12	The controller was braced with (2) 72.0" Unistrut on each side of the controller in a manner identical to what was used for UUT-05 and UUT-11. The top side of each tank-to-skid connection was retrofit with (1) 2" x 2" x 3/16" carbon steel plate washer, (4) plate washers total. The bottom side of the only tank-to-skid connection that did not pass through a weld nut was retrofit with additional (5) cut flat washers.
UUT-13	Both pumps were retrofitted with VMC TTB-10-750 isolators attached to the skid with (2) 3/8" Grade 5 bolts, nuts, and (4) flat washers spaced 5" on-center.
UUT-14	The top of the dryer stacks were rigidly connected with a (3) bracket assembly. (2) 3.8" x 2.5" x 1/8", 7.0" long carbon steel c-channel brackets were attached to the dryers, (1) on each dryer stack, with (2) M8 Grade 8.8 bolts and flat washers per bracket spaced approximately 6.0" on-center in the longitudinal direction. Both mounting brackets were attached to (1) 2.0" x 2.8" x 1/8", 35.6" long carbon steel c-channel with (4) 5/16" Grade 8 bolts and flat washers spaced 4.8" in the longitudinal direction and 2.8" in the lateral direction on-center per mounting bracket.

Special Seismic Certification

Table 14 - Certified Subcomponents - Horizontal Tank Scroll Systems



DCL Project: 39223-2201

Product Line: Horizontal Tank Scroll Systems

Mounting Configuration: Rigid Base Mount

Certified Seismic Level: Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

Air Compressors								
Model Number	Manufacturer	Technology	HP	Voltage Tested	Voltage Certified	Material	Max Weight (lb.)	Unit
SRL-2.2CB	Hitachi	Scroll	2 & 3	208	208/3/60	Aluminum / Carbon Steel / Plastic	35	UUT-01
SRL-5.5CB			5 & 7.5		230/3/60		61	Interpolated
SRL-7.5CB			10	460	460/3/60		62	UUT-02

Motors							
Model Number	Manufacturer	Technology	HP	Material	NEMA Rating	Max Weight (lb.)	Unit
DTP0022	TECO	ODP	2	Carbon Steel w/ Copper Windings	145T	42	Extrapolated
DTP0032			3		145T	42	UUT-01
DTP0052			5		184T	94	Interpolated
DTP7/52			7.5		184T	94	Interpolated
DTP0102			10		215T	158	UUT-02
NP0022		TEFC	2		145T	44	UUT-01
NP0032			3		182T	77	Interpolated
NP0052			5		182T	88	Interpolated
NP7/52			7.5		213T	141	Interpolated
NP0102			10		215T	154	UUT-02

Tanks						
Model Number	Manufacturer	Type	Capacity	Material	Max Weight (lb.)	Unit
VEC06581	Morganton Pressure Vessel	Horizontal Tank	80	Carbon Steel with Internal Epoxy Coating	248	UUT-01
VEC06578			120		383	Interpolated
PRO01526			200		547	UUT-02

Dryers						
Model Number	Manufacturer	Description	Material	Max Weight (lb.)	Unit	
Dryspell +5	Trident	5 SCFM Dryer	Aluminum Housing	28	Extrapolated	
Dryspell +10		10 SCFM Dryer		40	UUT-01	
Dryspell +20		20 SCFM Dryer		57	Interpolated	
Dryspell +30		30 SCFM Dryer		79	UUT-02	

Table Continued on Next Page

Special Seismic Certification

Table 14 - Certified Subcomponents - Horizontal Tank Scroll Systems (Continued)



DCL Project: 39223-2201

Product Line: Horizontal Tank Scroll Systems

Mounting Configuration: Rigid Base Mount

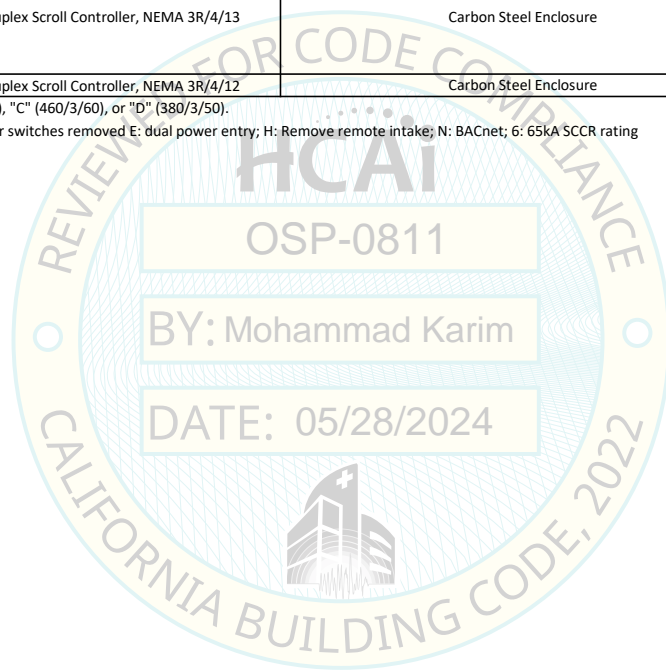
Certified Seismic Level: Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

Controllers					
Model Number ^{1,2}	Manufacturer	Description ³	Material	Max Weight (lb.)	Unit
52-S1-021DA-0000000-000	Pattons Medical	Duplex Scroll Controller, NEMA 3R/4/12	Carbon Steel Enclosure	110	UUT-01
52-S1-02xDC-YYYYYYY-000	Pattons Medical	Duplex Scroll Controller, NEMA 3R/4/13	Carbon Steel Enclosure	110	Interpolated
52-S1-03xDC-YYYYYYY-000				110	Interpolated
52-S1-05xDC-YYYYYYY-000				110	Interpolated
52-S1-07xDC-YYYYYYY-000				110	Interpolated
52-S1-10xDC-YYYYYYY-000				110	Interpolated
52-S1-101DC-N60000-000	Pattons Medical	Duplex Scroll Controller, NEMA 3R/4/12	Carbon Steel Enclosure	110	UUT-02

1. "C" in model number denotes the power rating and can be "A" (208/3/60), "B" (230/3/60), "C" (460/3/60), or "D" (380/3/50).

2. In any "y" character of the model number, the following can be added as options: D: dryer switches removed E: dual power entry; H: Remove remote intake; N: BACnet; 6: 65KA SCCR rating

3. Each enclosure has a NEMA rating of 3R, 4, and 12 simultaneously.



Special Seismic Certification
Table 15 - Certified Subcomponents - Modular Scroll Systems



DCL Project: 39223-2201

Product Line: Modular Scroll Systems

Mounting Configuration: Rigid Base Mount

Certified Seismic Level: Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

Air Compressors								
Model Number	Manufacturer	Technology	HP ¹	Voltage Tested ²	Voltage Certified	Material	Max Weight (lb.)	Unit
SRL-5.5CB	Hitachi	Scroll	5 & 7.5	460	208/3/60	Aluminum / Carbon Steel / Plastic	61	UUT-04
SRL-7.5CB			10		460/3/60			

Motors								
Model Number	Manufacturer	Technology	HP	Material	NEMA Rating	Max Weight (lb.)	Unit	
DTP7/52	TECO	ODP	7.5	Carbon Steel w/ Copper Windings	184T	94	UUT-04	
DTP0102			10		215T	158	UUT-04	
DTP0152			15		215T	158	UUT-03	
DTP0202			20		256T	292	UUT-03	
NP7/52			7.5		213T	141	UUT-04	
NP0102		TEFC	10		215T	154	UUT-04	
NP0152			15		254T	263	Interpolated	
NP0202			20		256T	312	UUT-03	

Tanks						
Model Number	Manufacturer	Type	Capacity	Material	Max Weight (lb.)	Unit
VEC06433	Morganton Pressure Vessel	Vertical Tank	120	Carbon Steel w/ Internal Epoxy Coating	312	UUT-05
VEC06237			200		473	Interpolated
VEC06328			240		542	UUT-06

Dryers						
Model Number	Manufacturer	Description	Material	Max Weight (lb.)	Unit	
Dryspell +45	Trident	45 SCFM Dryer	Aluminum Housing	101	UUT-05	
Dryspell +60		60 SCFM Dryer		115	Interpolated	
Dryspell +100		100 SCFM Dryer		225	Interpolated	
Dryspell +125		125 SCFM Dryer		254	UUT-06	

Table Continued on Next Page

1. To make the 15hp and 20hp modules, two Hitachi SRL-5.5CB or SRL-7.5CB compressors are tied to a single motor.
2. Compressor weight, configuration, and dimensions remain identical regardless of voltage rating.

Special Seismic Certification
Table 15 - Certified Subcomponents - Modular Scroll Systems (Continued)



DCL Project: 39223-2201

Product Line: Modular Scroll Systems

Mounting Configuration: Rigid Base

Certified Seismic Level: Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

Controllers					
Model Number ^{1,2}	Manufacturer	Description ³	Material	Max Weight (lb.)	Unit
52-S1-07xDC-YYYYYYY-000	Pattons Medical	Duplex Scroll Controller, NEMA 3R/4/12	Carbon Steel Enclosure	110	Extrapolated
52-S1-10xDC-YYYYYYY-000				110	Extrapolated
52-S1-15xDC-YYYYYYY-000				110	Extrapolated
52-S1-20xDC-YYYYYYY-000				110	Extrapolated
52-S1-07xTC-YYYYYYY-000	Pattons Medical	Triplex Scroll Controller, NEMA 3R/4/12	Carbon Steel Enclosure	160	Extrapolated
52-S1-10xTC-YYYYYYY-000				160	Extrapolated
52-S1-15xTC-YYYYYYY-000				160	Extrapolated
52-S1-20xTC-YYYYYYY-000				160	Extrapolated
52-S1-201TC-0000000-000	Pattons Medical	Triplex Scroll Controller, NEMA 3R/4/12	Carbon Steel Enclosure	160	UUT-05
52-S1-07xQC-YYYYYYY-000	Pattons Medical	Quadruplex Scroll Controller, NEMA 3R/4/12	Carbon Steel Enclosure	210	Interpolated
52-S1-10xQC-YYYYYYY-000				210	Interpolated
52-S1-15xQC-YYYYYYY-000				210	Interpolated
52-S1-20xQC-0000000-000				210	Interpolated
52-S1-07xPC-YYYYYYY-000	Pattons Medical	Pentaplex Scroll Controller, NEMA 3R/4/12	Carbon Steel Enclosure	260	Interpolated
52-S1-10xPC-YYYYYYY-000				260	Interpolated
52-S1-15xPC-YYYYYYY-000				260	Interpolated
52-S1-20xPC-YYYYYYY-000				260	Interpolated
52-S1-07xHC-YYYYYYY-000	Pattons Medical	Hexaplex Scroll Controller, NEMA 3R/4/12	Carbon Steel Enclosure	310	Interpolated
52-S1-10xHC-YYYYYYY-000				310	Interpolated
52-S1-15xHC-YYYYYYY-000				310	Interpolated
52-S1-20xHC-YYYYYYY-000				310	Interpolated
52-S1-101HC-N60000-000	Pattons Medical	Hexaplex Scroll Controller, NEMA 3R/4/12	Carbon Steel Enclosure	310	UUT-06

1. "C" in Model Number can be "A" (208/3/60), "B" (230/3/60), "C" (460/3/60), or "D" (380/3/50).

2. In any "y" character of the model number, the following can be added as options: D: dryer switches removed; E: dual power entry; H: Remove remote intake; N: BACnet; 6: 65kA SCCR rating

3. Each enclosure has a NEMA rating of 3R, 4, and 12 simultaneously.

Special Seismic Certification

Table 16 - Certified Subcomponents - Modular Scroll Systems, Extended Dryer Skids



DCL Project: 39223-2201

Product Line: Modular Scroll Systems, Extended Dryer Skids

Mounting Configuration: Rigid Base Mount

Certified Seismic Level: Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

Dryers					
Model Number	Manufacturer	Description		Max Weight (lb.)	Unit
Dryspell +45	Trident	45 SCFM Dryer	Aluminum Housing	101	UUT-05
Dryspell +60		60 SCFM Dryer		115	Interpolated
Dryspell +100		100 SCFM Dryer		225	Interpolated
Dryspell +125		125 SCFM Dryer		254	UUT-06
Dryspell +200		200 SCFM Dryer		459	Interpolated
Dryspell +250		250 SCFM Dryer		511	Interpolated
Dryspell +300		300 SCFM Dryer		547	UUT-14
Controller					
Model Number	Manufacturer	Description ¹	Material	Max Weight (lb.)	Unit
52-D1-000DH-0000000-000	Pattons Medical	Duplex Dryer Controller, NEMA 3R/4/12	Carbon Steel Enclosure	20	UUT-14

1.The enclosure has a NEMA rating of 3R, 4, and 12 simultaneously.



Special Seismic Certification

Table 17 - Certified Subcomponents - Space Saver Vacuum Systems



DCL Project: 39223-2201

Product Line: Space Saver Vacuum Systems

Mounting Configuration: Rigid Base Mount

Certified Seismic Level: Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

Vacuum System Pumps								
Model Number	Manufacturer	Technology	HP	Voltage Tested	Voltage Certified	Material	Max. Weight (lb.)	Unit
MM1104	Busch	Contactless Claw	2.0	208	208/3/60 230/3/60 460/3/60 380/3/50	Cast Iron Motor w/ Copper Windings	439	UUT-07
MM1144	Busch		3.0				448	Interpolated
MM1102	Busch		4.0				443	Interpolated
MM1142	Busch		5.4				449	Interpolated
MM1202	Busch		6.4				610	Interpolated
MM1252	Busch		7.5				616	Interpolated
MM1322	Busch		8.7				651	Interpolated
MM1402	Busch		10.0				706	UUT-08
RC0040	Busch	Lubricated Rotary Vane	2.0	208	208/3/60 230/3/60 460/3/60 380/3/50	Cast Iron Motor w/ Copper Windings	120	UUT-07
RC0063	Busch		3.0				172	Interpolated
RC0100	Busch		5.0				198	Interpolated
RC0101	Busch		5.0				198	Interpolated
RC0155	Busch		5.0				243	Interpolated
RC0205	Busch		7.5				435	Interpolated
RC0255	Busch		10.0				520	Interpolated
RC0305	Busch		10.0				520	UUT-08

Tanks						
Model Number	Manufacturer	Type	Capacity	Material	Max. Weight (lb.)	Unit
VEC06580	Morganton Pressure Vessel	Horizontal Tank w/ Top Plate	60	Carbon Steel w/ Internal Epoxy Coating	196	UUT-07
VEC06581			80		248	Interpolated
VEC06578			120		383	UUT-08

Table Continued on Next Page

Special Seismic Certification

Table 17 - Certified Subcomponents - Space Saver Vacuum Systems (Continued)



DCL Project: 39223-2201

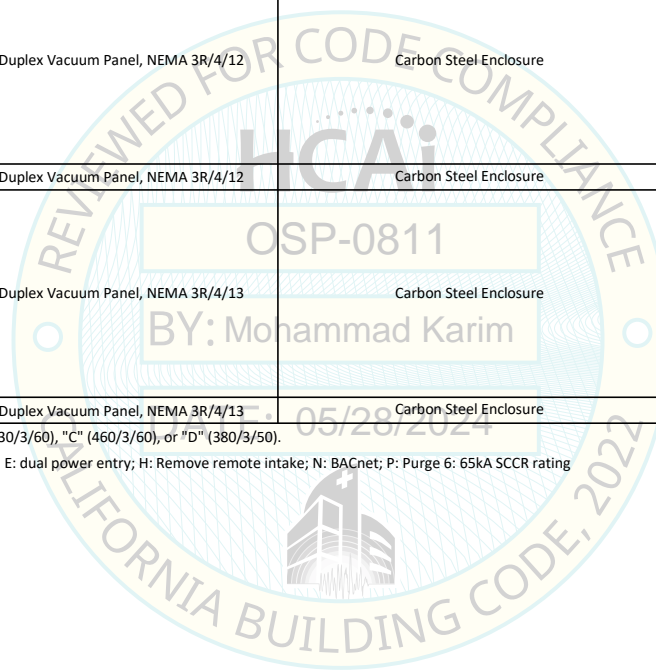
Product Line: Space Saver Vacuum Systems

Mounting Configuration: Rigid Base Mount

Certified Seismic Level: Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

Controllers					
Model Number ^{1,2}	Manufacturer	Description ³	Material	Max. Weight (lb.)	Unit
53-S1-02xDC-YYYYYY-000	Pattons Medical	Duplex Vacuum Panel, NEMA 3R/4/12	Carbon Steel Enclosure	110	Extrapolated
53-S1-03xDC-YYYYYY-000				110	Extrapolated
53-S1-04xDC-YYYYYY-000				110	Extrapolated
53-S1-05xDC-YYYYYY-000				110	Extrapolated
53-S1-06xDC-YYYYYY-000				110	Extrapolated
53-S1-07xDC-YYYYYY-000				110	Extrapolated
53-S1-08xDC-YYYYYY-000				110	Extrapolated
53-S1-10xDC-YYYYYY-000				110	Extrapolated
53-S1-024DA-P000000-000	Pattons Medical	Duplex Vacuum Panel, NEMA 3R/4/12	Carbon Steel Enclosure	130	UUT-07
53-S1-02xDC-VYYYYY-000	Pattons Medical	Duplex Vacuum Panel, NEMA 3R/4/13	Carbon Steel Enclosure	130	Interpolated
53-S1-03xDC-VYYYYY-000				130	Interpolated
53-S1-04xDC-VYYYYY-000				130	Interpolated
53-S1-05xDC-VYYYYY-000				135	Interpolated
53-S1-06xDC-VYYYYY-000				135	Interpolated
53-S1-07xDC-VYYYYY-000				135	Interpolated
53-S1-08xDC-VYYYYY-000				140	Interpolated
53-S1-10xDC-VYYYYY-000				140	Interpolated
53-S1-102DC-VPN6000-000	Pattons Medical	Duplex Vacuum Panel, NEMA 3R/4/13	Carbon Steel Enclosure	140	UUT-08

- "C" in model number denotes the power rating and can be "A" (208/3/60), "B" (230/3/60), "C" (460/3/60), or "D" (380/3/50).
- In any "y" character of the model number, the following can be added as options: E: dual power entry; H: Remove remote intake; N: BACnet; P: Purge 6: 65kA SCCR rating
- Each enclosure has a NEMA rating of 3R, 4, and 12 simultaneously.



Special Seismic Certification
Table 18 - Certified Subcomponents - Modular Vacuum Systems



DCL Project: 39223-2201

Product Line: Modular Vacuum Systems

Mounting Configuration: Rigid Base Mount

Certified Seismic Level: Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

Vacuum Pumps								
Model Number	Manufacturer	Technology	HP	Voltage Tested ¹	Voltage Certified	Material	Max Weight (lb)	Unit
MM1104	Busch	Contactless Claw	2.0	460	208/3/60 230/3/60 460/3/60 380/3/50	Cast Iron Motor w/ Copper Windings	439	UUT-10
MM1144	Busch		3.0				448	Interpolated
MM1102	Busch		4.0				443	Interpolated
MM1142	Busch		5.4				449	Interpolated
MM1202	Busch		6.4				610	Interpolated
MM1252	Busch		7.5				616	Interpolated
MM1322	Busch		8.7				651	Interpolated
MM1402	Busch		10.0				706	UUT-10
MM1502	Busch		15.0				717	UUT-09
RC0040	Busch		Lubricated Rotary Vane				2.0	208/3/60 230/3/60 460/3/60 380/3/50
RC0063	Busch	3.0		172	Extrapolated			
RC0100	Busch	5.0		198	Extrapolated			
RC0101	Busch	5.0		198	Extrapolated			
RC0155	Busch	5.0		243	Extrapolated			
RC0205	Busch	7.5		435	Extrapolated			
RC0255	Busch	10.0		520	Extrapolated			
RC0305	Busch	10.0		520	UUT-10			
RC0400	Busch	15.0		1084	Interpolated			
RC0502	Busch	20.0		1285	Interpolated			
RC0630	Busch	25.0	460	1527	UUT-13			

Tanks						
Model Number	Manufacturer	Type	Capacity	Material	Max Weight (lb)	Unit
VEC06433	Morganton Pressure Vessel	Vertical Tank	120	Carbon Steel w/ Internal Epoxy Coating	312	UUT-11
VEC06237			200		473	Interpolated
VEC06328			240		542	UUT-12

Table Continued on Next Page

1. Vacuum pump weight, configuration, and dimensions remain identical regardless of voltage rating.

Special Seismic Certification
Table 18 - Certified Subcomponents - Modular Vacuum Systems (Continued)



DCL Project: 39223-2201

Product Line: Modular Vacuum Systems

Mounting Configuration: Rigid Base Mount

Certified Seismic Level: Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

Controllers					
Model Number ^{1,2,3,4}	Manufacturer	Description ⁵	Material	Max Weight (lb.)	Unit
53-S1-02xDC-yyyyyy-000	Pattons Medical	Duplex Vacuum Panel, NEMA 3R/4/12	Carbon Steel Enclosure	130	Extrapolated
53-S1-03xDC-yyyyyy-000				130	Extrapolated
53-S1-04xDC-yyyyyy-000				130	Extrapolated
53-S1-05xDC-yyyyyy-000				135	Extrapolated
53-S1-06xDC-yyyyyy-000				135	Extrapolated
53-S1-07xDC-yyyyyy-000				135	Extrapolated
53-S1-08xDC-yyyyyy-000				140	Extrapolated
53-S1-10xDC-yyyyyy-000				140	Extrapolated
53-S1-15xDC-yyyyyy-000				150	Extrapolated
53-S1-200DC-yyyyyy-000				150	Extrapolated
53-S1-02xTC-yyyyyy-000	Pattons Medical	Triplex Vacuum Panel, NEMA 3R/4/12	Carbon Steel Enclosure	180	Extrapolated
53-S1-03xTC-yyyyyy-000				180	Extrapolated
53-S1-04xTC-yyyyyy-000				180	Extrapolated
53-S1-05xTC-yyyyyy-000				185	Extrapolated
53-S1-06xTC-yyyyyy-000				185	Extrapolated
53-S1-07xTC-yyyyyy-000				185	Extrapolated
53-S1-08xTC-yyyyyy-000				190	Extrapolated
53-S1-10xTC-yyyyyy-000				190	Extrapolated
53-S1-101TC-PN6000-000	Pattons Medical	Triplex Vacuum Panel, NEMA 3R/4/12	Carbon Steel Enclosure	190	UUT-11
53-S1-15xTC-yyyyyy-000	Pattons Medical	Triplex Vacuum Panel, NEMA 3R/4/12	Carbon Steel Enclosure	200	Interpolated
53-S1-200TC-yyyyyy-000				200	Interpolated
53-S1-250TC-yyyyyy-000				200	Interpolated
53-S1-05xQC-yyyyyy-000	Pattons Medical	Quadruplex Vacuum Panel, NEMA 3R/4/12	Carbon Steel Enclosure	210	Interpolated
53-S1-06xQC-yyyyyy-000				210	Interpolated
53-S1-07xQC-yyyyyy-000				240	Interpolated
53-S1-08xQC-yyyyyy-000				240	Interpolated
53-S1-10xQC-yyyyyy-000				240	Interpolated
53-S1-15xQC-yyyyyy-000				250	Interpolated
53-S1-200QC-yyyyyy-000				250	Interpolated
53-S1-250QC-yyyyyy-000				260	Interpolated

Table Continued on Next Page

- "C" in model number denotes the power rating and can be "A" (208/3/60), "B" (230/3/60), "C" (460/3/60), or "D" (380/3/50).
- The "X" in the model number can be "0" or "3" for Lubricated Vane or "1" or "4" for Claw.
- All controllers above can have a "v" added after "C-" to denote the VFD Option.
- In any "y" position the following can be added as options: E: dual power entry; N: BACnet; P: purge; 6: 65kA SCCR rating
- Each enclosure has a NEMA rating 3R, 4, and 12 simultaneously.

Special Seismic Certification
Table 18 - Certified Subcomponents - Modular Vacuum Systems (Continued)



DCL Project: 39223-2201

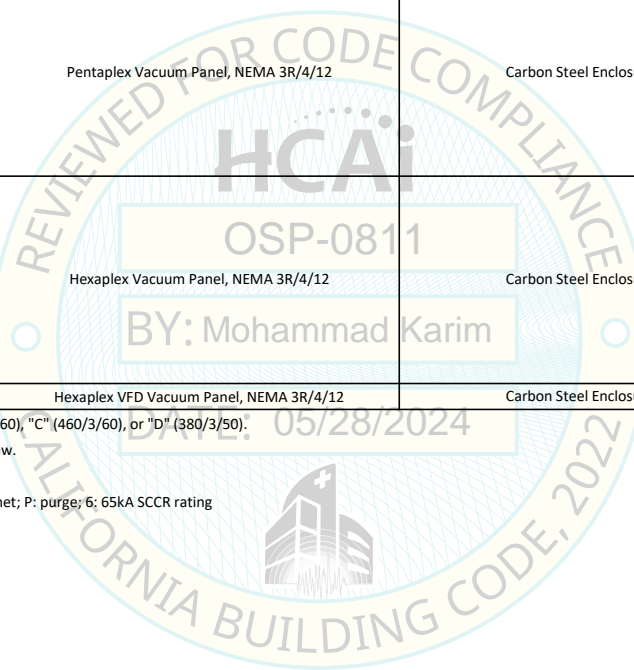
Product Line: Modular Vacuum Systems

Mounting Configuration: Rigid Base Mount

Certified Seismic Level: Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

Controllers								
Model Number ^{1,2,3,4}	Manufacturer	Description ⁵	Material	Max Weight (lb.)	Unit			
53-S1-05xPC-yyyyyyy-000	Pattons Medical	Pentaplex Vacuum Panel, NEMA 3R/4/12	Carbon Steel Enclosure	260	Interpolated			
53-S1-06xPC-yyyyyyy-000				260	Interpolated			
53-S1-07xPC-yyyyyyy-000				290	Interpolated			
53-S1-08xPC-yyyyyyy-000				290	Interpolated			
53-S1-10xPC-yyyyyyy-000				290	Interpolated			
53-S1-15xPC-yyyyyyy-000				300	Interpolated			
53-S1-200PC-yyyyyyy-000				300	Interpolated			
53-S1-250PC-yyyyyyy-000				310	Interpolated			
53-S1-05xHC-yyyyyyy-000				Pattons Medical	Hexaplex Vacuum Panel, NEMA 3R/4/12	Carbon Steel Enclosure	310	Interpolated
53-S1-06xHC-yyyyyyy-000							310	Interpolated
53-S1-07xHC-yyyyyyy-000	350	Interpolated						
53-S1-08xHC-yyyyyyy-000	350	Interpolated						
53-S1-10xHC-yyyyyyy-000	350	Interpolated						
53-S1-15xHC-yyyyyyy-000	360	Interpolated						
53-S1-200HC-yyyyyyy-000	370	Interpolated						
53-S1-250HC-yyyyyyy-000	370	Interpolated						
53v-S1-151HC-V000000-000	Pattons Medical	Hexaplex VFD Vacuum Panel, NEMA 3R/4/12	Carbon Steel Enclosure	370	UUT-12			

- "C" in model number denotes the power rating and can be "A" (208/3/60), "B" (230/3/60), "C" (460/3/60), or "D" (380/3/50).
- The "X" in the model number can be "0" or "3" for Lubricated Vane or "1" or "4" for Claw.
- All controllers above can have a "v" added after "C-" to denote the VFD Option.
- In any "y" position the following can be added as options: E: dual power entry; N: BACnet; P: purge; 6: 65kA SCCR rating
- Each enclosure has a NEMA 3R, 4, and 12 rating simultaneously.



Special Seismic Certification
Table 19 - Tested Components



DCL Project: 39223-2201

Manufacturer: Pattons Medical

Mounting Configuration: Rigid Base Mount

Certified Seismic Level: Sds=2.0g, z/h=1.0; Sds=2.5g, z/h=0.0

Model Number	System	Manufacturer	Technology	Configuration	HP	Receiver Size (gallons)	Voltage	System Size	Control Panel Size	Dimensions (in)			Weight (lb)	Mounting	DCL Test Report Number	Unit
										Length	Width	Height				
62-21-022AX-MM00SA0-000	Air	Pattons Medical	Scroll	Horizontal Tank	2	80	460	Duplex	Duplex	89.1	29.5	60.8	1,200	Rigid Base	39223-2201	UUT-01
62-21-104CX-MKM0SA0-N60	Air	Pattons Medical	Scroll	Horizontal Tank	10	200	208	Duplex	Duplex	91.3	35.6	74.4	1,950	Rigid Base	39223-2201	UUT-02
62-34-xx3CX-MM00SA0-000 (Compressor Skid)	Air	Pattons Medical	Scroll	Modular Skid	15, 20	N/A	460	Triplex	N/A	70.4	33.0	85.9	2,400	Rigid Base	39223-2201	UUT-03
62-44-xx5CH-MKM0SA0-N60 (Compressor Skid)	Air	Pattons Medical	Scroll	Modular Skid	7.5, 10	N/A	208	Quadplex	N/A	70.4	33.0	72.7	2,000	Rigid Base	39223-2201	UUT-04
62-34-xx3CX-MM00SA0-000 (Receiver/Dryer/Panel Skid)	Air	Pattons Medical	N/A	Modular Skid	N/A	120	208	N/A	Triplex	70.0	32.8	74.2	1,050	Rigid Base	39223-2201	UUT-05
62-44-xx5CH-MKM0SA0-N60 (Receiver/Dryer/Panel Skid)	Air	Pattons Medical	N/A	Modular Skid	N/A	240	460	N/A	Hexaplex	70.0	35.4	93.4	1,900	Rigid Base	39223-2201	UUT-06
64-02-300HX-KW00000-000	Air	Pattons Medical	N/A	Modular Skid	N/A	N/A	120	Duplex	N/A	42.2	70.0	68.5	1,390	Rigid Base	39223-2201	UUT-14
7x-25-026CX-VLL0SB0-000	Vacuum	Pattons Medical	Contactless Claw, Lubricated Rotary Vane	Space Saver	2	60	208	Duplex	Duplex	67.0	32.5	81.6	1,700	Rigid Base	39223-2201	UUT-07
7x-25-103CX-VKL0SB0-N60	Vacuum	Pattons Medical	Contactless Claw, Lubricated Rotary Vane	Space Saver	10	120	460	Duplex	Duplex	74.4	34.0	91.1	2,950	Rigid Base	39223-2201	UUT-08
7x-24-xx5CH-VKL0SB0-000 (Contactless Claw Vacuum Pump Skid)	Vacuum	Pattons Medical	Contactless Claw	Modular Skid	15	N/A	208	Duplex	N/A	69.0	33.0	89.9	2,460	Rigid Base	39223-2201	UUT-09
7x-34-xx3CX-VKL0SB0-N60 (Vacuum Pump Skid)	Vacuum	Pattons Medical	Contactless Claw, Lubricated Rotary Vane	Modular Skid	2, 10	N/A	460	Triplex	N/A	60.4	33.0	89.5	2,850	Rigid Base	39223-2201	UUT-10
7x-34-xx3CX-VKL0SB0-N60 (Receiver/Panel Skid)	Vacuum	Pattons Medical	N/A	Modular Skid	N/A	120	460	N/A	Triplex	60.0	36.0	77.2	750	Rigid Base	39223-2201	UUT-11
7x-24-xx5CH-VnL0SB0-000 (Receiver/Panel Skid)	Vacuum	Pattons Medical	N/A	Modular Skid	N/A	240	208	N/A	Duplex	60.0	36.0	95.2	1,450	Rigid Base	39223-2201	UUT-12
7x-24-xx5CH-VKL0SB0-000 (Lubricate Rotary Vane Vacuum Skid)	Vacuum	Pattons Medical	Lubricated Rotary Vane	Modular Skid	25	N/A	208	Duplex	N/A	75.8	36.9	88.7	4,450	Rigid Base	39223-2201	UUT-13

UNIT UNDER TEST (UUT) Summary Sheet



UUT-01 - DCL Test Report 39223-2201

Manufacturer: Pattons Medical

Product Line: Horizontal Tank Scroll Compressor Systems

Model Number: 62-21-022AX-MM00SA0-000

Product Construction Summary: Carbon Steel Tank

Options / Component Summary: Duplex system. Scroll air compressors (3 HP), 208V. 80 gallon horizontal tank. 10 SCFM Dryer. Duplex Scroll controller in NEMA 3R/4/12 enclosure.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)			Operating Weight (lb)	Lowest Natural Frequency (Hz)		
	Length	Width	Height		Front-Back	Side-Side	Vertical
UUT-01	89.1	29.5	60.8	1,200	7.5	5.5	19.5

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description:

The unit was rigid base mounted to the DCL shake table interface plate with (4) 7/16" Grade 8 bolts, flat washers, and 1 5/8" x 1 5/8" x 1/4" carbon steel plate washers spaced 14.0" in the lateral direction and 36.0" in the longitudinal direction on-center.



Overall Picture of UUT-01

UNIT UNDER TEST (UUT) Summary Sheet



UUT-02 - DCL Test Report 39223-2201

Manufacturer: Pattons Medical

Product Line: Horizontal Tank Scroll Compressor Systems

Model Number: 62-21-104CX-MKM0SA0-N60

Product Construction Summary: Carbon Steel Tank

Options / Component Summary: Duplex system. Scroll air compressors (10 HP), 460V. 200 gallon horizontal tank. 30 SCFM Dryer. Duplex Scroll controller in NEMA 3R/4/12 enclosure.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)			Operating Weight (lb)	Lowest Natural Frequency (Hz)		
	Length	Width	Height		Front-Back	Side-Side	Vertical
UUT-02	91.3	35.6	74.4	1,950	10.0	4.0	10.5

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description:

The unit was rigid base mounted to the DCL shake table interface plate with (4) 5/8" Grade 8 bolts, flat washers, and 2" x 2" x 3/16" carbon steel plate washers spaced 27.5" in the lateral direction and 42.0" in the longitudinal direction on-center. Pre-test retrofits: see Table 13.



Overall picture of UUT-02

UNIT UNDER TEST (UUT) Summary Sheet



UUT-03 - DCL Test Report 39223-2201

Manufacturer: Pattons Medical

Product Line: Modular Skid Air Compressor Systems

Model Number: 62-34-xx3CX-MM00SA0-000 (Compressor Skid)

Product Construction Summary: Carbon Steel Skid

Options / Component Summary: Triplex system. Scroll air compressor assembly (20 HP top and middle, 15 HP bottom), 460V.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

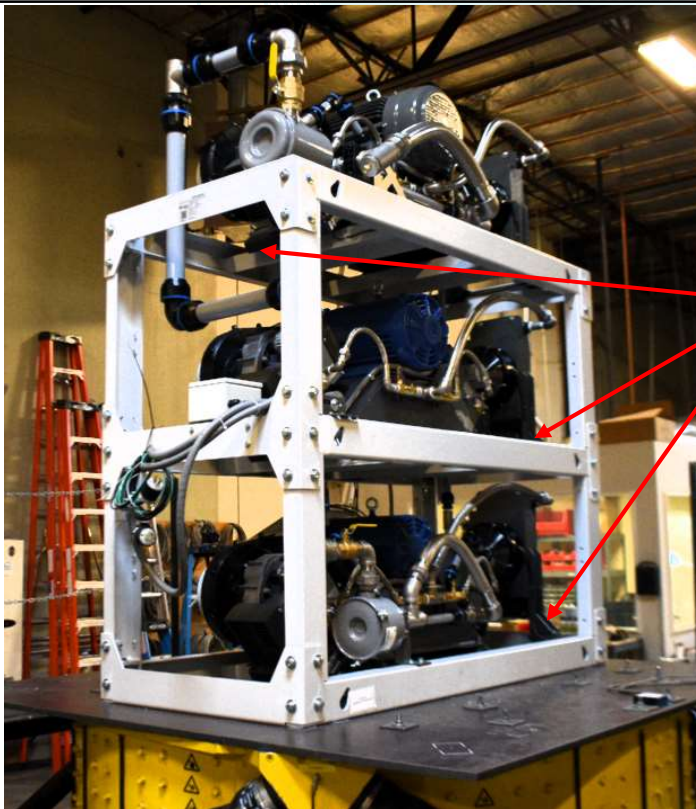
Tested unit	Dimensions (in)			Operating Weight (lb)	Lowest Natural Frequency (Hz)		
	Length	Width	Height		Front-Back	Side-Side	Vertical
UUT-03	70.4	33.0	85.9	2,400	8.0	6.0	17.0

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description:

The unit was rigid base mounted to the DCL shake table interface plate with (4) 5/8" Grade 8 bolts and (8) flat washers, two per bolt spaced 30.0" in the lateral direction and 65.5" in the longitudinal direction on-center. Pre-test retrofits: see Table 13.



Overall Picture of UUT-03

UNIT UNDER TEST (UUT) Summary Sheet



UUT-04 - DCL Test Report 39223-2201

Manufacturer: Pattons Medical

Product Line: Modular Skid Air Compressor Systems

Model Number: 62-44-xx5CH-MKM0SA0-N60 (Compressor Skid)

Product Construction Summary: Carbon Steel Skid

Options / Component Summary: Quadplex system. Scroll air compressor assembly (10 HP, 7.5 HP), 460V.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

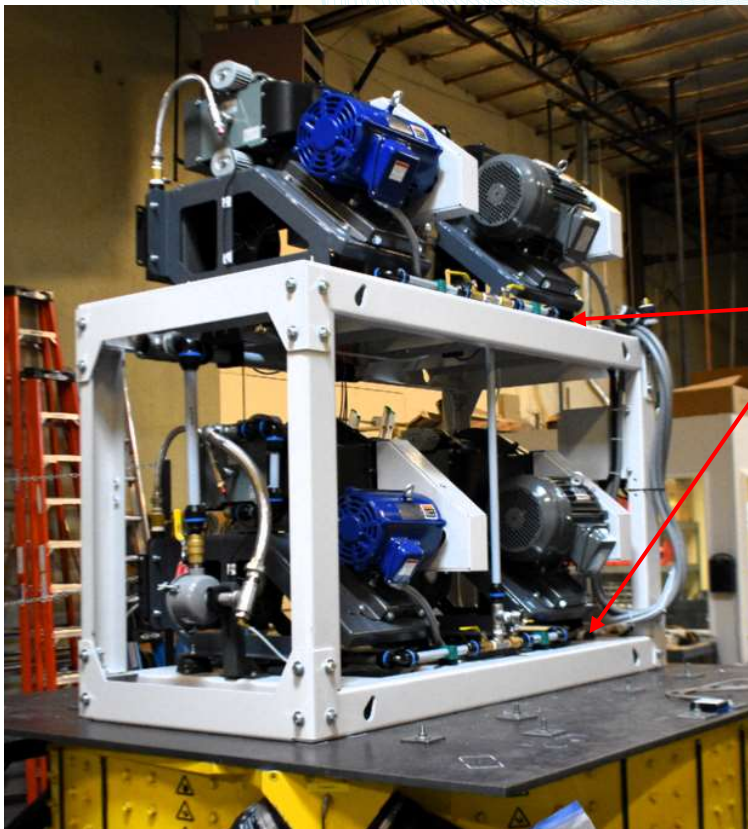
Tested unit	Dimensions (in)			Operating Weight (lb)	Lowest Natural Frequency (Hz)		
	Length	Width	Height		Front-Back	Side-Side	Vertical
UUT-04	70.4	33.0	72.7	2,000	10.0	8.0	26.0

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description:

The unit was rigid base mounted to the DCL shake table interface plate with (4) 5/8" Grade 8 bolts and (8) flat washers, two per bolt spaced 30.0" in the lateral direction and 65.5" in the longitudinal direction on-center. Pre-test retrofits: see Table 13.



Overall Picture of UUT-04

UNIT UNDER TEST (UUT) Summary Sheet



UUT-05 - DCL Test Report 39223-2201

Manufacturer: Pattons Medical

Product Line: Modular Skid Air Compressor Systems

Model Number: 62-34-xx3CX-MM00SA0-000 (Receiver/Dryer/Panel Skid)

Product Construction Summary: Carbon Steel Skid

Options / Component Summary: 120 gallon vertical tank. 45 SCFM Dryer. Triplex Scroll controller in NEMA 3R/4/12 enclosure.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

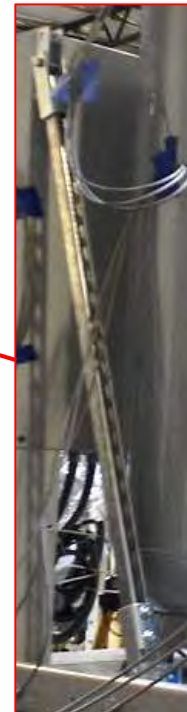
Tested unit	Dimensions (in)			Operating Weight (lb)	Lowest Natural Frequency (Hz)		
	Length	Width	Height		Front-Back	Side-Side	Vertical
UUT-05	70.0	32.8	74.2	1,050	7.0	10.5	>33.3

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description:

The unit was rigid base mounted to the DCL shake table interface plate with (4) 5/8" Grade 8 bolts and (8) flat washers, two per bolt spaced 30.0" in the lateral direction and 65.5" in the longitudinal direction on-center. Pre-test retrofits: see Table 13.



Overall Picture of UUT-05

UNIT UNDER TEST (UUT) Summary Sheet



UUT-06 - DCL Test Report 39223-2201

Manufacturer: Pattons Medical

Product Line: Modular Skid Scroll Compressor Systems

Model Number: 62-44-xx5CH-MKM0SA0-N60 (Receiver/Dryer/Panel Skid)

Product Construction Summary: Carbon Steel Skid

Options / Component Summary: 240 gallon vertical tank. 125 SCFM Dryer. Hexaplex Scroll controller in NEMA 3R/4/12 enclosure.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

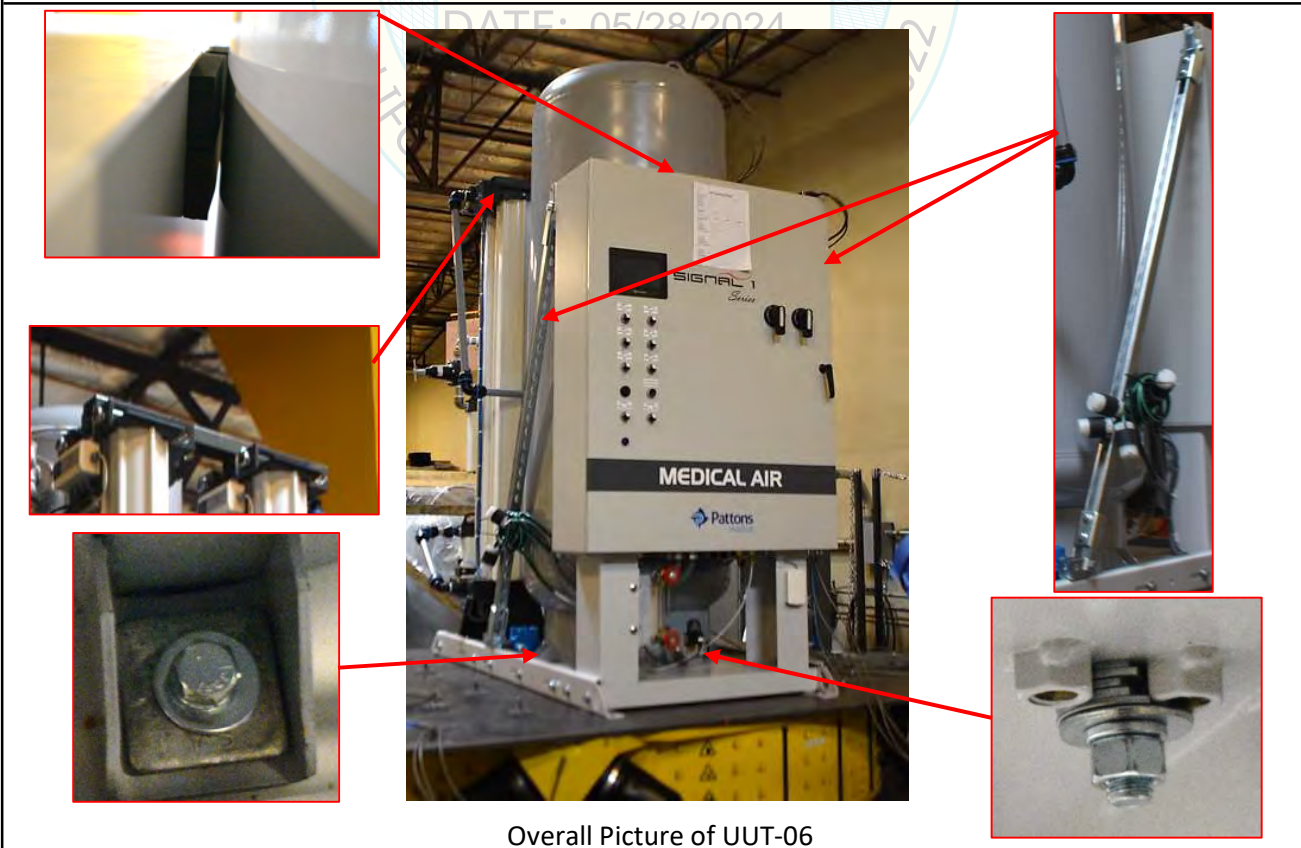
Tested unit	Dimensions (in)			Operating Weight (lb)	Lowest Natural Frequency (Hz)		
	Length	Width	Height		Front-Back	Side-Side	Vertical
UUT-06	70.0	35.4	93.4	1,900	5.5	5.0	24.0

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description:

The unit was rigid base mounted to the shake table interface plate with (4) 5/8" Grade 8 bolts and (12) flat washers, three per bolt spaced 30.0" in the lateral direction and 65.5" in the longitudinal direction on-center. Pre-test retrofits: see Table 13.



Overall Picture of UUT-06

UNIT UNDER TEST (UUT) Summary Sheet



UUT-14 - DCL Test Report 39223-2201

Manufacturer: Pattons Medical

Product Line: Extended Dryer Skids for Modular Skid Scroll Compressor Systems

Model Number: 64-02-300HX-KW00000-000

Product Construction Summary: Carbon Steel Skid

Options / Component Summary: 300 SCFM Dryer

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)			Operating Weight (lb)	Lowest Natural Frequency (Hz)		
	Length	Width	Height		Front-Back	Side-Side	Vertical
UUT-14	42.2	70.0	68.5	1,390	6.0	12.5	>33.3

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description:

The unit was rigid base mounted to the DCL shake table interface plate with (4) 5/8" Grade 8 bolts and (8) flat washers spaced 67.5" in the longitudinal direction and 16.0" in the lateral direction on-center. Pre-test retrofits: see Table 13.



Overall Picture of UUT-14

UNIT UNDER TEST (UUT) Summary Sheet



UUT-07 - DCL Test Report 39223-2201

Manufacturer: Pattons Medical

Product Line: Space Saver Vacuum Systems, Contactless Claw and Lubricated Rotary Vane Pumps

Model Number: 7x-25-026CX-VLLOSBO-000

Product Construction Summary: Carbon Steel Frame

Options / Component Summary: Duplex system. Contactless claw pump (2 HP, top) and lubricated rotary vane pump (2 HP, bottom), 208V. 60 gallon horizontal tank. Duplex vacuum control panel in NEMA 3R/4/12 enclosure.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)			Operating Weight (lb)	Lowest Natural Frequency (Hz)		
	Length	Width	Height		Front-Back	Side-Side	Vertical
UUT-07	67.0	32.5	81.6	1,700	13.5	7.5	15.0

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description:

The unit was rigid base mounted to the DCL shake table interface plate with (4) 5/8" Grade 8 bolts and (8) flat washers, two per bolt spaced 30.0" in the lateral direction and 55.5" in the longitudinal direction on-center. Pre-test retrofits: see Table 13.



Overall Picture of UUT-07

UNIT UNDER TEST (UUT) Summary Sheet



UUT-08 - DCL Test Report 39223-2201

Manufacturer: Pattons Medical

Product Line: Space Saver Vacuum Systems, Contactless Claw and Lubricated Rotary Vane

Model Number: 7x-25-103CX-VKLOSB0-N60

Product Construction Summary: Carbon Steel Frame

Options / Component Summary: Duplex system. Contactless claw pump (10 HP, top) and lubricated rotary vane pump (10 HP, bottom), 460V. 120 gallon horizontal tank. Duplex vacuum control panel in NEMA 3R/4/12 enclosure.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Tested unit	Dimensions (in)			Operating Weight (lb)	Lowest Natural Frequency (Hz)		
	Length	Width	Height		Front-Back	Side-Side	Vertical
UUT-08	74.4	34.0	91.1	2,950	10.5	6.0	18.0

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description:

The unit was rigid base mounted to the DCL shake table interface plate with (4) 5/8" Grade 8 bolts and (8) flat washers, two per bolt spaced 30.0" in the lateral direction and 55.5" in the longitudinal direction on-center. Pre-test retrofits: see Table 13.



Overall Picture of UUT-08

UNIT UNDER TEST (UUT) Summary Sheet



UUT-09 - DCL Test Report 39223-2201

Manufacturer: Pattons Medical

Product Line: Modular Skid Vacuum Systems, Contactless Claw Pumps

Model Number: 7x-24-xx5CH-VKLOSB0-000 (Contactless Claw Vacuum Skid)

Product Construction Summary: Carbon Steel Skid

Options / Component Summary: Duplex system. Two 15 HP contactless claw pumps, 460V.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

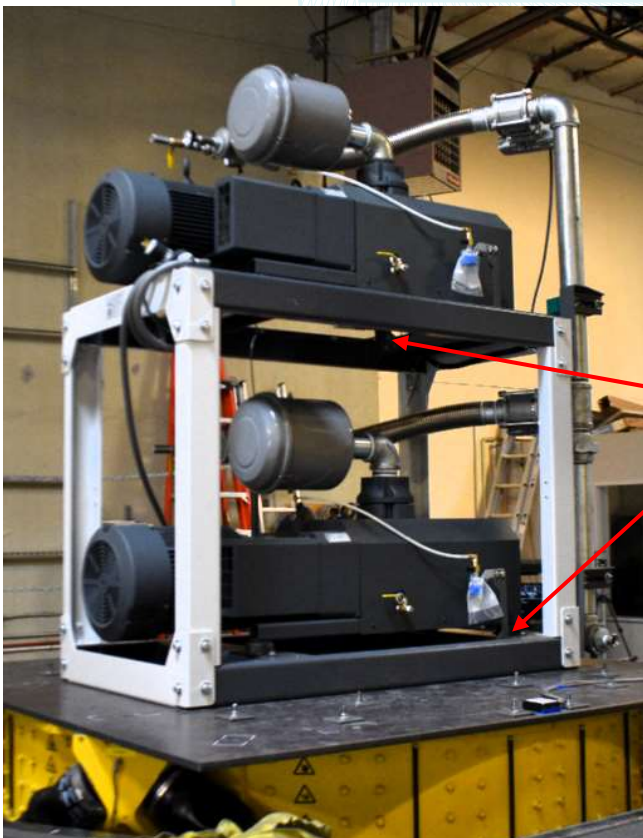
Tested unit	Dimensions (in)			Operating Weight (lb)	Lowest Natural Frequency (Hz)		
	Length	Width	Height		Front-Back	Side-Side	Vertical
UUT-09	69.0	33.0	89.9	2,460	9.0	5.0	12.5

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description:

The unit was rigid base mounted to the DCL shake table interface plate with (4) 5/8" Grade 8 bolts and (12) flat washers, three per bolt spaced 30.0" in the lateral direction and 55.5" in the longitudinal direction on-center. Pre-test retrofits: see Table 13.



Overall Picture of UUT-09

UNIT UNDER TEST (UUT) Summary Sheet



UUT-10 - DCL Test Report 39223-2201

Manufacturer: Pattons Medical

Product Line: Modular Skid Vacuum Systems, Contactless Claw and Lubricated Rotary Vane Pumps

Model Number: 7x-34-xx3CX-VKL0SB0-N60 (Vacuum Skid)

Product Construction Summary: Carbon Steel Skid

Options / Component Summary: Triplex system. Two contactless claw pumps (10 HP, top; 2 HP, bottom) and one lubricated rotary vane pump (10 HP, middle), 460V.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

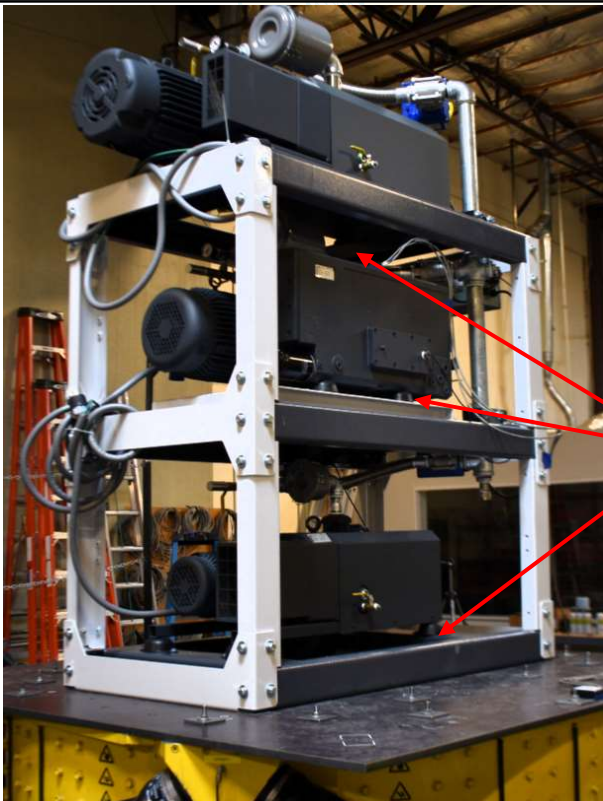
Tested unit	Dimensions (in)			Operating Weight (lb)	Lowest Natural Frequency (Hz)		
	Length	Width	Height		Front-Back	Side-Side	Vertical
UUT-10	60.4	33.0	89.5	2,850	9.5	5.0	14.0

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description:

The unit was rigid base mounted to the DCL shake table interface plate with (4) 5/8" Grade 8 bolts and (8) flat washers, two per bolt spaced 30.0" in the lateral direction and 55.5" in the longitudinal direction on-center. Pre-test retrofits: see Table 13.



Overall Picture of UUT-10

UNIT UNDER TEST (UUT) Summary Sheet



UUT-11 - DCL Test Report 39223-2201

Manufacturer: Pattons Medical

Product Line: Modular Skid Vacuum Systems

Model Number: 7x-34-xx3CX-VKLOSB0-N60 (Receiver/Panel Skid)

Product Construction Summary: Carbon Steel Skid

Options / Component Summary: 120 gallon vertical tank. Triplex vacuum control panel in NEMA 3R/4/12 enclosure.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

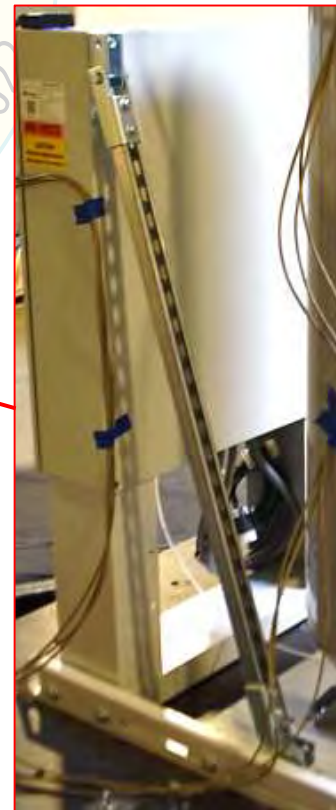
Tested unit	Dimensions (in)			Operating Weight (lb)	Lowest Natural Frequency (Hz)		
	Length	Width	Height		Front-Back	Side-Side	Vertical
UUT-11	60.0	36.0	77.2	750	8.0	9.5	32.0

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description:

The unit was rigid base mounted to the shake table interface plate with (4) 5/8" Grade 8 bolts and flat washers. The bolts were spaced 30.0" in the lateral direction and 55.5" in the longitudinal direction on-center. Pre-test retrofits: see Table 13.



Overall Picture of UUT-11

UNIT UNDER TEST (UUT) Summary Sheet



UUT-12 - DCL Test Report 39223-2201

Manufacturer: Pattons Medical

Product Line: Modular Skid Vacuum Systems

Model Number: 7x-24-xx5CH-VKLOSBO-000 (Receiver/Panel Skid)

Product Construction Summary: Carbon Steel Skid

Options / Component Summary: 240 gallon vertical tank. Hexaplex VFD vacuum control panel in NEMA 3R/4/12 enclosure.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

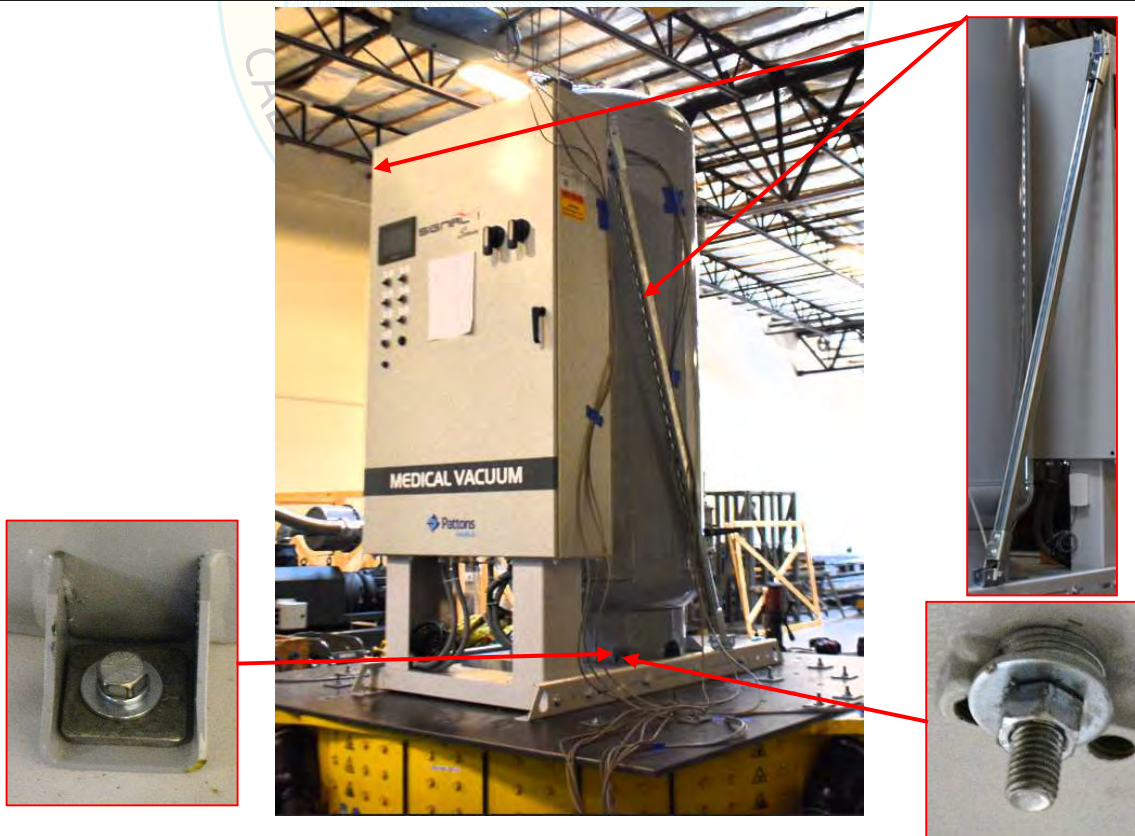
Tested unit	Dimensions (in)			Operating Weight (lb)	Lowest Natural Frequency (Hz)		
	Length	Width	Height		Front-Back	Side-Side	Vertical
UUT-12	60.0	36.0	95.2	1,450	5.0	5.5	27.0

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description:

The unit was rigid base mounted to the DCL shake table interface plate with (4) 5/8" Grade 8 bolts and (12) flat washers, three per bolt spaced 30.0" in the lateral direction and 55.5" in the longitudinal direction on-center. Pre-test retrofits: see Table 13.



Overall Picture of UUT-12

UNIT UNDER TEST (UUT) Summary Sheet



UUT-13 - DCL Test Report 39223-2201

Manufacturer: Pattons Medical

Product Line: Modular Skid Vacuum Systems, Lubricated Rotary Vane Pumps

Model Number: 7x-24-xx5CH-VKL0SB0-000 (Lubricated Rotary Vane Vacuum Skid)

Product Construction Summary: Carbon Steel Skid

Options / Component Summary: Duplex system. Two 25 HP lubricated rotary vane vacuum pumps, 460V.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

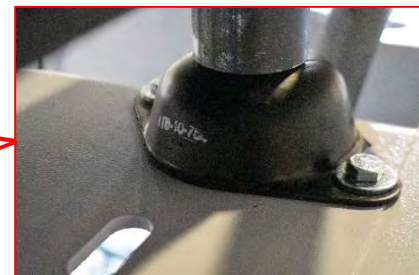
Tested unit	Dimensions (in)			Operating Weight (lb)	Lowest Natural Frequency (Hz)		
	Length	Width	Height		Front-Back	Side-Side	Vertical
UUT-13	75.8	36.9	88.7	4,450	8.5	6.5	17.0

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	N/A	N/A
		2.50	0.0		N/A	N/A	1.67	0.67

Unit Mounting Description:

The unit was rigid base mounted to the DCL shake table interface plate with (4) 5/8" Grade 8 bolts and (8) flat washers spaced 32.5" in the lateral direction and 70.0" in the longitudinal direction on-center. Pre-test retrofits: see Table 13.



Overall Picture of UUT-13