PER SCEGLIERE IL SUPPORTO ANTIVIBRANTE CORRETTO BISOGNA CONOSCERE:

1. PESO STATICO della macchina e NUMERO DEI PUNTI DI APPOGGIO con rispettivo carico gravante.
2. FREQUENZA ECCITANTE determinata dal corpo rotante con r.p.m. più bassa.
3. LUOGO D'INSTALLAZIONE: se la macchina viene installata in una zona sismica, in copertura, se è soggetta alle forze del vento o in una zona con elevata presenza di nebbie saline o altri agenti aggressivi.
4. TEMPERATURA D'IMPIEGO: bisogna tenere in considerazione le temperature alle quali saranno soggetti i supporti antivibranti.

L'INSTALLAZIONE É CORRETTA QUANDO TUTTI I SUPPORTI INSTALLATI PRESENTANO LA STESSA FRECCIA ELASTICA.

Se le basi di appoggio dei diversi supporti antivibranti non sono tra loro a livello, è necessario compensare tale mancanza utilizzando appositi registri (MARTINETTI).

TO CHOOSE THE CORRECT ANTI-VIBRATION MOUNT, YOU MUST KNOW:

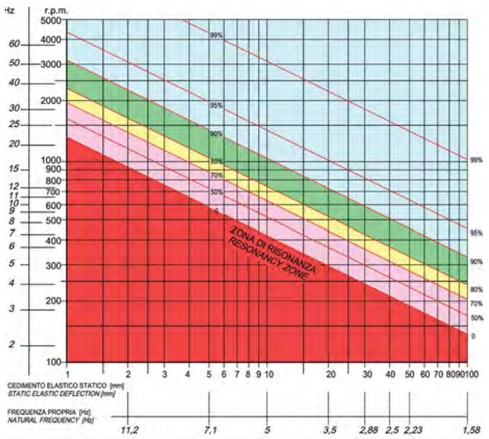
1. *The STATIC WEIGHT of the machine and the NUMBER OF SUPPORT POINTS with their respective loads;*
2. *The EXCITATION FREQUENCY determined by the rotating body at the lowest r.p.m.*
3. *INSTALLATION SITE: if the machine is installed in a seismic area, on the roof, if it is subject to wind forces or in an area with high presence of saline mists or other aggressive agents.*
4. *WORKING TEMPERATURE: the temperatures to which the anti-vibration mounts will be subject must be taken into consideration.*

THE INSTALLATION IS CORRECT WHEN ALL THE INSTALLED MOUNTS HAVE THE SAME ELASTIC DEFLECTION.

If the support bases of the different anti-vibration mounts are not among them at level, it is necessary to compensate for this lack using special registers (JACKS).

FREQUENZA
FREQUENCY

NOMOGRAMMA
NOMOGRAPH



Il diagramma degli isolamenti, riassume graficamente, le relazioni intercorrenti tra la freccia elastica espressa in mm, il regime vibrante in r.p.m. o i cicli/mm e il grado di isolamento espresso in %.

The insulation diagram shows graphically the ratios between the elastic deflections in mm, the vibration speed in r.p.m. or cycles/mm and the degree of insulation as a %.

ottima *very good*
sufficiente *sufficient*
buona *good*
zona di risonanza *resonant zone*
discreta *fair*

ESEMPIO DI SCELTA DI UN SUPPORTO ANTIVIBRANTE:

Si supponga di dover isolare un gruppo frigorifero di 6.234 kg con una frequenza pari a 1800 r.p.m. (30 Hz).
L'unità ha 6 punti di appoggio, su ogni punto d'appoggio gravano 1039 kg (il carico è uniformemente distribuito).
Per ottenere un isolamento del 90% ca. è necessaria una deflessione (freccia) di ca. 4 mm.
Nella scelta del supporto antivibrante controllare che il carico massimo consigliato sia superiore al carico applicato.
Per la corretta installazione consultare l'apposita guida tecnica.
Soleco engineering s.r.l. non si assume responsabilità nei casi dove si evidenzia l'errata installazione del supporto.

EXAMPLE OF CHOICE OF ANTI-VIBRATION MOUNT:

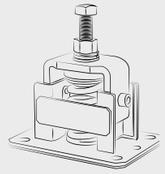
Suppose you need to isolate a 6234 kg refrigeration unit with one frequency equal to 1800 r.p.m. (30 Hz).
The unit has six resting points with 1.039 kg resting on each point (the load is evenly distributed).
To achieve about 90% insulation, a deflection of about 4 mm. is necessary.
When choosing the anti-vibration mount, check that the maximum recommended load is higher than the load applied.
Please consult the technical guide for correct installation.
Soleco Engineering S.r.l. declines all responsibility in cases where the incorrect installation of the support is detected.

ANTIVIBRANTI CON STRUTTURA ANTISISMA
SEISMIC RESTRAINT ANTI-VIBRATION MOUNTS

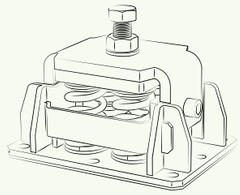
Soleco engineering s.r.l. non si assume responsabilità nei casi dove si evidenzia l'errata installazione del supporto.

Soleco Engineering S.r.l. declines all responsibility in cases where the incorrect installation of the support is detected.

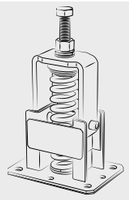
SERIE LaL
LaL SERIES
p. 4



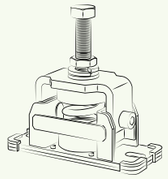
SERIE LaL SPECIALE
LaL SPECIAL SERIES
p. 6



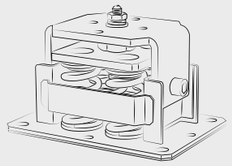
SERIE LaLAH
LaLAH SERIES
p. 18
MOLLE CON ALTA DEFLESSIONE
SPRINGS WITH HIGH DEFLECTION



SERIE LaLbZb - LaLbXb
LaLbZb - LaLbXb SERIES
p. 19
MOLLE RIDOTTE
REDUCED SPRINGS



SERIE LaLS
LaLS SERIES
p. 20
LIVELLAZIONE DELLA MACCHINA FACILITATA
BUILT-IN LEVEL ADJUSTMENT DEVICE



SERVIZIO IN KIT
KIT SERVICE
p. 30

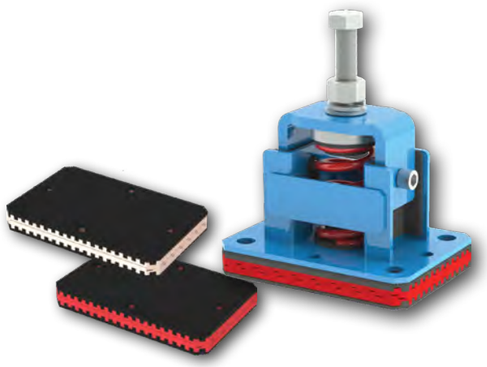
SERIE LaL
LaL SERIES

CARATTERISTICHE COSTRUTTIVE

- Struttura di contenimento realizzata in acciaio UNI EN 10025-S235JR sabbiata, protetta da trattamento cataforetico e verniciata a polvere poliestere con viti in acciaio zincato.
- La struttura è progettata per poter garantire un'elevata resistenza alle forze multidirezionali agenti sulla superficie della macchina sospesa in presenza di vento e/o movimenti tellurici.
- Molle in acciaio armonico UNI EN 10270-1 SH con superficie protetta da trattamento cataforetico.
- La gamma standard anti-sisma prevede dispositivi composti da un numero variabile di molle in grado di soddisfare un'estesa fascia di carico, da 17 a 8.000 kg per punto d'appoggio.
- Tramite esecuzioni speciali e strutture rinforzate è possibile raggiungere carichi di 15.000 kg per punto d'appoggio.

A RICHIESTA

- Su richiesta vengono forniti cuscinetti smorzatori in elastomero (STRIPES), interposti tra le superfici di contatto che consentono di ridurre sensibilmente la trasmissione delle frequenze soniche.



SOLUZIONI AD HOC

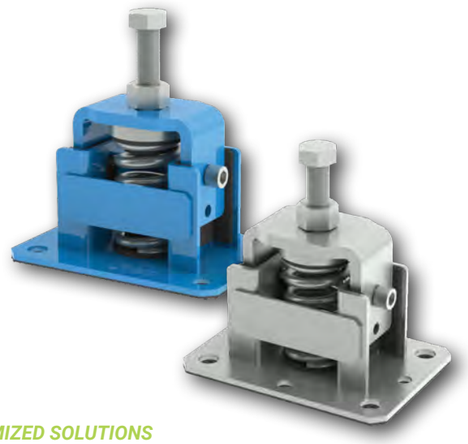
- Su richiesta le parti metalliche possono essere realizzate in ACCIAIO INOX AISI 304 o 316 per isolare macchinari in condizioni climatiche estreme e in presenza di agenti atmosferici aggressivi o nebbie saline.
- Verniciature speciali per ambienti da C1 a C5M e verniciatura NORSOK per applicazioni OFFSHORE.
- L'ufficio Progettazione Soleco è a disposizione per assistere il Cliente in ogni sua richiesta e realizzare prodotti su misura.

MANUFACTURING CHARACTERISTICS

- *Containment structure made of sandblasted UNI EN 10025-S235JR steel, protected by cataphoretic treatment and polyester powder coated with galvanized steel screws.*
- *The structure is designed to ensure high resistance to multidirectional forces acting on the surface of the suspended machine in the presence of wind and/or earthquake movements.*
- *Springs in harmonic steel UNI EN 10270-1 SH with surface protected by cataphoretic treatment.*
- *The standard anti-earthquake range includes devices consisting of a variable number of springs capable of satisfying an extended load range, from 17 to 8,000 kg per support point.*
- *Through special executions and reinforced structures it is possible to reach loads of 15,000 kg per support point.*

ON REQUEST

- *To reduce significantly the transmission of sonic frequencies we can provide elastomer bearings dampers (STRIPES) between the anti-vibration mount and the contact surface.*



CUSTOMIZED SOLUTIONS

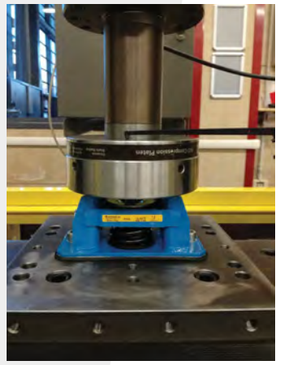
- *On request the container structure can be made in STAINLESS STEEL AISI 304 - 316 to insulate equipment's in extreme temperatures environments and in presence of aggressive atmospheric agent or salty fog.*
- *Special paints for environments from C1 to C5M and NORSOK paint for OFFSHORE applications.*
- *Soleco Technical Department can also provide assistance in the realization of customized solutions.*

CERTIFICAZIONI SISMICHE
SEISMIC CERTIFICATIONS

I NOSTRI ANTISISMICI SONO CERTIFICATI

Gli antivibranti anti-sisma Soleco sono stati testati presso il Politecnico di Milano secondo standard ANSI/ASHRAE 171-2008 (Method of Testing Seismic Restraint devices for HVAC&R Equipment).

I livelli prestazionali e la metodologia di prova sono stati validati e certificati da Lloyd's Register.



QUALIFICAZIONI SISMICHE E TEST FUNZIONALI

Per i nostri Clienti abbiamo ottenuto diverse certificazioni nel campo sismico.
Tutti i test sismici sono eseguiti da laboratori accreditati seguendo i requisiti di ICC-ES AC156 e ASCE 7-10 (che contiene le disposizioni antisismiche dell'International Building Code IBC).

Progettiamo e produciamo speciali basi sismiche per mantenere l'integrità strutturale delle unità dopo l'evento sismico e/o il test sismico eseguito su tavola a scossa triassiale.

OUR SEISMIC RESTRAINTS ARE CERTIFIED

Soleco anti-seismic line was tested following ANSI/ASHRAE Standard 171-2008 (Method of Testing Seismic Restraint devices for HVAC&R Equipment) at Polytechnic University of Milan.

Every test was supervised by a Lloyd'S Register surveyor to certify the compliance of the anti-seismic anti-vibration line.

POLITECNICO MILANO 1863

DIPARTIMENTO DI MECCANICA

miecc

097/16PC test on anti-vibration supports
according to ANSI/ASHRAE 171-2008
(Prove su supporti antivibranti
secondo ANSI/ASHRAE 171-2008)

Committente: SOLECO Engineering Srl
Via Monviolo, 12
24050 - Psalmiria (BG)

Data, 13 aprile 2017

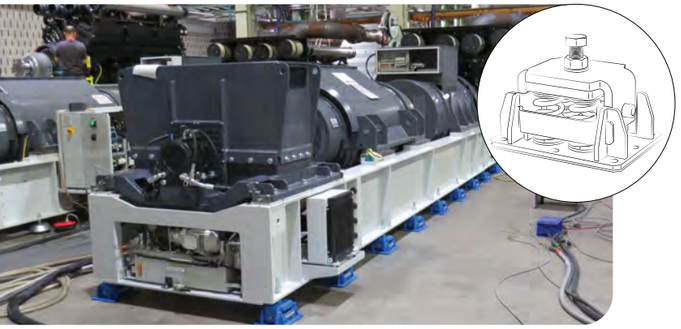
SEISMIC QUALIFICATION AND FUNCTIONALITY TEST

For our Clients we have obtained several certifications in the seismic field.
All seismic tests are performed by accredited laboratories following the requirements of ICC-ES AC156 and ASCE 7-10 (which contains the seismic provisions of the International Building Code IBC).

We design and produce special seismic bases to maintain the structural integrity of the units after the seismic event and/or the seismic test performed on triaxial shake table.

ANTIVIBRANTE ANTI-SISMA RINFORZATO

Per garantire ai nostri Clienti la partecipazione a progetti e appalti in cui si devono rispettare requisiti sismici particolari, possiamo fornire antisismici con struttura rinforzata.



REINFORCED ANTI-SEISMIC ANTI-VIBRATION MOUNT

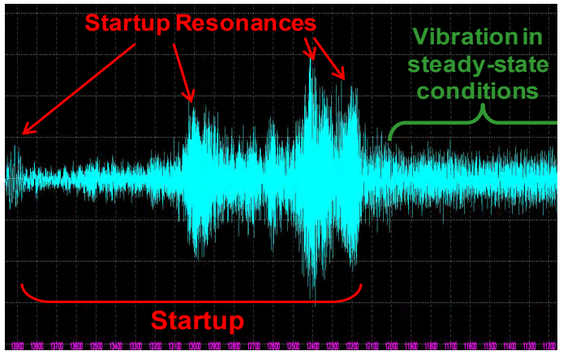
We can supply reinforced anti-seismic mounts or customized solutions for projects and contracts with strict seismic requirements.

ANTIVIBRANTE ANTI-SISMA CON ANELLI IN ELASTOMERO

Le macchine con parti rotanti (ventilatori, pompe, generatori, ecc ...) sono influenzate da risonanze multiple durante l'avvio e l'arresto.

Questi fenomeni sono dovuti al fatto che la crescente frequenza del rotore tocca le diverse frequenze di risonanza del sistema (nei sistemi reali sono previste più di una frequenza di risonanza).

Per evitare questo problema inseriamo all'interno delle molle degli anelli in elastomero.



Accelerazione verticale vs. tempo durante l'avvio della macchina
Vertical acceleration vs. time during machine startup

ANTI-SEISMIC ANTI-VIBRATION MOUNTS WITH ELASTOMERIC RINGS

Machines with rotating parts (fans, pumps, generators, ecc...) are affected by multiple resonances during start up and shut down.

These phenomena are due to the fact that the increasing frequency of the rotor touches the different resonance frequencies of the system (in real systems more than one resonance frequency are expected).

To avoid this problem we insert elastomer rings inside the springs.

IDEALE PER MACCHINE CON RISONANZE MULTIPLE DURANTE L'AVVIO E L'ARRESTO.

SUITABLE FOR MACHINES WITH MULTIPLE RESONANCES DURING START UP AND SHUT DOWN.

LIMITATORI DI SPINTA SISMICA

Limitatori di spinta formati da staffe a L, con fori per l'ancoraggio verso terra, in acciaio UNI EN 10025-S235JR sabbiate, protette da trattamento cataforetico e verniciate a polvere poliestere e tamponi elastomerici regolabili per bloccare l'unità.

Questi limitatori vengono installati a ridosso del basamento macchina ed effettuano un'azione contenitiva delle forze derivanti da sisma o dall'azione del vento impedendo gli spostamenti laterali dell'unità.

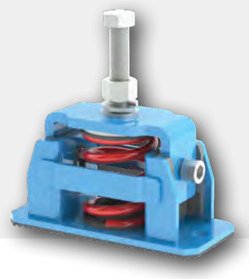
SEISMIC SNUBBER

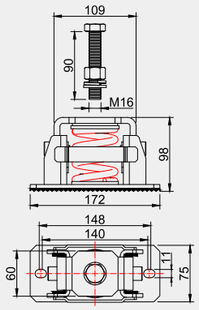
Thrust limiters formed by L-shaped brackets, with holes for anchoring to the ground, in sandblasted UNI EN 10025-S235JR steel, protected by cataphoretic treatment and polyester powder coated and adjustable elastomeric pads to block the unit.

These limiters are installed close to the machine base and carry out a containment action of the forces deriving from an earthquake or the action of the wind, preventing the lateral displacements of the unit.

SERIE LaL
LaL SERIES

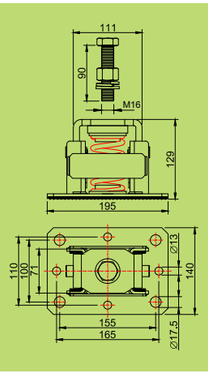
LaLrWr - LaLrVr





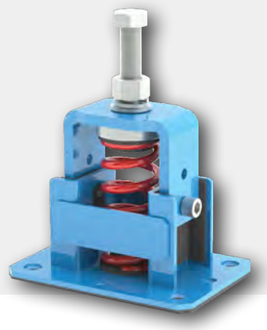
1

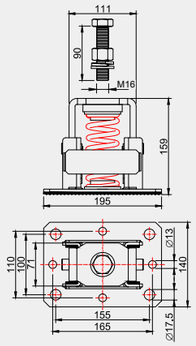
LaLW - LaLV



2

LaLWH - LaLVH

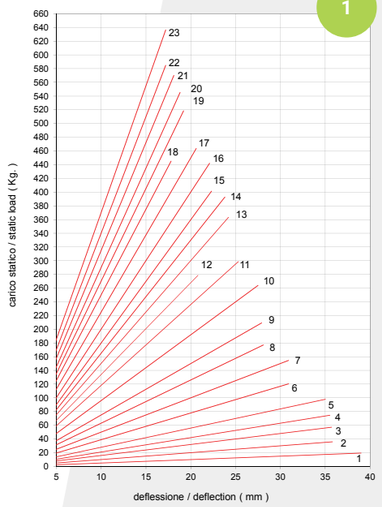




3

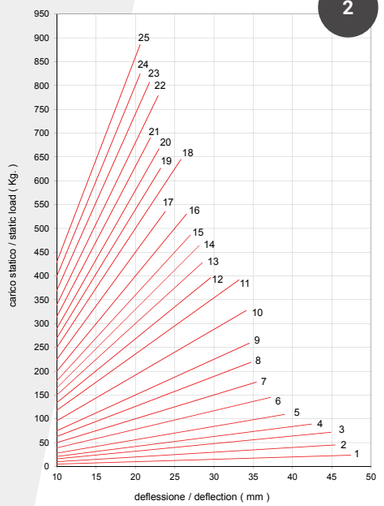
LaLrWr - LaLrVr

1



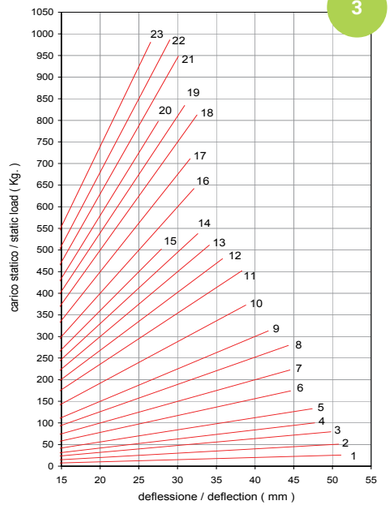
LaLW - LaLV

2



LaLWH - LaLVH

3



N.	MODEL	WEIGHT (kg)	k
1	LaLrWr 02	2.01	0.5
2	LaLrWr 04	2.03	1.0
3	LaLrWr 05	2.03	1.6
4	LaLrWr 06	2.12	2.1
5	LaLrWr 08	2.06	2.8
6	LaLrWr 09	2.10	3.9
7	LaLrWr 12	2.13	5.0
8	LaLrVr 14	2.16	6.3
9	LaLrVr 20	2.19	7.5
10	LaLrVr 22	2.20	9.6
11	LaLrVr 30	2.24	11.8
12	LaLrVr 300	2.25	13.4
13	LaLrVr 301	2.27	15.0
14	LaLrVr 305	2.29	16.5
15	LaLrVr 31	2.30	18.0
16	LaLrVr 33	2.26	20.0
17	LaLrVr 45	2.33	22.5
18	LaLrVr 47	2.38	25.0
19	LaLrVr 48	2.40	27.0
20	LaLrVr 50	2.48	29.0
21	LaLrVr 501	2.45	31.5
22	LaLrVr 510	2.44	34.0
23	LaLrVr 51	2.50	37.0

N.	MODEL	WEIGHT (kg)	k
1	LaLW 02	3.93	0.5
2	LaLW 04	3.96	1.0
3	LaLW 05	3.98	1.6
4	LaLW 06	4.01	2.1
5	LaLW 08	4.05	2.8
6	LaLW 09	4.09	3.9
7	LaLW 12	4.12	5.0
8	LaLV 14	4.17	6.3
9	LaLV 20	4.16	7.5
10	LaLV 22	4.27	9.6
11	LaLV 30	4.22	11.8
12	LaLV 300	4.28	13.4
13	LaLV 301	4.22	15.0
14	LaLV 305	4.34	16.5
15	LaLV 31	4.29	18.0
16	LaLV 33	4.37	20.0
17	LaLV 45	4.46	22.5
18	LaLV 47	4.48	25.0
19	LaLV 48	4.48	27.0
20	LaLV 50	4.41	29.0
21	LaLV 501	4.58	31.5
22	LaLV 510	4.66	34.0
23	LaLV 51	4.66	37.0
24	LaLV 53	4.46	40.0
25	LaLV 55	4.56	43.0

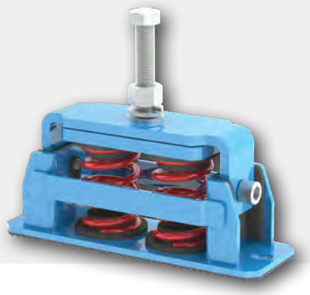
N.	MODEL	WEIGHT (kg)	k
1	LaLWH 02	4.02	0.5
2	LaLWH 04	4.08	1.0
3	LaLWH 05	4.17	1.6
4	LaLWH 06	4.17	2.1
5	LaLWH 08	4.23	2.8
6	LaLWH 09	4.19	3.9
7	LaLWH 12	4.23	5.0
8	LaLVH 14	4.28	6.3
9	LaLVH 20	4.35	7.5
10	LaLVH 22	4.42	9.6
11	LaLVH 30	4.39	11.8
12	LaLVH 300	4.38	13.4
13	LaLVH 301	4.68	15.0
14	LaLVH 305	4.61	16.5
15	LaLVH 31	4.78	18.0
16	LaLVH 33	4.68	20.0
17	LaLVH 45	4.68	22.5
18	LaLVH 47	4.73	25.0
19	LaLVH 48	4.83	27.0
20	LaLVH 50	4.90	29.0
21	LaLVH 501	4.79	31.5
22	LaLVH 510	4.89	34.0
23	LaLVH 51	5.00	37.0

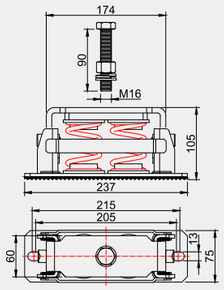
CARATTERISTICHE TECNICHE E PERSONALIZZAZIONI
A PAGINA 4

MANUFACTURING CHARACTERISTICS AND CUSTOMIZATIONS
ON PAGE 4

SERIE LaL
LaL SERIES

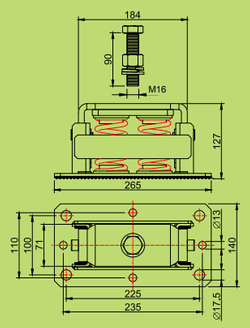
LaLrWr2 - LaLrVr2





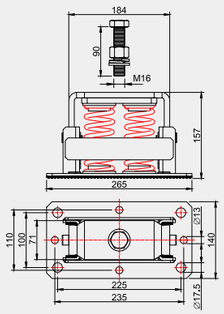
1

LaLW2 - LaLV2



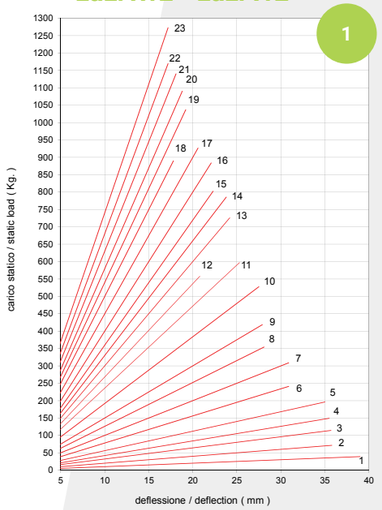
2

LaLWH2 - LaLVH2

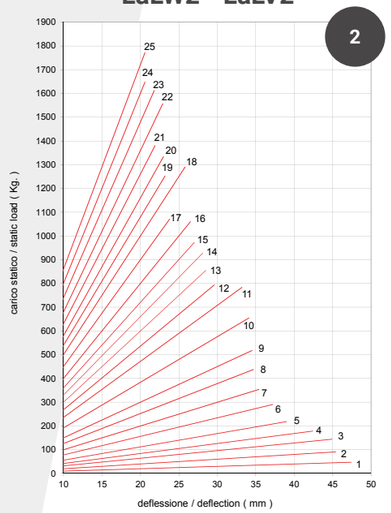


3

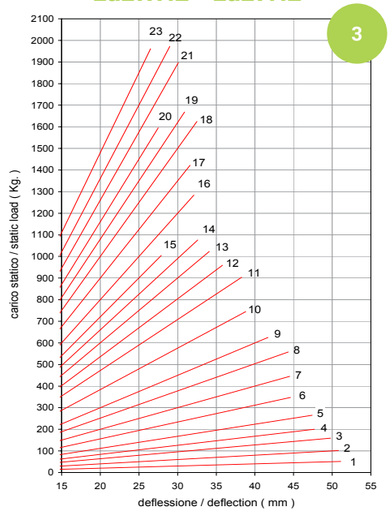
LaLrWr2 - LaLrVr2



LaLW2 - LaLV2



LaLWH2 - LaLVH2



N.	MODEL	WEIGHT (kg)	k
1	LaLrWr 202	2.78	1.0
2	LaLrWr 204	2.81	2.0
3	LaLrWr 205	2.82	3.2
4	LaLrWr 206	2.99	4.2
5	LaLrWr 208	2.88	5.6
6	LaLrWr 209	2.95	7.8
7	LaLrWr 212	3.01	10.0
8	LaLrVr 214	3.08	12.6
9	LaLrVr 220	3.13	15.0
10	LaLrVr 222	3.16	19.2
11	LaLrVr 230	3.23	23.6
12	LaLrVr 2300	3.26	26.8
13	LaLrVr 2301	3.30	30.0
14	LaLrVr 2305	3.33	33.0
15	LaLrVr 231	3.36	36.0
16	LaLrVr 233	3.28	40.0
17	LaLrVr 245	3.42	45.0
18	LaLrVr 247	3.51	50.0
19	LaLrVr 248	3.56	54.0
20	LaLrVr 250	3.72	58.0
21	LaLrVr 2501	3.66	63.0
22	LaLrVr 2510	3.63	68.0
23	LaLrVr 251	3.75	74.0

N.	MODEL	WEIGHT (kg)	k
1	LaLW 202	5.33	1.0
2	LaLW 204	5.37	2.0
3	LaLW 205	5.42	3.2
4	LaLW 206	5.48	4.2
5	LaLW 208	5.56	5.6
6	LaLW 209	5.65	7.8
7	LaLW 212	5.69	10.0
8	LaLV 214	5.79	12.6
9	LaLV 220	5.79	15.0
10	LaLV 222	6.01	19.2
11	LaLV 230	5.89	23.6
12	LaLV 2300	6.01	26.8
13	LaLV 2301	5.91	30.0
14	LaLV 2305	6.14	33.0
15	LaLV 231	6.03	36.0
16	LaLV 233	6.20	40.0
17	LaLV 245	6.38	45.0
18	LaLV 247	6.41	50.0
19	LaLV 248	6.43	54.0
20	LaLV 250	6.28	58.0
21	LaLV 2501	6.61	63.0
22	LaLV 2510	6.77	68.0
23	LaLV 251	6.79	74.0
24	LaLV 253	6.38	80.0
25	LaLV 255	6.58	86.0

N.	MODEL	WEIGHT (kg)	k
1	LaLWH 202	5.49	1.0
2	LaLWH 204	5.62	2.0
3	LaLWH 205	5.79	3.2
4	LaLWH 206	5.81	4.2
5	LaLWH 208	5.91	5.6
6	LaLWH 209	5.83	7.8
7	LaLWH 212	5.92	10.0
8	LaLVH 214	6.02	12.6
9	LaLVH 220	6.17	15.0
10	LaLVH 222	6.31	19.2
11	LaLVH 230	6.23	23.6
12	LaLVH 2300	6.21	26.8
13	LaLVH 2301	6.83	30.0
14	LaLVH 2305	6.67	33.0
15	LaLVH 231	7.02	36.0
16	LaLVH 233	6.82	40.0
17	LaLVH 245	6.83	45.0
18	LaLVH 247	6.92	50.0
19	LaLVH 248	7.12	54.0
20	LaLVH 250	7.25	58.0
21	LaLVH 2501	7.04	63.0
22	LaLVH 2510	7.23	68.0
23	LaLVH 251	7.45	74.0

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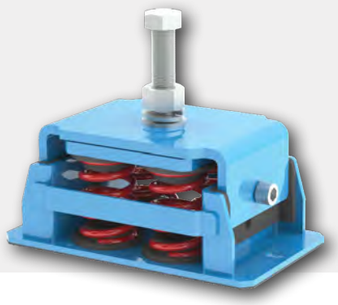
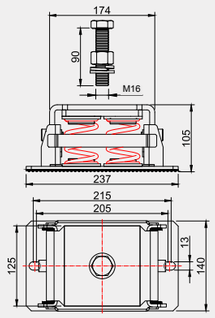
ON PAGE 4

SERIE LaL
LaL SERIES

LaLrWr4 - LaLrVr4





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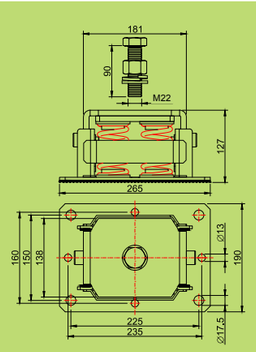
LaLW4 - LaLV4



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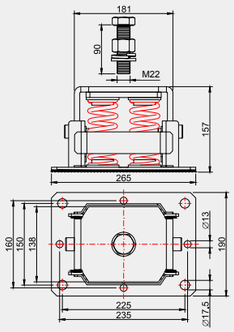
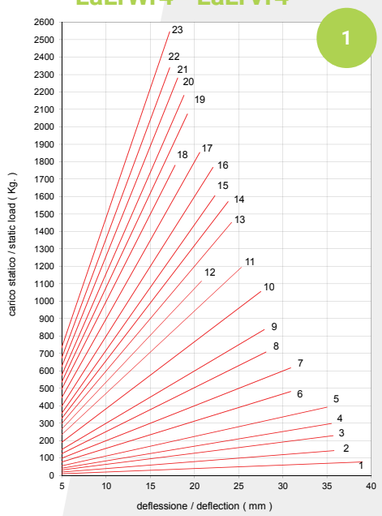
LaLWH4 - LaLVH4

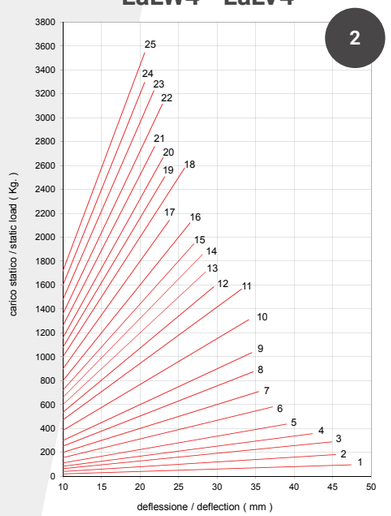


3

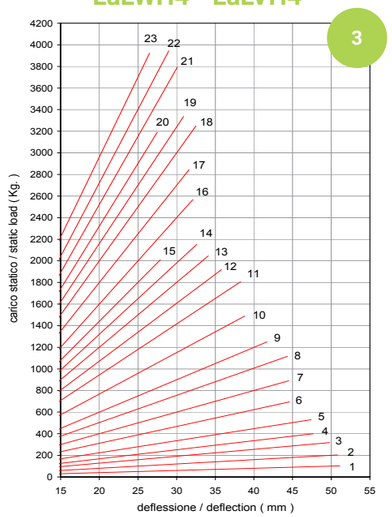
LaLrWr4 - LaLrVr4



LaLW4 - LaLV4



LaLWH4 - LaLVH4



N.	MODEL	WEIGHT (kg)	k
1	LaLrWr 402	5.49	2.0
2	LaLrWr 404	5.55	4.0
3	LaLrWr 405	5.57	6.4
4	LaLrWr 406	5.91	8.4
5	LaLrWr 408	5.69	11.2
6	LaLrWr 409	5.83	15.6
7	LaLrWr 412	5.94	20.0
8	LaLrVr 414	6.08	25.2
9	LaLrVr 420	6.19	30.0
10	LaLrVr 422	6.25	38.4
11	LaLrVr 430	6.39	47.2
12	LaLrVr 4300	6.44	53.6
13	LaLrVr 4301	6.52	60.0
14	LaLrVr 4305	6.58	66.0
15	LaLrVr 431	6.64	72.0
16	LaLrVr 433	6.48	80.0
17	LaLrVr 445	6.77	90.0
18	LaLrVr 447	6.94	100.0
19	LaLrVr 448	7.04	108.0
20	LaLrVr 450	7.36	116.0
21	LaLrVr 4501	7.24	126.0
22	LaLrVr 4510	7.19	136.0
23	LaLrVr 451	7.42	148.0

N.	MODEL	WEIGHT (kg)	k
1	LaLW 402	8.24	2.0
2	LaLW 404	8.34	4.0
3	LaLW 405	8.43	6.4
4	LaLW 406	8.55	8.4
5	LaLW 408	8.72	11.2
6	LaLW 409	8.88	15.6
7	LaLW 412	8.98	20.0
8	LaLV 414	9.18	25.2
9	LaLV 420	9.16	30.0
10	LaLV 422	9.60	38.4
11	LaLV 430	9.37	47.2
12	LaLV 4300	9.60	53.6
13	LaLV 4301	9.37	60.0
14	LaLV 4305	9.61	66.0
15	LaLV 431	9.40	72.0
16	LaLV 433	9.87	80.0
17	LaLV 445	9.65	90.0
18	LaLV 447	9.99	100.0
19	LaLV 448	10.36	108.0
20	LaLV 450	10.42	116.0
21	LaLV 4501	10.44	126.0
22	LaLV 4510	10.15	136.0
23	LaLV 451	11.67	148.0
24	LaLV 453	12.06	160.0
25	LaLV 455	12.50	172.0

N.	MODEL	WEIGHT (kg)	k
1	LaLWH 402	8.57	2.0
2	LaLWH 404	8.84	4.0
3	LaLWH 405	9.17	6.4
4	LaLWH 406	9.20	8.4
5	LaLWH 408	9.41	11.2
6	LaLWH 409	9.25	15.6
7	LaLWH 412	9.43	20.0
8	LaLVH 414	9.34	25.2
9	LaLVH 420	9.92	30.0
10	LaLVH 422	10.20	38.4
11	LaLVH 430	10.08	47.2
12	LaLVH 4300	10.02	53.6
13	LaLVH 4301	11.24	60.0
14	LaLVH 4305	10.94	66.0
15	LaLVH 431	11.64	72.0
16	LaLVH 433	11.24	80.0
17	LaLVH 445	11.24	90.0
18	LaLVH 447	11.44	100.0
19	LaLVH 448	11.84	108.0
20	LaLVH 450	12.10	116.0
21	LaLVH 4501	11.67	126.0
22	LaLVH 4510	12.06	136.0
23	LaLVH 451	13.65	148.0

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A PAGINA 4

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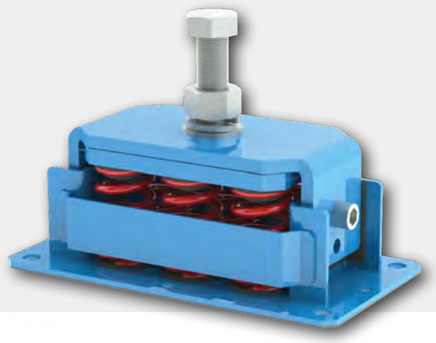
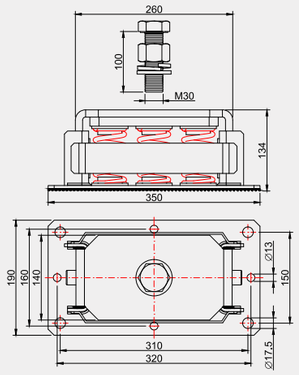
SERIE LaL
LaL SERIES

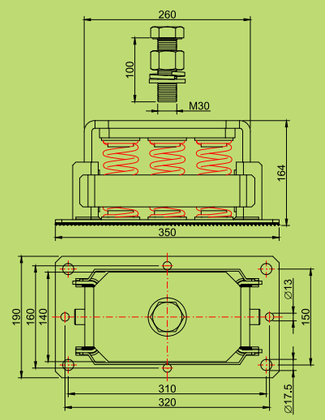
LaLW6 - LaLV6





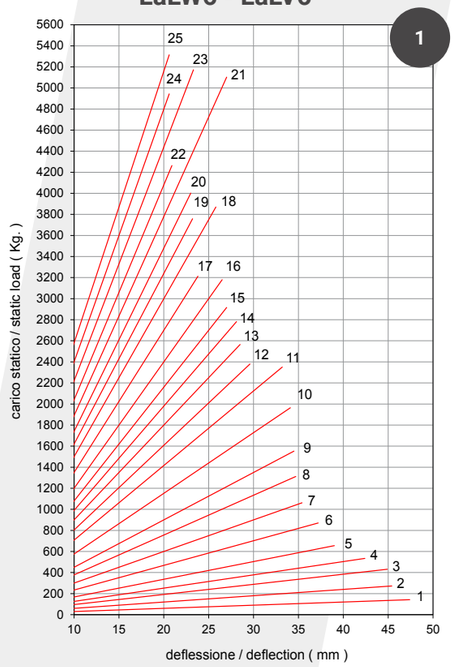
1

LaLWH6 - LaLVH6

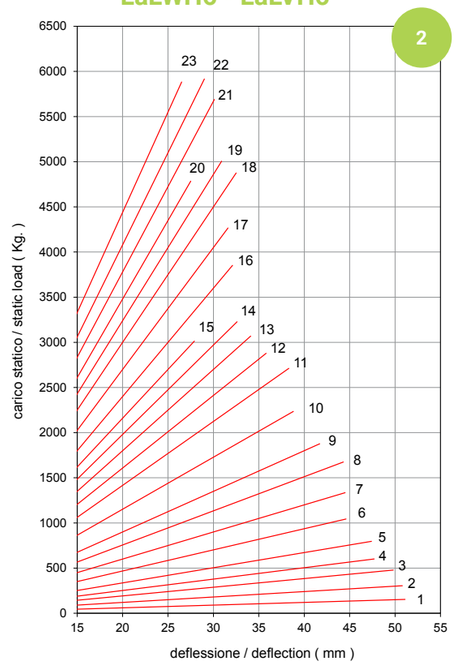


2

LaLW6 - LaLV6



LaLWH6 - LaLVH6



N.	MODEL	WEIGHT (kg)	k
1	LaLW 602	13.45	3.0
2	LaLW 604	13.60	6.0
3	LaLW 605	13.73	9.6
4	LaLW 606	13.91	12.6
5	LaLW 608	14.16	16.8
6	LaLW 609	14.41	23.4
7	LaLW 612	14.56	30.0
8	LaLV 614	14.86	37.8
9	LaLV 620	14.83	45.0
10	LaLV 622	15.49	57.6
11	LaLV 630	14.05	70.0
12	LaLV 6300	15.51	80.0
13	LaLV 6301	15.19	90.0
14	LaLV 6305	15.89	99.0
15	LaLV 631	15.57	108.0
16	LaLV 633	16.07	120.0
17	LaLV 645	16.62	135.0
18	LaLV 647	16.72	150.0
19	LaLV 648	16.75	162.0
20	LaLV 650	16.31	174.0
21	LaLV 6501	17.31	189.0
22	LaLV 6510	17.80	204.0
23	LaLV 651	17.83	222.0
24	LaLV 653	16.62	240.0
25	LaLV 655	17.21	258.0

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N.	MODEL	WEIGHT (kg)	k
1	LaLWH 602	13.95	3.0
2	LaLWH 604	14.34	6.0
3	LaLWH 605	14.85	9.6
4	LaLWH 606	14.89	12.6
5	LaLWH 608	15.21	16.8
6	LaLWH 609	14.97	23.4
7	LaLWH 612	15.23	30.0
8	LaLVH 614	15.54	37.8
9	LaLVH 620	15.97	45.0
10	LaLVH 622	16.39	57.6
11	LaLVH 630	16.21	70.0
12	LaLVH 6300	16.12	80.0
13	LaLVH 6301	17.95	90.0
14	LaLVH 6305	17.50	99.0
15	LaLVH 631	18.54	108.0
16	LaLVH 633	17.94	120.0
17	LaLVH 645	17.95	135.0
18	LaLVH 647	18.24	150.0
19	LaLVH 648	18.84	162.0
20	LaLVH 650	19.24	174.0
21	LaLVH 6501	18.59	189.0
22	LaLVH 6510	19.18	204.0
23	LaLVH 651	19.84	222.0

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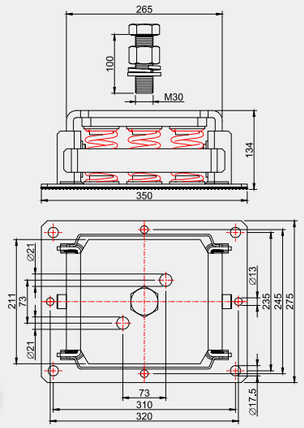
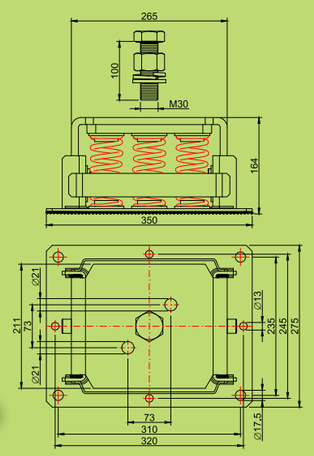
SERIE LaL
LaL SERIES

LaLW9 - LaLV9



1

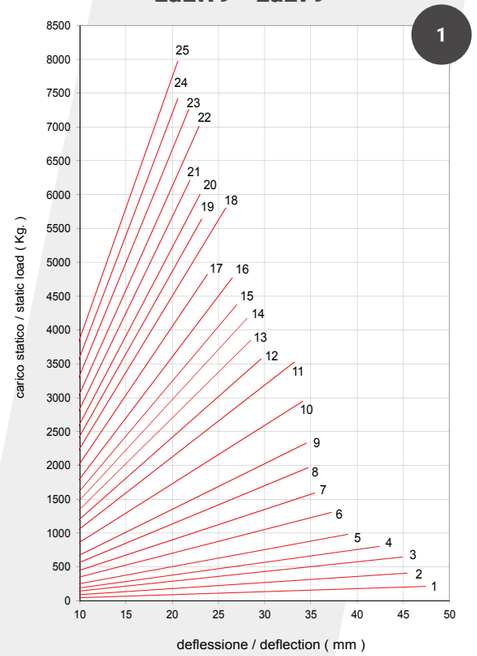
LaLWH9 - LaLVH9



2

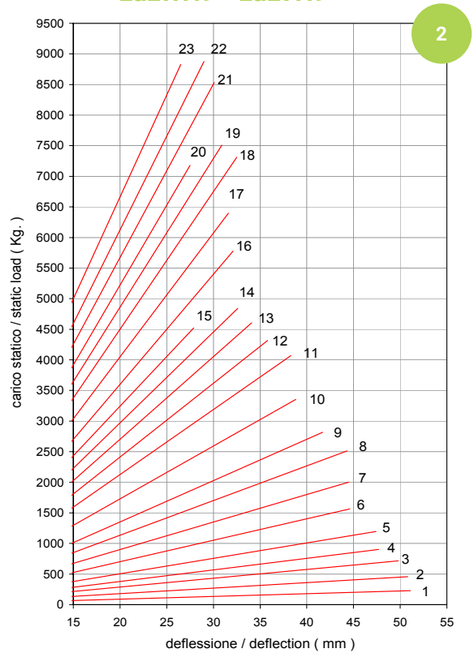
LaLW9 - LaLV9

1



LaLWH9 - LaLVH9

2



N.	MODEL	WEIGHT (kg)	k
1	LaLW 902	20.59	4.5
2	LaLW 904	20.80	9.0
3	LaLW 905	21.00	13.5
4	LaLW 906	21.27	18.9
5	LaLW 908	21.65	25.2
6	LaLW 909	22.03	35.1
7	LaLW 912	22.24	45.0
8	LaLV 914	22.69	56.7
9	LaLV 920	22.66	67.5
10	LaLV 922	23.65	86.4
11	LaLV 930	23.12	106.2
12	LaLV 9300	23.65	120.6
13	LaLV 9301	23.20	135.0
14	LaLV 9305	24.24	148.5
15	LaLV 931	23.75	162.0
16	LaLV 933	24.51	180.0
17	LaLV 945	25.34	202.5
18	LaLV 947	25.48	225.0
19	LaLV 948	25.54	243.0
20	LaLV 950	24.87	261.0
21	LaLV 9501	26.36	283.5
22	LaLV 9510	27.10	306.0
23	LaLV 951	27.16	333.0
24	LaLV 953	25.34	360.0
25	LaLV 955	26.22	387.0

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N.	MODEL	WEIGHT (kg)	k
1	LaLWH 902	21.32	4.5
2	LaLWH 904	21.92	9.0
3	LaLWH 905	22.64	13.5
4	LaLWH 906	22.75	18.9
5	LaLWH 908	23.21	25.2
6	LaLWH 909	22.85	35.1
7	LaLWH 912	23.25	45.0
8	LaLVH 914	23.72	56.7
9	LaLVH 920	24.37	67.5
10	LaLVH 922	25.00	86.4
11	LaLVH 930	24.73	106.2
12	LaLVH 9300	24.58	120.6
13	LaLVH 9301	27.34	135.0
14	LaLVH 9305	26.65	148.5
15	LaLVH 931	28.22	162.0
16	LaLVH 933	27.32	180.0
17	LaLVH 945	27.34	202.5
18	LaLVH 947	27.77	225.0
19	LaLVH 948	28.67	243.0
20	LaLVH 950	29.26	261.0
21	LaLVH 9501	28.29	283.5
22	LaLVH 9510	29.17	306.0
23	LaLVH 951	30.16	333.0

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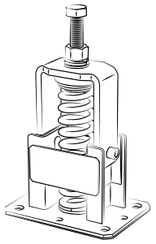
SERIE LaLAH
LaLAH SERIES

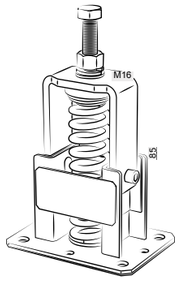


MOLLE AD ALTA DEFLESSIONE

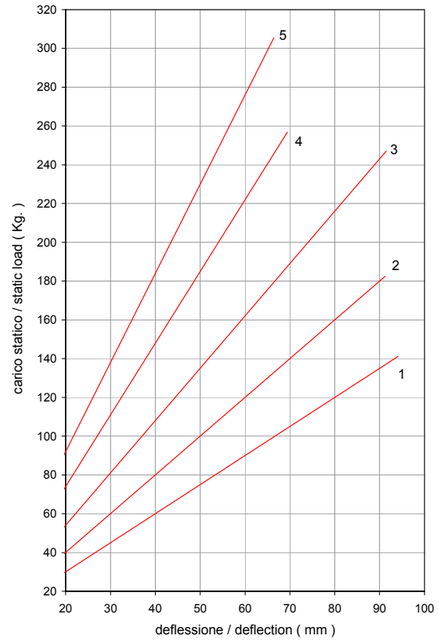
- Antivibranti antisismici con molle speciali adatti solitamente per l'isolamento di frequenze minime dov'è richiesta un'elevata deflessione.

SPRINGS WITH HIGH DEFLECTION

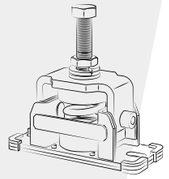
- *Anti-seismic vibration dampers with special springs usually suitable for isolating minimum frequencies where high deflection is required.*



N.	MODEL	WEIGHT (kg)	k
1	LaLAH 00	6.29	1.5
2	LaLAH 01	6.37	2.0
3	LaLAH 02	6.42	2.7
4	LaLAH 03	6.82	3.7
5	LaLAH 04	6.97	4.6



SERIE LaLb
LaLb SERIES

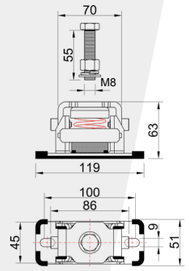


MOLLE RIDOTTE

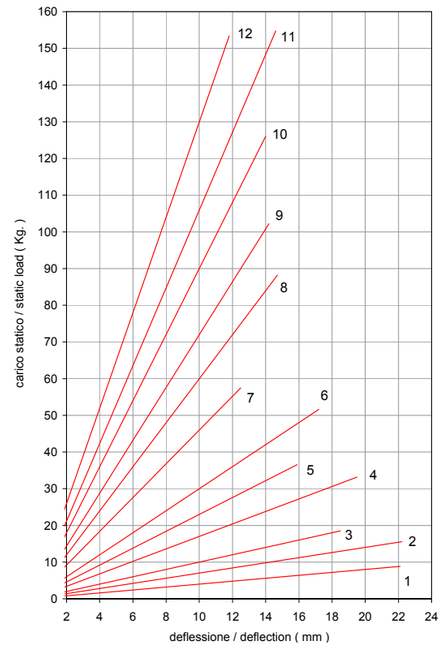
- Idoneo per ventilatori o piccole unità dove sia richiesto un elevato grado di resistenza al sisma.

REDUCED SPRINGS

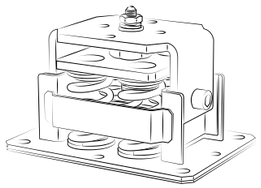
- *Suitable for fans or small units where a degree of earthquake resistance is required.*



N.	MODEL	WEIGHT (kg)	k
1	LaLbZb 0	0.66	0.4
2	LaLbZb 1	0.66	0.7
3	LaLbZb 2	0.66	1.0
4	LaLbZb 3	0.67	1.7
5	LaLbZb 4	0.68	2.3
6	LaLbZb 5	0.68	3.0
7	LaLbZb 8	0.70	4.6
8	LaLbXb 10	0.69	6.0
9	LaLbXb 101	0.70	7.2
10	LaLbXb 11	0.73	9.0
11	LaLbXb 12	0.70	10.6
12	LaLbXb 13	0.71	13.0



SERIE LaLS
LaLS SERIES



CARATTERISTICHE COSTRUTTIVE

- Struttura di contenimento realizzata in acciaio UNI EN 10025-S235JR sabbiata, protetta da trattamento cataforetico e verniciata a polvere poliestere con viti in acciaio zincato.
- La struttura è progettata per poter garantire un'elevata resistenza alle forze multidirezionali agenti sulla superficie della macchina sospesa in presenza di vento e/o movimenti tellurici.
- Molle in acciaio armonico UNI EN 10270-1 SH con superficie protetta da trattamento cataforetico.
- La gamma standard anti-sisma prevede dispositivi composti da un numero variabile di molle in grado di soddisfare un'estesa fascia di carico, da 17 a 10.000 kg per punto d'appoggio.
- Tramite esecuzioni speciali e strutture rinforzate è possibile raggiungere carichi di 15.000 kg per punto d'appoggio.

MANUFACTURING CHARACTERISTICS

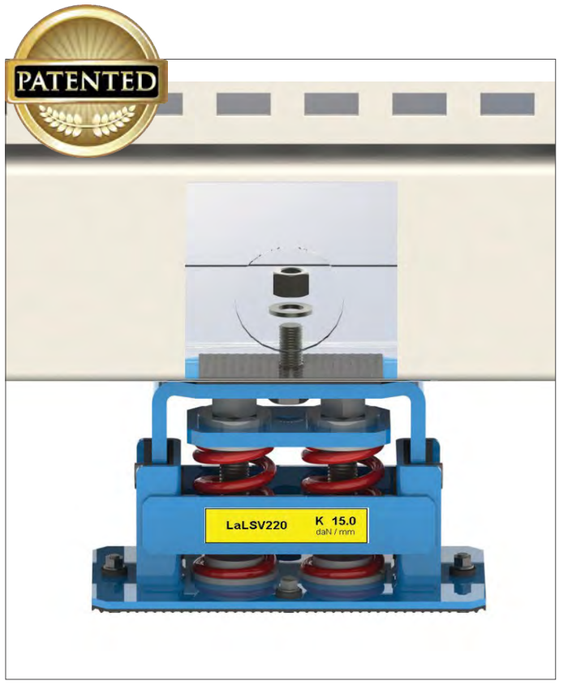
- *Containment structure made of sandblasted UNI EN 10025-S235JR steel, protected by cataphoretic treatment and polyester powder coated with galvanized steel screws.*
- *The structure is designed to ensure high resistance to multidirectional forces acting on the surface of the suspended machine in the presence of wind and/or earthquake movements.*
- *Springs in harmonic steel UNI EN 10270-1 SH with surface protected by cataphoretic treatment.*
- *The standard anti-earthquake range includes devices consisting of a variable number of springs capable of satisfying an extended load range, from 17 to 10,000 kg per support point.*
- *Through special executions and reinforced structures it is possible to reach loads of 15,000 kg per support point.*

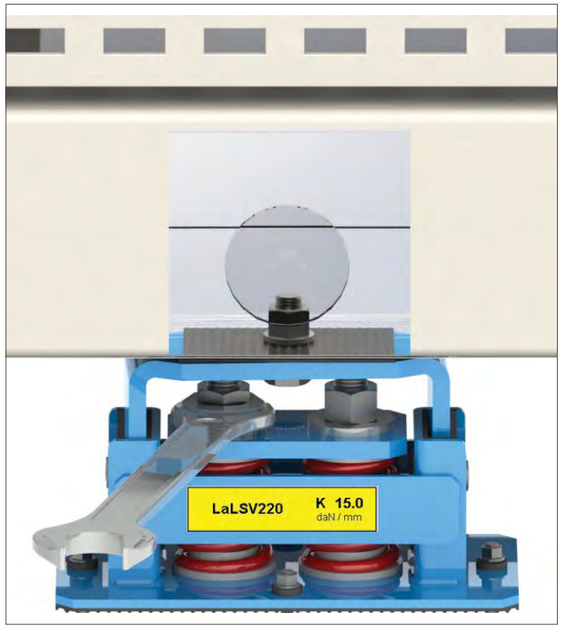
SISTEMA DI REGISTRAZIONE INTERNA BREVETTATO

La serie di antivibranti antisismici LaLS ha un sistema di registrazione interna BREVETTATO che grazie alla presenza di codolo/i e dado/i consente all'installatore di registrare dall'interno il livello della macchina.

PATENTED BUILT-IN LEVEL ADJUSTMENT DEVICE

The LaLS series of anti-seismic anti-vibration mounts has a PATENTED internal adjustment system which, thanks to the presence of shank and nut, allows the installer to adjust the level of the machine from the inside.

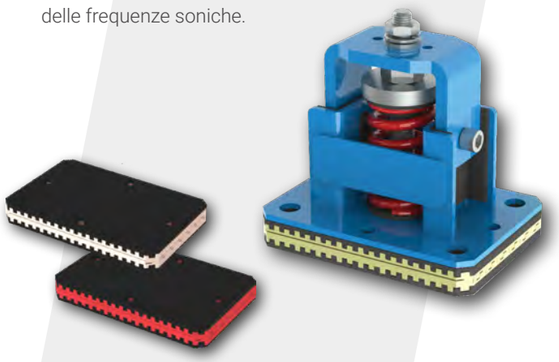




SERIE LaLS
LaLS SERIES

A RICHIESTA

- Su richiesta vengono forniti cuscinetti smorzatori in elastomero (STRIPES), interposti tra le superfici di contatto che consentono di ridurre sensibilmente la trasmissione delle frequenze soniche.



ON REQUEST

- *To reduce significantly the transmission of sonic frequencies we can provide elastomer bearings dampers (STRIPES) between the anti-vibration mount and the contact surface.*

SOLUZIONI AD HOC

- Su richiesta le parti metalliche possono essere realizzate in ACCIAIO INOX AISI 304 o 316 per isolare macchinari in condizioni climatiche estreme e in presenza di agenti atmosferici aggressivi o nebbie saline.
- Verniciature speciali per ambienti da C1 a C5M e verniciatura NORSOK per applicazioni OFFSHORE.
- L'ufficio Progettazione Soleco è a disposizione per assistere il Cliente in ogni sua richiesta e realizzare prodotti su misura.

CUSTOMIZED SOLUTIONS

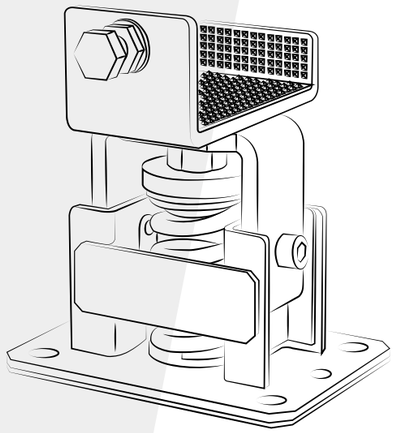
- *On request the container structure can be made in STAINLESS STEEL AISI 304 - 316 to insulate equipment's in extreme temperatures environments and in presence of aggressive atmospheric agent or salty fog.*
- *Special paints for environments from C1 to C5M and NORSOK paint for OFFSHORE applications.*
- *Soleco Technical Department can also provide assistance in the realization of customized solutions.*

SELLA PER FISSAGGIO

- A richiesta possiamo fornire una SELLA a C per il fissaggio.
- L'installazione eseguita con sella e morsetto consente di posizionare l'antivibrante lungo tutto il profilo della macchina così da poter trovare la posizione di fissaggio corretta.

BRACKETS FOR FIXING

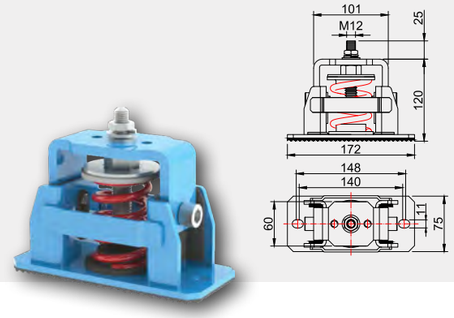
- *On request we can supply a C BRACKET for fixing.*
- *The installation performed with upper brackets and clamp allows the installer to place the anti-vibration mount along the entire machinery profile in order to find the right fixing positions.*



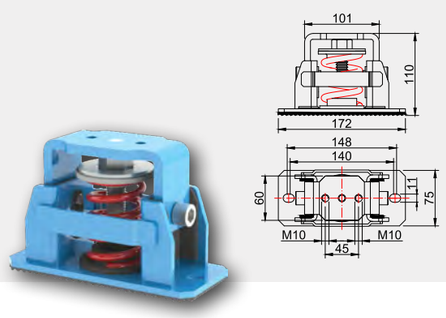
SERIE LaLS
LaLS SERIES

LaLrSWr - LaLrSVr

perno filettato M12
M12 threaded rod



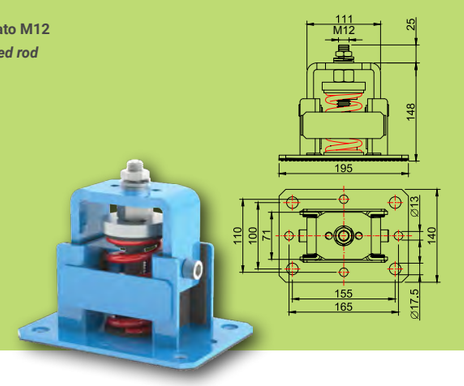
2 fori filettati M10
2 M10 threaded holes



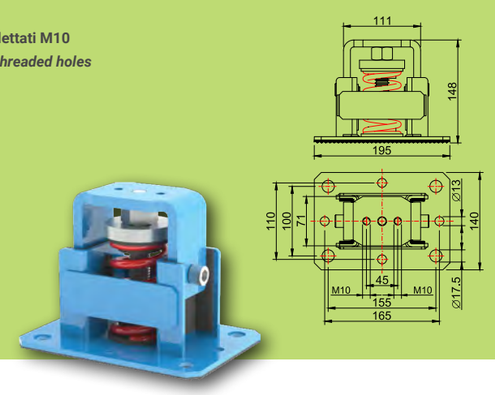
1

LaLSW - LaLSV

perno filettato M12
M12 threaded rod



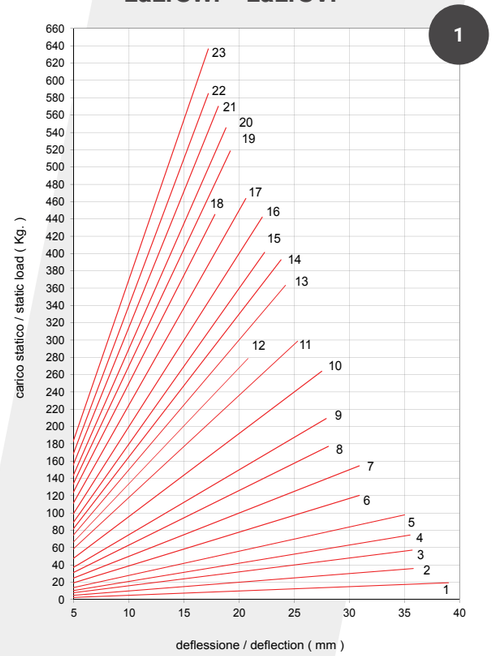
2 fori filettati M10
2 M10 threaded holes



2

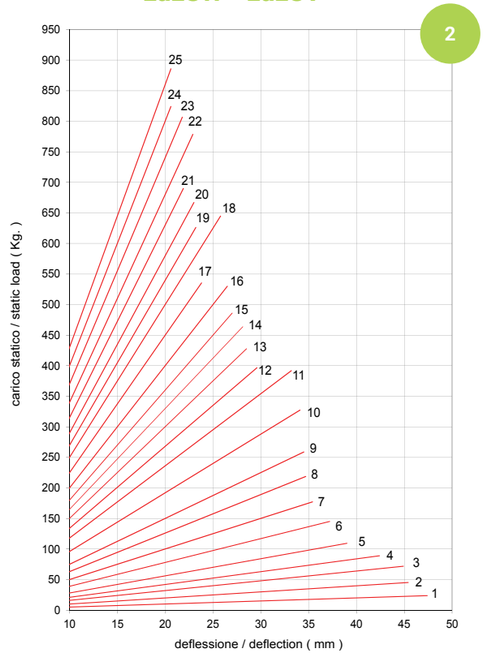
LaLrSWr - LaLrSVr

1



LaLSW - LaLSV

2



N.	MODEL	WEIGHT (kg)	k
1	LaLrSWr 02	2.09	0.5
2	LaLrSWr 04	2.10	1.0
3	LaLrSWr 05	2.11	1.6
4	LaLrSWr 06	2.19	2.1
5	LaLrSWr 08	2.14	2.8
6	LaLrSWr 09	2.17	3.9
7	LaLrSWr 12	2.20	5.0
8	LaLrSVr 14	2.23	6.3
9	LaLrSVr 20	2.26	7.5
10	LaLrSVr 22	2.28	9.6
11	LaLrSVr 30	2.31	11.8
12	LaLrSVr 300	2.32	13.4
13	LaLrSVr 301	2.34	15.0
14	LaLrSVr 305	2.36	16.5
15	LaLrSVr 31	2.37	18.0
16	LaLrSVr 33	2.33	20.0
17	LaLrSVr 45	2.41	22.5
18	LaLrSVr 47	2.45	25.0
19	LaLrSVr 48	2.47	27.0
20	LaLrSVr 50	2.55	29.0
21	LaLrSVr 501	2.52	31.5
22	LaLrSVr 510	2.51	34.0
23	LaLrSVr 51	2.57	37.0

CARATTERISTICHE TECNICHE E PERSONALIZZAZIONI
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N.	MODEL	WEIGHT (kg)	k
1	LaLSW 02	4.00	0.5
2	LaLSW 04	4.00	1.0
3	LaLSW 05	4.10	1.6
4	LaLSW 06	4.10	2.1
5	LaLSW 08	4.10	2.8
6	LaLSW 09	4.20	3.9
7	LaLSW 12	4.20	5.0
8	LaLSV 14	4.30	6.3
9	LaLSV 20	4.30	7.5
10	LaLSV 22	4.40	9.6
11	LaLSV 30	4.30	11.8
12	LaLSV 300	4.40	13.4
13	LaLSV 301	4.30	15.0
14	LaLSV 305	4.40	16.5
15	LaLSV 31	4.40	18.0
16	LaLSV 33	4.50	20.0
17	LaLSV 45	4.60	22.5
18	LaLSV 47	4.60	25.0
19	LaLSV 48	4.60	27.0
20	LaLSV 50	4.50	29.0
21	LaLSV 501	4.70	31.5
22	LaLSV 510	4.70	34.0
23	LaLSV 51	4.80	37.0
24	LaLSV 53	4.60	40.0
25	LaLSV 55	4.60	43.0

MANUFACTURING CHARACTERISTICS AND CUSTOMIZATIONS
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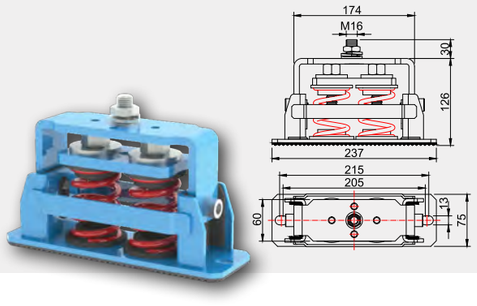
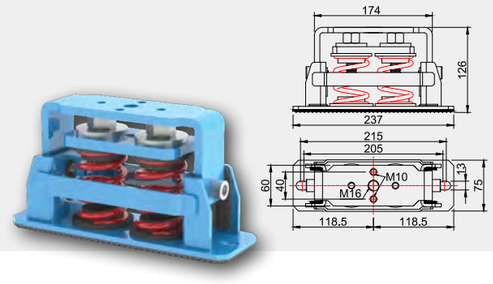
SERIE LaLS
LaLS SERIES

LaLrSWr2 - LaLrSVr2

perno filettato M16
M16 threaded rod



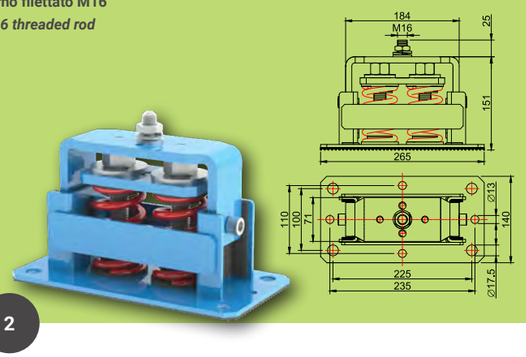
2 fori filettati M10
2 M10 threaded holes



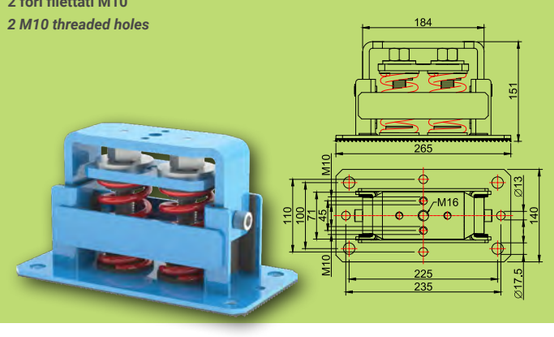
1

LaLSW2 - LaLSV2

perno filettato M16
M16 threaded rod



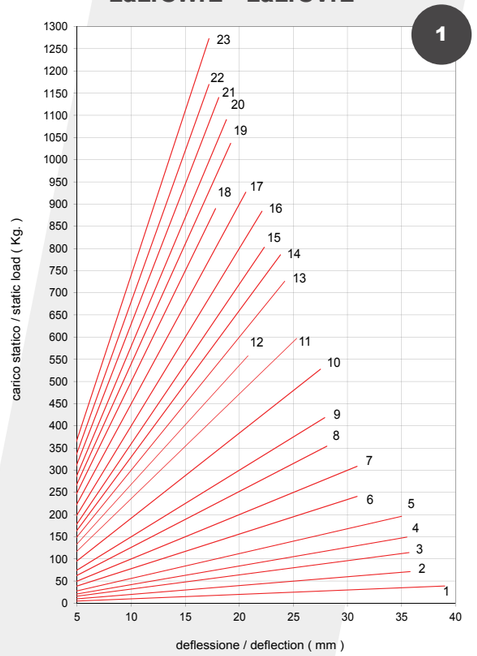
2 fori filettati M10
2 M10 threaded holes



2

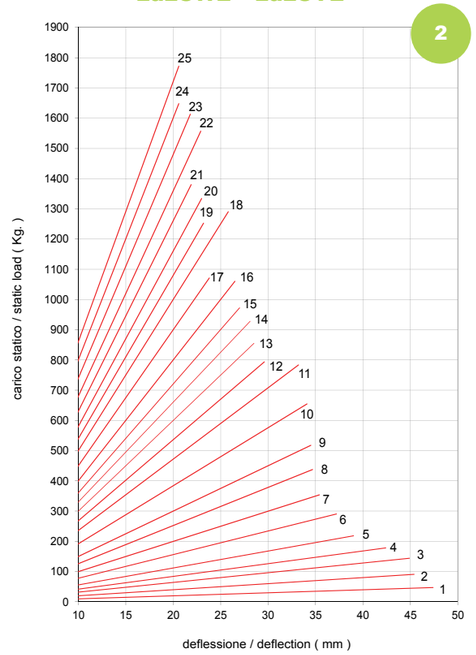
LaLrSWr2 - LaLrSVr2

1



LaLSW2 - LaLSV2

2



N.	MODEL	WEIGHT (kg)	k
1	LaLrSWr 202	3.34	1.0
2	LaLrSWr 204	3.36	2.0
3	LaLrSWr 205	3.38	3.2
4	LaLrSWr 206	3.54	4.2
5	LaLrSWr 208	3.44	5.6
6	LaLrSWr 209	3.50	7.8
7	LaLrSWr 212	3.56	10.0
8	LaLrSVr 214	3.63	12.6
9	LaLrSVr 220	3.68	15.0
10	LaLrSVr 222	3.72	19.2
11	LaLrSVr 230	3.78	23.6
12	LaLrSVr 2300	3.81	26.8
13	LaLrSVr 2301	3.85	30.0
14	LaLrSVr 2305	3.88	33.0
15	LaLrSVr 231	3.91	36.0
16	LaLrSVr 233	3.83	40.0
17	LaLrSVr 245	3.98	45.0
18	LaLrSVr 247	4.06	50.0
19	LaLrSVr 248	4.11	54.0
20	LaLrSVr 250	4.27	58.0
21	LaLrSVr 2501	4.21	63.0
22	LaLrSVr 2510	4.18	68.0
23	LaLrSVr 251	4.30	74.0

CARATTERISTICHE TECNICHE E PERSONALIZZAZIONI
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N.	MODEL	WEIGHT (kg)	k
1	LaLSW 202	5.40	1.0
2	LaLSW 204	5.50	2.0
3	LaLSW 205	5.55	3.2
4	LaLSW 206	5.60	4.2
5	LaLSW 208	5.60	5.6
6	LaLSW 209	5.70	7.8
7	LaLSW 212	5.80	10.0
8	LaLSV 214	5.90	12.6
9	LaLSV 220	5.90	15.0
10	LaLSV 222	6.10	19.2
11	LaLSV 230	6.00	23.6
12	LaLSV 2300	6.10	26.8
13	LaLSV 2301	6.20	30.0
14	LaLSV 2305	6.20	33.0
15	LaLSV 231	6.20	36.0
16	LaLSV 233	6.30	40.0
17	LaLSV 245	6.40	45.0
18	LaLSV 247	6.40	50.0
19	LaLSV 248	6.60	54.0
20	LaLSV 250	6.60	58.0
21	LaLSV 2501	6.40	63.0
22	LaLSV 2510	6.90	68.0
23	LaLSV 251	6.80	74.0
24	LaLSV 253	6.76	80.0
25	LaLSV 255	6.70	86.0

MANUFACTURING CHARACTERISTICS AND CUSTOMIZATIONS
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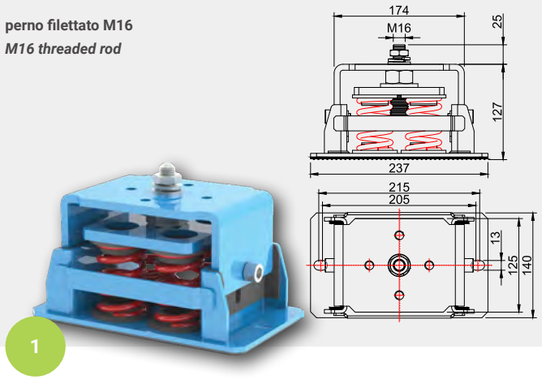
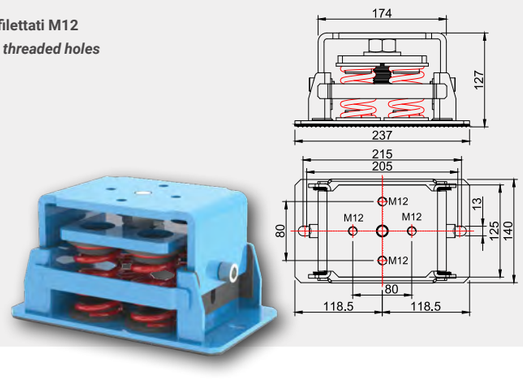
SERIE LaLS
LaLS SERIES

LaLrSWr4 - LaLrSVr4

perno filettato M16
M16 threaded rod



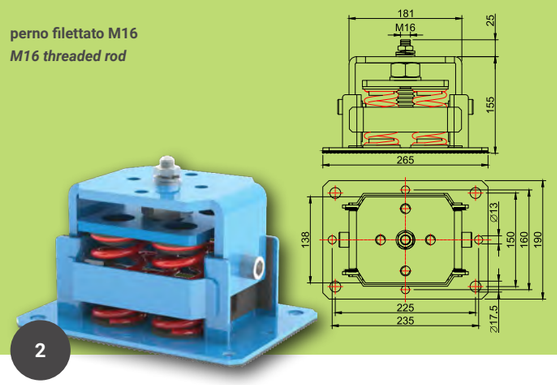
4 fori filettati M12
4 M12 threaded holes



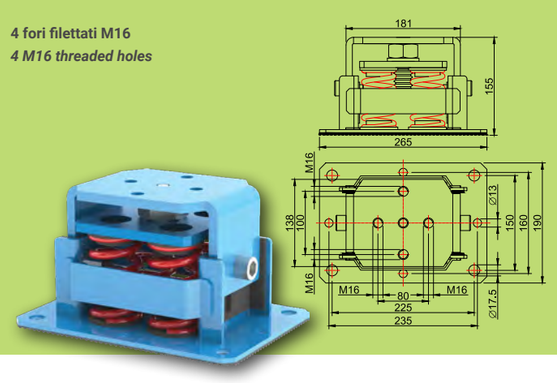
1

LaLSW4 - LaLSV4

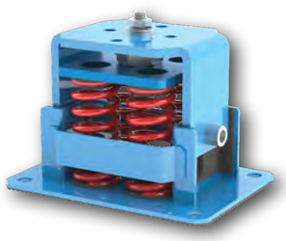
perno filettato M16
M16 threaded rod



4 fori filettati M16
4 M16 threaded holes



2

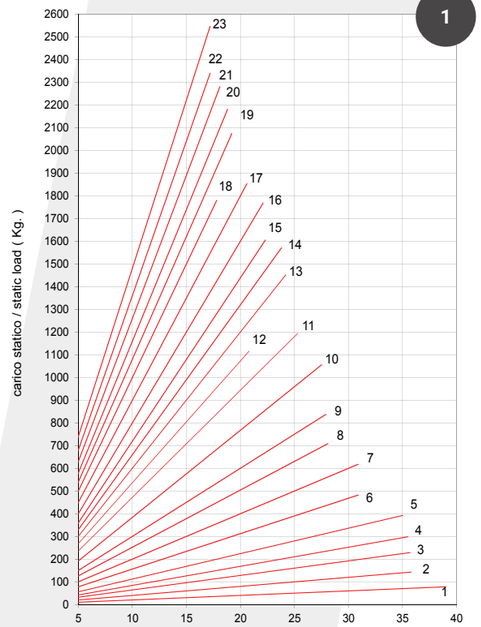


A RICHIESTA
Disponibile modello LaLSWH4 - LaLSVH4
per carichi superiori.

ON REQUEST
Available model LaLSWH4 - LaLSVH4
for higher loads.

LaLrSWr4 - LaLrSVr4

1

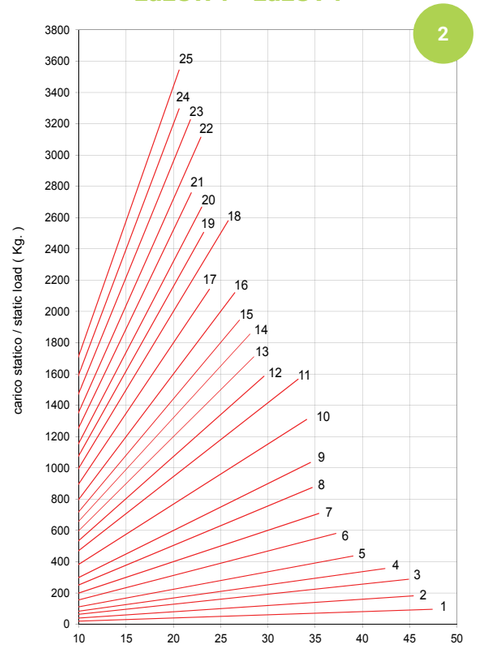


N.	MODEL	WEIGHT (kg)	k
1	LaLrSWr 402	7.33	2.0
2	LaLrSWr 404	7.39	4.0
3	LaLrSWr 405	7.41	6.4
4	LaLrSWr 406	7.75	8.4
5	LaLrSWr 408	7.53	11.2
6	LaLrSWr 409	7.67	15.6
7	LaLrSWr 412		20.0
8	LaLrSVr 414	7.92	25.2
9	LaLrSVr 420	8.03	30.0
10	LaLrSVr 422	8.09	38.4
11	LaLrSVr 430	8.23	47.2
12	LaLrSVr 4300	8.28	53.6
13	LaLrSVr 4301	8.36	60.0
14	LaLrSVr 4305	8.42	66.0
15	LaLrSVr 431	8.48	72.0
16	LaLrSVr 433	8.32	80.0
17	LaLrSVr 445	8.61	90.0
18	LaLrSVr 447	8.78	100.0
19	LaLrSVr 448	8.88	108.0
20	LaLrSVr 450	9.20	116.0
21	LaLrSVr 4501	9.08	126.0
22	LaLrSVr 4510	9.03	136.0
23	LaLrSVr 451	9.26	148.0

CARATTERISTICHE TECNICHE E PERSONALIZZAZIONI
A PAGINA 20

LaLSW4 - LaLSV4

2



N.	MODEL	WEIGHT (kg)	k
1	LaLSW 402	11.00	2.0
2	LaLSW 404	11.10	4.0
3	LaLSW 405	11.20	6.4
4	LaLSW 406	11.40	8.4
5	LaLSW 408	11.50	11.2
6	LaLSW 409	11.60	15.6
7	LaLSW 412	11.80	20.0
8	LaLSV 414	11.90	25.2
9	LaLSV 420	11.90	30.0
10	LaLSV 422	12.40	38.4
11	LaLSV 430	12.10	47.2
12	LaLSV 4300	12.40	53.6
13	LaLSV 4301	12.50	60.0
14	LaLSV 4305	12.60	66.0
15	LaLSV 431	12.70	72.0
16	LaLSV 433	12.80	80.0
17	LaLSV 445	13.00	90.0
18	LaLSV 447	13.00	100.0
19	LaLSV 448	13.30	108.0
20	LaLSV 450	13.40	116.0
21	LaLSV 4501	13.00	126.0
22	LaLSV 4510	14.00	136.0
23	LaLSV 451	13.40	148.0
24	LaLSV 453	13.70	160.0
25	LaLSV 455	13.60	172.0

MANUFACTURING CHARACTERISTICS AND CUSTOMIZATIONS
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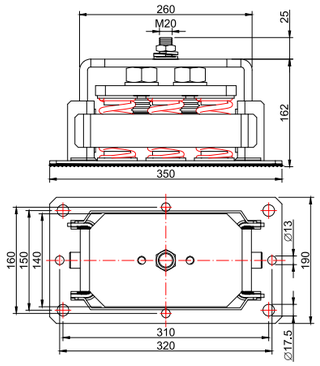
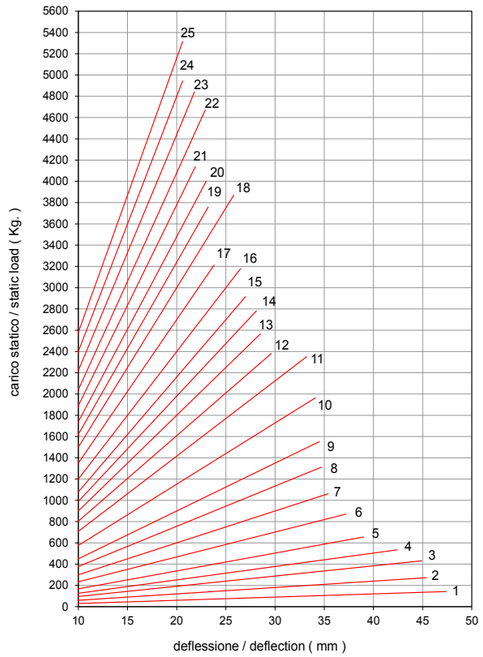
LaLSW6 - LaLSV6

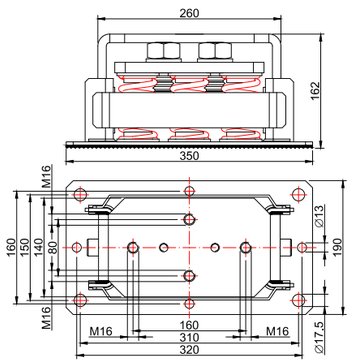
perno filettato M20
M20 threaded rod

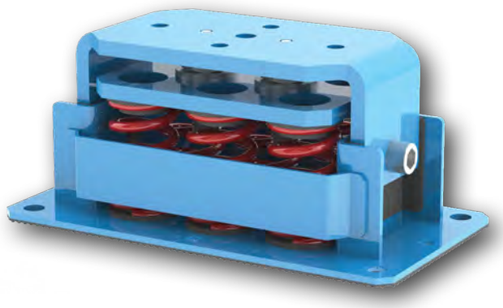




LaLSW6 - LaLSV6

4 fori filettati M16
4 M16 threaded holes

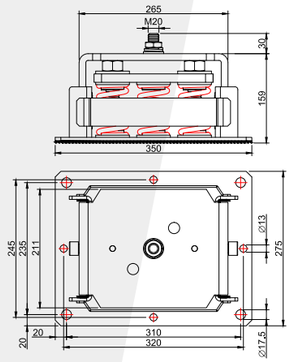


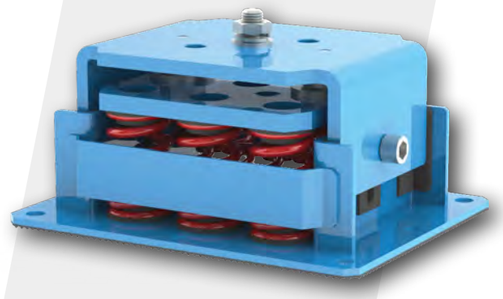


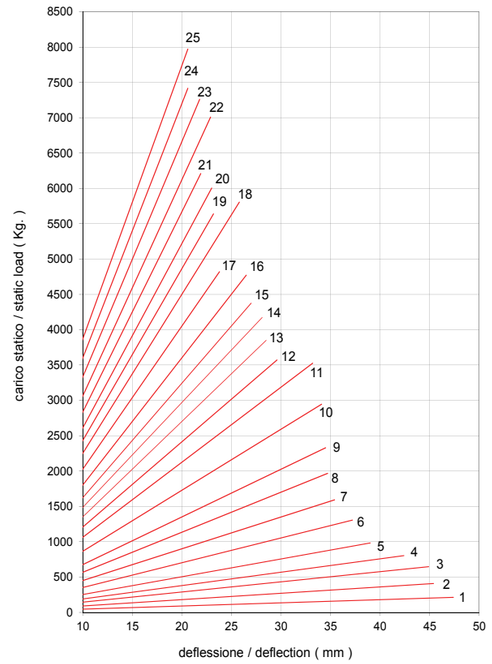
N.	MODEL	WEIGHT (kg)	k
1	LaLSW 602	12.90	3.0
2	LaLSW 604	13.20	6.0
3	LaLSW 605	13.30	9.6
4	LaLSW 606	13.70	12.8
5	LaLSW 608	14.00	16.8
6	LaLSW 609	14.30	23.4
7	LaLSW 612	14.60	30.0
8	LaLSV 614	15.00	37.8
9	LaLSV 620	15.00	45.0
10	LaLSV 622	16.00	57.6
11	LaLSV 630	15.50	70.0
12	LaLSV 6300	16.10	80.0
13	LaLSV 6301	16.30	90.0
14	LaLSV 6305	16.60	99.0
15	LaLSV 631	16.70	108.0
16	LaLSV 633	16.90	120.0
17	LaLSV 645	17.30	135.0
18	LaLSV 647	17.40	150.0
19	LaLSV 648	18.20	162.0
20	LaLSV 650	18.20	174.0
21	LaLSV 6501	17.30	189.0
22	LaLSV 6510	19.70	204.0
23	LaLSV 651	18.20	222.0
24	LaLSV 653	19.00	240.0
25	LaLSV 655	18.80	258.0

LaLSW9 - LaLSV9

perno filettato M20
M20 threaded rod



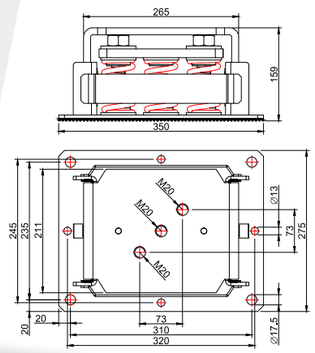


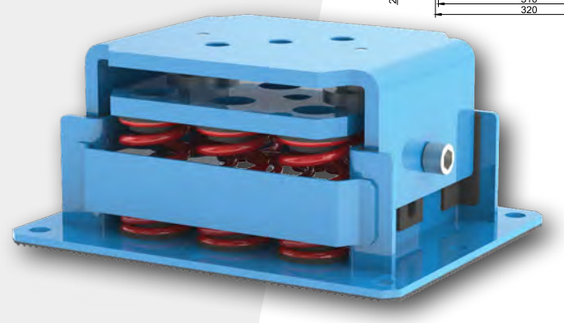


LaLSW9 - LaLSV9

3 fori filettati M20
3 M20 threaded holes

A RICHIESTA
Disponibili modelli per carichi superiori.
ON REQUEST
Available models for higher loads.





N.	MODEL	WEIGHT (kg)	k
1	LaLSW 902	20.90	4.5
2	LaLSW 904	21.20	9.0
3	LaLSW 905	21.30	14.4
4	LaLSW 906	21.70	18.9
5	LaLSW 908	22.00	25.2
6	LaLSW 909	22.30	35.1
7	LaLSW 912	22.60	45.0
8	LaLSV 914	23.00	56.7
9	LaLSV 920	23.00	67.5
10	LaLSV 922	24.00	86.4
11	LaLSV 930	23.50	106.2
12	LaLSV 9300	24.10	120.6
13	LaLSV 9301	24.30	135.0
14	LaLSV 9305	24.60	148.5
15	LaLSV 931	24.70	162.0
16	LaLSV 933	24.90	180.0
17	LaLSV 945	25.30	202.5
18	LaLSV 947	25.40	225.0
19	LaLSV 948	26.20	243.0
20	LaLSV 950	26.20	261.0
21	LaLSV 9501	25.30	283.5
22	LaLSV 9510	27.70	306.0
23	LaLSV 951	26.20	333.0
24	LaLSV 953	27.00	360.0
25	LaLSV 955	26.80	387.0

CARATTERISTICHE TECNICHE E PERSONALIZZAZIONI
A PAGINA 20

MANUFACTURING CHARACTERISTICS AND CUSTOMIZATIONS
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