



Ergonomics approved quality label

Matador Carrier Belt

vhp human performance b.v.
Huijgensstraat 13a
2515 BD The Hague / The Netherlands
T +31 (0)70 - 38 92 010
F +31 (0)70 - 38 92 413
info@vhphp.nl
www.vhphp.nl

IBAN NL27ABNA0486072894
BIC ABNANL2A
KVK Haaglanden nr. 27259365
BTW NL8121.45.471.B01



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Authors
drs. Kees Peereboom Eur.Erg.
Ir. Bas van Leeuwen

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Matador bv

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1 Introduction

This report contains the assessment for a vhp ergonomics approved quality label for the Matador Carrier Belt. During the assessment for the vhp ergonomics mark, the functional and usage aspects of the product are assessed to ensure compliance with the guidelines for physical load from the Dutch Physical Load Handbook¹. General regulations regarding physical load, including lifting and carrying apply².

2 Product Matador Carrier Belt

The Matador Carrier Belt is a belt designed for carrying and lifting, it is used to move products manually and on foot. The following tasks are performed:

- Lifting a load (e.g., box/ crate) onto the bracket of the Matador Carrier Belt
- Positioning hands to support crate/box. Two basic positions are used:
- With both hands on the back of the load. This involves a two-handed lifting motion.
- Holding steady with one hand at the top of the load. This involves a pulling motion.

The Matador Carrier Belt is made of Nylon, Cordura and steel, among other materials, and is variable in length from 900 to 1750 mm. The own weight is 0.5 kg.

3 Features: Matador Carrier Belt

The Matador Carrier Belt helps to adopt a better lifting and carrying posture. By resting the load on the belt at hip level, it is encouraged to not assume an overstretched posture when lifting and carrying the load.

The Matador Carrier Belt ensures that a load does not have to be put down. Lifting twice is thus avoided. Examples include: opening doors or ringing the doorbell during delivery.

Compared to the traditional lifting and carrying of a load, the Matador Carrier Belt gives a lower physical load. This is caused by the fact that the load rests on the hips instead of the back.



¹ Dutch Handbook of Physical Load, editors drs. K.J. Peereboom Eur.Erg. and drs. N.C.H. de Langen, seventh revised edition, 2015. For lifting equations the NIOSH method is used.

² According to the Working Conditions Act, employers must ensure that physical load does not endanger the safety and health of their employees (Working Conditions Law paragraph 5.2). Employers are obliged to include the risks of pushing and pulling in their risk inventory and evaluation and the Plan of Action. Employers must also provide proper information on how employees should push and pull objects in a safe and healthy manner. See: www.arboportaal.nl

The Matador Carrier Belt offers added value particularly in situations where a load has to be carried over distance and no use can be made of e.g. platform trucks, hand trucks or other means of transport. These tools are especially important while delivering large numbers of boxes/parcels and without having to pass obstacles.



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The Matador Carrier Belt is approved and is provided with the vhp ergonomics approved quality label.

The Matador Carrier Belt provides about 56% lower lifting load when in use by lifting close to the body and by supporting the hips and carrying load on the hips through the belt (See Appendix).

The Matador Carrier Belt ensures that lifting occurs less often, the user can support the load and open a door with the other hand at the same time. The Matador Carrier Belt provides in particular when walking with a load a much more favourable back load because when carrying the carrier hook supports the load and relieves the back. Moving a weight of 20 KG on foot with the Carrier Belt can also be done at a high frequency without risk of back strain, without the Carrier Belt this is not the case and the standard is exceeded.

When using the Matador Carrier Belt, the maximum lifting weight of 23 KG remains applicable because the load must be lifted on to the carrier hook.

5 Appendix

Forces on lower back, as a result of lifting WITH and lifting WITHOUT the carrier belt.

Forces on lower back when lifting WITH the carrier belt, lifting a crate (20kg), assuming that the weight of the crate is distributed equally between both hands and hips. The hands support the crate at the bottom (see image).



The load (3D low back compression force) on the lower back using the Carrier Belt is 1024 N where 3400 N is allowed, this occurs when using the Carrier Belt mainly by applying force with the hands and own torso weight.

Forces on the lower back when lifting WITHOUT the carrier belt, e.g. lifting a crate (20 KG), where the weight is carried entirely with the hands (thus maximum back strain) is:

- When carrying with the load against the body 1618 N;
- When carrying with the load 20 cm away from the body at 2057 N.

These values apply when lifting and carrying once to occasionally per day. For multiple lifting and carrying, the following corrections for frequency apply:

- For lifting/carrying once every 5 minutes: multiply the compression value by multiplying 1.25.

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- For lifting/carrying once every minute: increase the compression value by multiplying 1.66

When lifting 20 KG from the body WITHOUT a Carrier Belt on average once a minute, the standard of 3400 N is exceeded.