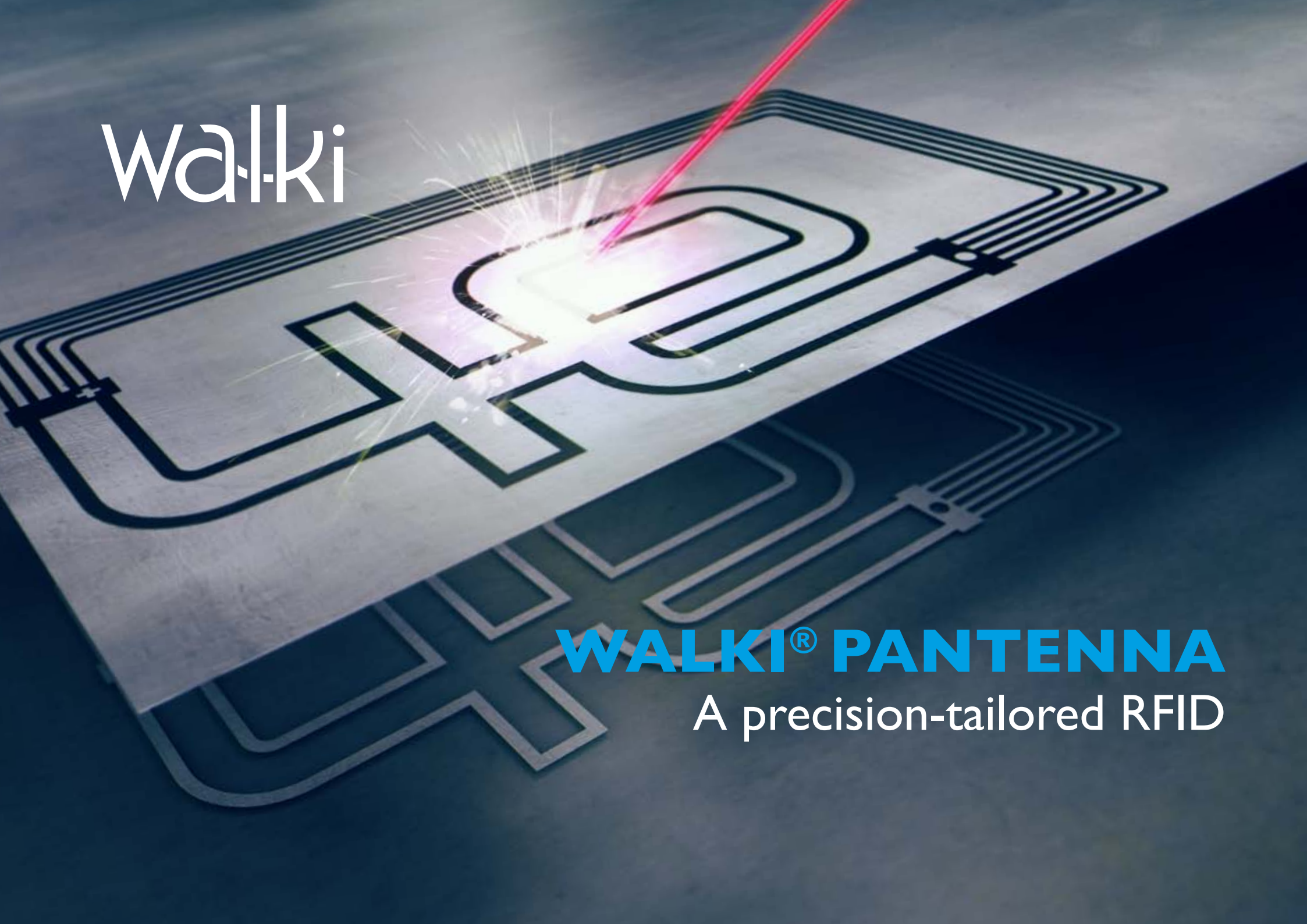

walki
WALKI® PANTENNA
A precision-tailored RFID

INTERNET HAS MADE IT POSSIBLE for people everywhere to be connected to anywhere at any time. If people are on the internet, everything else will follow. That is why the “Internet of Things” is a dimension, which will shape our understanding of connectivity more than we can imagine today.

INTERNET OF THINGS means that the things we use, consume and live with are connected as well. Internet will no longer be only for things that have a screen and a keypad.

Things connected to a larger entity shouldn't be only understood in terms of the World Wide Web. Tailored and local connectivity is an equally interesting avenue for new business and innovation. The first manifestations of this are the many ways that near field communication and radio frequency identification are already changing business structures and buying patterns around the world.

Internet will no longer be only for things that have a screen and a keypad.

MANUFACTURER, DISTRIBUTOR, retailer, consumer. Millions of consumers making millions of business transactions in millions of locations in the global marketplace. Already today RFID solutions allow businesses around the world to gather vital information and data at every phase of the value chain – and to make better business decisions.

THE BENEFITS OF RFID are evident in item-level tagging – but there´s one thing that has been slowing down the development. The costly and slow production of RFID antennas using the "wet" etching process.

WALKI HAS A SOLUTION to overcome these challenges: Walki® 4E. It is a unique antenna manufacturing process with outstanding process accuracy and excellent environmental and economical benefits. The solution is fast, accurate, flexible, cost-efficient, customizable, fit for short and long runs, and sustainable throughout the chain.

WALKI® 4E has potential for end-uses currently unseen. It invites the questioning of current methods and traditions. It sets the new standards for good!

FOUR Es

E FOR ECOLOGY

- Absence of liquid chemicals
- 100% recyclable aluminium process residue
- Monomaterial converting = fully recyclable end product matching the needs for electronics recycling

E FOR EFFICIENCY

- The dry process and the speed of laser technology provides up to 10 times faster production speed than in etching
- Computer to antenna production gives flexibility and speed to new antenna development
- Booster antenna is an ideal solution for high efficiency on-pitch converting

E FOR EXACTNESS

- Laser technology enables extreme accuracy and reliable repeatability of patterns for better production yield at IC attachment
- Allows for smaller microchips (ICs) in high volume production for lower IC cost

E FOR ECONOMY

- Lower total cost of tagging with unique Walki®Pantenna -solution
- Apply microchip only when needed in a Kernel tag – tag only what you need and save in microchip costs
- Can be used in traditional converting workflows – lower investment cost

NEW AGE IN ANTENNA PRODUCTION

The first product born from Walki® 4E technology is Walki® Pantenna. Walki® Pantenna is an environmentally sound antenna produced directly from computer. The production process is completely dry and can use paper as the substrate.

WALKI® PANTENNA'S digitized production chain enables versioning, serialization, personalization etc. Walki® Pantenna can be made on paper or fabric, along with all the traditional substrates. The array of possibilities is nearly endless.

WALKI® PANTENNA launches a new era in antenna production: more efficiency and accuracy, less cost and environmental impact.

Walki® 4E invites questioning current methods for good.

WALKI® PANTENNA OFFERS A NEW LEVEL OF NEED BASED, APPLICATION-SPECIFIC FLEXIBILITY

Walki®Pantenna can just as easily be used as an inlay or as a booster antenna. The following pages illustrate the main phases in both types of processes.

Whichever is used, the benefits Walki®Pantenna offers are impressive and unprecedented:

The choice of substrate is now greater than ever before – even beyond paper and PET. The antenna production benefits from all of the advantages of the speed and flexibility of a digital process. Converting is easier and more accurate than before enabling the use of smaller ICs (chips). What's more, the environmental performance is superior to the conventional methods from cradle to grave: A non-toxic process producing antennas that are totally recyclable with the end-product.

Walki®Pantenna saves time, trouble, money and raw materials. In short: Walki®Pantenna is sustainable and profitable. The two things all business should be.

Item-level tagging has never been smarter.

FROST & SULLIVAN

2012 BEST PRACTICES AWARD

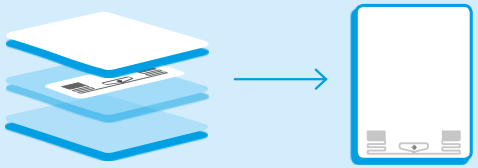
EUROPEAN
PASSIVE RFID ANTENNA PRODUCTION
TECHNOLOGY INNOVATION AWARD

WALKI® PANTENNA, INLAY

The antenna is lasered directly on the substrate that can be for example PET or paper. How densely the antennas are lasered has practically no limitations. It depends totally on the requirements of the next phases in the process.

The IC (chip) is attached to the antenna. It can be smaller than conventionally thanks to the extreme accuracy of the laser technology.

Pantenna can be inserted as inlay or used directly as label face material for an inlay-less structure.



The printing and encoding complete the smart label.

Fully functional tag is then applied on its end-use.

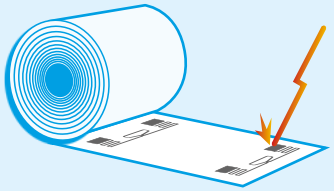
HOW EXACTLY CAN WALKI® 4E AND WALKI®PANTENNA HELP BUSINESSES TODAY?

Let's think of a big clothing store with easily thousands of different items. It would be a substantial investment to produce a traditional smart tag (IC + antenna) for each item. You would need dozens of different tags. With Walki's 4E-based solution – Walki® Pantenna – you need only one single type of a kernel tag attached to a booster antenna. The digital production allows item-level adaptation to the booster antenna itself so you can tag each different item in your inventory with lower costs than ever before.

WHAT'S MORE, there still are many supply chains that utilize RFID only in their process. In such cases it would be a waste of money to have costly microchips (ICs) attached to the items. With the Walki Pantenna solution you don't throw microchips to waste. Tag only what you need. Place the kernel tag solely on the products that make use of RFID.

Walki® Pantenna makes your tagging and business smarter than ever before.

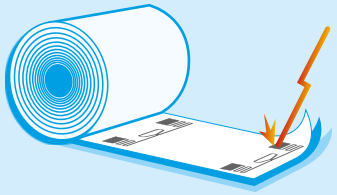
WALKI® PANTENNA, BOOSTER



Booster antenna lasering directly on the packaging material.

Optional kernel attachment to the booster antenna on the packaging material. Tag only what you need.

With the smart Walki® Pantenna packaging, you can manage your inventory and sales – both on item and batch levels – with more insight and precision than ever. And you only have to tag the items you need.



Booster antenna lasering directly on the label material for on-pitch converting.

Smart label printing, diecutting, encoding and barcode printing. Kernel attachment is optional. Tag only what you need.

With the smart Walki® Pantenna labels, you can manage your inventory and sales – both on item and batch levels – with more insight and precision than ever. And you only have to tag the items you need.

WALKI IN BRIEF

WALKI GROUP is a leading, international producer of technical laminates and protective packaging materials, specialising in the production of fibre based, intelligent, multilaminate products for markets ranging from energy saving construction facings and construction membranes to barrier packaging applications.

To best cater to our global customers, we aim to continue investing in state-of-the-art production facilities and promoting our tradition of innovation and exceptional service worldwide.

PRODUCTION FACILITIES IN

Finland
Germany
the Netherlands
Poland
the UK
Russia
China

ANNUAL NET SALES

300 million Euros

WORKFORCE

of about 900 people

CERTIFICATES

ISO 9001:2000 | ISO 14001:2005 | OHSAS 18001

PATENT PENDING

Patent FI 121592 B
US patent pending US 12/922253
Int. patent pending PCT/FI2013/050255

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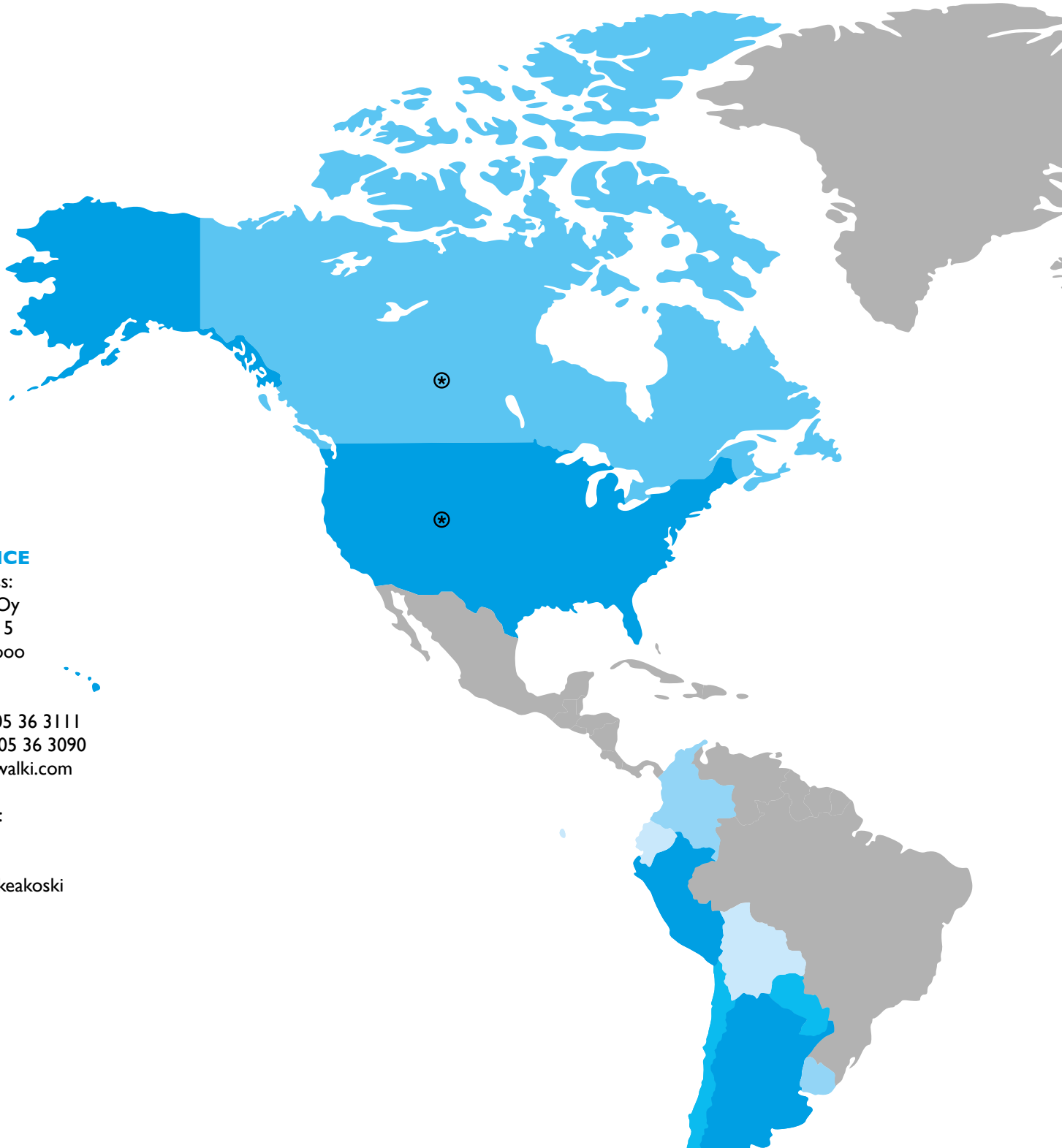

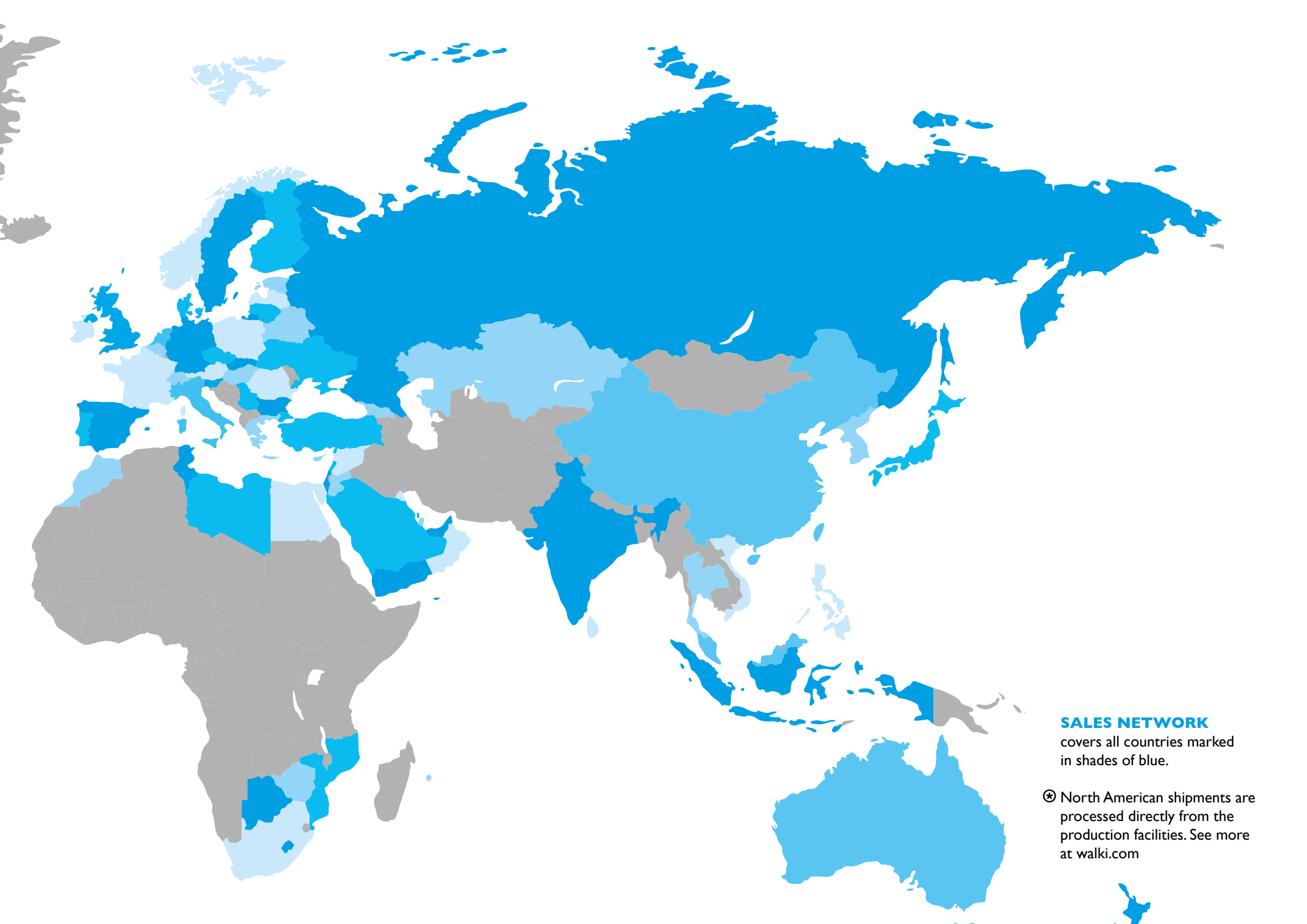

SALES NETWORK
covers all countries marked in shades of blue.

⊛ North American shipments are processed directly from the production facilities. See more at walki.com

WWW.WALKI.COM