

Mounting and Maintenance of VKJ-650

KONAFLEX VKJ-650 DISC BRAKE

Mounting and maintenance of VKJ-650 hydraulic brake

VKJ-650 disc brake is activated directly with hydraulic pressure. The brake consists of two identical brake halves and the achieved brake torque is directly relevant to the hydraulic pressure used. The basic brake is designed for a brake disc not thinner than 12 mm, but it can be used with thicker discs by using distance plates between the brake halves.

Wear of the asbestos free linings will be automatically compensated by the increased piston stroke. Due to a return spring assembled inside the piston, the brake can also be mounted horizontally. The spring force has been chosen so, that it allows a small pipe pressure (<2 bar), when friction pads are in a retracted position.

Maximum operating pressure is 100 bar. Each brake is tested at a pressure of 150 bar before delivery to customer. The brake is surface treated and can be used in normal industrial environments with no further treating.

The VKJ-650 can be installed either with four M10 screws or with three M16 bolts, if the brake disc is thicker than 12mm and the design of machine body allows it.

IMPORTANT! The brake unit and brake disc have to be installed in parallel position, even though a small misalignment is allowed due to design of the brake. If the brake is mounted by using M10 screws, please note the following instructions:

- a) Mount the brake unit and tighten the M10 screws by hand.
- b) Mount the hydraulic pipes. Both brake halves have $R1/4''$ pressure inlets. The hydraulic pipes can be, if wished, connected with a T-piece. The brake should be mounted with the bleed screws in vertical position to avoid trapping air in the cylinders.
- c) Pressurize the brake with a low pressure (5...10 bar). Now the brake will adjust itself to parallel position with the disc.
- d) Tighten the M10 screws securely. Check that the connectors do not leak. It is advisable to do the bleeding of the brake now when pressure is low. During bleeding let oil flow through the bleed screw until there are not any air-bubbles in the oil. Between the lining and the brake disc there ought to be an air gap of 2 mm/brake half.

The side mounting VKJ-650 S disc brake is attached to the machine by two M16 bolts. The calipers are connected to each other by three M16 bolts.

NB! The hydraulic pipes have to be cleaned before installation with compressed air or by rinsing. Before using the brake, clean the brake disc from dust and grease. It is also recommended to pressurize the brake a couple of times with working pressure. Use for this brake hydraulic oil with a viscosity of 40 cSt/40°C.

Maintenance

Maintenance of a disc brake is usually merely checking the wear of the linings. In the VKJ-650 the wear margin is 5 mm. The brake pad has to be replaced when 1 mm of friction material is visible over the edge of the support plate. Remove pad by turning the sheet metal claw into straight position, now the pad can be removed through the gap between the disc and the support plate.

NOTE! When inserting the new friction pads, the following procedure must be applied: Place the friction pads (5) into the support plates (6) and pressurize the caliper. While caliper is pressurized, i.e. the brake is applied, force (hammer) the sheet metal claws firmly into the slots in the support plate (6).

When checking the wear of the linings it is essential to notice, that if the brake is not parallel with the brake disc or if the disc is warped, it is most probable that brake linings will wear out unequally, and there is a danger that one edge of the support plate comes into contact with the disc.

During a long period of use the oil gets dirty and quality of oil becomes poor. In such a case leaks may occur. If this happens, the brake has to be reassembled and cleaned properly, and all seals have to be replaced. If the piston is scratched, replace it as well.

Spare parts	Spare part number
Friction pad	804127005/1 or 804048004
Seal kit	804127022
Piston replacement kit	804127021

KONAFLEX DISC BRAKE TYPE VKJ-650 SPECIFICATION

VKJ-650 is a Finnish made, rugged and reliable disc brake. The brake consists of two separate halves which are connected to each other with three bolts. Each brake half has one pressure inlet. The support plates holding the non-asbestos friction-pads, have cylindrical guide pins which prevent radial forces being applied to the piston. Pads can be changed without tools. The VKJ-650 disc brake can be used with brake discs of different thickness by using distance plates. As a standard the brake is designed to be used with a 12 mm thick disc. VKJ-650 brake can even be mounted to a brake disc with a minimum diameter not less than 300 mm, and minimum thickness 12 mm.

Wear of the asbestos free linings will be automatically compensated by the increased piston stroke. Due to a retraction system assembled inside the piston, the brake can also be mounted horizontally. The retraction has been chosen so, that it allows a small pipe pressure (<2 bar), when friction pads are in a retracted position.

TECHNICAL DATA

Piston area	Total pad area	Consumable pad volume	Friction coefficient	Working pressure max
33 cm ²	220 cm ²	110 cm ³	0,42	100 bar
Brake force		Weight		
280 N/bar		28000 N max		
		15 kg		

M_j=braking torque (Nm)

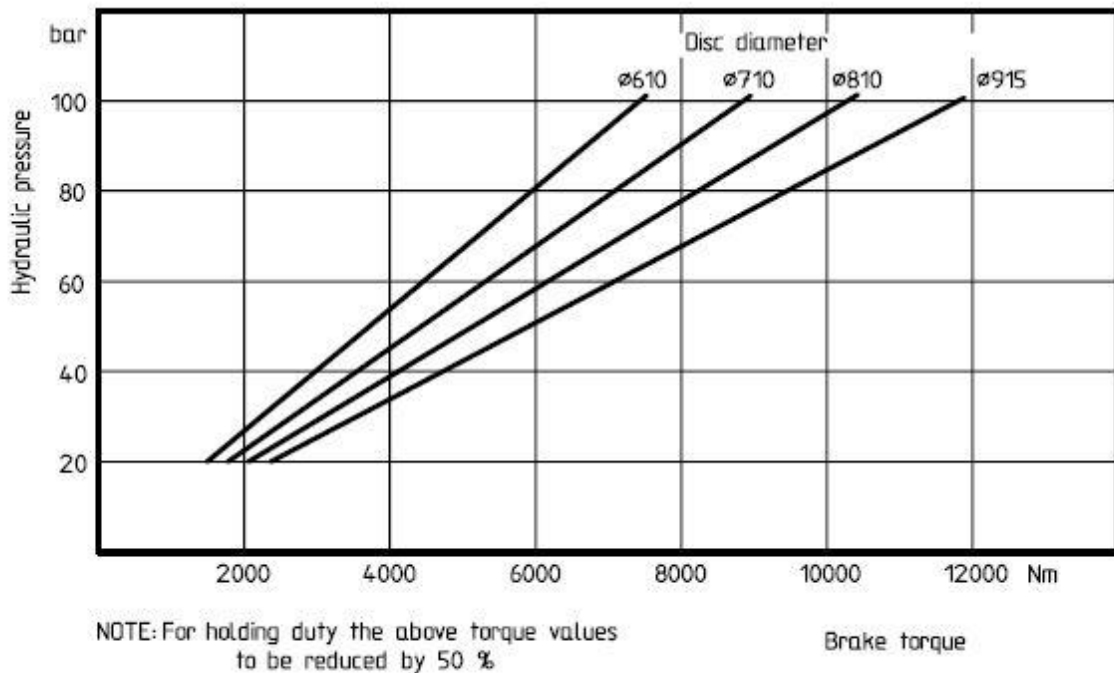
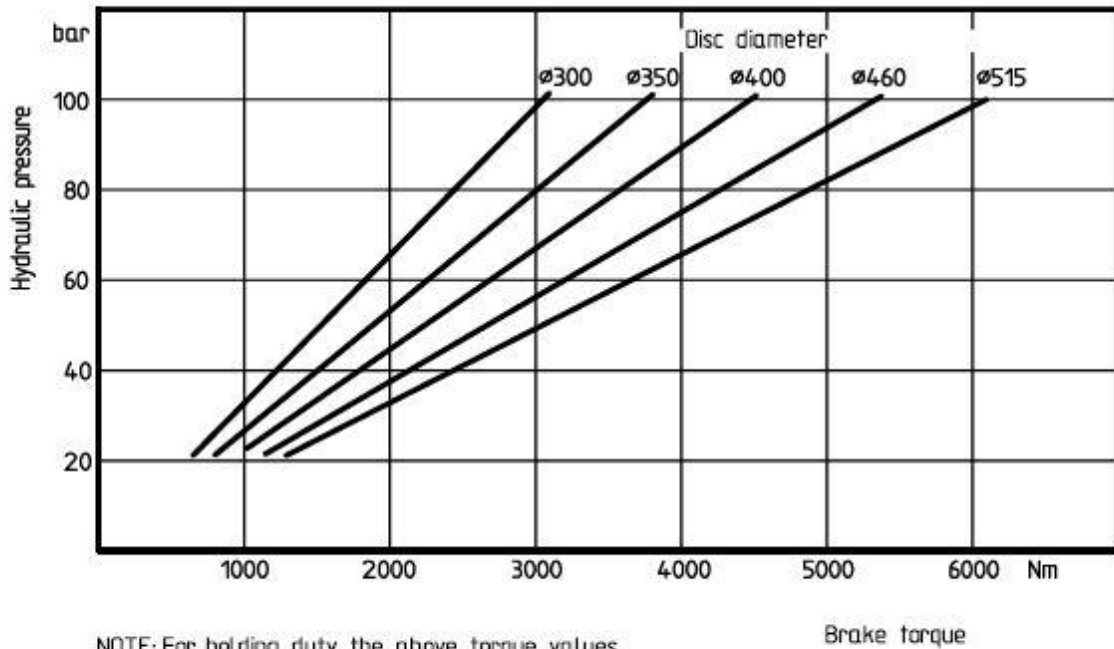
$M_j = a \times F \times (D - 0,084) / 2$

F=brake force (N)

D=brake disc diameter (m)

a=number of calipers

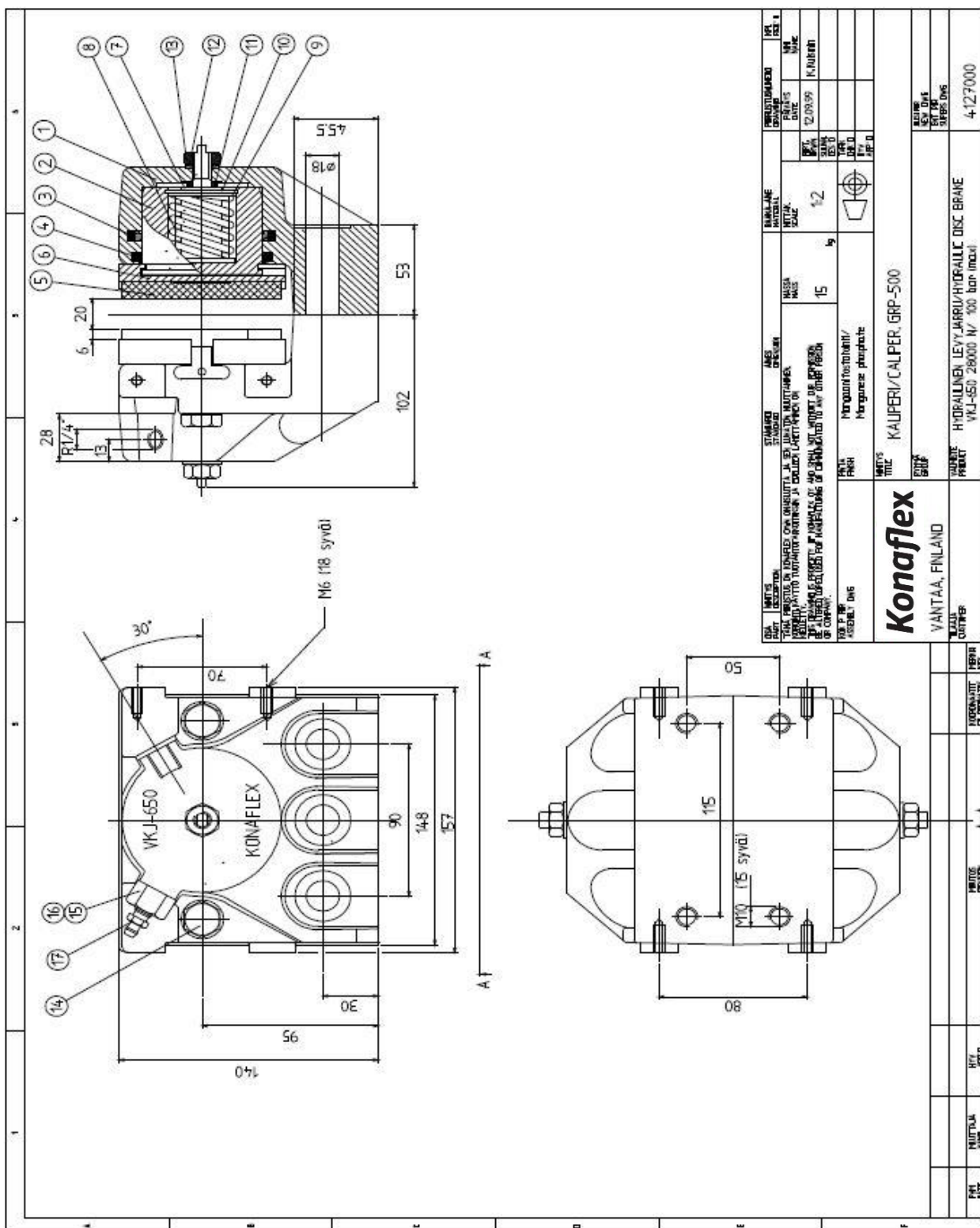
VKJ-650 DISC BRAKE



SPARE PARTS LIST OF KONAFLEX DISC BRAKE TYPE VKJ-650

List of items referring to drawing no. 4127000

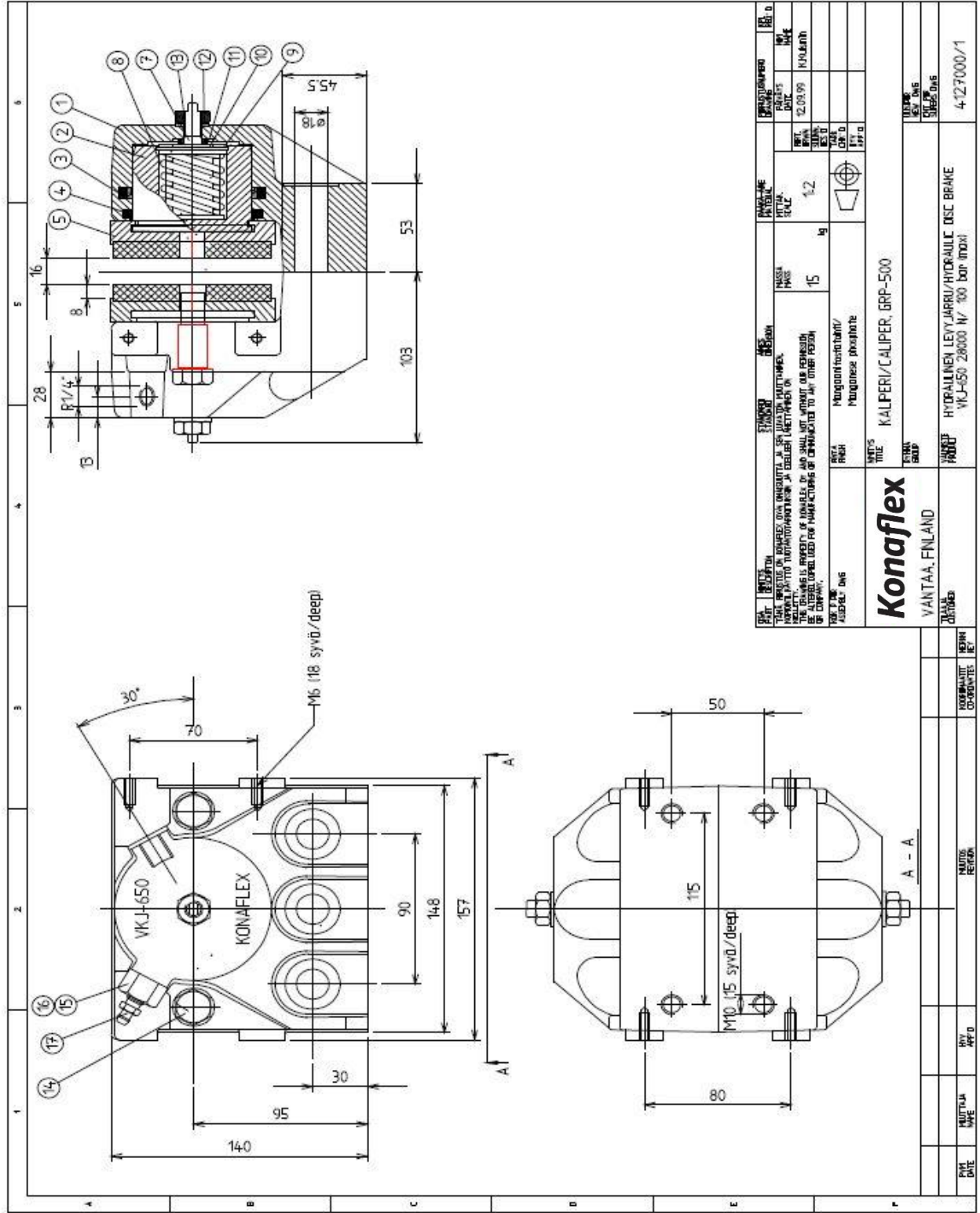
Item / Osa	Description / Nimitys	Drawing number/ Piirustusnumero	Material / Raaka-aine	Quantity / Määrä
1	Caliper / Kaliperi	4127001	GRP-500	2
2	Piston / Mäntä	4127002		2
3	Piston seal / Männäntiiviste			2
4	Wiper / Pyyhkijä			2
5	Friction pad / Kitkapala	4127005/2	ISB-104	2
6	Support plate / Kitkapalan pohjalevy	4127006/2		2
7	Pin / Jousen tappi	4127007		2
8	Spring / Jousi	4127008		2
9	Backing plate / Tukilevy			2
10	Circlip / Lukkorengas			2
11	Seal / Tiivistävä alusrengas			2
12	Washer / Alusrengas			2
13	Nut / Mutteri			2
14	Guide pin / Ohjaustappi	4127014/2		4
15	Socket for bleed screw / Ilmausruuvin istukka	4127015		2
16	O-ring / O-rengas			2
17	Bleed screw / Ilmausruuvi			2



SPARE PARTS LIST OF KONAFLEX DISC BRAKE TYPE VKJ-650

List of items referring to drawing no. 4127000/1

Item / Osa	Description / Nimitys	Drawing number/ Piirustusnumero	Material / Raaka-aine	Quantity / Määrä
1	Caliper / Kaliperi	4127001	GRP-500	2
2	Piston / Mäntä	4127002		2
3	Piston seal / Männäntiiviste			2
4	Wiper / Pyyhkijä			2
5	Friction pad / Kitkapala	4048004/4	ISB-104	2
7	Pin / Jousen tappi	4127007		2
8	Spring / Jousi	4127008		2
9	Backing plate / Tukilevy			2
10	Circlip / Lukkorengas			2
11	Seal / Tiivistävä alusrengas			2
12	Washer / Alusrengas			2
13	Nut / Mutteri			2
14	Guide pin / Ohjaustappi	4127014/2		4
15	Socket for bleed screw / Ilmausruuvin istukka	4127015		2
16	O-ring / O-rengas			2
17	Bleed screw / Ilmausruuvi			2



PIK. / PART NO.	STANDARD	REVISION	DATE	REVISION	DATE	REVISION	DATE
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Konaflex

VANTAA, FINLAND

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KALPERI/CALPER, GRP-500

HYDRAULINEN LEVYJARRU/HYDRAULIC DISC BRAKE

VKJ-500 28000 N/ 100 bar 1700x1



Myynti

Vantaa	Turku	Tampere	Oulu
Pyymosantie 4	Polttolaitoksenkatu 5	Lentokentänkatu 9 C	Revontie 2
01720 Vantaa	20380 Turku	33900 Tampere	90830 Haukipudas

Huolto ja kokoonpano

Vantaa	Turku	Puh. 010 8345 500
Pyymosantie 4	Polttolaitoksenkatu 5	power.hydraulics@masino.fi
01720 Vantaa	20380 Turku	www.masino.fi/masino-konaflex

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