kortho
coding & marking

TT-SERIES
THERMAL TRANSFER

TT-32

TT-53

TT-107

1.800 METERS OF RIBBON AND BULLETPROOF RELIABILITY

Ribbon that breaks, wrinkles or is wound too tight and stuck on the take-up spool. Notorious TTO problems that are caused by accumulating, abrupt or too loose ribbon tension. The longer the ribbon, the worse these issues get. However with our patented *SMART-FORCE*™ technology all ribbon problems belong to the past. This system keeps the tension equal and optimal through constant electronic regulation. Even when not printing! The result: no more ribbon issues and by far the longest ribbon on the market. Downtime due to ribbon errors and roll changes has never been lower!

OPTIMAL PRINTQUALITY UNDER ANY CONDITION

The same patented *SMARTFORCE*™ technology is also used to electronically actuate the printhead onto the substrate. By regulating the pressure in real-time a perfect contact with the product is guaranteed under any condition. Even if the print surface is uneven, bumpy or sloped! The printhead will compensate any imperfection by flawlessly following the print surface trajectory at a constant pressure. This makes the TT-Series' print quality completely impervious to changing, non-optimal conditions. Making it the most forgiving, reliable and user friendly TTO printer on the market!

SMART, OMNICOMPATIBLE AND 100% INDUSTRY 4.0 READY

Next to offering our own Kortho Control Center LMS software for free, Kortho also specializes in being omnicompatible with as much third party label and control software as possible. This makes you free to objectively choose the best software and control method for your application! Smart, tailored and error-free coding has never been so accessible. From standalone use to full Industry 4.0 cloud ERP integration: A Kortho printer makes any custom requirement easy to implement by adjusting itself to your coding need, and not the other way around!

SLIMLINE: SAVE UP TO 50% ON EQUIPMENT COSTS

Like with our software, also the use of our Printerface IoT controller is optional. Just install our free Kortho Control Center app on any PC, server or (mobile)device and control any number of printers from there! This makes the ratio between printers and controllers 100% flexible: From an individual controller for each printer, to full factory control from one single terminal. The more centralized control, the more you save on HMI's! We call this *SLIMLINE™*, which stands for Smart, Less Is More: Save up to 50% on unnecessary equipment by using the infrastructure that you already have!

INDUSTRY 4.0 IS NOW A TURN-KEY AVAILABLE COMMODITY!

SLIMLINE™

100% MADE IN HOLLAND | SLIMLINE CONCEPT™ | kortho CONTROL CENTER | Loftware NiceLabel™ | SMART FORCE™

HIGHLIGHTS & USP'S

MADE IN HOLLAND
Kortho was founded in Amsterdam in 1926 and is still a Dutch family owned business today. The TT-Series is our third generation TTO and, like all our printers, 100% made in Holland.

1.800 METER RIBBON
Patented **SMARTFORCE™** technology actively regulates ribbon tension. Avoiding all ribbon related problems, but also allowing for the longest ribbon on the market.

ULTRASONIC INDEXING
Real-time ultrasonic ribbon indexing offers extreme ribbon transport accuracy and foolproof reliability by no longer needing the use of moving (encoder) parts.
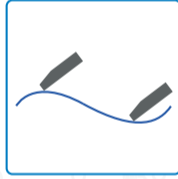
SMALLEST RIBBON GAP
Ribbon waste gap in between prints is kept on a constant value no wider than 0,5mm on average. Optimizing ribbon consumption by minimizing waste.
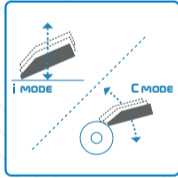
BEST SUBSTRATE CONTACT
Patented **SMARTFORCE™** technology actively regulates the pressure of the printhead onto the substrate. Ensuring an optimal substrate contact and print quality at all times.

EXTREMELY FORGIVING
Automatic printhead positioning sets the printhead in optimal position in relation to the substrate. Making the printer extremely forgiving to changing conditions.
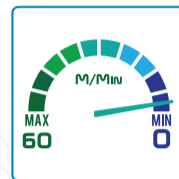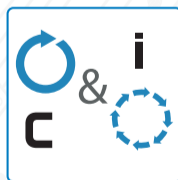
LONGEST PRINTHEAD LIFE
Printhead is kept on operating temperature mechanically without dotline activation. Extending its lifespan drastically and producing perfect prints in cold or moist environments.
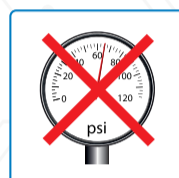
C & i WITH SAME PRINTER
Printhead orientation can be easily changed so that next to Intermittent the printer can also print Continuous Left and Right handed, making it suited for all applications.

PRINT TO ZERO FUNCTION
*Print to zero underspeed safeguard prevent bad prints or burning through the ribbon when product transport speed becomes too low.
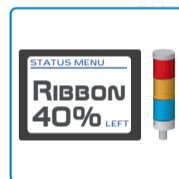
NO AIR FEED NEEDED
100% electric operation so no compressed air is needed anymore. Enabling a quick and easy installation, but also maximum reliability by not depending on air quality.

SAVE ON CONTROLLERS
Built according to **SLIMLINE™** Smart, Less Is More philosophy. Save costs on controllers by operating multiple printers from one single terminal. Maximizing central control benefits.

LED-STRIP SIGNALING
Printer integrated dual RGB LED strips and full color status screen facilitates the use without (nearby) HMI, but also avoids the need for additional signaling equipment.

KORTHO CONTROL CENTER GUI
Operated with Kortho Control Center (KCC) software. Free and very complete platform designed to make Industry 4.0 coding easy and quick to implement. See separate KCC leaflet for details.

100% INDUSTRY 4.0 READY
Open platform and Windows native OS. Especially designed for extended communication options with third party software. Including Windows generic network driver and 350+ commands protocol.
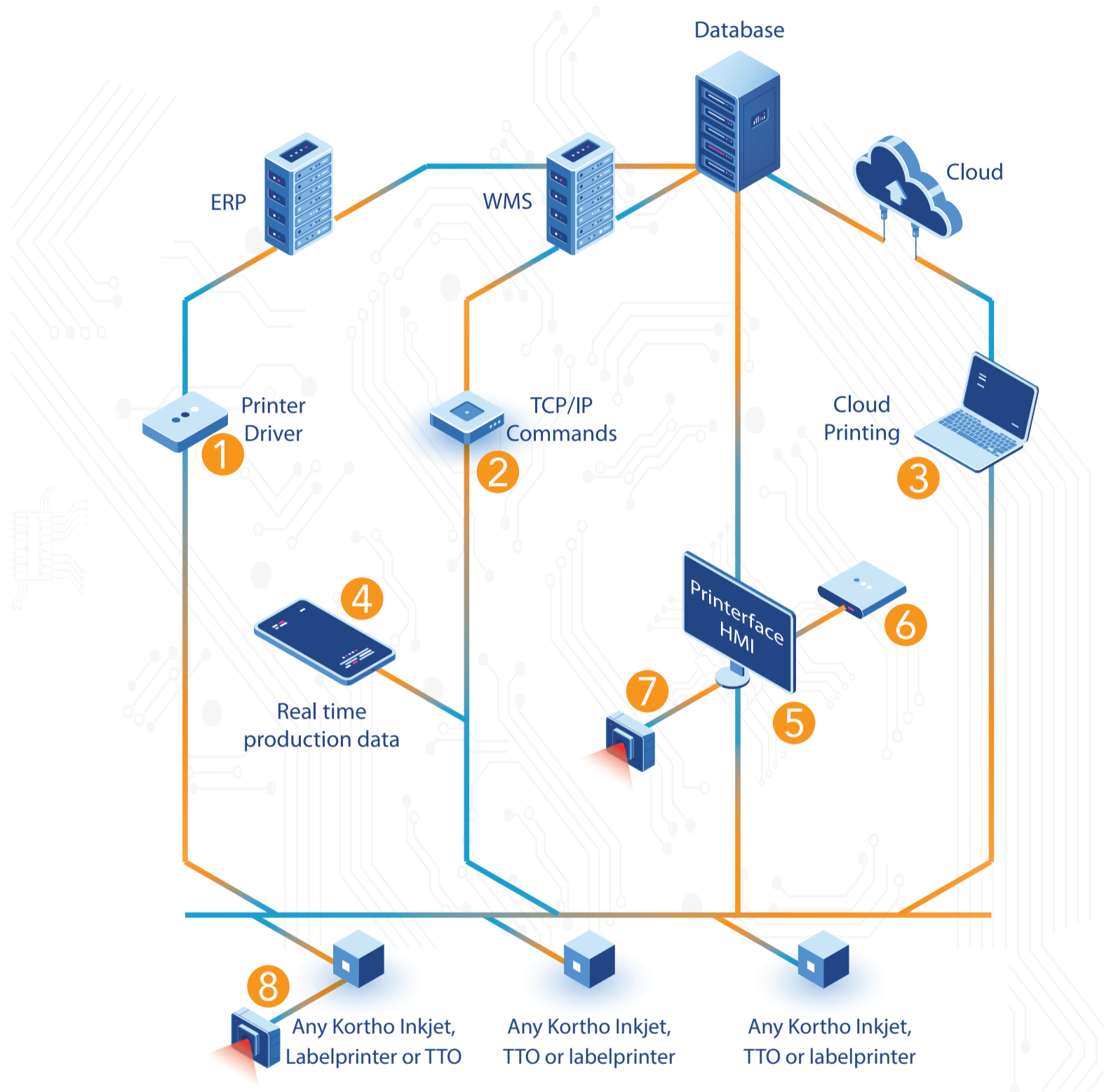
REMOTE DIAGNOSTICS
Full printer diagnostics including real-time scope traces of the physical status, position, speed and trajectory of all internal wearing and moving parts.

MAINTENANCE FREE
The TT-Series is maintenance free by design. Meaning that other than the consumables during its entire lifecycle no parts need to be periodically renewed, tuned or re-adjusted.

COMMUNICATION & NETWORKING

Database

ERP WMS Cloud

Printer Driver ① **TCP/IP Commands** ② **Cloud Printing** ③

④ Real time production data

Printerface HMI

⑦ ⑤ ⑥

⑧ Any Kortho Inkjet, Labelprinter or TTO

Any Kortho Inkjet, TTO or labelprinter

Any Kortho Inkjet, TTO or labelprinter

1 Print directly from an ERP or WMS* by sending your own labels through the Windows printer driver.

2 Select labels, update label data or choose any of 350+ TCP/IP commands to communicate to the printer.

3 Print directly from the cloud or use *LMS to collect your data from the cloud to print real time information.

4 Monitor production data and statistics from the printer. Use the free variable Machine ID's to see your real time production status.

5 Let operators control the printer by using Kortho Control Center on the Printerface or an (previously purchased) third party HMI.

6 Connect PLC's, checkweighers, metal detectors or other in-line equipment to the Printerface and use LMS to read or send data.

7 Use a barcode scanner to select your label template from an LMS with the correct product information from a database and update the variable data.

8 Connect a barcode scanner directly to the printer to select the correct label from the label library by scanning a barcode from a production sheet.

Enterprise Resource Planning (ERP) / Warehouse Management Software (WMS) / Label Management Software (LMS)

		TT-32	**TT-53**	**TT-107**
Printing	Max. print area I-mode	32 x 60 mm	53 x 95 mm	107 x 95 mm
	Max. print speed I-mode	600 mm/sec	600 mm/sec	400 mm/sec
	Min. print speed I-mode	50mm/sec	50 mm/sec	50 mm/sec
	Max. throughput I-mode	t.b.e.	300 ppm	300 ppm
	Max. print area C-mode	32 x 60 mm	53 x 500 mm	107 x 500 mm
	Max. print speed C-mode	600 mm/sec	600 mm/sec	400 mm/sec
	Min. print speed C-mode	0 mm/sec	0 mm/sec	0 mm/sec
	Max. throughput C-mode	t.b.e.	240 ppm	180 ppm
	Resolution	300 DPI	300 DPI	300 DPI
Physical	Printunit dimensions	165 x 244 x 231 mm	195 x 294 x 249 mm	195 x 294 x 303 mm
	Printunit weight	8,5 kg	10,3 kg	11,5 kg
	Power supply dimensions		183 x 183 x 75 mm	
	Power supply weight		1,2 kg	
	Print modes		Intermittent and Continuous L & R in any orientation (omnidirectional)	
	Connectors		Free configurable I/O port - Ethernet - USB - Power - Encoder	
	Power supply		External IP-67, 230V AC main cable 300 cm, 42V DC main cable 500 cm	
	Air supply		None needed	
	Signaling		Integrated full color status display and dual RGB LED strip beacons	
	Ribbon system		Cassette based system with simple 2 axle ribbon trajectory	
	Ribbon indexing		Real-time indexing through ultrasonic sensors	
	Printhead preheat		Printhead is kept on operating temperature with external heating element	
	Printhead pressure		SMARTFORCE™ keeps the printhead pressure on a exact value while printing	
	SLIMLIME concept		No controller needed, operation from any Windows (10+) system	
	Material		Stainless steel and aluminum	
Consumables	Ribbon length	1.200 m	1.800 m	1.800 m
	Ribbon width	35 mm	55 mm	110 mm
	M2 on roll	35 m2	99 m2	198 m2
	Compounds		Standard (4.5 µ wax) - Premium (4 µ wax/resin) - Excellence (4 µ resin)	
	Ribbon print gap		< 0.5 mm consistent	
	Core material		Plastic without notches - Extra core included with each ribbon	
HMI	Kortho HMI/GUI*		See separate KCC leaflet for label design and (printer) control functions	
	Third party HMI/GUI		Any Windows based LMS* - Nicelabel, Bartender or other	
	ERP direct		Direct printer control through ERP output files - SAP, Navision or other	
Coms	Wired communication		Ethernet - I/O - USB	
	Wireless communication		Bluetooth - RFID	
	Supported protocols		Escape protocol - Communication Protocol with 350+ commands	
	Driver		Generic Windows network driver	
Accessoiries	Kortho Printerface IoT		Optional: Kortho Branded Windows 10 Industrial tablet + bracket	
	Ethernet cable		Industrial ethernet cable 5 meters + M12/RJ45 coupling	
	Ethernet Switch		Fast ethernet switch 16 ports	
	I/O cable		I/O cable 5 meters	
	Encoder		Pulse encoder - can be mounted on Kortho bracket	
	Universal bracket I- & C-mode		Multiple bracket configuration kits available – cut to size on location	
	Pressure roller kit		Combine with universal bracket for continuous applications	
	Pressure platen kit		Combine with universal bracket for intermittent applications	
	Bracket cutting kit		Set to cut bracket to size on location without the need of power tools	
	Custom bracket		Request through brackets@kortho.nl	

* LMS = Label Management Software, HMI = Human Machine Interface, GUI = Graphical User Interface

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