

### Features and benefits

- Long service life thanks to the use of special materials and coatings suitable for processing highly abrasive materials
- Low wear and reduced maintenance thanks to compensating coupling between drive and metering piston
- Variable mixing ratio and variable discharge rate thanks to modular structure
- Variable speed and maximum precision thanks to two independent servo drives
- Material discharge in shot or bead form
- Multiple shots with one piston volume enable short cycle times
- Pressure monitoring in metering chambers and pre-pressure adjustment for optimized metering results
- Automated leak test
- Hermetic piston sealing with sealing liquid
- Use of disposable mixing tubes



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**HILGER&KERN**GROUP

We are one of the world's most experienced manufacturers of high-quality metering technology. Wherever adhesives, resins, silicones or lubricants are metered and applied in industrial production, we offer reliable, precise solutions. We provide systems and components for highly automated production processes, including for the automotive, wind, household appliances and electrical industries, as well as for aviation.

DOPAG is part of the HILGER & KERN GROUP, a reliable supplier and a development and service partner to industrial companies in a variety of market segments for almost 100 years. The group employs around 350 people and has subsidiaries and distributors in more than 40 countries.



### Global sales and service network

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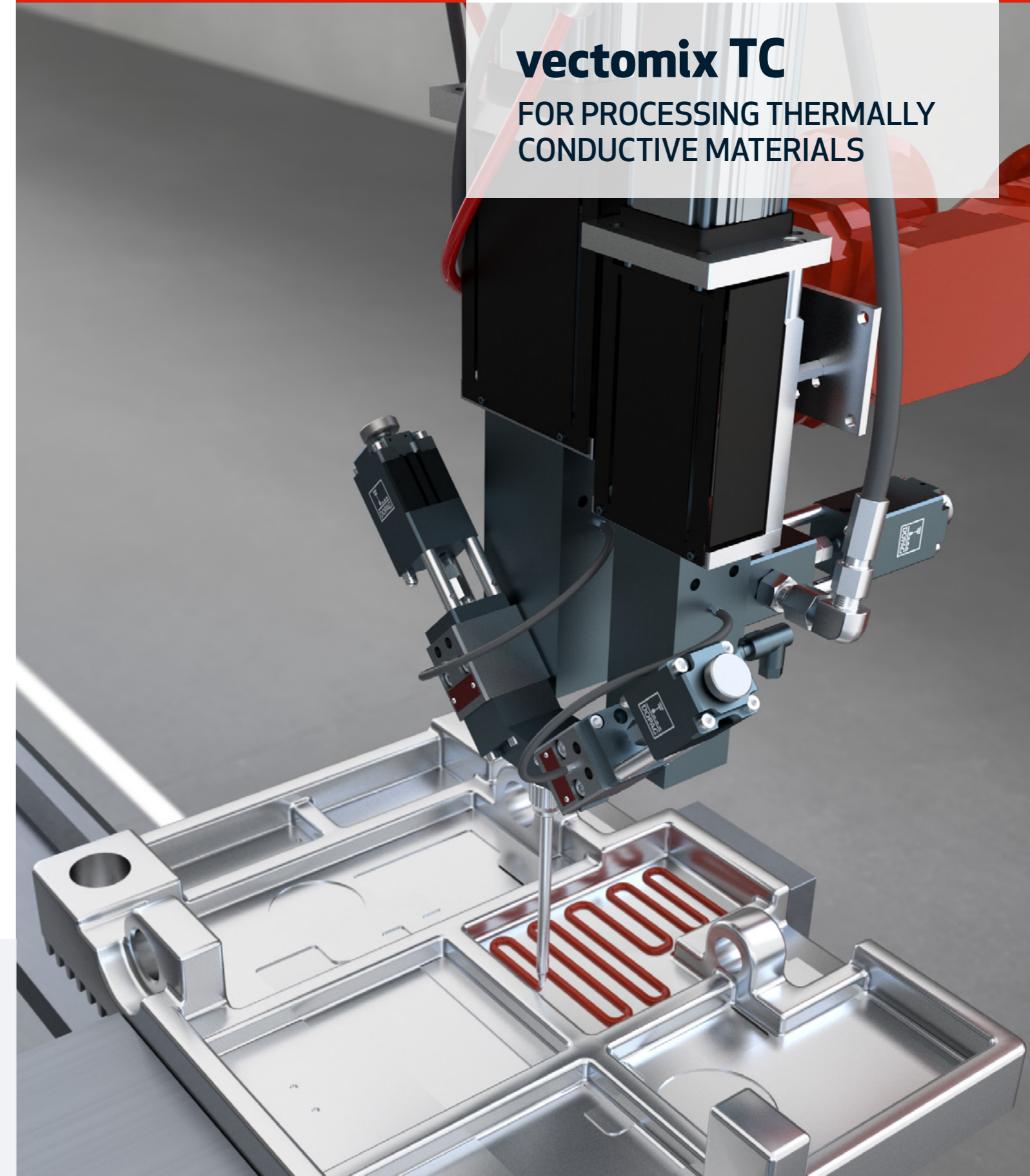
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## vectormix TC

FOR PROCESSING THERMALLY  
CONDUCTIVE MATERIALS





# Metering of thermally conductive materials

## Metering systems for electronic components and for the mobility of the future

Effective heat dissipation in electronic and electrical components is becoming more and more important. Thermal energy has to be evenly distributed and dissipated in a wide range of components in order to prevent breakdown and overheating. In addition, many components are becoming smaller and space is getting tighter. Power density is increasing. Heat is generated on ever smaller surfaces and must be dissipated more effectively than ever.

This is playing an increasingly important role in automotive production and in the electrical and electronics industry in particular. Whether it's for heat management of batteries for electric vehicles or in the production of circuit boards and sensors, thermally conductive materials are metered everywhere.

These materials fulfil several tasks: they not only continuously dissipate heat, but also balance out irregularities and tolerances or fill gaps in electronic components. Thermally conductive materials include silicones, polyurethanes and plastics that can be processed exclusively using special metering systems. With the vectomix TC, DOPAG offers a process stable and reliable solution.

### Your partnership with DOPAG

- Competent support, design and process automation
- A dedicated technical centre for testing and customer training
- Close collaboration and regular communication with material manufacturers
- Decades of experience in metering and mixing technology
- Global distribution and service in over 40 countries

# Precise application thanks to a robust piston metering system

## Hardened steel components guarantee a long product life

The vectomix TC was developed especially for metering, mixing and applying thermally conductive materials. They are used when heat must be spread and carried away consistently – for example in batteries, electronic components. Thermally conductive materials contain a high proportion of abrasive fillers. For this reason the vectomix TC is made of hardened steel to minimize abrasion.

It consists of two piston metering units which are available in different sizes and which can be combined together. This modular structure enables a diverse range of applications as well as variable mixing ratios and discharge ratios.

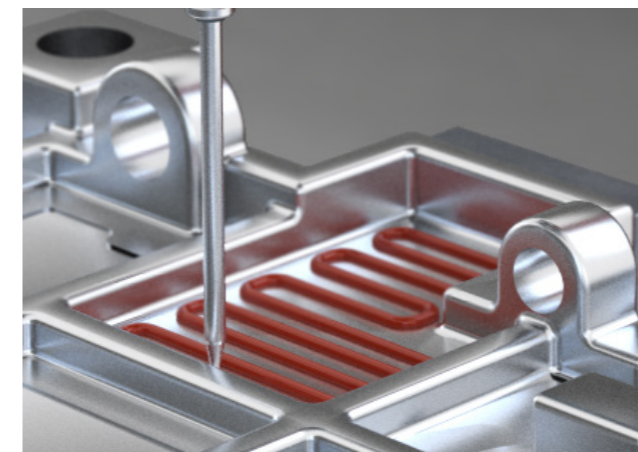
### Control

Metering is controlled via a control unit with touchscreen system operation. All application options possible with vectomix TC can be configured in the control unit, stored in different metering processes and called up on a higher level (Profibus/Profinet). In the case of robotic applications, for example, the control unit also enables material discharge proportional to speed.

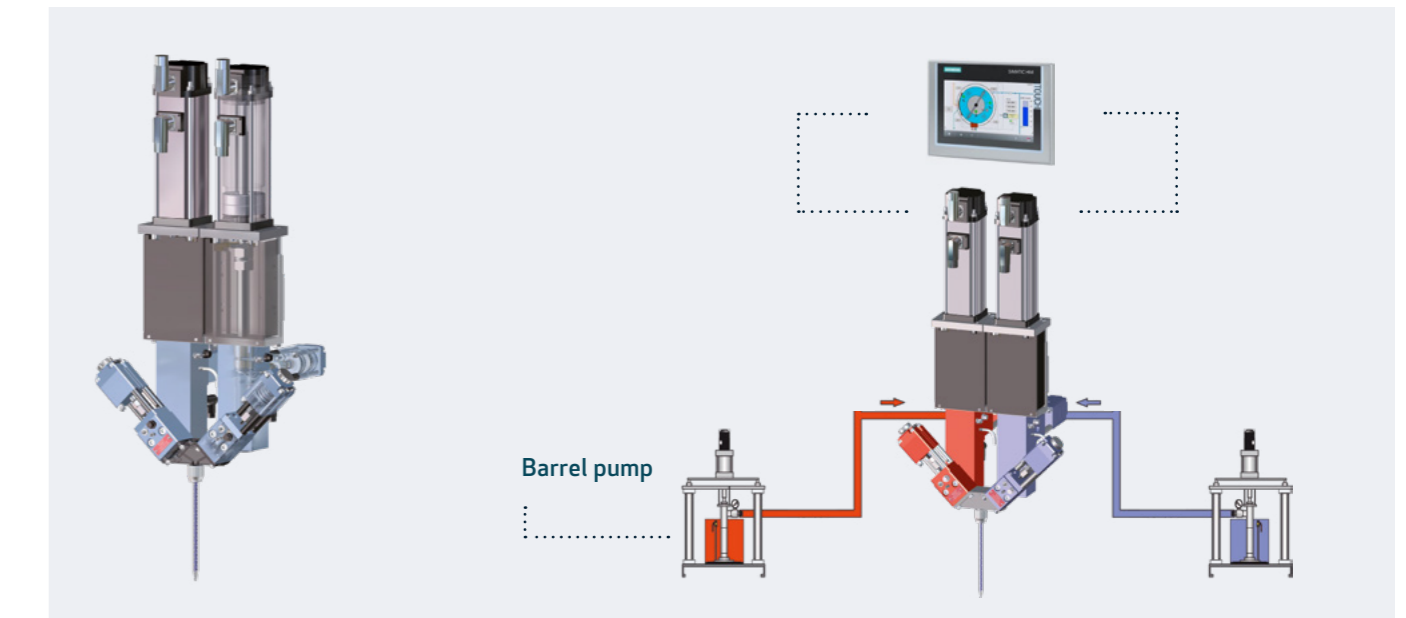
This system is also known for its efficient servo control. Both metering units have their own independent drive. This enables them to be controlled separately, which means that the mixing ratio can be adjusted and controlled precisely. The discharge rate can also be modified by means of an analogue signal during metering, such as to ensure a clean coupling point via a ramp function.

With integrated actuators and sensors, and supported by intelligent software, the vectomix TC metering system offer exceptionally high process reliability.

The material is supplied by a barrel pump, which is available in different sizes as well as a tandem version.



# vectomix TC



Size	ø 3/3	ø 6/6	ø 10/10	ø 20/20	ø 36/36
<b>Max. metering volume**</b>	0.9 ml	3.6 ml	15.6 ml	62 ml	202 ml
<b>Min. metering volume **</b>	0.08 ml	0.3 ml	0.8 ml	3.2 ml	10.2 ml
<b>Metering stroke</b>	65 mm	65 mm	100 mm	100 mm	100 mm
<b>Max. flow rate*</b>	1.4 ml/s	5.5 ml/s	15.6 ml/s	62 ml/s	202 ml/s
<b>Mixing ratio*</b>	100:100 bis 100:5 ***	100:100 bis 100:5 ***	100:100 bis 100:5 ***	100:100 bis 100:5 ***	100:100 bis 100:5 ***
<b>Min. metering time (Full stroke)*</b>	0.65 s	0.65 s	1.0 s	1.0 s	1.0 s
<b>Min. cycle time (Full stroke)*</b>	2.5 s	2.5 s	3.0 s	3.0 s	3.0 s
<b>Max. supply pressure</b>	160 bar	160 bar	160 bar	100 bar	100 bar
<b>Min. supply pressure</b>	3 bar	3 bar	3 bar	3 bar	3 bar
<b>Max. working pressure</b>	160 bar	160 bar	160 bar	100 bar	100 bar
<b>Viscosity range****</b>	50–1,000,000 mPas	50–1,000,000 mPas	50–1,000,000 mPas	50–1,000,000 mPas	50–1,000,000 mPas
<b>Power supply</b>	400 VAC 3/N/PE / 50/60 Hz 230 VAC L/N/PE / 50/60 Hz 220–240 VAC 3/PE / 50/60 Hz	400 VAC 3/N/PE / 50/60 Hz 230 VAC L/N/PE / 50/60 Hz 220–240 VAC 3/PE / 50/60 Hz	400 VAC 3/N/PE / 50/60 Hz 230 VAC L/N/PE / 50/60 Hz 220–240 VAC 3/PE / 50/60 Hz	400 VAC 3/N/PE / 50/60 Hz 230 VAC L/N/PE / 50/60 Hz 220–240 VAC 3/PE / 50/60 Hz	400 VAC 3/N/PE / 50/60 Hz 230 VAC L/N/PE / 50/60 Hz 220–240 VAC 3/PE / 50/60 Hz
<b>Max. dimensions</b>	415 x 350 x 544 mm	415 x 350 x 544 mm	415 x 365 x 709 mm	415 x 365 x 719 mm	449 x 390 x 852 mm
<b>Weight</b>	approx. 14.8 kg	approx. 19.3 kg	approx. 24.3 kg	approx. 30.3 kg	approx. 55.3 kg

\* Depending on material characteristic, material supply pressure and use of the material compression function

\*\* For volumetric mixing ratio 1:1 | \*\*\* Lower on request | \*\*\*\* Other on request