

Overview

Support for electronic handwheels is standard on the TNC 128:

- One **HR 550 FS** wireless handwheel, or
- One **HR 510** or **HR 520** portable handwheel, or
- One **HR 130** panel-mounted handwheel, or
- Up to three **HR 150** panel-mounted handwheels via **HRA 110**

HR 510

Portable electronic handwheel with:

- Keys for actual-position capture and the selection of five axes
- Keys for traverse direction and three preset feed rates
- Three keys for machine functions (see below)
- Emergency stop button and two permissive buttons (24 V)
- Magnetic holding pads

All keys are designed as snap-on keys and can be replaced by keys with other symbols (see overview for HR 510 in *Snap-on keys for handwheels*).

	Keys	Without detent	With detent
HR 510	NC start/stop, spindle start (for basic PLC program)	ID 1119971-xx	ID 1120313-xx
	FCT A, FCT B, FCT C	ID 1099897-xx	–
	Spindle right/left/stop	ID 1184691-xx	–
HR 510 FS	NC start/stop, spindle start (for basic PLC program)	ID 1120311-xx	ID 1161281-xx
	FCT A, FCT B, FCT C	–	ID 1120314-xx
	Spindle start, FCT B, NC start	–	ID 1119974-xx

Mass ≈ 0.6 kg



HR 510

HR 520

Portable electronic handwheel with:

- Display for operating mode, actual position value, programmed feed rate and spindle speed, error messages
- Override potentiometers for feed rate and spindle speed
- Selection of axes via keys or soft keys
- Actual position capture
- NC start/stop
- Spindle on/off
- Keys for continuous traverse of the axes
- Soft keys for machine functions of the machine manufacturer
- Emergency stop button

	Without detent	With detent
HR 520	ID 670302-xx	ID 670303-xx
HR 520 FS	ID 670304-xx	ID 670305-xx

Mass ≈ 1 kg



HR 520

Holder for HR 520

For attaching to a machine

ID 591065-xx

HR 550 FS

Electronic handwheel with wireless transmission. Display, operating elements, and functions are like those of the HR 520

In addition:

- Functional safety (FS)
- Radio transmission range of up to 20 m (depending on environment)

HR 550 FS Without detent ID 1200495-xx
With detent ID 1183021-xx

Replacement battery For HR 550 FS ID 623166-xx



HR 550 FS with HRA 551 FS

HRA 551 FS

Handwheel holder for HR 550 FS

- For docking the HR 550 FS onto the machine
- Integrated battery charger for HR 550 FS
- Connections to the control and the machine
- Integrated transceiver
- HR 550 FS magnetically held to front of HRA 551 FS

HRA 551 FS ID 1119052-xx
Mass ≈ 1.0 kg

For more information, see the *HR 550 FS* Product Information sheet.

Connecting cables

	HR 510	HR 510 FS	HR 520	HR 520 FS	HR 550 FS with HRA 551 FS	
Connecting cable (spiral cable) to HR (3 m)	–	–	✓	✓	–	ID 312879-01
	✓	✓	–	–	–	ID 1117852-03
Connecting cable with metal armor	–	–	✓	✓	–	ID 296687-xx
	✓	✓	–	–	–	ID 1117855-xx
Connecting cable without metal armor	–	–	✓	✓	✓ (max. 2 m)	ID 296467-xx
	✓	✓	–	–	–	ID 1117853-xx
Adapter cable for HR/HRA to MC, straight connector	✓	✓	✓	✓	✓ ¹⁾	ID 1161072-xx
Adapter cable for HR/HRA to MC, angled connector (1 m)	✓	✓	✓	✓	✓ ¹⁾	ID 1218563-01
Extension cable to adapter cable	✓	✓	✓	✓	✓ ¹⁾	ID 281429-xx

¹⁾ For maximum cable lengths up to 20 m between the MB and HRA 551 FS

²⁾ For maximum cable lengths up to 50 m between the MB and HRA 551 FS

	HR 510	HR 510 FS	HR 520	HR 520 FS	HR 550 FS with HRA 551 FS	
Adapter cable for HRA to MC	–	–	–	–	✓ ²⁾	ID 749368-xx
Extension cable to adapter cable	–	–	–	–	✓ ²⁾	ID 749369-xx
Adapter connector for handwheels without functional safety	✓	–	✓	–	–	ID 271958-03
Adapter connector for handwheels with functional safety	–	✓	–	✓	✓	ID 271958-05

¹⁾ For maximum cable lengths up to 20 m between the MB and HRA 551 FS

²⁾ For maximum cable lengths up to 50 m between the MB and HRA 551 FS

See also *Cable overview* on Page 24.

HR 130

Panel-mounted handwheel with ergonomic control knob.
It is attached to the MB 7x0 or the TE 7x5 either directly or via an extension cable.

HR 130	Without detent	ID 540940-03
	With detent	ID 540940-01
Mass	≈ 0.7 kg	



HR 130

HR 150

Panel-mounted handwheel with ergonomic control knob for connection to the **HRA 110** handwheel adapter.

HR 150	Without detent	ID 540940-07
	With detent	ID 540940-06
Mass	≈ 0.7 kg	



HR 150

HRA 110

Handwheel adapter for connection of up to three **HR 150** panel-mounted handwheels and two step switches for axis selection and configuration of the subdivision factor. The first and second handwheels are assigned to axes 1 and 2. The third handwheel is assigned to the axes via a step switch or via machine parameters. The position of the second step switch is evaluated over the PLC (e.g., to select the subdivision factor).

HRA 110		ID 261097-xx
Mass	≈ 1.5 kg	



HRA 110











Snap-on keys for handwheels

Snap-on keys





































The snap-on keys make it easy to replace the key symbols. In this way, the HR handwheel can be adapted to different requirements. The snap-on keys are available in packs of five keys.

Overview for HR 520, HR 520 FS, and HR 550 FS

Axis keys Orange

	ID 330816-42		ID 330816-24		ID 330816-43		ID 330816-37
	ID 330816-26		ID 330816-36		ID 330816-38		
	ID 330816-23		ID 330816-25		ID 330816-45		

Gray

	ID 330816-95		ID 330816-69		ID 330816-0W		ID 330816-0R
	ID 330816-96		ID 330816-0G		ID 330816-0V		ID 330816-0D
	ID 330816-97		ID 330816-0H		ID 330816-0N		ID 330816-0E
	ID 330816-98		ID 330816-71		ID 330816-0M		ID 330816-65
	ID 330816-99		ID 330816-72		ID 330816-67		ID 330816-66
	ID 330816-0A		ID 330816-63		ID 330816-68		ID 330816-19
	ID 330816-0B		ID 330816-64		ID 330816-21		ID 330816-16
	ID 330816-0C		ID 330816-18		ID 330816-20		ID 330816-0L
	ID 330816-70		ID 330816-17		ID 330816-0P		ID 330816-0K





















Machine functions

	ID 330816-0X		ID 330816-75		ID 330816-0T		ID 330816-86
	Black ID 330816-1Y		ID 330816-76		ID 330816-81		ID 330816-87
	Black ID 330816-30		ID 330816-77		ID 330816-82		ID 330816-88
	Black ID 330816-31		ID 330816-78		ID 330816-83		ID 330816-94
	Black ID 330816-32		ID 330816-79		ID 330816-84		ID 330816-0U
	ID 330816-73		ID 330816-80		ID 330816-89		ID 330816-91
	ID 330816-74		ID 330816-0S		ID 330816-85		ID 330816-3L













































Spindle functions

	Red ID 330816-08		ID 330816-40		Red ID 330816-47		ID 330816-48
	Green ID 330816-09		ID 330816-41		Green ID 330816-46		ID 385530-5X

Other keys

	Black ID 330816-01		Red ID 330816-50		ID 330816-90		ID 330816-93
	Gray ID 330816-61		ID 330816-33		Black ID 330816-27		ID 330816-0Y
	Green ID 330816-11		ID 330816-34		Black ID 330816-28		Black ID 330816-4M
	Red ID 330816-12		ID 330816-13		Black ID 330816-29		ID 330816-3M
	Green ID 330816-49		Green ID 330816-22		ID 330816-92		ID 330816-3N

Overview for HR 510 and HR 510 FS

Axis keys Orange	 A	ID 1092562-02	 X	ID 1092562-05	 U	ID 1092562-36	 IV	ID 1092562-08
	 B	ID 1092562-03	 Y	ID 1092562-06	 V	ID 1092562-09		
	 C	ID 1092562-04	 Z	ID 1092562-07	 W	ID 1092562-37		
Gray	 X+	ID 1092562-28	 Y-	ID 1092562-31	 IV+	ID 1092562-24	 V-	ID 1092562-27
	 X-	ID 1092562-29	 Z+	ID 1092562-32	 IV-	ID 1092562-25		
	 Y+	ID 1092562-30	 Z-	ID 1092562-33	 V+	ID 1092562-26		
Machine functions	 FCT A	Black ID 1092562-14	 FCT B	Black ID 1092562-15	 FCT C	Black ID 1092562-16		ID 1092562-42
		ID 1092562-43		ID 1092562-44				
Spindle functions		ID 1092562-18		ID 1092562-19		Green ID 1092562-22		Red ID 1092562-17
		Red ID 1092562-38		ID 1092562-41				
Other keys		Black ID 1092562-01	 NC I	Green ID 1092562-23		ID 1092562-13		ID 1092562-35
		Green ID 1092562-20		ID 1092562-11		Black ID 1092562-10		Gray ID 1092562-39
		Red ID 1092562-21		ID 1092562-12		ID 1092562-34		Orange ID 1092562-40











Snap-on keys for controls

Snap-on keys







































The snap-on keys make it easy to replace the key symbols. In this way, the keyboard can be adapted to different requirements. The snap-on keys are available in packs of five keys.

Overview of control keys










































Keys
Orange

	ID 679843-31		ID 679843-54		ID 679843-C8		ID 679843-D4
	ID 679843-32		ID 679843-55		ID 679843-C9		
	ID 679843-53		ID 679843-88		ID 679843-D3		



















Gray

	ID 679843-03		ID 679843-13		ID 679843-93		ID 679843-B9
	ID 679843-04		ID 679843-14		ID 679843-94		ID 679843-C1
	ID 679843-05		ID 679843-43		ID 679843-B1		ID 679843-C2
	ID 679843-06		ID 679843-44		ID 679843-B2		ID 679843-C3
	ID 679843-07		ID 679843-67		ID 679843-B3		ID 679843-C4
	ID 679843-08		ID 679843-68		ID 679843-B4		ID 679843-C5
	ID 679843-09		ID 679843-69		ID 679843-B5		ID 679843-D9
	ID 679843-10		ID 679843-70		ID 679843-B6		ID 679843-E1
	ID 679843-11		ID 679843-91		ID 679843-B7		
	ID 679843-12		ID 679843-92		ID 679843-B8		































Machine
functions

	ID 679843-01		ID 679843-30		ID 679843-74		ID 679843-C6
	ID 679843-02		ID 679843-40		ID 679843-76		Black ID 679843-C7
	ID 679843-16		Green ID 679843-56		Black ID 679843-95		SPEC FCT ID 679843-D6
	ID 679843-22		Red ID 679843-57		Black ID 679843-96		ID 679843-E3
	ID 679843-23		+		Black ID 679843-A1		FCT RC ID 679843-E4
	FN 1 ID 679843-24		-		FN 4 ID 679843-A2		FN DUC ID 679843-E6
	FN 2 ID 679843-25		ID 679843-61		FN 5 ID 679843-A3		ID 679843-E7
	FN 3 ID 679843-26		ID 679843-62		ID 679843-A4		ID 679843-E8
	ID 679843-27		FCT		ID 679843-A5		
	ID 679843-28		ID 679843-64		ID 679843-A6		
	ID 679843-29		ID 679843-73		ID 679843-A9		

Spindle functions

	ID 679843-18		ID 679843-47		Red ID 679843-52		ID 679843-99
	ID 679843-19		ID 679843-48		ID 679843-65		Green ID 679843-D8
	ID 679843-20		ID 679843-49		Green ID 679843-71		ID 679843-F3
	ID 679843-21		ID 679843-50		ID 679843-72		
	ID 679843-46		ID 679843-51		Red ID 679843-89		

Other keys

	ID 679843-15		ID 679843-39		ID 679843-97		Black ID 679843-E2
	ID 679843-17		ID 679843-41		ID 679843-98		ID 679843-E5
	Gray ID 679843-33		ID 679843-42		ID 679843-A7		ID 679843-F2
	Black ID 679843-34		Red ID 679843-45		ID 679843-A8		ID 679843-F4
	Orange ID 679843-35		ID 679843-58		Black ID 679843-D1		ID 679843-F5
	ID 679843-36		ID 679843-66		Black ID 679843-D2		ID 679843-F6
	ID 679843-37		ID 679843-75		ID 679843-D5		
	ID 679843-38		Green ID 679843-90		Red ID 679843-D7		

Special keys

Snap-on keys can also be made with special key symbols for special applications. The laser labeling differs in appearance from the labeling of the standard keys. If you need keys for special applications, please consult your contact person at HEIDENHAIN.

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