

The ZVV Re 420 HVZ-D

QUICK GUIDE



Quick guide

- These slides will take you through the basic functions of the Re 420 HVZ-D for TS20XX



Quick guide – Re 420 HVZ-D V1.0



Startup (Manual)

1. Move BV valve Left (**Shift-B**)
2. Unlock panel C (**V**)
3. Move control current switch forward (**Shift-S**)
4. Move panto switch forward (**P**)
5. Move main switch forward (**Z**)
6. Move Compressor switch forward (**K**)
7. Move Shuttleservice switch forward (**Shift-Z**)

You will hear the mainswitch engage. The rear panto will raise. **Shift-P** will toggle the front panto.

4. Disengage the Enginebrake (Lokbremse, **[]**) which will be on 70% by default.
5. Set the Trainbrake (Zugbremse, ; ') to Fahrstellung 'Quick Release'; (2nd) position.

The engine is now ready for operation.



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Startup (Autostart)

1. Release Panel C (**V**)
2. Press (**Ctrl-Shift-S**)

Needed functions will automatically engage. The rear panto will raise. Also Engine brake will loosen and Deadmans safety system (Wachsamkeitskontrolle) will activate. Reverser will be set to forward.

Manually set the *Trainbrake* (Zugbremse, ; ') to the 'Quick Release'; (2nd) position

The engine is now ready for operation.



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Lights

The *servicelights* are switched on by turning the '*Dienstbeleuchtung*' switch (**H/Shift-H**). Default is *OFF*.

For normal operation the switch should be set to position 1 (first position to the right). The switch operates the lights at the end you are currently in.



- One red (Loco only, tail)
- One white (Pulling wagons tail)
- Off
- Three white (front)
- Three red (Emergency)



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High beam and Cablights

Press the 'Scheinwerfer' High beam switch (**Ctrl-Shift-H**) to switch on the *high beam*.

There are 2 other lights in the cabine:

Cab light (**L**)

Instrument light (**I / Shift-I**)



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Wipers

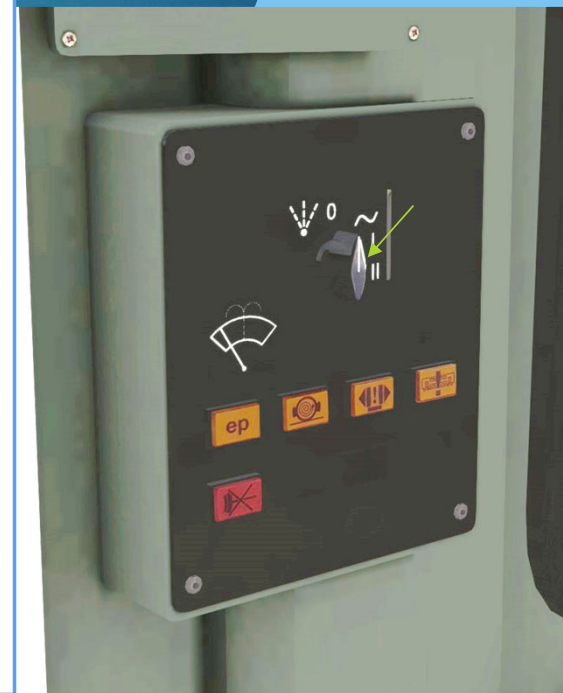
The wipers are controlled by a switch on the left:

Wipers On/faster (*turn switch right* **V**)

Wipers Off/slower (*turn switch left* **Shift-V**)

Sequence:

Off<->Slow<->Faster<->Fastest



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Brakes (1)

Before driving make sure all brakes are off:

*Hand Brake (/, **Shift**/)* – default = off

Loco Brake ([&]) – default = 70% on

Train Brake (; & ') – default = 20% on

EP Brake (, & .) – default = off

The **trainbrake** has 6 positions:

1. *Abschlussstellung* - Park
2. *Fahrstellung* - Drive
3. 1. *Bremsstellung* – Normal Braking
4. 2. *Bremsstellung* – Normal Braking
5. 1. *Schnellbremsstellung* – Full Braking
6. 2. *Schnellbremsstellung* – Full Braking
7. *Vollbremsung* - Emergencybrake



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Brakes (2)

This engine has an Elektro Pneumatic Brake.

This brake is used as main brake during shuttle services.

It is possible to start traction with this brake still applied (up to 12 km/h). This makes it easier to operate the train safely on gradients.



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Reverser and Combined Throttle-Brake

To move *forward* push the Reverser forward (**W**), to reverse pull backwards (**S**). The middle position is *neutral*.

The *Fahrhebel* is a combined *throttle* and *dynamic brake* which operates a **step-switch**:

Push forward to *increase* steps (3200 amp max) (**A**)

Pull backwards to *decrease* steps (**D**)

Above the middle (zero) position is *throttle*, below the middle position is *dynamic brake*.

The button on the *Regulator* pivot point is the *horn* (**B**).



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Step switch (Stufenschalter)

Forward:

Minus -	Switches back to step zero
Point	Holds current step
Manual M	Increases steps to 2400 Amps
Plus +	Quickly increases steps to 2150 Amps then slow to 2400 Amps
Doubleplus ++	Quickly increases steps to 2150 Amps then slow to 3100 Amps (32 steps)

Dynamic brake:

Minus -	Decreases Dynamic brake steps
Point	Holds Dynamic brake step
Plus +	Increases Dynamic brake steps to 2200 Amps (22 steps)



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Mirrors, Sander, Horn

The *mirrors* can be deployed / closed by pressing **Ctrl-S**.

The *sander* (**X**) can be used to increase traction on slippery tracks.

The *horn* is located on the throttle lever pivot (**B**).



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Wachsamkeitskontrolle

The Re 420 has a **deadmans safety** system which is like a distance-distance **SIFA**. When the system is switched on (Shift-7) it is in '**Schnellgang**' (fast mode). This is used during shunting. A warning will sound after **50 meter**. To prevent this the driver needs to press the **pedal** (Space) before that or quickly after the warning. If the driver fails to press the pedal an **emergency braking** will occur after **100 meter**.

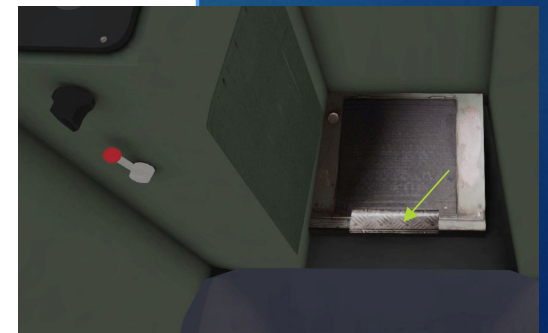
When the speed is over 20 kmh the system goes into '**Langsamgang**' (slow mode). Now the warning sounds after **1600 meter**. The driver must move the Throttle or Trainbrake or press the pedal (Space) before 1800 meter is travelled.

When speed is over 100 kmh the system will switch to **time mode**. The warning comes after **30 sec.** and an E-brake will occur after **35 sec.**

Failing to correctly operate the Wachsamkeitskontrolle causes An audible **warning** and eventually an **emergency stop**.



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ZUB 121 Zugsicherung (1)

When passing a warning signal which shows a limited speed the **ZUB light** lights up and a **buzzer** sounds. The driver needs to turn the **Zugsicherung switch** (Q) to the right override the warning and slow down. If you go too fast (faster than the braking curve) a warning will sound.

When passing a **red signal** the **emergency brake** is applied instantly except when the '**manoeuvre**' mode (Ctrl-M) is active.

When reaching **overspeed** the system also warns you by sounding an alarm which can be reset with the **ZUB button** again **after slowing down**.



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ZUB 121 Zugsicherung (2)

The ZUB display shows the next speedlimit when lower than the current limit. You need to watch the signals carefully to stay within the limits.

The system also calculates a brakecurve when the route permits. The correct working of speedwarnings and brakecurves is highly dependant on the route and will not always work correctly.

Please only engage the ZUB system when on a suitable route (Gotthardbahn or Lake Constance Route by Rivet Games). On other routes the basic AWS system will be used.



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Manoeuvre mode

When *shunting* or needing to *pass a red light* at low speed, the driver can switch off the Zugsicherung temporarily by engaging the 'Manoeuvre' mode (**Ctrl-M**).

When active the Manoeuvre light comes on and the *speedlimit* is now 40 Km/h. It is now possible to pass a red signal without causing an emergencybrake.

On passing a red signal in this mode the *ZUB buzzer* and light will sound 3 times.



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Winter

When driving in the *winter* season there will be electric *arcing* where the *Panto* touches the overhead catenary wire. This will happen automatically when in motion and will increase with higher power.

Snow will whirl off the bogies when at higher speed.

These effects can be switched off by pressing **Ctrl-Shift-A**



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- Have fun driving the Re 420 HVZ-D!

For more info read the full manual. If you have any further questions please press the green HELP tab on my website:

WWW.TRAINWORX.NL