

FAN SPEED SENSOR PS 200-1600 H

CONVERSION INSTRUCTIONS



PLEASE READ CAREFULLY BEFORE CONVERSION!

Version: 2.1 EN; Item number: 00602-3-025





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1 MOUNTING ON THE HYDRAULIC FAN

1.1 REMOVING THE LOCKING BOLT ON THE PS 200 – 500



Remove the marked locking bolt using an open-ended or socket spanner WAF 13 (Figure 1).

Figure 1



On more recent implements, the locking bolt is located in the hydraulic motor bracket right beside the hydraulic motor (Figure 2).

Figure 2

1.2 REMOVING THE GEAR MOTOR COVER

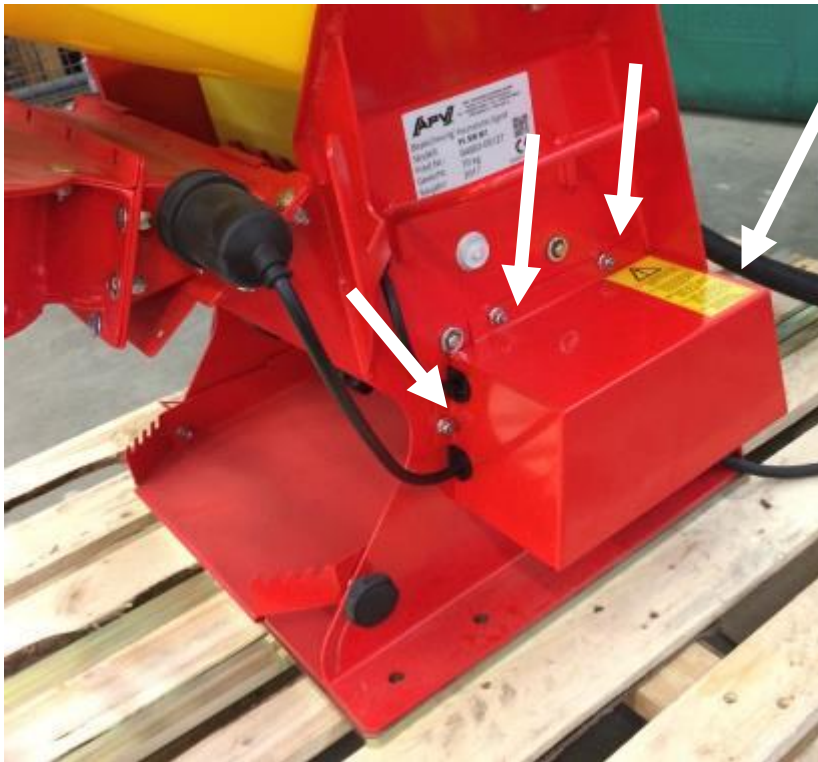


Figure 3

Now remove the 3 marked nuts and the bolt with an open-ended or socket spanner WAF 10, to take off the cover for the gear motor (Figure 3).

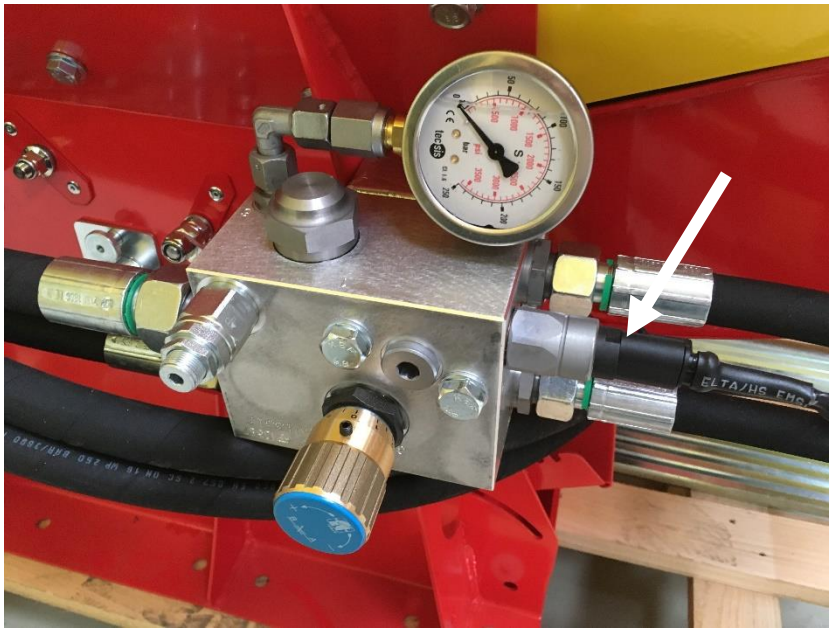
1.3 REMOVING / DISCONNECTING THE PRESSURE SWITCH



Figure 4

The pressure switch can remain installed on the PS. Disconnect the pressure switch (Figure 4) from the terminal strip on the PS (see connection diagram, Figure 6). If a pressure monitor is not installed, you do not need to do/change anything.

1.4 REMOVING THE OIL PRESSURE SWITCH



The oil pressure switch (Figure 5) can remain installed on the implement. You must only disconnect the plug connection from the oil pressure sensor and the corresponding cable from the terminal strip of the PS.

Figure 5

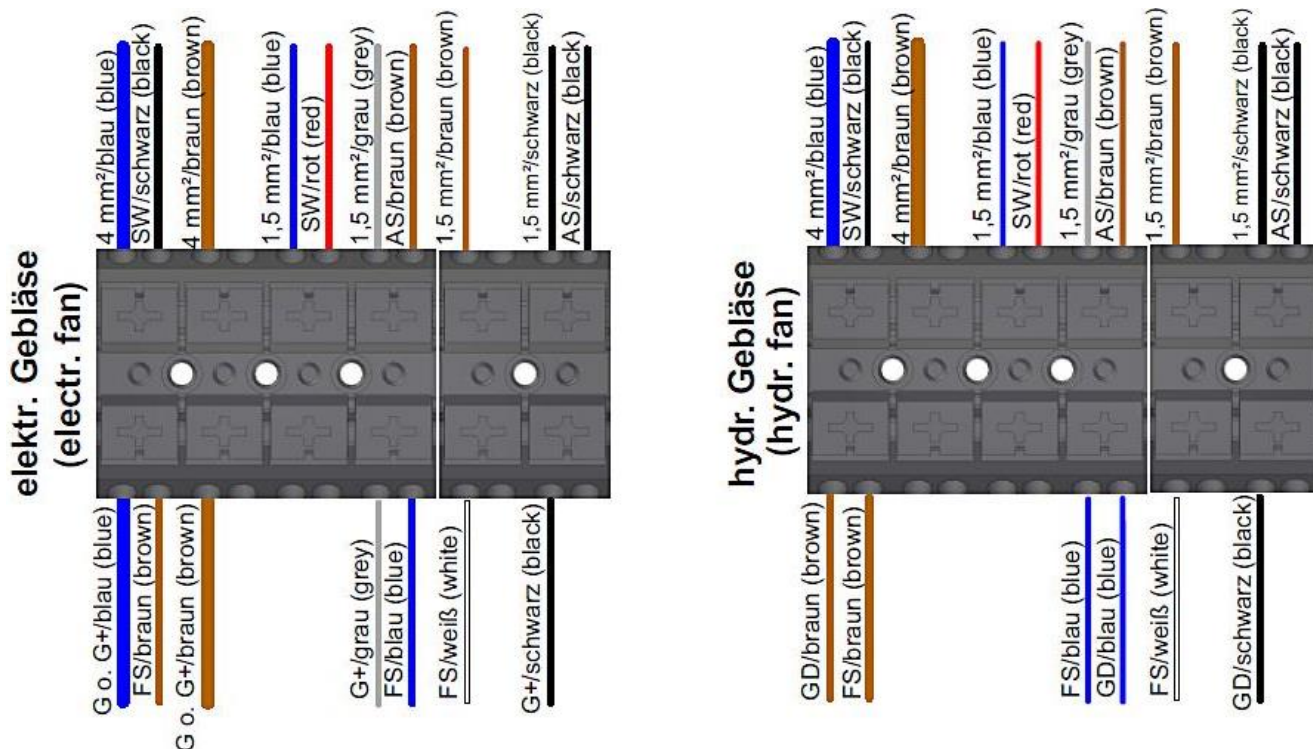
1.5 INSTALLATION OF THE FAN SPEED SENSOR PS 200 - 500

CAUTION!

Based on the following points, distinguish which hydraulic fan is mounted on your Pneumatic Seeder:

- PS 200 – 500 → HG 300 (sensor in the fan housing)
- PS 200 – 500 → HG 300 (sensor beside the hydraulic motor)
- PS 800 – 1600 → HG 450 (sensor in the hydraulic motor).

Now connect the fan speed sensor to the terminals as shown in the connection diagram (Figure 6) (connections marked on the connection diagram).



Stecker-PIN (plug-pin)	Gerätekabel (machine cable)	Gebläse (G) (fan)	Gebläse PLUS (G+) (fan PLUS)	Säwellenmotor (SW) (sowing shaft motor)	Füllstandsensor (FS) (fill level sensor)	Abdrehschalter (AS) (calibration button)	Gebläsedrehzahl-sensor (GD) (fan speed sensor)
1	4 mm ² / blau (blue)	4 mm ² / blau (blue)	0,5 mm ² / blau (blue)	1,5 mm ² / schwarz (black)	0,75 mm ² / braun (brown)		0,75 mm ² / braun (brown)
2	4 mm ² / braun (brown)	4 mm ² / braun (brown)	0,5 mm ² / braun (brown)				
3	1,5 mm ² / blau (blue)			1,5 mm ² / rot (red)			
4	1,5 mm ² / grau (grey)		0,5 mm ² / grau (grey)		0,75 mm ² / blau (blue)	0,75 mm ² / braun (brown)	0,75 mm ² / blau (blue)
5	1,5 mm ² / braun (brown)				0,75 mm ² / weiß (white)		
6	1,5 mm ² / schwarz (black)		0,5 mm ² / schwarz (black)			0,75 mm ² / schwarz (black)	0,75 mm ² / schwarz (black)

Figure 6: connection diagram; stripping length 10 mm



PLEASE NOTE!

The electric connection diagram can also be found on the inside of the previously removed cover for the gear motor.

Switch on your APV Control Box and also start the hydraulic fan at the lowest possible speed (the slower the better) to adjust / align the fan speed (rpm) sensor.

On older implements, the hole / threaded connection for the fan speed sensor is located in the fan housing (Figure 7). Screw the fan speed sensor 14 mm deep into the hole / threaded connection until the LED on the back of the sensor starts flashing.

On current implements, the hole / threaded connection for the fan speed sensor is beside the hydraulic motor (Figure 8). Screw the fan speed sensor 19 mm deep into the hole / threaded connection until the LED on the back of the sensor starts flashing.



Figure 7



Figure 8



The supplied Usit ring (Figure 9) does not need to be installed on the HG 300 (PS 200 – 500).

Figure 9



Figure 10

Now screw the fan speed sensor by another 2.5 rotations into the housing and then fasten the sensor with the nuts located on the sensor (Figure 10).

If the sensor cable from the fan speed sensor is very twisted, you can connect the sensor on the screw connection and untwist the cable.



Route the cable by fastening it to the blower fan with a cable tie. Then route it through the grommet on the cover. The cover is reattached to the implement using the three previously removed nuts and the screw (Figure 11).

Figure 11

1.6 INSTALLATION OF THE FAN SPEED SENSOR PS 800 - 1600

Possible as of serial number 08002-01500. The serial number can be found on the housing of the hydraulic fan (Figure 12).

First, remove the Allen screw from the hydraulic motor (Figure 13).



Figure 12



Figure 13

CAUTION!

Oil can escape during removal. Place a bucket or suitable tank underneath to collect the escaping oil.

CAUTION!

Install the supplied Usit ring (Figure 14) between the motor and lock nut; otherwise, hydraulic oil will escape.



Figure 14

Then screw the sensor into the motor by exactly 32 mm (Figure 15).



Figure 15

Switch on the Control Box and also start the hydraulic fan at the lowest possible speed (the slower the better) to adjust/align the speed sensor.

Now unscrew the fan speed sensor slowly out of the threaded connection / hole until the LED on/in the sensor is turned off.

Now screw the fan speed sensor by another 2.5 rotations into the hole / threaded connection and then fasten the sensor with the nuts located on the sensor (Figure 16).

CAUTION!

If the speed sensor is screwed too far into the hydraulic motor, the speed sensor can be damaged.

If the sensor cable from the fan speed sensor is very twisted, you can connect the sensor on the screw connection and untwist the cable.

1.6.1 FUNCTIONAL CHECK



Figure 16

First switch on the hydraulic fan at medium speed (~1500 rpm).

Afterwards, the LED display (Figure 16) must flash. Check whether the LED on the fan speed sensor is flashing constantly.



PLEASE NOTE!

The APV Control Box must be switched on for the functional check.

1.7 PULSE SETTINGS



PLEASE NOTE!

The number of pulses for the hydraulic fans of APV seed drills depends on the installation of sensor on the housing.

If the sensor is installed on the outside (Figure 17), set 2 pulses.

If the sensor is installed on the inside (Figure 18), set 5 pulses.

If the sensor is installed directly on the hydraulic motor (Figure 19), set 5 pulses.



Figure 17

If the sensor is installed on the fan housing, set 2 pulses (Figure 17).



Figure 18

If the sensor is installed in the hydraulic motor bracket, set 5 pulses (Figure 18).



Figure 19

If the sensor is installed directly on the hydraulic motor, set 5 pulses (Figure 19).



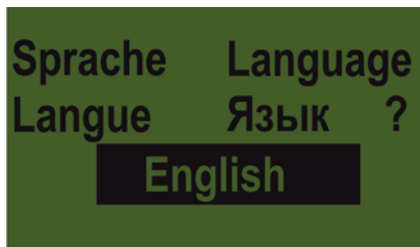
Pulse setting overview			
Hydraulic fan	Sensor	Installation type	Number of pulses
HG 300	Speed sensor	On the outside of the housing (Figure 17)	2
HG 300	Speed sensor	On the inside of the housing (Figure 18)	5
HG 450	Speed sensor	Hydraulic motor (Figure 19)	5

2 SETTINGS ON CONTROL BOX 5.2

2.1 INITIAL OPERATION

The following describes how settings should be made on control box 5.2 for initial operation when a fan speed (rpm) sensor is equipped.

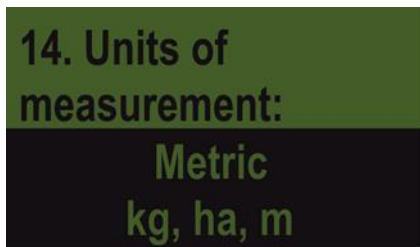
2.1.1 SELECT LANGUAGE



Select your desired menu language here. Select the desired language with the +/- buttons and confirm with the OK button!

2.1.2 SELECTING THE MEASURING UNITS

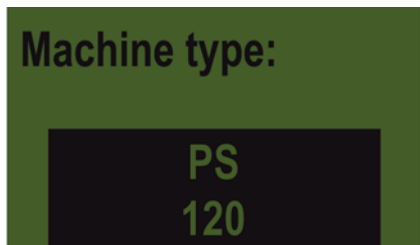
Select metric (m, ha, km/h, kg) or imperial (ft, ac, mph, lb) measuring units.



Using the +/- buttons, select metric (kg, ha, m) or imperial (lb, ft, ac) and confirm with the OK button.

2.1.3 SELECTING THE IMPLEMENT TYPE

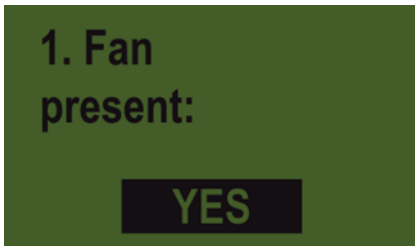
Here, you must select your implement type (PS, MDP, MDG, MDS).



Select using the +/- buttons and confirm with the OK button.

2.1.4 SELECTING THE FAN

Here, you must select whether an electric or hydraulic fan is installed on your PS.



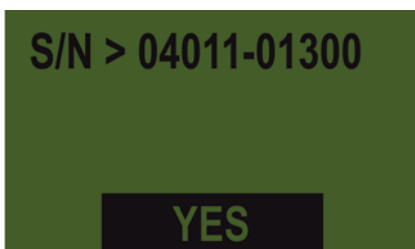
YES – Electric fan installed

NO – Hydraulic (or external) fan installed

Select with the +/- buttons and confirm with the OK button.

2.1.5 SELECTING THE SERIAL NUMBER (FOR PS 800)

Here, select whether your PS 800 has a serial number higher than 01300. This will store the right motor characteristic in the control box.



Select using the +/- buttons and confirm with the OK button.



PLEASE NOTE!

You can find the serial number for your implement on the same side as the wiring on your PS (Figure 20).



Figure 20

2.1.6 SELECTING THE FAN MONITORING

Here, you must set whether the fan monitoring works with pressure (measures the air current from the hydraulic fan) or speed (measures the rotations of the fan propeller or motor).



Use the +/- buttons to make your selection

No – There is no fan monitoring.

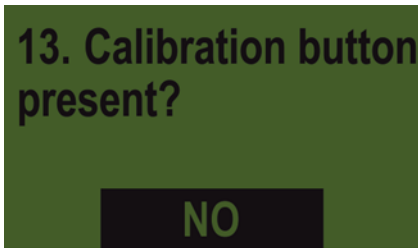
Pressure – A pressure monitor is installed in the air duct.

Speed – A fan speed (rpm) sensor is installed.

Then confirm the setting with the OK button.

2.1.7 SETTING THE CALIBRATION SWITCH (CALIBRATION BUTTON)

Here, you can set whether a calibration button is installed on your implement (available as an accessory).



With the +/- buttons, select YES or NO and confirm with the OK button.



After successfully entering this data, the Control Box switches itself off automatically so that the entries are saved.

2.2 ACTIVATING THE FAN SPEED (RPM) SENSOR

If control box 5.2 is already equipped, follow the steps below to activate the fan speed (rpm) sensor. These settings are only available as of version 1.27.

CAUTION!

The display of the fan speed only works with a Control Box with HW version 14.2 and at least SW version 1.27 (Figure 21).

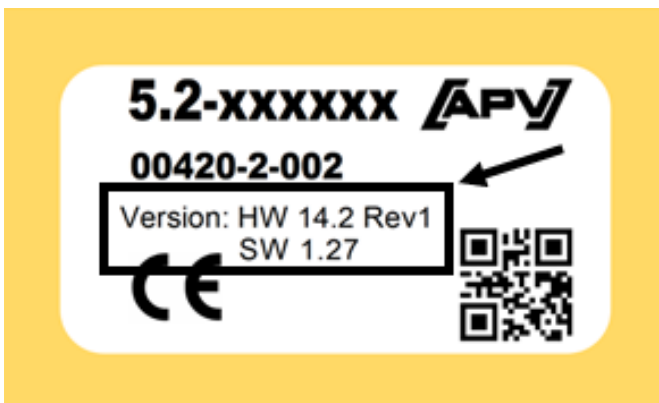


Figure 21

PLEASE NOTE!

If your Control Box has hardware version 14.2 but does not have software version 1.27 yet, then please contact the following telephone number or email address regarding a software update.

Tel.: +43 2913 8001-5500

Email: service@apv.at

2.3 PROGRAMMING

To enter the programming menu on Control Box 5.2, press and hold the ON/OFF button during start-up (Figure 22) until the following message appears on the screen: 0. implement type (Figure 23).



Figure 22

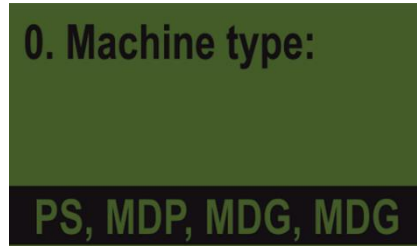


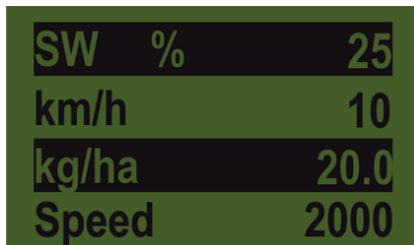
Figure 23

Using the ▲ button, you must then scroll through the menu until you reach Point 12.



With the +/- buttons, change Point 12 to "Speed".

Confirm the change with the OK button. The control box saves the settings and switches itself off automatically.



When you switch on the Control Box again, the speed display appears on the screen.

2.4 SETTING THE FAN SPEED PARAMETERS

During operation, you can define the following parameters in the menu of Control Box 5.2:

- Pulses per revolution
- Lower fan speed limit
- Upper fan speed limit

Using the ▲ button, scroll through the menu until you reach the "Fan settings" point.

Fan settings

Confirm with the OK button.

Change the parameter for "Pulses per revolution", "Min. fan speed" and "Max. fan speed" with the +/- buttons. See Point 1.7 Pulse settings for more information.

Then confirm the setting with the OK button.



PLEASE NOTE!

The speed itself can only be changed through the oil quantity, directly on the tractor or on the hydraulic block of the PS.

If the fan speed is **undercut** during operation, an error message appears on the display and the seeding shaft is switched off. If you acknowledge the error message with the OK button and the speed rises above the set minimum alarm limit again, the seeding shaft can be switched on again.

If the blower fan speed is **exceeded** during operation, a warning appears on the display. In this case, the seeding shaft is not switched off.



CAUTION!

If there is an error message due to the speed being too high, reduce the speed of the fan to prevent damage to the gasket.

3 SETTINGS ON CONTROL BOX 6.2

3.1 ACTIVATING THE FAN SPEED SENSOR

To activate the blower fan speed sensor, the settings must be adjusted on the control box:

In the main menu of the Control Box, press and hold the SET button for 3 seconds until you reach the submenu (Figure 24).



In the main menu of the Control Box, press and hold the SET button for 3 seconds until you reach the submenu (Figure 24).

Figure 24



Figure 25

Press the arrow button until you reach the fan icon. Then switch to the fan speed sensor with the "+" button (icon marked on the display in Figure 25).



Figure 26

Confirm the setting with the OK button and then exit the submenu with the ESC button (Figure 26).

3.1.1 BLOWER FAN SETTINGS



Figure 27


Enter the menu for the fan settings using the  button (Figure 27).



Figure 28

In this menu, the number of pulses from the speed sensor and the speed limits for the hydraulic blower fan can be set (Figure 28).

Description of the button functions:

With the ▼ ▲ buttons, you can select the desired parameter.

The selected value is changed using the + & - buttons.

The set value is adopted with the OK button.

With the ESC button, you go back one menu level, in this case, to the SET menu.

Description of the display elements:



Here, the number of pulses sent by the fan speed sensor per rotation can be set. For hydraulic fans, depending on the housing, it is 2 or 5 pulses/rotation. See Point 1.6 Pulse settings for more information.



Here, the speed and the alarm limits for the hydraulic fan can be set.



PLEASE NOTE!

The speed itself can only be changed through the oil quantity, directly on the tractor or on the hydraulic block of the PS.

If the fan speed is **undercut** during operation, an error message appears on the display and the seeding shaft is switched off. If you acknowledge the error message with the QUIT button and the speed rises above the set minimum alarm limit again, the seeding shaft can be switched on again.

If the blower fan speed is **exceeded** during operation, a warning appears on the display. In this case, the seeding shaft is not switched off.



CAUTION!

If there is an error message due to the speed being too high, reduce the speed (oil quantity) of the fan to prevent damage to the gasket of the oil motor.

3.1.2 DISPLAY IN THE MAIN MENU



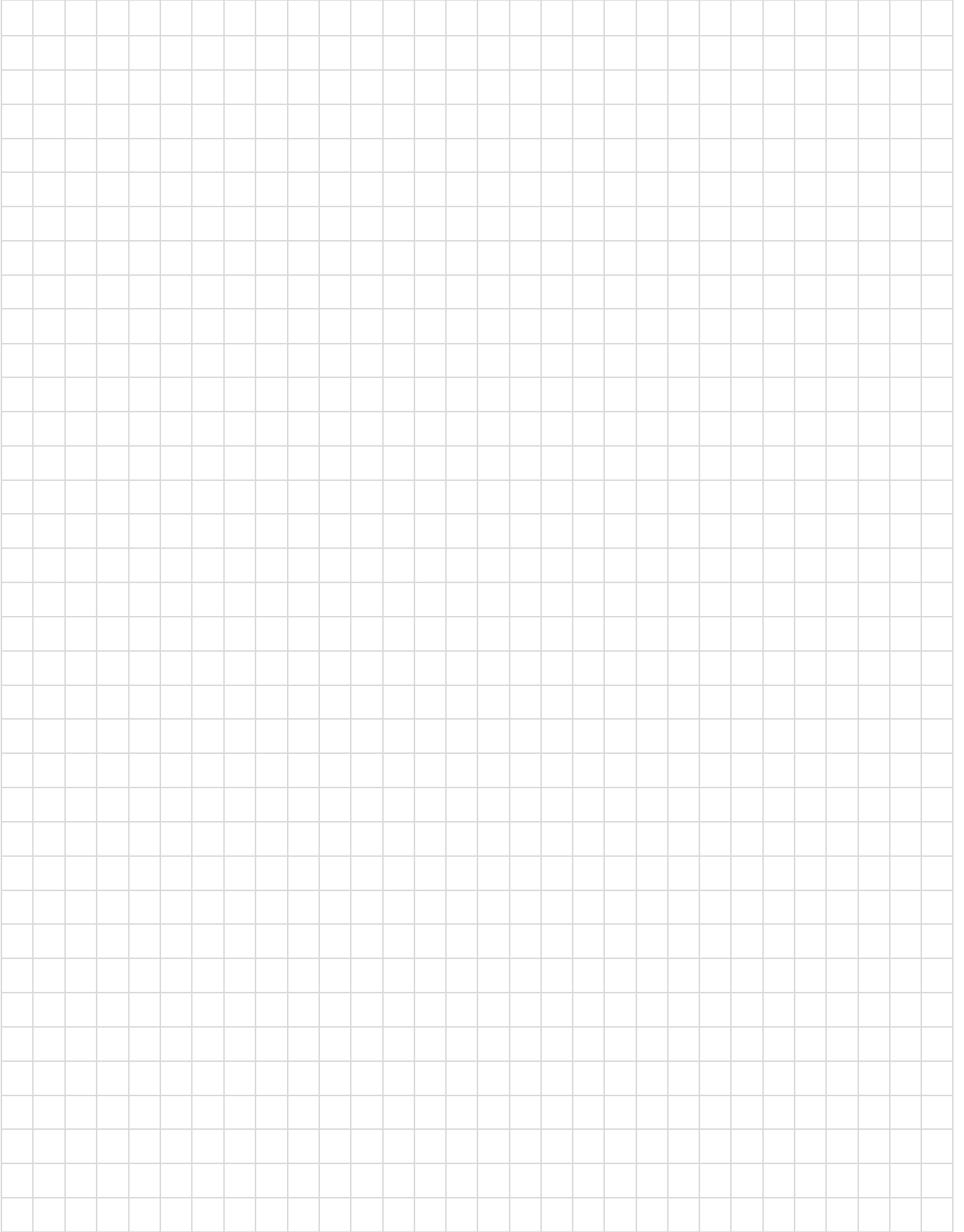
Enter the Work menu of the Control Box using the WORK button (Figure 29).

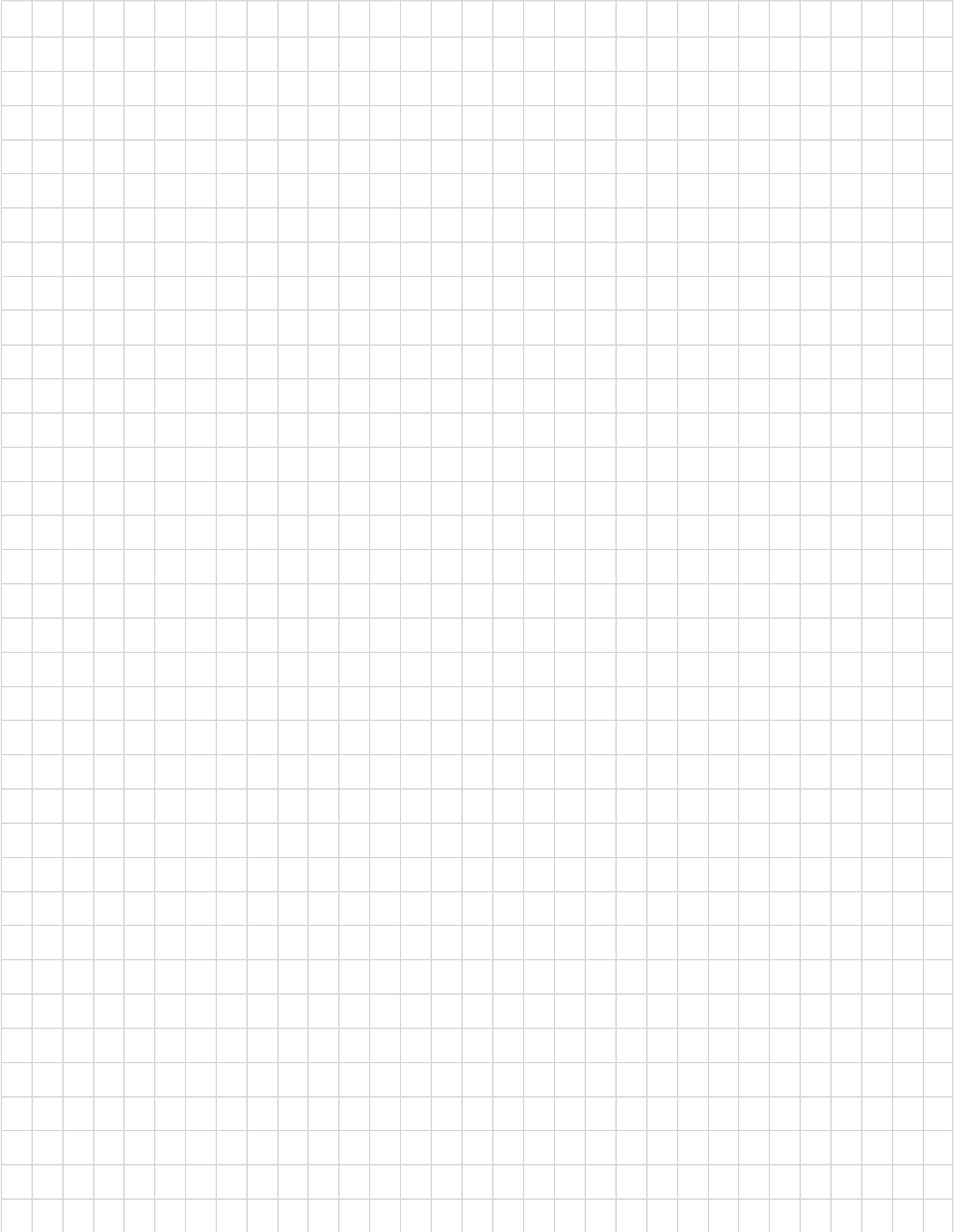
Figure 29



At the marked position in the work menu, the speed for the blower fan is shown (Figure 30).

Figure 30







APV – Technische Produkte GmbH
Zentrale: Dallein 15
AT - 3753 Hötzelndorf

Tel.: +43 2913 8001
office@apv.at
www.apv.at

