Manual
and
spare parts catalogue
Micro-Pro 16

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2015

Contents

EC Declaration of Conformity

The manufacturer: **Thomas Hatzenbichler**
Agro-Technik GmbH
Fischering 2
A-9433 St. Andrä
Phone: +43 (0) 4358/2287

declares that the following product:

Product: Pneumatic Applicator Micro Pro 16

Serial number: _____

Year of building _____

all relevant provisions of the Machinery Directive (2006/42/EC).

To properly implement the EC directives specified in the safety and health requirements of the following standards and / or specifications have been used.

DIN EN ISO 4254-1	Agricultural machinery - Safety - Part 1: General requirements
DIN EN ISO 12100	Safety of machinery - Basic concepts - Risk assessment and risk reduction
DIN EN 60204-1	Safety of machinery - Electrical equipment of machines Part 1: General requirements

Fischering, 13.07.2015
Date

Director

2nd. Safety information:

Before starting,
read the instruction manual
and note.

Do not stand on the
machine in transport.

The applicator should be thoroughly checked before work.

When attaching the
machine and during
operation of the hydraulic
folding ensure that no one
is in the danger area.

Never reach into the crushing area as long as parts may move!

Stay clear of swinging and
folding machine parts!

Only operate in the
hydraulic lift zone if hyd-
raulic cylinder is suppor-
ted by a mechanical stay

Beware of high pressure
fluid escaping!

Never unfold the boom of the applicator if it is not connected to the tractor.

3rd. Intended Use

Dear Customer!

We are pleased to congratulate you on your buying decision and wish you success in working with this machine.

Please read all the instructions in this manual carefully before using this product.

The information, technical data and dimensions in this manual are correct at the time of printing but we reserve the right to change and improve them.

This machine is designed with safety in mind but nevertheless care needs to be taken whilst using it to prevent injury to the user or third parties.

Only use a machine in perfect working condition, for its intended purpose and with respect to advice in the manual to ensure safety and no risk of danger.

Any problem that can effect safety must be rectified immediately.

The Machine may only be used by individuals who are familiar with its function and aware of operational dangers and must be maintained and repaired correctly.

Hatzenbichler and OPICO cannot be held responsible for modifications or additions to the machine that change its safety characteristics.

The machine is designed for application in the agricultural sector, any other or additional use is considered improper.

Hatzenbichler and OPICO shall not be liable for damages resulting from the machine. The risk is borne entirely by the user.

Intended use also includes compliance with the instruction manual and adherance to the manufacturers instructions for operation, maintenance and maintenance requirements.

4th. Accident prevention

- The Gerneal accident prevention regulations of the country of operation must be observed.
- Care must be taken when coupling and uncoupling to the tractor.
- The unit must be secured to prevent accidental overturning when demounted.
- Road regulations must be observed by anyone transporting the machine on the road.
- Attach the machine properly before lifting off the ground with the tractor.
- Attach the machine properly to the tractor before unfolding the boom.

5th. Germination of Seed and effectiveness of chemicals

Micro Pro 16 - Pneumatic Applicator and Seeder with 16 Outlets to apply and seed to a maximum working width of 12m

Hatzenbichler and OPICO assume no liability for the germination of seeds or effectiveness of chemical product applied.

Grounds:

Hatzenbichler and OPICO lack control of the following factors –

- Soil Condition
- State of the Seed or Chemical
- Application or sowing depth
- Preparation of the soil before application
- Weather conditions at the time
- (At times) The implement or device the machine was mounted to.

Be Aware - A Calibration test must be performed by the operator in the field.

6th. Warranty

Check the unit immediately on acceptance for possible shipping damage. Subsequent complaints from transit damage cannot be accepted.

We give a one year warranty from the date of delivery (invoice or delivery note date as proof).

The warranty is valid in the case of material or construction failure and does not cover parts that are damaged by normal or excessive wear.

The Warranty is void

- If damage is caused by external forces
- When an operation error has occurred.
- If the KW/Hp limit or Oil flow limit is exceeded.
- If the machine is changed, modified, extended or fitted with foreign parts without con sent.

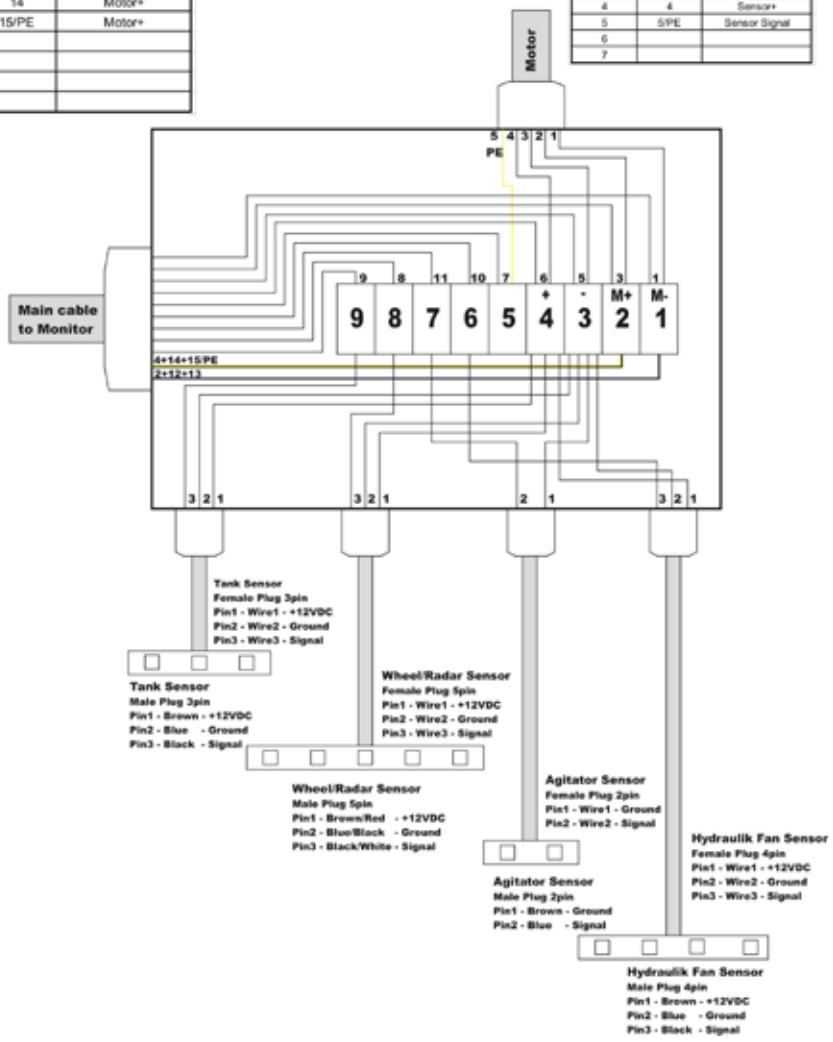
7th. Installation Instructions

7.1 Connect the Micro Pro to the Tractor Three point Linkage (where applicable).

7.2 Connect the Electronic Cable to provide power to the control box and metering mechanism directly to the Tractor Battery using the yellow cable provided.

Main cable to monitor		
PIN Nr.	WIRE Nr.	Description
A	1	Motor-
B	2	Motor-
C	3	Motor+
D	4	Motor+
E	5	Grd - Sensors
F	6	+12VDC Sensors
G	7	Motor Sensor
H	8	Wheel/Radar Sensor
I	9	Tank Sensor
J	10	Fan Sensor
K	11	Agitator Sensor
L	12	Motor-
M	13	Motor-
N	14	Motor+
P	15/PE	Motor+
R		
S		
T		
U		

Motor		
PIN Nr.	WIRE Nr.	Description
1	1	Motor-
2	2	Motor+
3	3	Sensor-
4	4	Sensor+
5	5/PE	Sensor Signal
6		
7		



7.3 PTO Fan – Connect the PTO shaft ensuring it is cut to the correct length and does not bottom out. Ensure that the shaft angle is as straight as possible.

7.4 Hydraulic fan - Connect the Hydraulic Hoses to the Tractor.

The hydraulic fan requires an unpressurized return oil supply 2-16 l / min.

The oil flow should be adjusted on the hydraulic spool valve on the tractor and may 16 l / min. not exceed, otherwise the oil seal of the engine could be damaged. After connecting it must be ensured that the fan runs in the right direction: the blades must rotate clockwise when looking at the air inlet.

1. Fit the 1/2“ hydraulic hose coupling into the tractor hydraulic service.

2. The 3/4“ return hose from motor should be pressure free return direct to the tractor hydraulic oil reservoir, using the 3/4“ female coupling provided. This return pipe has a one way valve fitted.

7.5 FAN SPEED ADJUSTMENT

7.5.1
The speed is automatically displayed on the controller display; the alarm (fan not running), however, must be activated (MENU 140.0 of control). Recommended operating speed of the hydraulic fan: min. 1,600 Turns / Minute .; max. 3,800 Turns / Minute. The operating speed should taking into account the working width and the type the seed can be selected. This hydraulic fan is suitable for micro granules and and grass seeds max. 12.50 m working width.
Small seeds: 2.000 - 3.000 rpm
Grass seeds: 2.500 - 3.500 rpm
Micro granules: 3000 - 3500 rpm (12m)

7.5.2
Note: It is essential that the cover of the hopper is completely hermetically sealed and properly, so there is no air flowing through it!

8th. Note for the operation

8.1 Basic settings for the cover of the seed hopper

➛ Before you start seeding check if the cover of the seed hopper is closed with the handle.
➛ Check the screw of the cover of the seed hopper if it´s fixed
➛ An air tight seal must be achieved for correct air flow.

2. basic settings

Before filling the seed box, note the following:

1. The correct seed roller is installed?
N.B - Only the fine roller is supplied with Micro-Pro 16 machines.

Attention!!! The seed roller must be according to the size of the seed and seed rate to be selected.

Seed, applied to the coarse seed roller:

grass seed mixtures, rye, barley, wheat, oats, etc.
(usually small amounts, ≥ 10kg/ha)

Seed, applied to the fine seed roller:

Pure clover seed, rape, phacelia, granules, etc.
(usually small amounts, ≤ 15kg/ha)

When installing the fine roller, ensure it is centralised in the chassis of the machine.

3. Setting the seed retention brush:

The distance between the retaining brush from the seed shaft can be adjusted with the lever on the right side of the pneumatic Seeding machine. It is possible to choose a distance between 1 and 7mm.

Note the following:
The distance between the brush and roller corresponds to about 1/2 a seed or granule.

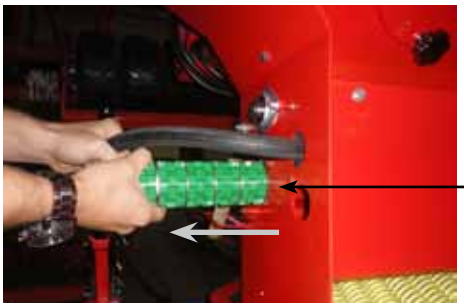
Oilseed rape, clover, microgranules	0,1mm
Grass mixtures	1-2mm
Ground cover and feed mixtures	2-3mm

Lever for adjusting the retaining brush

8.2 Changing the seed roller:

1. Ensure that the seed box is completely empty
2. To replace remove the bearing support cap on the right side of the seed roller.
3.Pull out the roller, while doing so turn counterclockwise and pull.

Opening the bearing support of the closing flap by thumbscrew



Pull out the seed roller

Installation of a new seed roller:

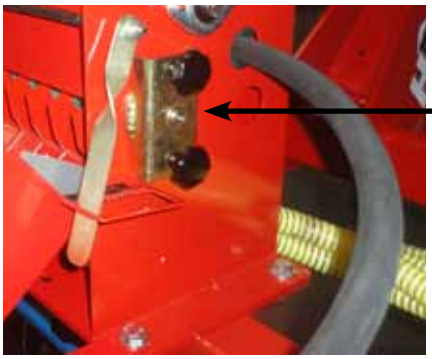
1. Push new seed roller into the drive axle

2. Replace the bearing bracket.

3. After securing the bearing holder use the spring washer at the end of the seed roller to ensure correct balance. Attention!!! the slices should not sit tight

4. Turn metering wheel and make sure that the metering roller rotates properly.

New seed roller shaft to the drive axle



The bearing retainer refit using the thumb screws

8.3 Protection plate of the seed roller

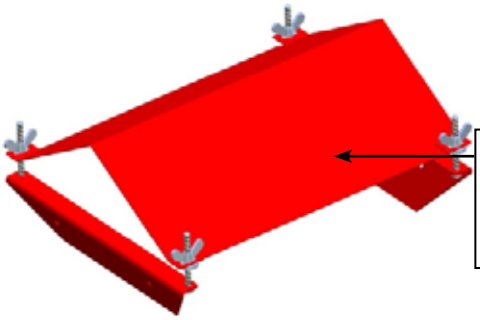
The protective plate is located in the interior of the seed hopper and carries the weight of the seed. It was primarily designed for heavier seeds such as Oilseed Rape.

In lighter crops such as grass seed, make sure that the protective plate caused no bridging effect. If this problem persists, the protective plate can be removed by means of wing nut screws and the sowing may continue without this protective plate.

Attention!!! **Remove only the protection plate when you are using light seed for seeding, The protective plate should be installed when using Avadex.**

Protection plate of the seed roller mounted in the inner Seedbox

Remove by loosening the wing nuts on all 4 sides



Removed protective plate

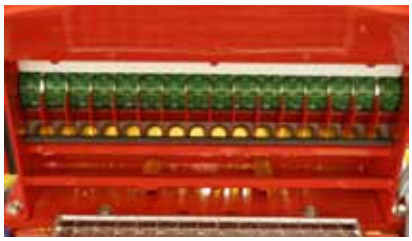
8.4 Drive

Radar:
This must be positioned as per manufacturers intructions.

Calibration:
Radar or sensor drive wheels **must** be calibrated on 100m run with the same ground surface as working conditions.

8.6 Calibrate

1. Remove the cover of the seed roller
2. Insert the calibration tray under the metering roller.
3. Follow the steps on the on board computer for calibration see page 45
4. Weighing the product / seeds with an accurate set of scales.
5. Enter the weight in the on board computer.
6. Close the cover of the seed roller.



8.7 To Drain the Seedbox

➛ Position the calibration tray into the compartment (8.6.2)
➛ Fully open the seed retention brush and simulate forward speed until the seedbox is empty.
➛ To completly empty the seedbox the seed roller must also be removed.

9th Working at the field

The Micro-Pro 16 can be used for Undersowing, seeding and overseeding various seed types and for applying Slug Pellets and Microgranules to a maximum of 12m.

Ensure the correct feild conditions for whichever operation is to be carried out, if in doubt speak to a specialist or agronomist.

10th Before start working:

10.1
> Once the Radar has been calibrated, the Seeding mechanism has been calibrated and the Micro-pro has been loaded with sufficient seed engage the Hydraulic of PTO Fan to provide airflow and check the fan speed is correct.

> It is recommended to allow the fan to run for 2 to 3 minutes to allow for any moisture in the pipework to dry thus reducing the risk of clogging the pipework.

> There should be a minimum of 10kg in the seed Hopper

> The lid of the Hopper must be closed and provide an air tight seal

> Check all the pipes and distributor plates to ensure uniform output across the entire width

10.2 In order to attain even product distribution – The Airflow and Outlet plate Angles have been calibrated on the Micro-Pro for spreading Avadex Granules whilst operating at a boom height of 56cm above the ground. The spread patten will not be affected significantly when working up to a maximum height of 75cm above the ground.

Each Outlet plate has a different Angle to ensure the optimum double overlapping spread pattern. If the outlet height, spreading plate angle or fan speed is altered then the spread pattern will vary.

When Spreading Slug pellets the standard settings below may be applicable but as the products vary greatly a patternation test is recommended using the product to be used.

When Spreading Seeds the standard settings below may be applicable but as the products vary greatly a patternation test with the seed is recommended.

The agitator should be disengaged.

Standard Avadex Settings are as follows –

1) Outlet Height – 56cm, Fan speed 3000rpm (Hydraulic Version), 540rpm on PTO (PTO Version)

Outlet (Right to left)	Outlet Angle (bottom plate angle down from Horizontal)	Outlet Air Speed m/s
1	15	13.5
2	24	14.1
3	20	14.2
4	24	14.3
5	27	15.1
6	31	15.8
7	33	16.8
8	37	17.1
9	37	17.1
10	33	16.8
11	31	15.8
12	27	15.1
13	24	14.3
14	20	14.2
15	24	14.1
16	15	13.5

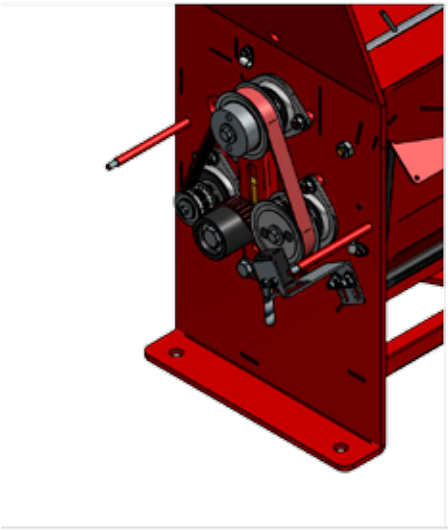
11th Care and Maintenance

- Clean the fans with compressed air, especially in dusty environments.
- Check cables and connectors for damage.
- Check the agitator is clean and ready.
- Check for damage or wear. Rectify any defects rectified immediately.
- **Check nuts and bolts regularly for tightness and tighten if necessary. (On new units every 3 hours and again after 20 hours.)**
- **Do not use high pressure washers for cleaning bearings and hydraulic parts.**

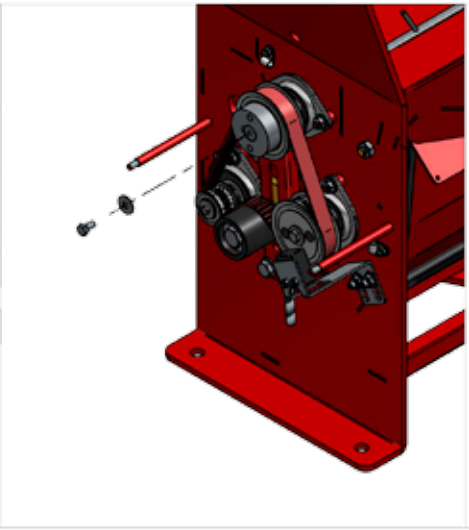
12th Storage in winter

- Completely empty Seedbox
- Completely and thoroughly clean
- Protect from the weather, so that the distribution pipes and the metering mechcanism may not accumulate moisture.
- We recommend that the control boxis stored inside.

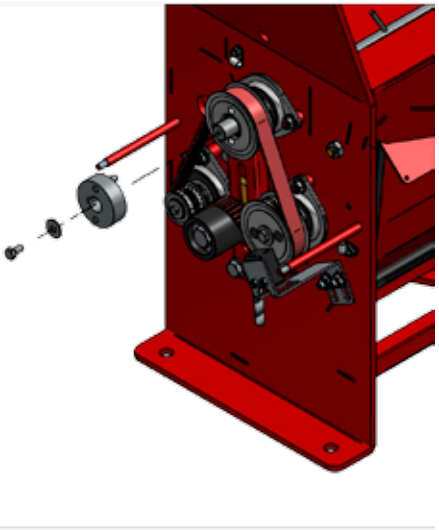
13th Turn off the agitator shaft



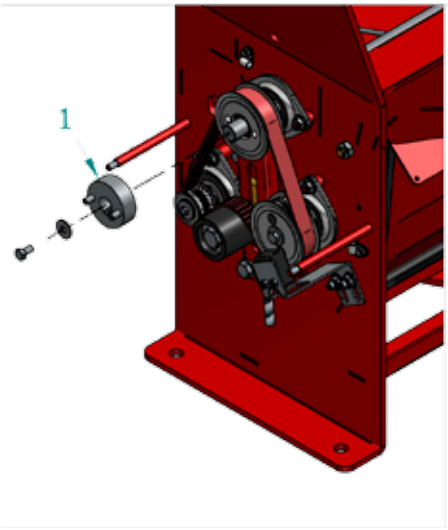
for this procedure you don‘t have to remove the belt.



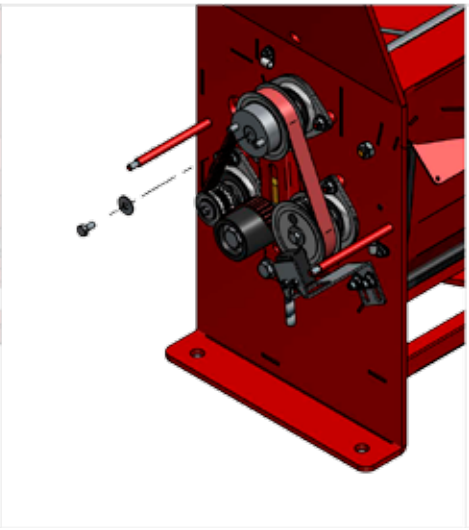
1. remove the bold and washer



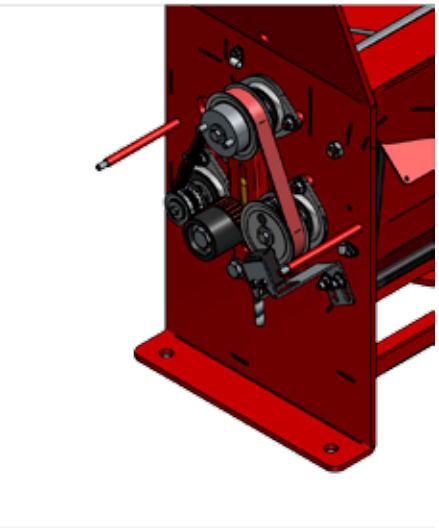
2. remove the clutch



3. turn the clutch (1)



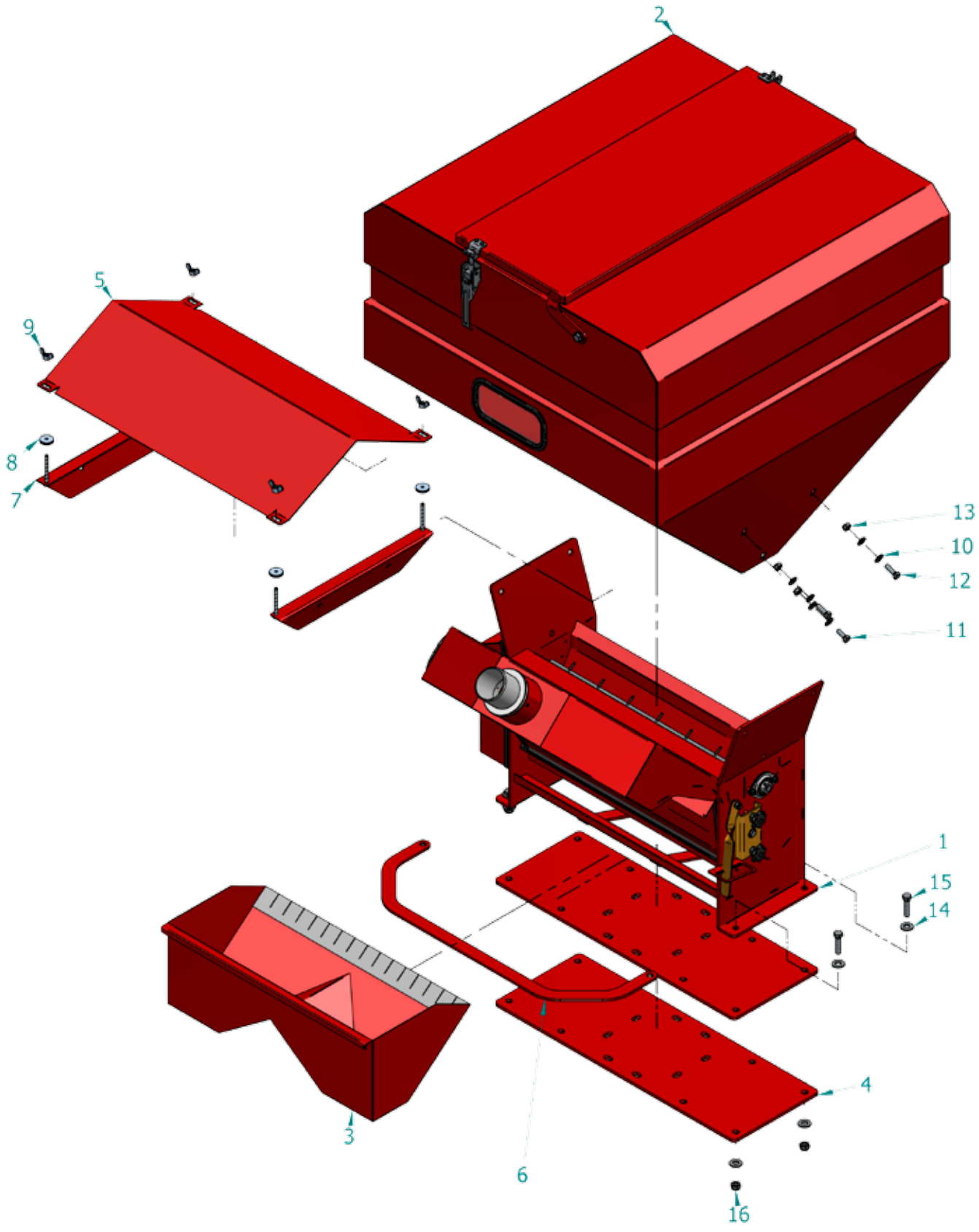
4. connet the turned clutch with bolt and washer



5. now the agitator is turned off

➛ Turning off the agitator shaft is only useful if fine seed is spread example clover seed or Avadex.

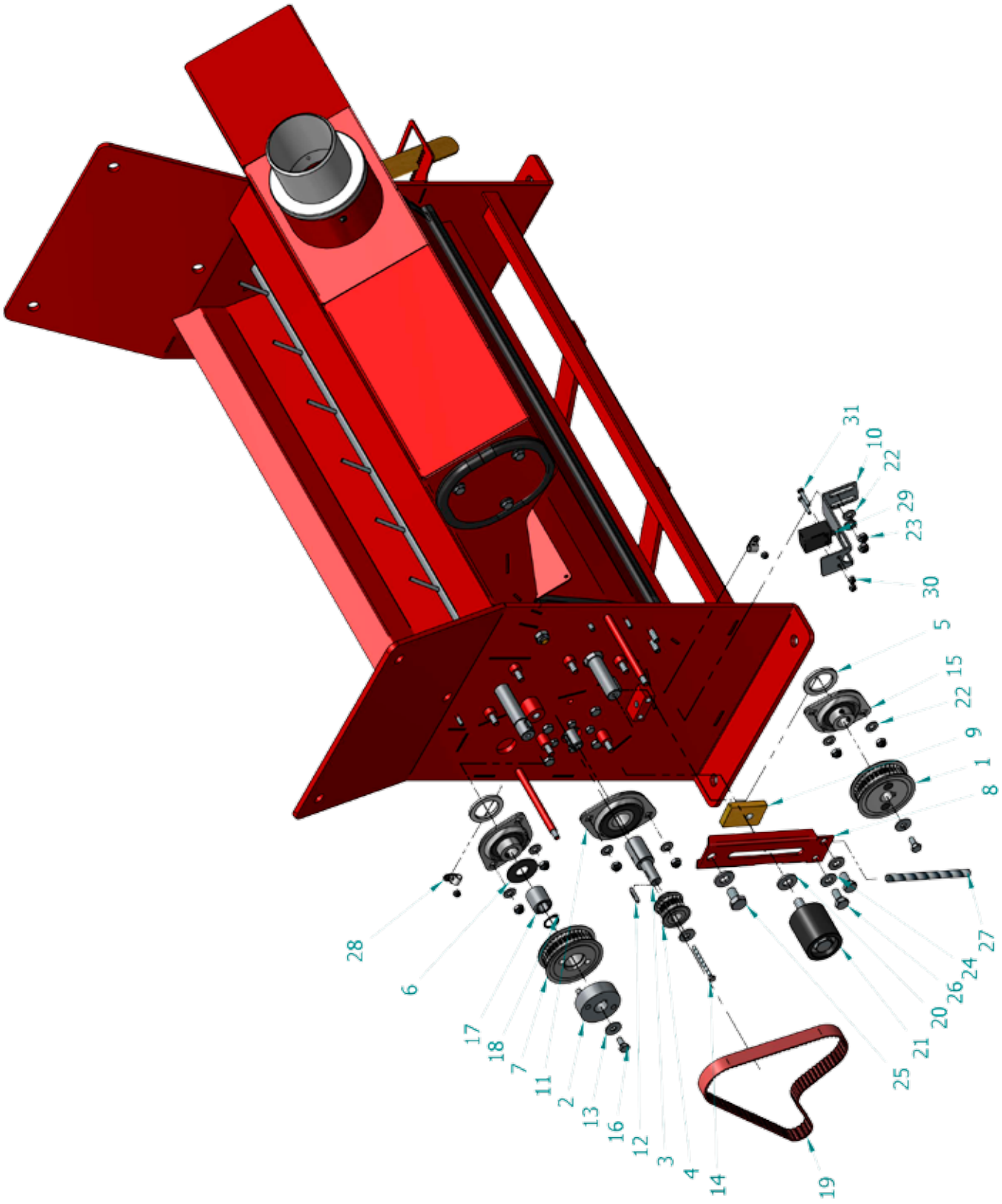
14TH SPARE PARTS CATALOG FOR PNEUMATIC SEEDER „AIR 16“



AIR 16 COMPLETE

item code	item number	designation
0405010001	1	undercarriage for „Air 16“
0405020001	2	hopper for „Air 16“
0405030001	3	calibration bucket for „Air 16“
0405040001	4	baseplate for „Air 16“
0405040002	5	Protection plate of the seed roller
0405040003	6	holder for calibration bucket
0405040004	7	holder for protection plate for the seed roller
1902070001	8	nut DIN 467- M8
1902080001	9	wing nut DIN 315-M8
1908010007	10	washer M10
1901010070	11	hexagonal screw DIN933 M10x25
1901010069	12	hexagonal screw DIN 933 M10x30
1902010005	13	hexagonal nut DIN 985 M10
1908010001	14	washer M12
1901010009	15	hexagonal screw DIN 933 M12x45
1902010003	16	hexagonal nut DIN 985 M12

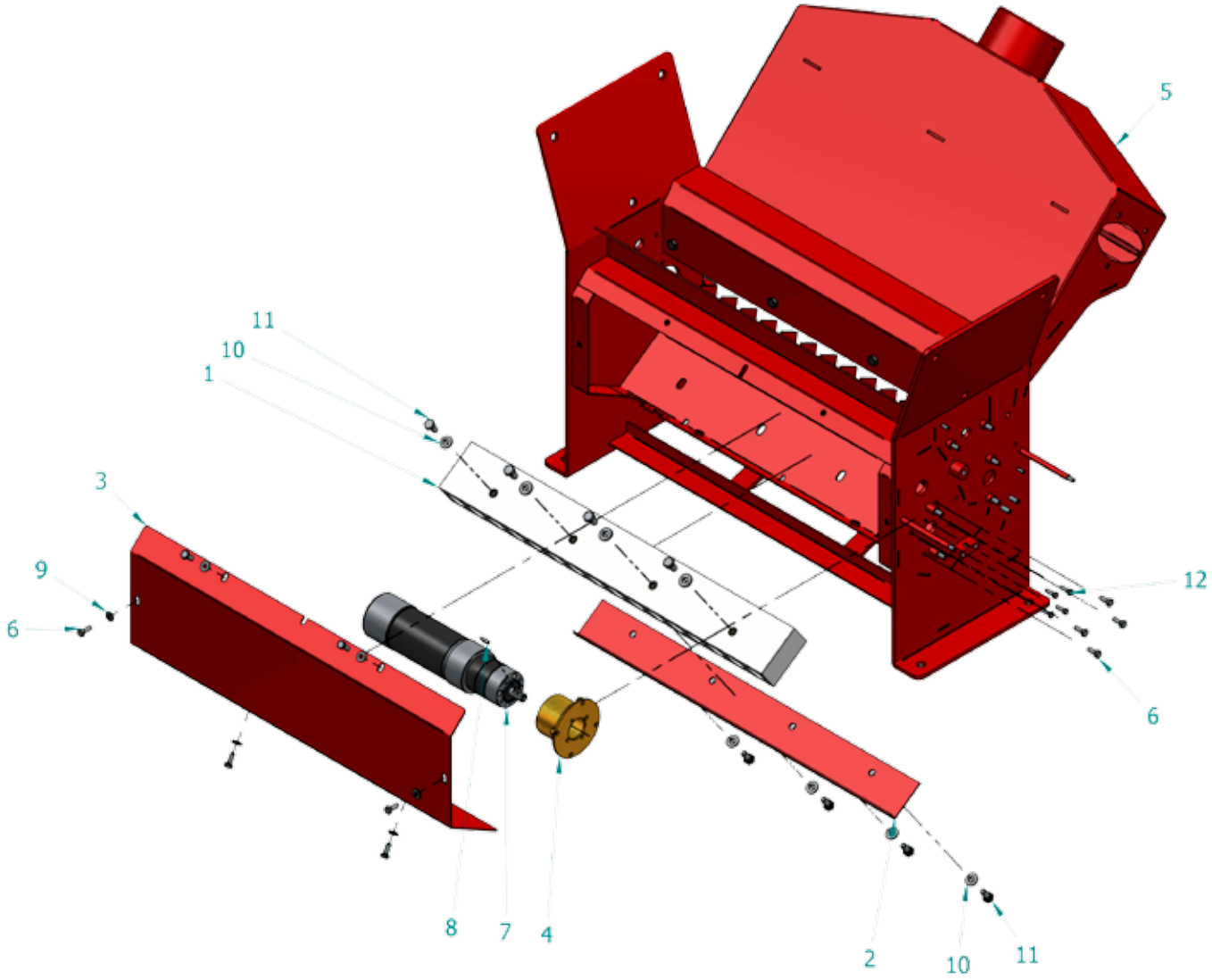
METERING BOX



METERING BOX

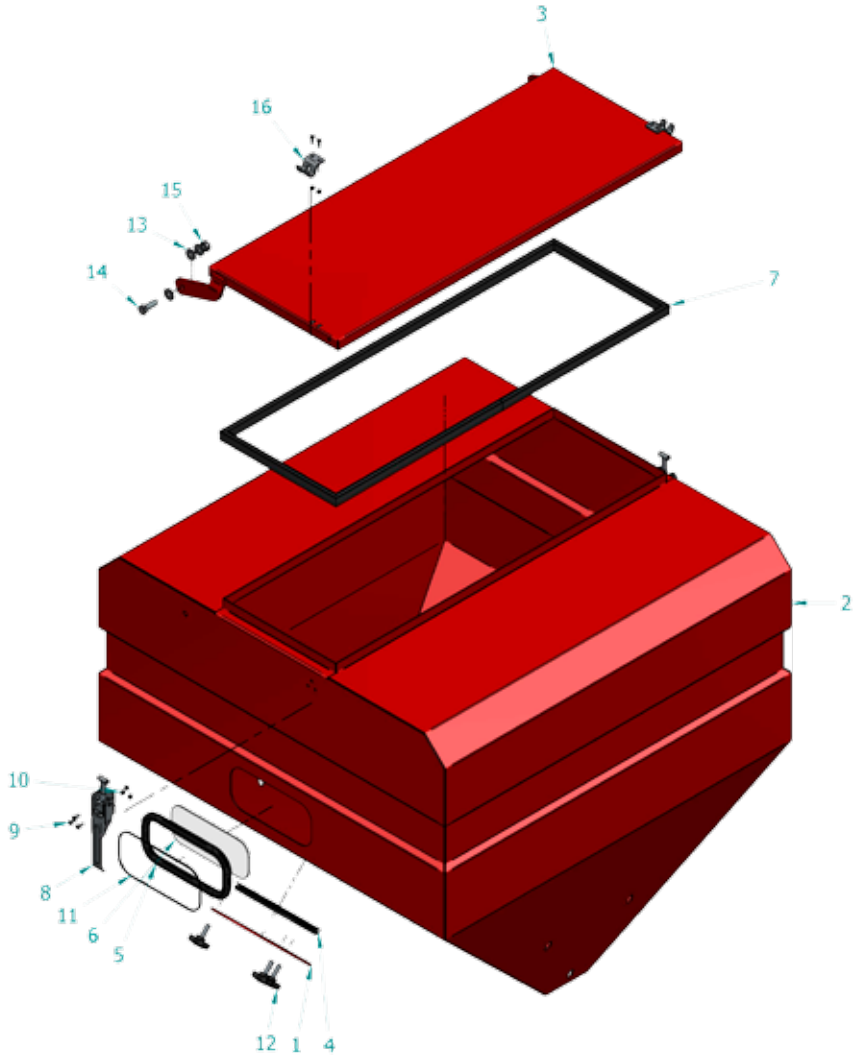
item code	item number	designation
0405010008	1	tooth-belt disc with magnet 36Z
0405010009	2	Disc f. clutch with bolt
0405010010	3	motor extension for „Air 16“
0405010011	4	tooth-belt disc 36Z for the clutch
0405010012	5	seal for bearing 202
0405010013	6	spacer for clutch
0405010014	7	tooth-belt disc 36Z f. clutch
0405010015	8	Lead belt tensioner
0405010016	9	clamp plate for tensioner
0405010017	10	holder for belt sensor
1906030011	11	flange bearing SBPFL 204
1904040002	12	spring 4x4x20
1908010009	13	disc DIN 9021 - 6,4
1901010072	14	hexagonal screw DIN 933 M4x45
1906030012	15	flange bearing SBPFL 202
1901010039	16	hexagonal screw DIN 933 M6x12
1906030013	17	needle sleeve HK1522
1904030003	18	circlip DIN 471 - 15x
0405010018	19	tooth-belt 16ATS5 - l=525mm
1908010007	20	washer M10 - DIN 134
0405010019	21	roller set style RE 3/4
1908010008	22	washer M6 - DIN 134
1902010009	23	hexagonal nut DIN 985 M6
1908010010	24	washer M8
1901010066	25	hexagonal screw DIN 933 M10x16
1901010073	26	hexagonal screw DIN 933 M8x16
1901090002	27	threaded pin DIN 913 - M8x100
1912070017	28	cable eye diameter 6mm
1918030007	29	belt sensor
1902010010	30	hexagonal nut DIN 985 M4
1901070007	31	cylinder screw with slit M4x20

UNDERCARRIAGE FOR „AIR 16“



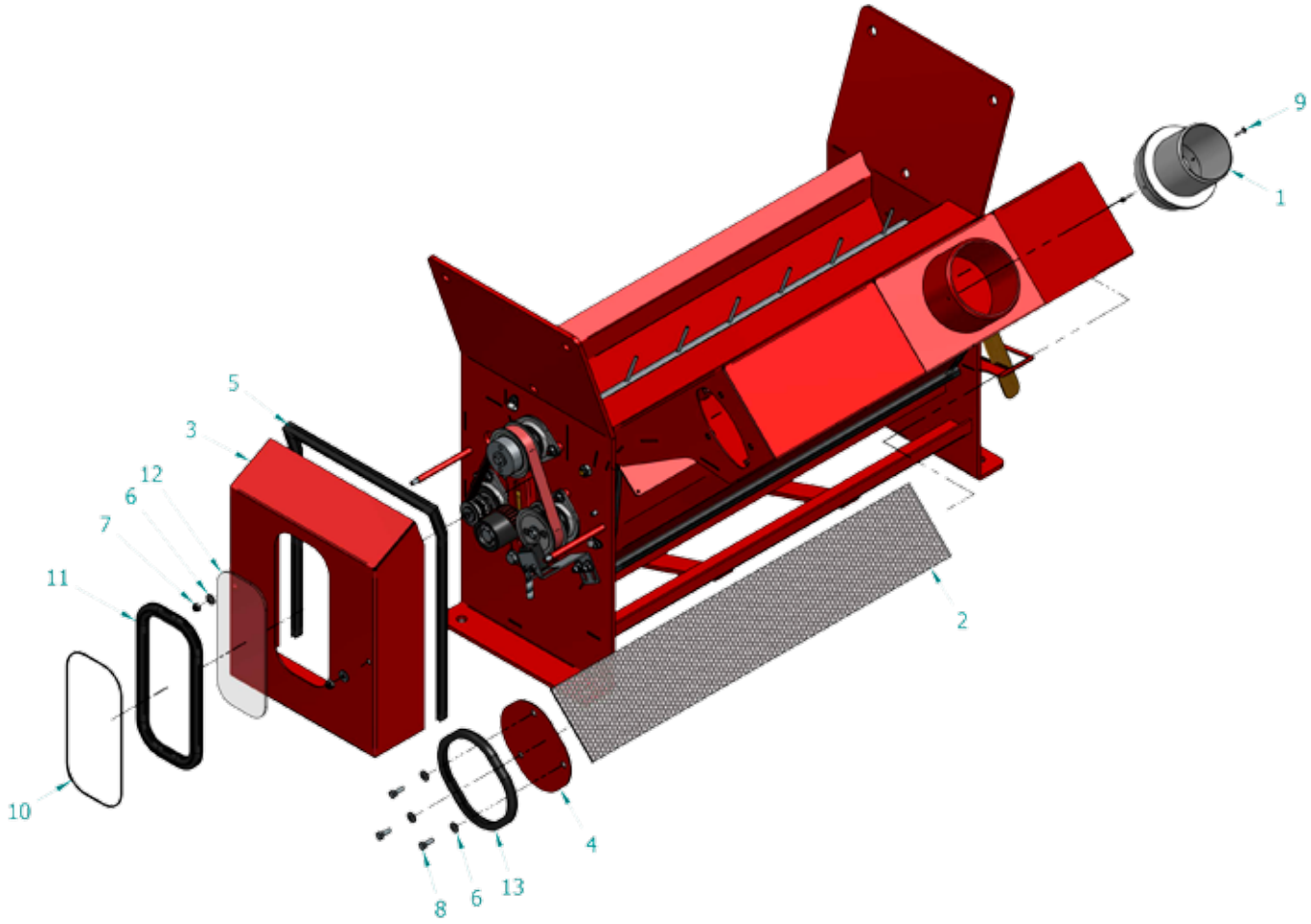
item code	item number	designation
0405010034	1	hose holder
0405010035	2	clamp sheet
0405010036	3	motor cover
0405010037	4	motor mount
0405010038	5	undercarriage for „Air 16“
1901010041	6	hexagonal screw DIN 933 M6X16
1918030008	7	E-motor
1904040005	8	spring 4x4x16
1908010008	9	washer M6
1908010010	10	washer M8
1901010073	11	hexagonal screw DIN 933 M8x16
1901010074	12	hexagonal screw DIN 933 M5x16

SEED HOPPER



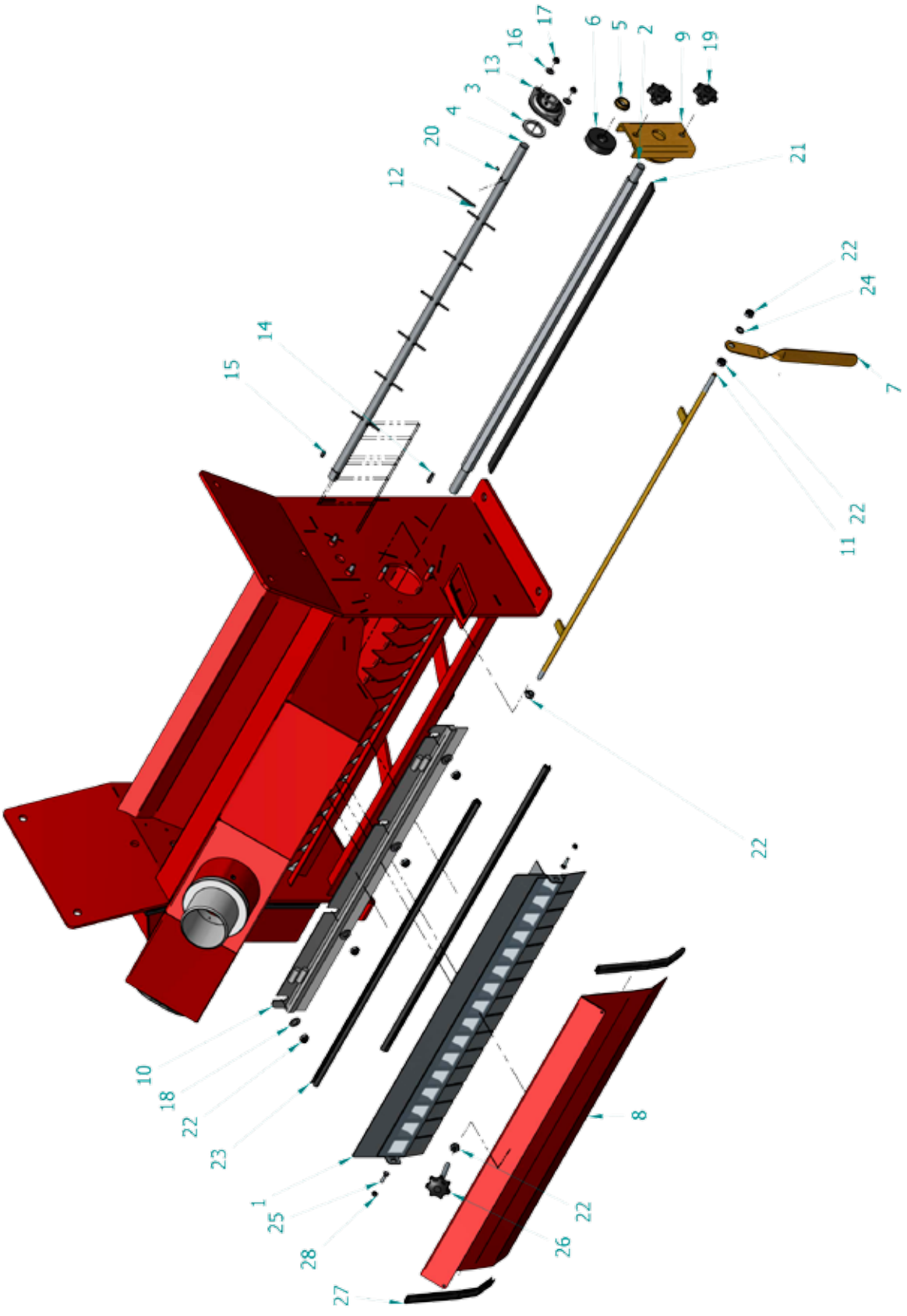
item code	item number	designation
0405020002	1	drain cover for „Air 16“
0405020003	2	hopper for „Air 16“ without standard parts
0405020004	3	cover for „Air 16“ without standard parts
0405020005	4	Edge protection profile for drain cover
0405020006	5	clamp profile for viewing window
1916020002	6	viewing window
0405020007	7	sealing profile for cover, l=2250mm
1917010003	8	Lever Release for container
1901010071	9	hexagonal schrew DIN 933 M4x12
1902010010	10	hexagonal nut DIN 985 M4
0405020008	11	filler profile for viewing window
1901020001	12	star handle M8x25
1908010007	13	washer M10
1901010069	14	hexagonal screw DIN 933 M10x30
1902010005	15	hexagonal nut DIN 985 M10
1917010004	16	hook for lever release

UNDERCARRIAGE MOUNTED FOR „AIR 16“



item code	item number	designation
0405010002	1	adapter for injection hood
0405010003	2	hole sheet for „Air 16“
0405010004	3	Side cover for „Air 16“ without standard parts
0405010005	4	Cover for injection hood
0405010006	5	Edge protection profiles straight for side cover
1908010008	6	washer M6
1902010009	7	hexagonal nut DIN 985 M6
1901010041	8	hexagonal screw DIN 933 M6x16
1901030001	9	sheet screw ST3,5x16
0405020008	10	filler profile for viewing window
0405020006	11	clamp profile for viewing window
1916020002	12	viewing window
0405010007	13	Edge protection profile for cover for injection hood

UNDERCARRIAGE MOUNTED FOR „AIR 16“

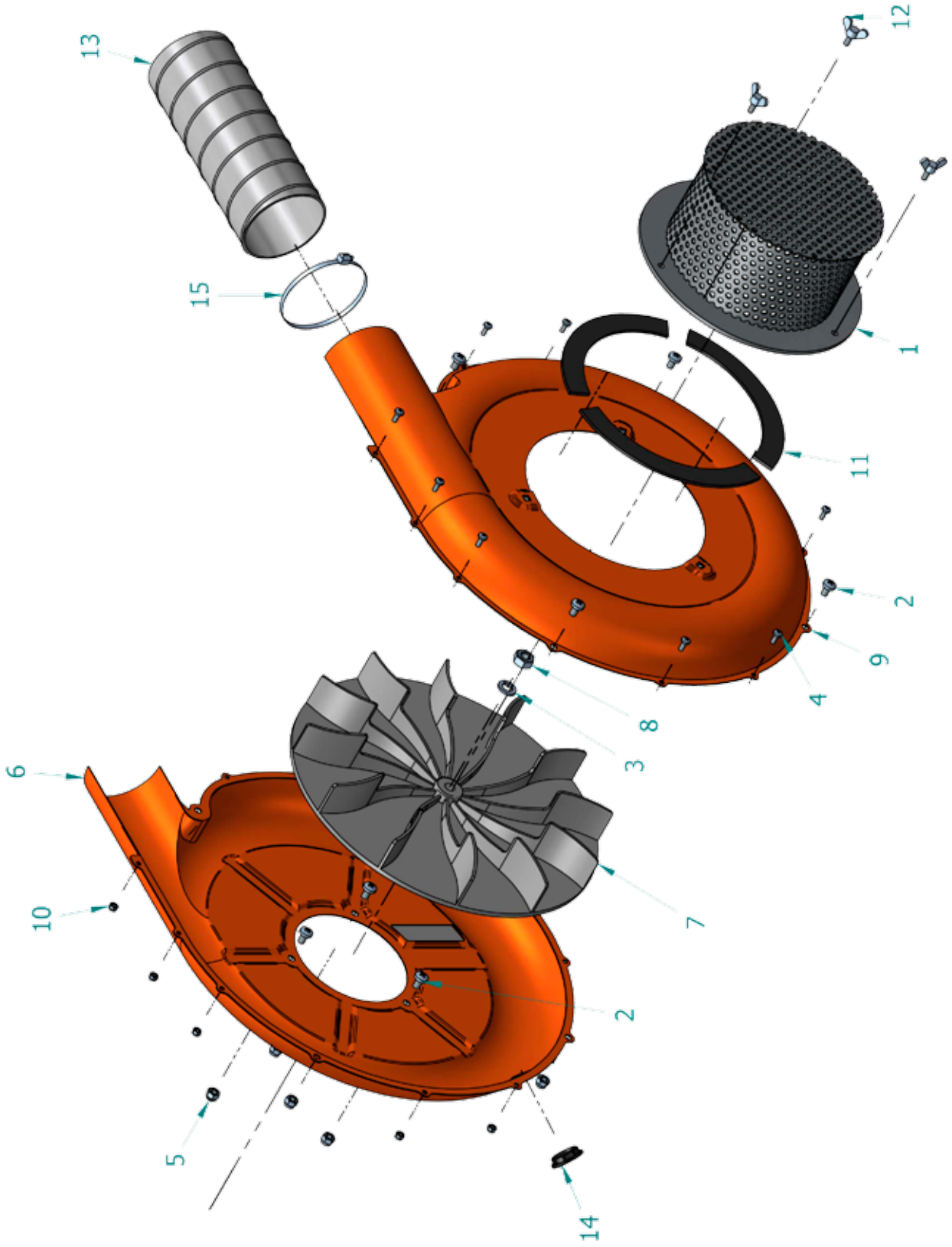


UNDERCARRIAGE MOUNTED FOR „AIR 16“

item code	item number	designation
0405010020	1	Air baffle for seed roller
0405010021	2	hexagonal for seed roller
0405010012	3	seal for bearing 202
0405010022	4	shaft for agitator
0405010023	5	brass bearing for bearing block
0405010024	6	plastic part for bearing block
0405010025	7	adjusting for brush
0405010026	8	Cover for seed roller without standard parts
0405010027	9	bearing block for „Air 16“
0405010028	10	brush for „Air 16“
0405010029	11	brush adjustment
0405010030	12	sahft diameter 4mm for agitator - l=80mm
1906030012	13	flange bearing SBPFL 202
1904040003	14	spring 5x5x20
1904040004	15	spring 5x5x12
1908010008	16	washer M6
1902010009	17	hexagonal nut DIN 985 M6
1908010010	18	washer M8
1901020002	19	star handle M6
1901090003	20	threaded pin DIN 913 M5x6 - A2
0405010031	21	rubber 20x5
1902010002	22	hexagonal nut DIN 985 M8
0405010032	23	Edge protection profile
1901100004	24	disc M8x55
1901010074	25	hexagonal screw Din 955 M5x16
1901020003	26	star handle
0405010033	27	Edge protection profile straight for seed roller cover
1902010011	28	hexagonal nut DIN 985 M4

HYDRAULIC FAN

complete: 0404010001



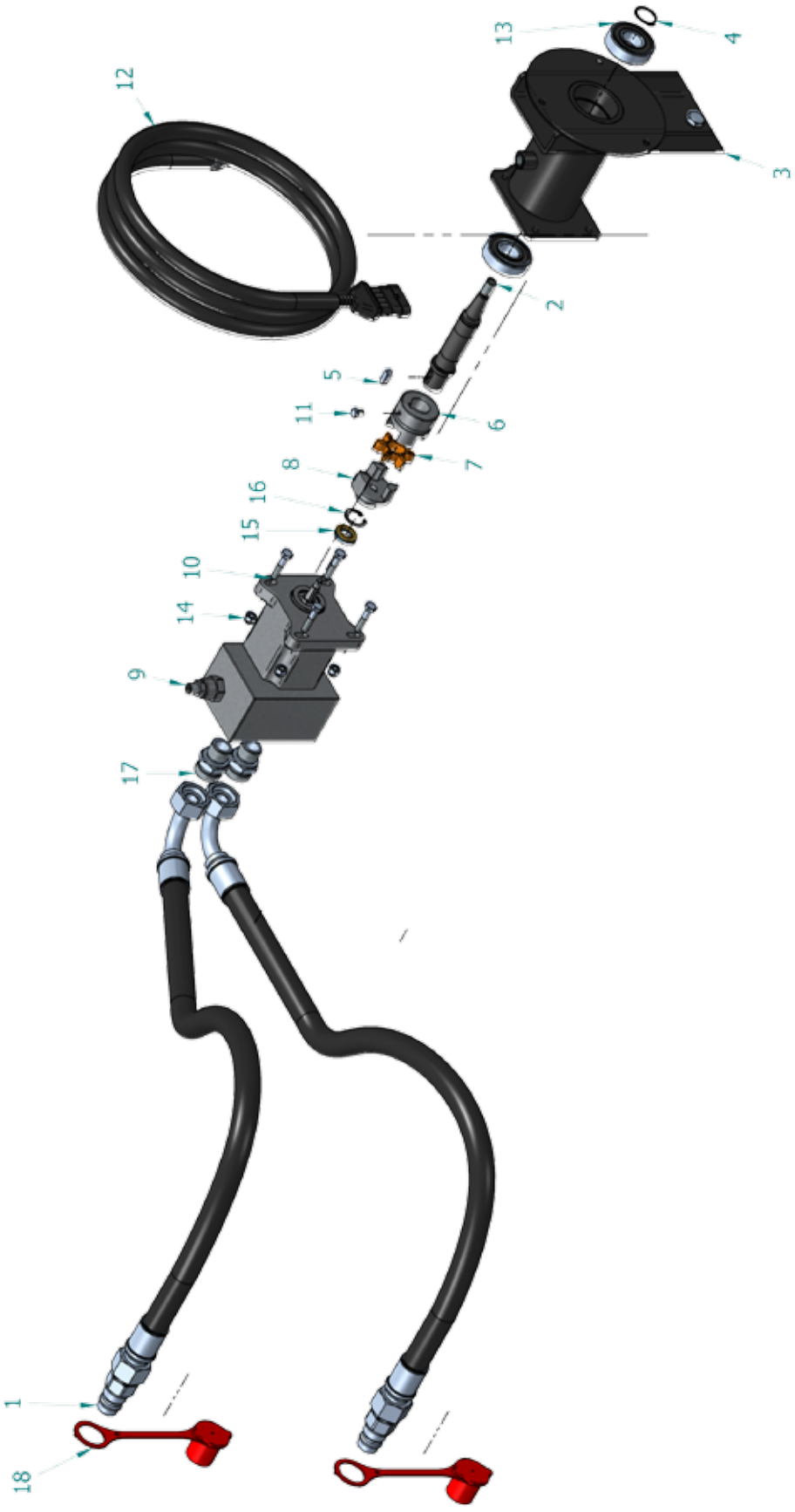
HYDRAULIC FAN

complete: 0404010001

item code	item number	designation
0404010008	1	basket for hydraulik fan
1901080001	2	flat Head Screw M6x10
1908030001	3	spring ring DIN 127B-10
1901080002	4	flat Head Screw M4x10
1902010009	5	hexagonal nut M6
0404010009	6	blower half small section
0404010010	7	wings for fan
1902060001	8	hexagonal nut M10 - Linksgewinde
0404010011	9	blower half big section
1902010010	10	hexagonal nut M4
1916020001	11	foam 20x5 l=180mm
1901090001	12	thumbscrew M5x12
1912100001	13	blast hose Ø=75mm per one meter
1916010002	14	sealing Cap ZK 30/25
1912070002	15	hose clamp 70-90

MOTOR WITH CLUTCH

complete: 0404010001

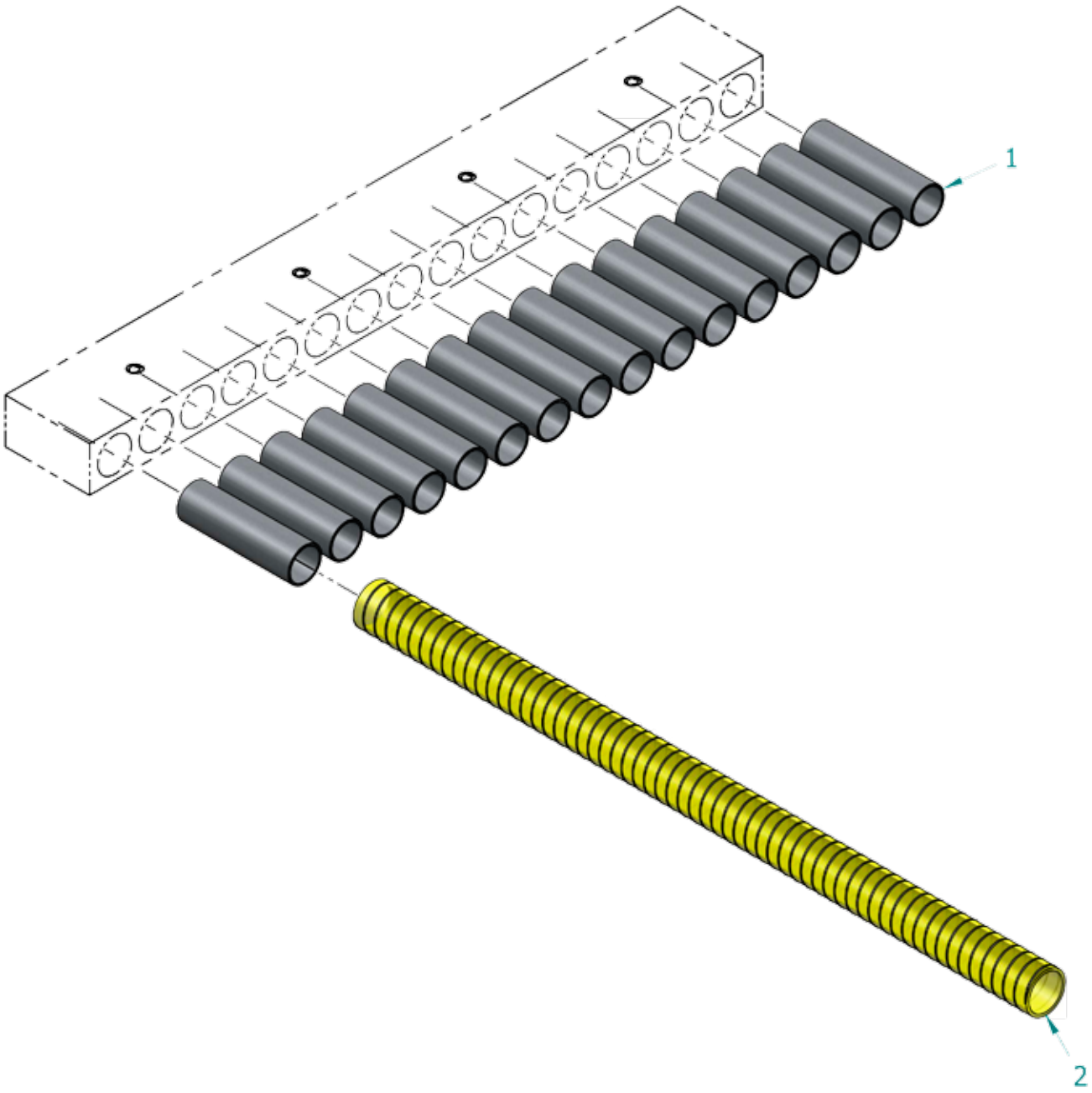


MOTOR WITH CLUTCH

complete: 0404010001

item code	item number	designation
1912020012	1	hydraulik hose for hydraulik fan
1912090001	2	shaft for hydraulic fan
0404010002	3	fan holder
1904030002	4	circlip 20x1,2
1904040001	5	wedge AS 6x6x16
0404010003	6	clutch - hub with Ø =20mm
0404010004	7	clutch - sprocket 92 Shore
0404010005	8	clutch- Hub with taper
0404010006	9	hydraulic motor for fan
1901010043	10	hexagonal screw M6x30
1901010044	11	hexagonal screw M5x8
1918010002	12	speed sensor with cable and connector
1906030004	13	deep groove ball bearings - 6204 -22RS
1902010009	14	hexagonal nut M6
0404010007	15	high pressure seal
1904030004	16	circlip 22x1
1912030004	17	screwed
1912040001	18	dust cap red

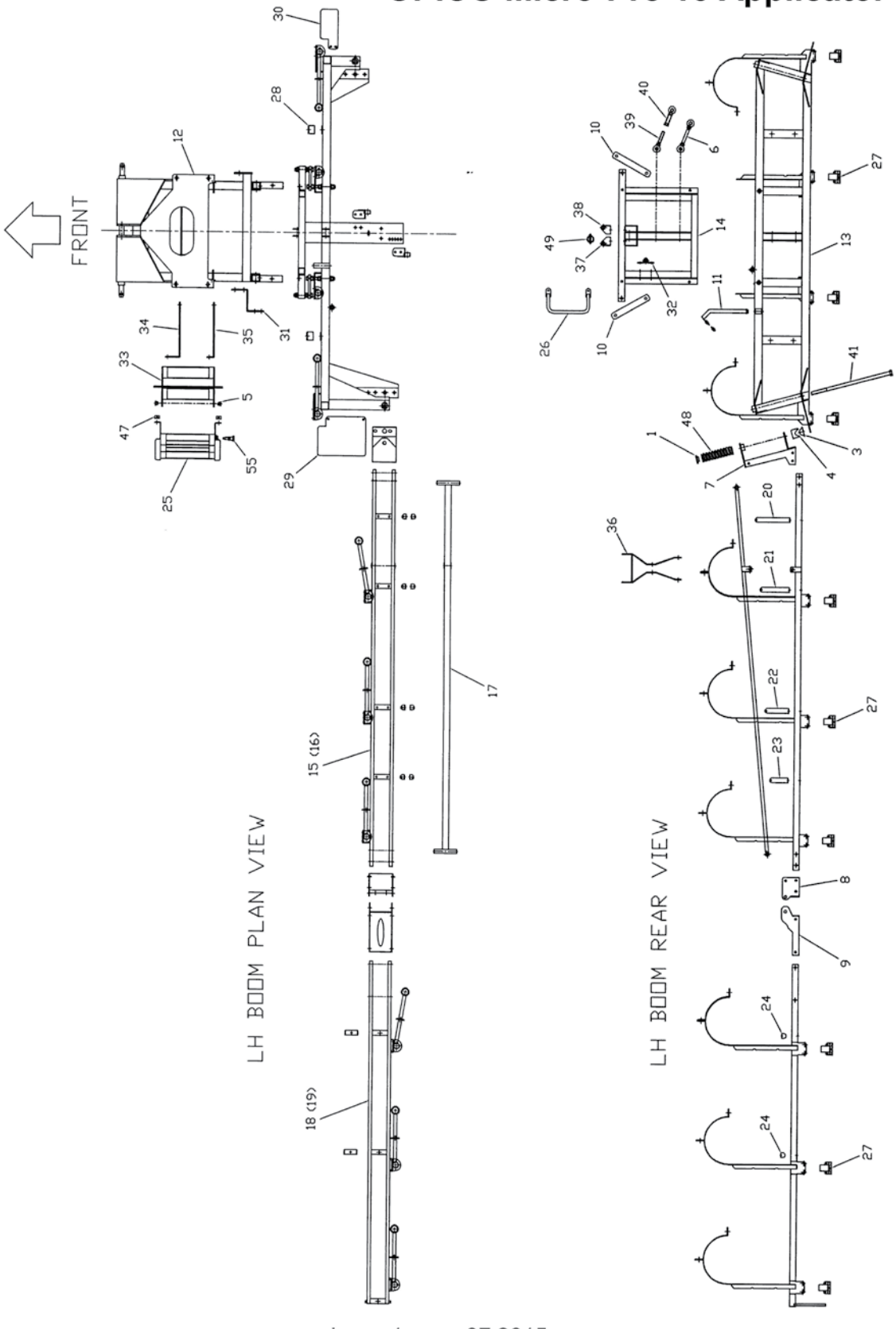
STAINLESS TUBES



item code	item number	designation
0405010039	1	tube Ø 30x2mm, l=100mm
1912100003	2	seeding hose Ø=30x2,5mm per one meter

SPARE PARTS 1.1

OPICO Micro-Pro 16 Applicator



1.1a SPARE PARTS

OPICO Micro-Pro 16 Applicator

Item	Part No.	Description	Qty.	Remarks
1	TS0214/A	Spring Holder	2	
2				
3	TS2813	Hinge Cam	2	
4	TS2917	Hinge 'U' Channel	2	
5	TS3074	Top Hat Boss	2	
6	TS3177	Parallel Link	1	
7	TS3950-3	End Upright	2	
8	TS3950-4	Inner Boom Hinge Plate	2	
9	TS3951-3	Outer Boom Hinge Plate	2	
10	TS3956	Swinging Link	2	
11	TS3960	Transport Pin	1	
12	TS4057	Chassis	1	
13	TS4058	Boom Centre Frame	1	
14	TS4059	Height Adjustable Frame	1	
15	TS4060	Inner Boom LH	1	
16	TS4061	Inner Boom RH (not shown)	1	
17	TS4062	Inner Boom Strut	2	
18	TS4063	Outer Boom LH	1	
19	TS4064	Outer Boom RH (not shown)	1	
20	TS4068	Hose Support (6 hose)	4	
21	TS4069	Hose Support (5 hose)	4	
22	TS4070	Hose Support (4 hose)	4	
23	TS4071	Hose Support (3 hose)	4	
24	TS4072	Hose Clamp (2 hose)	4	
25	TS4075	Steps	1	
26	TS4076	Hopper Grab Rail	2	
27	TS4077	Adjustable Deflector Nozzle	16	
28	TS4089	Hose Clamp (7 hose)	2	
29	TS4157	Hose Deflector Plate LH	1	
30	TS4158	Hose Deflector Plate RH	1	
31	TS4159	Radar Bracket	1	
32	TS4160	Transport Pin Bracket	1	
33	TS4161	Top Step	1	
34	TS4162	Step Mounting Plate Front	1	
35	TS4163	Step Mounting Plate Rear	1	
36	TS4166	Boom Support	2	
37	TS4167	Stowage Bracket LH	1	Was TS4091
38	TS4168	Stowage Bracket RH	1	Was TS4092
39	TS4169	Adjustable Link Male End	1	
40	TS4170	Adjustable Link Female End	1	
41	TS4188	Spring Rod	2	
42				
43				
44				
45				
46				
47	OP0387/B	Bump Stop	2	
48	OP0414/A	Compression Spring	2	
49	-	Quick Release Pin	2	
50				
51				
52				
53				
54				
55	V0119	Index Plunger	1	

15. On-Board Computer

Operator's Manual

Rev. 1.00

ContentsTable of Contents

Hatzenbichler On-Board Computer – Operator's Manual

This Operator's Manual covers the operation of the on-board computer which comes with the pneumatic seeders Air 8 (electronic) and Air 16.

You must have read and understood this manual before starting up the on-board computer.

The on-board computer is for controlling the motor of the metering roller based on pulses from a wheel-driven sensor or radar sensor.

The Hatzenbichler on-board computer allows the user to store different seed rates and assign to them names and the corresponding calibration quantity.

The on-board computer offers various checking and monitoring features, such as

- Speed display (in km/h)
- Actual seed rate

- Elapsed time

- Distance counter

- Hectare counter

- Used seed

- Filling level

- Belt
- Motor
- Speed control

The computer signals problems by means of an acoustic alarm signal and shows an error message on its display.

Controls

The „**UP**“ arrow lets you navigate to the menu items you want to work with.

The „**DOWN**“ arrow lets you navigate to the menu items you want to work with.

The "**-**" key is for decrementing values.

The "**+**" key is for incrementing values.

The „**OK**“ key stores any value or alteration made to the computer.

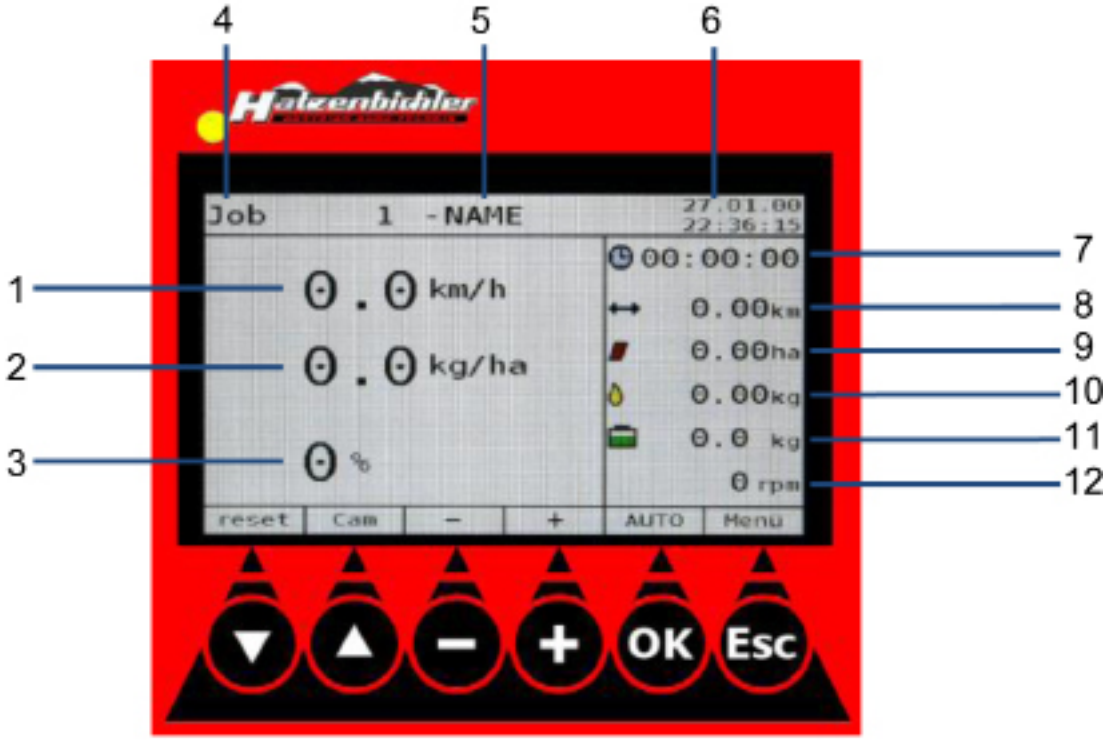
The „**ESC**“ key lets you exit the active window and takes you one step back.

The „**DigiPot**“ lets you increment/decrement values to be entered by turning the knob CW/CCW.

Controls and Interfaces at the Bottom of the On-Board Computer

Main Screen (Job screen)

The main screen shows all information about the job in progress. In the following this screen is called "Job screen".



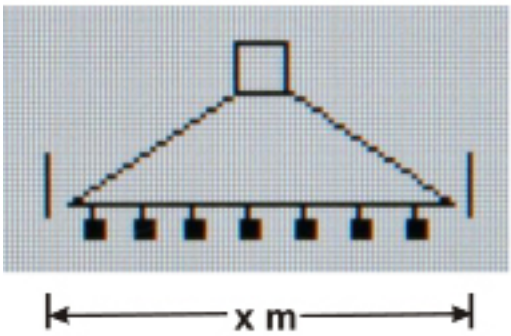
▲	Camera
▼	Reset for seed rate in %
−	Decrement value
+	Increment value
OK	Second function for OK button
Esc	Second function to get into the menu

1	Travelling speed	7	Elapsed time
2	Actual seed rate in kg	8	Distance counter
3	Seed rate +% and -%	9	Hectare counter
4	Job	10	Used seed
5	Job number and name	11	Filling level
6	Date and time	12	Fan RPM

Important Settings

Before you start working, make the following settings:

1. Select **Language** (menu 4)
2. Check **Working width** (menu 1)



3. Check **Type of Sensor** (menu 4)
4. Check the pulse settings for wheel or radar sensor (menu 2)
   - Wheel: Dist. of pulses = 4.75
   - Radar: Dist. of pulses = 0.74

Getting Started

From calibration to seeding

Once the computer is energized by pressing the main switch at the bottom of the device and the boot loader has completed its routines, the start screen appears on the display.
After 5 seconds the Job screen is displayed.
Before you start, get familiar with the controls and the information on page 6.
Please note that two functions have been assigned to the keys "OK" and "Esc":

- "OK" + "AUTO"
- "Esc" + "Menu"

- Press "Esc" to enter into the Main menu
- Use the arrow keys ▲ and ▼ to navigate through the menu
- Select "Input"
- Press "OK"

Fig. 1

- Select "Working width"
- Press "OK"

Fig. 2

- Enter the working width by pressing "+" or "-" or by turning the DigiPot.
- Press "OK"

Fig. 3

- Use the arrow keys ▲ and ▼ to navigate to "Job"
- Press "OK"

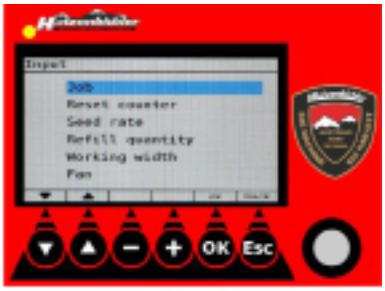


Fig. 4

- Press "+" or "-" to select the job number (1 ... 30)
- Press the arrow key ▼ to navigate to "Name". Here you can enter a descriptive name for the selected job.
- Press "OK"

Fig. 5

- Press "+" or "-" or use the DigiPot to navigate to the character/number you wish to enter. Confirm the selected letter by pressing "OK" or the DigiPot. Repeat this step until the name is complete.
- Press "Esc" to set the type of metering roller.

Fig. 6

- Press "+" or "-" to select the metering roller (coarse, fine, micro) installed in the seed box. This entry is for your information only and has no effect on the internal calculations made by the computer.
- Press "OK" to confirm your selection.

Fig. 7

- On the next screen information about seed rate, minimum and maximum driving speed is displayed.
- Press "OK" or "Esc" to return to the Job screen.

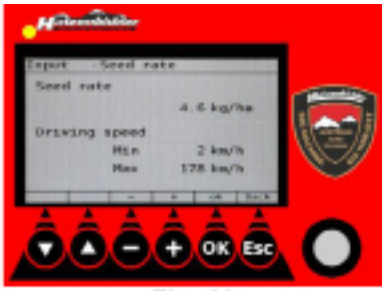
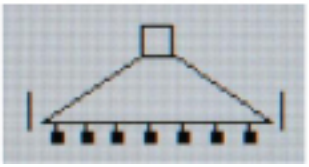


Fig. 12

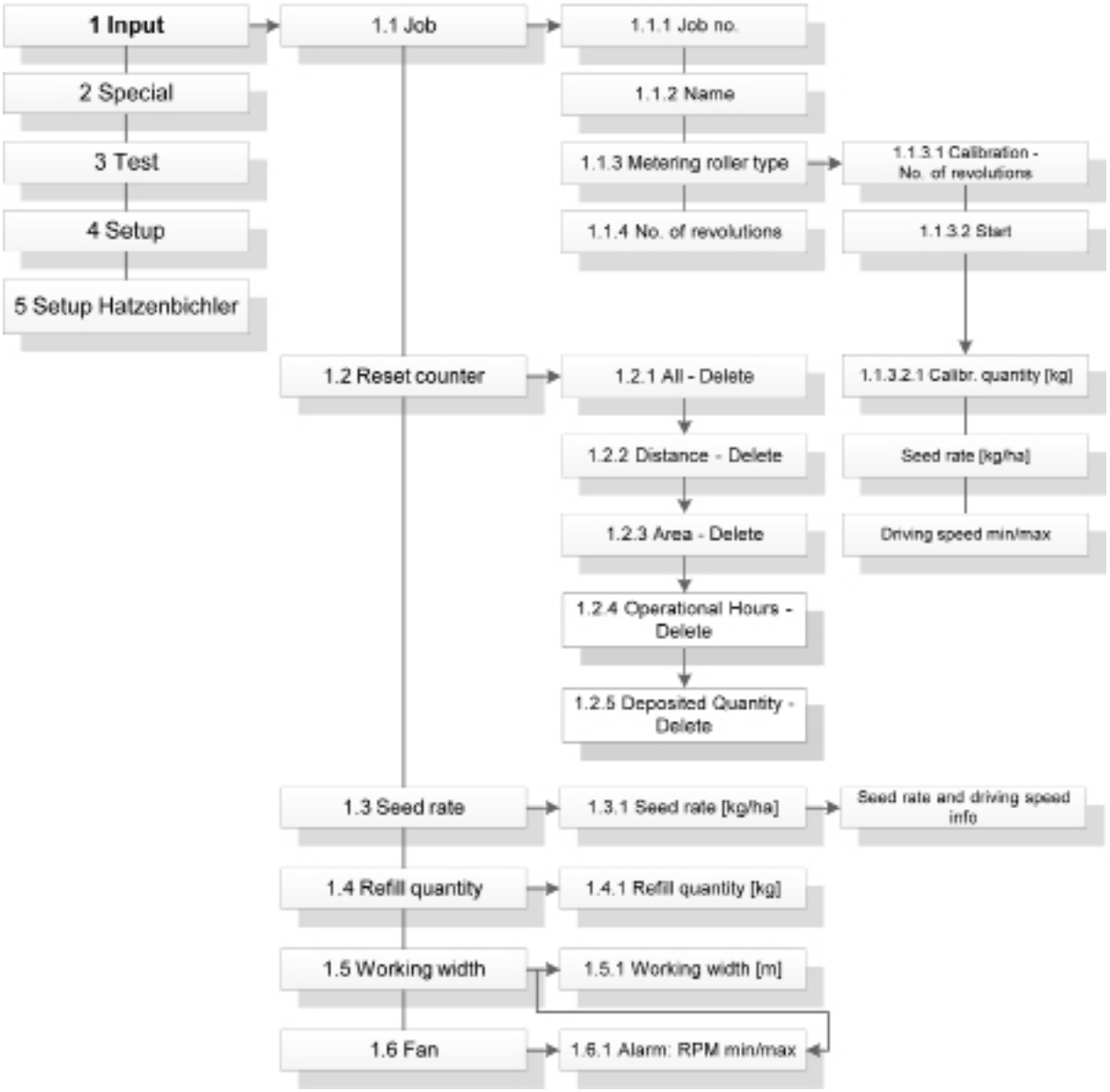
- Press "OK" to enable the seeding process.

Fig. 13

A small seeder icon appears on the screen indicating that the machine is ready for seeding. During seeding the cover of the seeder must be hermetically sealed.



1 Input


1 Input
2 Special
3 Test
4 Setup
5 Setup Hatzenbichler
1.1 Job
1.1.1 Job no.
1.1.2 Name
1.1.3 Metering roller type
1.1.3.1 Calibration - No. of revolutions
1.1.4 No. of revolutions
1.1.3.2 Start
1.2 Reset counter
1.2.1 All - Delete
1.1.3.2.1 Calibr. quantity [kg]
1.2.2 Distance - Delete
Seed rate [kg/ha]
1.2.3 Area - Delete
Driving speed min/max
1.2.4 Operational Hours - Delete
1.2.5 Deposited Quantity - Delete
1.3 Seed rate
1.3.1 Seed rate [kg/ha]
Seed rate and driving speed info
1.4 Refill quantity
1.4.1 Refill quantity [kg]
1.5 Working width
1.5.1 Working width [m]
1.6 Fan
1.6.1 Alarm: RPM min/max

1.1 Selecting a Job and Calibrating the Seed Box

When you have entered all important settings described on page 8 you can select a job and start calibration. You can choose from up to 30 different jobs. Jobs can be used to distinguish between different types of seed, calibration parameters, metering rollers and seed rates (kg/ha).

The Hatzenbichler seeder comes with two standard metering rollers (coarse and fine). For applications where these two roller types are not suitable, a superfine roller (micro) and a segmented roller with holes are available.

Fig. 14

- On the starting screen press "Esc" to activate the Main Menu.

Fig. 15

- Press "OK" to select "Input".

Fig. 16

- Press "OK" to select "Job".

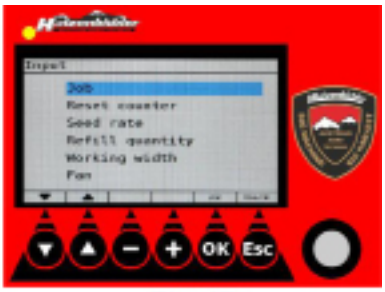


Fig. 17

- Enter the job number (1 … 30) by pressing the key "+" or "-".
- Press the key ▼ (Name) to enter a job name.
- Select the characters to be entered by pressing "+" or "-" or by turning the DigiPot. Press the DigiPot or "OK" to enter the selected character. Repeat these steps until you have entered all characters. Then, press "Esc" to enter the type of metering roller.

Fig. 18

- Press "+" or "-" to select the metering roller type installed in the seed box.
- Press "OK" to confirm your selection and to go to "Calibration".

Fig. 19

- Enter the number of revolutions by pressing "+" or "-" or by turning the DigiPot. Press "OK" to confirm your selection.
  Please make sure that the number of revolutions is not too high and corresponds to the type of seed. For example, for rape seed 30 … 50 revolutions are adequate. Seed with coarse grains requires less revolutions (15 … 25).

Fig. 20

Make sure that there is enough seed in the tank for calibration purposes. However, the filling level should not exceed the quantity needed for calibration in case you must exchange the metering roller.

- Install the calibration tray.
- Press "OK" to start calibration.
- Wait until the metering roller has completed the number of revolutions you have set before.

Fig. 21

- Determine the weight of the seed in the calibration tray.
- Enter the weight [kg] determined before by pressing "+" or "-".
- Press "OK".

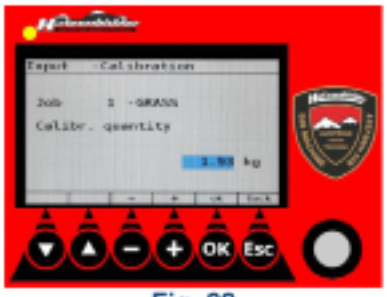


Fig. 22

- Press "+" or "-" to set the seed rate.
- Press "OK"

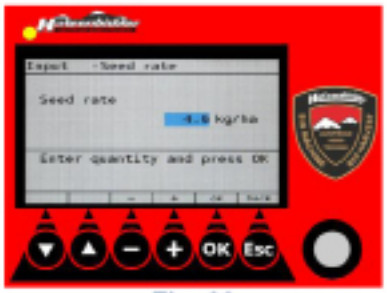


Fig. 23

Note on "Driving Speed" information:
If you don't get information about minimum or maximum driving speed, an error must have occurred. In this case, change the metering roller settings in menu 1.1 accordingly. Then, go to "Input/Job" and press the key ▲ (Calib.). This will trigger a new calibration process.

- Press "OK" to confirm the settings.
- Press "Esc" to return to the Job screen.

Fig. 24

1.2 Resetting Counter Values

Menu item 1.2 "Reset counter" is for deleting individual or all counter values of the active job.

- Starting from the Job screen, press "Esc" to go to "Main menu/Input". Then, press "OK".
- Press ▼ to select "Reset counter". Press "OK".

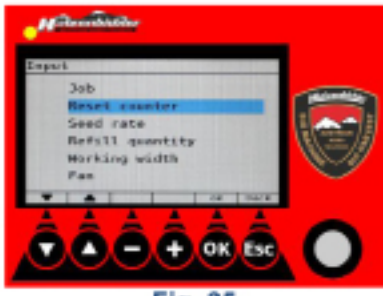


Fig. 25

- Press ▲ or ▼ to select the desired function.
- Press "OK" to execute this function.
- Once the function has been executed, the computer returns "Deleted".
- Press "Esc" three times to return to the Job screen.

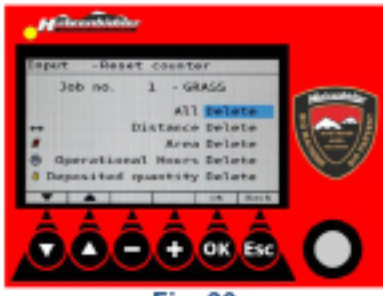


Fig. 26

1.3 Setting the Seed Rate

Menu item 1.3 "Seed rate" is for setting the seed rate value of the active job.

- Starting from the Job screen, press "Esc" to go to "Main menu/Input". Then, press "OK".
- Press ▼ twice to select "Seed rate".

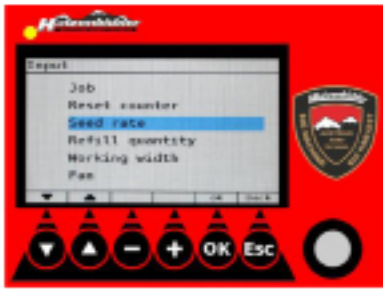


Fig. 27

- Press "+" or "-" or turn the DigiPot to enter the seed rate [kg/ha].
- Press "OK" to confirm.
  On the next screen, minimum and maximum driving speed values are displayed for your information.
- Press "OK" to return to the Job screen.

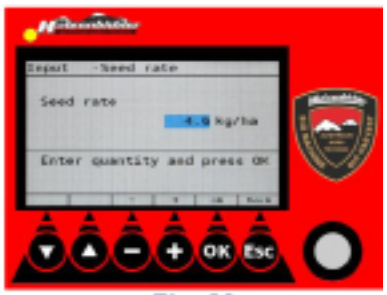


Fig. 28

1.4 Setting the Refill Quantity

Menu item 1.4 "Refill quantity" is for setting the quantity that has been filled into the tank. Based on this information, the computer is able to calculate the remaining quantity.

- Starting from the Job screen, press "Esc" to go to "Main menu/Input". Then, press "OK".
- Press ▼ three times to select "Refill quantity".
- Press "OK".

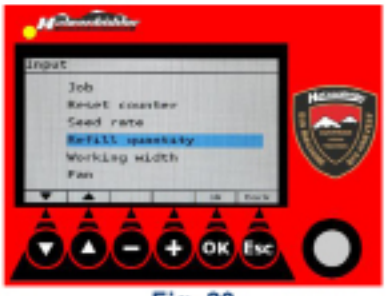


Fig. 29

- Press "+" or "-" or turn the DigiPot to enter the refill quantity [kg].
- Press "OK" to confirm and to return to the menu.
- Press "Esc" twice to return to the Job screen.

Fig. 30

1.5 Setting the Working Width

Menu item 1.5 "Working width" is for setting the width of the machine on which your seed box is installed.

- Starting from the Job screen, press "Esc" to go to "Main menu/Input". Then, press "OK".
- Press ▼ four times to select "Working width".
- Press "OK".

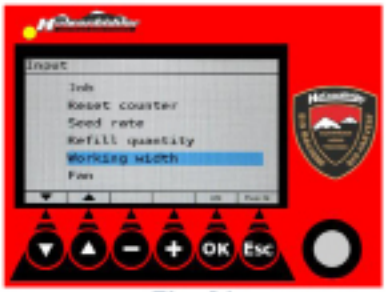


Fig. 31

- Press "+" or "-" or turn the DigiPot to enter the working width [m].
- Press "OK" to confirm and to return to the menu.
- Press "Esc" twice to return to the Job screen.

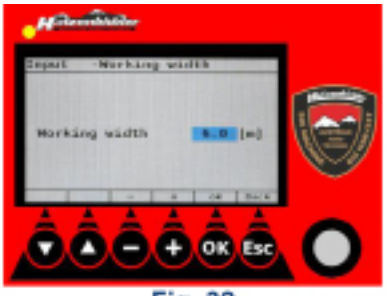


Fig. 32

1.6 Setting the Limits for Fan RPM Alarm

Menu item 1.6 "Fan" is for setting the minimum and maximum RPM values of the fan. If the fan of your seeder is equipped with an RPM sensor, you can set here the thresholds for RPM alarm.

- Starting from the Job screen, press "Esc" to go to "Main menu/Input". Then, press "OK".
- Press ▲ to select "Fan".
- Press "OK".

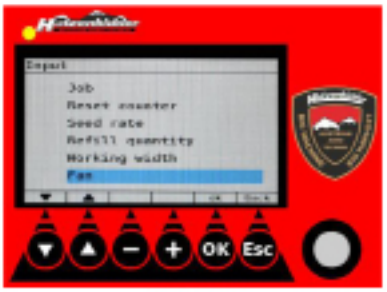
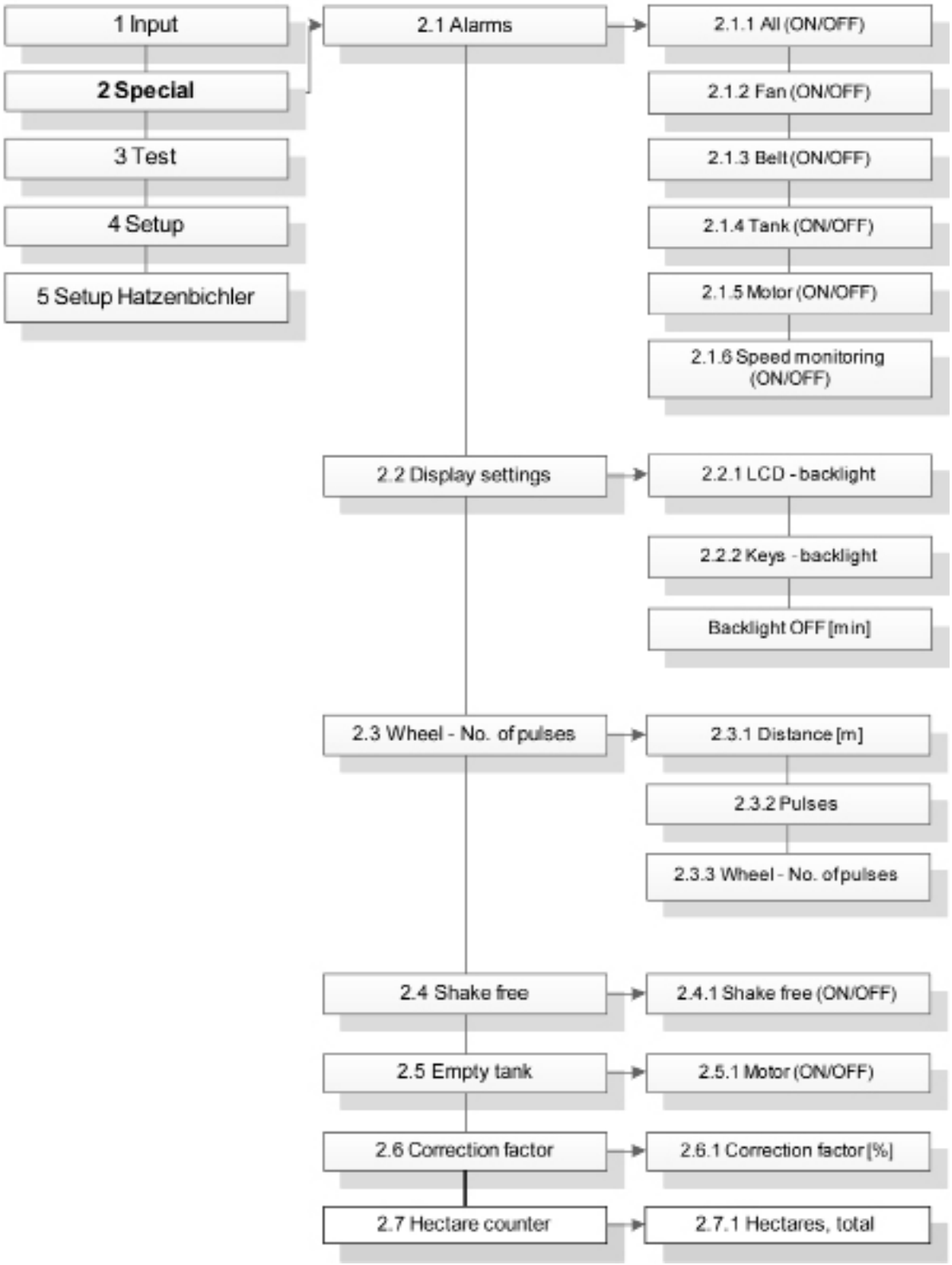


Fig. 33

- Press "+" or "-" or turn the DigiPot to enter the minimum RPM threshold. Press "OK".
- Press "+" or "-" or turn the DigiPot to enter the maximum RPM threshold.
- Press "Esc" three times to return to the Job screen.

Fig. 34

2 Special


1 Input
2 Special
3 Test
4 Setup
5 Setup Hatzenbichler
2.1 Alarms
2.1.1 All (ON/OFF)
2.1.2 Fan (ON/OFF)
2.1.3 Belt (ON/OFF)
2.1.4 Tank (ON/OFF)
2.1.5 Motor (ON/OFF)
2.1.6 Speed monitoring (ON/OFF)
2.2 Display settings
2.2.1 LCD - backlight
2.2.2 Keys - backlight
Backlight OFF [min]
2.3 Wheel - No. of pulses
2.3.1 Distance [m]
2.3.2 Pulses
2.3.3 Wheel - No. of pulses
2.4 Shake free
2.4.1 Shake free (ON/OFF)
2.5 Empty tank
2.5.1 Motor (ON/OFF)
2.6 Correction factor
2.6.1 Correction factor [%]
2.7 Hectare counter
2.7.1 Hectares, total

2.1 Alarms

Menu item 2.1 "Alarms" is for enabling or disabling acoustic (buzzer) and visual (display) alarms for components/functions of the seeder, such as fan, belt, tank, motor, speed monitoring.
You can enable/disable acoustic and visual alarms as a whole or for each component/function individually. In case you need a visual alarm only, you can disable the buzzer separately. If you disable an alarm, the buzzer is disabled automatically.

- Starting from the Job menu press "Esc" to go to the Main menu.

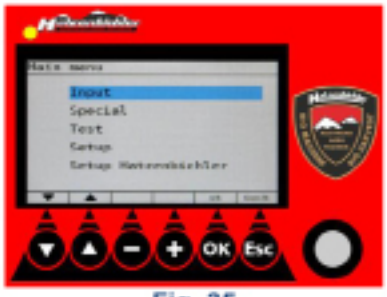


Fig. 35

- Press ▼ to select "Special", then press "OK" twice to go to "Alarms".

Fig. 36

- Press ▲ or ▼ to select the alarm you wish to enable or disable.
- Press "+" or "-" to toggle between ON and OFF.
- Press "Esc" to return to the menu.

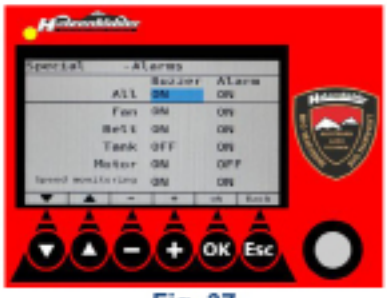


Fig. 37

2.2 Display Settings

Menu item 2.2 "Display settings" allows you to customize the backlight settings of the monitor screen and the keys. You can also set the timer to switch the backlight automatically off.

- Navigate to menu item "Display settings".
- Press "OK" to enter the menu and customize the backlight settings.

Fig. 38

- Press ▲ or ▼ to select the setting you wish to change.
- Press "+" or "-" change the corresponding value. You can keep the keys pressed to keep increasing/decreasing the value.
- Press "Esc" to go back.

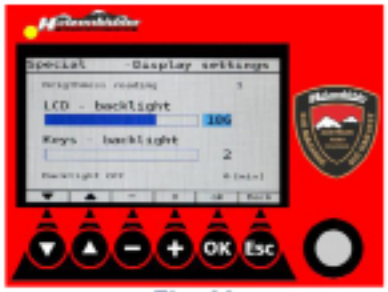


Fig. 39

2.3 Wheel - Pulses per Revolution

Menu item 2.3 "Wheel – no. of pulses" is for calibrating the sensor wheel. Here you can enter how many pulses you get when you travel a distance of 100 m. The factory setting is 4.75. You only have to change this setting if you don't use the original sensor wheel by Hatzenbichler.
Preparatory work: Mark a distance of exactly 100 meters.

- Navigate to menu item "Wheel – no. of pulses".
- Press "OK" to enter into the menu.

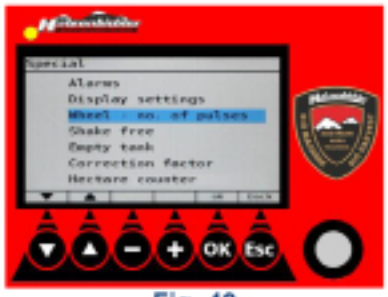


Fig. 40

- Press "OK" to start the calibration.

Fig. 41

- Travel the distance of 100 m.

Fig. 42

- Press "OK" to confirm the new value.
- If you don't want to save the new value, press (Reset) and start again or press "Esc" to go back to the Job screen..

Fig. 43

2.4 Shake Free Mode

Menu item 2.4 "Shake free" is for releasing the metering roller in case it has stalled. If this function is activated, the motor rotates for a short time in clockwise and counter-clockwise direction to remove the object blocking the roller.

- Navigate to menu item "Shake free".
- Press "OK" to enter into the menu.

Fig. 44

- Press "OK" to activate this function.
- Once the object has been removed, press "OK" to stop this function.
- Press "Esc" to exit this menu item.

Fig. 45

2.5 Emptying the Hopper

Menu item 2.5 "Empty tank" is for discharging the hopper, for example if you wish to clean it.

- Navigate to menu item "Empty tank".
- Press "OK" to enter into the menu.

Fig. 46

- The "OK" key toggles between motor OFF and ON.
- Press "OK" to activate this function
- Once the tank is empty, press "OK" to switch the motor off.
- "Esc" to exit this menu item.

Fig. 47

2.6 Correction Factor

Menu item 2.6 "Correction factor" is for entering a correction factor to the seed rate. This factor must be calculated by the user considering various factors, such as grain size of the seed. The value showing the actually deposited quantity is not affected by the correction factor.

- Navigate to menu item "Correction factor".
- Press "OK" to enter into the menu.

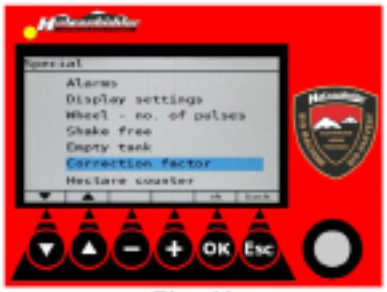


Fig. 48

- Press "OK" to enter into the menu.
- Enter the correction factor in % by pressing "+" or "-" or by turning the DigiPot.
- Press "OK" to confirm the value entered.
- Press "Esc" to exit this menu item.

Fig. 49

2.7 Hectare Counter

Menu item 2.7 "Hectare counter" displays the total amount of area cultivated (in hectares).

- Navigate to menu item "Hectare counter".
- Press "OK" to enter into the menu.

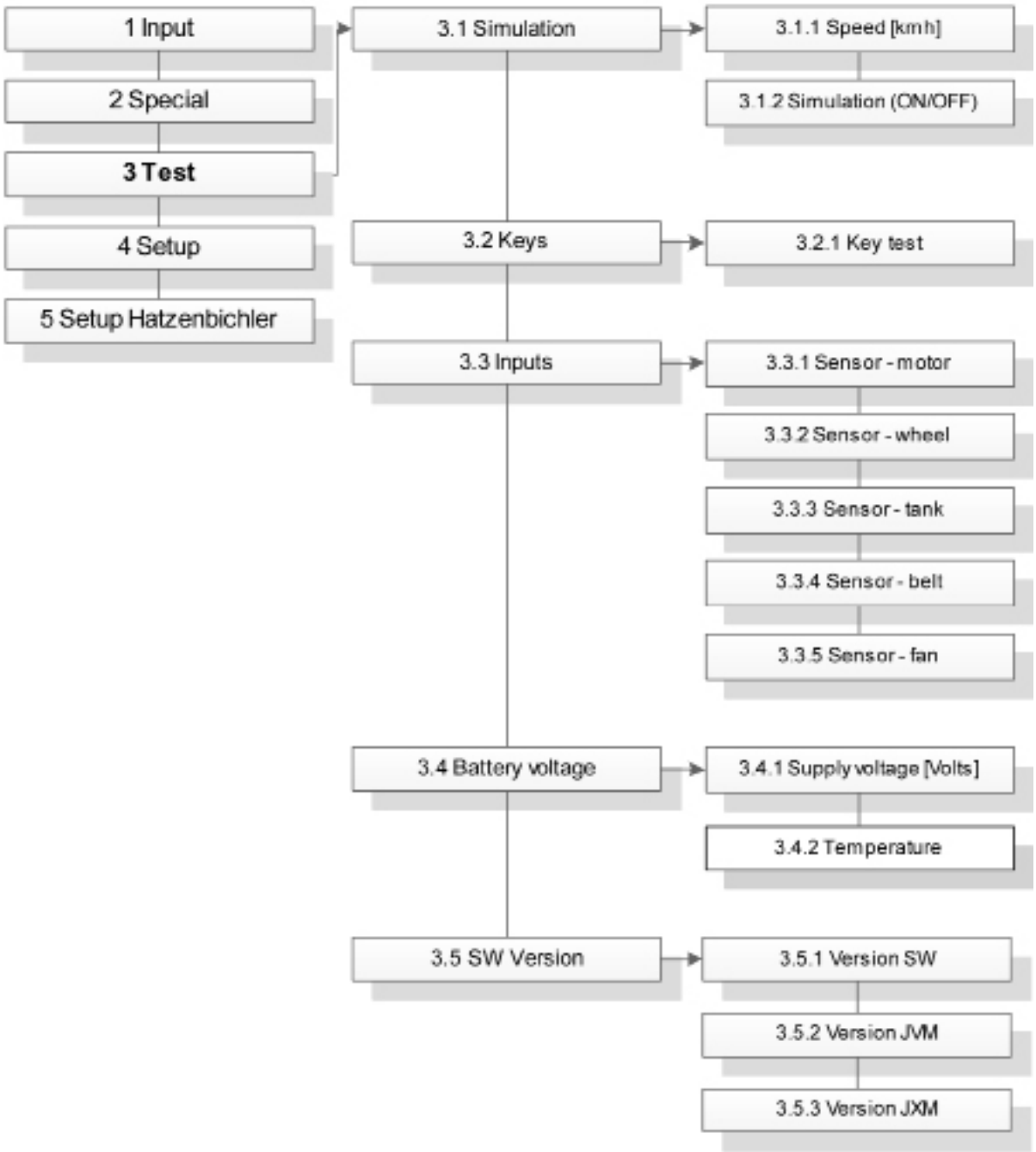
Fig. 50

- The total area cultivated in hectares is displayed.

Fig. 51

- To reset this value press the keys ▼, "-" and "OK" simultaneously.

3 Test


1 Input
2 Special
3 Test
4 Setup
5 Setup Hatzenbichler
3.1 Simulation
3.1.1 Speed [km/h]
3.1.2 Simulation (ON/OFF)
3.2 Keys
3.2.1 Key test
3.3 Inputs
3.3.1 Sensor - motor
3.3.2 Sensor - wheel
3.3.3 Sensor - tank
3.3.4 Sensor - belt
3.3.5 Sensor - fan
3.4 Battery voltage
3.4.1 Supply voltage [Volts]
3.4.2 Temperature
3.5 SW Version
3.5.1 Version SW
3.5.2 Version JVM
3.5.3 Version JXM

3.1 Simulation

Menu item 3.1 "Simulation" is for carrying out tests. Motor and metering roller are operated independently of the machine. To be able to use this feature complete the following steps first:

- Set the working width
- Create a job
- Calibrate the seeder

- Navigate to menu item "Simulation".
- Press "OK" to enter into the menu.

Fig. 52

- Set speed by pressing "+" or "-" or by turning the DigiPot.
- Press "OK" to toggle between simulation "OFF" and "ON".
- Press "Esc" to return to the Job screen

Fig. 53

- On the Job screen "TEST" is displayed to indicate that the test mode has been activated.
- Press "OK" [AUTO] to start the simulation.
- To stop the simulation navigate back to menu item "Simulation" and press "OK".
- Press "Esc" to return to the Job screen.

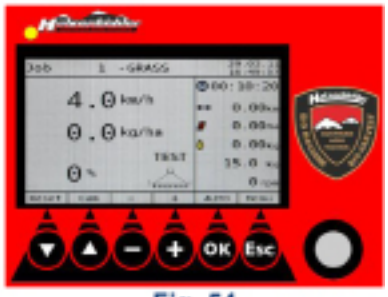


Fig. 54

3.2 Keys

Menu item 3.2 "Keys" allows you to check the keys for proper functioning.

- Navigate to menu item "Keys".
- Press "OK" to enter into the menu.

Fig. 55

- On the screen "Test – Keys" the state of the six keys is displayed.
- Press any key to test it for proper functioning.
- As long as you press the key, "Pressed" is displayed and a beep comes from the loudspeaker.
- Press "Esc" to exit this menu item.

Fig. 56

3.3 Input

Menu item 3.3 "Inputs" allows you to check the sensors for proper functioning.

- Navigate to menu item "Inputs".
- Press "OK" to enter into the menu.

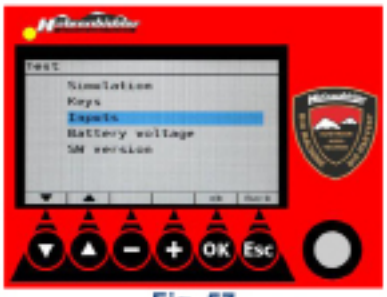


Fig. 57

- The screen "Test – Inputs" shows the state of the different sensor inputs.
  The sensors are by default negative switching, i.e. "0" means "active". If no sensor is installed, "1" is displayed (or vice versa if the sensor is + switching).
  You can check the sensor for proper functioning if you turn the wheel, cover up the filling level sensor or turn the metering roller.
- Press "Esc" to exit this menu item.

Fig. 58

3.4 Battery voltage

Menu item 3.4 "Battery voltage" allows you to check the supply voltage coming from the tractor.

The battery voltage should be between 10 … 15 volts. If the voltage is below 10 V DC, check the tractor battery. This menu item lets you also check the device temperature.

- Navigate to menu item "Battery voltage".
- Press "OK" to enter into the menu.

Fig. 59

- Check the supply voltage and the device temperature.
- Press "Esc" three times to return to the Job screen.

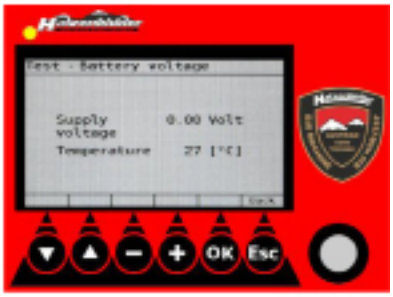


Fig. 60

3.5 Software Versions

Menu item 3.5 "SW version" shows the version numbers of the installed operating system and application software. You will need this information if you intend to update the software.

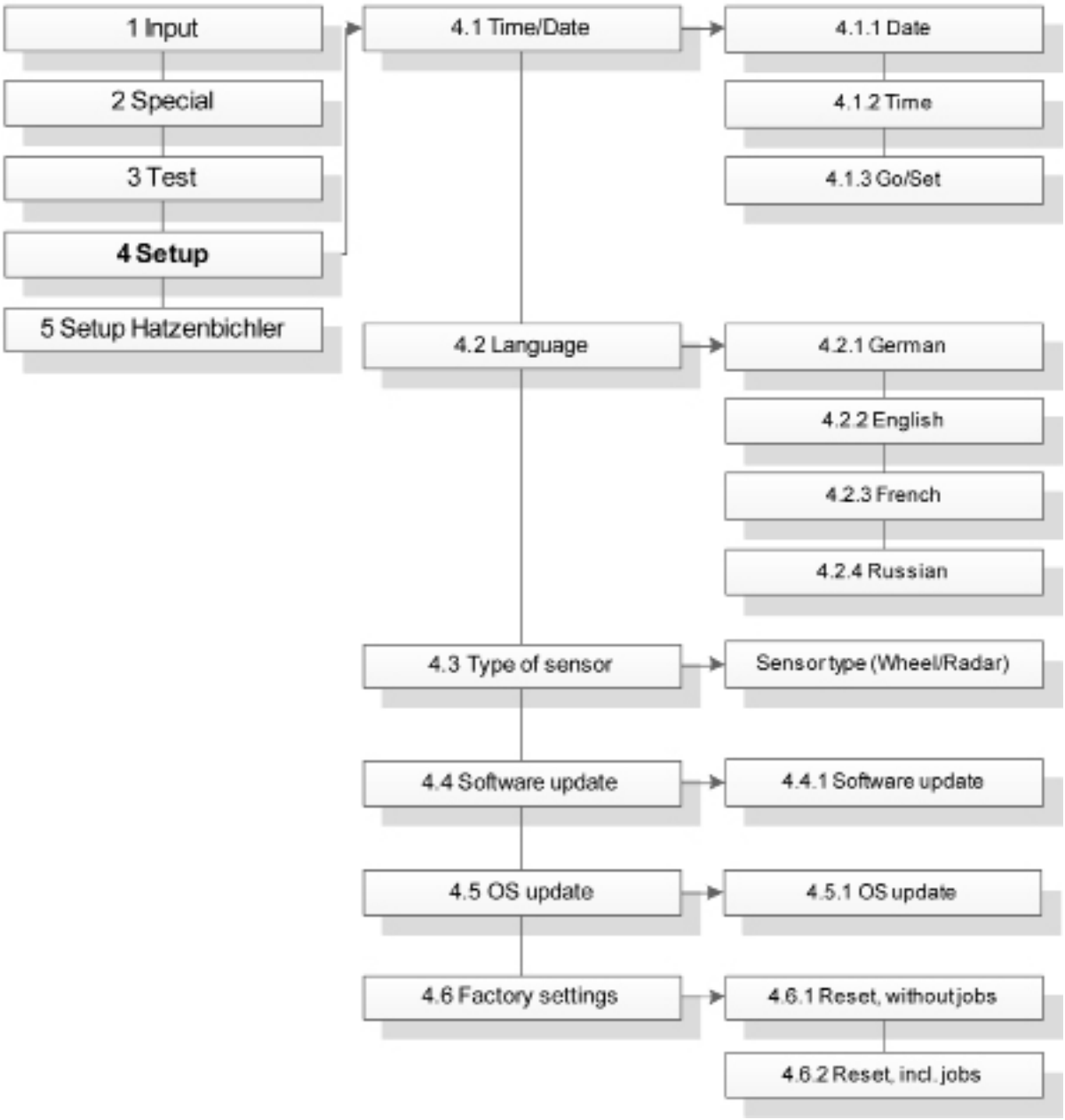
- Navigate to menu item "SW version".
- Press "OK" to enter into the menu.

Fig. 61

- Press "Esc" to exit this menu item.

Fig. 62

4 Setup


1 Input
2 Special
3 Test
4 Setup
5 Setup Hatzenbichler
4.1 Time/Date
4.1.1 Date
4.1.2 Time
4.1.3 Go/Set
4.2 Language
4.2.1 German
4.2.2 English
4.2.3 French
4.2.4 Russian
4.3 Type of sensor
Sensor type (Wheel/Radar)
4.4 Software update
4.4.1 Software update
4.5 OS update
4.5.1 OS update
4.6 Factory settings
4.6.1 Reset, without jobs
4.6.2 Reset, incl. jobs

4.1 Time/Date

Menu item 4.1 "Time/Date" is for setting the time and date. The date format is "DD.MM.YY".

- Navigate to menu item "Time/Date".
- Press "OK" to enter into the menu.

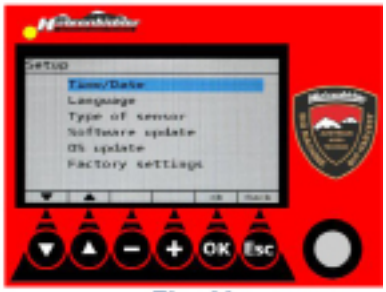


Fig. 63

- To set the time and date press "+" or "-" to switch from "Go" to "Set".

Fig. 64

- Press "OK".

Fig. 65

- Press "+" or "-" or turn the DigiPot to change the highlighted value.
- Press "OK" to confirm and jump to the next value.
  You can also navigate through the values by pressing the arrow keys ▲ or ▼.

Fig. 66

- Make all necessary adjustments and go to the field "Set".
- Press "+" or "-" to switch the value to "Go".
- Press "Esc" to exit this menu item.

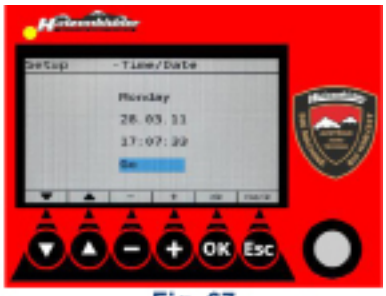


Fig. 67

4.2 Language

Menu item 4.2 "Language" is for selecting the language of the user interface.
The user may select one of the following languages:

- German
- Englisch
- French
- Russian

- Navigate to menu item "Language".
- Press "OK" to enter into the menu.

Fig. 68

- Press ▲ or ▼ to select the language.
- Press "OK" to confirm your selection.

Fig. 69

4.3 Type of Sensor

Menu item 4.3 "Type of sensor" lets you select the type of sensor used on the seed box, i.e. radar sensor or wheel-driven sensor.

- Navigate to menu item "Type of sensor".
- Press "OK" to enter into the menu.

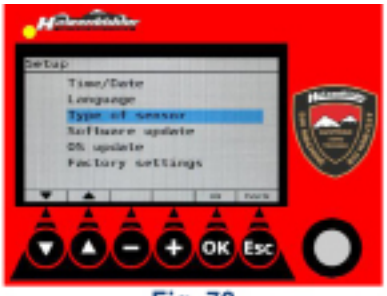


Fig. 70

- Press "+" or "-" to select the sensor type.
- Press "OK" to confirm your selection and to exit this menu item.

Fig. 71

4.4 Software Update

Menu item 4.4 "Software update" lets you update the application software of your computer.

- Navigate to menu item "Software update".
- Press "OK" to enter into this menu item.

Fig. 72

- Plug a USB stick into the USB port at the bottom of the on-board computer.


Fig. 73

- Follow the instructions on the screen.

Key assignment: ▼ = F1; "-" = F3.

Note:
Make sure that the USB stick is plugged in until the following message appears "Update successful, reboot system".

Make sure that during update process the power supply is not interrupted.

Fig. 74

4.5 OS Update

Menu item 4.5 "OS update" lets you update the operating system of your computer.

- Plug in the USB stick with the new OS.
- Navigate to menu item "OS update".
- Press "OK" to enter into this menu item.

Fig. 75

- The message "Ready" appears on the screen.
- Press "OK" to start OS download.
- The bar on the screen shows the progress of the download. Under it the progress is shown in percent format.
- When the message "Ready" appears on the screen, the update process has finished.
- Check the new version under 3.5. "SW version".

Fig. 76

Note:
Make sure that the USB stick is plugged in until the following message appears "Update successful, reboot system".

Make sure that during update process the power supply is not interrupted.

4.6 Factory Settings

Menu item 4.6 "Factory settings" lets you reset your computer to its as-delivered settings. You may choose between two options:

- Full reset including all job settings
- Reset without deleting the job settings

- Navigate to menu item "Factory settings".
- Press "OK" to enter into this menu item.

Fig. 77

- Press ▼ to select an option.
- Press "OK" to confirm your selection and to exit this menu and return to the Job screen.

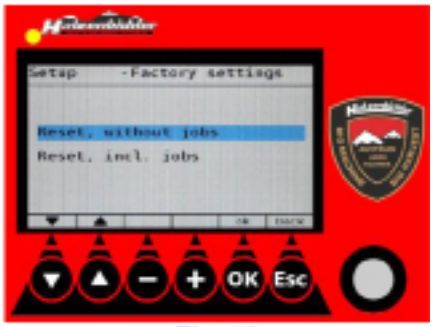


Fig. 78

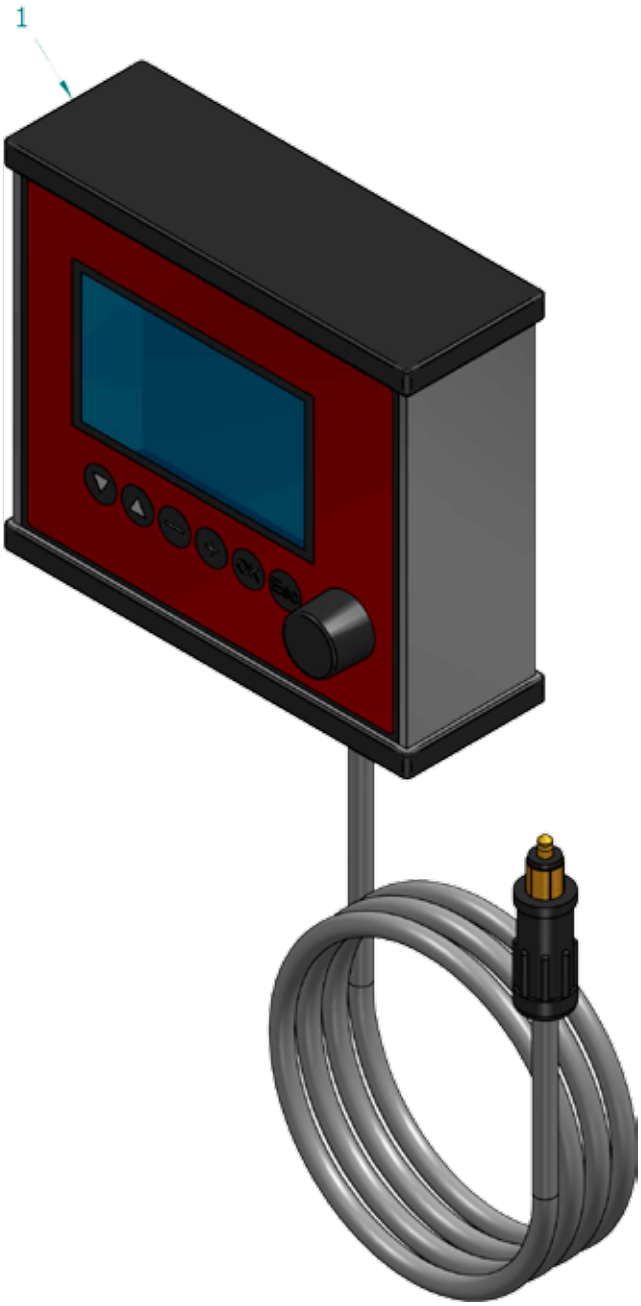
5 Setup Hatzenbichler

This menu is for service purposes only and is not accessible to the user.

6. SPARE PARTS „ON-BOARD COMPUTER“

ON-BOARD COMPUTER COMPLETE

item code: 1918030009



item code	item number	designation
1918030009	1	on-board computer

CABLE SET FOR AIR 16 WITH SENSORS

item code	item number	designation
1918010003	1	leveler sensor
1918030011	2	cable set for Air 16 without senosors
1918030007	3	belt sensor
	a	motor connection
	b	blower connection
	c	belt sensor connection
	d	radar connection
	e	leveler sensor connection
	f	computer connection

EXTENSION CABLE FOR AIR 16

item code	item number	designation
1918030010	1	extension cable for Air 16