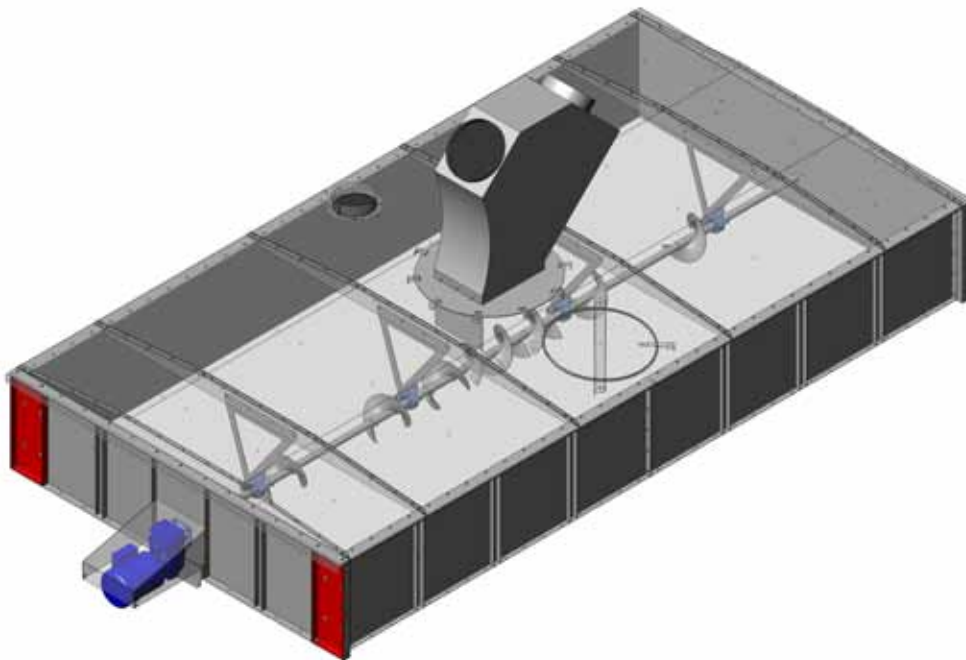


# Installation and Operating Instructions

## ANTTI GRAIN SPREADER FOR 3W AND 4W DRYER MACHINERY

408104 (en) 02-2022



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# Grain spreader

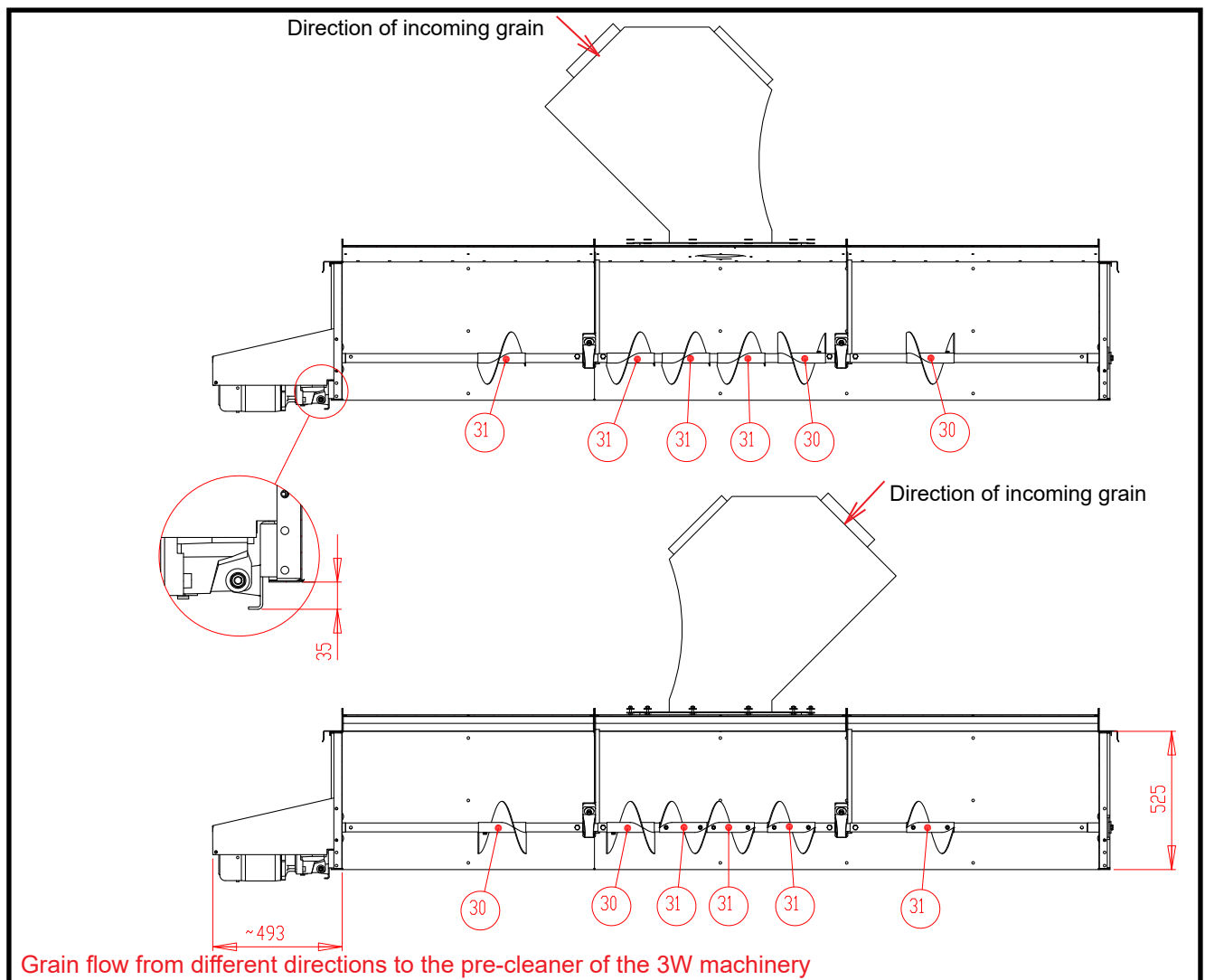
## Intended use of the grain spreader

This manual deals with the grain spreader intended for the 3w and the 4W dryer machinery. The volumetric efficiency of a wide machinery can be improved by means of the grain spreader.

The grain spreader comprises a low top tank with a through shaft fitted with short worm screws. While the grain spreader is running, the motor rotates at a steady speed. The worm screws transfer the grain to heaps from which the next screw scoops a portion. This enables an excellent volumetric efficiency to be achieved.

Keep this manual in order to ensure quick assistance in case of malfunction and when ordering spare parts. Refer to the spare parts list for denominations of the parts.

The grain spreader can be assembled in two different ways. The direction of the motor and the direction of the grain flow to the pre-cleaner affect the set-up. See the drawings "Grain flow from different directions to the pre-cleaner of the 3W machinery" and "Grain flow from different directions to the pre-cleaner of the 4W machinery". The location of the worm screws in terms of handedness are illustrated in the pictures below; the direction of rotation will change depending on the configuration.



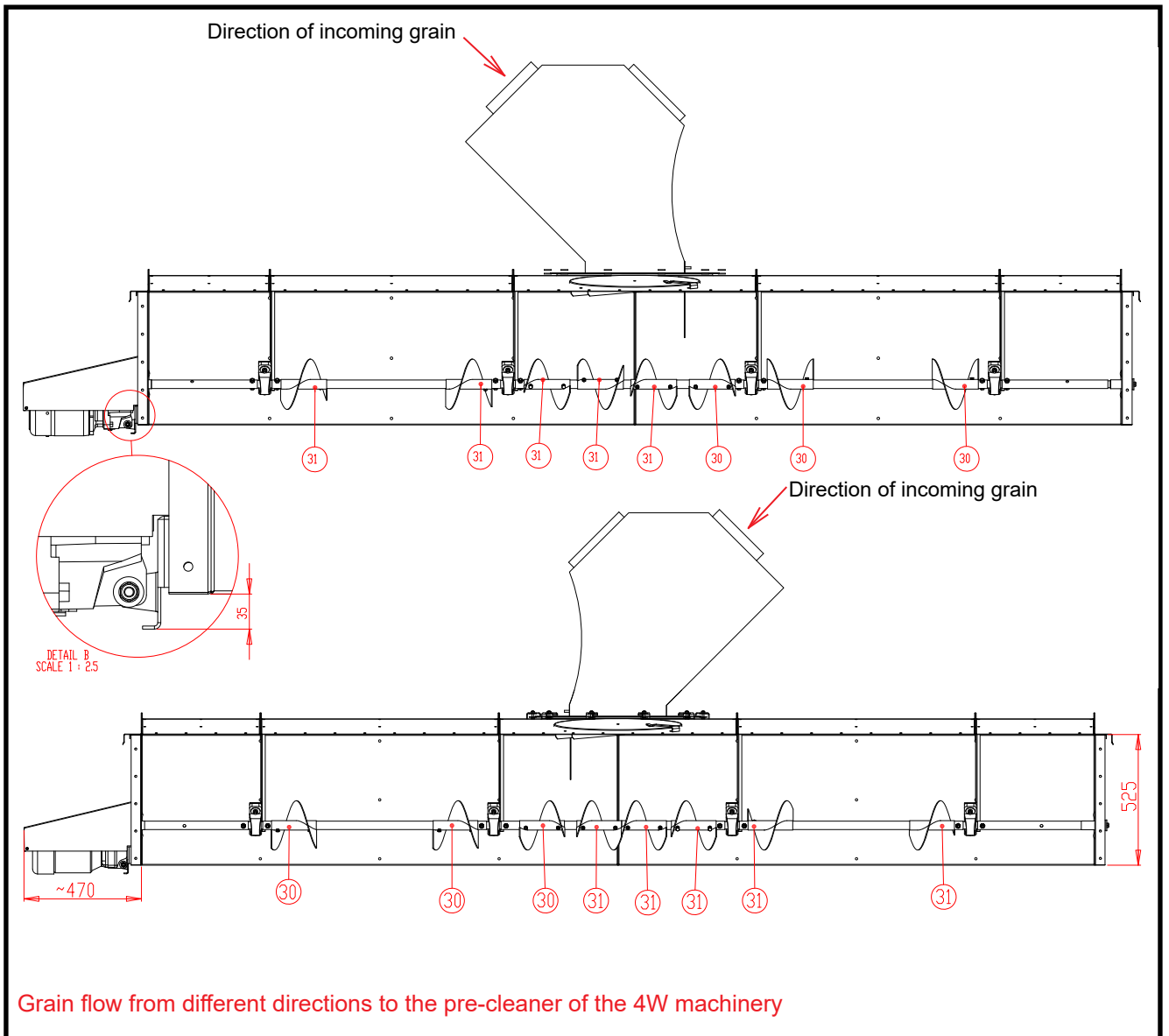


## Grain spreader

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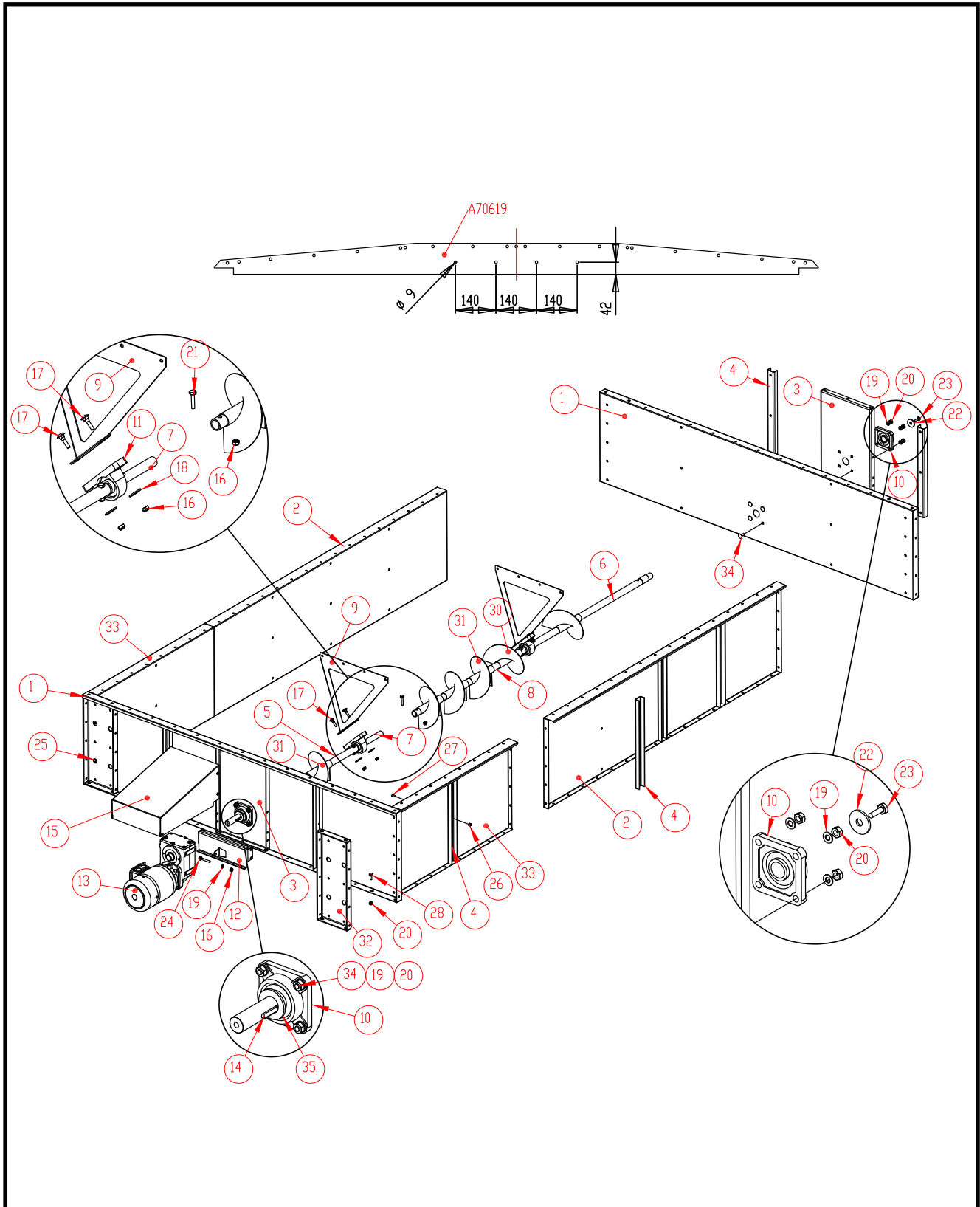
# Grain spreader





# Grain spreader

## Spare parts 3W





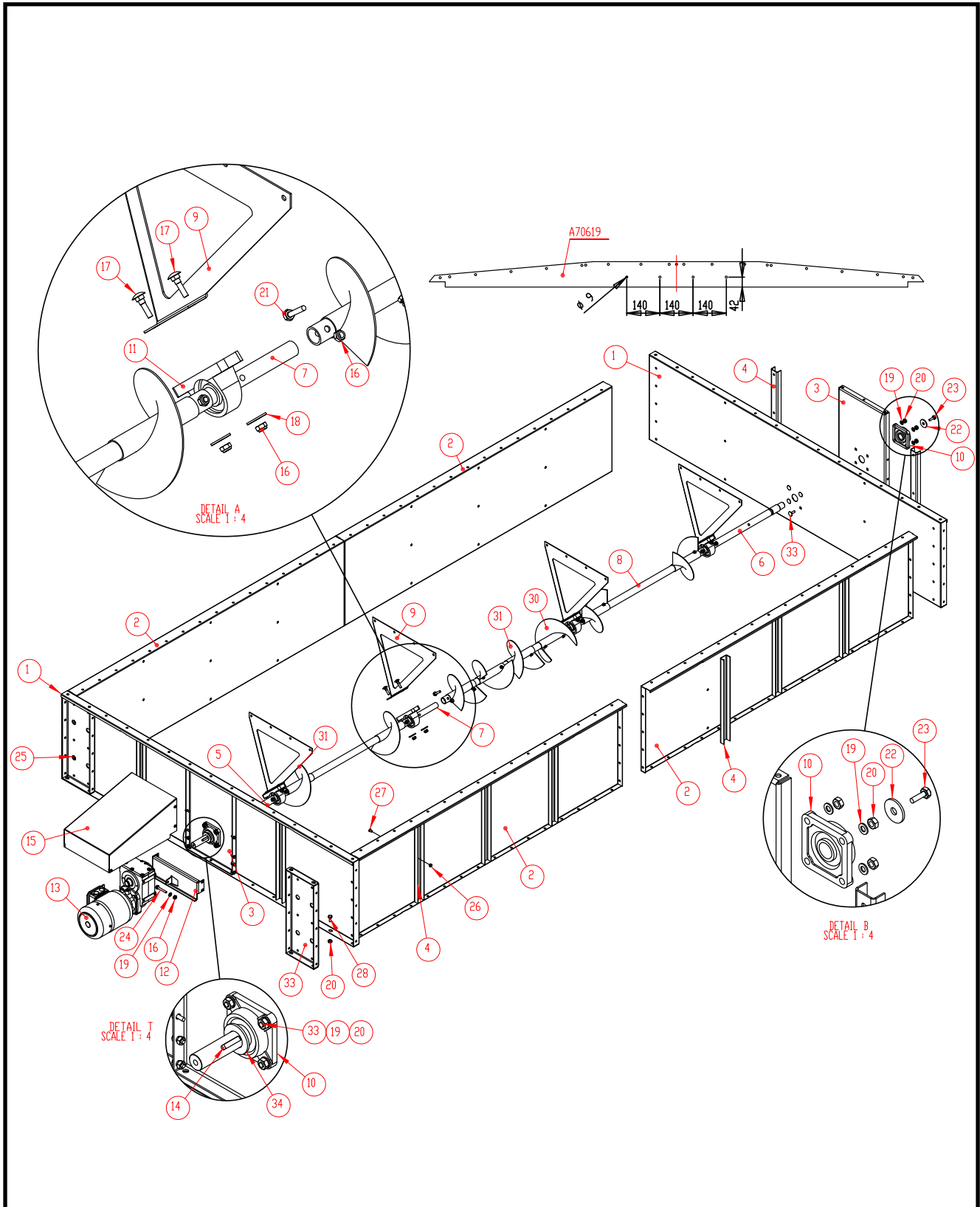
## Grain spreader

Part	Item	Denomination	Pcs.	Weight
1	A73302	DRYER GRAIN SPREAD SIDE-PLATE 400X2088 M11	2	15,7
2	A73303	DRYER GRAIN SPREAD END-PLATE 400X1916 M11	2	14,37
3	A73298	DRYER GRAIN SPREAD BEARING SUPP 3X335X520 M11	2	5,02
4	A73304	DRYER GRAIN SPREAD VERTICAL SUPP L=520 M11	12	1,12
5	A76450	DRYER GRAIN SPREAD TUB SHAFT MOTOR 3W L=1058 M1	1	3,88
6	A76449	DRYER GRAIN SPREAD TUB SHAFT FREE 3W L=987 M19	1	3,6
7	A73293	GRAIN SPREAD TUBULAR SHAFT D35	2	1,65
8	A73294	DRYER GRAIN SPREAD TUB SHAFT D33,7 L=900 M11	1	2,19
9	A73292	DRYER GRAIN SPREAD SCREW SUPP PL3 M11	2	1,72
10	313087	BEARING FLANGE UCF 206 CAST HOUS	2	1,5
11	313040	BEARING UPRIGHT UCF 206 CAST HOUS	2	1,86
12	A73301	DRYER GRAIN SPREAD TORQUE ARM 73X328 1,5 KW M11	1	1,15
13	304316	MOTOR TV 1,5 KW 220R IE3 SK 0282.1 AXZBG-90L/4 POSIT M3/3/III	1	25
14	A70439	KEY 7x8 - 35	1	0,02
15	A73386	DRYER GRAIN SPREAD MOTOR RAIN COVER ASSY	1	3,79
16	110800	NUT NYLOC ZN M10 DIN985	9	0
17	107915	LOCK SCREW ZN M10X40 DIN603 8.8	4	0,03
18	111566	WASHER ZN FENDER M 12 DIN9021 D13/37	4	0,02
19	111550	WASHER ZN M10 DIN 125	9	0
20	110560	NUT M10 DIN 934	16	0,01
21	102260	HEX BOLT ZN 10X45 DIM933	4	0,01
22	111561	WASHER ZN FENDER M12 14/44X4 DIN440R ZN	1	0,04
23	102210	HEX BOLT ZN 10X25 DIN933	1	0,02
24	101903	HEX BOLT ZN 10X60 DIN 933	1	0,01
25	101810	HEX BOLT ZN 8X16 DIN933	144	0,01
26	110540	NUTI M8 DIN 934	172	0
27	104262	SOCK SCREW BALL-H -8X12AM ISO 7380	36	0,01
28	102210	HEX BOLT ZN 10X25 DIN933	8	0,02
29	115570	SEALING STRIP 4X10 MAPA	13	0,04
30	A73359	DRYER GRAIN SPREAD WORM BRACKET D198/D38 L=180 RIGHT	2	1,03
31	A73362	DRYER GRAIN SPREAD WORM BRACKET D198/D38 L=180 LEFT	4	1,03
32	A73406	DRYER GRAIN SPREAD SUPP LEG S=4 L=520 M11 <b>(OPTION)</b>	4	4,62
33	A75120	DRYER LOW END PLATE 525X958 M14	2	7,25
34	107916	LOCK SCREW ZN M10X30 DIN603 8.8	8	0,03
35	111585	WASHER M 30 DIN125 ZN	1	0,03



# Grain spreader

## Spare parts 4W







## Grain spreader

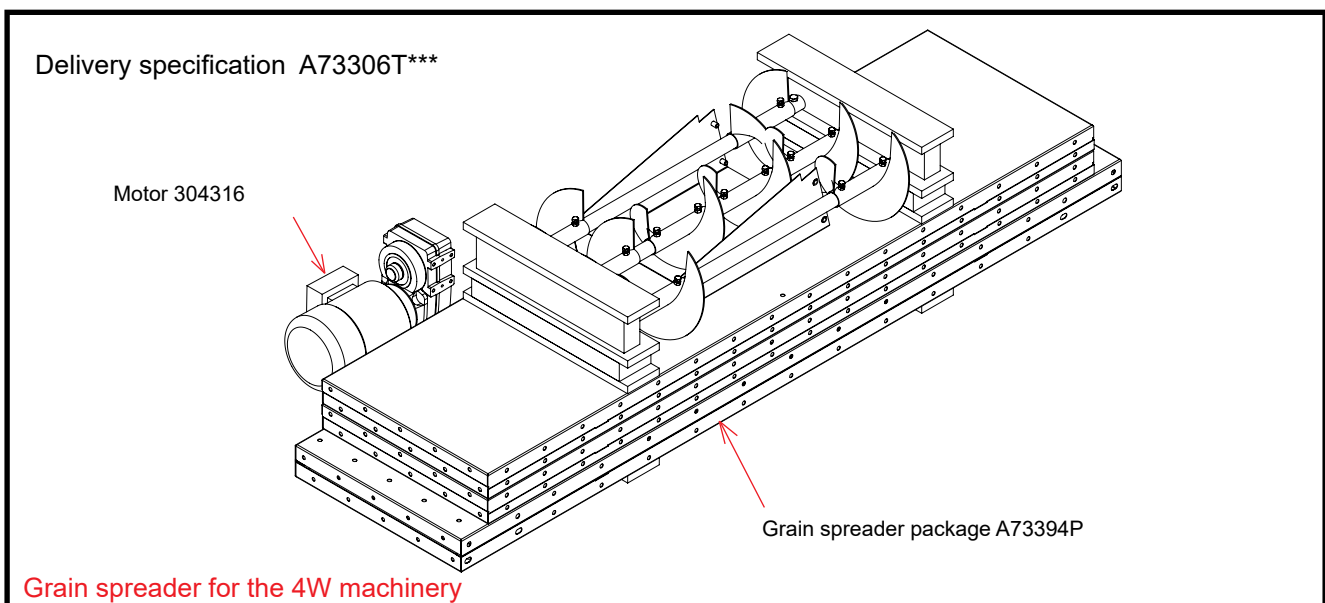
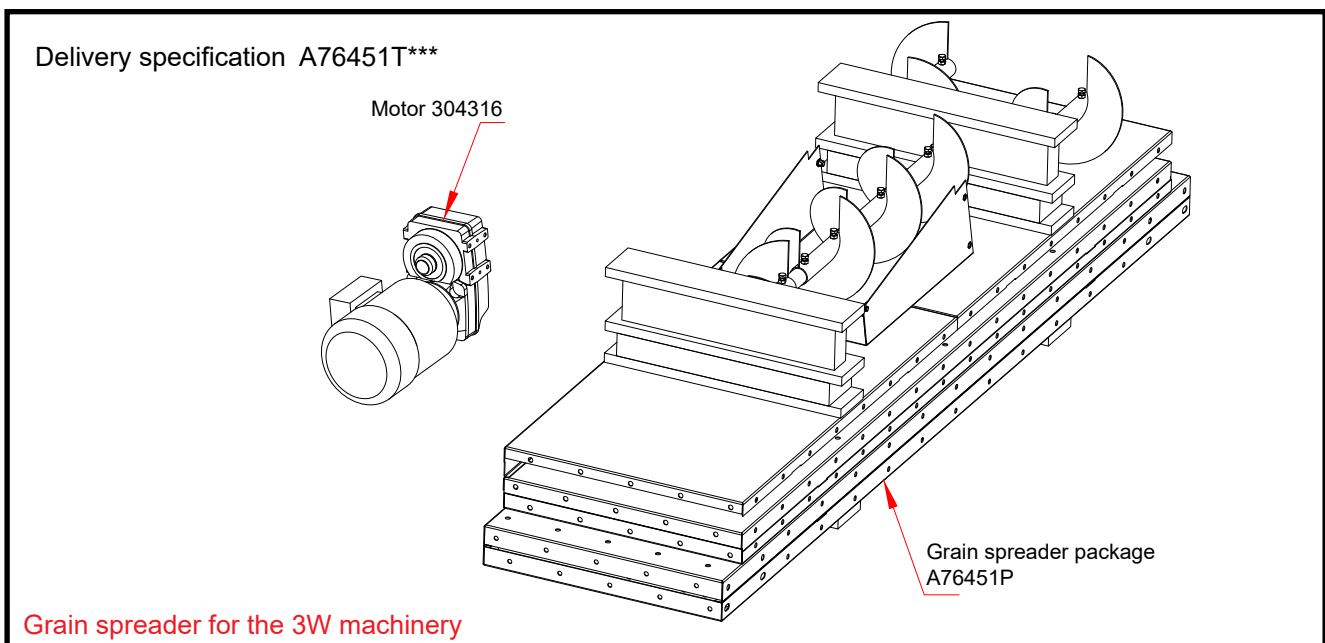
Part	Item	Denomination	Pcs.	Weight
1	A73302	DRYER GRAIN SPREAD SIDE-PLATE 525X2088 M11	2	15,7
2	A73303	DRYER GRAIN SPREAD END-PLATE 525X1916 M11	4	14,37
3	A73298	DRYER GRAIN SPREAD BEARING SUPP 3X335X520 M11	2	5,02
4	A73304	DRYER GRAIN SPREAD VERTICAL SUPP L=520 M11	16	1,12
5	A73299	DRYER GRAIN SPREAD TUB SHAFT MOTOR L=554 M11	1	2,7
6	A73300	DRYER GRAIN SPREAD TUB SHAFT FREE L=513 M11	1	2,45
7	A73293	GRAIN SPREAD TUBULAR SHAFT D35	4	1,65
8	A73294	DRYER GRAIN SPREAD TUB SHAFT D33,7 L=900 M11	3	2,19
9	A73292	DRYER GRAIN SPREAD SCREW SUPP PL3 M11	4	1,72
10	313087	BEARING FLANGE UCF 206 CAST HOUS	2	1,5
11	313040	BEARING UPRIGHT UCF 206 CAST HOUS	4	1,86
12	A73301	DRYER GRAIN SPREAD TORQUE ARM 73X328 1,5 KW M11	1	1,03
13	304316	MOTOR TV 1,5 KW 220R IE3 SK 0282.1 AXZBG-90L/4 POSIT M3/3/III	1	25
14	A70439	KEY 7x8 - 35	1	0,02
15	A73386	DRYER GRAIN SPREAD MOTOR RAIN COVER ASSY 324X482 M11	1	3,78
16	110800	NUT NYLOC ZN M10 DIN985	17	0
17	107915	LOCK SCREW ZN M10X40 DIN603 8.8	8	0,03
18	111566	WASHER ZN FENDER M 12 DIN9021 D13/37	8	0,02
19	111550	WASHER ZN M10 DIN 125	9	0
20	110560	NUT M10 DIN 934	16	0,01
21	102260	HEX BOLT ZN 10X45 DIM933	8	0,01
22	111561	WASHER ZN 14/45X4 DIN440R	1	0,04
23	102220	HEX BOLT ZN 10X30 DIN933	1	0,01
24	101903	HEX BOLT ZN 10X60 DIN 933	1	0,01
25	101810	HEX BOLT ZN 8X16 DIN933	176	0,01
26	110540	NUT M8 DIN 934	204	0
27	104262	SOCK SCREW BALL-H – 8X12AM ISO 7380	48	0,01
28	102210	HEX BOLT ZN 10X25 DIN933	8	0,02
29	115570	SEALING STRIP 4X10 MAPA	15	0,04
30	A73359	DRYER GRAIN SPREAD WORM BRACKET D198/D38 L=180 RIGHT	3	1,03
31	A73362	DRYER GRAIN SPREAD WORM BRACKET D198/D38 L=180 LEFT	5	1,03
32	A73406	DRYER GRAIN SPREAD SUPP LEG S=4 L=520 M11 (OPTION)	4	4,62
33	107916	LOCK SCREW ZN M10X30 DIN603 8.8	8	0,03
34	111585	WASHER M 30 DIN125 ZN	1	0,03



## Grain spreader

### PRESENTATION OF THE MACHINERY

The grain spreader is delivered in one package, excluding the motor. The worm screws are attached to the tubular shafts in their initial position. The fine-adjustment of the worm screws on the tubular shaft can be carried out steplessly. Each worm is fixed to the shaft using two M8 bolts.





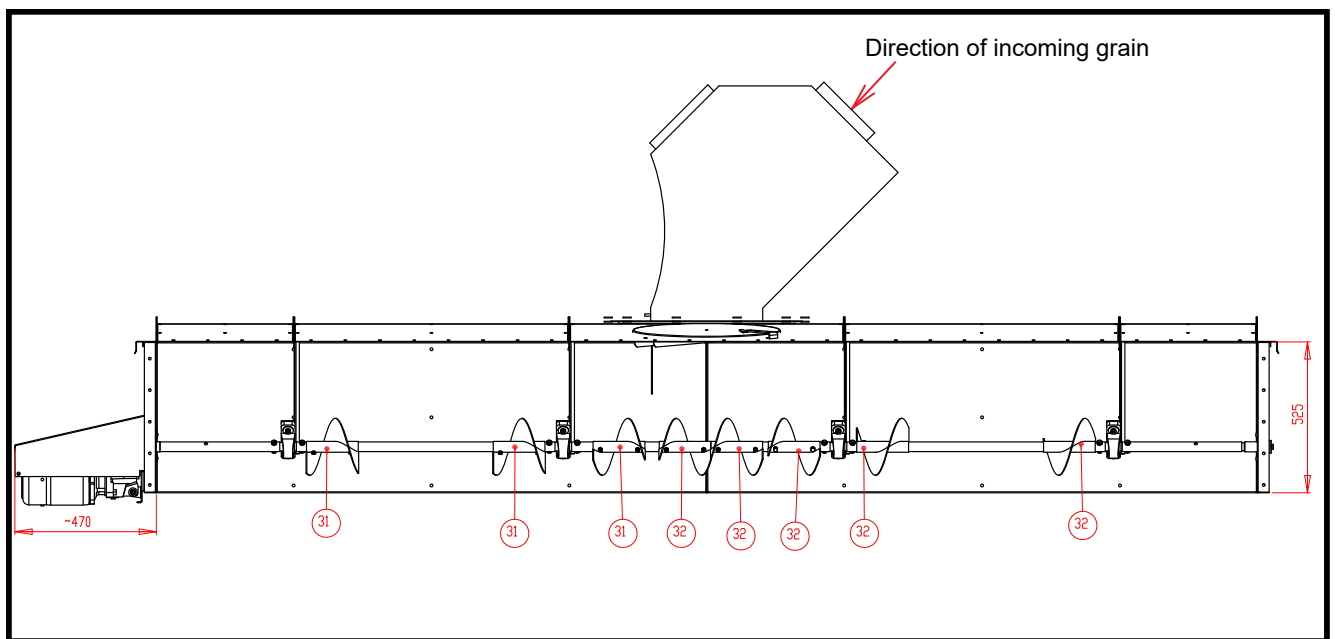
# Grain spreader

## Assembly

An example of the grain spreader assembly for the 4W machinery is presented in this manual. If you wish to mount the the pre-cleaner into the opposite position with respect to the motor of the spreader, turn the worm shafts around (see drawing: "Grain flow from different directions to the pre-cleaner of the 4W machinery").

How to adapt the example set-up, presented in this manual, to the 3W grain spreader assembly:

- When assembling the grain spreader on the 3W, the order of the work stages is the same as in this example.
- See the spare parts drawing for more detailed instructions for assembling the grain spreader on the 3W machinery. (Pages 6 and 7)
- See the drawing on page 3 for the positions of the worm screw units on the grain spreader assembly on the 3W.

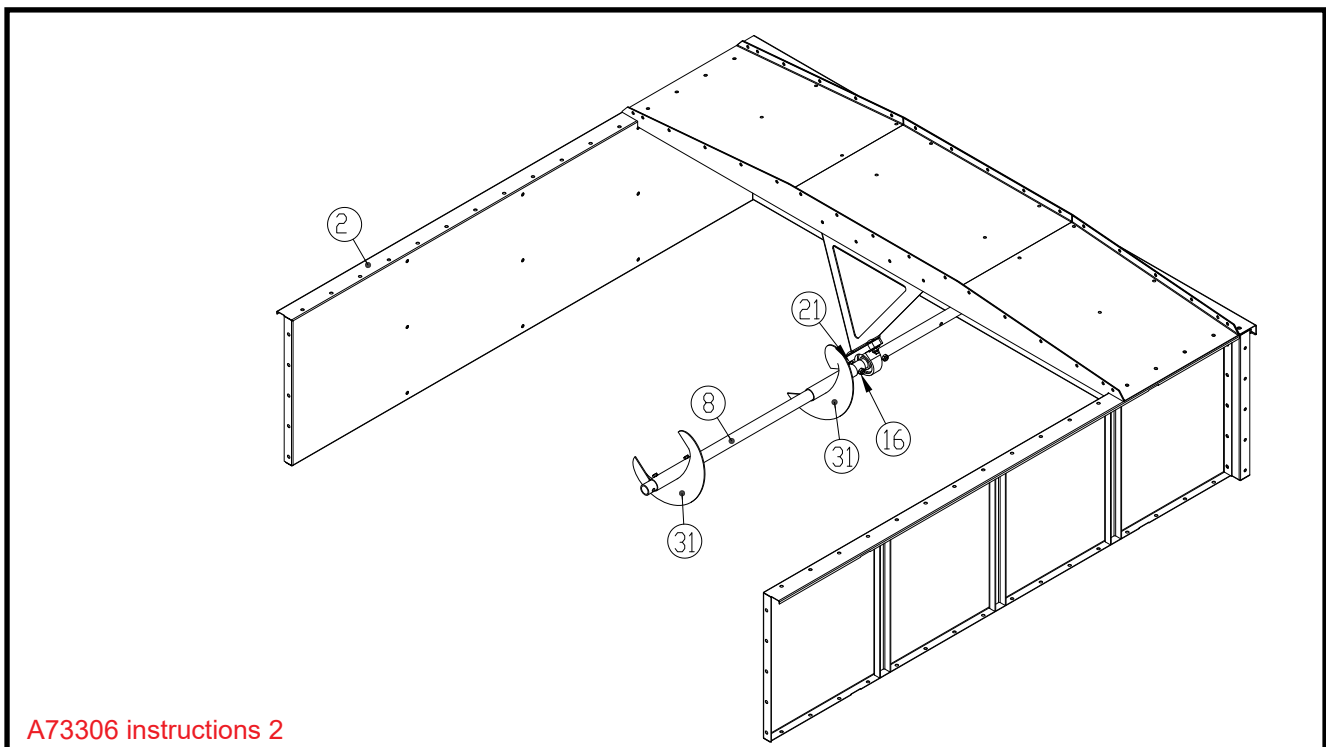
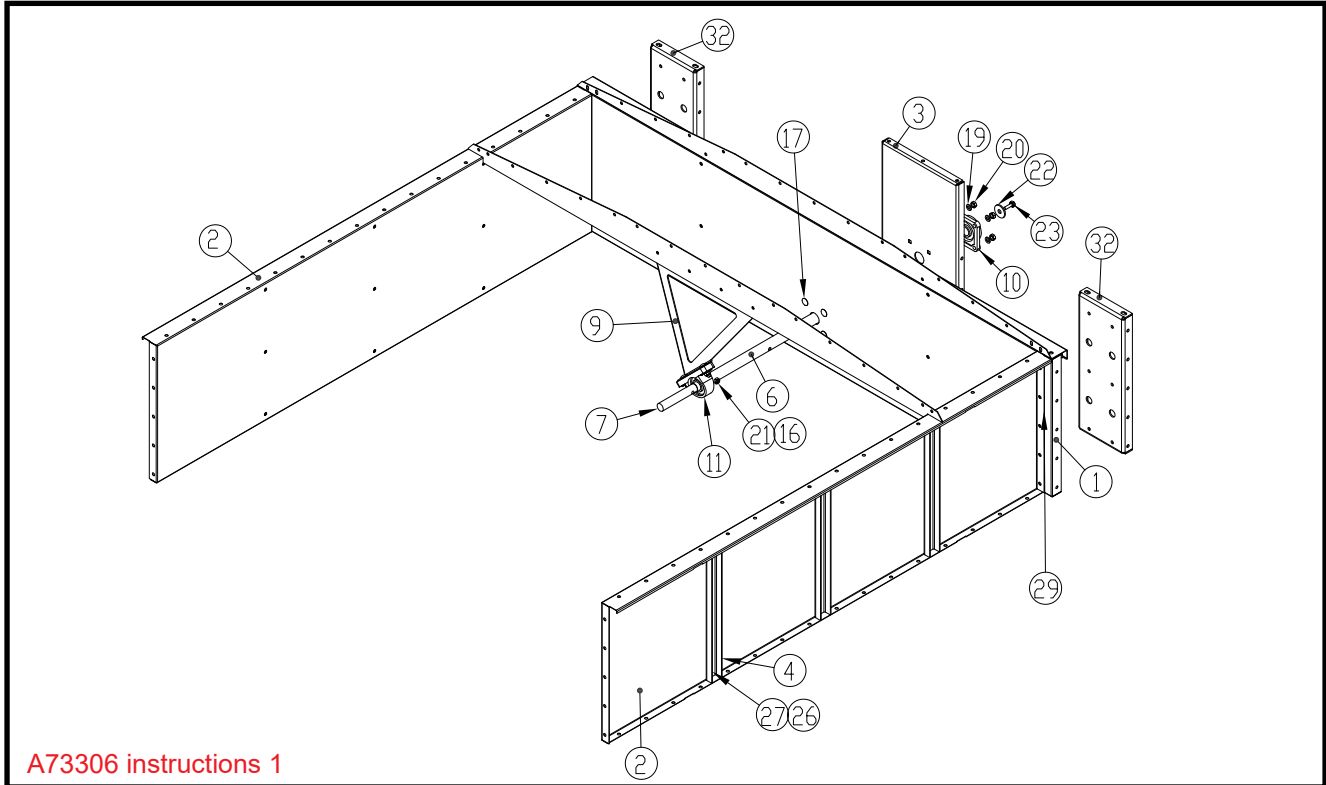




# Grain spreader

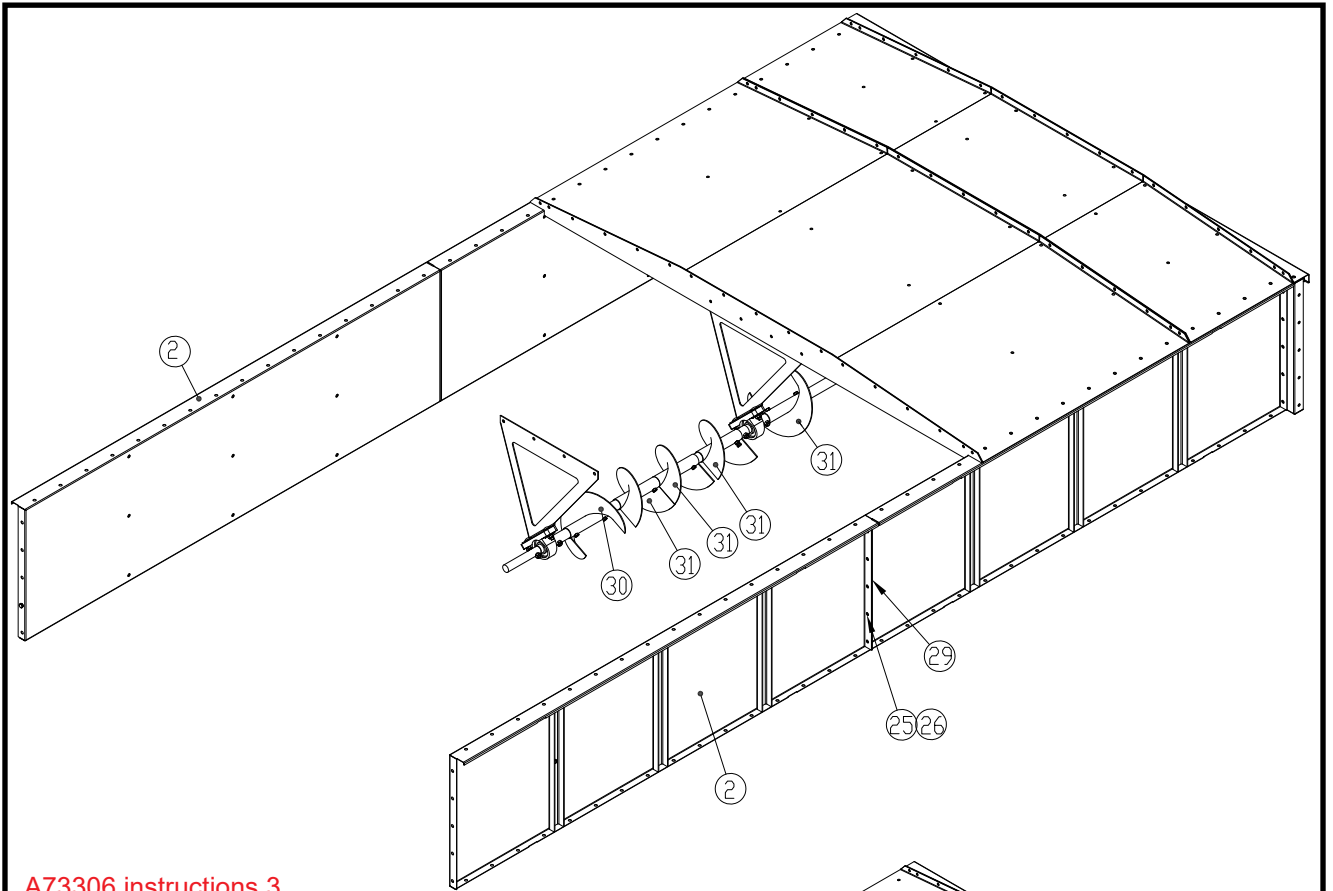
Start the set-up of the grain spreader by assembling the end-plates and the side-plates as well as the support legs (if there will be any). All joints shall be fitted with sealing strips. The assembly of the grain spreader's top deck shall proceed in the same pace with the assembly of the worm shaft as the worm shaft brackets will be supported on the deck. If the brackets on the deck lack holes, you can drill the holes in accordance with the dimensions presented in the spare parts drawing.

The steps of the assembly are presented in the illustrations below.

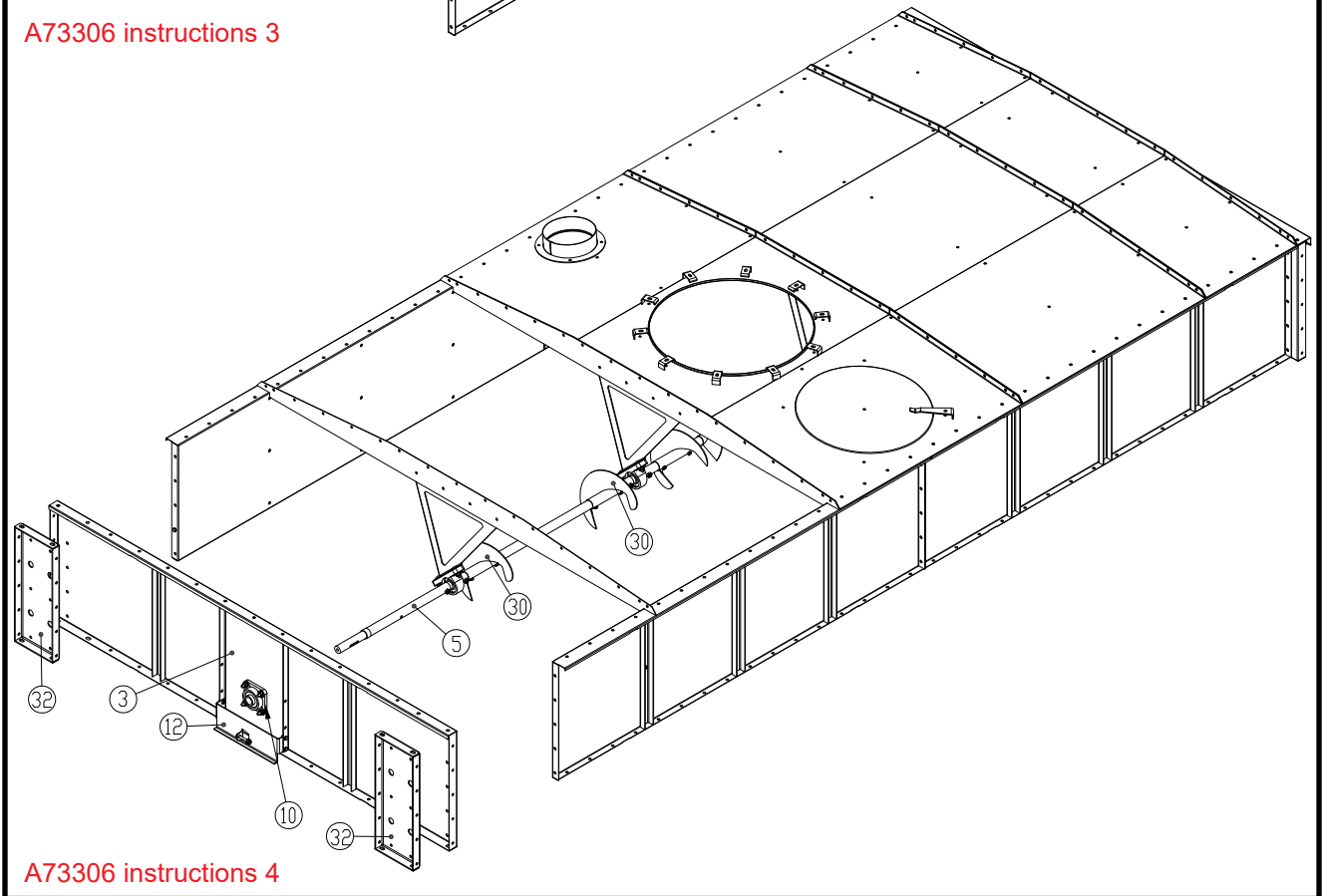




# Grain spreader



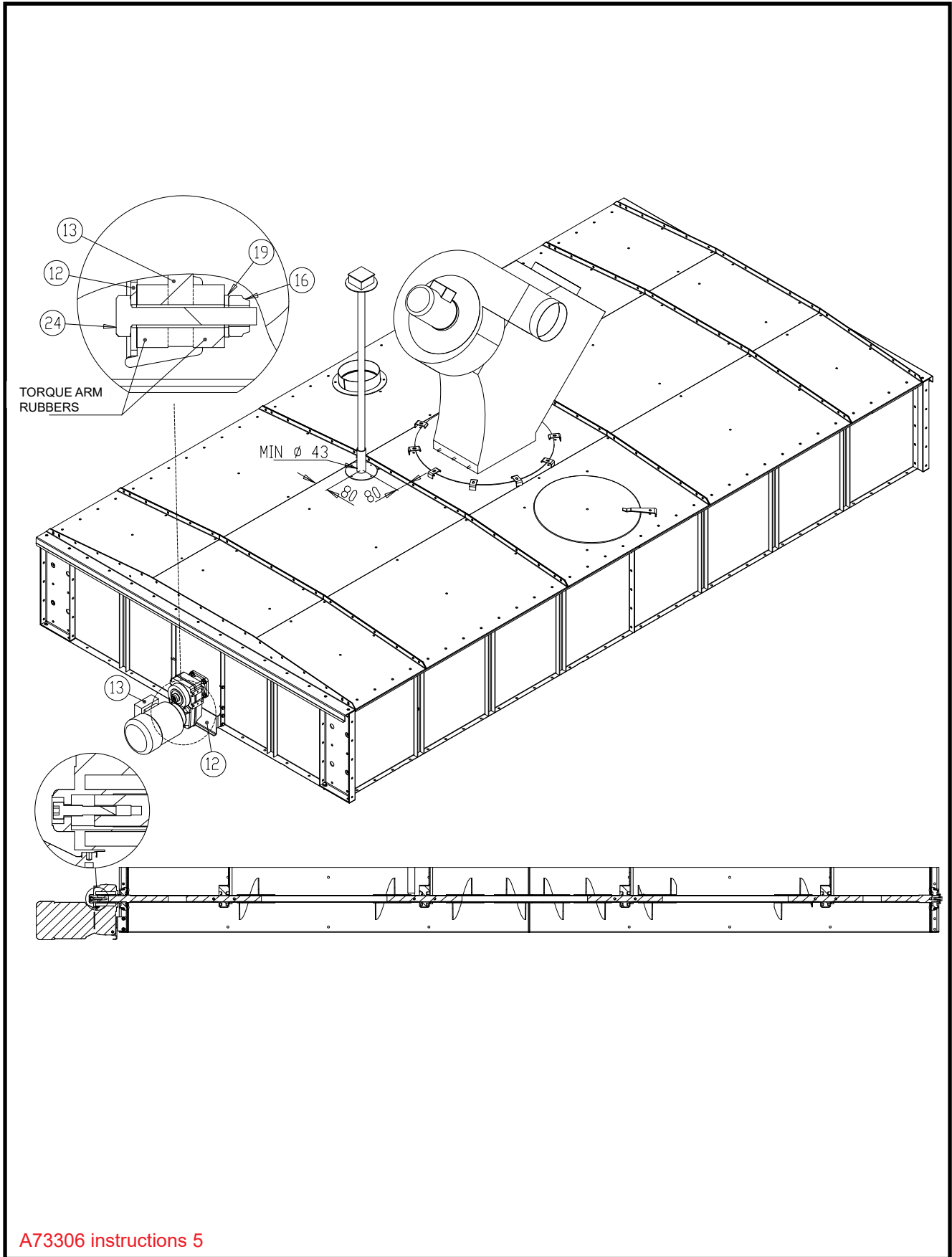
A73306 instructions 3



A73306 instructions 4



# Grain spreader



A73306 instructions 5



### Installing the level guard

(capacitive, adjustable )

A capacitive level guard with adjustable rod is included in the delivery of the dryer machinery.

The most suitable location for the guard is in the deck of the dryer, in the section next to the pre-cleaner, at a short distance from it (see drawing A73306 instructions 5).

We recommend installing the guard in a location where the grain jet does not hit the sensor directly, because then the sensor might transmit wrong data and wear, resulting from the friction caused by the grain flow.

The direction, from which the grain arrives to the dryer machinery, varies case-by-case. Therefore, the opening for the guard has not been made ready in the deck. You must make the opening yourself (at least  $\varnothing 43$ ). Place the sensor bracket with wing screw on top of the opening. Fix the bracket to the deck by the  $\varnothing 5$  mm holes using four self-tapping screws.

You must define the correct height for the capacitive sensor, because in practice, this height varies. Observe that the grain swells in the starting phase of drying. Therefore, you need to reserve some extra space at the ends of the grain spreader tank to which the worm screw will transfer the grain as its level rises. The initial setting of the sensor height is about at the centre-line of the spreader screw. As the grain surface in the top section rises, the grain heap starts spreading out, and then gets into contact with the sensor. The filling grade of the top sections must be observed during first times of operation, so that no overfilling can occur.

Fix the sensor in the correct height position using the wing screw. Connect the electric conductor to the sensor in such a manner, that you will be able to move the sensor in the vertical direction.

**The head of the sensor may also get dirty over time and start transmitting wrong data. Therefore, it is advisable to clean up the sensor head from time to time.**

## 1. Electric installation

Assign an authorised electrician to make the connections to the separate control centre of the grain spreader! The electrician shall issue a certificate of the installation in writing.

Note! Check the correct direction of rotation to ensure that the worm screws will not transfer the grain towards the centre!

The gear motor of the grain spreader must always be running while the grain dryer is in operation. In practice this means that, whenever the filling and circulation elevators are running, also the gear motor of the grain spreader must run.



### **SERVICING**

#### **Annual service**

- Greasing the bearings (6 pcs.)
- Check the nuts and bolts of the components for tightness as well the attachment of the motor.
- The gear motor is lubed-for-life and, therefore, maintenance-free.

#### **Service during the operation**

- Ensure that the grain dryer does not make any extra noise or motions. Tighten all nuts and bolts, as required.

### **GUARANTEE**

The guarantee period for the Antti grain spreader is one (1) operating season. The guarantee covers defects in material and workmanship. For the electric motors, the guarantee terms, issued by the respective manufacturer, apply. A prerequisite for validity of the guarantee is that the instructions issued by the manufacturer and the valid regulations have been followed during installation, use and service of the grain spreader.

All matters related to the guarantee shall be agreed upon with the manufacturer before any action is taken.





## **EU Declaration of Conformity**

**ANTTI-TEOLLISUUS OY**  
Koskentie 89  
FI-25340 KANUNKI  
Tel.: +358 2 7744700

declares that

### **ANTTI GRAIN SPREADER**

conforms with the provisions of the following directives:

- **Machine Directive 2006/42/EU**

**Salo 09.09.2019**

**Kalle Isotalo**  
**Managing Director**