

pendulum - action spreader

Instruction Manual, Parts Catalog
and Calibration Charts

English

PS 203S	PS 303	PS 403S	PS 503S	PS 603S
PS 753	PS 953	PS 1153	PS 1353	PS 1553T

abonadora pendular

Manual de Instrucciones, Catálogo de
Piezas y Tablas de Calibración

Español

PS 203S	PS 303	PS 403S	PS 503S	PS 603S
PS 753	PS 953	PS 1153	PS 1353	PS 1553T



1. Technical Data	2-3
2. General Information	2
3. Packing and Assembly	4
4. Connecting the Spreader to the Tractor	5
5. Connecting the PTO Shaft	6
6. How to Regulate the Spreader	7
7. How to Regulate for Band Spreading	8
8. How to Distribute Spreading Evenly	9
Cleaning and Greasing	9
9. Calibration Charts - How to Regulate the Spreader	10
L.A.N. 26% Nitrogen	11-12-13
Potassium Nitrate Granules	13-14-15
NPK Coarse 12-10-18	16-17-18
NPK Fine 23-23-0	18-19-20
Superphosphate 19%	21-22-23
K.C.L. 60	23-24-25
Agricultural Lime - with Stirring Device	25
Rye Grass Seed - with Stirring Device	26
Wheat Seed	26
10. Parts and Spares Catalog - Series 22300:	
Spreader Unit	53
Spreader Unit	54
Spreader Unit	55
Chassis and Hopper: PS 203S, PS 303	56
Chassis and Hopper: PS 403S, PS 503S, PS 603S	57
Chassis and Hopper: PS 753, PS 953, PS 1153, PS 1353, PS 1553T	58
Cable: PS 603S, PS 753	59
Trailer: PS 1353T, PS 1553T	60

1. TECHNICAL DATA



Model	PS 203S	PS 303	PS 403S	PS 503S
Capacity of hopper (pounds)	440	660	880	1,100
Full height (feet)	2.52	3.02	3.22	3.61
Full width (feet)	2.95	3.38	4.76	4.76
Empty weight (pounds)	195	220	240	253
Tires	-	-	-	-
PTO shaft rotation	540 RPM for all models			
EFFECTIVE spreading width	Up to 39.3 feet (depending on the material spread)			
Spreading regulation	From 8.9 lb/acre to 1,785 lb/acre			

2. GENERAL INFORMATION

The **Pendulum - Action Fertilizer Spreader** was developed to spread pelleted fertilizer, calcium, powders and seeds with absolute precision.

For the fertilization of line-crops such as coffee, citrus and other fruit trees, just change the standard Pendulum (07665) for the special Pendulum (70445) and fertilizer will spread in two definite bands close to the plants or trees.

The distance between bands varies with the length of the Pendulum. (See table ⑥ page 8).

The mechanical part of all Spreaders is the same, with changes only for the hopper capacity, which varies from 600 to 3,300 lb, depending on the users need and the tractor available on the property.

The working width varies from 19.7 to 46 feet, depending on the weight and type of material being spread.

The Pendulum Spreader ships with a standard stirring device (parts 21142 & 21406), which guarantees an even spreading pattern, regardless of dry, powdered or granulated material is being used.

If the material used is humid or moist, such as calcium, gypsum and hygroscopic fertilizers, a special stirring device is needed (parts 15445 & 36180).

For any questions or suggestions, please contact our Technical Support Department.

1. TECHNICAL DATA

English



PS 603S	PS 753	PS 953	PS 1153	PS 1353	PS 1553T
1,320	1,650	2,090	2,530	2,970	3,410
4.23	3.22	3.61	3.94	4.16	5.87
4.76	5.91	5.91	5.91	5.91	5.91
264	332	352	374	407	792
-	-	-	-	-	600 x 16 or 900 x 16
540 RPM for all models					
Up to 39.3 feet (depending on the material spread)					
From 8.9 lb/acre to 1,785 lb/acre					

3. PACKING AND ASSEMBLY

The Spreader is partially disassembled for transport, therefore the following parts will have to be assembled on site:

- The Pendulum unit,
- The Hopper and its three support plates for the tubular frame,
- The disc regulating handle.

The Pendulum

For assembly of the Pendulum you will need:

- Two fine-threaded screws with nuts and four washers,
- Aluminium flange (83262) to fix the Pendulum to the frame.

Assemble as follows:

1. Place flange ① over and around Spreader,
2. Insert screws and washers ② & ③,
3. Tighten both screws using the correct torque (i.e. 160 Nm/16 kgfm).

Correct torque maintenance is recommended in order to avoid damage to the Pendulum neck and coupling.

The Hopper

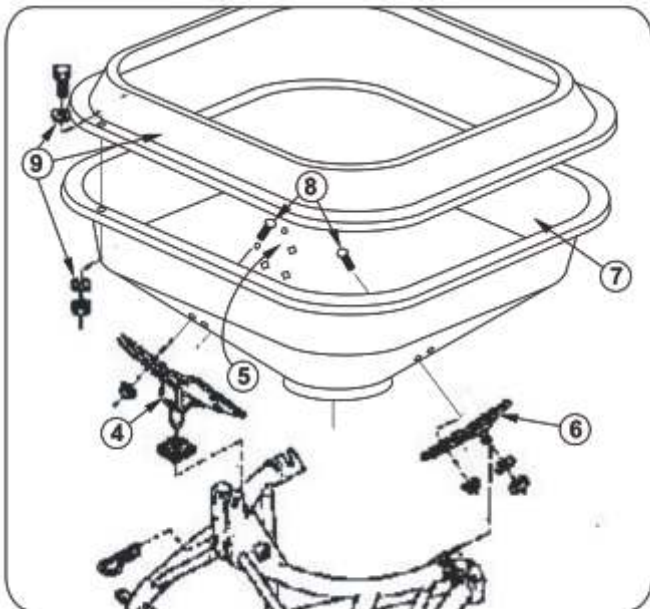
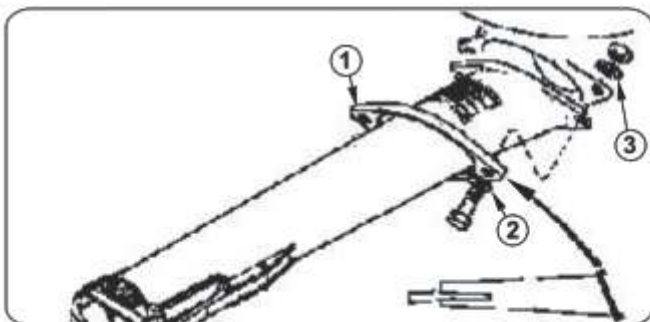
The Hopper ⑦ is fixed to the frame by three reinforced plates in such a way that the hopper may be removed easily for cleaning. (See page 9).

- Fix the three mounting plates to the frame, using the 16 screws ⑧, through the pre-drilled holes.
- The screws flat heads must be on the inside of the Hopper.
- For the PS 603S model, attach the 53 gallons extension ⑨ to the Hopper.

The Regulator Bar

To assemble the regulator bar you will need to:

- Fix the flow scale to the flat end of the handle.
- Slide the handle into the keyhole and lock it with the locking pin.



4. CONNECTING THE SPREADER TO THE TRACTOR

Basically the Pendulum Spreader may be attached to any tractor equipped with a hydraulic lift.

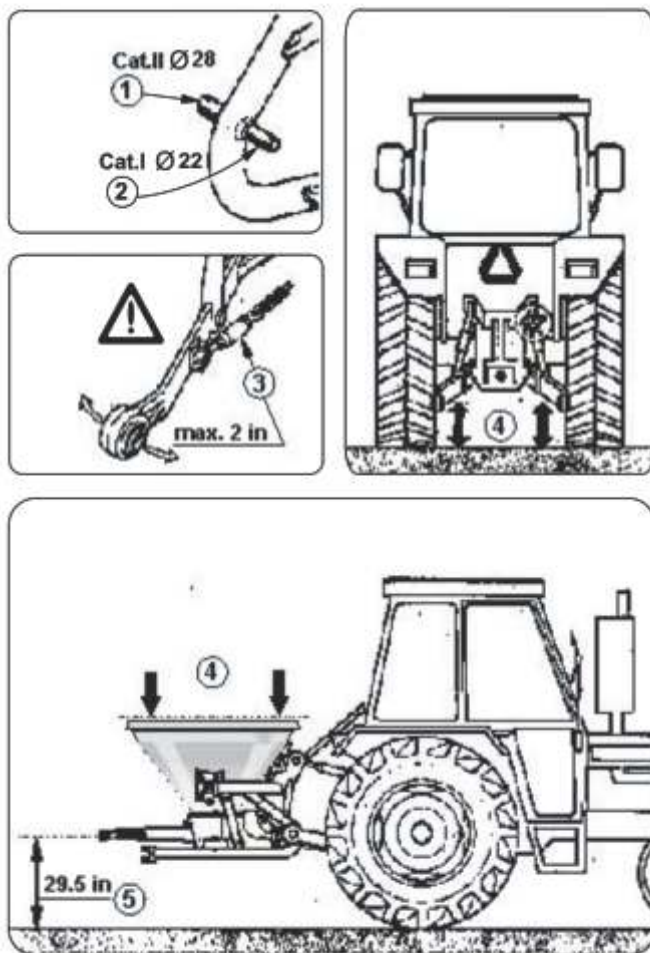
It is important that the topline on the Spreader, mounted to the three - point link on the tractor, has a maximum gap of 2 inches in order to avoid contact of the two sidelinks^③ with the tractor tires. It is recommended stabilizer bars or chains to be used.

As an added safety measure, it is recommended to protect the tractor PTO with a cover plate or bus.

The linkage pins of the Spreader were designed for both categories I & II ^① & ^②.

From the front and from the side, it is important that the Spreader is in a horizontal position ^④ and that the Pendulum is at 29.5 inches from the ground.

When used on a lightweight tractor, it is advisable to use front weights on the tractor.



5. CONNECTING THE PTO SHAFT

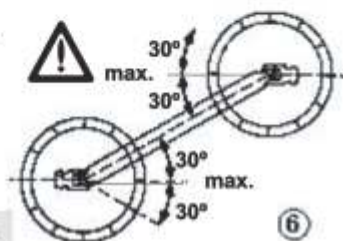
Lift the Spreader until the PTO shaft reaches the height of the shaft connection of the tractor (1).

Connect half of the PTO shaft to the tractor and the other half to the Spreader, holding them side by side (2).

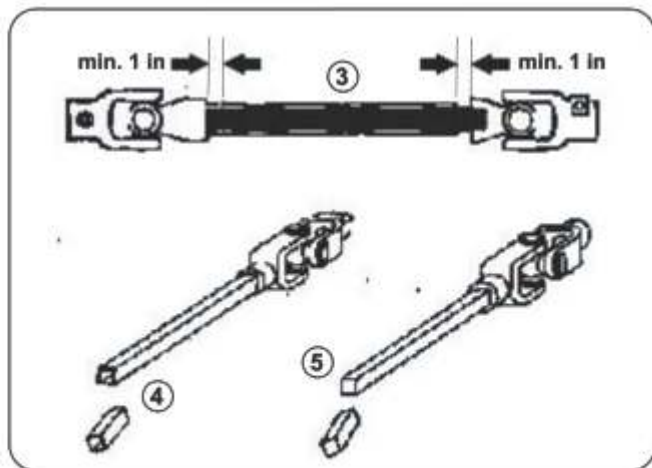
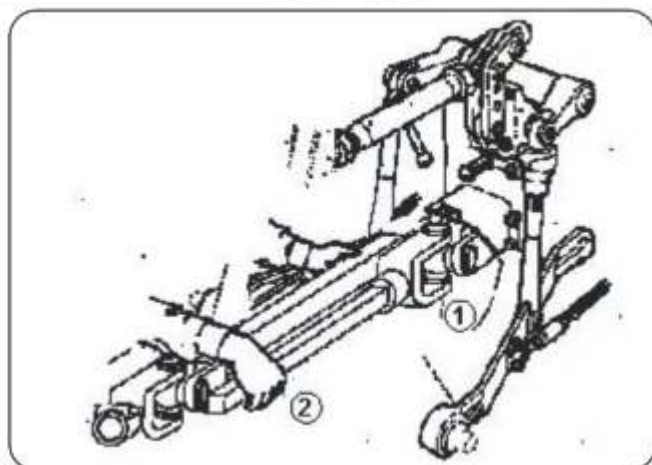
Make sure that both tubes overlap each other by at least 1 inch (3).

If the shaft is too long, first cut the guard tubes to the correct length, and then cut the profile tubes to the correct length (4 & 5).

Remove burrs, clean well and regrease the inner profile tube on its outside.



NOTE: The angle of the moving PTO shaft must never exceed 30° (6).



6. HOW TO REGULATE THE SPREADER

With a working revolution of 540 rpm, the amount of material being spread depends on two factors: the opening of flow rate regulator, and the speed of the tractor.

Also for economic reasons it is very important that the right amount of product is being spread, in accordance to the type of culture and the soil's need. Prior to spreading, adjust the Spreader with accuracy. Following are detailed examples for the spreading of fertilizer at 130 lb/acre and how to distribute 0.11 lb per tree through bandspreading.

Example 1: Spreading 130 lb/acre

A. $130 \text{ lb/acre} = 132 \text{ lb/4,000m}^2$

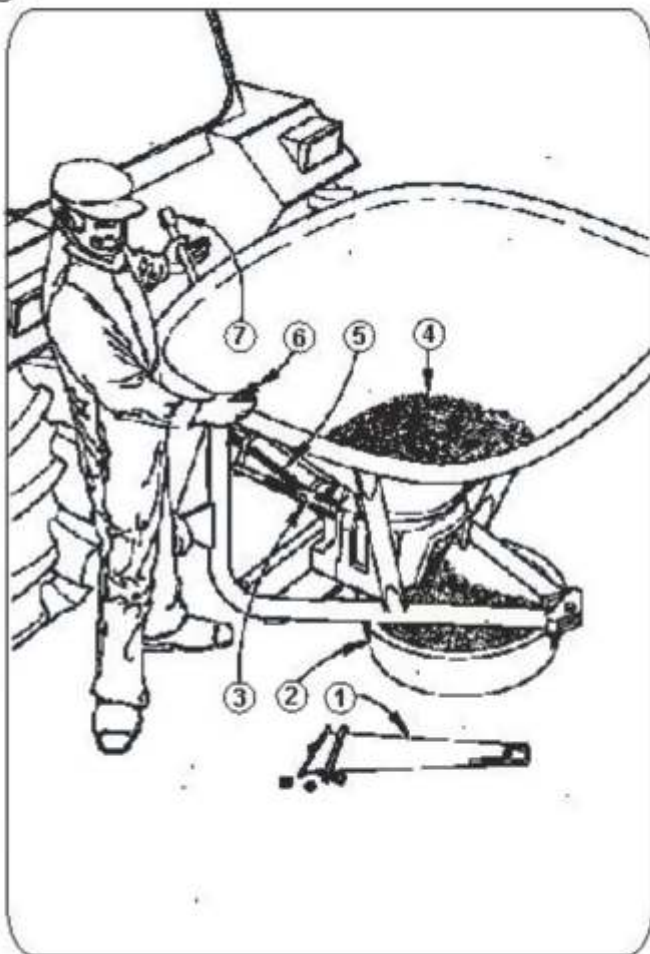
B. If the tractor works at a speed of 3.72 mph = 3.72 miles in 60 minutes.

C. We measure the width of the spreading pattern, e.g. 26 feet.

D. Now we know that in one minute we can fertilize $26 \text{ feet} \times 0.062 \text{ mi} = 0.005 \text{ mi} \times 0.062 \text{ mi} = 0.031 \text{ mi}^2$ and $0.031 \text{ mi}^2 \times 0.033 \text{ lb} = 0.033 \text{ lb}$ (item A) should be released by the spreader, per minute (See also page 9).

With this result of 26,40 lb/min we can now regulate the Spreader as follows:

- Disconnect the Pendulum Spreader ①.
- Place a bucket underneath the opening ②.
- Close the regulator disc.
- Set the nylon adjuster to about the correct setting.
- Fill hopper with pellets and start and accelerate the PTO to 540 rpm.
- Open the regulator disc for one minute and weigh the amount of pellets collected. If the weight is under 26.40 lb, open the adjuster more. If the collected weight is in excess of 26.40 lb, close the adjuster until right amount is reached. Write down the right setting for future use.



7. HOW TO REGULATE FOR BAND SPREADING

Example 2: Spreading 50 grams per tree:

A. Assuming the culture is planted at 1,5 m intervals with a 4 meters width between rows,

B. If the tractor moves at 6 kph - 6.000 m in 60 minutes = 100 meters per minute,

C. Every 100 meters we will service 66 tree on either side = 132 trees total,

D. With the objective of fertilizing each tree with 50 grams, we know that the flow rate will have to be $132 \times 50 = 6.600$ kg. We can now regulate the Spreader as in the previous example.

In order to spread in two bands, we will have to change the Standard Pendulum (07665) for the Special Pendulum - (70445). Depending on the length of the Pendulum (70445), the maximum distance between rows will vary (see table (6)).

In addition to the standard stirring device fixed permanently to the Spreader, we can supply an extra stirring device (2) to be used with moist or humid fertilizer (4).

When mounting the stirring device, make sure there is no movement.

CAUTION: Never use the extra stirring device (2) with granulated fertilizer (3) or seeds, as this will damage them.

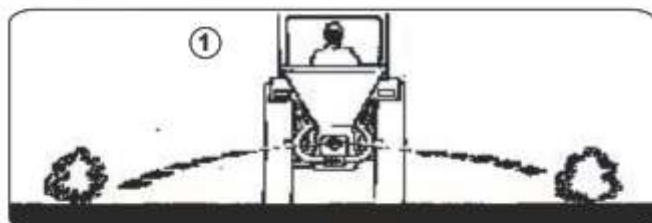
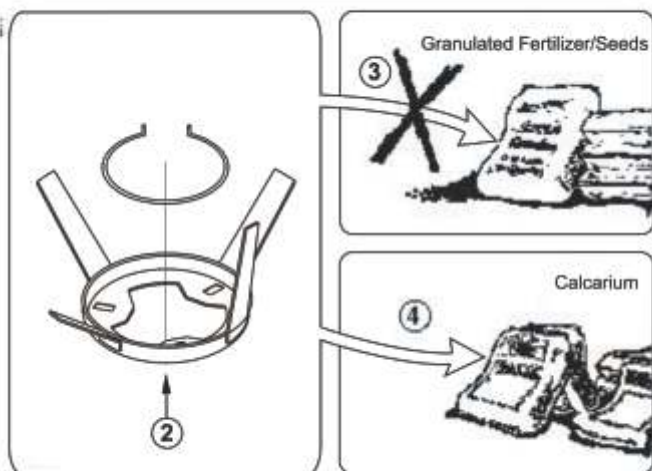


Diagram 6 shows a table correlating pendulum length (mm) with the maximum distance between rows (m). To the left of the table is a diagram of a pendulum with a dimension line labeled 'mm'. To the right is a diagram of a spreader head with a dimension line labeled 'm'.

500 mm	8,5 - 9 m
350 mm	7,5 - 8 m
250 mm	5 - 5,5 m
195 mm	4 - 4,5 m
80 mm	3 - 4 m



8. HOW TO DISTRIBUTE SPREADING EVENLY

When distributing fertilizers or seeds with a Spreader, a greater concentration of product will be found in the center and a lighter spread will occur in the edges of the pattern ① & ②.

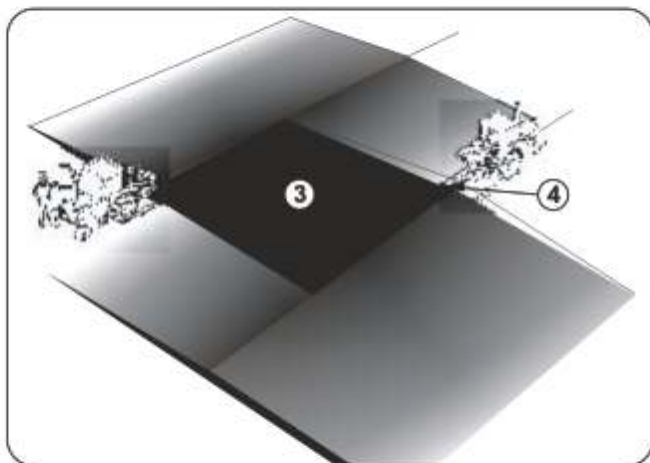
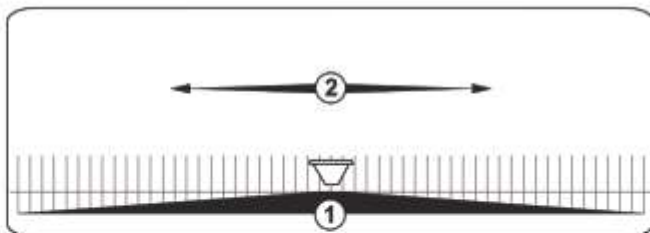
In order to obtain a more even spread, you must compensate across the edges of the pattern. The most effective way is to drive the tractor, on the return trip, as close as possible to the outer edge of the previous pattern ③ & ④.

ATTENTION

Cleaning and Greasing

Humid fertilizers harden quickly and may prevent a smooth operation of the regulator disc. It is therefore recommended that the Spreader be cleaned out and washed after each use.

- Close the regulating disc and operate the Spreader slowly while washing the hopper on the inside.
- Open the regulator disc and wash the disc and stirring device while operating slowly.
- Disengage the PTO shaft and remove the hopper from the frame.
- Spray the outside of the Spreader clean.
- Close the regulating disc and lubricate the disc (even waste oil may be used).
- Apply grease to all greasing nipples and make sure that the PTO shaft tubes are cleaned and greased after approximately each 10 hour operating period.



9. CALIBRATION CHARTS HOW TO REGULATE THE SPREADER

With the PTO shaft operating at 540 rpm the amount of fertilizer spread per acre depends on three factors:

- The setting of the adjuster arm, the tractor speed and the width of the spread pattern.
- The spread width varies according to the type of material being used.
- The following charts are meant as a guide but, considering the cost of fertiliser, it is imperative to check the accuracy of the setting as follows:

Example

To spread L.A.N. at 176 lb per hectare at a speed of 19,80 lb/min. with a working width of 19.7 feet.

The table on page 11 shows an adjuster setting of 24.

To check this, remove the pendulum spreader spout. Put a bucket under the opening. With fertilizer in the hopper, run the spreader at 540 r.p.m. with the adjuster set at N° 24 and open the feed gate for one minute. The chart shows that 39,60 lb of material should have flowed into the bucket. If you have more than 39,60 lb close the adjuster a little; if less, open it. Adjust the arm until you have discharged exactly the correct weight in one minute and then write down the setting for future use.

L.A.N. 26% NITROGEN

working width

19.7 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
18	24	163	140	123	109	98	89	82
21	29	193	166	145	128	116	105	96
24	40	267	229	200	178	160	146	134
27	46	312	267	234	208	187	170	156
30	57	386	331	290	257	232	210	193
33	66	446	382	334	297	267	243	223
36	79	535	458	401	357	321	291	267
42	106	713	612	535	475	428	389	356
48	139	936	802	702	624	562	511	468
54	176	1188	1019	892	793	713	648	595

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

L.A.N. 26% NITROGEN

working width

29.5 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
18	24	109	94	82	72	65	60	54
21	29	128	110	96	85	77	70	64
24	40	178	152	134	118	107	97	89
27	46	208	178	156	139	125	113	104
30	57	258	221	193	172	154	141	128
33	66	297	255	223	198	178	162	149
36	79	357	306	267	238	214	194	178
42	106	475	407	357	317	285	259	238
48	139	624	535	468	416	374	341	312
54	176	793	679	595	529	475	432	396

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

L.A.N. 26% NITROGEN

working width

32.8 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
18	24	98	84	74	65	59	53	49
21	29	116	99	87	78	69	62	58
24	40	160	137	120	107	96	83	80
27	46	187	160	141	125	112	103	94
30	57	232	199	174	155	139	127	116
33	66	267	229	201	178	160	146	134
36	79	321	276	241	214	193	175	160
42	106	428	366	321	285	257	233	214
48	139	562	481	422	374	337	307	281
54	176	713	612	535	475	428	388	357

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

L.A.N. 26% NITROGEN

working width

39.4 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
18	24	82	70	61	55	49	46	41
21	29	96	83	72	64	58	53	48
24	40	134	115	101	89	80	73	67
27	46	156	134	117	104	94	85	78
30	57	193	166	145	128	116	105	96
33	66	223	191	168	149	134	121	111
36	79	267	229	201	178	160	146	134
42	106	357	306	267	238	214	194	178
48	139	468	401	351	312	281	255	234
54	176	595	509	446	396	357	324	297

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

L.A.N. 26% NITROGEN

working width

46 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	705
		lb/acre						
18	24	70	60	53	46	42	38	35
21	29	83	71	62	56	50	45	41
24	40	115	98	86	77	69	62	57
27	46	134	115	101	89	80	73	67
30	57	166	142	124	110	99	90	83
33	66	191	164	143	128	115	104	95
36	79	229	196	172	152	137	125	115
42	106	306	262	229	195	184	167	152
48	139	401	344	301	267	241	218	201
54	176	509	437	382	340	306	278	255

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

POTASSIUM NITRATE GRANULES

working width

19.7 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
18	24	163	140	123	109	98	89	82
21	35	238	204	178	159	143	129	118
24	48	327	280	245	218	196	178	163
27	64	430	369	324	287	258	235	215
30	77	520	446	390	347	312	284	260
33	90	609	522	457	407	365	332	305
36	108	728	624	546	485	436	397	364
42	134	907	776	680	604	544	495	453
48	163	1099	942	825	733	660	600	550
54	202	1367	1172	1025	911	820	745	684

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

POTASSIUM NITRATE GRANULES

working width

29.5 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
18	24	109	94	82	72	65	60	54
21	35	159	136	119	106	95	86	79
24	48	217	187	163	145	131	119	109
27	64	287	246	216	192	172	157	143
30	77	347	297	260	231	208	189	173
33	90	406	348	305	271	243	221	203
36	108	485	416	364	324	291	265	242
42	134	604	518	453	403	363	330	302
48	163	733	628	550	489	439	399	366
54	202	911	781	684	607	546	497	456

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

POTASSIUM NITRATE GRANULES

working width

32.8 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
18	24	98	84	74	65	59	53	49
21	35	143	122	107	95	86	77	71
24	48	196	168	147	132	117	107	98
27	64	258	222	194	172	155	141	129
30	77	312	267	234	208	187	170	156
33	90	365	313	275	243	219	200	183
36	108	437	374	328	291	262	238	218
42	134	544	466	408	363	326	297	272
48	163	660	565	495	440	396	360	330
54	202	820	703	615	546	492	448	410

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

POTASSIUM NITRATE GRANULES

working width

39.4 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
18	24	82	70	62	54	49	44	41
21	35	118	102	89	79	71	65	60
24	48	163	140	123	109	98	89	82
27	64	215	185	161	144	129	118	108
30	77	260	223	195	173	156	142	130
33	90	305	261	228	203	183	166	152
36	108	364	312	273	243	218	199	182
42	134	453	389	340	303	272	247	226
48	163	550	472	413	366	330	300	275
54	202	684	586	513	456	410	373	341

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

POTASSIUM NITRATE GRANULES

working width

46 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
18	24	70	60	53	47	42	38	35
21	35	102	87	77	67	62	55	51
24	48	140	120	105	94	84	77	70
27	64	185	159	138	123	111	101	93
30	77	223	191	168	149	134	121	111
33	90	261	224	196	174	157	143	130
36	108	312	267	234	208	187	170	156
42	134	389	333	292	259	233	212	194
48	163	472	404	353	314	283	257	235
54	202	586	502	440	390	351	320	293

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

NPK COARSE 12 - 10 - 18

working width

19.7 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
18	24	163	140	123	109	98	89	64
21	28	193	166	145	128	116	105	96
24	39	267	229	201	179	159	146	134
27	46	312	267	234	208	187	170	156
30	57	386	331	290	258	232	210	193
33	66	446	382	334	297	267	243	223
36	79	535	458	401	357	321	292	267
42	106	713	612	535	475	428	389	357
48	139	936	802	703	624	562	511	468
54	176	1188	1019	892	793	713	648	595

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

NPK COARSE 12 - 10 - 18

working width

29.5 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
18	24	109	94	82	72	65	60	54
21	28	128	111	96	86	77	70	64
24	39	178	152	134	119	106	97	89
27	46	208	178	156	139	125	113	104
30	57	258	221	193	173	154	141	128
33	66	297	255	223	198	178	162	149
36	79	357	306	267	238	214	194	178
42	106	475	407	357	318	285	259	238
48	139	624	535	468	416	374	340	312
54	176	793	679	595	529	475	432	396

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

NPK COARSE 12 - 10 -18

working width

32.8 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
18	24	98	84	74	65	59	53	49
21	28	116	99	87	78	69	63	58
24	39	160	137	120	107	96	87	80
27	46	187	160	141	125	112	102	94
30	57	232	199	174	155	139	127	116
33	66	267	229	201	179	160	146	134
36	79	321	275	241	214	193	175	160
42	106	428	366	321	285	257	234	214
48	139	562	481	422	374	337	307	281
54	176	713	612	535	475	428	389	357

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

NPK COARSE 12 - 10 - 18

working width

39.4 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
18	24	82	70	61	55	49	45	41
21	28	96	83	72	64	58	53	48
24	39	134	115	101	89	80	73	67
27	46	156	134	117	104	94	85	78
30	57	193	166	145	128	116	105	96
33	66	223	191	168	148	133	121	111
36	79	267	229	201	178	160	146	134
42	106	357	306	267	238	214	194	178
48	139	468	401	351	312	281	255	234
54	176	595	509	446	396	357	324	297

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

NPK COARSE 12 - 10 - 18

working width

46

FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
18	24	70	60	53	46	42	38	35
21	28	83	71	62	55	50	45	41
24	39	115	98	86	76	69	62	57
27	46	134	115	101	89	80	73	65
30	57	166	142	124	110	99	90	83
33	66	191	164	144	127	115	104	95
36	79	229	196	172	152	137	125	115
42	106	306	262	229	204	184	167	152
48	139	401	344	301	267	241	218	201
54	176	509	437	382	340	306	278	255

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

NPK FINE 23 - 23 - 0

working width

19.7

FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
24	26	178	152	134	119	107	97	89
27	35	238	204	178	159	142	129	119
30	44	297	255	223	198	178	162	149
33	55	372	318	279	248	223	202	185
36	64	431	369	324	287	259	235	216
42	86	580	497	435	386	348	316	290
48	110	743	637	557	496	446	406	372
54	134	906	777	680	605	544	495	453
60	163	1099	942	825	733	660	600	550
66	198	1337	1147	1003	892	802	729	669

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

NPK FINE 23 - 23 - 0

working width

29.5 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
24	26	119	102	89	79	71	65	60
27	35	159	136	119	106	95	86	79
30	44	198	169	149	132	119	108	99
33	55	248	212	185	165	149	135	124
36	64	287	246	216	192	172	157	144
42	86	386	331	290	258	232	210	193
48	110	496	424	372	330	297	270	248
54	134	605	518	453	403	362	330	302
60	163	733	629	550	489	440	399	366
66	198	892	764	669	595	535	486	446

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

NPK FINE 23 - 23 - 0

working width

32.8 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
24	26	107	92	80	71	64	58	53
27	35	143	122	107	95	86	78	71
30	44	178	152	134	119	107	97	89
33	55	223	191	168	149	134	121	111
36	64	286	222	194	172	155	141	129
42	86	348	258	261	232	209	190	174
48	110	446	382	334	297	267	243	223
54	134	544	466	408	363	326	297	272
60	163	660	565	495	440	396	360	330
66	198	802	687	602	535	481	438	401

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

NPK FINE 23 - 23 - 0

working width

39.4 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
24	26	89	77	67	60	53	49	45
27	35	119	102	89	79	71	65	60
30	44	149	127	111	99	89	81	74
33	55	185	160	139	124	111	102	93
36	64	216	185	161	144	129	118	108
42	86	290	249	218	193	174	158	145
48	110	372	318	279	248	223	202	185
54	134	453	389	340	302	272	247	226
60	163	550	472	413	366	330	300	275
66	198	689	573	502	446	401	365	334

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

NPK FINE 23 - 23 - 0

working width

46 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
24	26	77	65	57	51	45	42	38
27	35	102	87	77	67	62	55	51
30	44	127	109	95	85	77	70	63
33	55	160	136	119	107	95	86	79
36	64	184	159	138	123	111	101	93
42	86	249	213	186	166	149	136	124
48	110	318	273	239	212	191	174	160
54	134	389	333	292	259	233	212	194
60	163	472	404	353	314	283	257	235
66	198	573	491	430	382	344	313	286

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

SUPERPHOSPHATE 19%

working width

19.7 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
21	33	223	191	168	149	134	121	111
24	46	312	267	234	208	187	170	156
27	57	386	331	290	258	232	210	193
30	70	475	407	357	318	285	259	238
33	83	564	484	424	376	339	308	283
36	101	684	586	513	456	410	373	341
42	139	936	802	703	624	562	511	468
48	180	1219	1044	914	812	731	664	609
54	233	1575	1350	1181	1050	945	860	787
60	293	1977	1694	1483	1318	1186	1078	988

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

SUPERPHOSPHATE 19%

working width

29.5 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
21	33	149	128	111	99	89	81	74
24	46	208	178	156	139	125	113	104
27	57	258	221	193	173	154	141	128
30	70	317	272	238	211	190	173	159
33	83	376	323	283	251	226	205	188
36	101	456	391	341	304	274	249	228
42	139	624	535	468	416	374	341	312
48	180	812	696	609	541	488	443	407
54	233	1050	901	787	700	630	572	525
60	293	1318	1130	988	878	791	719	659

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

SUPERPHOSPHATE 19%

working width

32.8 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
21	33	134	115	101	89	80	73	67
24	46	187	160	141	125	111	103	94
27	57	232	199	174	154	139	127	116
30	70	285	244	214	190	171	156	143
33	83	339	291	254	226	203	185	169
36	101	410	351	308	274	246	224	205
42	139	562	481	422	374	337	307	281
48	180	731	627	548	488	439	399	366
54	233	945	810	709	630	567	515	473
60	293	1186	1016	890	791	711	646	593

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

SUPERPHOSPHATE 19%

working width

39.4 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
21	33	111	95	84	74	67	61	56
24	46	156	133	117	104	94	85	78
27	57	193	166	145	128	116	105	96
30	70	238	204	178	159	143	129	119
33	83	283	242	212	188	169	154	141
36	101	341	293	257	228	205	186	171
42	139	468	401	351	312	281	255	234
48	180	609	522	457	407	366	333	305
54	233	787	675	591	525	473	430	394
60	293	988	847	741	659	593	539	494

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

SUPERPHOSPHATE 19%

working width

46 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
21	33	95	82	71	64	57	52	48
24	46	134	115	101	89	80	73	67
27	57	166	142	124	110	99	90	83
30	70	204	175	152	136	122	111	102
33	83	242	208	182	161	145	132	121
36	101	293	251	219	196	174	160	146
42	139	401	344	301	267	241	218	201
48	180	522	448	391	348	313	284	261
54	233	675	579	506	450	405	368	338
60	293	847	726	636	564	508	462	424

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

K.C.L. 60

working width

19.7 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
21	18	119	102	89	79	71	65	60
24	24	163	140	123	109	98	89	82
27	33	223	191	168	149	134	121	111
30	42	283	242	212	188	169	154	141
33	48	327	280	245	218	196	178	163
36	55	372	318	279	248	223	202	185
42	79	535	458	401	357	321	292	267
48	101	684	586	513	456	410	373	341
54	125	847	726	636	564	508	462	423
60	158	1070	917	802	713	642	584	535

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

K.C.L. 60

working width

29.5 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
21	18	79	68	60	53	47	43	39
24	24	109	94	82	72	65	60	54
27	33	149	128	111	99	89	81	74
30	42	188	161	141	126	113	103	95
33	48	218	187	163	146	131	119	109
36	55	248	212	186	165	149	136	124
42	79	357	306	268	238	214	194	178
48	101	456	391	342	305	274	249	228
54	125	565	484	424	376	339	308	283
60	158	714	612	535	475	428	389	357

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

K.C.L. 60

working width

32.8 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
24	24	98	84	74	65	59	54	49
27	33	134	115	101	89	80	73	67
30	42	169	145	128	113	102	93	85
33	48	196	169	147	131	118	107	98
36	55	223	191	168	149	134	121	111
42	79	321	276	241	214	193	175	161
48	101	410	351	308	274	246	224	205
54	125	508	436	382	339	305	277	254
60	158	642	550	482	430	385	351	321
66	198	803	688	602	535	482	438	401

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

K.C.L. 60**working width****39.4 FEET**

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
24	24	82	70	62	54	49	45	41
27	33	111	95	84	74	67	61	56
30	42	141	121	106	95	84	77	70
33	48	163	140	123	109	98	89	82
36	55	185	160	139	124	111	102	93
42	79	267	229	200	179	160	146	134
48	101	341	293	257	228	205	186	171
54	125	424	363	317	283	254	231	212
60	158	535	458	401	357	321	292	267
66	198	669	573	502	446	401	365	334

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

AGRICULTURAL LIME with stirring device**working width****19.7 FEET**

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
34	46	312	267	234	208	187	170	156
39	68	461	395	346	307	276	251	230
46	94	639	547	480	426	383	349	319
53	158	1070	917	802	713	642	584	535
62	262	1768	1516	1327	1179	1061	965	884

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

RYE GRASS SEED with stirring device

working width

19.7 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
18	3	24	21	18	16	14	13	12
19	4	27	23	21	18	16	14	13
20	4	29	26	22	20	18	16	15
22	5	37	32	28	25	22	20	19

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

WHEAT SEED

working width

10 FEET

Adjuster Setting	Quantity Spread lb/min	Tractor Speed mph						
		3,72	4,34	5	5,6	6	7	7,5
		lb/acre						
27	35	129	111	97	86	78	70	65
30	48	178	152	134	119	107	97	89
36	62	227	194	170	152	136	124	113
39	70	259	222	194	173	156	142	129

Working width refers to the distance from center to center of each run. This will usually be half the total spreading width to allow for a correct overlap and even spread pattern. (See page 9)

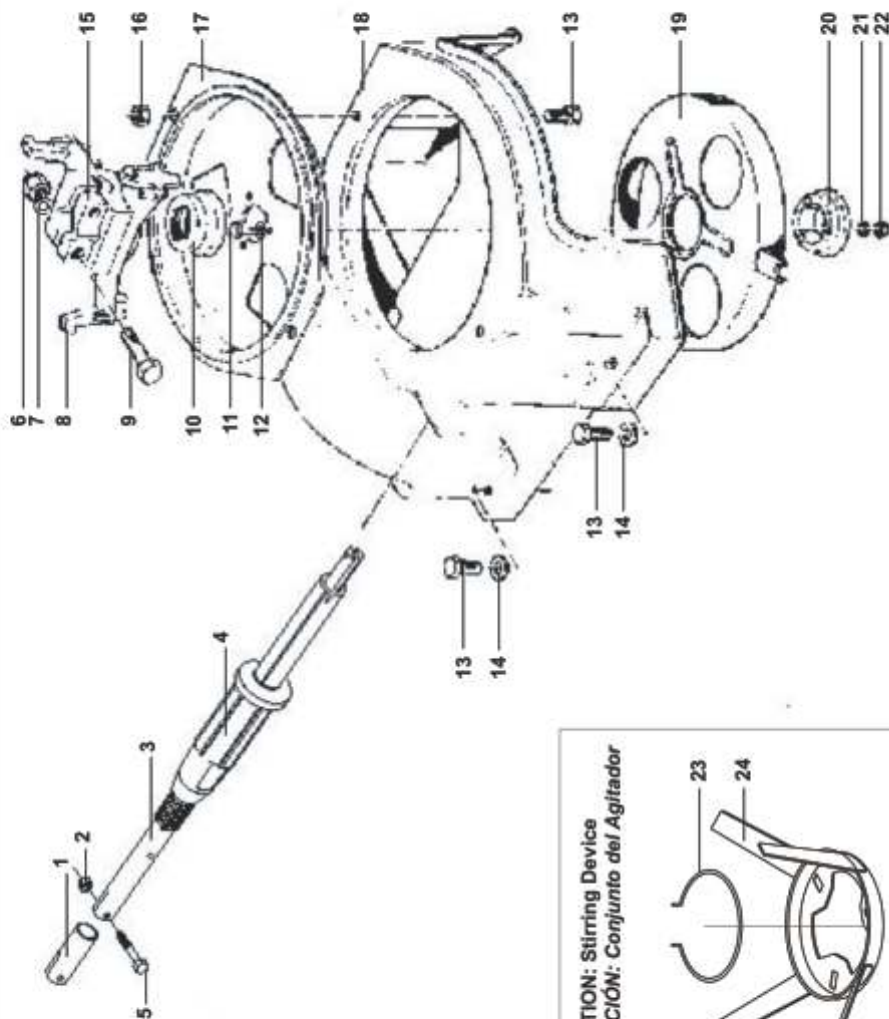
Note: The productions mentioned above can present variations according to the product humidity grade, specific height and work conditions. Specifications and design are subject to change without notice.

SPREADER UNIT

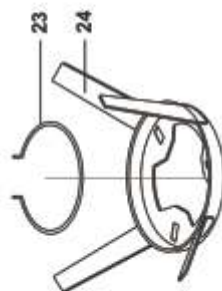
UNIDAD DE LA ABONADORA

SERIES 22300

SERIE 22300



OPTION: Stirring Device
OPCIÓN: Conjunto del Agitador



N°	Reference	Quantity per machine
N°	Referencia	Cantidad por máquina
1	52429	1
2	305.75.600	2
3	70437	1
4	70524	1
5	302.71.625	1
6	305.61.300	2
7	314.53.301	2
8	21406	1
9	302.70.360	2
10	70589	1
11	302.70.525	3
12	314.53.501	3
13	302.98.120	6
14	314.97.100	4
15	21142	1
16	305.96.100	2
17	70542	1
18	70927	1
19	15097	1
20	20041	1
21	314.53.500	3
22	305.61.500	3

Stirring Device Assy

Conjunto del Agitador

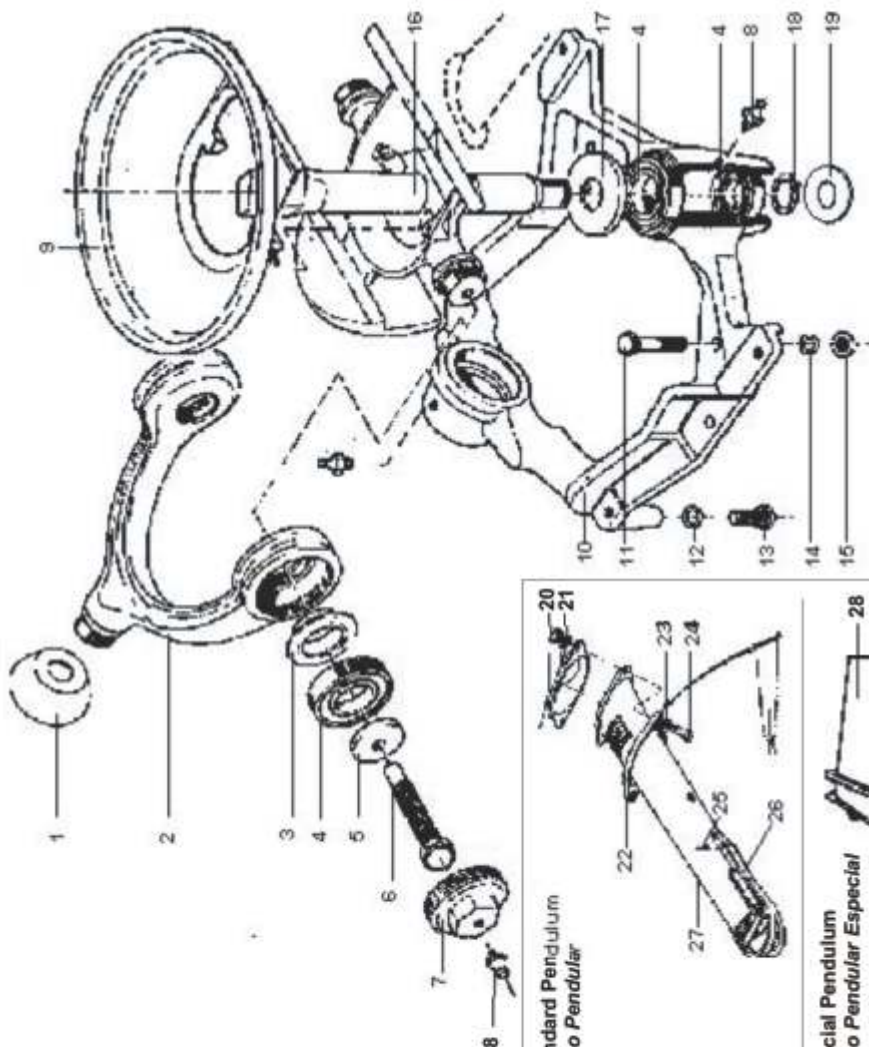
23	36180	1
24	15445	1

SPREADER UNIT

UNIDAD DE LA ABONADORA

SERIES 22300

SERIE 22300



Standard Pendulum
Tubo Pendular

Special Pendulum
Tubo Pendular Especial

N°	Reference	Quantity per machine
N°	Referencia	Cantidad por máquina
1	70629	1
2	96439	1
3	71178	2
4	401.01.208	4
5	40851	2
6	302.68.290	2
7	70548	2
8	417.61.200	4
9	70632	1
10	21956	1
11	302.71.245	4
12	314.97.100	2
13	302.98.120	2
14	314.53.300	4
15	305.83.200	4
16	96422	1
17	70633	1
18	310.01.300	1
19	70188	1

Standard Pendulum <i>Tubo Pendular</i>		
20	305.53.800	2
21	314.53.300	2
22	83262	1
23	314.61.250	2
24	302.90.855	2
25	312.04.320	2
26	70413	1
27	07665	1

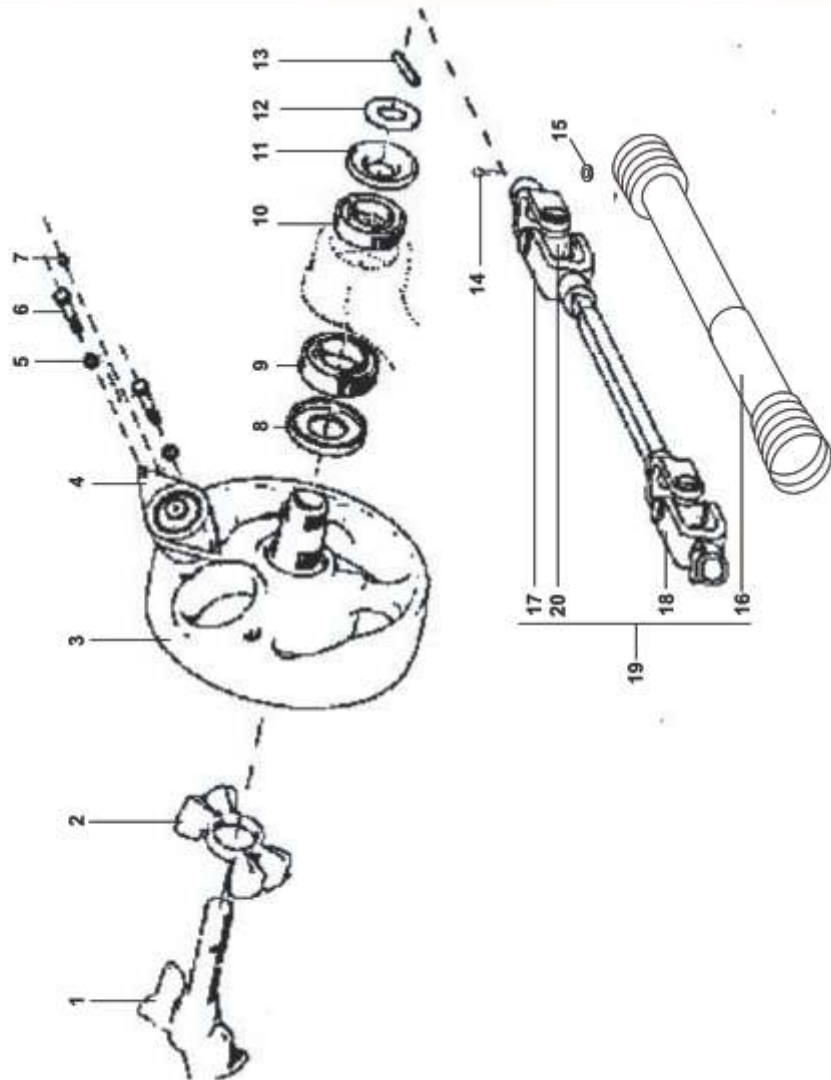
Special Pendulum Tubo Pendular Especial		
28	70445	1

SPREADER UNIT

UNIDAD DE LA ABONADORA

SERIES 22300

SERIE 22300



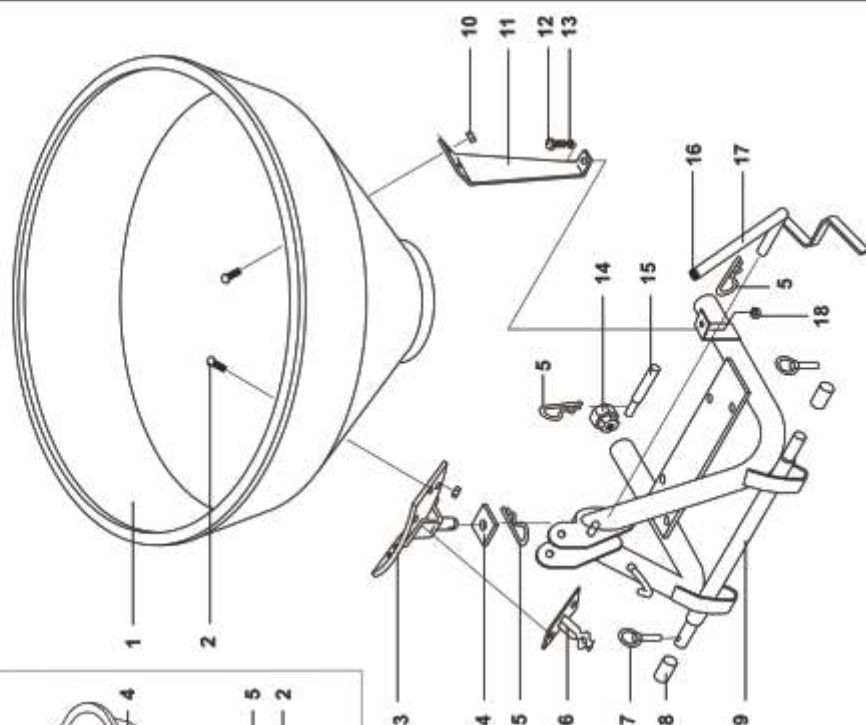
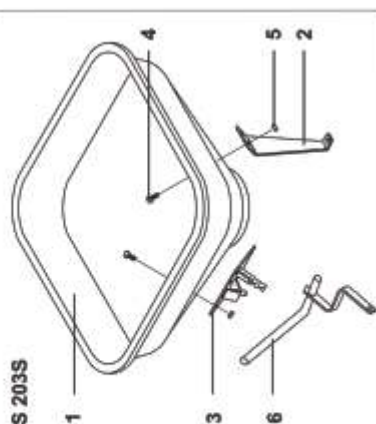
N°	Reference	Quantity per machine
N°	Referencia	Cantidad por máquina
1	95963	1
2	70527	1
3	21859	1
4	95629	1
5	314.53.200	2
6	302.70.840	2
7	417.61.200	1
8	71119	1
9	401.02.450	1
10	401.02.208	1
11	71118	1
12	69802	1
13	308.03.170	1
14	308.03.155	1
15	305.96.100	2

PTO Shaft	Cardán
16	95560
17	95557
18	95556
19	95558
20	310-CZ-101

CHASSIS AND HOPPER: PS 203S, PS 303
CHASIS Y TOLVA: PS 203S, PS 303

SERIES 22300
SERIE 22300

PS 203S



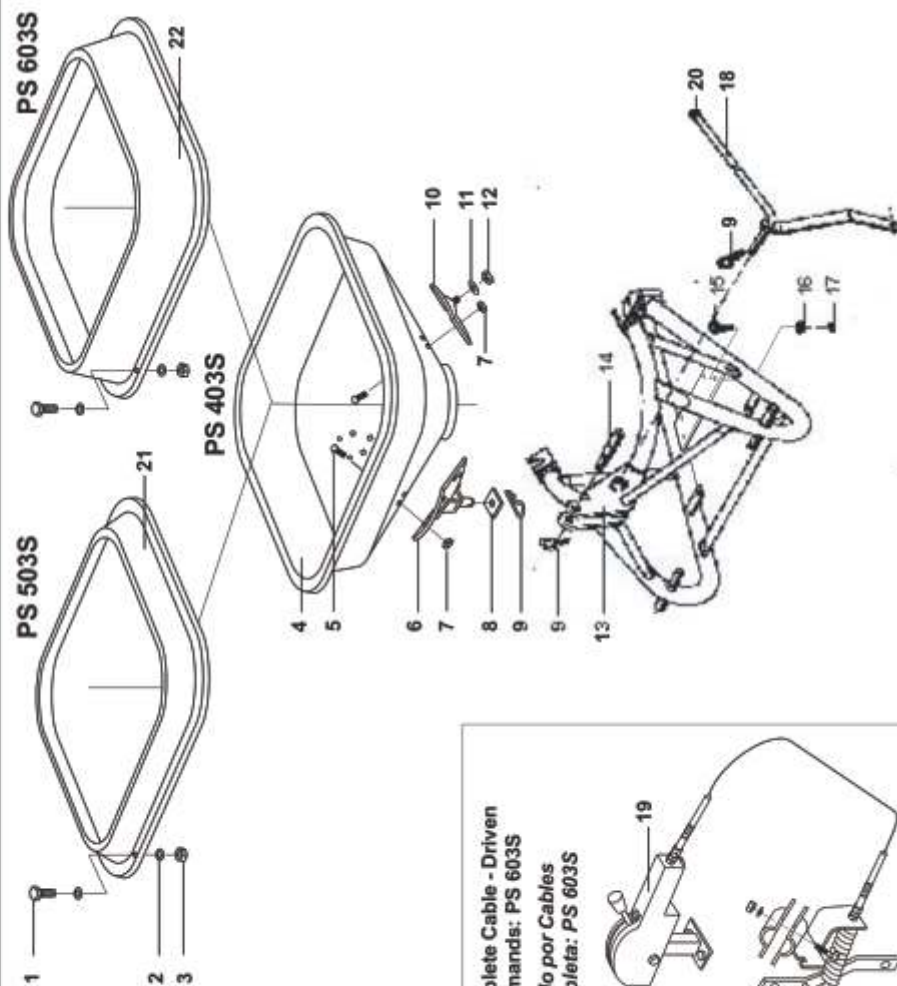
N°	Reference	Quantity per machine
N°	Referencia	Cantidad por máquina
1	70308	1
2	80952	12
3	15253	1
4	70330	1
5	91589	3
6	15240	1
7	94887	2
8	70301	2
9	80202	1
10	305.85.100	12
11	15254	2
12	302.98.120	2
13	314.97.100	2
14	70300	2
15	43838	1
16	83138	1
17	15242	1
18	305.96.100	2

PS 203S

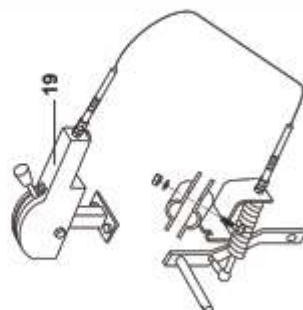
N°	Reference	Quantity per machine
N°	Referencia	Cantidad por máquina
1	PS111209	1
2	PS215010	2
3	PS215011	1
4	80952	9
5	305.85.100	9
6	PS015006	1

CHASSIS AND HOPPER: PS 403S, PS 503S, PS 603S
CHASIS Y TOLVA : PS 403S, PS 503S, PS 603S

N°	Reference	Quantity per machine
N°	Referencia	Cantidad por máquina
1	302.71.825	8
2	314.61.800	16
3	305.61.800	8
4	70316	1
5	80952	14
6	15251	1
7	305.85.100	14
8	70330	1
9	91569	3
10	15252	2
11	314.61.250	2
12	305.61.200	2
13	80204	1
14	43838	1
15	302.71.245	4
16	314.53.300	4
17	305.93.200	4
18	15243	1
19	79053	1
20	83138	1



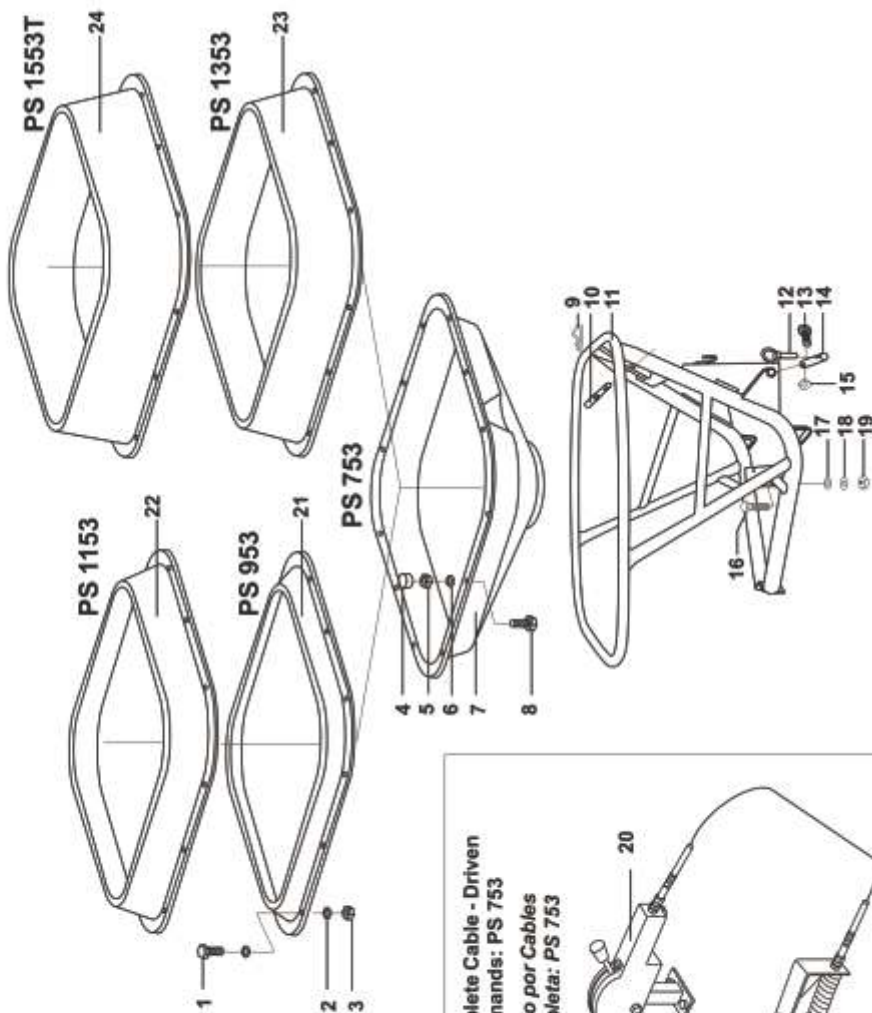
Complete Cable - Driven
Comando: PS 603S
Mando por Cables
Completa: PS 603S



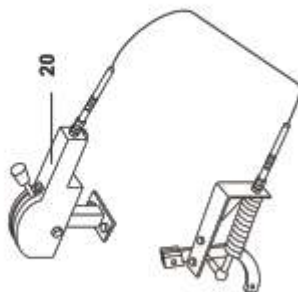
**Options to increase
 capacity of hopper**
**Opción para aumentar la
 capacidad de la tolva**

21	70317	1
22	70318	1

CHASSIS AND HOPPER: PS 753, PS 953, PS 1153, PS 1353, PS 1553 T SERIES 22300
CHASIS Y TOLVA: PS 753, PS 953, PS 1153, PS 1353, PS 1553 T **SERIE 22300**



Complete Cable - Driven
Comands: PS 753
Mando por Cables
Completa: PS 753



N°	Reference	Quantity per machine
N°	Referencia	Cantidad por máquina
1	84190	4
2	85408	8
3	86608	4
4	70625	8
5	86610	8
6	85410	8
7	70312	1
8	84301	8
9	91589	1
10	30002	1
11	80203	1
12	94887	2
13	302.70.155	2
14	30602	2
15	305.96.100	4
16	302.71.245	4
17	314.61.250	4
18	314.53.300	4
19	305.83.200	4
20	79054	1

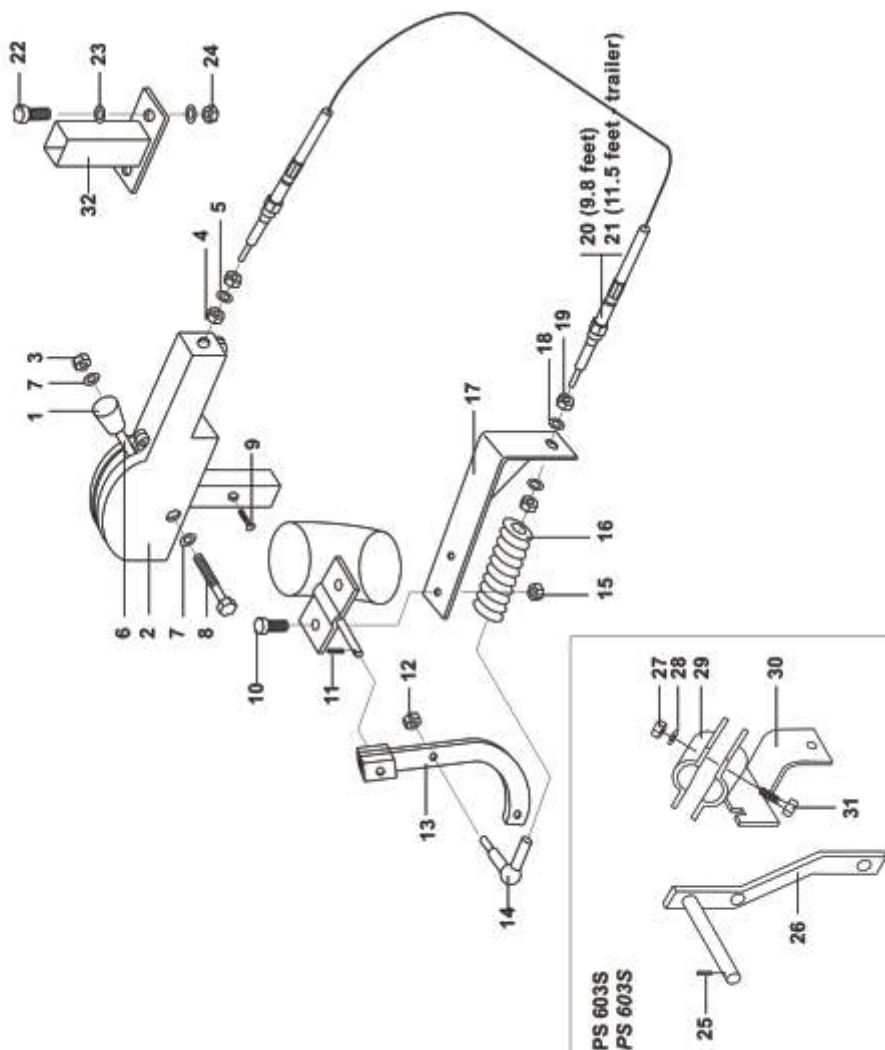
Options to increase capacity of hopper

Opción para aumentar la capacidad de la tolva

N°	Reference	Quantity per machine
N°	Referencia	Cantidad por máquina
21	70314	1
22	70310	1
23	70313	1
24	70311	1

CABLE: PS 603S, PS 753
CABLES: PS 603S, PS 753

SERIES 22300
SERIE 22300

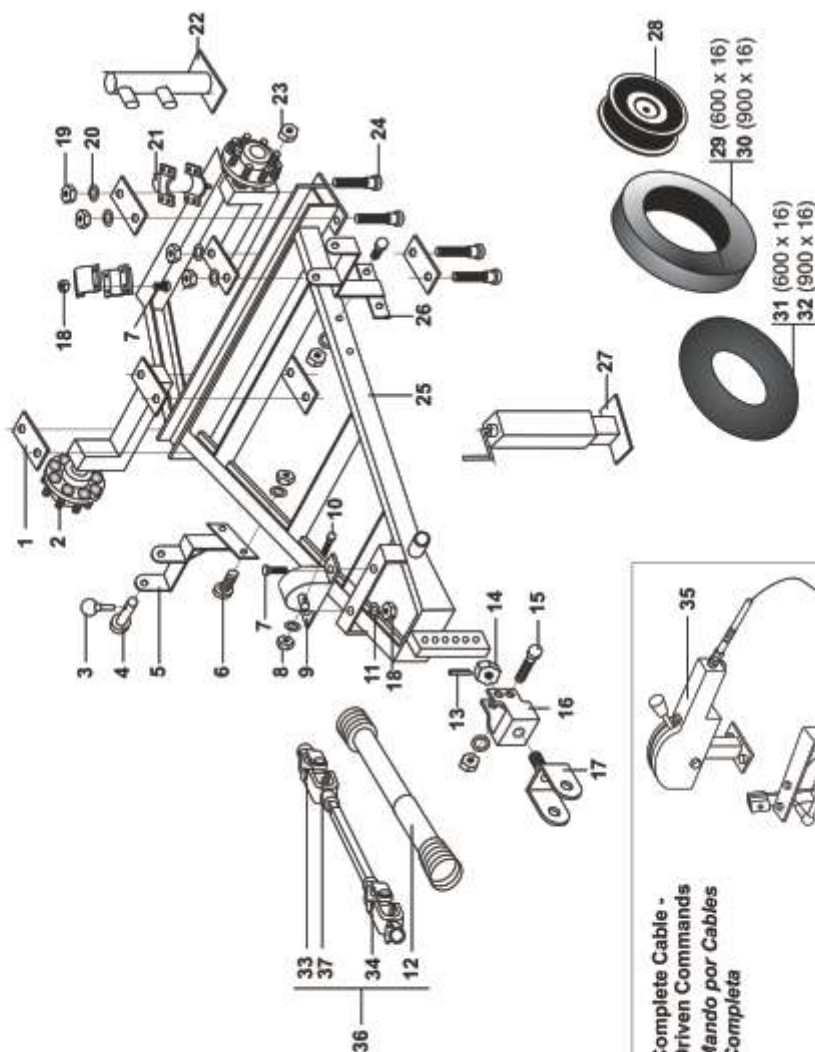


N°	Reference	Quantity per machine
N°	Referencia	Cantidad por máquina
1	10556	1
2	20525	1
3	305.96.100	1
4	86213	2
5	86214	1
6	10526	1
7	314.97.100	2
8	308.03.155	1
9	83241	4
10	80821	2
11	88026	1
12	86610	1
13	20205	1
14	20202	1
15	86608	2
16	89051	1
17	20204	1
18	85702	2
19	86212	2
20	79051	1
21	79052	1
22	302.71.825	2
23	314.61.800	4
24	305.61.800	2

PS 603S	PS 603S	Quantity per machine
PS 603S	PS 603S	Cantidad por máquina
25	88026	1
26	20203	1
27	305.61.800	2
28	314.61.800	2
29	20206	1
30	20200	1
31	302.71.825	2
32	20197	1

TRAILER: PS 1353T, PS 1553T
CARRETA: PS 1353T, PS 1553T

SERIE 22300
SERIE 22300



**Complete Cable -
 Driven Commands
 Mando por Cables
 Completa**

N°	Reference Referencia	Quantity per machine Cantidad por máquina
1	80209	4
2	60014	2
3	94887	2
4	80214	2
5	80207	1
6	302.70.143	4
7	302.71.245	10
8	305.96.100	4
9	80215	1
10	308.03.155	2
11	314.61.250	2
12	95561	1
13	308.03.550	1
14	305.96.192	1
15	302.70.144	2
16	80210	1
17	80211	1
18	305.83.200	10
19	305.96.190	14
20	314.53.195	14
21	80213	2
22	80212	1
23	305.96.191	12
24	302.70.145	8
25	80205	1
26	80206	1
27	80208	1
28	60015	2
29	60016	2
30	60017	2
31	60018	2
32	80019	2
33	2303-144	1
34	2303-143	1
35	79055	1
36	2303-145	1
37	310-CZ-101	2