JesHopper

Advanced weighers and weighing systems for static, dynamic and continuous weighing

Jesma®
- weighing solutions

JesHopper

Efficient and reliable charge weighers

The JesHopper scales are designed for industrial use in modern process systems where a high degree of automation requires a solid and reliable construction.

Jesma offers a wide and varied range of hopper scales, all with a sublime finish achieved by modern design and up-to-date manufacturing facilities.
Based on our many years of experience from the grain and feed industry, the Jesma hopper scales are a flexible solution for charge weighing.

All JesHopper scales are designed and supplied in a modular construction, making the scales easy to extend in case of future requirements for production expansions.

All JesHopper scales are designed with high slide angles ensuring complete and reliable emptying. The JesHopper construction is thoroughly tested and meets both current and future requirements to a safe working environment and operational reliability.

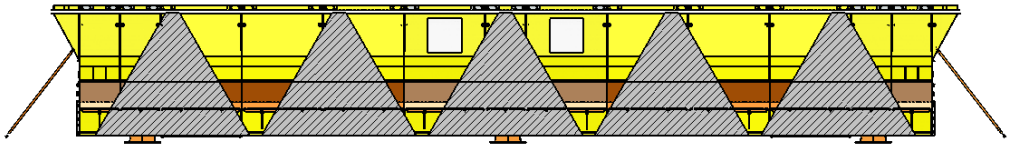
Jesma hopper scales are available in standard versions with capacities up to 10.000kg, or as bespoke solutions according to the project specifications.

The JesHopper is supplied including:

- Unique modular design.
- Integrated calibration platforms.
- Dustproof execution and designed for a low built-in height.
- Adjustable screen above the chain conveyor securing an efficient and reliable emptying.
- Dust tight lid ready for connection of feeding devices.
- Soft linen connection between the lid and the weigh bin to avoid any weighing inaccuracy.
- Optionally available in compliance with ATEX zone 20 inside the scale, and zone 22 outside the scale.

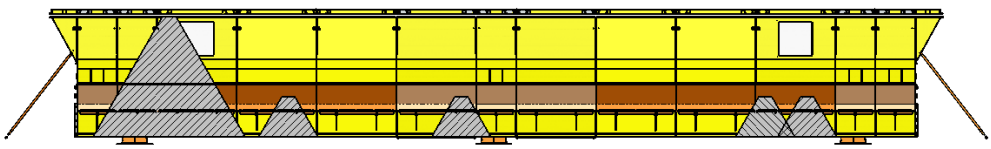
Optimum filling of a JesHopper

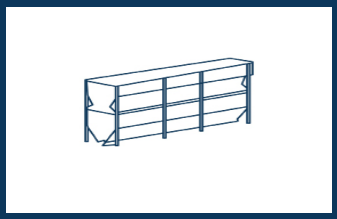
With optimum feeder locations and identical batch sizes it is possible to install a high capacity scale in the shortest possible space.



Uneven filling of a JesHopper

However at variations in the individual charge size and the location of the feeders it can be necessary to extend the length of the hopper scale.





RELIABLE ACCURACY

Selecting the right JesHopper:

Together with the weighing capacity the hopper scale is primarily selected depending on the numbers of products and the location of the feeder outlets.

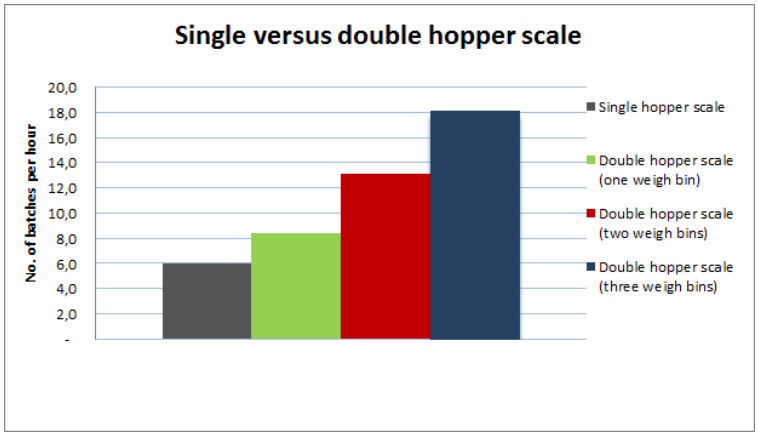
However to find the best suitable JesHopper several operational details are considered such as:

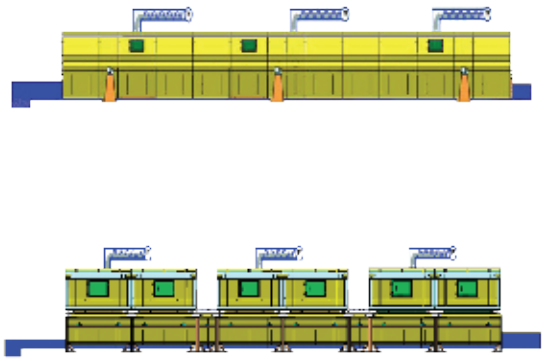
- What are the sizes of the individual batches?
- How many charges are planned per hour?
- How many components are included in each charge and their individual densities?
- What is the location of the feeders?
- What are the size and the filling speed of the feeders?
- What type of chain conveyor is used, and what is the capacity?

The length of the scale is designed according to the location of the feeders and the filling from each of these.

Single hopper scale versus double hopper scale

The main difference between a single- and a double hopper scale is the possibility to start the weighing of a new charge, before the chain conveyor is empty.
To enhance the number of charges per hour even further, the double hopper scale can be divided into 2 or more weigh bins. This allows simultaneous feeding from several dosing feeders at the same time, rather than waiting for each individual feeder.
The graph below shows the increase in number of charges with the different hopper scale models.





The calculations were based on a batch size of 3.5 tonnes and 6 components per batch.

The double hopper scale from Jesma can be supplied with an exceptional low build-in height, making it possible to fit a double hopper scale into the same space as an old single hopper scale, thereby making it possible to increase the number of batches per hour with a minimum of change in the production.

Construction JesHopper EEK - Single

The single hopper scale type JesHopper EEK is designed and constructed to accommodate the demand for optimum operational reliability in modern process industries.

The single hopper scale is available prepared for an existing chain conveyor, or as a complete unit including chain conveyor.

JesHopper EEK	Single hopper scale without chain conveyor
JesHopper EEK-K	Single hopper scale with chain conveyor

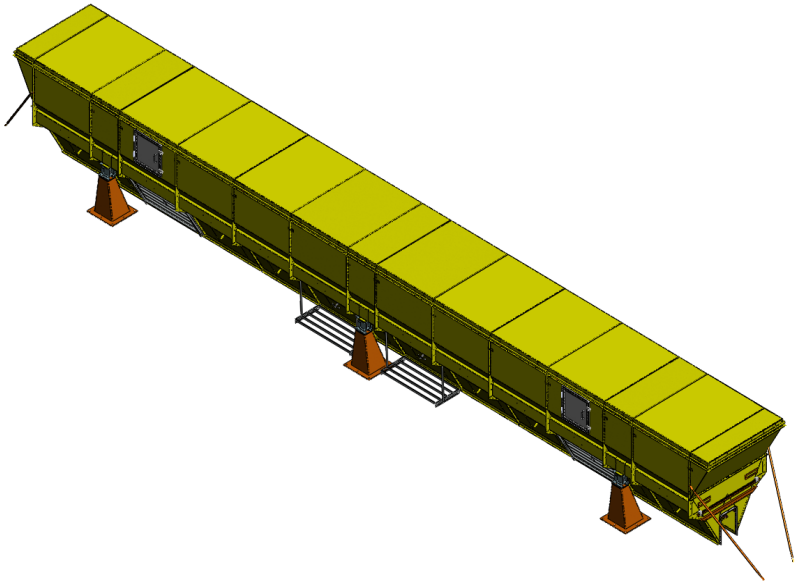
Both types of single hopper scales are constructed with sets of strong and rigid scale supports with integrated load cells, and supplied with the weigh bin mounted on the load cells.

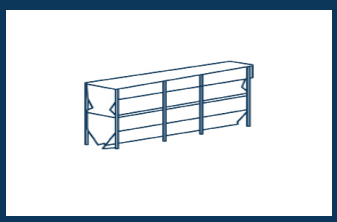
The intelligent modular design allows flat-packing of the scale during transport, high flexibility and easy extensions of the scale for future production expansions.

To allow easy calibration each support includes a test platform for the calibration loads.

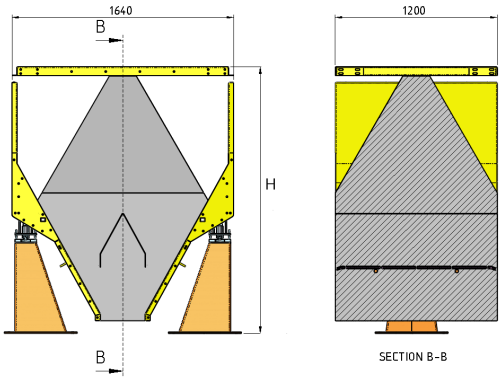
Operation of JesHopper EEK

The products are added successively from the feeders, and when the final charge is achieved, the scale is emptied by the chain conveyor in the bottom of the weigh bin. When the charge is removed from the bin, the next charge can be initiated.





RELIABLE ACCURACY

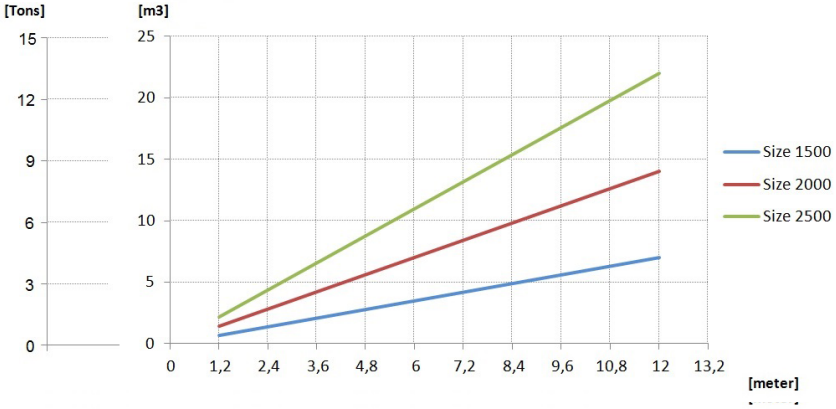


Capacity [kg]	Accuracy [kg]	Height H [mm]	Min. length [mm]
1,500	+/- 0.5	1500	1200
3,000	+/- 1.0	2000	1200
5,000	+/- 1.5	2500	1200

Contact Jesma for other capacities and sizes

Capacity of the scale

The given capacity is at a uniform filling with one filling point for each 1200 mm. Furthermore the filling must be equally divided between the filling points. Otherwise the capacity will be reduces accordingly.



calculated with a density of 0.6 kg/l

Required emptying capacity [t/h]

Charges/hour	Kilo per charge											
	200	400	600	800	1000	1500	2000	2500	3000	3500	4000	5000
1	1	1	2	2	3	5	6	8	9	11	12	15
2	1	2	4	5	6	9	12	15	18	21	24	30
3	2	4	6	7	9	14	18	23	28	32	37	46
4	3	5	7	10	12	19	25	31	37	43	49	62
5	3	6	9	12	16	23	31	39	47	54	62	78
6	4	8	11	15	19	28	37	47	56	66	75	94
7	4	9	13	18	22	33	44	55	66	77	88	110
8	5	10	15	20	25	38	51	63	76	89	101	126
9	6	11	17	23	29	43	57	72	86	100	115	143
10	6	13	19	26	32	48	64	80	96	112	128	160
11	7	14	21	28	35	53	71	89	106	124	142	177
12	8	16	23	31	39	58	78	97	117	136	156	194
13	9	17	25	34	42	64	85	106	127	148	170	212
14	9	18	28	37	46	69	92	115	138	161	184	230
15	10	20	30	40	50	74	99	124	149	173	198	248

Construction JesHopper EEB - Double

The double hopper scale type JesHopper EEB is designed and constructed to accommodate the demand for high charge capacities in modern process industries.

The combination of weighing and surge bin allows each charge weighing to be performed while the previous charge is being conveyed. Together with a strong and well-proven construction the JesHopper EEB provides market leading charge capacities while operating a reliable and accurate weighing system.

The double hopper scale is available prepared for an existing chain conveyor, or as a complete unit including chain conveyor.

JesHopper EEB Double hopper scale without chain conveyor.
JesHopper EEB-K Double hopper scale with chain conveyor.

Both types of double hopper scales are constructed with sets of strong and rigid scale supports with integrated load cells, and supplied with the weigh bin mounted on the load cells and a surge bin to release the charge into the process.

The intelligent modular design allows flat-packing of the scale during transport, high flexibility and easy extensions of the scale for future production expansions.

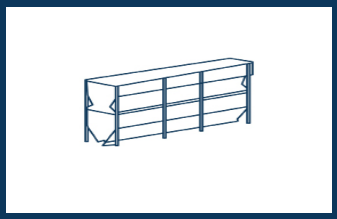
Operation of JesHopper EEB

The weighed products are added successively from the feeders, and when the final charge is achieved, the material is released into the surge bin through the integrated and pneumatically operated slide system. When the slide system is closed the next charge can be dosed while the previous charge is emptied from the surge bin.

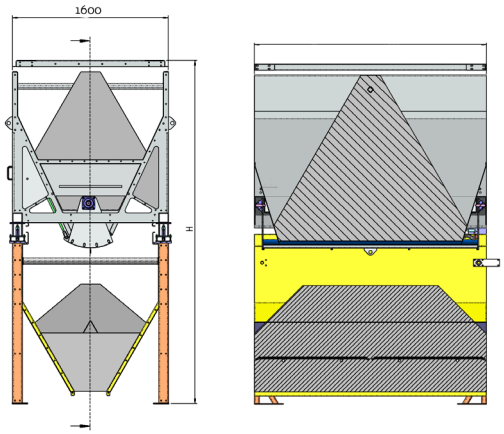
The double hopper design provides excellent capacities as a quick and reliable charge weighing is possible while the surge bin is emptied for previously weighed charges.

To allow easy calibration each support includes a test platform for the calibration loads.

The charge capacity of the JesHopper EEB can be increased by dividing the weighing bin into 2 or more sections. See more on page 2.



RELIABLE ACCURACY

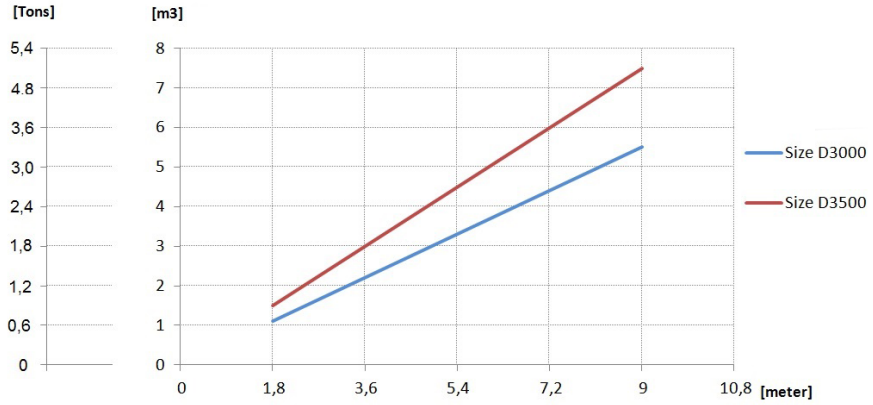


Capacity [kg]	Accuracy [kg]	Height H [mm]	Min. length [mm]
3,000	+/- 0.5	3000	1800
5,000	+/- 1.0	3000	1800
10,000	+/- 1.5	3500	1800

Contact Jesma for other capacities and sizes

Capacity of the scale

The given capacity is at a uniform filling with one filling point for each 1800 mm. Furthermore the filling must be equally divided between the filling points. Otherwise the capacity will be reduces accordingly.



calculated with a density of 0.6 kg/l

Required emptying capacity [t/h]

Charges/hour	Kilo per charge									
	1000	2000	3000	4000	5000	6000	7000	8000	9000	10.000
5	8	15	23	30	38	45	53	60	68	75
6	9	18	27	36	45	54	63	72	81	90
7	11	21	32	42	53	63	74	84	95	105
8	12	24	36	48	60	72	84	96	108	120
9	14	27	41	54	68	81	95	108	122	135
10	15	30	45	60	75	90	105	120	135	150
11	17	33	50	66	83	99	116	132	149	165
12	18	36	54	72	90	108	126	144	162	180
13	20	39	59	78	98	117	137	156	176	195
14	21	42	63	84	105	126	147	168	189	210
15	23	45	68	90	113	135	158	180	203	225
16	24	48	72	96	120	144	168	192	216	240
17	26	51	77	102	128	153	179	204	230	255
18	27	54	81	108	135	162	189	216	243	270
19	29	57	86	114	143	171	200	228	257	285
20	30	60	90	120	150	180	210	240	270	300

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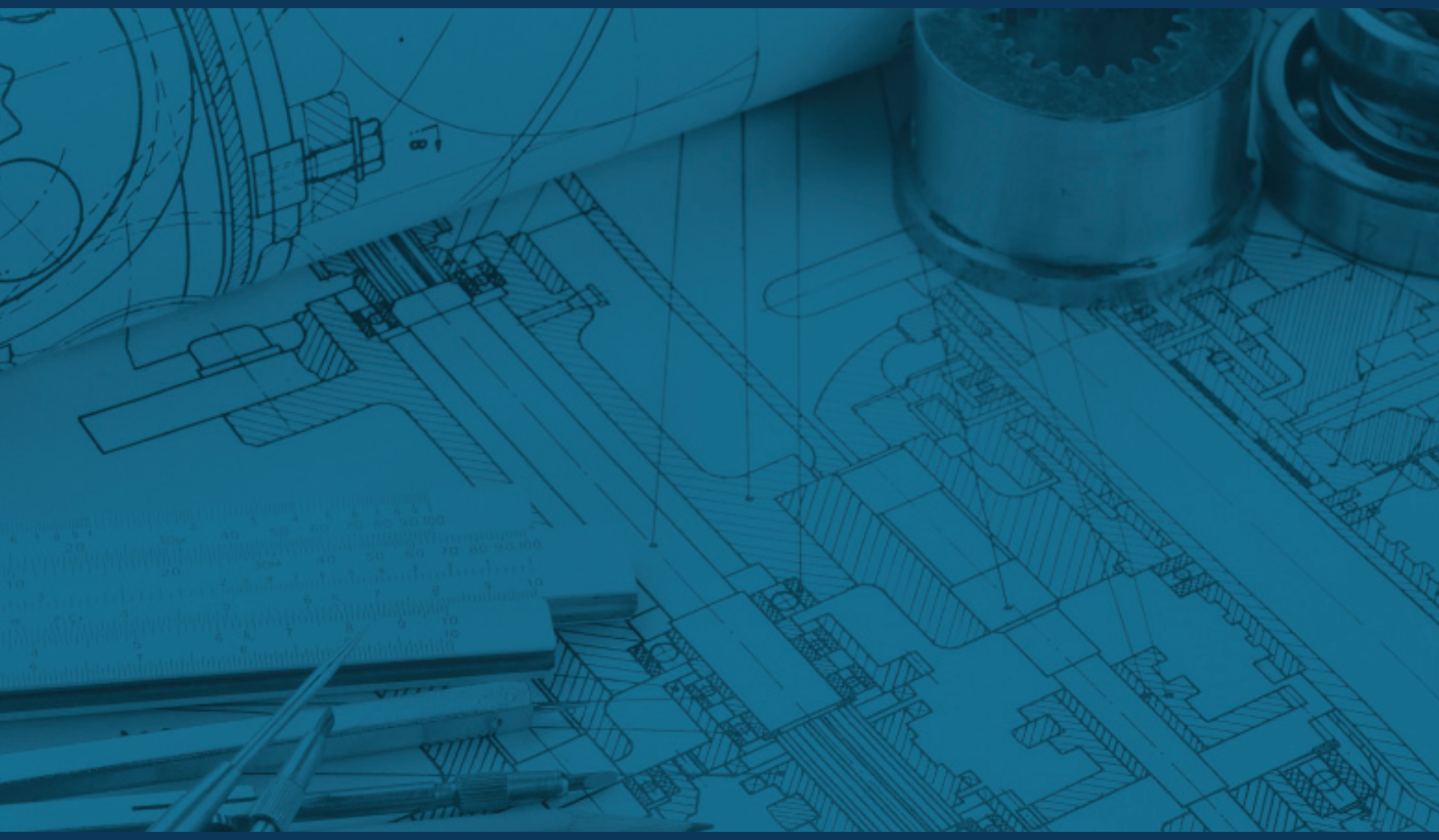
- weighing solutions



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