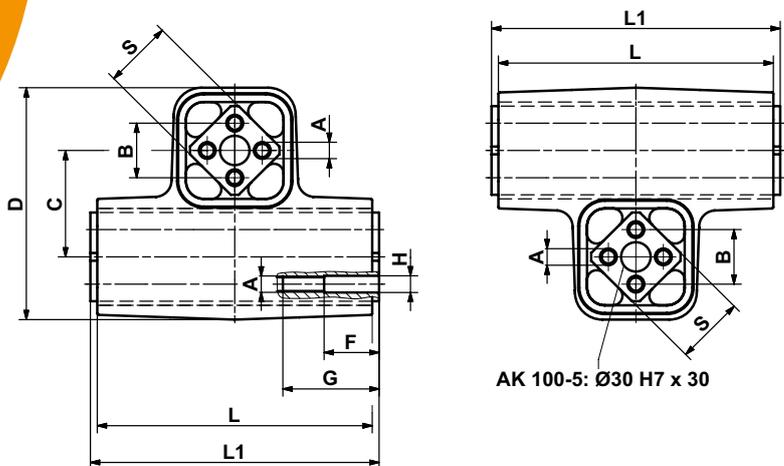




Oscillating Mountings for Gyratory Sifters

Type AK – Universal Joints



Art. No.	Type	Max. load G [N] by system:			A	B	C	D	F	G	ø H	L	L1 ±0.2	□ S
		hanging	staying crank driven	staying free oscillating										
07 061 001	AK 15	160	128	80	5 ^{+0.5}	10 ±0.2	27	54	-	-	-	60	65	15
07 061 002	AK 18	300	240	150	6 ^{+0.5}	12 ±0.3	32	64	-	-	-	80	85	18
07 061 003	AK 27	800	640	400	8 ^{+0.5}	20 ±0.4	45	97	-	-	-	100	105	27
07 061 004	AK 38	1'600	1'280	800	10 ^{+0.5}	25 ±0.4	60	130	-	-	-	120	130	38
07 061 005	AK 45	3'000	2'400	1'500	12 ^{+0.5}	35 ±0.5	72	156	-	-	-	150	160	45
07 061 011	AK 50	5'600	4'480	2'800	M12	40 ±0.5	78	172	40	70	12.25	200	210	50
07 061 012	AK 60	10'000	8'000	5'000	M16	45	100	218	50	80	16.5	300	310	60
07 061 013	AK 80	20'000	16'000	10'000	M20	60	136	283	50	90	20.5	400	410	80
07 061 009	AK 100-4	30'000	24'000	15'000	M24	75	170	354	50	100	25	400	410	100
07 061 010	AK 100-5	40'000	32'000	20'000	M24	75	170	340	50	100	25	500	510	100

G = max. load in N per support column

Art. No.	Type	Weight [kg]	Material structure			Bolting on inner square
			Inner square	Housing	Protection	
07 061 001	AK 15	0.4	Light metal profile	Steel welded construction	ROSTA blue painted	End-to-end screw or threaded bar quality 8.8
07 061 002	AK 18	0.6				
07 061 003	AK 27	1.9				
07 061 004	AK 38	3.7				
07 061 005	AK 45	6.7				
07 061 011	AK 50	11.4	Steel	Nodular cast iron	ROSTA blue painted	Shoulder studs quality 8.8 for optimizing frictional connection
07 061 012	AK 60	37.4				
07 061 013	AK 80	85.4				
07 061 009	AK 100-4	124				
07 061 010	AK 100-5	137		Steel welded construct.		

Usual drive parameters out of practice

- Driving speed n_s up to approx. 380 min⁻¹
- Oscillation angle α up to approx. ±3.5°

General advises

The operating parameters shall not exceed the guidelines of the "frequency spectrum" in the Technology part of the ROSTA general catalogue.

Calculation Example

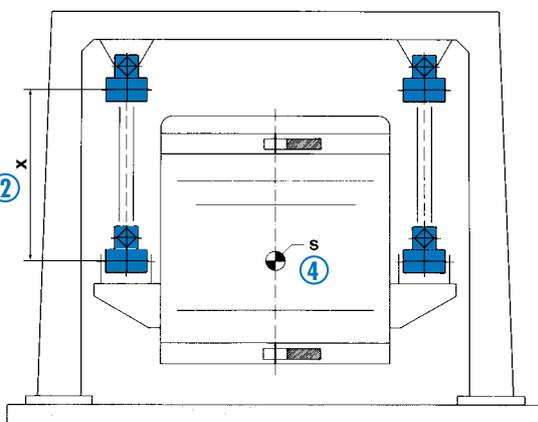
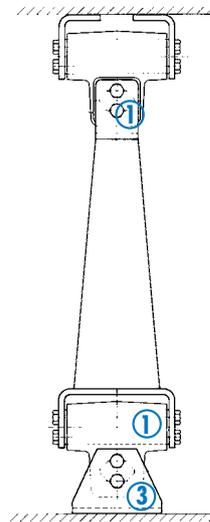
Machine type: staying sifter with positive crank drive

Description	Symbol	Example	Unit	Calculation formula
Total oscillating mass (material included)	m	1600	kg	Angle of oscillation $\alpha = \arctan \left(\frac{R}{X} \right) [^\circ]$
Eccentric radius	R	25	mm	
Length of support column	X	600	mm	
Angle of oscillation (out of R and X)	$\alpha \pm$	2.4	°	
Revolutions	n_s	230	min ⁻¹	Load per column $G = \frac{m \cdot g}{z} [N]$
Quantity of support columns	z	4	pcs.	
Load per column	G	3924	N	
Max. load capacity per column with AK 50 mounts	G_{max}	4480	N	

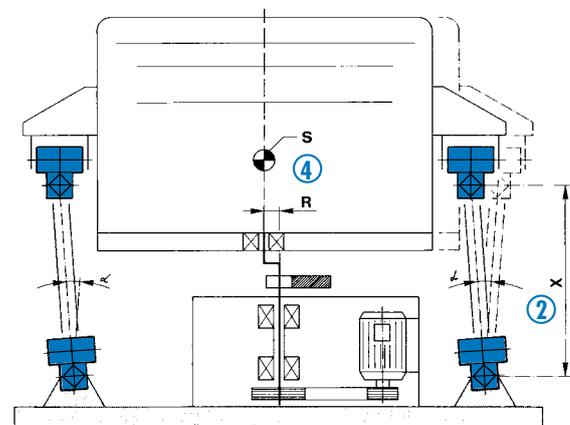
Element selection: 4 columns consisting of 2 pcs. AK 50 → **8 pcs. AK 50**

Installation guidelines for AK universal joints

- ① Install the two AK per column in the same line, in order that the distance X between the two inner squares of the 90° "distorted" element parts and the two inner squares of the "in-line" element parts is identical.
- ② Install the four identical connection columns (provided by the customer) between the two AK. Also by slightly inclined screen-boxes the distance or length X of the connection columns has to be identical – compensate the inclination with e.g. the higher positioning of the fixation brackets by the discharge-end of the screen-box.
- ③ Up to the size AK 50 we do recommend to use our fixation brackets type **WS** for the AK mounting on machine frame and screen-box – see ROSTA general catalogue "Rubber suspensions".
- ④ To avoid unwanted tilting motions or screen-box distortions (by standstill) we do recommend the installation of the upper AK-brackets on the level of the center of gravity "S" of the screen-box.



Hanging and freely oscillating gyratory sifter



Staying gyratory sifter with positive crank shaft drive

Gyratory sifter machines (plan sifter) Technology



Introduction

Gyratory sifters stay mainly in use in the processing sectors of the flour and grain conditioning, in the pharmaceutical powder preparation and in the chipboard industry for the selection and cleaning of the different wood-chip sizes.

The circular screening motion is offering a fast and complete covering of the entire screen surface = very high throughput.

Customized solutions

Oscillating Mountings



Gyratory screening machine installed on 8 pcs. AK-I 40 universal joints (joints made out of stainless steel)



Wood-chip sorting screen mounted on 8 pcs. AK 100-4 suspensions



Free oscillating gyratory sifter for the flour selection on 8 pcs. AV 38 elements



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Hanging gyratory sifters

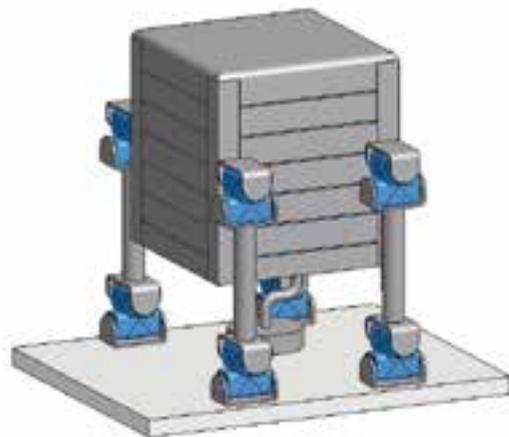
Hanging gyratory sifters are almost exclusively used in the milling sector for the sorting of the different types of flour (white flour, dark flour, black flour). These screens, which are equipped with a central unbalanced shaft, normally hang from the building ceiling on rattan or round fibre-glass rods. Due to the relatively high weight of the screening machines, several rattan or fibre-glass rods are needed at each corner of the box to ensure the suspension. In cases of very high humidity in the buildings, both types of rods can slip out of the clamps. Furthermore, it is very difficult to set it up so that all the rods support approximately the same weight.

For these applications, ROSTA recommends the use of the AV mounts, which have a very high carrying capacity. Only one mounting set is thereby needed for each corner of the screening box. In addition, the AV mountings can be delivered with right-hand and left-hand threads, which facilitates the horizontal adjustment of the box. The AV mountings have a long service life, and do not have to be periodically replaced, as it is the case with the rattan rods.



Upright staying gyratory sifters with eccentric shaft drive

Upright staying gyratory sifter machines frequently have this classical type of crank drive. These screens are mainly used in the flour processing sector, as well as in chipboard manufacturing plants. An eccentric shaft driven by belts transfers the circular movement to the screen box. The screen box is supported by four legs, each consisting of two ROSTA universal joints. The weight of the box lies completely on the four supports, which accurately guide the box movement.

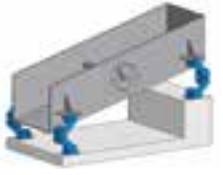
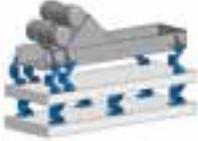


Upright staying gyratory sifters with unbalanced shaft drive

A very cost-efficient version of the upright staying gyratory sifter. Requires no complicated eccentric drive. The AK mountings or even the AV mountings must be over-dimensioned, however, due to the lack of a precisely defined guidance.

Please contact ROSTA for projects using upright staying gyratory sifters with unbalanced shaft drive.

Selection table for free oscillating systems (with unbalanced excitation)

					
		One mass system circular motion screen	One mass system linear motion screen	Two mass system with counterframe	One mass system linear motion screen hanging
	AB ABI Page 2.10	Oscillating Mounting – universal mounting. High vibration isolation and low residual force transmission. Natural frequencies approx. 2–3 Hz. 9 sizes from 50 N to 20'000 N per element.			
	AB-HD ABI-HD Page 2.12	Oscillating Mounting for impact loading and high production peaks. (Heavy Duty) Natural frequencies approx. 2.5–4 Hz. 8 sizes from 150 N to 14'000 N per element.			
	AB-D Page 2.14		Oscillating Mounting in compact design. Optimal in two mass systems as counterframe mounting. Natural frequencies approx. 3–4.5 Hz. 7 sizes from 500 N to 16'000 N per AB-D.		
	HS Page 2.15				Oscillating Mounting for hanging systems. Natural frequencies approx. 3–4 Hz. 5 sizes from 500 N to 14'000 N per HS.

Selection table for gyratory sifters

	AK Page 2.36	Universal Joint for the support or suspension of positive drive or freely oscillating gyratory sifting machines. 10 sizes up to 40'000 N per AK.	Gyratory sifter upright staying	Gyratory sifter hanging
	AV Page 2.38	Single Joint specially designed with large rubber volume for the suspension of gyratory sifting machines. Models with right-hand and left-hand threads. 5 sizes up to 16'000 N per AV.	