Alfa Laval Gravity bar screen

For dewatering of coarse particles

Introduction

The gravity bar screen is used for dewatering of coarse particles.

Application

- Separation of steeped corn from transport water
- Dewatering of pre-milled corn
- Washing and dewatering of maize germ.

Benefits

- Proven solution with a large installed base
- Long service life due to simple and rugged design
- Screens can be delivered with cleaning nozzles installed at the front- and rear side of the screen surface to minimize operator time for cleaning.

Design

The gravity bar screen is comprised of individual stainless steel housings for each screen surface, equipped with removable front cover and a clamping device for mounting and quick replacement of the screen surface. A gasketed divider separates the bottom discharges for the under- and overflows.

The feed box is made of stainless steel with a flanged inlet connection, and a slot shaped discharge nozzle for equal distribution of the feed flow.

The screen surface is mounted and sealed between two polypropylene retainers to form an assembly designed for quick reversal and replacement.

The discharge hoppers are in stainless steel for underflow and overflow, and are equipped with flanged connections. Overflow can be supplied with rectangular shut over the full width of the screen.

Gravity bar screens are available in the following lengths depending on the dewatering abilities of the slurry

- 800 mm screen length (GBS80/…)
- 1600 mm screen length (GBS160/…)

Working principle

The screen is a rugged stationary device using a concave wedge bar screen. The slot shaped nozzle in the top mounted feed box ensures even distribution of the feed over the width of the screen surface. The feed flows across the screen surface at right angles to the openings between the wedge bars. The sharp leading edges of the wedge bars act as a sharp knife on the underside of the passing flow and slice off layers of slurry and direct them downward through the slot into the screen box to leave via the underflow discharge.

The oversize fraction (for instance cracked corn kernels and germ) is continually dewatered as it moves across the screen and discharges at the far end to leave the screen box through the overflow discharge. In order to obtain the required dewatering performance, the dewatering screens have a bar spacing (slot width) ranging from 0.7 to 4 mm. The screen requires no special feed condition other than sufficient head to flow into the feed box above the screen surface. The unique continuously curved surface design, together with the velocity across the surface, creates a centrifugal force which holds the slurry constantly against the screen.

Technical data									
Capacity in m^3/h (gpm)									**N1**
Slot width mm (inches)	0.4 (0.015)	0.6 (0.024)	0.8 (0.031)	1 (0.039)	1.5 (0.059)	2 (0.079)	2.5 (0.098)	3 (0.118)	
GBS 80/40	21 (92)	29 (128)	35 (154)	42 (185)	54 (238)	64 (282)	77 (339)	90 (396)	1
GBS 80/60	31 (136)	43 (189)	53 (233)	62 (273)	81 (357)	96 (423)	115 (506)	134 (590)	1
GBS 80/80	42 (185)	58 (255)	70 (308)	83 (365)	108 (476)	128 (564)	154 (678)	179 (788)	2
GBS 80/100	52 (229)	72 (317)	88 (387)	104 (458)	134 (590)	160 (704)	192 (845)	224 (986)	2
GBS 80/120	62 (273)	87 (383)	106 (467)	125 (550)	161 (709)	192 (845)	230 (1013)	269 (1184)	2
GBS 80/140	72 (317)	101 (445)	124 (546)	146 (643)	188 (828)	224 (986)	268 (1180)	314 (1383)	3
GBS 80/160	83 (365)	115 (506)	141 (621)	166 (731)	215 (947)	256 (1127)	307 (1352)	358 (1576)	3
GBS 160/40	21 (92)	29 (128)	35 (154)	42 (185)	54 (238)	64 (282)	77 (339)	90 (396)	1
GBS 160/60	31 (136)	43 (189)	53 (233)	62 (273)	81 (357)	96 (423)	115 (506)	134 (590)	2
GBS 160/80	42 (185)	58 (255)	70 (308)	83 (365)	108 (476)	128 (564)	154 (678)	179 (788)	2
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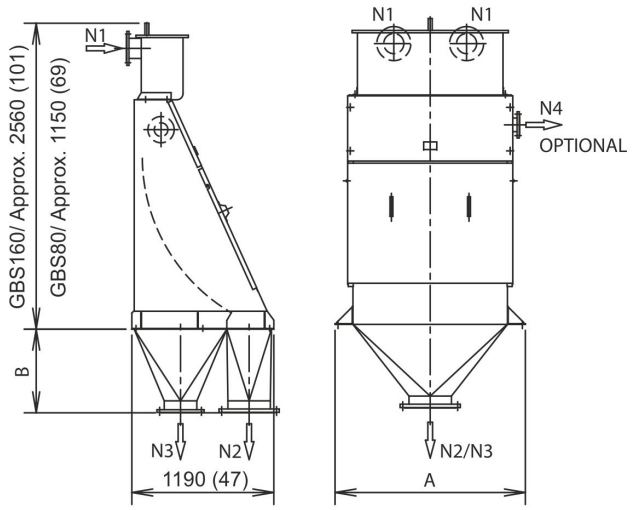
GBS 160/120	62 (273)	87 (383)	106 (467)	125 (550)	161 (709)	192 (845)	230 (1013)	269 (1184)	2

Dimensional drawing



Dimensions in mm (inches)	A	B	Net weight kg (lbs)
GBS 80/40	814 (32)	350 (14)	160 (353)
GBS 80/60	1014 (40)	400 (16)	200 (441)
GBS 80/80	1224 (48)	450 (18)	240 (529)

Dimensions in mm (inches)	A	B	Net weight kg (lbs)
GBS 80/100	1434 (56)	550 (22)	285 (628)
GBS 80/120	1645 (65)	650 (26)	360 (794)
GBS 80/140	1795 (71)	650 (26)	400 (882)
GBS 80/160	2005 (79)	650 (26)	450 (992)
GBS 160/40	764 (30)	700 (28)	175 (386)
GBS 160/60	964 (38)	700 (28)	210 (463)
GBS 160/80	1174 (46)	700 (28)	250 (551)
GBS 160/100	1384 (54)	700 (28)	300 (661)
GBS 160/120	1595 (63)	700 (28)	350 (772)

How to contact Alfa Laval

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