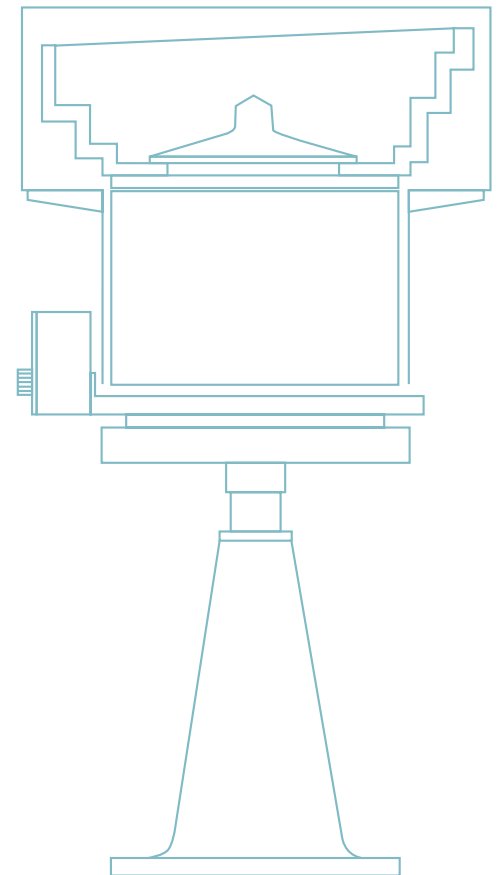


Standard Equipment

- Bowls
- Drive Units
- Control Boxes
- Accessories

Vibratory Bowl Feeders



RNA – Feeding Technology



RNA – The Company

With many years experience in the parts handling industry and nearly 2000 complete feed systems supplied annually, RNA have earned a reputation for the most robust and reliable equipment on the market. Our commitment to research and development maintains our position at the leading edge of feeding technology.

We provide an extensive range of the most efficient drive units, controllers and accessories for either standard or special requirements. All equipment is manufactured to the highest standards of quality upon which we have built our reputation.

We offer a first class service and for standard equipment, immediate delivery from stock. Our product range is manufactured to meet the highest demands of the food and pharmaceutical industries and also includes equipment manufactured to UL and CSA standards.

Quality has always been of central importance to RNA, with each employee committed to make their own personal contribution to the achieve-

ment of quality standards and customer satisfaction. We know that long term success in business can only be achieved by providing high quality equipment, which fulfils the customers requirements.



Vibratory Bowl Feeder from RNA

This catalogue represents our complete range of standard equipment.

It includes drive units, bowls, bowl centres, control boxes and additional accessories including stands, base plates, sound covers and sensors. Special requirements are available upon request.

We also manufacture tooling to orientate components, which together with our standard equipment, provides a system ready to integrate with a customer's machine.

If you require bespoke tooling, please complete the enquiry form on page 23 of this catalogue. Send this together with your specification and bulk components and we will be happy to provide you with a detailed quotation.

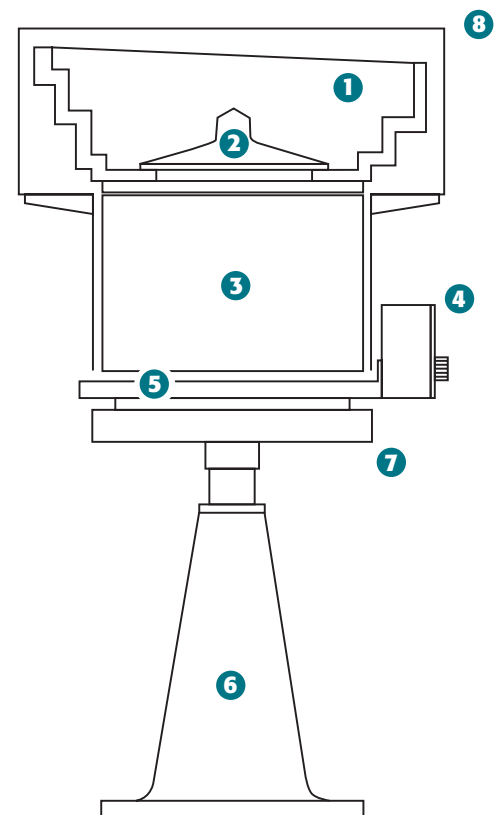
This catalogue has been designed to provide technical details on many of our standard products.

Please refer to the guidance notes on the following pages.

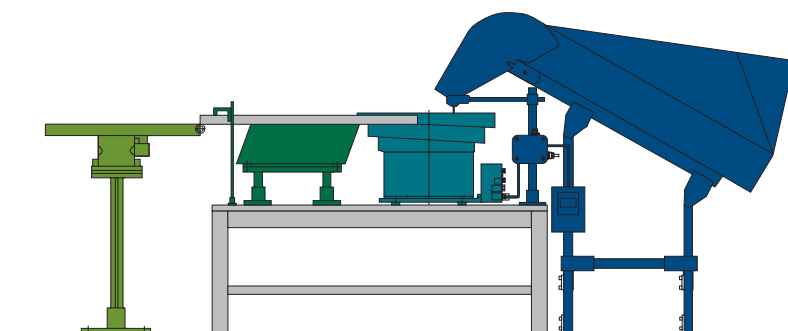
For those who are familiar with our brochure, you will find a summary table showing all equipment and the construction sizes on page 23-1. Further technical information can be found on our web sites www.rna-uk.com and www.rna.de

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Subject	see page
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5 Base plates	19
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6 Stands and	
7 top plates	21
8 Soundproof covers	22
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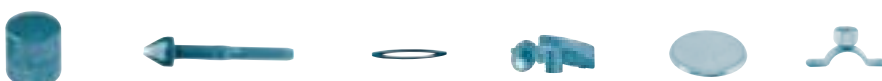


More product catalogues from the RNA range of equipment



Colouring of catalogues:

- Bulk hopper
- Linear feeder
- Conveyor
- Stepfeeders
- Control Boxes



How to use this catalogue

We suggest the following sequence:

1. Selection of bowl type
(cylindrical, conical, stepped)
according to the table given below.



Bowl

Cylindrical bowl

Suitable for

Continuous transport of components and for handling small parts

Page

Page 6



Conical bowl

Heavy sharp-edged components
Larger Loads
Automatic pre-separating

Page 8

Type RG

Ideal for the food and pharmaceutical industry

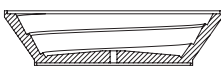
Page 8



Stepped bowl

Larger loads and larger components
see also conical bowls

Page 10

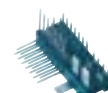


Polyamide bowls
(conical or stepped)

Small components with simple geometry and where mass production of feeders is required

Page 12

Technical data is subject to change. All measurements are stated in mm.



2. Dependant upon the application, you can define the bowl size by choosing the track width measurement (B).

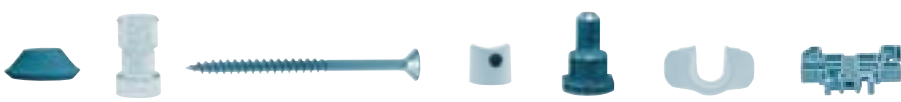
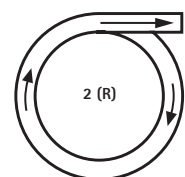
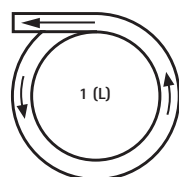
Each bowl has a dedicated drive unit. For ease of machine assembly we recommend the use of a base plate.

Please use the code for enquiries and orders. (For codes refer to page 23-1)

Type	1	1	2	2
Capacity [l]*	1	1	2	2
Material	Aluminium	Aluminium	Aluminium	Aluminium
A = Discharge height	75	78	112	132
B = Width of track	20	20	32	32
C = Discharge radius	166	168	206	206
H = Bowl height	330	330	400	400
S = Track pitch	97	101	124	145
Bowl weight	0.8	2.6	1.65	6.0
Fixing	central	central	radial	radial
Bottom (see page 13)	cast	cast	required	required
Suitable drive unit	SRC-N 200	SRC-B 200	SRC-N 250	SRC-N 250
Z = Total discharge height	252	263	323	357
Suitable base plate	SRG-N 200	SRG-N 200	SRG-N 250	SRG-N 250

3. Please state the feed direction for orders of bowls and drive units.

- 1) Left handed: anti-clockwise
- 2) Right handed: clockwise



Cylindrical Bowls

These bowls provide a constant feed of components. They are ideal for small components, but have restricted capacity for some applications.



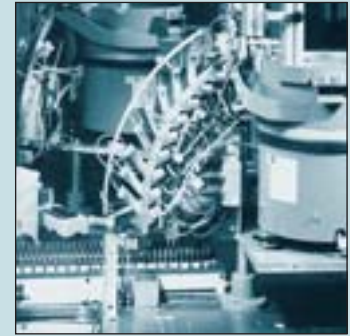
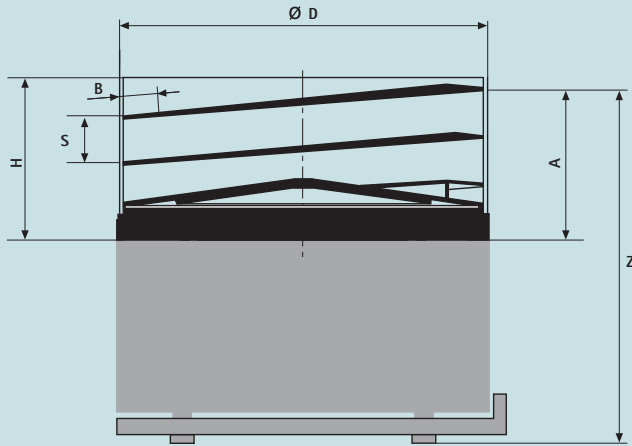
Type	ZAD-Z 63-4-18	ZAD-Z 100-6-50	ZSD-Z 160-12-70	ZSB-Z 160-12-70	ZSB-Z 200-12-80	ZSB-N 250-30-110
Capacity [l]*	0.05	0.2	0.5	0.5	0.8	1.6
Material	Aluminium	Aluminium	Steel	Stainless Steel	Stainless Steel	Stainless Steel
A = Discharge height	17	35	64	64	65	100
B = Width of track	5	6	12	12	12	30
D = Bowl diameter	70	100	168	168	181	288
H = Height of bowl	18	40	70	70	80	110
S = Track pitch (Spiral distance)	8	12	22	22	22	35
Bowl weight [kg]	0.09	0.3	1.4	1.1	1.35	4.2
Fixing	central	central	central	central	central	radial
Bottom (see page 13)	integral	integral	integral	fully welded	fully welded	required
Suitable drive unit (see also page 14)	SRC-N 63	SRC-N 100	SRC-N 160	SRC-N 160	SRC-N 200	SRC-N 250
Z = Total discharge height	82	117	220 (SRC-SRG) 237 (SRC-SRJ)	220 (SRC-SRG) 237 (SRC-SRJ)	253 (SRC-SRG) 270 (SRC-SRJ)	350 (SRC-SRG) 368 (SRC-SRJ)
Suitable base plate (see also page 19)	-	-	SRG-N 160 SRJ 160	SRG-N 160 SRJ 160	SRG-N 200 SRJ 200	SRG-N 250 SRJ 250

* Larger capacities available, dependent on application and components

** Each track pitch increased by 3 mm



Cylindrical Bowls



Please advise feed direction when ordering (see also page 5).

ZSB-ZA 250-30-125	ZSB-N 400-30-160	ZSB-BA 400-30-175	ZSB-Z2A 400-30-190	ZSB-N 630-50-180	ZSB-BA 630-50-195	ZSB-B 800-80-220
1.6	7	7	7	20	20	20
Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
120	140	155	171	156	167	195
30	30	30	30	50	50	80
288	440	440	440	670	670	820
127	160	175	191	180	195	220
33**	50	50	50	70	70	70
6.4	8.4	10.6	16.3	16.2	18.7	36.8
central	radial	radial	central	radial	radial	radial
fully welded	required	fully welded	fully welded	required	fully welded	fully welded
SRC-N 250	SRC-N 400 SRHL 400	SRC-N 400 SRHL 400	SRC-N 400 SRHL 400	SRC-N 630	SRC-N 630	SRC-N 800
370 (SRC-SRG) 388 (SRC-SRJ)	403 (SRC-SRG) 421 (SRC-SRJ) 427 (SRHL-SRG) 445 (SRHL-SRJ)	418 (SRC-SRG) 436 (SRC-SRJ) 442 (SRHL-SRG) 460 (SRHL-SRJ)	434 (SRC-SRG) 452 (SRC-SRJ) 458 (SRHL-SRG) 476 (SRHL-SRJ)	419 (SRC-SRG) 444 (SRC-SRJ)	430 (SRC-SRG) 455 (SRC-SRJ)	510
SRG-N 250	SRG-N 400	SRG-N 400	SRG-N 400	SRG-N 630	SRG-N 630	-
SRJ 250	SRJ 400	SRJ 400	SRJ 400	SRJ 630	SRJ 630	-

The measurements mentioned above are valid for standard equipment only without tooled devices.
Subject to manufacturing tolerances.



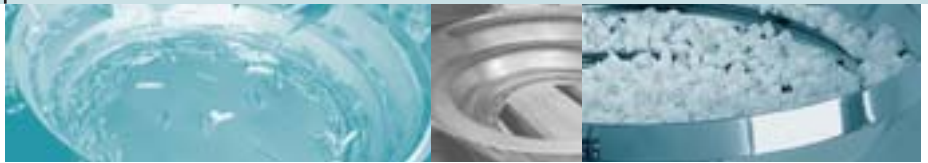
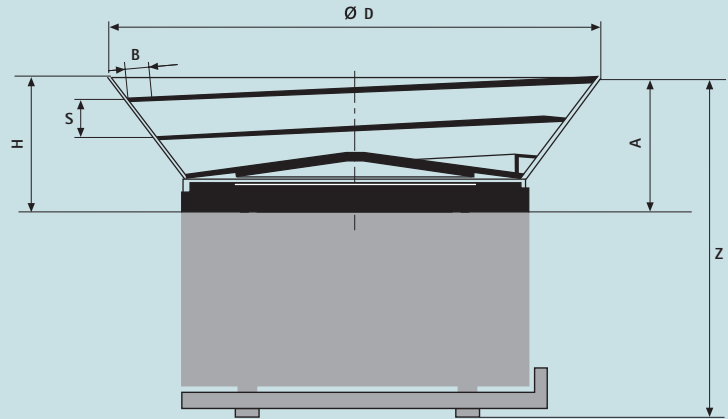
Conical Bowls

A conical bowl provides a higher capacity and with an increase in radius, assists with the pre-singulation of components.

Where necessary, the standard track width, track pitch and the amount of tracks can be adapted to suit the application.

Type RG makes pre-orientation possible through a sloping track position which prevents parts jamming between the pitch of the tracks.

The closed track type is particularly suitable for pharmaceutical applications.

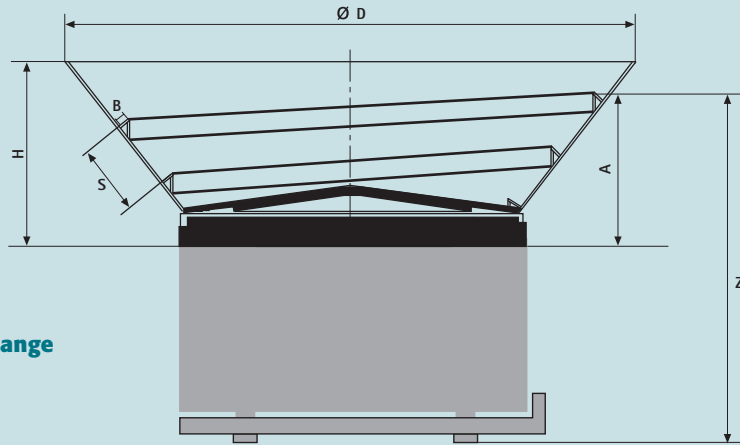


Type	KAD-Z 63-4-30	KAD-Z 100-4-40	KSB-Z 200-18-55	KSB-N 250-20-90	KSB-ZA 250-20-105
RG Range			KSB-Z 200-5RG-60		
Capacity [l]*	0.04	0.15	0.5	2	2
Material	Aluminium	Aluminium	Stainless Steel	Stainless Steel	Stainless Steel
A = Track discharge height RG Range	25	35	47 50	77	110
B = Discharge height RG Range	4	4	18 5	20	20
D = Bowl diameter RG Range	69	99	265 277	403	415
H = Bowl height RG Range	30	40	55 58	89	113
S = Track pitch (Spiral distance) RG Range	6.5	11	25 28	32	32
Bowl weight [kg]	0.11	0.34	1.46 1.7	3.85	8.2
Fixing	central	central	central	radial	central
Bottom (see page 13)	integral	integral	fully welded	required	fully welded
Suitable drive unit (see page S. 14)	SRC-N 63	SRC-N 100	SRC-N 200	SRC-N 250	SRC-N 250
Z = Total discharge height	90	117	235 (SRC-SRG) 252 (SRC-SRJ)	327 (SRC-SRG) 345 (SRC-SRJ)	360 (SRC-SRG) 378 (SRC-SRJ)
RG Range			238 (SRC-SRG) 255 (SRC-SRJ)		
Suitable base plate (see page 19)	-	-	SRG-N 200 SRJ 200	SRG-N 250 SRJ 250	SRG-N 250 SRJ 250

* Larger capacities available, dependent on application and components



Conical Bowls



RG Range



Please advise feed direction when ordering (see also page 5).

KSB-ZA 250-20-150	KSB-N 400-50-160	KSB-BA 400-50-175	KSB-Z2A 400-50-190	KSB-N 630-50-180	KSB-BA 630-50-190	KSB-B 800-80-170
KSB-ZA 250-8RG-150	KSB-BA 400-15RG-220		KSB-Z2A 400-15RG-235	KSB-BA 630-15RG-250		
2	10	10	10	20	20	25
Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
136 138	153	164 169	180 185	172	167 149	148
20 8	50	50 15	50 15	50	50 15	80
476 478	670	670 745	670 745	898	898 980	1200
151 151	161	173 220	189 236	180	192 250	168
32 40	68	68 71	68 71	70	70 81	64
9.2 10.8	12.9	13.6 16	19.4 23.2	19	21.5 27	35
central	radial	radial	central	radial	radial	radial
fully welded	required	fully welded	fully welded	required	fully welded	fully welded
SRC-N 250	SRC-N 400 SRHL 400	SRC-N 400 SRHL 400	SRC-N 400 SRHL 400	SRC-N 630	SRC-N 630	SRC-N 800
386 (SRC-SRG) 404 (SRC-SRJ)	416 (SRC-SRG) 434 (SRC-SRJ) 440 (SRHL-SRG) 458 (SRHL-SRJ)	427 (SRC-SRG) 445 (SRC-SRJ) 451 (SRHL-SRG) 469 (SRHL-SRJ)	443 (SRC-SRG) 461 (SRC-SRJ) 467 (SRHL-SRG) 485 (SRHL-SRJ)	435 (SRC-SRG) 460 (SRC-SRJ)	430 (SRC-SRG) 455 (SRC-SRJ)	463
388 (SRC-SRG) 406 (SRC-SRJ)		432 (SRC-SRG) 450 (SRC-SRJ) 456 (SRHL-SRG) 474 (SRHL-SRJ)	448 (SRC-SRG) 466 (SRC-SRJ) 472 (SRHL-SRG) 490 (SRHL-SRJ)		412 (SRC-SRG) 437 (SRC-SRJ)	
SRG-N 250 SRJ 250	SRG-N 400 SRJ 400	SRG-N 400 SRJ 400	SRG-N 400 SRJ 400	SRG-N 630 SRJ 630	SRG-N 630 SRJ 630	- -

The measurements mentioned above are valid for standard equipment only without tooled devices.
Subject to manufacturing tolerances.



Stepped Bowl

Stepped bowls have a larger feeding track width and are particularly suited to pre-orientation of components. The capacity is larger than that of a cylindrical bowl. A further advantage is that the components do not jam in the tracks. All stepped bowls are cast aluminium, which need to be coated (see also page 18 Coating).



Type	TAG-Z 200-10-80	TAG-Z 200(324)-20-105	TAG-N 250-20-105	TAG-N 250-32-130	TAG-N 250-32-145	TAG-ZA 250-32-165	TAG-ZA 250(541)-32-180
Capacity [l]*	0.5	1	1	2	2	2	7
Material	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium
A = Discharge height	66	71	77	90	107	126	135
B = Width of track	10	20	20	32	32	32	32
C = Discharge radius	115	166	168	206	206	206	275
D = Bowl diameter	228	330	330	400	400	400	545
H = Bowl height	81	95	102	122	140	160	177
S = Track pitch (Spiral distance)	20	32	34	42	42+15**	42+15**	50+15**
Bowl weight [kg]	0.8	2.6	1.65	2.9	3.4	6.9	8.2
Fixing	central	central	radial	radial	radial	central	central
Bottom (see page 13)	cast	cast	required	required	required	cast	cast
Suitable drive unit (see page 14)	SRC-N 200	SRC-B 200	SRC-N 250	SRC-N 250	SRC-N 250	SRC-N 250	SRC-B 250
Z = Total discharge height	254 (SRC-SRG) 271 (SRC-SRJ)	259 (SRC-SRG) 276 (SRC-SRJ)	327 (SRC-SRG) 345 (SRC-SRJ)	340 (SRC-SRG) 358 (SRC-SRJ)	357 (SRC-SRG) 375 (SRC-SRJ)	376 (SRC-SRG) 394 (SRC-SRJ)	385 (SRC-SRG) 403 (SRC-SRJ)
Suitable base plate (see page 19)	SRG-N 200 SRJ 200	SRG-N 200 SRJ 200	SRG-N 250 SRJ 250	SRG-N 250 SRJ 250	SRG-N 250 SRJ 250	SRG-N 250 SRJ 250	SRG-N 250 SRJ 250

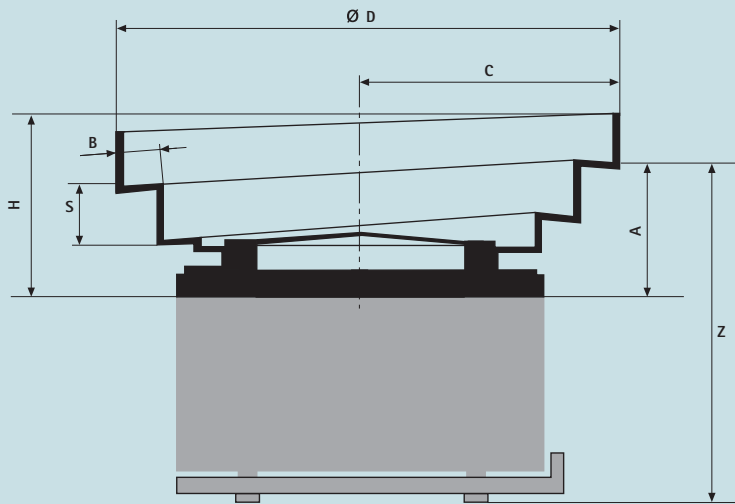
* Larger capacities available, dependent on application and components

** Additional gradient on last 180 degrees





Stepped Bowl



Please advise feed direction when ordering (see also page 5).

TAG-N 400-32-165	TAG-N 400-50-190	TAG-N 400-50-215	TAG-ZA 400-50-240	TAG-N 630-50-220	TAG-N 630-65-230	TAG-ZAB 630-50-240	TAG-ZAB 630-65-250
7	10	10	10	25	25	25	25
Aluminium	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium	Aluminium
124	138	162	188	157	157	197	197
32	50	50	50	50	65	50	65
275	335	335	335	440	440	440	440
545	645	645	650	830	830	830	830
165	190	215	241	222	230	242	250
50+15**	68	68+23**	68+23**	76	95	76	95
5	9	11,7	14,7	18	18	27	27
radial	radial	radial	central	radial	radial	central	central
required	required	required	cast	required	required	screwed in	screwed in
SRC-N 400	SRC-N 400	SRC-N 400	SRC-N 400	SRC-N 630	SRC-N 630	SRC-N 630	SRC-N 630
387 (SRC-SRG)	401 (SRC-SRG)	425 (SRC-SRG)	451 (SRC-SRG)	420 (SRC-SRG)	420 (SRC-SRG)	460 (SRC-SRG)	460 (SRC-SRG)
405 (SRC-SRJ)	419 (SRC-SRJ)	443 (SRC-SRJ)	469 (SRC-SRJ)	445 (SRC-SRJ)	445 (SRC-SRJ)	485 (SRC-SRJ)	485 (SRC-SRJ)
411 (SRHL-SRG)	425 (SRHL-SRG)	449 (SRHL-SRG)	475 (SRHL-SRG)				
429 (SRHL-SRJ)	443 (SRHL-SRJ)	467 (SRHL-SRJ)	493 (SRHL-SRJ)				
SRG-N 400	SRG-N 400	SRG-N 400	SRG-N 400	SRG-N 630	SRG-N 630	SRG-N 630	SRG-N 630
SRJ 400	SRJ 400	SRJ 400	SRJ 400	SRJ 630	SRJ 630	SRJ 630	SRJ 630

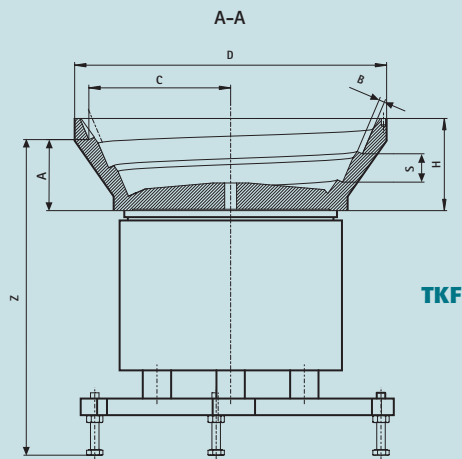
The measurements mentioned above are valid for standard equipment only without tooled devices.
Subject to manufacturing tolerances.



Polyamide Bowls

Plastic bowls show favourable sliding and running properties: an unfavourable mating of steel on steel is avoided. Customized milling of the bowl and spiral makes it flexible to shape and reproduce the plastic bowl. The sound pressure level is reduced.

Plastic bowls are available in a stepped shape (TKF) or in a conical shape (KKF). Individual measures and shapes upon request. A multithread design is possible upon request.



Please advise feed direction when ordering (see also page 5).

Type	KKF-Z 100-X-40	TKF-Z 100-X-40	KKF-Z 160-X-65	TKF-Z 160-X-65	KKF-Z 200-X-65	TKF-Z 200-X-65	KKF-ZA 250-X-100	TKF-ZA 250-X-100
Capacity [l]***	0.2	0.2	1.2	1.2	1.2	1.2	6	5
Material****	PA 6-G schwarz	PA 6-G schwarz	PA 6-G schwarz	PA 6-G schwarz	PA 6-G schwarz	PA 6-G schwarz	PA 6-G schwarz	PA 6-G schwarz
A = Discharge height**	33-32	33-32	51-50	50-48	51-50	50-48	85-83	88-87
B = Width of track	1-4	1-5	1-4	1-9	1-4	1-9	1-7	1-10
C = Discharge radius**	50-53	53-57	97-100	99-108	97-100	99-107	175-180	176-186
D = Bowl diameter	120	120	220	230	220	230	400	400
H = Bowl height	40	40	65	65	65	65	100	100
S = Track pitch* (Spiral distance)	12	12	20	20	20	20	36	36
Fixing	central	central	central	central	central	central	central	central
Suitable drive unit (see page 14)	SRC-N 100	SRC-N 100	SRC-N 160	SRC-N 160	SRC-N 200	SRC-N 200	SRC-N 250	SRC-N 250
Z = Total discharge height** (incl. "SRJ"/regulating range ±10mm) (100 series without SRJ)	115-114	115-114	223-222	223-221	256-255	255-253	372-370	376-375

* measured vertically

** varies depending on the spiral width

*** approximate indication; a larger filling volume is possible depending on the nature of the task and workpiece

**** alternative material possible

structural shape:

KKF = conical shape

TKF = stepped shape (stepped design)

Moving direction to the left and right and multiple-current designs are possible

Alternative designs are possible



The measurements mentioned above are valid for standard equipment only without tooled devices.
Subject to manufacturing tolerances.



Centres

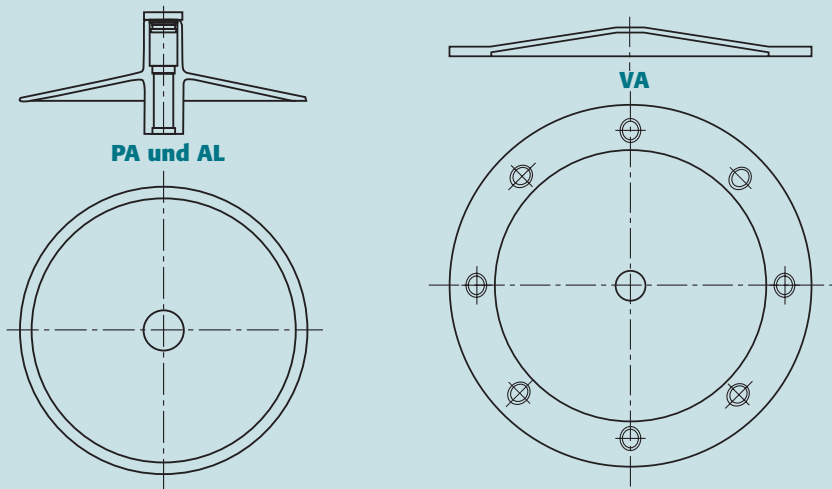
If there is an aperture in the bottom of the bowl, either a rotating or fixed centre is required.

Material type:

PA = Polyamide

AL = Aluminium

VA = Stainless steel



Rotating centres (SRL) are used in the following circumstances:

1. To relieve pressure on the bowl drive unit
2. Keeping vibration of components to a minimum
3. To reduce noise levels

Please note:

Certain products can get trapped between the rotating centre and base of the bowl and small quantities of parts may be left within the feeder. For heavy parts we recommend the use of an aluminium rotating centre (SRL AL).

Loose/rotating centres (non vibrating)

Size	SRL-N 250		SRL-N 400		SRL-N 630
Material	PA	AL	PA	AL	AL

Fixed centres (SRF) provide the following advantages:

1. There are no gaps to trap parts
2. The centre will not allow dust or debris into the drive unit
3. The bowl can be purged of components

Fixed centres (vibrating)

Size	SRF-N 250			SRF-N 400			SRF-N 630	
Material	PA	AL	VA	PA	AL	VA	AL	VA

Selection of basic material

Rotating Centre (stainless steel, only for fixed centres)

Suitable when a hopper feeds components to the same position on the centre at the bottom of the bowl. Will provide more durability.

Polyamide or aluminium centres (PA or AL)

The choice of the material is dependent upon the weight and condition of components.



Drive Units

RNA drive units offer reliability and endurance. The use of high performance magnets give a continuous high feed rate regardless of the number of parts in the bowl. RNA drive units are renowned for their durability, smooth feed characteristics and low noise levels.



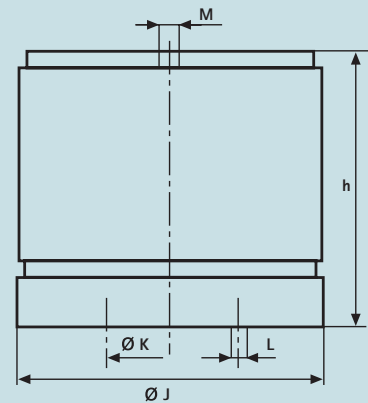
SRC-N 63-2 SRC-N 100-2

Electrical Equipment

Supply Voltage 200V 50 Hz

Protection class IP54

Output vibrating frequency: -1=50 Hz/3000 min⁻¹
-2=100 Hz/6000 min⁻¹



Application area for 50 Hz vibration frequency (-1 design)

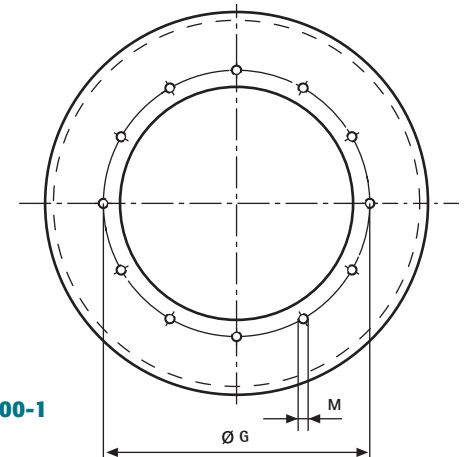
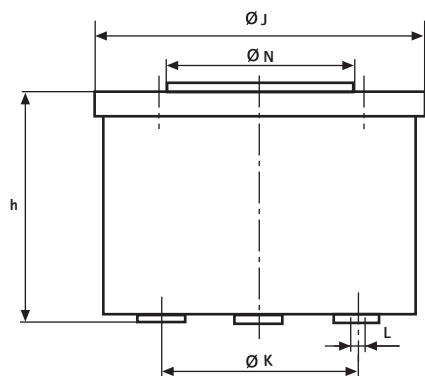
- for heavy additional mass at the bowl (f.e. extensive orienting devices)
- for minor noise emission
- drive unit will be more damageable by heavy loading (filling weight) as by -2 design

Application area for 100 Hz vibration frequency (-2 design)

- if "fine" orienting devices are needed for small sort criterions of the work pieces
- better for critical cutting site passage (small vibrating cast of the work pieces)

Type	SRC-N 63-2	SRC-N 100-2	SRC-N 160-2	SRC-N 200-2	SRC-B 200-2**
h = Drive unit height/ Top casting	65	82	133	165	165
J = Drive unit diameter	60	90	157	180	180
K = Pitch between mountings/ no. of bores	40/2	70/3	120/3	130/3	130/3
L = Thread dimensions	M4	M4	M6	M6	M6
M = Bowl fixing	M5	M5	M8	M8	M8
N = Shoulder diameter	-	-	150	161	161
G = Bolt circle (Bowl fastening)	-	-	-	-	-
Drive unit weight [kg]	0.8	1.8	7	11	11
Rating in amps [A]	0.04	0.055	0.55	1.2	1.2
Length of connection cable* [m]	1.4	1.4	1.4	1.4	1.4

Adapter plates for strange bowls see page 23-1



SRC-N 250-2 • SRC-B 250-2 • SRC-N 400-2 • SRC-N 400-1

SRHL 400-1 • SRHL 400-2 • SRC-N 630-1

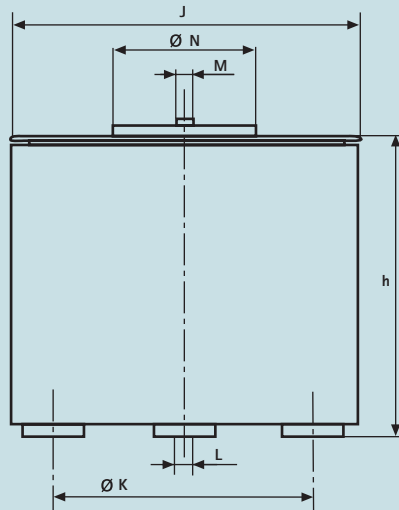




Drive Units



SRC-N 160-2
 SRC-N 200-2
 SRC-B 200-2



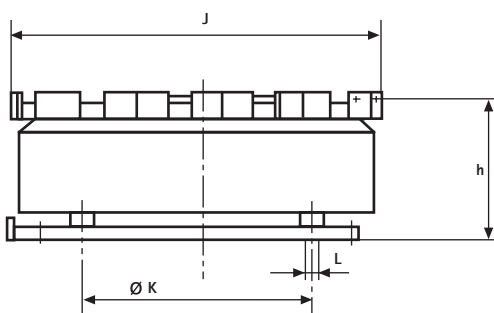
Standard nominal tension 200 V/50 Hz. Also available in special nominal tensions 110 V/220 V and frequencies 50 Hz/60 Hz.

SRHL The bowl feeder type SRHL 400 is a very efficient drive unit and is recommended for use with heavy tooling and high feed requirements.

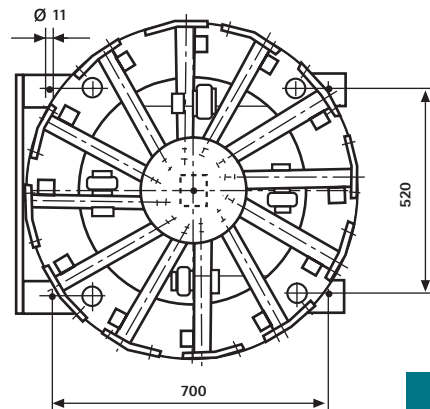
SRC-N 250-2	SRC-B 250-2**	SRC-N 400-1	SRHL 400-1	SRC-N 630-1	SRC-N 800-1
		SRC-N 400-2	SRHL 400-2		
218	218	231	255	228	315
290	290	440	470	660	826
220/3	220/3	350/3	350/3	560/3	735
M8	M8	M10	M10	M10	M10
M6 8 x 45°	M6 8 x 45°	M6 12 x 30°	M6 12 x 30°	M6 12 x 30°	-
165	165	300	300	500	-
186	186	320	320	525	-
40	40	103	140	168	270
2.6	2.6	3.75(...-1) 4.05(...-2)	5.7(...-1) 5.3(...-2)	5	8.5
0.5	0.5	0.5	0.5	0.5	1.4

* Longer connection cables are available upon request • ** Extra springs for larger capacity

Standard paint finish: RAL 7035 • Special paint finish on request



SRC-N 800-1

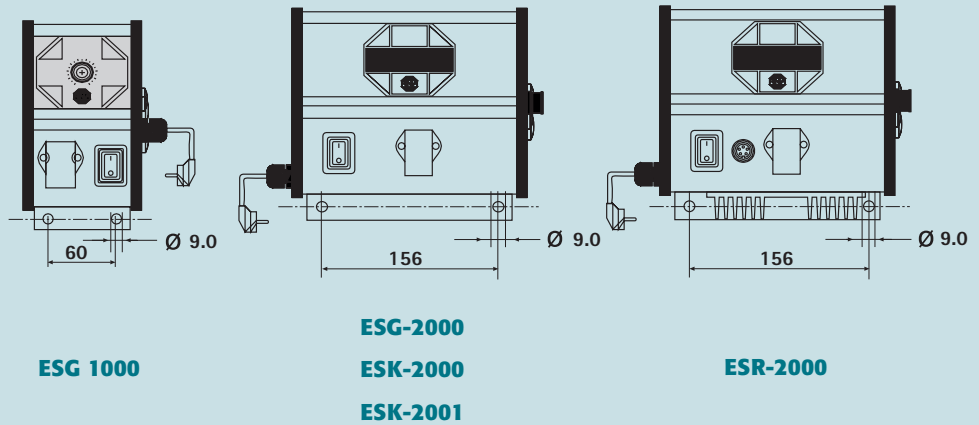


Please advise feed direction when ordering (see also page 5)
 Subject to manufacturing tolerances.



Control Boxes

RNA provides state of the art controllers for all vibratory drive units. These range from low cost units to self calibrating, high-tech controllers using microprocessor technology to control external sensors and provide communication signals. These are specially designed to meet the requirements of the bowl feeder industry. All controllers are CE approved.



ESG 1000

ESG-2000

ESK-2000

ESK-2001

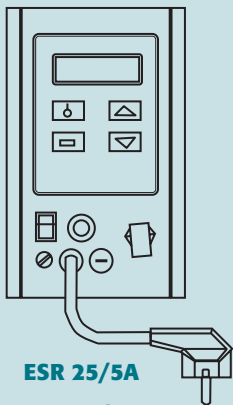
ESR-2000

Type

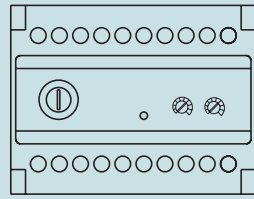
Type	ESG 1000	ESG-2000	ESK-2000	ESK-2001
Mains voltage	230 V AC, 50/60 Hz, +20 %/-15 % 110 V AC, 50/60 Hz, +10 %/-10 %	230 V AC, 50/60 Hz, +20 %/-15 % 110 V AC, 50/60 Hz, +10 %/-10 %	230 V AC, 50/60 Hz, +20 %/-15 % 110 V AC, 50/60 Hz, +10 %/-10 %	230 V AC, 50/60 Hz, +20/-15 % 110 V AC, 50/60 Hz, +10/-10 %
Output voltage	0 ... 208 V _{eff} / 230 V AC 20 ... 105 V _{eff} / 110 V AC	0 ... 208 V _{eff} / 230 V AC, 0 ... 98 V _{eff} / 110 V AC	0 ... 208 V _{eff} / 230 V AC, 0 ... 98 V _{eff} / 110 V AC	0 ... 208 V _{eff} / 230 V AC, 0 ... 98 V _{eff} / 110 V AC
Control method	Phase angle control	Phase angle control	Phase angle control	Phase angle control
Load current max. channel 1+2	–	–	–	10 A _{eff} / 4 A _{eff}
Load current max.	6 A _{eff}	10 A _{eff}	10 A _{eff}	10 A _{eff}
Load current min.	80 mA	80 mA	80 mA	80 mA
Internal fuse	microfuse 5x20, 6,3 A slow	F 1 = 10 A	F 1 = 10 A	F 1 = 10 A / F 2 = 4 A F 1 = 10 A
Soft start/stop time	Soft start is adjustable and can be turned off	0 ... 5 sec. independently adjustable	0 ... 5 sec. independently adjustable	0 ... 5 sec. independently adjustable 0 ... 5 sec. independently adjustable
External speed control	–	–	0 ... 10 V DC	0 ... 10 V DC
Sensor inputs	–	–	2	2 2
Remote control input	contact or 24 V DC	24 V DC (10-24 V DC)	24 V DC (10-24 V DC)	24 V DC (10-24 V DC) 24 V DC (10-24 V DC)
Sensor power supply	–	–	24 V DC, max. 60 mA (per sensor)	24 V DC, max. 60 mA (per sensor) each 24 V DEC, max. 60 mA
Sensor delay On	–	–	0 ... 60 sec.	0 ... 60 sec. 0 ... 60 sec.
Sensor delay Off	–	–	0 ... 60 sec.	0 ... 60 sec. 0 ... 60 sec.
Outputs	–	2 Optocouplers	2 Relay / 2 Optocouplers	2 Relay / 2 Optocouplers
Status output (optocouplers)	–	max. 30 V DC 10 mA	max. 30 V DC 10 mA	max. 30 V DC 10 mA
Relay output contacts	–	–	max. 6 A 250 V AC	max. 6 A 250 V AC
Operating temperature	0 ... 50 °C	0 ... 50 °C	0 ... 50 °C	0 ... 50 °C
Protection class	IP 54	IP 54	IP 54	IP 54
Dimensions W x H x D	80 x 190 x 140	192 x 180 x 132	192 x 180 x 132	192 x 180 x 132



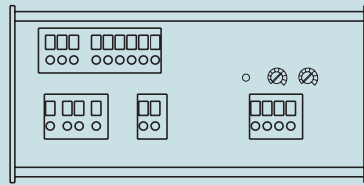
Control Boxes



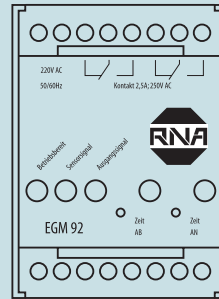
ESR 25/5A
ESR 28/8A



ESM 906



ESM 910



EGM 92



Modular for integration in switch cabinets

	ESR 2000	ESR 25/5A*	ESR 28/8A	ESM 906	ESM 910	EGM 92
	230 V AC, 50/60 Hz, convertible to 110 V AC 50/60 Hz	230 V AC 50/60 Hz convertible to 110 V AC 50/60 Hz	230 V AC 50/60 Hz convertible to 110 V AC 50/60 Hz	230 V AC, 50/60 Hz +6 % / -10 % 110 V AC, 50/60 Hz +6 % / -10 %	230 V AC, 50/60 Hz +6 % / -10 % 110 V AC, 50/60 Hz +6 % / -10 %	230 V AC, 50/60 Hz - +10 % on request
	0 ... 208 V _{eff} / 230 V AC 20 ... 105 V _{eff} / 110 V AC	0 ... 210 V _{eff} / 230 V AC 20 ... 105 V _{eff} / 110 V AC	0 ... 210 V _{eff} / 230 V AC 20 ... 105 V _{eff} / 110 V AC	0 ... 220 V _{eff} / 230 V AC 0 ... 105 V _{eff} / 110 V AC	0 ... 220 V _{eff} / 230 V AC 0 ... 105 V _{eff} / 110 V AC	- -
	Variable frequency PWM	Variable frequency PWM	Variable frequency PWM	Phase angle control	Phase angle control	-
	-	-	-	-	-	-
	6 A _{eff}	5.5 A _{eff}	8.5 A _{eff}	6 A _{eff}	10 A _{eff}	-
	80 mA	60 mA	60 mA	-	-	-
	mains fuse: 5x20 mm, 4 A träge, 12 13 72-			-	-	-
ble	Input: 0.05 - 10 sec. / Output: 0.005 - 10 sec		Fixed pre-set soft start	-	-	-
	0 ... 10 V DC	-	-	0 ... 10 V oder Poti 10 / k Ω	-	-
	1	1	-	-	-	-
	extend. with add. print	-	Potential free contact / 12 ... 24 V DC, Ri 10 k Ω	-	-	-
	each 24 V DEC, max. 60 mA	each 24 V DEC, max. 60 mA	0 - 20 mA / 0 ... 10 V or Poti 10 / k Ω	-	24 V / 100 mA	-
	Sensor signal delays: 0.000 bis 10 sec.	-	-	0 ... 60 sec.	-	-
	Sensor signal delays: 0.000 bis 10 sec.	-	-	0 ... 60 sec.	-	-
	2 Relay / Optocouplers	-	-	2/0 PTO couplers	-	Relay point 2x voltage-free changeover contact
	max. 30 V DC 10 mA	24 V, 50 mA	24 V, 50 mA	30 V 0.1 A DC	30 V 0.1 A DC	-
	max. 6 A 250 V AC	-	-	-	-	max. 6 A 250 V AC
	0 ... 50 °C	0 ... 40 °C	0 ... 40 °C	0 ... 45 °C	0 ... 45 °C	0 ... 50 °C
	IP 54	IP 54	IP 54	IP 20	IP 20	IP 30
	192 x 180 x 132	140 x 220 x 160	140 x 220 x 160	104 x 77 x 112	150 x 74 x 109	55 x 75 x 110

* Also available with reduced output current 0.6 A and 1.8 A, suitable for small drive units.



Coating

Coating minimises wear and tear, reduces noise and damage to components. Coatings can be selected according to the application.



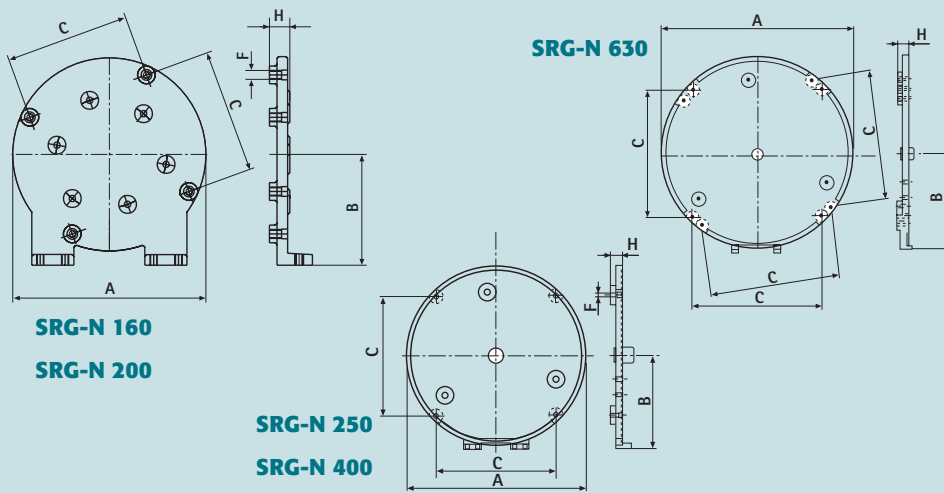
Coating material	Characteristics	Application
Polyurethane spray coating colour: beige	- smooth surface	rubber and plastic parts
Polyurethane lining, 1 mm thickness colour: black	- high durability, good sound reduction and can be applied either side i.e. smooth or rough side can be used as track surface. Rough surface is suitable for wet parts	dry and clean metal parts and heavy plastic parts
Polyurethane lining, 2 mm thickness colour: black	as above plus: - very hard wearing, - abrasion resistant, - shock proof and very good sound suppression	as above plus: heavy sharp metal, glass and abrasive parts e.g. screws, forged and pressed parts
Polyurethane lining ribbed, colour: black	- allows oil dispersal through ribs	oily, wet and sticky parts (pressings and stampings)
Habasit lining (HAM-5P), colour: green suitable for food, colour: white	- high feed rates for wet/oily parts - reduces static on plastic parts side wall coated with polyurethane foil (1 mm)	Parts with smooth surfaces, light plastic parts and light oily parts (pull-in oil, separating agent)
Brush coating	- feeding of oily parts, gentle/careful feeding, noise reduction	blank screws, heavy metal parts, parts with delicate surfaces
Flock lining, textile surface	- gentle parts feeding - improved feed rates	light parts with delicate surfaces prone to marking



Base Plates

Base plates enable easy mounting of the drive unit to the machine bed.

The base plate SRG has integrated fixing devices for the mounting of control units. When using a top plate type UP, UL and UK, base plates are necessary (see page 21, Stands and Top Plates).

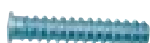
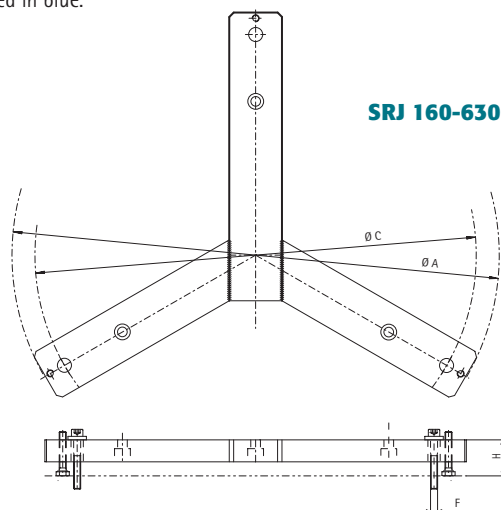


Type	SRG-N 160	SRG-N 200	SRG-N 250	SRG-N 400	SRG-N 630
A = Plate diameter	218	218	332	485	720
B = Position of control box mounting	125	125	172	253	375
C = Fixing hole centres	140	140	220	325	488
F = Thread size	M8/Km6	M8/Km6	M10/Km8	M10	M10
H = Plate height	23	23	32	32	35

Base plates are aluminium and black powder coated

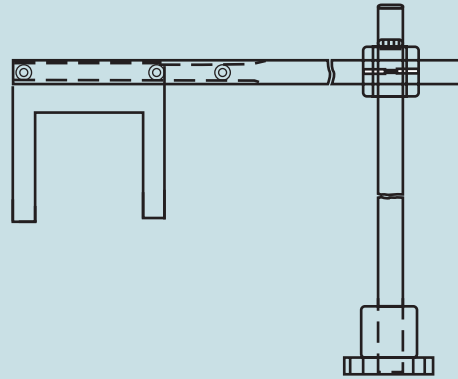
Type	SRJ 160	SRJ 200	SRJ 250	SRJ 400	SRJ 630
A = outside diameter	245	245	383	555	750
C = Fixing hole centres	202	202	332	502	698
F = Thread size	M6	M6	M8	M8	M8
H = Plate height	40	40	50	50	60

The base plates SRJ are made of steel and galvanized in blue.

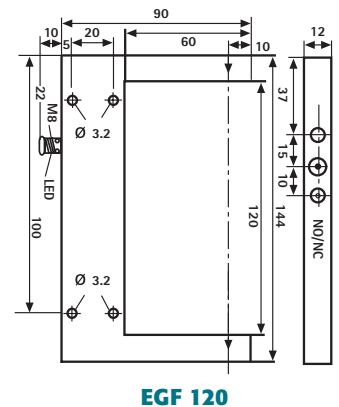
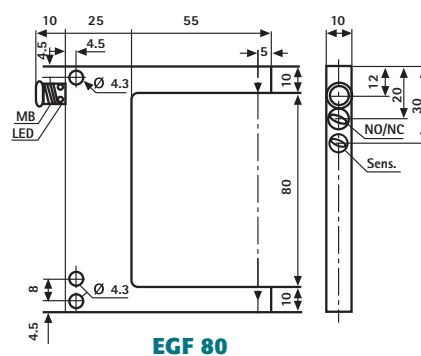
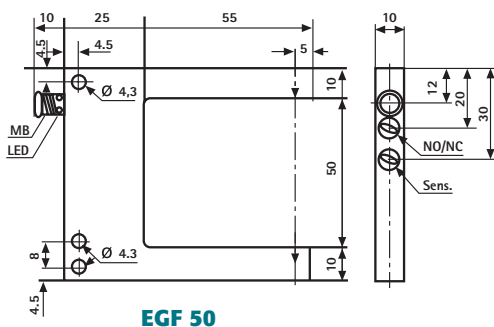


Sensors

Thru-beam sensors are used for minimum/maximum level control on a linear track.



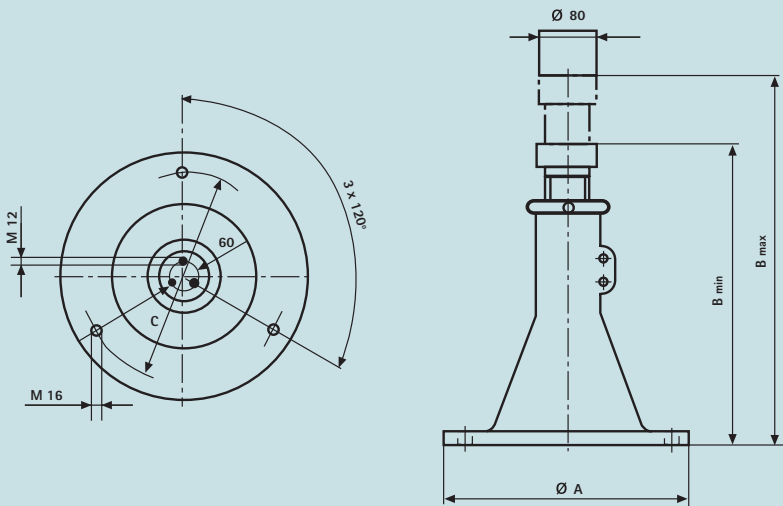
Type	EGF 50 untimed	EGF 80 timed	EGF 120 timed
Sensor width	50	80	120
Supply voltage	10 ... 30 V	10 ... 35 V DC	10 ... 35 V DC
Output	pnp	pnp/npn	pnp/npn
Load current	200 mA, short circuit proof	200 mA, short circuit proof	200 mA, short circuit proof
Internal power consumption	< 35 mA	< 30 mA	< 45 mA
Voltage drop	< 2.8 V	< 2.8 V	< 2.0 V
Operating frequency	10 kHz	4 kHz	1 kHz
Resolution, smallest detectable part	average 1.5 mm	average 0.5 mm	average 2.0 mm
Switch hysteresis	< 0.3 mm	< 0.25 mm	< 0.2 mm
Repeatability	0.02 mm	0.06 mm	0.08 mm
Ambient temperature	-10 ... + 60 °C	-10 ... + 60 °C	-10 ... + 60 °C
Insensitivity to parasitic light	1 kLux	80 kLux	10 kLux
Insulation voltage endurance	500 V	500 V	500 V
Protection class	IP 67	IP 67	IP 67
Housing material	Aluminium black anodised	Zinc black chromised	Zinc black chromised



Feeder Stand and Top Plates

RNA stands and top plates have a large height regulating range. Due to their finely adjustable regulation, they also enable an optimal interface compensation at the workpiece discharge points.

The drill template for the top plate serves to mount the relevant size of the SRG type base plate.



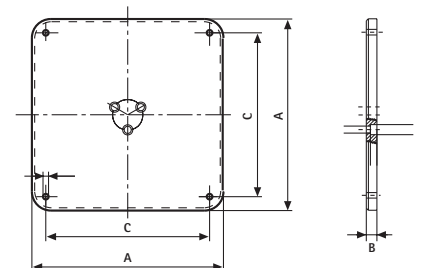
Feeder stands consist of a cast iron pedestal, painted RAL 6011 and fitted with an adjustable threaded column.

Type	UG 400-535	UG 400-735	UG 400-935	UG 630-535	UG 630-735	UG 630-935
A	400	400	400	630	630	630
B min.	535	735	935	535	735	935
B max.	790	990	1190	790	990	1190
C	340	340	340	560	560	560

Top plate type UP

Type	UP-120*	UP-250	UP-400	UP-630
A	120	250	380	550
B	20	21	21	21
C	100	220	325	488

* For use with special baseplates



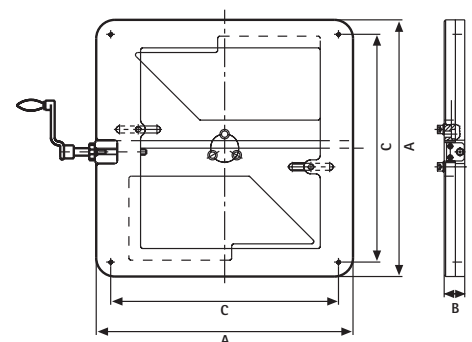
Top plate type UL, adjustable only in one direction

Type	UL-250	UL-400	UL-630
A	250	380	550
B	44	44	44
C	220	325	488
Total traverse path X	54	83,5	82

Top plate – type UK, adjustable in both directions

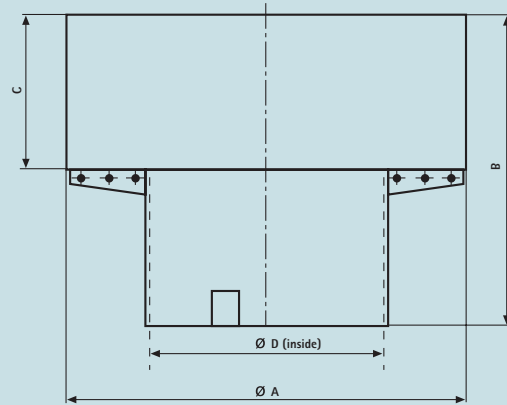
Typ	UK-250	UK-400	UK-630
A	250	380	550
B	64	64	64
C	220	325	488
Gesamtverfahrweg X	83,5	83	83,5
Gesamtverfahrweg Y	70	83	82

** As an accessory, it is necessary to have a prolonged crank



Sound Cover

Reduces noise and protects against dust and contamination.



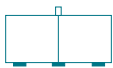
















Type	HK-S 250	HK-S 400	HK-S 630
A* = Total diameter	550	880	1100
B* = Total body height	435	525	565
C* = Upper body height	230	310	350
D = Inner diameter	333	488	723

* Measurements of A, B, C are variable

Sound Cover Type HK-S

- Suitable for bowl feeder from SRC-N 250 to SRC-N 630 with base plate type SRG
- Stainless steel with acoustic material
- RAL 7035 (outside), structure painted lightgrey, special paints available on request
- Lid made from polycarbonate for sizes 400 and above, a hinged lid is available as an option



Equipment	63	100	160	200
 Drive units	SRC-N 63-2	SRC-N 100-2	SRC-N 160-2	SRC-N 200-2 SRC-B 200-2
 Cylindrical bowls	ZAD-Z 63-4-18	ZAD-Z 100-6-50	ZSD-Z 160-12-70 ZSB-Z 160-12-70	ZSB-Z 200-12-80
 Conical bowls	KAD-Z 63-4-30	KAD-Z 100-4-40		KSB-Z 200-18-55 KSB-ZA 200-5RG-150
 Stepped bowls				TAG-Z 200-10-80 TAG-Z 200(324)-20-105
 Synthetic bowls	on request	KKF-Z 100-X-40 TKF-Z 100-X-40	KKF-Z 160-X-65 TKF-Z 160-X-65	KKF-Z 200-X-65 TKF-X-200-X-65
 Adapter plates				
 Fixed bowl centre				
 Rotating bowl centre				
 Control box compatability	ESG 1000 ESG 2000 ESK 2000 ESK 2001	ESG 1000 ESG 2000 ESK 2000 ESK 2001	ESG 1000 ESG 2000 ESK 2000 ESK 2001	ESG 1000 ESG 2000 ESK 2000 ESK 2001
 Control box compatability frequency controller	ESR 2000 ESR 25	ESR 2000 ESR 25	ESR 2000 ESR 25	ESR 2000 ESR 25
 Control box (din rail mounted type)*	ESM 906/910	ESM 906/910	ESM 906/910	ESM 906/910
 Baseplate			SRG/SRJ 160	SRG/SRJ 200
 Sound cover				
 Feeder stand together with threaded column				
 Top plate for feeder stand				
 X movement slide for feeder stand				
 X/Y movement slide for feeder stand				

*This only applies to a mains connection voltage of 230V/ 50-60 Hz

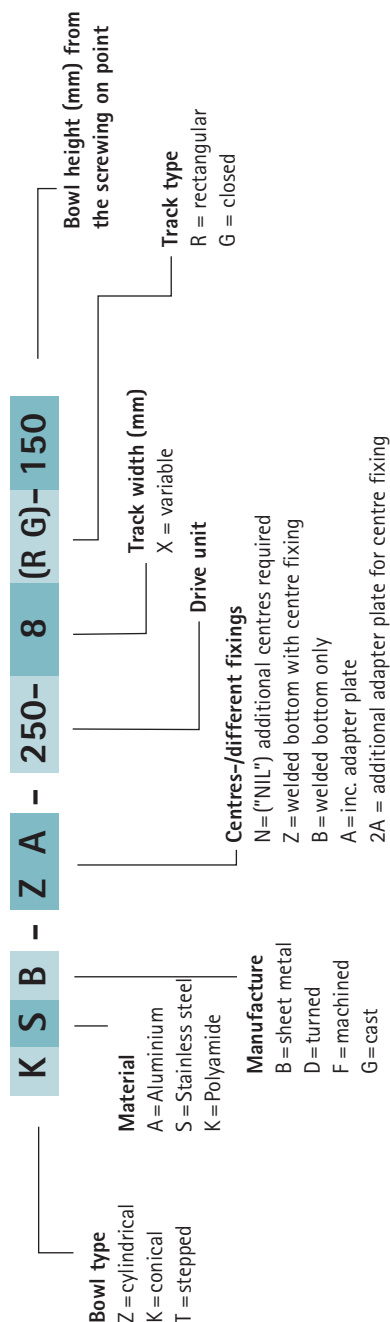


250	400	630	800
SRC-N 250-2 SRC-B 250-2	SRC-N 400-2 SRHL 400-1 SRC-N 400-1 SRHL 400-2	SRC-N 630-1	SRC-N 800-1
ZSB-N 250-30-110 ZSB-ZA 250-30-125	ZSB-N 400-30-160 ZSB-BA 400-30-175 ZSB-Z2A 400-30-190	ZSB-N 630-50-180 ZSB-BA 630-50-195	ZSB-B 800-80-220
KSB-N 250-20-90 KSB-ZA 250-20-105 KSB-ZA 250-20-150 KSB-ZA 250-8RG-150	KSB-N 400-50-160 KSB-BA 400-50-175 KSB-BA 400-15RG-220 KSB-Z2A 400-50-190 KSB-Z2A 400-15RG-235	KSB-N 630-50-180 KSB-BA 630-50-190 KSB-BA 630-15RG-250	KSB-N 800-80-170
TAG-N 250-20-105 TAG-N 250-32-130 TAG-N 250-32-145 TAG-ZA 250-32-165 TAG-ZA 250(541)-32-180	TAG-N 400-32-175 TAG-N 400-50-190 TAG-N 400-50-215 TAG-ZA 400-50-240	TAG-N 630-50-220 TAG-N 630-65-230 TAG-ZAB 630-50-240 TAG-ZAB 630-65-250	
KKF-ZA 250-X-100 TKF-ZA 250-X-100	on request		
AAG-Z 250	AAG-R 400 AAG-Z 400 AAG-Z 400(Z)	AAG-R 630 AAG-Z 630	
SRF-N 250(PA) SRF-N 250(AL) SRF-N 250(VA)	SRF-N 400(PA) SRF-N 400(AL) SRF-N 400(VA)	SRF-Z 630 (AL) only for TAG-ZAB SRF-N 630(AL) SRF-N 630(VA)	
SRL-N 250(PA) SRL-N 250(AL)	SRL-N 400(PA) SRL-N 400(AL)	SRL-N 630(AL)	
ESG 1000 ESG 2000 ESK 2000 ESK 2001	ESG 1000 ESG 2000 ESK 2000 ESK 2001	ESG 1000 ESG 2000 ESK 2000 ESK 2001	ESG 2000 ESK 2000
ESR 2000 ESR 25	ESR 2000 ESR 25/28	ESR 2000 ESR 25/28	ESR 28
ESM 906/910	ESM 906/910	ESM 906/910	ESM 910
SRG/SRJ 250	SRG/SRJ 400	SRG/SRJ 630	
HK-S 250	HK-S 400	HK-S 630	
UG 400-535 UG 400-735 UG 400-935	UG 630-535 UG 630-735 UG 630-935	UG 630-535 UG 630-735 UG 630-935	
UP 250 UL 250 UK 250	UP 400 UL 400 UK 400	UP 630 UL 630 UK 630	

Overview of RNA Equipment – Bowl Feeders



RNA-Code for Bowls



Enquiry form

Fax to:
RNA Automation LTD

Fax No. ++44 (121) 749 6217

or post it to:
RNA Automation LTD
Hayward Industrial Park Tameside Drive
Castle Bromwich, Birmingham, B35 7AG

Or fax to:

RNA Automated Systems Inc.

Fax No. ++1 (905) 304 9951

or post it to:
RNA Automated Systems Inc.
1349 Sandhill Drive Unit 101
Ancaster, Ontario
Canada, L9G 4V5

Sender:

Company

Contact name

Street

Postcode, City, Country

Telephone

Fax

E-Mail

Internet

Your enquiry:

Component

Dimension

Weight

Material

Speed (component/min)

Capacity

Further information

Drawing/Sketch



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