International Combustion (India) Limited

Electromagnetic Vibrating Feeders

Type SMC Tubular Feeders

Advantages

- High availability
- Any number of starts and stops with low trickle-feed.
- Open-loop or closed-loop control from upstream or downstream equipment, if required.

- Low dynamic foundation load.
- Closely graded series affording an optimum solution for each individual application.
- Very simple maintenance, as there are no sensitive or complicated parts.
- Replaceable wear liners available, made from wear resistant steel, rubber, plastics or ceramics.

Application

IC Electromagnetic Feeders are used to discharge bulk solids from bins if the flow is to be controlled. Handling the material over short to medium stretches, they feed or batch bulk crushers, process equipment, dryers and coolers, etc.

Principle of Operation

IC Electromagnetic Feeders operate on the micro-throw principle. Electromagnetic drives set system in vibration, with amplitude being infinitely variable from zero to maximum. Operation in the subcritical range, resulting in low amounts of trickle-feed after cut-off, permit the Feeders to be used especially well for accurate feeding duties.

Construction

IC Electromagnetic Feeders are two frame design using Electromagnetic drives.

The base frame serves at the same time as the counter mass and stiffening element of the machine. The mass ratio of the base frame to the trough is optimally selected. Springs manufactured from high quality spring steel, arranged between trough and base frame, determine the vibrating angle and position of resonance by carefully selected inclination and spring constant.

Both selection as well as design parameters are individually checked and verified for every customer's application through computer aided techniques.

General Technical Specifications

Vibro Feeders can be offered suitable for either base mounting or suspension mounting arrangement.

Electric Power : 415v/50 Hz

Other voltage supplies on request.

No. of vibrations : 3000 per minute.

Protection : IP54 (Magnet drive)

IP55 (Thyristor Control Panel).

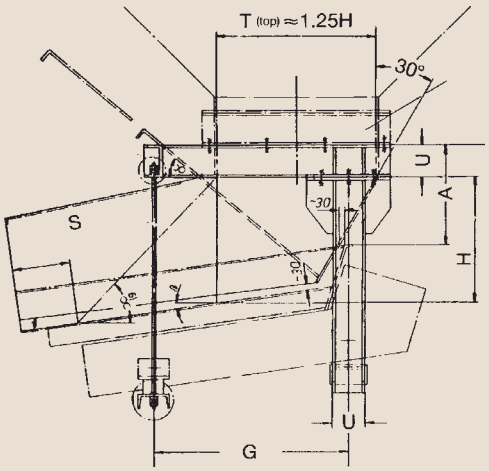
The Electro magnet comprising coil and core is completely cast in special synthetic resin thus providing complete protection against mechanical shocks, high humidity, corrosive atmosphere, etc.

A wide variety of trough shape and design can be supplied including tubular, with dust covers, etc. as per specific duty requirement.

Replaceable liners for trough can be offered made from wear resistant steel, rubber, plastics or ceramics.

Type SMF Feeder

Typical installation arrangement using inlet chute and skirt plates.



T – Bin width.

H – Discharge height.

S – Stationary skirt plates.

U – Support structure

G – Mounting centres.

a – Material Angle of Repose (a)

b – Trough down slope. (b)

- Coal Preparation
- Ore Beneficiation
- Recycling Industries and Waste Recovery
- Power Stations
- Steel and Non-Ferrous Metal Processing
- Foundries
- Ceramics

Applications

For controlled discharge of bulk material in Industries such as

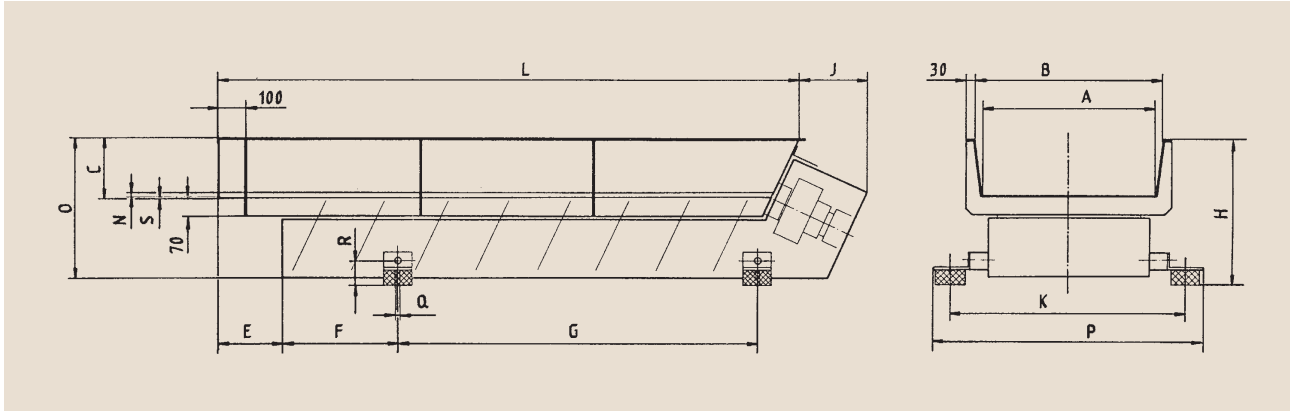
- Basic Material Recovery and Processing
- Chemicals
- Fertilizers
- Agriculture
- Paints
- Plastics
- Pharmaceuticals
- Foods
- Animal Feeds
- Coal and Ore Mining
- Metallurgical Plants (Pig Iron/DR Briquetting processes/Pelletising)
- Integrated Steel Plants
- Refractories.

Thyristor Controller

IC Electromagnetic Feeders are operated through specially designed Thyristor Controllers which ensure no-loss adjustment of voltage across magnet units to control the vibration amplitude and hence, the flow rate.

Voltage adjustment in the normal case is by potentiometer. In the fast/dribble feed mode (for batching duties) two pole - changing potentiometers are provided.

Control by reference signals is also possible (0-10V DC, 4-20 mA).



Type	B x L in mm		Flow Rate without / with Hopper Boot in m3/h		Dimensions in mm													
					A	C	E	F	G	H	J	K	N	O	P	Q	R	S
SMA	260	1000	15	29	220	150	220	200	550	415	250	430	3	430	510	M 10	80	3
SMA	260	1250	14	28	220	150	220	250	750	415	250	430	3	430	510	M 10	80	3
SMA	340	1000	15	43	300	150	220	200	550	455	250	430	3	430	510	M 10	80	3
SMA	340	1250	15	42	300	150	220	250	750	455	250	430	3	430	510	M 10	80	3
SMA	340	1500	15	41	300	150	220	300	900	455	250	430	3	430	510	M 10	80	3
SMA	440	1000	20	59	400	150	220	200	550	455	250	510	4	430	590	M 10	80	3
SMA	440	1250	19	58	400	150	220	250	750	455	250	510	4	430	590	M 10	80	3
SMA	440	1500	19	57	400	150	220	300	900	455	250	510	4	430	590	M 10	80	3
SMA	540	1000	31	81	500	150	220	200	550	455	250	510	4	430	590	M 10	80	3
SMA	540	1250	30	79	500	150	220	250	750	455	250	510	4	430	590	M 10	80	3
SMA	540	1500	29	77	500	150	220	300	900	455	250	514	4	430	590	M 10	80	3
SMA	540	1750	29	76	500	150	220	350	1000	455	250	514	4	430	590	M 10	80	3
SMA	650	1000	68	121	600	200	220	200	550	505	250	610	4	480	690	M 10	80	3
SMA	650	1250	66	118	600	200	220	250	750	505	250	614	4	480	694	M 10	80	3
SMA	650	1500	64	114	600	200	220	300	900	525	250	614	4	480	734	M 12	100	3
SMA	650	1750	63	113	600	200	220	350	1000	525	250	614	4	480	734	M 12	100	3
SMA	850	1250	88	161	800	200	220	250	750	510	250	1030	4	480	1150	M 12	100	4
SMB	850	1500	85	156	800	200	220	300	900	510	250	1030	4	480	1150	M 16	100	4
SMB	850	1750	84	154	800	200	220	350	1000	510	250	1030	4	480	1150	M 16	100	4
SMB	850	2000	83	151	800	200	220	400	1250	510	250	1040	4	480	1160	M 16	100	4
SMB	1050	1500	106	198	1000	200	220	300	900	560	300	1220	6	530	1340	M 16	100	4
SMB	1050	1750	104	195	1000	200	220	350	1000	560	300	1220	6	530	1340	M 16	100	4
SMC	1050	2000	103	191	1000	200	220	400	1250	560	300	1220	6	530	1340	M 16	100	4
SMB	1300	1500	133	250	1250	200	220	300	900	560	300	1464	6	530	1584	M 16	100	4
SMC	1300	1750	130	246	1250	200	220	350	1000	570	300	1590	6	530	1790	M 16	115	4
SMC	1300	2000	128	242	1250	200	220	400	1250	570	300	1590	6	530	1790	M 16	115	4
SMC	1650	2000	163	313	1600	200	300	400	1150	610	430	1940	6	580	2140	M 16	115	5
SMC	1670	2250	213	304	1600	250	300	450	1300	660	430	1940	6	630	2140	M 16	115	5
SMC	1670	2500	206	296	1600	250	300	500	1500	660	430	1940	6	630	2140	M 16	115	5
SMC	1670	2750	204	293	1600	250	300	550	1650	710	430	1940	6	680	2140	M 16	115	5

Explanation to Table :

Material flow data refer to slightly moist building sand, grain size 1-7 mm, bulk density 1.6 t/m3, Feeder slope 8°.
Feed rate at 0° slope - 15% per hour,
feed rate at 14° slope + 40% per hour.

Acceptable material temperature + 120°C
Acceptable ambient temperature + 50°C
Protection type IP 54
Power supply 380 V, 50 Hz

Minimum clearance :
between vibrating and stationary parts 10 mm,
between back walls of hopper boot and trough 30 mm.
Design variations available upon request.

International Combustion (India) Limited

INFINITY BENCHMARK,11th Floor, Plot-G1, Block-EP & GP, Sector – V, Salt Lake Electronics Complex, Kolkata – 700 091
Ph : (033) 3315 3000, Fax : (033) 2357 6653, e-mail : info@internationalcombustion.in, Website : www.internationalcombustion.in
Branches : Bangalore (080)26575258 ◆ Chennai (044)28530367 ◆ Hyderabad (040)23810546 ◆ Mumbai (022)24934192
◆ Nagpur (07104)237613 ◆ New Delhi (011)23528120 ◆ Pune (020)24264257 ◆ Vadodara (0265)2353031