PAL

WEIGHING & METERING BINS

LIVE BOTTOM PITS, BELT SCALES,
METERING BINS BCD, METERING BINS BBT

/ Screw-Bed Conveyor

- available as modules of 2-3 dosing screws;
- separate drive for each module of screws;
- possibility to work with level controls and inverters.

/ Dosing Bin

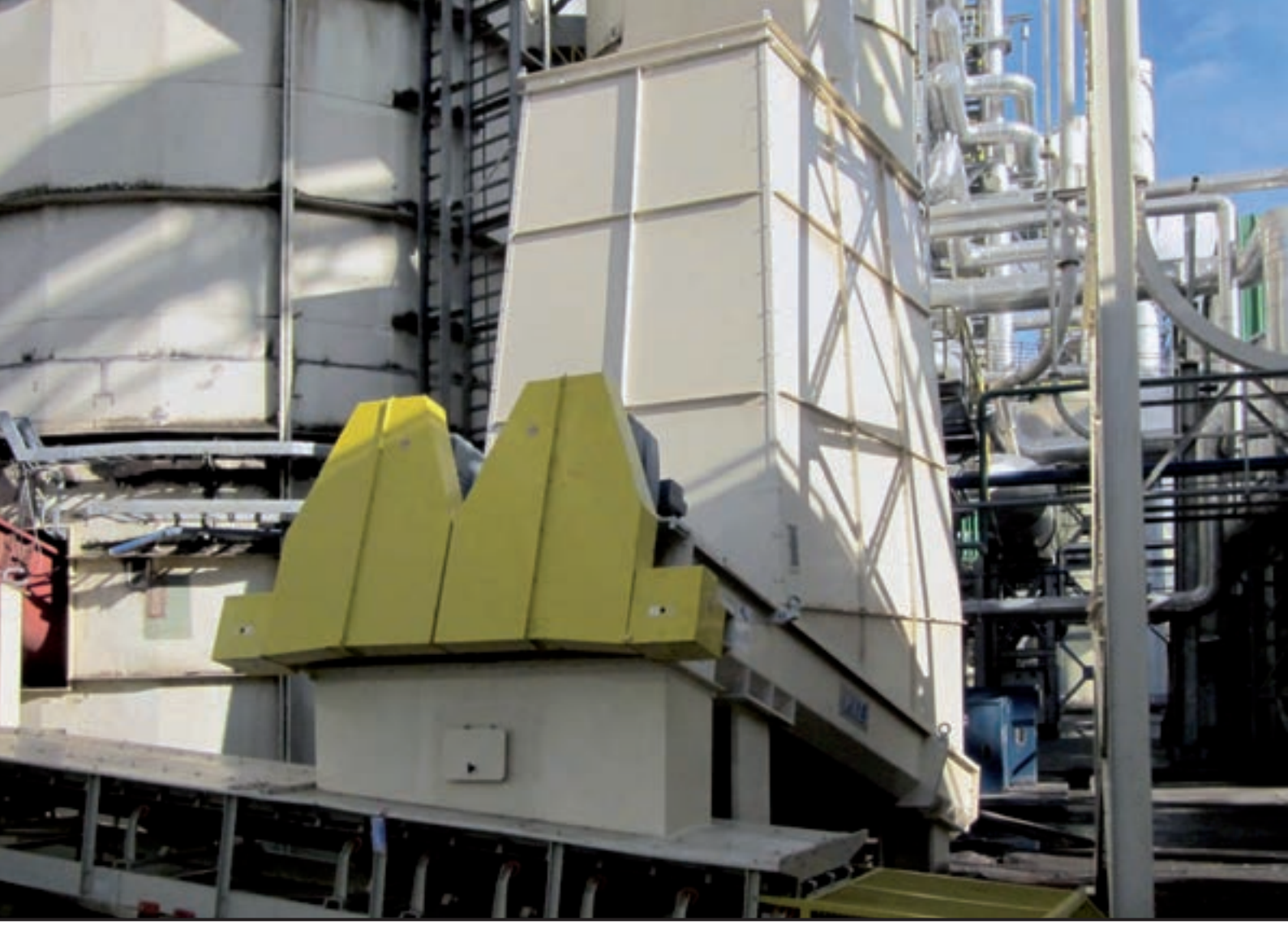
- suitable for storage/dosing of fractioned materials, wet or dry;
- available in different models, open-top for front loader feeding, closed for chips metering or with opposed screws for simultaneous metering of 2 downstream machines;
- no bridge formation and no material demixing.

/ Belt Scale

- designed for wet/dry continous weighing-dosing of wet/dry particles through weighing bridge and load cell;
- accuracy higher than ± 0,5% related to full scale value;
- micro processor including all functions for electronic calibration.

/ Metering Bin

- designed for dosing-metering of driers process mills and blenders;
- accuracy better than ± 2% related to instant flow;
- can be installed before a belt scale for gravimetric feeding with a final accuracy of ± 0,5% related to instant flow.



DOSING BINS

07.07

LIVE BOTTOM PITS

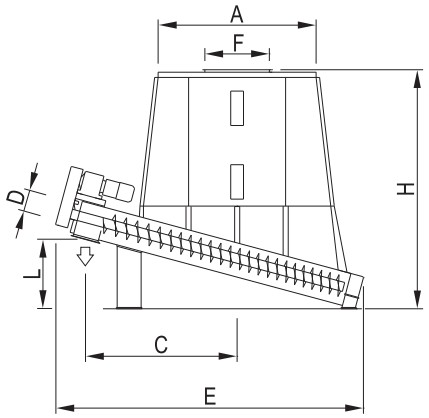
FOR CHIPS, SAWDUST, SHAVINGS, WET & DRY PARTICLES

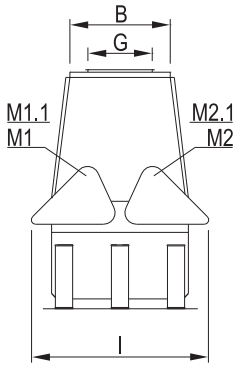
TECHNICAL FEATURES

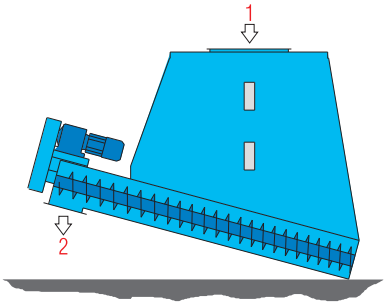
/ Versatile storage-dosing live bottom pits: DB.6-9-12 with open-top for feeding with front loader • DBC.4 closed execution for metering of chips • DBD.4 special application for metering of Driers • DB1.1 & 2.2 for simultaneous metering of two downstream **/** Destorage system based on live bed made up of modules of two or three dosing screws (parallel or opposed construction) **/** Separate drive for each series of dosing screws **/** Level controls.

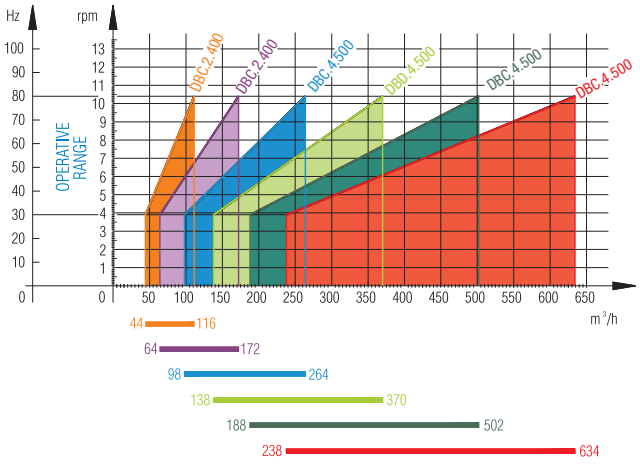
BENEFITS

/ Storage-dosing of fractioned materials, wet or dry, such as chips, sawdust, shavings, particles, etc. **/** Accurate dosing of several downstream machines, e.g.: roll screens • cleaners or sifters for chips, sawdust and shavings • knife ring flakers • hammermills • driers • dry screens • dry mills **/** No bridge formation **/** No material demixing **/** Wide range of extraction capacity: running the dosing screw modules separately, alternatively or all together • driving each motor with a frequency converter **/** High dosing accuracy from progressive pitch screws **/** High efficiency and reliability **/** Low maintenance.









1= FEEDING
2= DISCHARGE
M1-M2= SCREW ROTATION
M1.1-M2.2= FAN FOR COOLING

Not binding data. We reserve the right of modification at any time without prior notice.

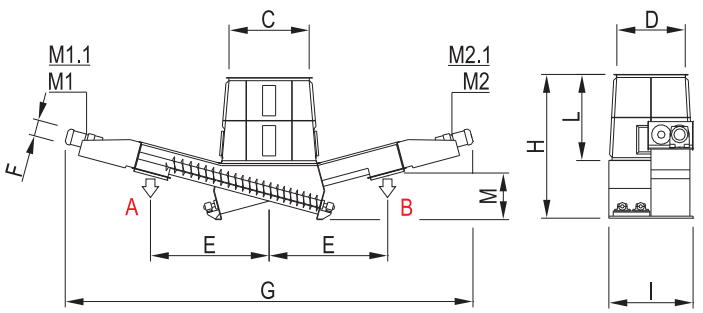
07.07.A

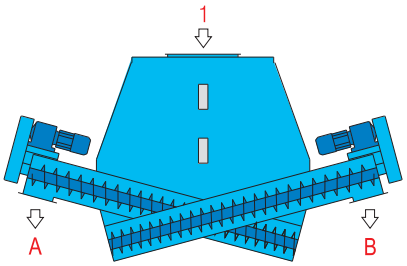
LIVE BOTTOM PITS - CLOSE TOP

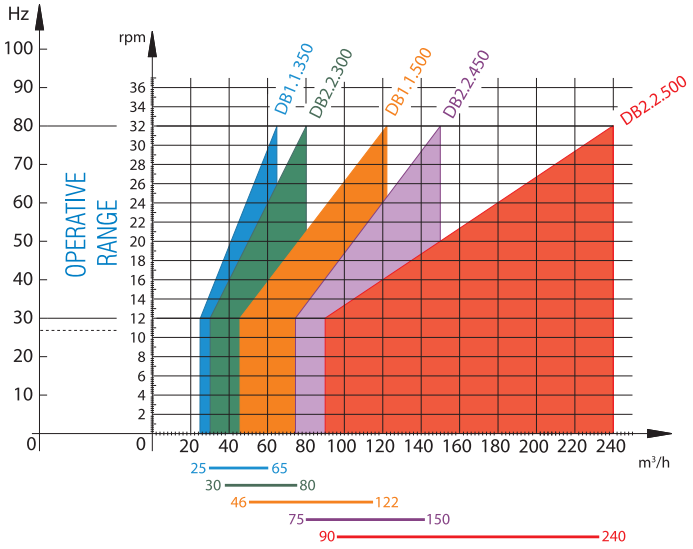
FOR CHIPS ONLY & SPECIAL APPLICATION TO METER THE DRYER FEEDING BY CONVEYORS

MODEL	BIN CONTENT m^3	THROUGH-PUT m^3/h	OVERALL DIMENSIONS mm										INSTALLED POWER kW**				WEIGHT APPROX. KG
			A	B	C	D	E	F	G	H	I	L	M1	M1.1	M2	M2.1	
DBC.2.400	5	SEE DIAGRAM	2310	975	2420	400	4470	2230	800	3300	995	1005	9,2	0,18	-	-	4300
DBC.4.500	30	SEE DIAGRAM	3845	2506	3340	500	7180	1500	1500	5570	4140	1615	11	0,18	11	0,18	19000
DBD.4.500*	30	SEE DIAGRAM	3600	1600	3685	500	8260	1200	1400	5390	2400	1405	45	0,27	45	0,27	13000
DBC.4.500	50	SEE DIAGRAM	3845	2506	3340	500	7180	1500	1500	5570	4140	1615	18,5	0,18	18,5	0,18	19000
DBC.4.500	60	SEE DIAGRAM	3845	2506	3340	500	7180	1500	1500	6570	4140	1615	22	0,18	22	0,18	20000

*For dryer application **According to type of material







1= FEEDING
A-B= DISCHARGE
M1-M2= SCREW ROTATION
M1.1-M2.2= FAN FOR COOLING

CAPACITY FOR EACH
FLOW A AND B

Not binding data. We reserve the right of modification at any time without prior notice.

07.07.B

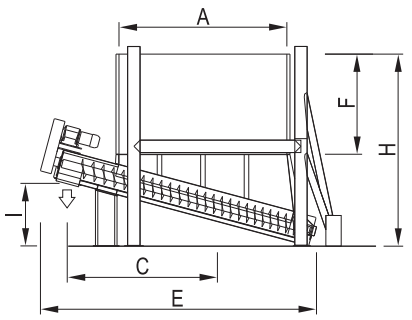
LIVE BOTTOM PITS - CLOSE TOP WITH TWO EXTRACTIONS

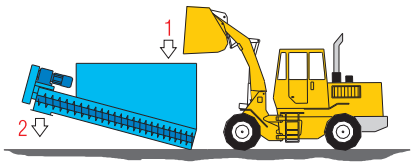
FOR CHIPS , SAWDUST, WE & FRY PARTICLES FEEDING BY CONVEYORS

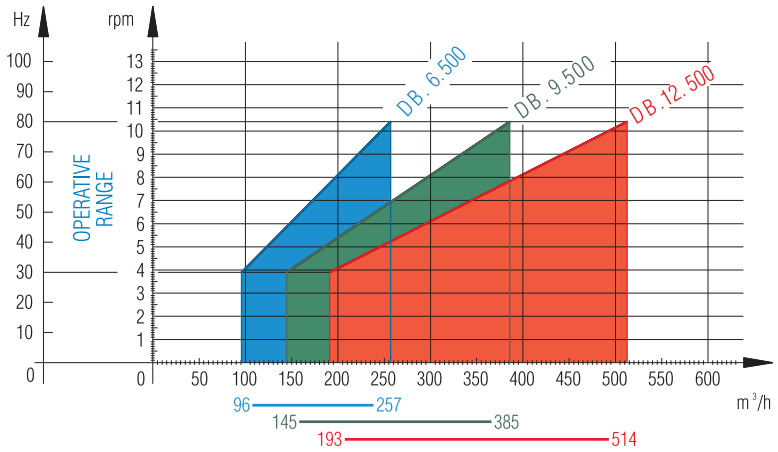
MODEL	BIN CONTENT m³	THROUGHPUT m³/h		OVERALL DIMENSIONS mm								
		A	B	C	D	E	F	G	H	I	L	M
DB1.1.350	2	25 - 65	25 - 65	1400	700	2075	350	5296	2411	930	1500	632
DB1.1.500	3	46 - 122	46 - 122	2000	900	3000	500	7392	2500	1370	1000	1150
DB2.2.300	3	30 - 80	30 - 80	1400	1200	2075	315	7335	2480	1472	1500	820
DB2 2.450	8	75 - 150	75 - 150	1600	1600	2606	450	6480	3280	2080	2000	1005
DB2.2.500	8	90 - 240	90 - 240	2000	1500	3296	500	7965	3430	2326	2000	1225

MODEL	INSTALLED POWER kW				WEIGHT APPROX. KG
	M1	M1.1	M2	M2.1	
DB1.1.350	4,0	0,08	4,0	0,08	2500
DB1.1.500	11,0	0,18	11,0	0,18	4000
	9,2	0,18	9,2	0,18	
DB2.2.300	5,5	0,08	5,5	0,08	4000
DB2.2.450	11	0,18	11	0,18	6500
DB2.2.500	9,2	0,18	9,2	0,18	8000
	11,0	0,18	11,0	0,18	

Solutions for different throughputs, layout arrangements and type of material are available upon request.







1= FEEDING
2= DISCHARGE
M1-M2-M3-M4= SCREW ROTATION
M1.1-M2.2-M3.3-M4.4= FAN FOR COOLING

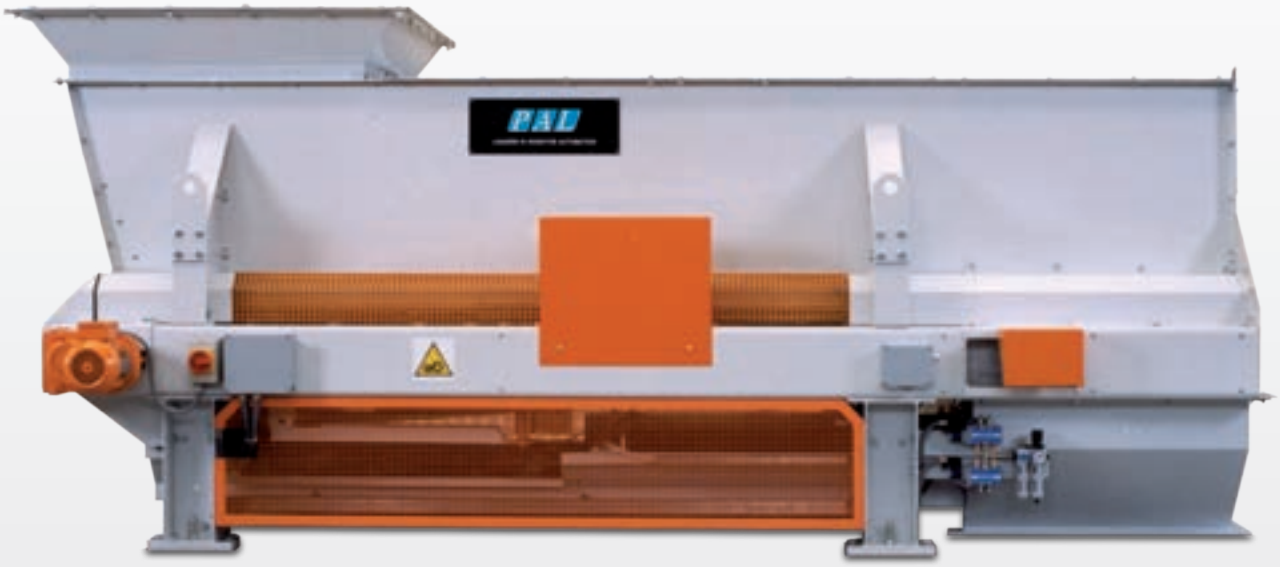
Not binding data. We reserve the right of modification at any time without prior notice.

07.07.C

LIVE BOTTOM PITS - OPEN TOP

FOR CHIPS , SAWDUST, SHAVINGS WET & FRY PARTICLES FEEDING BY FRONT LOADER

MODEL	BIN CONTENT m^3	THROUGHPUT [30 - 80 Hz] m^3/h	OVERALL DIMENSIONS mm									INSTALLED POWER kW								WEIGHT APPROX KG
			A	B	C	D	E	F	G	H	I	M1	M1.1	M2	M2.1	M3	M3.1	M4	M4.1	
DB. 6.500	Chips 50	96-257	4372	4508	3719	500	7195	2608	750	5000	1540	11	0,18	11	0,18	-	-	-	-	19500
												15	0,07	15	0,07	-	-	-	-	
	Saw-dust 40	96-257	4372	3632	3719	500	7195	2608	600	5000	1540	11	0,18	11	0,18	-	-	-	-	19500
												15	0,07	15	0,07	-	-	-	-	
DB. 9.500	Chips 75	145- 385	4372	6762	3719	500	7195	2608	750	5000	1540	11	0,18	11	0,18	11	0,18	-	-	28500
												15	0,07	15	0,07	15	0,07	-	-	
	Saw-dust 60	145- 385	4372	5448	3719	500	7195	2608	600	5000	1540	11	0,18	11	0,18	11	0,18	-	-	28500
												15	0,07	15	0,07	15	0,07	-	-	
DB. 12.500	Chips 100	193 - 514	4372	9016	3719	500	7195	2608	750	5000	1540	11	0,18	11	0,18	11	0,18	11	0,18	37500
												15	0,07	15	0,07	15	0,07	15	0,07	
	Saw-dust 80	193 - 514	4372	7264	3719	500	7195	2608	600	5000	1540	11	0,18	11	0,18	11	0,18	11	0,18	37500
												15	0,07	15	0,07	15	0,07	15	0,07	



BELT SCALES

08.01.A-E

BS

FOR CHIPS, SAWDUST, SHAVINGS, FIBER, WET & DRY PARTICLES

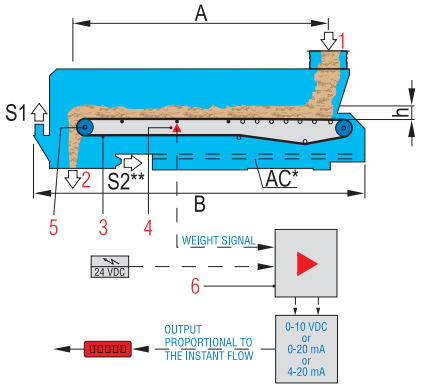
TECHNICAL FEATURES

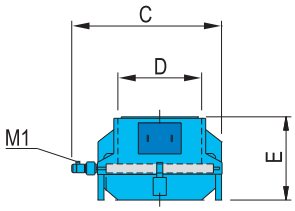
/ Weighing-dosing of chips, sawdust, shavings, wet & dry particles **/** Belt conveyor provided of weighing bridge and precision load cell **/** Weighing belt automatic tensioning system **/** Self-centering system for the weighing belt **/** Drive system **/** Encoder to detect the actual speed of the weighing belt **/** Calibration chain **/** Microprocessor including all functions for electronic calibration.

BENEFITS

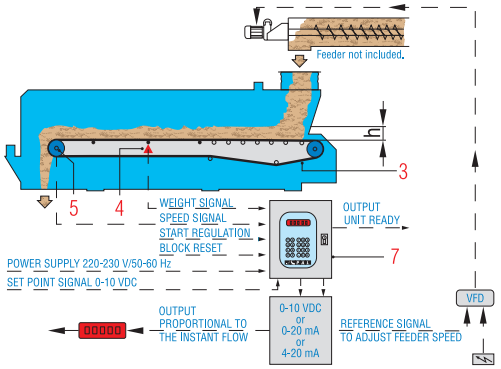
/ Very high weighing accuracy, higher than +/- 0,5 % related to full scale value **/** Employment range from 20 to 100% of full scale value **/** Full scale value, freely settable **/** Easy testing by calibrating chain **/** High efficiency and reliability **/** Very low maintenance.

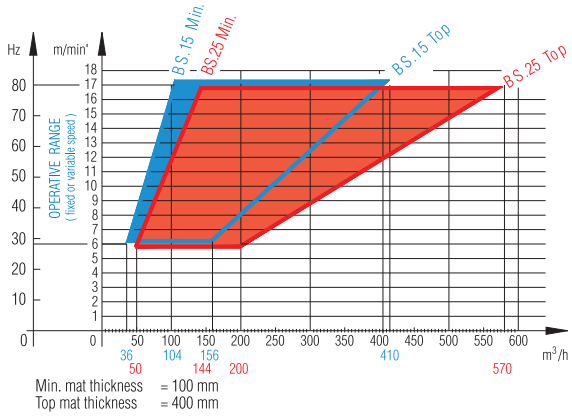
FLOW DETECTOR SYSTEM





FLOW REGULATOR SYSTEM





1= FEEDING
2= DISCHARGE
3= WEIGHING BELT
4= LOAD CELL
5= ENCODER
6= LOAD CELL AMPLIFIER
7= MICROPROCESSOR
M1= DOSING BELT DRIVE
S1= SUCTION

S2**= not needed with option AC (Autocleaning System)
AC*= autocleaning system based on pneumatic moving floor (OPTION)

Not binding data. We reserve the right of modification at any time without prior notice.

08.01.A-E

BELT SCALES - BS

FOR CHIPS, SAWDUST, SHAVINGS, FIBER, WET & DRY PARTICLES

MODEL	OVERALL DIMENSIONS mm						INSTALLED POWER kW
	A	B	C	D	E	MAT THICKNESS h	M1*
BS.15/2580	2580	3750	2140	1000	1410		0,55
BS.15/3500	3500	4950	2140	1000	1410		0,55
BS.15/6000	6000	7170	2140	1000	1410	Min. = 100	0,55
BS.25/2580	2580	3750	2540	1400	1410	Top = 400	0,75
BS.25/3500	3500	4950	2540	1400	1410		0,75
BS.25/6000	6000	7170	2540	1400	1410		0,75

*Standard supply: fixed speed
Option: variable speed with inverter

MODEL	CAPACITY BULK MATERIAL		AC COMPRESSED AIR Nm³/h	SUCTION						WEIGHT APPROX. KG
				THROUGHPUT WET MATERIAL m³/h		THROUGHPUT DRY MATERIAL m³/h		AIR SPEED m/s	SUCTION PRESSURE Pa	
	m³/h TOP	t/h		S1	S2**	S1	S2**			
BS.15/2580	410	According to bulk density	0,02	800	1150	710	1020	29	200	1360
BS.15/3500	410			800	1150	710	1020	29	200	1560
BS.15/6000	410			800	1150	710	1020	29	200	2220
BS.25/2580	570			800	1150	710	1020	29	200	1840
BS.25/3500	570			800	1150	710	1020	29	200	1850
BS.25/6000	570			800	1150	710	1020	29	200	2580

**Not needed with option AC (Autocleaning System)

METERING BINS

08.02.A

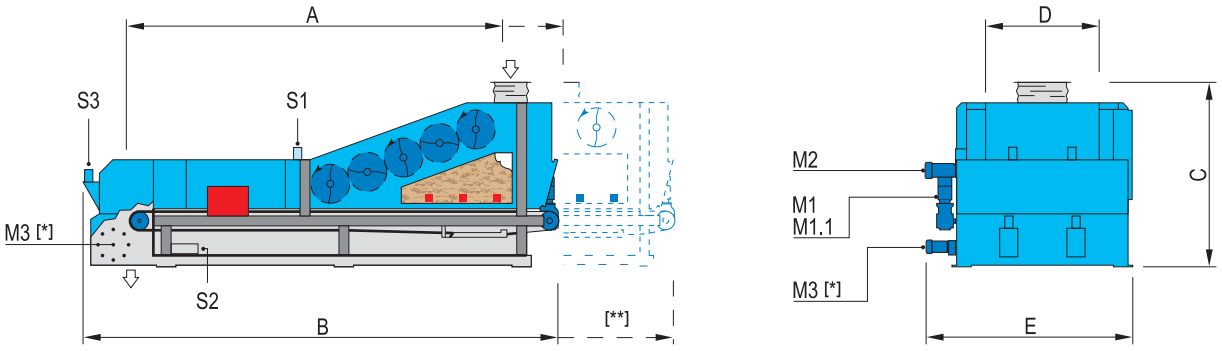
BCD
FOR WET & DRY PARICLES

TECHNICAL FEATURES

/ Metering of wet particles to the Dryers or dry particles to the Glue Blenders **/** Belt conveyor fitted with weighing bridge and precision load cell **/** Weighing belt automatic tensioning system **/** Self-centering system for the weighing belt **/** Dosing bin provided with levelling combs **/** Drive systems **/** Encoder for measuring speed of weighing belt **/** Calibration chain **/** Microprocessor.

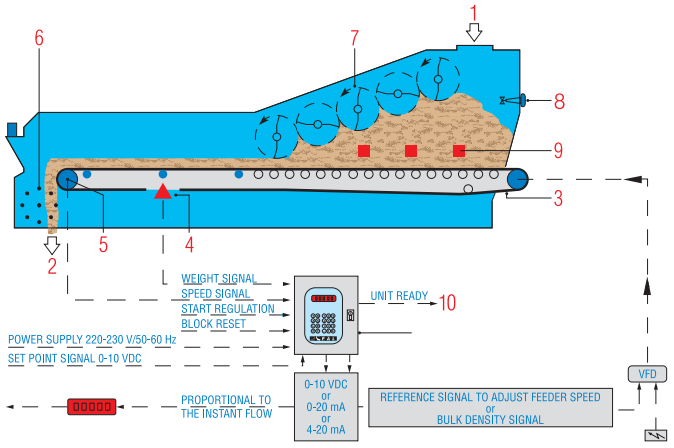
BENEFITS

/ Very high weighing-metering accuracy higher than +/- 0,5% relating to instant flow **/** Accuracy is guaranteed for all throughput values and not related to the full scale value as in conventional systems **/** Employment range from 10 to 100% of full scale value **/** Full scale value, freely settable **/** Easy testing by calibrating chain **/** High efficiency and reliability **/** Very low maintenance.



[*] Option
[**] BCD 21

1= FEEDING
2= DISCHARGE
3= WEIGHING BELT
4= LOAD CELL
5= ENCODER
6= NEODYMIUM (OPTION)
UNIT TO REMOVE FERROUS METALS
7= LEVELLING COMBS
8= EMERGENCY LEVEL
9= OPERATING LEVELS
10= MICROPROCESSOR
M1= DOSING BELT DRIVE
M1.1= FAN FOR COOLING
M2= LEVELLING COMBS DRIVE
M3= NEODYMIUM STAND DRIVE
S1-S2-S3= SUCTION



Not binding data. We reserve the right of modification at any time without prior notice.

08.02.A

METERING BINS - BCD

FOR WET & DRY PARICLES

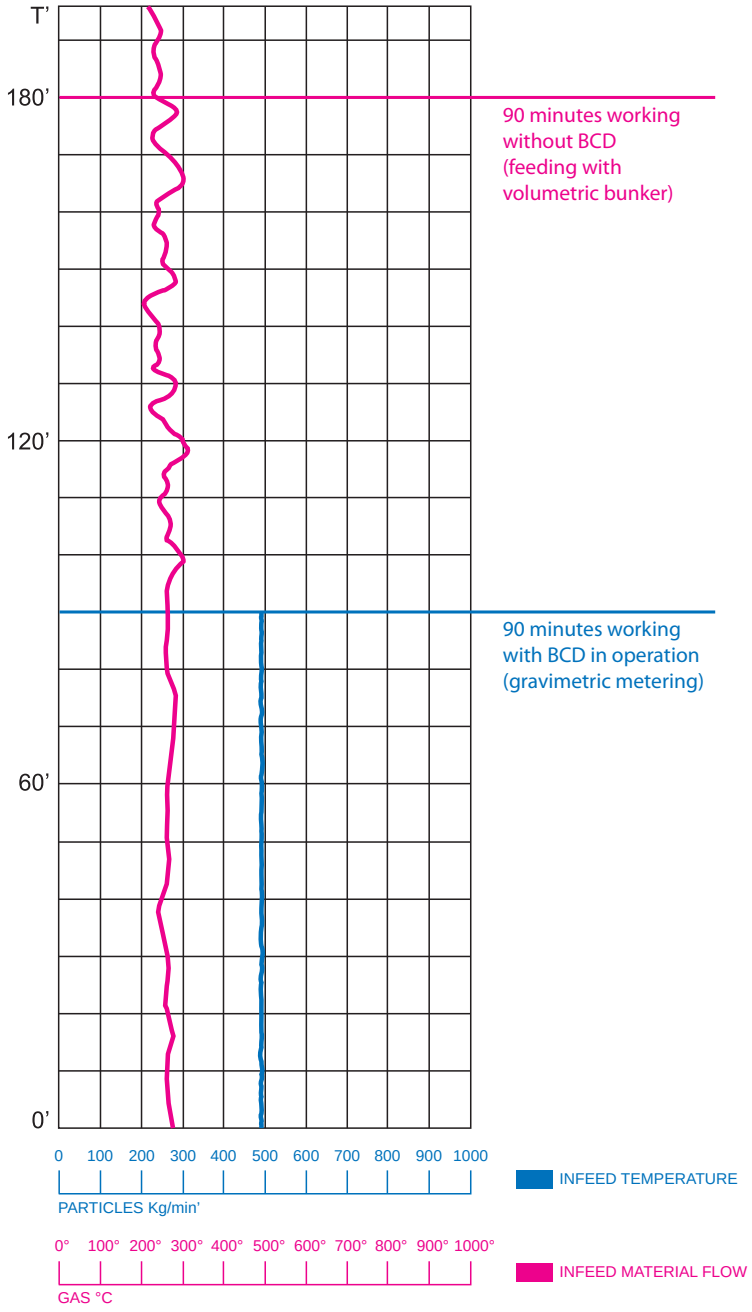
MODEL	OVERALL DIMENSIONS mm					INSTALLED POWER kW			
	A	B	C	D	E	M1	M1.1	M2	M3*
BCD 4	3240	4270	1810	750	1745	0,75	0,078	1,5	2,2
BCD 12	4688	5800	2250	900	2125	0,75	0,078	2,2	2,2
BCD 21	5342	7400	2400	1385	2600	1,10	0,078	4,0	2,2

*Option

MODEL	CAPACITY BULK MATERIAL		BIN VOLUME m^3	SUCTION								WEIGHT APPROX. KG
	TOP m^3/h	RANGE Kg/h		THROUGHPUT WET MATERIAL m^3/h			THROUGHPUT DRY MATERIAL m^3/h			AIR SPEED m/s	SUCTION PRESSURE Pa	
				S1	S2	S3	S1	S2	S3			
BCD 4	40	500/3500	0,9	2 x 800	1 x 1150	2 x 800	2 x 710	1 x 1020	2 x 710	29	200	1960
BCD 12	120	600/12000	1,7	2 x 800	1 x 1150	2 x 800	2 x 710	1 x 1020	2 x 710	29	200	3260
BCD 21	210	1000/21000	4,2	2 x 800	1 x 1150	2 x 800	2 x 710	1 x 1020	2 x 710	29	200	4680

BCD TO GET A BETTER DRYING

The diagram records the working conditions of a particles drier feeded with and without our BCD metering scale. It evidences that the BCD system gives better stability to the drying operations increasing the performances (10-15%) and consequently reducing costs.



Premise

/ Drying process takes long time to accomodate new parameter inputs and heat requirement variation capacity is extremely limited.

/ Conventional but, mainly continuous pressing processes, require stable mixtures-moisture of particles.

State of the art drying

The most common dryer metering technique consists of infeeding volumetrically controlled wet particle flow/s, for instance, by means of silo extractors.

The above system is not precision guaranteed as real flows and heat demand are influenced by several factors, such as silo levels, high compressibility of wet particles, extractor ineffectiveness, moisture contained in particles, etc. causing:

- unstable particle mixtures (± 15-20 %);
- too fast variation of heat requirement (± 15-20 %);
- unstable final moisture (over under thickness and blown boards).

DRIERCON

DRIERCON is an integrated system for drying optimization which controls-analizes-compares: Formulation-gravimetric metering of particle mixtures (scales) **/** Particles moisture (moisture detectors or pre-set values) **/** Available heating capacity from drier.

PLC-linked DRIERCON offers

Constant-gravimetric metering of wet particle mixtures **/** Constant-gravimetric metering of particle mixtures based on pre-set dry formulations **/** Constant-gravimetric metering of particle mixtures based on stable heat requirement.

BENEFITS

/ Constant particle mixing **/** Stable final moisture **/** Up to 10-15% increase in drier efficiency **/** Prompt and reliable process cost analysis **/** Improved pressing cycle.

BCD continuous metering scales & MAMMUTH in drying operations

The working conditions in the drying field are particularly affected by external variables such as humidity, temperature, etc.

These years have seen a widespread general trend towards the improvement of combustion control (understood as control of the quantity of thermal energy delivered) on the basis of the testing of the final state of humidity of the product.

The systems based on testing the humidity and subsequent adjustment of the drier to bring the values into the preset field have not been successful. Such systems may be compared to bolting the stable door immediately after the horse has left.

The inertias are such a handicap that they eliminate the advantages or create greater damage.

The favourable experiences achieved with the installation of BCD continuous metering scales in the field of adhesive application have been extended almost at once, owing to likeness, to the drying field, in which:

- we operate to meter "thermal energy" not "adhesive" in a flow of particles;
- humidity is the main variable.

The first installations of the BCD scale for gravimetric metering of constant flows of damp particles in the driers gave exceptionally good results and showed at once that the old volumetric systems should be pensioned off quickly.

The diagram has been recorded owing to the kind permission of the S.I.L.L.A (Mauro Saviola Group) and is an eloquent confirmation of our statements.

The BCD continuous metering scale reduces the maximum range of the input temperature from 50°C recorded with good volumetric metering to only 18°C recorded with the BCD scale at work.

In proportion to the nominal 280° a good 11% of efficiency is recovered by the use of the BCD scale alone.

This represents just a first step in economics wich can be readily achieved by the mere installation of a BCD metering scale.

A second step can be taken by use of the integrated control system of the DRIERCON drying process.

PAL

METERING BINS

08.02.C-D

BBT

FOR WET & DRY PARTICLES

TECHNICAL FEATURES

/ Volumetric dosing of wet and dry particles for dosing bin only / Gravimetric metering of wet and dry particles for dosing bin & belt scale / Excellent dosing-metering solution for dryers, process mills and blenders

Dosing Bin

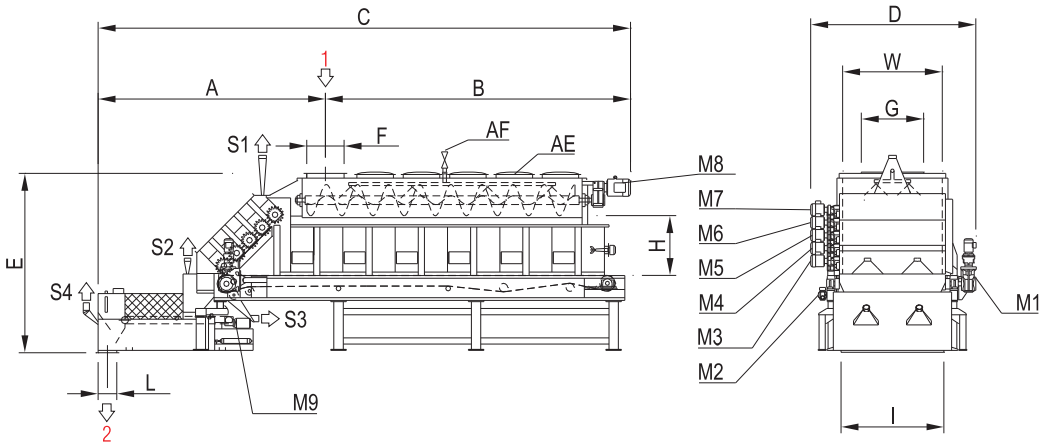
/ Strong-modular bin provided with: inspection windows • electronic levels for filling control • fire-extinguishing system for dry materials • explosion protection system for dry materials / Front scalping-fluidizing rolls / Drive systems / Pre-wiring of all electrical fittings up to a junktion box / Weighing belt with load cell / Tensioning-centering system for the belt / Drive system / Calibration chain / Microprocessor including all functions for electronic calibration / Accuracy for wet particles better than +/- 2,5% relating to instant flow / Accuracy for dry flakes better than +/- 2,0% relating to instant flow / Continuous-constant feeding of material with constant running of dosing bin / Employment range from 10 to 100% of nominal throughput

Belt scale

/ Weighing belt with load cell / Tensioning-centering system for the belt / Drive system / Calibration chain / Microprocessor including all functions for electronic calibration.

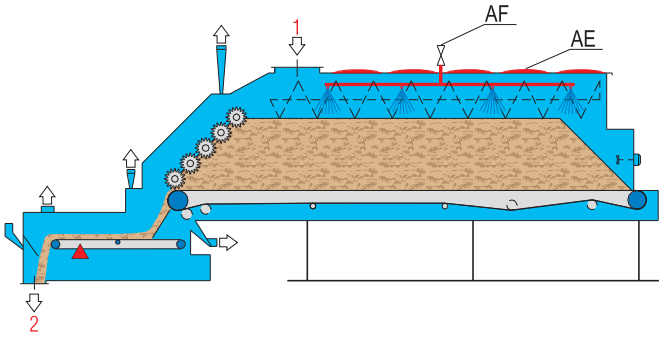
BENEFITS

/ Perfect mixing of particle flow from scalping rolls milling the front section / High-stable volumetric accuracy / Very high weighing-metering accuracy / Accuracy is related to instant flow and not to the full scale value as in conventional systems / High efficiency and reliability / Low maintenance / Accuracy from dosing bin + belt scale higher than +/- 0,5% relating to instant flow! / Employment range from 10 to 100% of full scale value / Full scale value is freely settable / Easy testing by calibrating chain.



1= FEEDING
2= DISCHARGE
S1-S2-S3-S4= SUCTION
M1= FEEDING BELT ROTATION
M2= CLEANING DEVICE COMAND
M3-M4-M5-M6-M7= FRONT MILL ROTATION
M8= LEVELLING SCREW ROTATION
M9= DOSING BELT DRIVE

FOR DRY MATERIAL:
AF= FIRE-EXTINGUISHING SYSTEM
AE= EXPLOSION VENTS



Not binding data. We reserve the right of modification at any time without prior notice.

08.02.C-D

METERING BINS - BBT

FOR WET & DRY PARTICLES

MODEL	OVERALL DIMENSIONS mm									USEFUL SECTION mm	
	A	B	C	D	E	F	G	I	L	H	W
BBT 24	3700	4810	8660	2300	2840	600	750	1250	300	1000	1200
BBT 36	3700	4810	8660	2700	2840	600	1150	1650	300	950	1600
BBT 56	8050	8650	17300	3475	5268	600	1550	1980	800	3000	2000
BBT 60-20	4600	6005	10755	3190	3735	600	1550	1650	300	1500	2000

MODEL	CAPACITY BULK MATERIAL			BIN VOLUME m^3	INSTALLED POWER kW					
	m^3/h	t/h	RATIO		M1*	M1.1	M2	M3...M7	M8	M9
BBT 24	240	According to bulk density	1:6	6	0,55	0,07	0,37	1,10	2 x 2,20	0,55
BBT 36	360			8	0,75	0,07	0,37	1,10	2 x 2,20	0,55
BBT 56	600			70	0,37	0,37	0,37	1,50	4 x 3,00	0,75
BBT 60-20	600			20	1,50	0,07	0,37	1,50	4 x 3,00	0,75

*For SL - CL

MODEL	COMPRESSED AIR Nm^3/h	AF** H_2O - 6 bar		SUCTION								AIR SPEED m/s	SUCTION PRESSURE Pa	WEIGHT APPROX. KG	
				THROUGHPUT WET MATERIAL m^3/h				THROUGHPUT DRY MATERIAL m^3/h							
		DN	l/min	S1	S2	S3	S4	S1	S2	S3	S4			BIN	SCALE
BBT 24	0,05	50 G 2"	560	1 x 1780	2 x 800	1 x 800	2 x 800	1 x 1600	2 x 710	1 x 710	2 x 710	29	200	6500	900
BBT 36		50 G 2"	560	1 x 1780	2 x 800	1 x 800	2 x 800	1 x 1600	2 x 710	1 x 710	2 x 710	29	200	8000	1200
BBT 56		65 G 2"1/2	840	2 x 1780	2 x 800	1 x 1780	2 x 800	2 x 1600	2 x 710	1 x 1600	2 x 710	29	200	28000	2000
BBT 60-20		65 G 2"1/2	700	2 x 1780	2 x 800	1 x 1780	2 x 800	2 x 1600	2 x 710	1 x 1600	2 x 710	29	200	14000	1200

**AF = Fire-extiguishing system (Option for dry materials)

/ BBT Installation