

CEMACH

ROLL COMPACTOR ^{cGMP}

200 DIA X 50 (W), 75 (W), 100 (W)
PLAIN & WATER JACKETED



WHY COMPACTION IS NECESSARY ?

- To improve bulk density.
- To achieve better granulation of sieve analysis.
- To reduce process cost and improve end product quality.
- To produce uniform blends or mixture.
- To produce a uniform partical size range.
- To control partical hardness.
- To control dust.
- To adjust flow properties.
- To improve solution or dispersion rates.

PRINCIPLE OF COMPACTION

This is a dry granulation method. The basic concept is to force fine powder into solid compact or sheet. Some of the factors controlling the compaction process are roll surface, diameter, peripheral speed, separating force or pressure capabilities, feed screw and basic compaction characteristics of the material being processed. The addition of binders to the material being processed, greatly reduces the production of fines.

AN OUTSTANDING FEATURE

Totally G.M.P., compact design - plain as well as water jacketted for products which are extremely heat sensitive.

Various types of rolls can be offered to suit your specific application so as to achieve maximum bulk density of output eg. (A) Plain (b) Corrugated (c) Briquetted & (d) Knurled.

Specially designed feeding system consisting of hopper pre-densifier and a variable speed drive unit. Safety clutch is provided to prevent any accident.

Feeding unit can be hydraulically lifted by hand-operated hydraulic pump for easy cleaning and Built-in panel and indicators are provided, on-off, feed screw, main switch, forward/reverse switches. RPM indicators for roll and feed screw, emergency stop, digital RPM indicator etc.

Specially designed scraper is provided to prevent powder sticking on the rolls.

Design of the equipment is such that minimum lubrication is required in daily maintenance.

Main roll drive is designed with twin shaft gear box coupled with safety clutch to protect roll drive unit thereby perfectly synchronising the rolls with a steady torque.

The side seal is forced against the roll side, so that the percentage of uncompacted powder that leaks by is kept extremely low.

To prevent a possible accident the compacting roll is designed to rotate backward when cleaning.

N.B.: Can offer free trials at our factory before purchase, decision is taken.

Feed System



Roll Drive



Feed Screw



Product



CORRUGATED CHIPS



VERTICAL CORRUGATED



PLAIN



KNURLED



TECHNICAL SPECIFICATIONS

MODEL	CERC-200/50	CERC-200/75	CERC-200/100	CERC-200/150
Output * □	20 to 50 Kgs / hour□	75 to 100 Kgs / hour□	100 to 250 Kgs / hour□	100 to 350 Kgs / hour□
Roll Size□	200mm Dia X 50 mm (w)□	200mm Dia X 75 mm (w)□	200mm Dia X 100 mm (w)□	200mm Dia X 150 mm (w)
Roll Drive Motor□	5 HP, 960 RPM, 440 V, 3 Phase, 50 Hz,□			□0 HP, 960 RPM, 440 V, 3 Phase, 50 Hz,
Feed Screw Drive Motor□	2 HP, 1440 RPM, 440 V, 3 Phase, 50 Hz,□			□3 HP, 1440 RPM, 440 V, 3 Phase, 50 Hz,
Roll Speed (Step Pulley drive)□	5 to 25 RPM (Through Step pulley drive.)			
Feed Screw Speed (Through Mechanical Variator)□	□ 10 to 60 RPM			
Overall Dimensions (in mm)□ □	1160 (W) X 1160 (B) □ X 2032 (H) □	1160 (W) X 1160 (B) □ X 2032 (H) □	1160 (W) X 1160 (B) □ X 2032 (H) □	2350 (W) X 1250 (B) X 1300 (H)
Net Weight□	1000 Kg□	1200 Kg□	1500 Kg□	3000 Kg

* Depending upon material characteristic & available room atmosphere only.

NOTE : DUE TO CONTINUOUS IMPROVEMENTS IN THE MACHINERIES, SPECIFICATION OF THE MACHINERIES IS SUBJECT TO CHANGE WITHOUT ANY PRIOR NOTICE.

BASIC REQUIREMENT FOR TABLETING

UNIFORM COMPOSITION MATERIAL. FREE FLOWING GRANULES. ULTIMATE COMPRESSIBILITY FOR FINAL TABLETS.

PROCESS

CONVENTIONAL WET PROCESS

(ACHIEVED BY WET GRANULATION & NON - AQUEOUS BINDERS)

DRY SLUGGING PROCESS THROUGH ROLL COMPACTOR



SAVE QUALITY OF ACTIVE MATERIALS : Dry Granulation Process saves the quality of active raw-materials at its best. Material remains safe of Oxidation / Reduction / Temperature / Atmospheric hygroscopic absorbences.

SAVE INSTALLATION OF RELATED EQUIPMENTS & SPACES. : Dose not require Drying equipments on account of Compaction Process. So Drier Equipments & Spaces are saved.

SAVES POWER INSTALLATIONS & CONSUMPTION. : Power Requirements is only 7 H.P. compared to account of Compaction to more than 50 H.P. for Fluid Bed Drier. Power Conservation Comparative Study for Processing of 500 Kgs. granules proves :

Wet Granulation - ROLLER COMPACTOR MACHINE = SAVING
246.5 KW/HR. 34 KW. HR. = 212.5 Kw.HR.

SAVES MAN POWER. : Wet Granulation - ROLLER COMPACTOR MACHINE = SAVING
22.5 man./ hr. 8 man./ hr. = 14.5 Kw.HR.

INCREASE PRODUCTION CAPACITY BY 1 TO 3 CRORES OF TABLETS.

Serrations	X	Rpm	X	Weight	X	Minute	X	Work Time	= Compacts/Granules Output
60	X	5	X	3	X	60	X	6	= 324 Kgs. (10-25 Lac Tab.)

EASY & PERFECT CLEANING ON CHANGE OVER.

Machine Design permit perfect cleaning in just 15 minute time. Machine Design permit cleaning with WATER HOSE PIPE & SOAP WATER.

REDUCES INDUSTRIAL HAZARDS. : Alternative Production Process requires use of Non - Aqueous Binders that Causes INDUSTRIAL HAZARDS OF - FIRE - COST - HUMAN DAMAGES. which is saved on account of dry Granulation Processing.

DRY GRANULATION MADE PRODUCTIVE & EFFICIENT.

Alternative Slugging Equipments have - Cumbersome Operation - Less Efficient Slugging. - Low Productivity.

READY FORMULATION SUGGESTIONS.

Backed by Actual Involvement in manufacture of various Formulations from one of the Directors of the company.



Suggested Formulas For Direct Compaction & Compression to Tablets.

NO.	NAME OF PRODUCTS	ACTIVE	MCCP	STARCH	MG. ST.	TALC	OTHER
1.	ANALGIN & COMBINATIONS	10 KGS.	0.5 KG.	0.3 KG.	0.1 KG.	-----	
2.	ERYTHROMYSIN ST. / ESTOLATE	10 KGS.	1.0 KG.	0.3 KG.	0.1 KG.	0.1 KG.	-----
3.	GRISEOFULVIN TAB.	10 KGS.	1.5 KG.	1.5 KG.	0.1 KG.	0.1 KG.	0.2 KG. S.S.G.
4.	IBUPROFEN TAB.	10 KGS.	1.0 KG.	0.4 KG.	-----	0.1 KG.	0.1 KG. AEROSIL
5.	DI - IODOHYDROXYQUINOLENE	10 KGS.	1.5 KG.	1.5 KG.	0.1 KG.	0.1 KG.	-----
6.	IDOCHLOROHYDROXYQUINOLENE	10 KGS.	1.5 KG.	1.5 KG.	0.1 KG.	0.1 KG.	-----
7.	CHLOROPROMZINE HYDROCHLORIDE TAB.	10 KGS.	4.0 KG.	5.0 KG.	0.4 KG.	0.4 KG.	8.0 KG. D. C. P.
8.	ETHAMBUTAZONE TAB.	10 KGS.	1.5 KG.	0.5 KG.	0.1 KG.	0.1 KG.	0.1 KG. GUAR GUM
9.	OXYPHENE BUTAZONE TAB.	10 KGS.	1.0 KG.	1.0 KG.	0.1 KG.	0.1 KG.	0.1 KG. S. S. G.
10.	PHENYL BUTAZONE TAB.	10 KGS.	1.0 KG.	1.0 KG.	0.1 KG.	0.1 KG.	0.1 KG. S. S. G.
11.	RANITIDINE TAB.	10 KGS.	2.0 KG.	1.0 KG.	0.15 KG.	0.15 KG.	2.0 KG. DCP/LACTOSE
12.	MEBENDAZOLE TAB.	10 KGS.	2.0 KG.	1.0 KG.	0.15 KG.	0.15 KG.	2.0 KG. D. C. P.
13.	CHLOROQUINE PHOSPHATE	10 KGS.	1.0 KG.	1.0 KG.	0.1 KG.	0.1 KG.	0.1 KG. GUAR GUM
14.	BASE GRANULES/POTENT MEDICINE	10 KGS.	4.0 KG.	2.0 KG.	0.1 KG.	0.1 KG.	4.0 KG. D. C. P.
15.	MULTIVITAMINS TAB.	10 KGS.	2.0 KG.	1.0 KG.	0.1 KG.	0.1 KG.	2.0 KG. LACTOSE
16.	ASPIRIN & COMBINATION TAB.	10 KGS.	1.0 KG.	1.0 KG.	-----	-----	-----
17.	AMPICILLIN & OTHER DR Y SYRUP	10 KGS.	2.0 KG.	-----	-----	-----	0.1 KG. AEROSIL
18.	NORFLOXACIN TAB.	10 KGS.	2.0 KG.	2.0 KG.	0.15 KG.	0.15 KG.	0.1 KG. S. S. G.
19.	CIPROFLOXACIN TAB.	10 KGS.	2.0 KG.	2.0 KG.	0.15 KG.	0.15 KG.	0.1 KG. S. S. G.
20.	RIPHAMPICIN & COMBINATION	10 KGS.	2.0 KG.	1.0 KG.	0.2 KG.	0.2 KG.	-----
21.	ANTIBIOTIC KID & DISPERSIBLE	10 KGS.	2.0 KG.	1.0 KG.	0.2 KG.	0.2 KG.	-----
22.	IBU - PARA TAB. 4.0 KGS. +	3.25 KGS.	1.0 KG.	0.5 KG.	-----	0.2 KG.	1.0 KG. PUL. SUGAR
23.	ALUMINIUM HYDROXIDE TAB.	10 KGS.	1.5 KG.	(SUGAR) SACHARIN, COLOUR.	3-5% Water should be		

Uniformly mixed to help Better Compaction till no Sticking on Roll Surface.

Formulation for Compaction should include :

Compaction aid Glident Lubricants Dry Binders Disintegrants
MCCP, LACTOSE, PUL. SUGAR AEROSIL MG. ST. GUM ACACIA S.S.G.
DEXTROSE, DCP, SOL, STARCH TALC GUAR GUM STARCH