

"BRAHMASTRA"

As per our design, machining, fabrication, manufacturing, assembly & supply of new concept, heavy duty, sturdy and result oriented special "Brahmastra" unit considering ultimate crushing capacity of 6500 T. C. D. In existing cane carrier width of 1525 m.m. with fibre % cane - 15

The unit should have futures for increasing cane feeding, cane carrier maximum capacity utilization, increasing bulk density, preparatory index and ultimately crushing rate by reducing further load on preparatory devices and milling Tandem.

The unit should run without gearbox at full RPM to achieve double result as compared to other devices for achieving targeted crushing rate of 6500 TCD.

It should help & participate along with our next unit "overall plant stabilizer" for uniform cane preparation, uniform bulk density of prepared cane & achieve our ultimate targeted goal of ---

- 1 Uniform crushing.
- 2 Smooth crushing.
- 3 Consistent crushing.
- 4 Constant crushing.
- 5 Easy going crushing
- 6 Uniform load on all Mills.
- 7 To reduce wear & tear of mill parts & components
- 8 To reduce Donnelly chute jamming.
- 9 To reduce mill stoppages and breakdowns.
- 10 To increase the overall profitability of sugar complex.

And Help factory for overall plant stabilization & synchronization of milling section, boiler section, co-generation section, distillery section & sugar manufacturing process plant.

This should help factory for sure shot ---

- 1 Increased crushing rate.
- 2 Increased milling efficiency.
- 3 Increased the boiler thermal efficiency.
- 4 Increased average steam generation rate.
- 5 Increased bagasse saving.
- 6 Increased power export by reducing fluctuations.
- 7 Increased co-generation plant thermal efficiency.
- 8 Improved quality of sugar & RS, Ethanol due to uniform juice, uniform steam & uniform mixing of chemical in to juice syrup steam & molasses.



R B PATIL

TECHNICAL DIRECTOR
R B PATIL AND ASSOCIATES

"Overall Plant Stabilizer"

As per our design, machining, fabrication, manufacturing, assembly & supply of new concept, heavy duty, sturdy and result oriented special "Overall Plant Stabilizer" unit considering ultimate crushing capacity of 6500 T. C. D. In existing cane carrier width of 1525 m.m. with fibre % cane - 15

The unit should have futures for increasing cane feeding, cane carrier maximum capacity utilization, increasing bulk density, preparatory index and ultimately crushing rate with bagasse saving by keeping uniform load on fibrizer and all milling Tandem.

It should help & participate along with our first unit "Brahmastra" for uniform cane preparation, uniform bulk density of prepared cane & achieve our ultimate targeted goal of ---

- 1 Uniform crushing.
- 2 Smooth crushing.
- 3 Consistent crushing.
- 4 Constant crushing.
- 5 Easy going crushing
- 6 Uniform load on all Mills.
- 7 To reduce wear & tear of mill parts & components
- 8 To reduce Donnelly chute jamming.
- 9 To reduce mill stoppages and breakdowns.
- 10 To increase the overall profitability of sugar complex.

And Help factory for overall plant stabilization & synchronization of milling section, boiler section, co-generation section, distillery section & sugar manufacturing process plant.

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Advantages Of Our Innovative, Miracle, Modern Concept, New Design Combine Units Brahmastra & Overall Plant Stabilizer.

- 1 Avoids huge investment for cane carrier and preparatory device replacement around 3.5 to 4 crores.
- 2 Able to increase 1000 MT to 2000 MT cane crushing in existing cane carrier.
- 3 Improves cane preparatory index by 5%.
- 4 Increases bulk density of cane & prepared cane.
- 5 Gives uniform quantity & uniform density prepared cane feeding to fibrizer.
- 6 Avoids all types of cane and prepared care jamming in cane carrier, near chopper, leveller and fibrizer.
- 7 Reduces Load on preparatory devices.
- 8 Cane carrier speed fluctuations are reduced by 95%.
- 9 Gives full width wise & equal prepared cane feeding in rakes of rake elevator from fibrizer.
- 10 Uniform and equal prepared cane feeding to mill station.
- 11 Gets uniform cane preparatory index.
- 12 Increases mill primary extraction by 2%.
- 13 Gives full width wise & equal prepared cane feeding to mill roller overall length from rake carrier to all mills ensuring uniform & maximum mill extraction.
- 14 Due to consistent & constant equal quantity density, fibre feeding to overall length of all mill rollers, mill setting purpose is truly followed & mill extraction is increased & kept constant.
- 15 Reduces load on all Mills.
- 16 Avoids Donnelly chute jamming.
- 17 Reduces wear and tear of all mill components.
- 18 Keeps uniform load on all mills & also all mills load & rpm fluctuations are reduced by 90%.
- 19 Increases mill extraction by 0.25%.
- 20 Increased preparatory index by 4 to 5% & primary extraction by 2% simultaneously & due to uniform quantity & uniform fibre blanket to all mills bagasse pole is reduced by 0.25 to 0.35% resulting in recovery rise by minimum 0.1% i.e., per ton of cane 1Kg gain sugar is increased.
Thus, if you crush 7 Lakh MT crushing in one season you can increase 7000 quintals more bagging
(7000 X 4000 = 2,80,00,000 /- Rs) 2.8 Cr. Rupees.
- 21 Due to uniform quantity & uniform fibre blanket to all mills maceration water to last mill can be increased further by 3 to 4% additionally.
- 22 Increases mill efficiency.

- 23 The Combine benefits of our both units together are not less than 5 to 7 crores per season in the form of increased crushing rate, bagasse saving, power export, Ethanol production as well as rise in sugar gain & reducing fix expenditure cost.
- 24 Get uniform quality and quantity of bagasse from last mill, by reducing moisture by 0.25 to 0.50 %.
- 25 Keeps boiler load, pressure, and temperature consistent & constant.
- 26 Increases boiler thermal efficiency by 1 to 1.5%.
- 27 Increases average per hour steam generation of each boiler by minimum 3 tons per hour, without consuming more or extra bagasse.
- 28 Increases thermal efficiency of turbine and stabilizes co-generation station.
- 29 Specific steam consumption of turbine reduces to some extent.
- 30 Increases minimum 3500-to-5000-unit power export per day due to fluctuations in crushing rate by mill as well as fluctuations in boiler load, temperature and pressure are reduced by 90%.
- 31 Due to uniform, consistent, constant & uninterrupted juice flow & steam pressure, temperature, boiling house evaporation, efficiency, performance improves. Also due to uniform juice flow & steam flow along with uniform pressure & temp, uniform mixing of all added chemicals in process house are properly carried out & due to effective reactions & proper boiling, the quality of sugar crystal also improves.
- 32 Increases Bagasse saving at largest scale.
- 33 Fine tuning of all sugar complex including mill, boiler, co-generation, boiling house, and distillery is achieved due to uniform, smooth, easy, consistent & constant crushing rate.
- 34 All sugar complex is stabilized with uniform crushing rate, uniform juice, bagasse, steam, uniform mixing of chemicals at boiler, Quadrupole, Clarifier, pan and distillery section.
- 35 Helps to increase yield and profit of all sugar complex subdivisions.
- 36 Helps to improve sugar quality and R.S. & ethanol product due to uniform juice, steam and uniform mixing added chemicals due to uniform juice, syrup.
- 37 Due to increased preparation and preparatory index & primary extraction along with reduced stoppages by brahmastra & stabilizer --The electric load on all three preparatory device and all five Mills reduces by minimum 600 H.P. & net power saving in milling Tandem increases by 400 k.w. resulting in total saving of 75 Lakh per season.
- 38 Due to uniform, consistent, constant, and smooth crushing rate, juice flow & steam flow along with reduced stoppages -- the unknown losses like sugar loss at mill due to bacteria, inversion losses, caramelization losses & more retention time of juice in the equipment losses results in minimum 0.05 reduction in unknown losses & net rise in revenue due to increase of sugar per season goes to 1 crore. (Net sugar rise 0.5 kg/ton)



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All Solution's Under One Roof

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Advantages of Our Innovative, Miracle, Modern Concept, New Design Overall Plant Stabilizer

1. Increases bulk density of prepared cane.
2. Keeps uniform cane preparation.
3. Reduces cane carrier speed fluctuations by 90%.
4. Gives uniform quantity & density prepared cane feeding to fibrizer.
5. Gives uniform cane preparatory index.
6. Cane preparatory index is increase by 1 to 1.5%.
7. Gives full width wise & equal prepared cane feeding in rakes of rake elevator from fibrizer.
8. Gives full width wise & equal prepared cane feeding to mill roller overall length from rake carrier to all mills ensuring uniform & maximum mill extraction.
9. Mill primary extraction increases by 1%.
10. Due to consistent & constant equal quantity density, fibre feeding to overall length of all mill rollers, mill setting purpose is truly fallowed & mill extraction is increased & kept constant.
11. Increases mill extraction by 0.2%.
12. Keeps uniform load on all mills.
13. Due to uniform quantity & uniform fibre blanket to all mills bagasse pole is reduced by 0.2% resulting in recovery rise by minimum 0.05% i.e., per ton of cane 0.5Kg sugar is increased for bagging.

Thus, if you will crush 5 Lakh MT crushing in one season you can increase 2500 more bagging (2500 X 4000 = 1, 00, 00, 000 /- Rs) 1 Cr. Rupees.
14. Due to uniform quantity & uniform fibre blanket to all mills maceration water to last mill can be increased further by 3 to 4% additionally.
15. Achieves uniform, smooth, consistent, constant & easy going crushing, performance & operation of milling, boiler & Cogen station.
16. Reduces 25 % stoppages of mill Section.
17. Avoids Donnelly chute Jamming.
18. Reduces wear and tear of mill components.
19. Increases and keeps uniform mill extraction & performance.

- 20.** Reduces bagasse moisture by 0.25 %. due to uniform Preparatory index, uniform load on all mills.
- 21.** Gets uniform quality and quantity of bagasse from last mill going to boiler.
- 22.** Increases thermal efficiency of boilers by 1 to 1.5 %.
- 23.** Reduces fluctuations in boiler load, pressure, and temperature by 90 %.
- 24.** Increases average steam generation of each boiler 3 to 4 ton per hour without consuming extra Bagasse.
- 25.** Increases power export by minimum 3000 to 4000 unit due to reduced boiler fluctuations 90 % due to uniform and equal quality and quantity of bagasse going to boiler from mill station.
- 26.** Due to uniform, consistent, constant & uninterrupted juice flow & steam pressure, temperature, boiling house evaporation, efficiency, performance improves. Also due to uniform juice flow & steam flow along with uniform pressure & temp, uniform mixing of all added chemicals in process house are properly carried out & due to effective reactions & proper boiling, the quality of sugar crystal also improves.
- 27.** Stabilizes and synchronizes overall mill, boiler, turbine, Cogen, sugar & distillery complex with uniform, smooth, consistent & constant working & performance of all stations.
- 28.** Specific steam consumption of turbine reduces to some extent.
- 29.** Increases crushing rate by minimum 150 M.T. per day.
- 30.** Increases bagasse saving by minimum 35 to 40 ton per day.
- 31.** Reduces fix expenditure by Rs 30,000 /- per day.
- 32.** Increases additional revenue from ethanol production net profit Rs 32,400 /- per day.
- 33.** Total profit or payback of the unit in one crushing season is not less than 2 crores.
- 34.** Due to increased preparation and preparatory index & primary extraction & uniform load by stabilizer -- the electric load on fibrizer and all five Mills reduces by minimum 200 H.P. & net power saving in milling Tandem increases by 100 k.w. resulting in total saving of 18.75 Lakh per season.
- 35.** Due to uniform, consistent, constant, and smooth crushing rate, juice flow & steam flow along with reduced stoppages -- the unknown losses like sugar loss at mill due to bacteria, inversion losses, caramelization losses & more retention time of juice in the equipment losses results in minimum 0.05 reduction in unknown losses & net rise in revenue due to increase of sugar per season goes to 1 crore. (Net sugar rise 0.5 kg/ton)



R B Patil

**Technical Director
R B Patil and Associates**

Financial Profit Sheet of our new unit "Brahmastra"

How much is the profit of our new invented unit and consultancy if you increase 400 M.T. crushing per day to any factory????

- 1 Minimum 400 M.T. more Crushing will result in reducing the fix expenditures like annual maintenance, salary, interest etc. Rs 200/- per MT Cane Crushing, which is $400 \text{ MT} \times \text{RS } 200 = \text{Rs } 80,000/-$ profit per day.
- 2 Near about 80 % of above excess crushing bagasse is saved per day $86.4 \text{ MT} \times \text{RS } 2000/-$ costing around Rs 1, 72, 800/- per day. ($400 \text{ MT} \times 27 \% \times 80 \% \times \text{Rs. } 2000 /- \text{ PER MT of Bagasse} = \text{Rs. } 1, 72, 800 /-$ per day more)
- 3 We will get extra "B" Heavy molasses $400 \text{ MT} \times 6 \% = 24 \text{ MT}$ per day.

If this extra 24 MT "B" Heavy molasses used for ethanol production then $24 \text{ MT} \times 300 \text{ Ltr} = 7200 \text{ Ltr}$ Ethanol will increased per day. Profit Rs 13/- more per ltr after conversion will come $\text{Rs } 13 \times 7200 \text{ ltr} = \text{Rs } 93,600/-$ per day.

- 4 Reduced fluctuations and increased boiler efficiency will increase minimum 2500 unit power export X RS 6 per Unit more. Total revenue by additional export will be Rs 15, 000/- per day.
- 5 We can reduce your season total stoppage by minimum 30 hours, by our study, rectification, changes, modification, alteration, suggestion & fine tuning of overall plant, then you can save $30 \text{ Hr} \times \text{Rs } 2,00,000/- = \text{Rs } 60,00,000 /-$ (0.6 Crore Rupees per season)

Total Rs 3, 61, 400/- per day minimum. (As per Sr, No, 1 to Sr No. 4 only)

And for calculation and minimum profit ratio, if we take only 80 % Amount of this, then grand and sure per day profit will be Rs 2, 89, 120/- Per day.

If we consider 135 season days then return will be Rs 4, 87, 89, 000 / - (Rs 4.87 Crore)

Except this above total profit of 4.87 crore, Total RS 4.87 crore + RS 0.6 crore reduced season stoppages (Sr. No. 5) = RS 5. 47 crores minimum of our new "BRAHMASTRA" unit + our consultancy total profit per Season.



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Financial Profit Sheet of our new unit "Overall Plant Stabilizer"

How much is the profit of our new invented unit and consultancy if you increase 150 M.T. crushing per day to any factory????

- 1 Minimum 150 M.T. more Crushing will result in reducing the fix expenditures like annual maintenance, salary, interest etc. Rs 200/- per MT Cane Crushing, which is $150 \text{ MT} \times \text{RS } 200 = \text{Rs } 30,000/-$ profit per day.
- 2 Near about 80% of above excess crushing bagasse is saved per day $32.4 \text{ MT} \times \text{RS } 2000/-$ costing around Rs 64,800/- ($150 \text{ MT} \times 27 \% \times 80 \% \times \text{Rs. } 2000 /-$ MT of Bagasse = Rs. 64800 /- per day)
- 3 We will get extra "B" Heavy molasses $150 \text{ MT} \times 6 \% = 9 \text{ MT}$ per day.

If this extra 9 MT "B" molasses used for ethanol production then $9 \text{ MT} \times 300 \text{ Ltr} = 2700 \text{ Ltr}$ Ethanol will increased per day. Profit Rs 13/- more per ltr after conversion will come $\text{Rs } 13 \times 2700 \text{ ltr} = \text{Rs } 35,100/-$ per day.

- 4 Reduced fluctuations and increased boiler efficiency will increase minimum 2000 unit power export X RS 6 per Unit more. Total revenue by additional export will be Rs 12,000/- per day.
- 5 We can reduce your season total stoppage by minimum 25 hours, by our study, rectification, changes, modification, alteration, suggestion & fine tuning of overall plant, then you can save $25 \text{ Hr} \times \text{Rs } 2,00,000/- = \text{Rs } 50,00,000 /-$ (0.5 Crore Rupees per season)

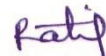
Total Rs 1,41,900/- per day minimum. (As per Sr, No, 1 to Sr No. 4 only)

And for calculation and minimum profit ratio, if we take only 80 % Amount of this, then grand and sure per day profit will be Rs 1,13,680/- Per day.

Even we take only Rs 1,13,520 /- per day only) you will get Rs 34,05,600/- return per month.

If we consider 135 season days then return will be Rs 1,53,5200 /- (Rs 1.53 Crore)

Except this above total profit of 1.53 crore, Total RS 1.53 crore + RS 0.5 crore due to reduced season stoppages (Sr. No. 5) = RS 2.03 crores minimum of our new "Overall Plant Stabilizer" unit + our consultancy total profit per Season.



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Financial Profit Sheet of our new units "Brahmastra" & "Overall Plant Stabilizer" + Our Consultancy

How much is the profit of our new invented unit and consultancy & some addition + modifications if you increase 600 MT crushing per day to any factory????

- 1 Minimum 600 MT more Crushing will result in reducing the fix expenditures like annual maintenance, salary, interest etc. Rs 200/- per MT Cane Crushing, which is 600 MT X RS 200 = Rs 1, 20, 000/- profit per day.
- 2 Near about 80% of above excess crushing bagasse is saved per day 162 MT X RS 2000/- costing around Rs 2, 59, 200/- per day. (600 MT X 27 % X 80 % X Rs. 2000/- per MT of Bagasse = Rs 2, 59, 200/- per day)
- 3 We will get extra "B" Heavy molasses 600 MT X 6 % = 36 MT per day.

If this extra 36 MT "B" Heavy molasses used for ethanol production then 36 MT X 300 Ltr = 10800 Ltr Ethanol will increased per day. Profit Rs 13/- more per ltr after conversion will come Rs 13 X 10800 ltr = Rs 1, 40, 400/- per day.

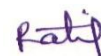
- 4 Reduced fluctuations and increased boiler efficiency will increase minimum 3500 unit power export X RS 6 per unit more. Total revenue by additional export will be Rs 21, 000/- per day.
- 5 We can reduce your season total stoppage by minimum 50 hours, by our study, rectification, changes, modification, alteration, suggestion & fine tuning of overall plant, then you can save 50 Hr X Rs 2,00,000/- = Rs 1 crore Rupees per season

Total Rs 5, 40, 200/- (Rs 5.40 Lakh) per day minimum. (As per Sr, No, 1 to Sr No. 4 only)

And for calculation and minimum profit ratio, if we take only 80 % Amount of this, then grand and sure per day profit will be Rs 4, 32, 160/- Per day.

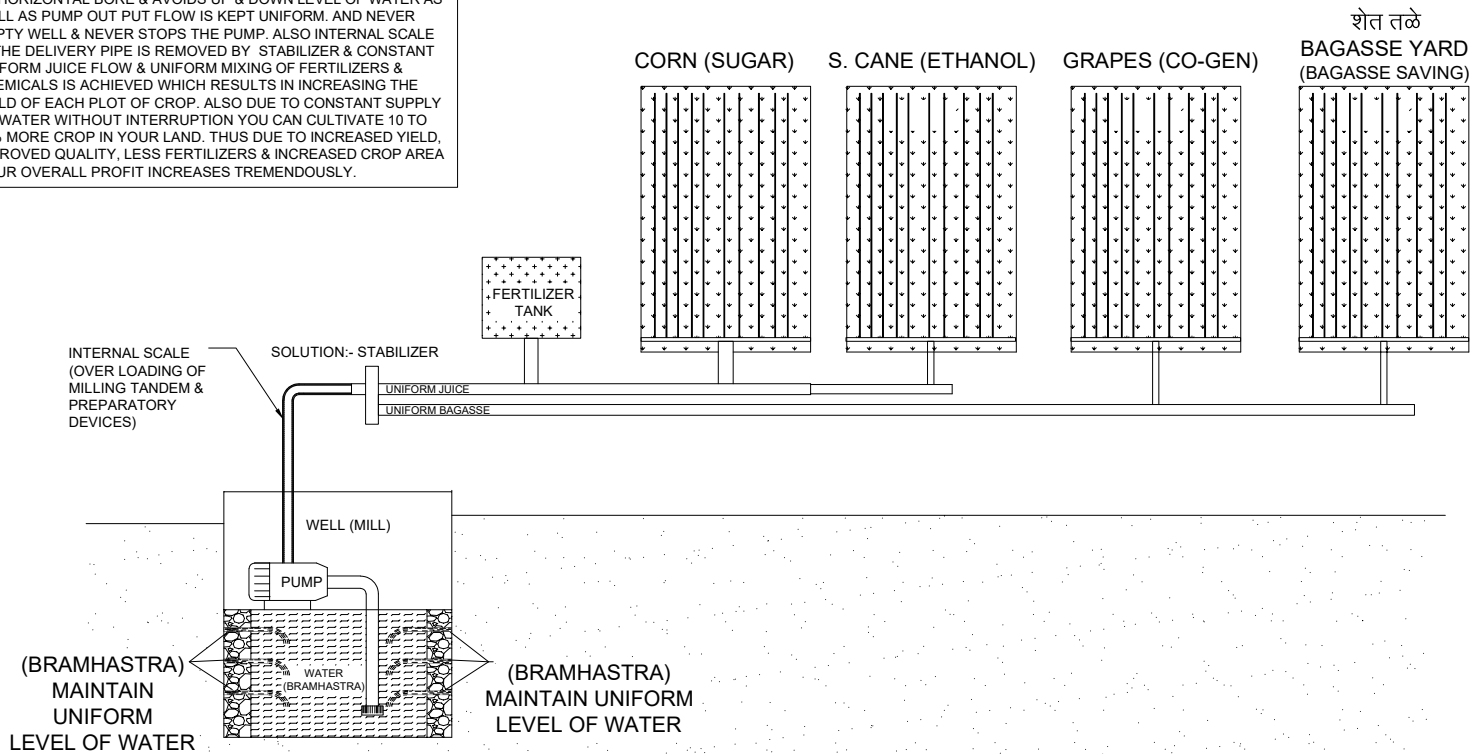
If we consider 135 season days then return will be Rs 5, 83, 41, 600 / - (Rs 5.83 Crore)

Except this above total profit of Rs 6.53 crore, Total RS 5.83 crore + RS 1.0 crore reduced season stoppages (Sr. No. 5) = RS 6.83 crores minimum of our new "BRAHMASTRA" & "Overall Plant Stabilizer" + our consultancy total profit per Season.



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BRAMHASTRA MAINTAIN UNIFORM LEVEL OF WATER IN THE WELL BY HORIZONTAL BORE & AVOIDS UP & DOWN LEVEL OF WATER AS WELL AS PUMP OUT PUT FLOW IS KEPT UNIFORM. AND NEVER EMPTY WELL & NEVER STOPS THE PUMP. ALSO INTERNAL SCALE IN THE DELIVERY PIPE IS REMOVED BY STABILIZER & CONSTANT UNIFORM JUICE FLOW & UNIFORM MIXING OF FERTILIZERS & CHEMICALS IS ACHIEVED WHICH RESULTS IN INCREASING THE YIELD OF EACH PLOT OF CROP. ALSO DUE TO CONSTANT SUPPLY OF WATER WITHOUT INTERRUPTION YOU CAN CULTIVATE 10 TO 15% MORE CROP IN YOUR LAND. THUS DUE TO INCREASED YIELD, IMPROVED QUALITY, LESS FERTILIZERS & INCREASED CROP AREA YOUR OVERALL PROFIT INCREASES TREMENDOUSLY.



(BRAMHASTRA) MAINTAIN UNIFORM LEVEL OF WATER

(BRAMHASTRA) MAINTAIN UNIFORM LEVEL OF WATER