ABHISHEK ENTERPRISE

OPERATION MAINTENANCE MANUAL FOR -20 TPH STONE CRUSHER MODEL-AE ST 201M

Year-2022

GEM/2021/B/1655399 DATED: 08-11-2021

www.aecrushers.com

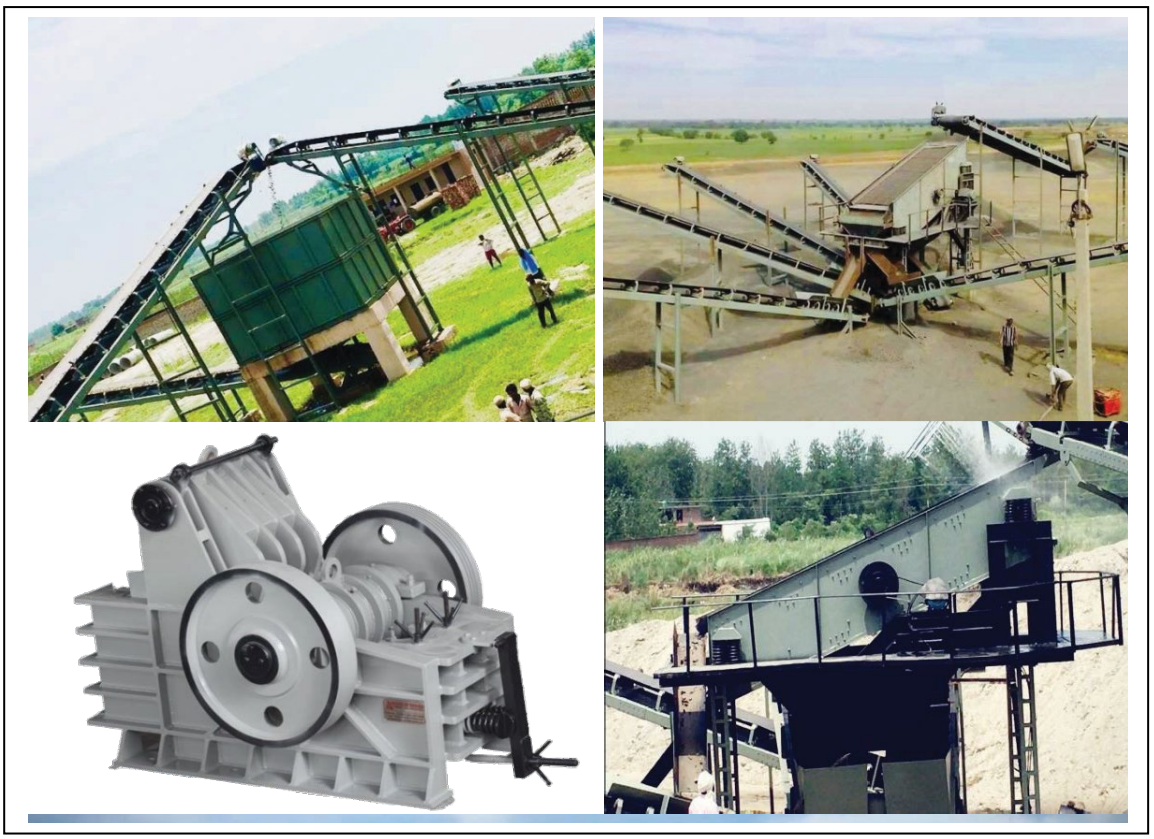
mehta_nareshkr@yahoo.co.in

H.O.:-SIKRI, TH.-BALLABHGRAH,FARIDABAD-121004 (HARYANA)

ABHISHEK ENTERPRISES

FOR: DIRECTOR GENERAL BORDER ROADS, SEEMA SADAK BHAWAN RING ROAD, NEW DELHI 110010

STONE CRUSHER -MODEL :-AE ST 201M



OPERATION AND MAINTENANCE MANUAL WITH SPARE PARTS MANUAL FOR RD-AE-ST-20X10(M)

M/C. SL.NO. ---------- MODEL: ---------- YEAR OF MANUFACTURING -------- CUSTOMER--------

ABHISHEK ENTERPRISES

H.O.:- PLOT NO.19-20, VILLAGE SIKRI, TEHSIL BALLABGRAH, FARIDABABD-121004 (HARYANA) INDIA

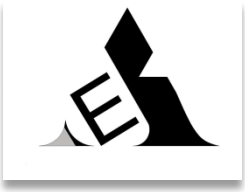
MFG. UNIT - :- PLOT NO.19-20, VILLAGE SIKRI, TEHSIL BALLABGRAH, FARIDABABD-121004 (HARYANA)

MOB: - +91-9911218421, +91-9911169984

FAX: - 0129-2205984

SERVICE MAIL -:- mehta_nareshkr@yahoo.co.in

Web: - www.aecrushers.com



ABHISHEK ENTERPRISES (AE)

INTRODUCTION

WE (ABHISHEK ENTERPRISES), would like to introduce ourselves as a leading Stone crusher Manufacturer Company since 2007, was established by our Founder **Mr. Naresh Mehata** (Managing Director). The company is devoted and engaged in manufacturing of all types/ capacities of Stone Crusher, feeder & screening plant. We proudly announce that our company in Today's scenario is one leading manufacturer of crushing and screening plant in India. Now Abhishek Enterprises has hands –on well experience in this business for more than over one and half decade. We offer not only the crushing Plants but every supportive machinery and equipment along with spare parts and accessories; the Company has accumulated the latest technology and high productivity to meet the requirements of our clients. Our products include a new generation of Jaw crushers, Cone crushers, Vibratory Screens, Double Shaft Grizzly and Vibratory Feeders which have been proven to be high in quality and supplied to overseas market such as in African Continent. We wish to offer our sincere appreciation for all our customers and supporters who lead our Plants and we are committed to be the world best aggregate production plant manufacturer with the best technology know-how and complete production management. For more details visit our website. *www.aecrushers.com.*

We have gained a wide experience for an over 14 years in the development of **Mobile stone crusher, Portable crusher Plant** and has become a market leader in India for just this very purpose. To protect the customer's investment is our main duty and means that we at **ABHISHEK ENTERPRISES,** inputs a maximum in serviceability, functional reliability and professionalism in-to our plants and machinery. After all, customer satisfaction is a premium and has been demonstrated in more than **1.5 decades of service.**

The company has carved a niche for itself in the business scenario. We are very much famous for high quality crushing equipment – such as **Single toggle jaw crusher, Single toggle granulators, Double toggle jaw crusher and granulators, Roll Crusher, M.S fabricated Retaining Walls, Vibratory Feeders, Vibrating Screens, Conveying**

System, Bulk material Handling system, Unit handling system Sand/ Gravel washing Plant and related spares. We are geared up to offer Indian infrastructure organizations with International standards and global technical improvements in mining & crushing field. With massive investment strategies in its commercial infrastructure, solid R&D, comprehensive range of excellent crushing products, extremely trustworthy post sales services & worldwide disperses service system. **ABHISHEK ENTERPRISES** is currently an embellished brand for its unique products of top notch quality.

WE DESIGN, MANUFACTURE, SUPPLY, ERECT AND COMMISSION COMPLETE CRUSHING & SCREENING PLANTS AS WELL AS BULK MATERIAL SYSTEMS.

CUSTOMER SATISFACTION – A NEW MARKET ORDER

The use of ABHISHEK ENTERPRISES machines and equipment can give our customer the competitive edge. As a "Performer" company ABHISHEK ENTERPRISES continues to participate in major innovations and provide creative solutions for business and achieves this own vision 2000 goal. For customer striving to achieve a competitive advantage in the market over other companies without loss of business momentum, **AE** has the solutions. Training is also impacted by **AE** to the customer's staff for operational and maintenance eases. O & M Literature is also furnished for purchaser's reference.

Free after sales services is provided over the guarantee period where possible or required replacement are also made over this period, for reasons not attributable to the client.

A.E. GROUP undertakes Turnkey Projects for Crushing and Screening Plants – for various applications such as:

- Iron Ore
- Granite
- Lime Stone
- Dolomite
- River Gravel
- Manganese Ore

The Turnkey Projects are also undertaken for Bulk Material Handling Equipment such as Coal, Fertiliser, Glass, Cement, Paper, Sugar, All kind of Ore etc.

Its team of highly qualified managers, executives, supervisors and technicians working together to build a strong future for the nation.

THE CONTRIBUTION SPECTRUM

The difference field of work where **ABHISHEK ENTERPRISES** has created an impact and business momentum is in the diverse area of:-

- STONE CRUSHING AND SCREENING INDUSTRY (ESPECIALLYFOR ROAD SECTOR)
- MINING, IRON ORE, LIME STONE, DOLOMITE, STONE ETC.
- FERTILIZER AND CHEMICAL INDUSTRIES.
- CEMENT INDUSTRIES.
- PAPER AND BOARD INDUSTRIES.
- GLASS INDUSTRIES.
- CONSTRUCTION INDUSTRIES.
- RAILWAYS.
- SUGAR INDUSTRIES.
- SPONGE IRON PLANTS.
- STEEL PLANTS.

ABHISHEK ENTERPRISES

: OUR QUALITY POLICY:

We would like to introduce ourselves as a leading construction equipment manufacturer since 2007, in India.

The company is devoted and engaged in manufacturing of all types capacities of stone crusher plant as well as *Screening equipment such as, jaw crusher, granulators, cone crusher, roll crusher , rotopactors, impact crusher, vibratory screen ,rotary screen grizzly feeder* etc.

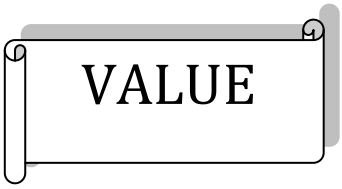
Our qualified & well trained engineers capable to manufacturer the equipment, plant as per customer specification, requirements.

ABHISHEK ENTERPRISES committed to enhance customer satisfaction by innovative design, consistent product quality and one time delivery through continually improving on all our process, system, recourse and technology

"To Offer the Products and services to the satisfaction of the Customer and strive Continuously Upgrade Quality in all Respect through the Joint Efforts of all Employee"

- Q – Quest for excellence
- U – Understanding customers need
- A - Action to achieve customers appreciation
- L – Leadership determination to be a leader
- I – Involving all people
- T – Team spirit
- Y – Yardstick to measure progress

TO BE THE COUNTRY'S LEADING MANUFATURER OF CRUSHING &SCREENING PLANTS AND BULK MATERIAL HANDLING SYSTEM (QUALITY-WISE)



EXCELLENCE: - *Our Only Standard*

TEAM WORK: - *We share the same vision*

CUSTOMERS: - *We create Superior value for our Customer*

COMMITMENT: - *We do what we say*

INNOVATION: - *We believe in it*

PEOPLE: *Our Sincere and hard working people are strength.*

ABHISHEK ENTERPRISES

FOREWORD

Dear Customer

We are happy to provide you STONE CRUSHER portable type Model-AE ST 201M with screening arrangement (Abhishek Enterprises) O & M model with latest revision.

STONE CRUSHER Model-AE ST 201M with screening system, are developed for wide range of application meeting your requirement.

We are sure that all necessary safety precautions and regulations have been adhered to in the design material and manufacturing of AE-ST (M) series.

This manual provides specifications and operations guidelines routine maintenance, service maintenance procedure. The performance of crusher Plant largely depends on its proper maintenance. Hence please maintain your machine properly as per the guidelines and schedules given in this manual. We recommend that only trained manpower should perform the operation and maintenance task of the jaw crusher / screen or complete machine.

Continuous improvements in the product design are incorporate from time to time which may not be included in this manual.

Should you have any quarries fully equipped and trained team from Abhishek Enterprises Customer care will be happy to provide the help.

In case of any difficulty Please contact

ABHISHEK ENTERPRISES,

Customer Support

Plot No.-19-20, Vill-Sikri, Teh-Ballabgrah

(Near Gopal Ji dairy)

Faridabad 201001 (Haryana)

Help Desk - +91-9911218421, +91-9911169984

Help Desk id – mehta_nareshkr@yahoo.co.in

Visit us at – aecrushers.com

NOTE:-All the information in this manual is based on latest product information available. A.E. reverses the right to make changes at any point of time without any notice & incurring any obligations thereof.

ABHISHEK ENTERPRISES

STANDARD WARRANTY FOR 20 TPH STONE CRUSHER A.E. MAKE MODEL-AE-ST20X10 (M)

This warranty applies to AE ST 201 M capacities 20 Ton per hours operates by different rating of motors.

WARRANTY CARD

In the event of any defective part being discover within a period of one year from the date of delivery/commissioning(as per S.O.) then said defective part/s will have to be returned to dealer/workshop on freight basis. We shall impact such part/s thoroughly. On satisfaction, if the defect is found due to faulty material or poor workmanship, the same will be repaired or replaced with a new one free of cost but freight charges will be borne by the customer. The defective part/s, which has been replaced or repaired, will be sole property of the A.E

The benefit of warranty is given to the owner and cannot be transferred if the machine resold or send out.

Warranty is not applicable for:-

1. Starter, Capacitor, Hydraulic element, Electronic component, Belt, Pulleys, Chains, Gear, Couplings, Plumbing's accessories, Tyre and Tubes, & Bearings etc. However the company will passion to the customer the benefit of any guarantee/warrantee of the electronic motors and engines given by the manufacturers and will on behalf of the customer take up with such manufacturers any complains which they may have regarding the workmanship.
2. Defect due to wear and tear, accident, improper adjustment, misuse, or lack of maintenance.
3. Spare manufactured by the party/customer and then fitted to stone crusher supplied by the ABHISHEK ENTERPRISES

Limitations and Exclusions:

1. To fair wear and tear or to damage due to negligence or improper handling or incorrect application or improper handling or incorrect applications or incorrect installation by the purchaser, or his employees or agents or in the case of repairs or alterations carried out by the purchaser without or knowledge and written approval.
2. Any damage due to use of lubrication oil, fuel quality and grade not recommended by us.

3. Any damage resulting from improper shutdown.

4. Any failure to meet its obligations here under which are due to circumstances beyond its reasonable control including but not limited to industrial disputes, fire, severe weather conditions, government decisions, material shortage, power or machinery breakdown or failure or war.

5. We will not be responsible for loss or damage to goods beyond the delivery point as stated in our tender and we will repair or replace free of charge goods damaged in transit up to the point of delivery (consignee location) as specified above.
6. Strike, Lockout, Fire ,Theft , Accident during transit from consignee location to user end and anything by the act of God constituting the force Majeure.

Warranty:-

Machine Type :

Invoice No. & Date. :

Warranty card no. :

Machine Serial No. :

Dealer's Seal & Address :

ABHISHEK ENTERPRISES

:-TECHNICAL LITRATUTE CONTENTS OF 20 TPH STONE CRUSHER PLANT:-
MODEL:-AE ST 201M

S.No.	Literature content	Page A.E Make	Page No –Asoka Leyland
1 (aa)	Operational, Repair and maintenance manual for both engine and equipment	1.1. To 1.22	1 to 93
2 (ab)	Workshop manual for both engine and equipment	2.1 to 2.16	1 to 93
3 (ac)	Illustrated Parts catalogue for both engine and equipment	3.1 to 3.36	1 to 85
4 (ad)	Illustrated list of Special Maintenance Tools, if any	4.1 to 4.2	1 to 93
5 (ae)	Lubrication charts for complete equipment	5.1 to 5.3	1 to 93

Note:-1-We provide the engine literature separately with each equipment.

IMPORTANT NOTE

THE DATA'S INDICATED IN THIS OPERATING INSTRUCTION MAY DIFFER FROM PLANT TO PLANT IN A ACCORDANCE WITH CONSTANT IMPROVEMENT, AND WE RESERVE ALL RIGHT TO CHANGE OR MODIFY ANY PARTS AT ANY TIME WITHOUT ANY PRIOR NOTIFICATION

ATTENTION

THE NON-APPLICATION OF THE USE AND MAINTENANCE RULES MENTIONED WITH THE PRESENT MANUAL WILL ENTAIL THE AUTOMATIC LOSS OF ALL WARRANTY INSURANCE COVERINGS.

ABHISHEK ENTERPRISES
1

OPERATION AND MAINTENACNE MANUL FOR BOTH PLANT AND ENGINE OF ABHISHEK ENTERPRISES MAKE STONE CRUSHER MODEL:-AE ST 201M CAPACITY:-20 TPH

ABHISHEK ENTERPRISES

H.O.:- PLOT NO.19-20, VILLAGE SIKRI, TEHSIL BALLABGRAH, FARIDABABD-121004 (HARYANA) INDIA

MFG. UNIT - :- PLOT NO.19-20, VILLAGE SIKRI, TEHSIL BALLABGRAH, FARIDABABD-121004 (HARYANA)

MOB: - +91-9911218421, +91-9911169984

SERVICE MAIL -:- Mehta_nareshkr@yahoo.co.in

Web: - www.aecrushers.com

OPERATION OF STONE CRUSHER MODEL:-A.E SE 201M

PRINCIPLES FOR OPERATION

Following principles govern the operation of Stone crusher plant:

1. The Operation should be carefully planned, so that the final product is of a highly quality.
2. The Operation should be run by a competent manager, who with his supporting staff, are all fully conversant with the plant, its operation and maintenance.
3. The aim should be continuity in operation, avoid break-down and intermittent working.
4. The adequate stock of ingredients must be ensured.

The guidelines point given below should also be taken care of before starting, shutting down and running the plant.

i. Stone crusher must be 0, 0 level surfaces on ground.
ii. Do the complete and proper Ericson and commissioning Procedure.
iii. After Commissioning the plant check visually all it should be ok
iv. Check the hopper visually and not insert in the hopper any non aggregate material just like that, steel block, steel rod etc.
v. Same Check as jaw crusher and check its jaw plate must proper tight.
vi. The operation of Jaw Crusher (Setting of Jaw & Toggle and vez Block) should be checkout twice daily and more frequently, if variation appears in the Jaw and got calibrated, if required.
vii. The operation of the Grizzly should be checked regularly.
viii. Check And proper setting of all conveyor Chhute before the starting the plant
ix. Check the oil level in all gear box as well as DG set
x. Check the panel connection it may be proper tight.

START UP PROCEDURE

- A normal civil work foundation is required for making plant stationary (Vibratory Screen)and so that it could bear the affecting load and sustain the occurred vibration.

- Material like Stone should be in sufficient; lack of material can cause reducing efficiency of the plant.

- Special attention should be taken where the ground soil is soft. In case of soft soil, concrete should be used to make the soil hard otherwise ground will sink and it can cause misalignment.

- Power cables must be used with proper safety / shielding to avoid any damage that may occur during operation.

- Make certain that no loose objects are placed on the Jaw before start double check make certain that no unauthorized people are close to Jaw Crusher.

- Make certain that all fuses are intact and free of dirt. It is important that the fuses fit the plug in use.

- Check the power Supply DG and panel properly before start. And also check motor connection if Connection reverse are then system can move in opposite direction. Hence changes the connection accordingly.

INSTALLATION PROCEDURE OF STONE CRUSHER

The crusher should be mounted on a rigid RCC foundation or steel structure bolts should be sufficiently inserted into the pocket and level before grouting. Leave ample space around the crusher for easy dismantling/ servicing. Be sure that the crusher products get discharged freely. Otherwise materials may jam the crusher and break the toggle or case other damage.

DIRECTION OF ROTATION

The direction of rotation of model A.E ST 201M crusher is anticlockwise viewed at the machine from the Drive pulley side. The direction is marked on both flywheels. The prime mover should be installed in such a way that it rotates in the said direction only. Before start -up it must be confirmed that the prime mover rotates in the right direction.

FEEDING

Fines and smaller material should be removed from the feed. These finnes tend to cause a clogging action which result in heavy stresses in the machine causing rapid wear and tear. For maximum capacity, the feed should be small enough to flow freely into chamber. This is approximately 80% of the feed gap opening. The feed should be regulated so that the crushing chamber is always full.

INSTRUCTUINS BEFORE THE STARTING OF PLANT

Follow the all instruction before the starting of Plant.

1. Check visually complete plant before starting for any unwanted external object.
2. Check all fitment and gap of machine periodically.
3. The Engine should idle run for 2 minutes before starting production and stop after 3 minutes of idle running.
4. Check fuel before starting (Engine) D G Set.
5. Check jaw plate fasteners periodically.
6. Always clean the output chute and input before stopping the plant.
7. Apply ample of grease at all greasing points before start.
8. Do not insert bar/ rod/ hand during the operation of crusher in jaw chamber.
9. Replace both v-belts together.
10. Do not allow outside persons on site on which mc running
11. Operate the machine by trained operator only. Do not operate the machine if operator is not there.
12. Keep machine on level surface. Do not operate machine in overload conditions.
13. Check all conveyor idler fitments.
14. *Check all conveyor belt alignment properly before stating the plant.*

SAFETY INSTRUCTIONS

- ✓ Check all the electrical connections for tightness. Do not operate if electrical connections are loose.
- ✓ Check derives assembly. Do not operate machine if assembly not proper.
- ✓ Check all the lubricating point. Do not operate the machine if the lubricating points are dry or less oil.
- ✓ Check the entire nut and bolts for tightness regularly. Do not operate the machine if the nuts and bolts are loose.
- ✓ Operate the machine only by trained operator. Do not operates the machine if operator is not properly trained
- ✓ All the V-belts and pulley having guard covers.
- ✓ All the conveyor belts are partially covered to avoid accidents.
- ✓ Optional Emergency stop switches can be provided to stop the working of the entire plant at control panel and DG Panel control panel at an extra cost.
- ✓ All the motors are equipped with safety devices like overload
- ✓ Keep the equipment in good running condition.
- ✓ Never operate unsafe equipment.
- ✓ Be familiar with all controls, gauges, instruments.
- ✓ Look around before starting the plant and equipment.
- ✓ Never leave the equipment unattended with its engine running.
- ✓ Keep operator's Palace clean and free from oil and grease.
- ✓ Never carry out servicing, adjustment and repairs, when the equipment is running.
- ✓ Never permit unauthorized persons to handle the plant.
- ✓ The operator must have max unrestricted view of the operating area.

- ✓ Avoid loose connections in electrical system.
- ✓ Don't leave the control, when the equipment is working.
- ✓ Be careful in removing the radiator cap, after engine has been running.
- ✓ Store fuel and lubricants away from plant.
- ✓ Keep away from v-belt and vibration Area.
- ✓ Be careful while attending to Jaw crusher.
- ✓ Inspect all cables of plant periodically.

DAILY OPERATION INSTRUCTIONS

- Oiling & greasing to all Bearing, Chains, keep oil can filled up in the Machine for ready use.
- To check the oil level in the entire Gear Box. If found below level top it up with proper grade (S.A.E-140).
- To check all the fasteners by the Tool Before the operation/ starting of the plant.
- Clean the dust sludge & other foreign material from gears, Roller of Conveyor Belt and the Rotary Parts.
- Adjust All Belt though 2 tension screw provided at the lower end to keep it in proper tension and inline. Also check the positioning of belt guard cover.
- Check the Roller of all the Conveyers before the operation start.
- Before starting / operating the plant the Rotary parts are to be checked manually for their freeness. Jamming indicate the blockage of same they should be removed and start otherwise the diode will burnt out and motor will play foul/ will not work properly.
- Use vacuum cleaner daily to keep Panel dust free for smoother and trouble- free operation.
- Always check proper tension of Belt. Also check for the proper Spring of Pan feeder and V. Screen.

Daily maintenance:-

• Tight all nut bolts of the whole plant including F. Bolts, Bracket bolts, Cover bolts etc.

• Greasing of the Jaw Crusher & Vib. Screen

After 30 Days maintenance:-

• check oil of conveyor gearboxes and lubricate if needed

CHECK THE FOLOWING BEFORE YOU STARTING THE PLANT:-

- Carried out the daily maintenance schedule as per instructions.
- Checked the tension of V –belt.
- Check all grease point before the start the plant.
- Checked all guards and covers fitted in the plant complying the safety norms.
- Checked the v- belts for any damage of wear.
- Alignment is correct and belt tension is adequate to avoid any slippage.
- Bearing are properly lubricated.
- No foreign material is inside the crushing chamber.
- The entire fastener is properly tightened.
- The entire unit must be manually rotated to ensure that it rotates freely without any mechanical blockage/ friction or rubbing and the jaw do not touch each other at their closest position.

WARNING

- The DG set used must be equipped with automatic voltage and frequency regular.
- Do not switch on the Panel Power before setting and stabilizing the DG set out put (440V +10%, 50 Hz + 3%).In case of any failure in input power source, switch off the panel immediately.
- Use vacuum cleaner daily to keep panel cabin dust free for smoother and trouble- free operation.
- Before starting the panel makes sure that AC is working and cooling properly. All the phases from the input power sources are present and are at proper level. See the proper earthling as per IS 3043.
- Check Oil level in Gear Boxes. Hydraulic oil tanks, Thermo fluid tank and all the lubrication points such as chains, Bearing etc.
- Oiling and greasing daily is absolutely must for smooth and trouble- free operation of the part.

NOTE:-

- While doing general maintenance, cleaning belt, main nozzles etc, make sure the panel cvt switch off.

PRINCIPLE –(SAFTEY PRECAUTION)

- Machine /plant is designed and constructed according to the state of art and the recognized safety rules. Nevertheless, its operation may cause damage to health of user or third persons. Or damage to the machine and other properties.

- The machine /plant shall be used only when in proper technical condition.

- The machine/plant is intended to produce concrete exclusively. Any other use different from or exceeding the purpose of machine /plant is not considered suitable. The manufacturer will not be liable for any damage resulting from the product misuse. The user only accepts the risk.

- Before starting the work, the personal incharge of any activities relating to the use of machine must read the instruction manual and follow the safety rules.

- The personal must not wear long loose hair, or slack clothing or jewelry including rings, because of danger of injury.

- As far as necessary or mandatory by regulations use personal protection suits and other protective equipments.

- Observe and follow the safety and danger signs at the machine/plant.

- In case of safety related modifications to the machine / plant or to the performance of the machine/plant immediately and notify the responsible body / person of the disorder.

- Do not make any modifications, extensions or rebuilding to the machine /plant, which would cause safety, without manufacturer's approval. It also includes the welding and cutting at supporting structure.

- Spare parts must correspond to the manufacturer's technical specifications.

- Do not change / alter machine programs (software) for programmable control systems

QUALIFICATION AND PRINCIPLE RESPONSIBILITY

- Any work at machine /plant must be performed by reliable personnel only, Observe the minimum age admissible.
- Empty trained or instructed personnel only, state clearly personnel competences for operation, set up, service / maintenance and repair.
- Make sure those personnel only in-charge of these responsibilities is working with the machine.
- State clearly the responsibilities of the machine operator an authorize him to refuse safety advise instruction by out sides
- All the electric work must be performed by trained electrician only.
- Danger may occur if the plant is used with carelessness. It is important that all personnel working in close range to the machine know the safety rules, if safety rules are not respected, you endanger body parts such as fingers and hands or in the worst case a fatal outcome.
- Try to stay away from the moving parts, make sure that all the safety guards and protection covers are provided and properly fitted.
- Carry out all maintenance work under observance of safety regulations.
- Condensed water during the night the cement might harden up. The inlet gate of cement screw conveyer is to be closed after finishing day work.
- Check the “emergency stop” button daily when starting the work. Start the system and the mixer motor, then press emergency stop button, if the mixer stops immediately, everything is OK.
- Please notice that there is still power in the power box even through the emergency stop is active.
- The connection cables should not be shortening anywhere.
- Ensure in your interest regular maintenance and lubrication of the machine.
- For faults which cannot be repaired by you kindly notify the “AKONA Service department.
- The operator of the machine should be trained only under the permanent supervision of an experienced person.
- During training the personal should be well known about the general education and how to operate with machine / plant.
- The personal should be well known about the regular maintenance of the plant.

NOT TO DO

- If any motor /gear box is not working properly do not just replace the same without analyzing the reason & removing the basic fault.
- Do not repair the Jaw when power is on.
- Do not allow unauthorized & untrained person to operate any part of the machine.
- Do not allow any rod or big stone or bolt into the Jaw as it will damage the side plate and jaw plates. Also avoid inappropriate feeding of Stone, it can also cause damage.
- Do not allow Jaw crusher to rotate in reverse direction in normal plant operation.
- Make sure that all the connection of Plant and all the machinery must be disconnected while repairing or during maintenance.
- Do not leave any foreign material between the jaws.
- Do not allow the jaws to touch each other even at their closest position.
- Never over-lubricate the bearings.
- Avoid non-uniformity of feeding of feeding rate. Try to maintain at least 50% of the feeding chamber full.
- Rebuild the jaws well before the teeth are completely flat

NOTE

- In case of repair work or replacement of parts, only use the spare parts prescribed and used by "ABHISHEK ENTERPRISES."
- Any use of unperceived spare parts or operating, repair and maintenance, without the supervision of any unauthorized or untrained person will dispenses us from our product liability and from our guarantee obligation.

TO DO

- Check that electrical supply is within correct voltage (415 ± 5.1v) and there is no signal phasing.
- All the connections should be right and tight.
- All phases should be correct, check every day.
- Plant should be properly earthed. Check earthen connections and resistance value every month.
- Clean Jaw Screen Hopper every day after completing work if there is Setting of jaw crusher change do the again set it before start the plant.
- Check the gap in Jaw and adjust the jaw by the use of toggle and vez setting and check toggle plate also
- Check the condition of all conveyor belts and its alignment.
- Check the all v-velt and springs every week.
- Maintain a logbook for machine; this should include information for hours run, any problem & details of repair or maintenance.
- Check the machine is installed correctly.
- Carried out the daily maintenance schedule as per instructions.
- Checked the tension of V –belt.
- Checked all guards and covers fitted in the plant complying the safety norms.
- Checked the v- belts for any damage of wear.
- Alignment is correct and belt tension is adequate to avoid any slippage.
- Check tightness of bolts.
- Check All Lubrication Point.
- Check the direction of rotation.
- Check the drive alignment and belt tension.
- Check the freeness of rotation of the shaft assembly.
- Check that the gap setting is proper.
- Check that feeding should be done well distributed along the width of the crusher.

SEQUENCE OF OPERATION FOR STARTING AND SHUTTING DOWN THE PLANT

The starting and shutting down the plant should be done in chronological order for its smooth running. The sequence for staring various components of plant is as under:

- First start the DG set by the starting key DG panel. The DG starts 2 Minutes. Idle mode.
- Start the Vibrating Screen with all delivery conveyor by the panel and idle run for 2 Minutes
- Along with the screen and delivery conveyor starts the Main Conveyor and Jaw Crusher run idle for 2 Minutes.
- Ideally run the whole plant for 2-3 Minutes.
- Switch on the Vibro Feeder After that Start the Feeding

The Shutting down the plant, the first component to be stopped is the input of stone in hopper. The material trapped inside the Jaw should be then flushed out from the system in the sequence shown below:

- Stop Feeding in Hopper.
- Stop the Vibro Feeder by the control panel
- After that 5 Minutes once the mouth of jaw is empty stop the jaw crusher.
- Once the material on main conveyor is cleared then stop the main conveyor.
- Once all the material is screened through vibratory screen then stop the Vibratory Screen.
- At the last stop delivery conveyors once all the material is delivered.

MAINTENANCE SCHEDULE OF STONE CRUSHER –A.E ST 201M

DAILY MAINTENANCE SCHEDULE:-

1) Check the gear box oil level at least one hour after the shut down the plant, when the oil will settle down and indicate the correct level. If necessary top them up.
2) Top up all drip feed lubricators.
3) Tighten all bolts after completing day's operation, especially Jaw plates, Side plate fitment, spring of jaw, Liner of pan feeder, tie rod setting and toggle and vez block bolt.
4) Check the bearings and ensure that overheating does not occur.
5) Check the springs of Vibratory Screen and Pan Feeder.
6) Check all conveyor belt alignment it should be in liner and adjustment by the adjusting Screw..
7) Be alert for undue noises, which may be due to lose bolts.
8) Check oil regularly, making sure it is free of dirt and contaminants.
9) Check jaw dies every day, and make sure bolts are fastened securely.
10) Maintain crusher backing to ensure proper vibration and impact protection.
11) Keep breathers clean.
12) Make sure the toggle area is clean, especially prior to any adjustments.
13) Wash out seats and plates daily.

WEEKLY MAINTENANCE SCHEDULE:-

1) Clean the jaw and remove any stone part if stuck in jaw teeth.
2) Check all V-belts drivers and do necessary adjustments accordingly.
3) Inspect feeder and conveyor belts for wear and tear and broken fasteners.
4) Check all belt conveyor any cut or damage. Ensure they are in good condition and effective. If necessary, replace them.
5) Check the conveyor belts in case of holes or cuts repair them immediately by lacing or vulcanizing.
6) Clean the Vibratory screen and check wire mesh tightness, if loose bolt then tight it.

MONTHLY MAINTENANCE SCHEDULE:-

1) Clean panel and DG set.
2) Check all electrical wiring and cables for loss of insulation or corrosion and replace, if required.

3) Check the screen meshes and repair/ replace, if required.

4) Check the v-belt and replace, if required.

5) All fastener check and tight properly.

6) Check all wire connection if loose then tight accordingly

QUARTERLY MAINTENANCE SCHEDULE:-

1) Drain the oil of gear boxes, flush them and refill to correct level with recommended gear oil.

2) Inspect the conveyor stand bolt if bolt cut then replace it

3) Check the oil level DG and top up, if required.

4) Inspect the liner plates in pan feeder, hopper plate and nut bolt and discharge chute replace if required.

5) Check the bearing all visually and during operation by any noise, clean it and repair, if required.

6) Clean electric contact and relays in control panel.

7) Check all wire must be in good condition if any damage then replaces it.

MAINTENANCE OF ELECTRICAL MOTORS:-

1) Isolate the mains supply to prevent unauthorized starting

2) Cover all the exposed motor starter panels and controls, with tarpaulin of plastic sheet to prevent their damage during rains.

3) Always place the proper size of fuse, while replacing it. Never put a substitute of different size.

4) Do earthling of entire electric supply line properly.

5) Keep the motors and contacts always clean, by blowing away the dust.

6) Test checks no volts coils and over load protection devices for their proper function.

7) All the wiring should be placed under insulated cabling and properly covered trench

IF THE PLANT IS LEFT IN OPEN FOR MORE THAN SIX WEEKS, CERTAIN PRECAUTIONS SHOULD BE OBSERVED.

- Isolate the mains supply to electrically driven plant to prevent unauthorized starting.
- Warp all V- belts pulleys with a strong, self-adhesive paper and lubricate exposed chain drives.
- Grease all adjusting screw, Jaw bearing, conveyor rollers, and motor slide rail adjusting screw Jack to prevent rusting.
- Protect the all motor and gearbox.
- Close the window of panel and keep the door
- Cover the Vibro motor panel and DG Set.
- Cover the inlet of the burner air blower.

HOW TO MAINTAIN AND REPLACE JAW PLATES?

There are different jaw plates materials in the market, and some of them suits for hard stone while other is not. Therefore, you have to choose the right jaw plate for your crusher. For example, generally the jaw plate of single toggle jaw crusher is not good at crushing strongly abrasive and hard stone material with large production.

It is inevitable for crusher to get wear because of long-time crushing work, and all you can do is try your best to maximize its service life by regular check and timely maintenance.

1. Check whether the tooth peak to tooth valley is match with each other.
2. Regularly check whether the bolts and nuts have been tightened so you must ensure that they will not loosen during work.
3. Check whether the jaw surface appears flat, hole, crack, if it does, do some adjustment or change new ones.

4. If more than 80% of the jaw plate is found to be worn during the inspection, you need to replace the jaw plate in time for not affecting the overall performance of the machine.
5. If you don't know whether to replace it, contact the jaw crusher manufacturer, and they will give you the most professional advice according to the real situation of jaw plate.

HOW TO ADJUST THE TOGGLE PLATE OF THE JAW CRUSHER?

The function of toggle plate is to adjust the outlet of the jaw crusher to the desired size. There are two specific methods: one is to replace the support pad between the toggle plate and the body frame, and the other is to adjust the two wedges between the toggle and the body frame.

PITMAN BEARING BROKEN

Although the main crushing process is complemented by jaw plates, the crucial parts that give a motion to the moveable jaw plate are toggle plate, pitman bearing and flywheel.

The pitman drives the moveable jaw dies to push stone material towards stationary jaws, which would create strong pressing forces to both jaw dies. Therefore, if the pitman cannot get lubrication in time, it will be broken under the high pressure of material and interrupt the whole work.

MAINTENANCE SCHEDULE OF STONE CRUSHER
Lubrication point schedule

1. Jaw Crusher: - Full in starting then mix oil Grease in ratio 1:2 respectively –twice a week and regular check every second day skipping one day.
2. Vibration Screen: - full in starting then mix oil grease in ratio 1:2 respectively twice in a week and regular check every second day skipping one day.
3. Gera Box: - Full in starting then check every 3 months gear oil.

RECOMMENDED LUBRICATION
Oil & Lubricant

1. Gear Box Oil No. 460/320 make
2. Engine Oil 20W40
3. Grease EP3 (General Purpose) make Shell

TRANSPORT

- **A** registered vehicle must be used when plant is transported on the public road and the speed limit must not exceed 40km/hr.
- Jaw crusher And Screen must be empty during transport.
- DG set and control panel must be free from any load during transportation.
- Make sure that nothing sticks out before transporting the Screen and Vibro feeder make certain that all loose objects are securely fastened.
- Always drive slowly uneven ground and pay attention when turning.
- Only use cranes/elevator and loading equipments having sufficient carrying capacity.
- Determine a competent person to guide the lifting operation.
- Lift machine and parts properly with lifting equipment accessories.
- Use particular slinging point for loading equipments.
- Use suitable transport vehicle having sufficient loading capacity.
- Do not unload the complete machinery at once, please unload one by one.
- Use red signal / red flag, at rear side of trailer, while transporting during right.

SALIENT FEATURES OF STONE CRUSHER AJ-1611

- Modern crushing technology.
- Advanced Crusher Geometry.
- Wide range of setting.
- Produce high quality output.
- High production rate.
- Easy to operate.
- Highly accurate size of stone output
- Modular Design for moving and transport.
- Water cooled Diesel Generator for power.
- Easy to erect and dismantle due to bolted type design.
- Ease of removing major component for servicing and maintenance.

ABHISHEK ENTERPRISES
2

WORKSHOP MANUAL FOR BOTH ENGINE AND PLANT
OF
ABHISHEK ENTERPRISES MAKE
STONE CRUSHER
MODEL:-AE ST 201M
CAPACITY:-20 TPH

ABHISHEK ENTERPRISES

H.O.:- PLOT NO.19-20, VILLAGE SIKRI, TEHSIL BALLABGRAH, FARIDABABD-121004 (HARYANA) INDIA

MFG. UNIT - :- PLOT NO.19-20, VILLAGE SIKRI, TEHSIL BALLABGRAH, FARIDABABD-121004 (HARYANA)

MOB: - +91-9911218421, +91-9911169984

SERVICE MAIL -:- Mehta_nareshkr@yahoo.co.in

Web: - www.aecrushers.com

TECHNICAL SPECIFICATIONS

1.	Model	:- AE ST 201M
2.	Capacity	:20 TPH
3.	Type	:Single Toggle /Mobile type
4.	Jaw Machine Size	:10”X20”
5.	Jaw Machine Weight	: 5.5 Ton aprox.
6.	Feeding	: Loader or JCB
7.	Pneumatic Wheel	: 04 Nos. (Size 10x16)
8.	Draw Bar	:Yes
9.	Prime mover	: Electric Motor separately for all m/c unit
10.	D.G SET	:125 KVA
11.	Jaw Stock Adjusting	:Manually By Spring and Tie Rod
12.	Max. Input Size	: *200mm*
13.	Output Size of Stone	: 6mm,10mm,20mm,40mm
14.	Machine feed Opening	:250mm
15.	RPM	: 3*25*-3*50*
16.	Derive	: V-Belt and pulley

TECHNICAL DETAILS OF JAW STONE CRUSHER

❖ STONE CRUSHER: - Stone crusher is a machine which is used to crush the stone and segregated into various sizes like 40mm, 20mm, 10mm etc for different uses. Crushed stone aggregate are used for construction of roads, bridges, housing, industrial building construction and other cement based products like RCC pipes, PSC poles frames and beams.

The granite stones of various sizes are fed into the jaw crushers for size reduction. Depending on the desired output size of the crushed stone, raw material may be fed to one or two jaw crushers in a sequence. Then these crushed stones are passed on to the vibratory screen for size gradation. Material is handled through a belt conveyor to the different places of the operation i.e. from jaw crusher to the vibratory screen.

A.E- Make stone crusher 20 TPH Model A.E-ST-10X20(M) manufactured with latest technology and used for crushing hard stone/ granites of size of size approximately 200mm. Stone size shall be reduced to final product of size up to 0 to 5mm, 5mm to 10mm, 10mm to 20mm, 20mm to 40mm. The model A.E-ST-10X20(M) is portable type and trailer /trailer mounted on pneumatic tires.

❖ JAW CRUSHER (SINGLE TOGGLE JAW CRUSHER): The **single-toggle** crusher is also known as an **overhead eccentric** for its eccentric shaft is up above compared to the Dodge which has its shaft below/under. Here, the eccentric is integrated into the "swing" jaw plate that's moving up/down as the flywheel rotated by the motor. A single-toggle pivots at the base of the swing plate which is causing the jaw's arc-like motion. The rock pinching resulting from its flowing/passing between a fixed and a swing moveable plate causes the ore to crush as it is "between a rock and a hard place".

Here also the toggle is kept in place by a compression spring. Large CSS adjustments are made to the jaw crusher by modifying the length of the toggle.

A.E- make stone crusher is capable producing 20 tons per hours. It produces different sizes of stone. The crusher machine having more setting for obtaining desired output and made by good quality of steel. All joint is stress relieved and bearing housing properly machined for better seating. Stress relieved cast iron toggle plate is provided in the machine. The main frame body is of welded plate's construction, amply proportioned to take the strain during crushing operation. The design also allows for easy inspection of wearable parts and ample access for service work. All frame

members are accurately positioned and welded together. After welding, the frame is thoroughly stress relieved and accurately machined to allow a precise fit and contact for side plates, main frame bearing housing and toggle block.

Strength and fracture toughness of the material to be crushed are intrinsic properties that determine the time and energy required to crush the material. Economy of the crushing process is partly dependent on the **angle of nip**. Productivity of the crusher can be improved upon by increasing the eccentricity of the eccentric shaft, use of reversible jaws, bush bearing and easily adjustable toggle plate. Vibrations and fatigue cracks in the crusher frame will be nipped in the bud through structural analysis at design stage. Determination of the optimal angle of inclination of the toggle plate, development of jaws with varying wear rate along the crushing chamber, and development of comminuting energy models that take into cognizance relevant crushing parameters for simulation and optimization of the crushing process are some areas that require close attention.

Angle of Nip

The jaws are set at an acute angle to each other. This angle commonly known as the "angle of nip" is usually less than 26deg. This is due to slipping effect when the angle is larger which reduces capacity. Niemela and Kieranen, stated that a desirable nip angle controls the ability to crush a given type of material at a commercial rate and it preferably falls between 17deg. and 27deg. Exceeding the maximum angle causes regurgitation or slipping from the machine, while operating below the desired range leads to the production of undesirable dust and fines; hence, the machine tends to serve more like a pulverizer. Figure - illustrates the angle of nip in a jaw crusher.

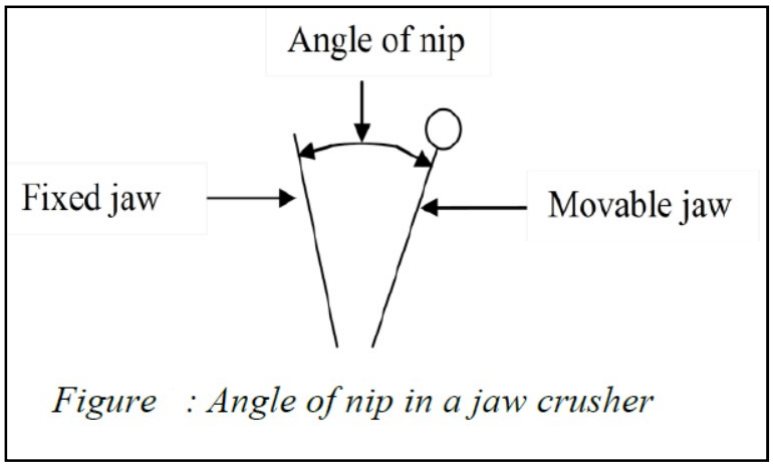
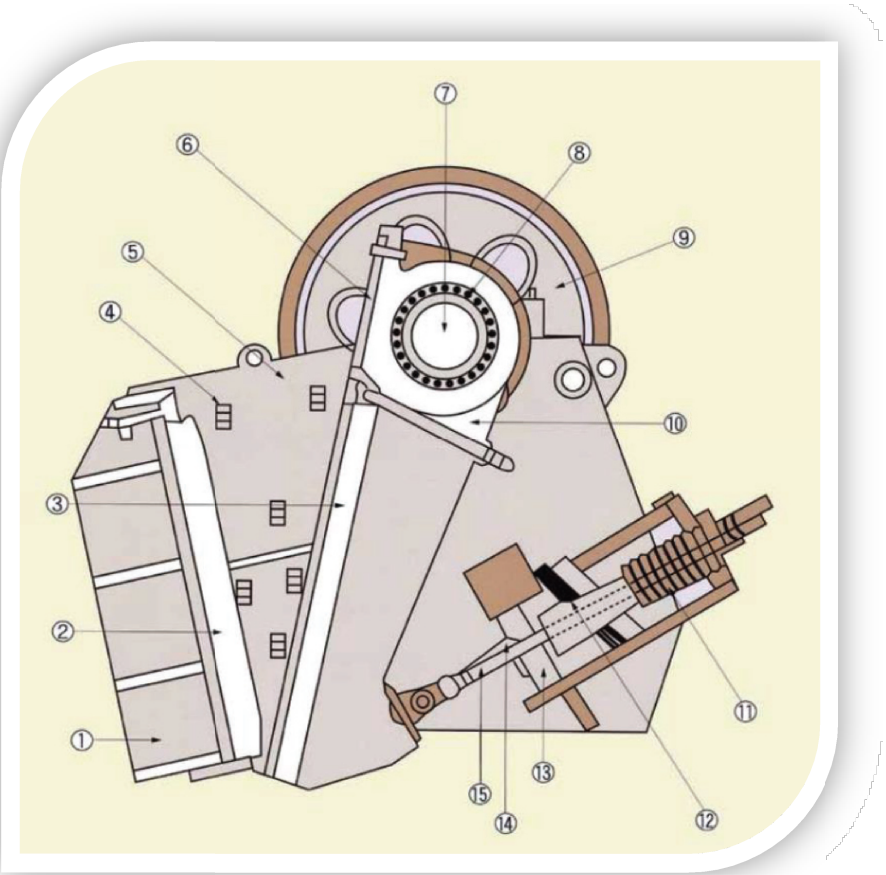


Figure : Angle of nip in a jaw crusher

❖ Component of jaw crusher (Construction of a Single Toggle Jaw Crusher):-



1. **Crusher Main Frame: -** Crusher Frame is made of high welding. As a welding structure, it has been designed with every care so as to ensure that it is capable of resistant to bending stress even when crushing material of extremely high.
2. **Fixed Jaw Plate: -** The fixed jaw face is opposite the pitmen face and is statically mounted. It is also covered with the manganese jaw die. Manganese liners which protect the frame from wear; these include the main jaw plates covering the frame opposite the moving jaw, the moving jaw and cheek plates which line the sides of the main frame within the crushing chamber.
3. **Swing Jaw Plate:-** The jaw crusher pitmen is covered on the inward facing side with swing jaw plates made of manganese, an extremely hard metal. These plates often have scalloped faces. The swing jaw plate is usually symmetrical top to bottom and can be flipped over that way. This is handy as most wear occurs at the bottom

(closed side) of the jaw flipping them over provides another equal period of use before they must be replaced.

4. **Cheek plate bolt:-**The cheek plate tight with crusher frame at the crushing chamber with the bolt both side of crushing chamber.
5. **Cheek Plates:** - The sides of the crusher body covered with cheek plates or the cheek plates lining the inside of the jaw crusher cavity are subject to both high stress (during the crushing cycle) and low stress (between crushing cycles) abrasion. This abrasion wears away the material from which the cheek plates are made.
6. **Protector :-**

7. **Main shaft (Eccentric Shaft):-** The pitman is put in motion by the oscillation on a shaft that goes through the pitmen's entire length. The movement might total only 1 ½ "but produces Substantial force to crush material. The rotation of the eccentric shaft during operation by the pulley causes the movable jaw to make elliptical movement. The increased eccentricity of the shaft leads to increase in throw; hence, increase in throughput capacity can be achieved without increasing the physical size of the jaw crusher by increasing the stroke of eccentric shaft, decreasing the speed without increasing the crushing force through increased width. Also, increased through gives the advantages of the retaining the structural design of the crusher and decreasing the machine load. The crusher stroke is displacement of jaw between the widest and narrowest points on an eccentrically gyrating cycle. Alternatively, the throw as the stroke of the swing jaw or the difference between the open side set and the closed side set. The open side set is the maximum discharge aperture, while the closed side set is the minimum discharge aperture. This force is also put on the shaft itself so they are constructed with large dimensions and with hardened steel. The main shaft that rotates has a large flywheel mounted on each end. Its eccentric shape initiates the movement of the moving jaw in and out. The eccentric shaft is made of Alloy Steel Fitted with anti-friction bearings and is in the pitman and dust proof housing.

8. **Bearing: -** There are typically four bearings on the eccentric shaft: two on each side of the jaw frame supporting the shaft and two at each end of the pitman. These bearings are typically roller in style and usually have labyrinth seals and some are lubricated with an oil bath system.

   The bearings that support the main shaft normally are spherical tapered roller bearings on an overhead eccentric jaw crusher. Dynamic loads from the pitman, movable jaw, flywheel, pulley, drawback rod, toggle plate and eccentric shaft lead to severe wear in the bearings.

9. **Fly Wheel: -** The rotational energy is fed into the eccentric shaft of the jaw crusher by means of a sheave pulley which usually has multiple V-belt grooves. In addition to turning the pitman, eccentric shaft usually has substantial mass to help maintain rotational inertia as the jaw crushes the material. The weights of these two machine elements need be balanced as any deviation may lead to undesired twisting of the eccentric shaft and increased vibration. They are firmly keyed to the opposite ends of the eccentric shaft. Usually, they are made of gray cast iron because of its good vibration damping, machinability and resistance to sliding wear. The flywheel supplies the moment of inertia of a system, as it serves as a reservoir, which stores energy during the period when the supply is more than the requirement and releases it when the energy requirement is more than the supply. Hence, the inertia required to crush a material in a jaw crusher is provided by the flywheel

10. **Pitmen: -** The pitman is journalled at the upper end to accept the eccentric shaft. This structure houses the eccentric lobe and supports the movable jaw. The lower end of the pitman is guided by the toggle plate and drawback rod attached to it. A pitman with a cross-sectional support in the form of a honeycomb structure reduces or removes bending of the pitman and wear compared with a pitman without such support. The cross-sectional supports eliminate bending and distortion horizontally, with additional advantages including crushing material with smaller stroke count and smaller stroke length, reduction in the amount of energy required from the flywheel, lesser material requirement for producing the pitman, reduced mass of the pitman and avoidance of holes arising from casting, when open structured pitman is used. The pitman usually denotes a connecting rod, but in a jaw crusher it does not connect two things. Here, it refers to the moving jaw in a jaw crusher. It

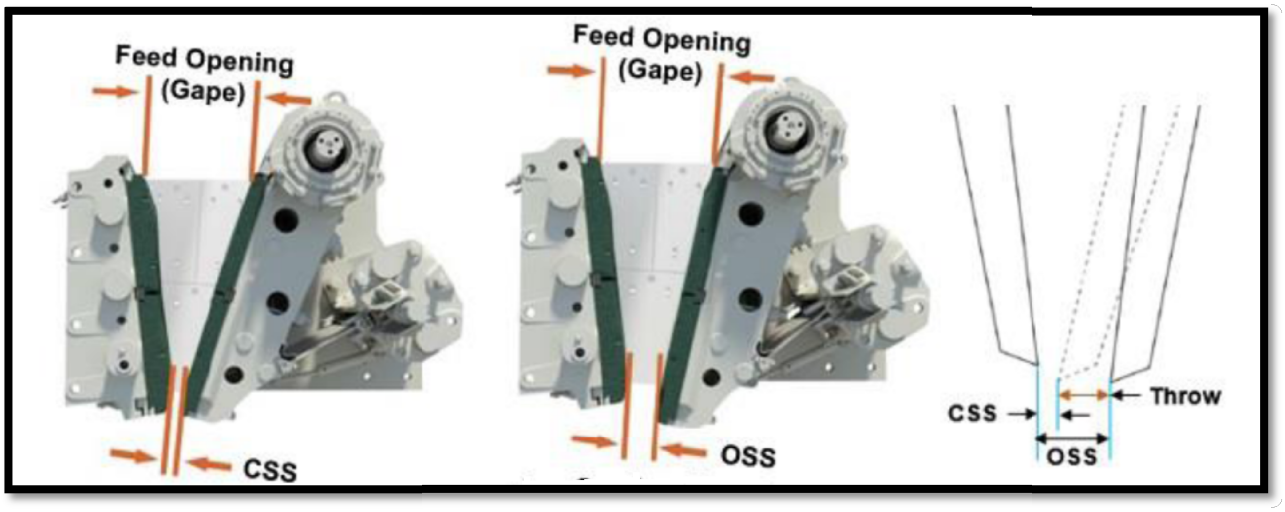
achieves the reciprocating movement through the eccentric motion of the flywheel shaft. This creates enormous force in each stroke. The pitman is fitted with two replaceable high strength steel alloy toggle plate

11. **Tension Spring:-** The rod-spring subassembly retrieves the movable jaw from the furthest end of travel. Here, the spring deflection and the rigidity of the rod are pertinent. This spring-biased rod facilitates the cyclical return of the lower end of the jaw to the base position
12. **Toggle Bearing** :- Toggle Plate Shims are used to prevent toggle plate from abrading the machine directly. If they are worn out, the toggle plate will impact the body of main frame and the body of movable jaw. As a result, the service-life of the two parts will be affected.
13. **Toggle Block:-** A toggle block sliding mechanism for a jaw crusher for adjusting the position of a toggle block quickly and easily, the toggle block sliding mechanism for a toggle block supporting one end of a toggle plate which is connected at the other end thereof to a lower end portion of a swing jaw being characterized in that a toggle block comprising an upper block and a lower block which are connected to each other via an elastic body is sand- wiched by upper and lower supporting members which are provided on a machine frame and that the toggle block is caused to slide by applying an external force
14. **Toggle Plate: -** The bottom of the pitman is supported by a curved piece of metal called the toggle plate. It allows the bottom of the pitman to move up and down with the motion of the eccentric shaft, apart from serving as a safety mechanism for the entire jaw. The piece of non-crushable material such as a steel loader tooth (sometimes called "tramp iron") enters the jaw crushing chamber and being larger than the closed side setting it can't be crushed nor can it pass through the jaw. In this case, the toggle plate will bend or break thus preventing further damage.
15. **Tension Rod: -** Without the spring & retraction screw rod, the bottom of the pitman would just flop around as it isn't connected to the toggle plate and is just resting against it in the toggle seat. The retraction screw rod system ensures the pitman is firmly fixed to the toggle plate. It is designed to fail before any damage occurs to the crusher body, pitman or shaft. The toggle seats are fixed points where the toggle plate contacts the pitman and the toggle beam.

❖ Terminology & Parameter of crusher

1. **Feed Opening:-**It is the distance between the jaws at the feed opening. The feed opening. The feed opening (gap or depth of the cavity) is measured from the top of the tooth of fixed jaw to the bottom of the tooth of movable jaw in a straight line perpendicular to the centerline of the crushing cavity.

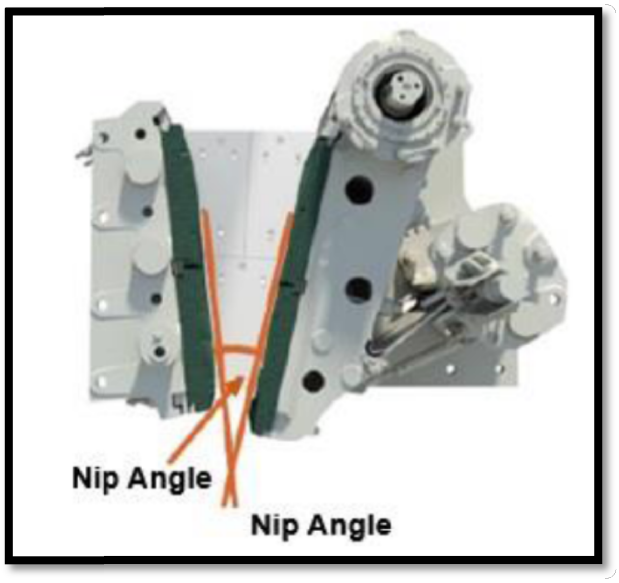
Feed opening define the maximum feed size of the crusher. The maximum feed size is approximately 80% of the feed opening.



2. **Open Side Setting (OSS):-**The open side setting is measured when the crusher is at rest. The setting is measured either top to top (for closed profile jaw plate, i.e. use of heavy duty jaw plate), or bottom to top (for open profile jaw plates, i.e. jaw plate with tooth), depending on the tooth profile of the jaw plates. It is the maximum discharge opening /gap.
3. **Closed Side Setting (CSS)**:- The closed setting can be calculated by deducting the throw/ stroke from the OSS.CSS is the most important crusher parameter since it defines the maximum product size and has significant bearing on capacity, product gradation, power draw and wear. It is the minimum discharge opening /gap. Check the instruction manual for the permitted minimum CSS.

4. **Throw/Stroke**: - The throw is stroke of the swing jaw. It is the difference between OSS and CSS.

5. **Nip Angle**:-The nip Angle is the angle between the fixed and movable jaw plates. Too large a nip angle reduces the capacity (due to material squirt out like a large ball which might squirt out from under a car tire) and increases the wear as the feed material grinds and gouges the jaw plates in an upwards direction during the compressive stroke.



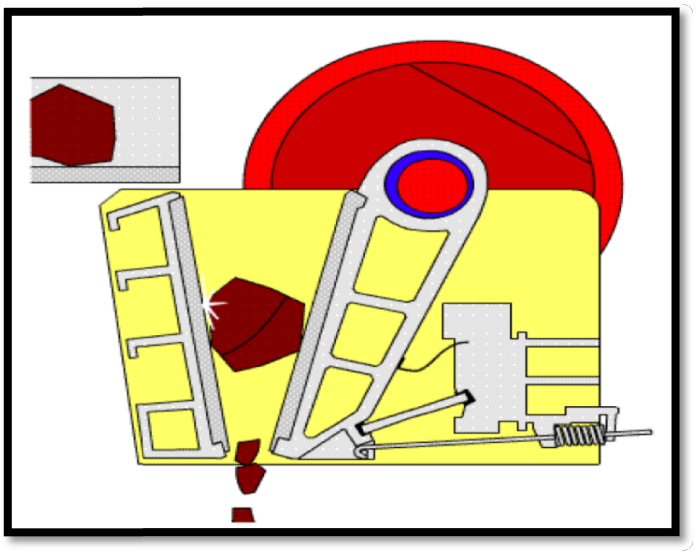
6. **Setting adjustment: -** Varying material output size (discharge) is achieved by adjusting the opening at the bottom of the jaw, commonly referred to as the "closed side setting". This can be done by inserting shim plates, wedge movement and hydraulic system.

Single Toggle Jaw Crusher

A single toggle jaw crusher consists of an eccentric shaft that is placed on the top of the crusher. The rotation of the shaft along with the toggle plate generates the necessary compression force required to break down the substance into smaller particles. A single toggle jaw crusher has a better capacity than a double toggle jaw crusher.

Working Principle of Jaw crusher

The Working Principle of jaw crusher (Single toggle) is based on modern design "Crushing without Rubbing" The machine consists, two jaws, one fixed and the other moving. The opening between them is smaller at the bottom and wider at the top. The pitmen moving on an eccentric shaft on bearing, swing lever (Moving Jaw) swing on center pin. The Rock held in between two Jaws and crushed by mechanical pressure.

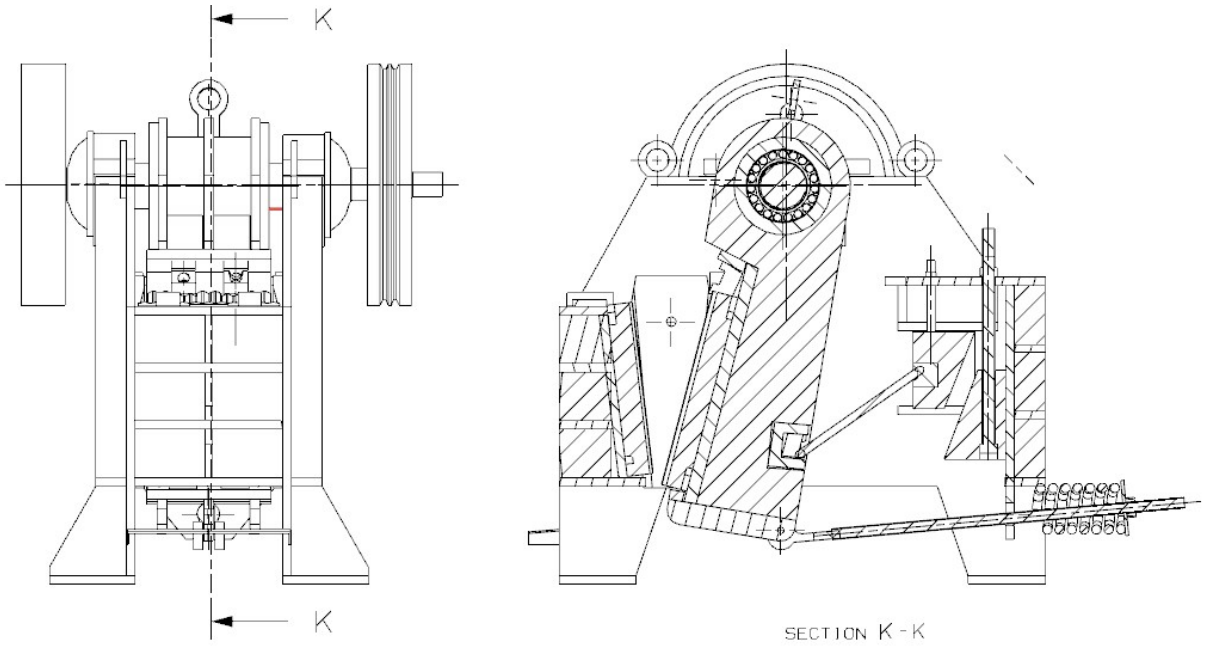


The motor derives the belt pulley drives the eccentric shaft to rotate, and make the moving jaw approach and leave the fixed jaw periodically with respect to eccentric shaft rotation, to crush, rub and grind the materials repeatedly, thus to make the material slower and slower and gradually fall down and finally discharge from the discharge opening as the desired dimension of the crushed product. A fixed jaw mounted in a "V" alignment is the stationary plate.

The ore or rock is fed into the crusher where the jaw are furtherest apart, i.e. at the maximum opening or gape. When the jaws come together the ore is crushed into smaller sizes and slip down in the crushing chamber. In the return stroke, further reduction of size is experienced and the ore moves down further. The process is repeated till particles having size less than the bottom opening or set pass through as product. The function of the toggle (s) is to move the pivoted jaw. The retrieving action of the jaw from its furthest end of travel is by springs for small crushers or by a pitman for larger crushers. For a smooth reciprocating action of the moving jaws, heavy flywheels are used in both types of crushers mounted on each side of the eccentric shaft.

ADJUSTMENT OF DISCHARGE GAP OR STOCK

- Loosen the drawbar spring so that the jaw stock is free.
- Loosen fastener toggle block bolts so that the toggle block is free to move.
- Loosen also the vez block bolt and is free to move.
- Do the manually tight of vez block by the tighten the vez block bolt in up direction the toggle block assembly with pitmen or jaw stock also push till the required gap is achieved. This is apply to reduce the gap.
- After achieving the required gap place the adjusting shims behind the toggle block and tight all bolt vez block and toggle block.
- In case the gap is to be increased then, similarly toggle block bolt and draw bar spring assembly to be loosened . Then the toggle block is to be push ahead with the manually with help of vez block.
- Again tighten the toggle block bolt and drawbar spring assembly and toggle block and vez block nut bolt.



TIGHTENING UP OF JAW

A Jaw Crusher is fully effective only when the jaws of the machine are rigidly fixed on the holding members. If they are not properly fixed, the jaws may fall down from there setting position that may damage the various parts like shaft, bearing etc. For tightening up the jaws first have to see the gap between the jaw stock and Distance plate. The gap must be 6mm or more, otherwise the jaws cannot be tightening properly. The distant plate along with its bolt heads has to be hammered from the front and nut of the distant plate to be fastened from the back simultaneously. Regarding fixed Jaw, reducer side plate derive end and reducer side plate non driven end the same have to be hammered down first and the distant plate bolts have to be tightened afterwards.

Tightness of the jaws of their bases should be checked up before running the machine and also at intervals of four hours when the machine is opening for long hours.

Although crusher jaws are made of manganese steel, the teeth wear out after consideration period. The wear is more in the lower half, i.e the discharge end of the jaw. The upper half of the jaws should be fully used by fitting the jaws upside down. New jaws should be fit only when both the halves have been used to capacity.

To change fixed jaw, remove its distant plate along with its bolts, pull out Reducer side plate derive end and reducer side plate non derive end, lift up the jaw and refit it upside down. Replace reducer side derive end and reducer. Side plate non derive end and hammer it down. The swing jaw is reversed by talking out swing jaw distant plate and its bolt. After fitting the swing jaw upside down swing jaw bolts are tightened.

To remove the jaw first takes out the distant plate bolts and the distant plates. Jaws are now free to be dislodged and can be removed manually. Jaw can be inverted to obtain maximum life.

REBUILDING OF JAWS PLATES

The Jaws are made of manganese steel as per IS: 276. The initial wear out of the jaws should be watched & rebuilding is necessary before the teeth become totally flat. The rebuilding of the teeth of jaws should be made by process of welding with manganese steel or any hard facing electrodes. Jaws must be kept in horizontal position partially submerged inside the cold water bath to avoid distortion, cracking and bending. A continuous flow of water to be maintained so that the water temperature is ambient.

The life of jaw depends on the character of materials crushed. To rebuild the jaws by welding recommended electrode are, TERROWELDMN or DUROMANGAN, followed by ok. SELECTRO 8340 of ESAB India as well as MAC Trade E6 130 of Indomac welding alloys.

REPLACEMENT OF TOGGLE PLATES

To remove the toggle plate, loosen the drawbar bolts & toggle block bolts. Push the swing jaw towards the fixed jaw thus creating the room for the toggle plate to be free. Take out the toggle plate from its position.

Major component

TOGGLE PLATE:-

A toggle plate is used in the crusher unit for maintaining the gap between jaws but its other function is to break whenever the Crusher machine becomes overloaded with some unbreakable materials such as metal, Wood etc. and to save further damage to the plant. Toggle Plates has to be replaced as its length becomes shorter after prolonged use. Both ends of the toggle plate which rubs against liners are specially treated for less wear and longer life. Similarly the toggle liners attached to the jaw stock and Toggle Blocks are specially treated for less wear and longer life.

JAWS:-

Jaws are constructed of grade Mn. Steel which is sufficiently capable to withstand heavy shock loads. The corrugated surface profile result in efficient crushing and shaping of stones but need replacement when excessively worn out.

SIDE PLATE:-

Akona Crusher has two manganese steel side plates. They have dual function. One is to hold the fix jaw in position and the other is to act as protection lining of the main crusher body to prevent sever abrasion. They should be replaced with new ones whenever they are sufficiently worn out, which of course take a very long time. The side plates are also fixed with the side plates of the main cage with bolts to avoid upward thrust.

DRAW BAR SPRING:-

The strength of the drawbar spring, as supplied with A.E crusher, is sufficient to hold the toggle plate in its position, as set for operation. While any change is made in the gap between the jaws, the spring compression should also be changed suitably. The spring may lose its flexibility tension and become useless if it is subjected to the undue heavy compression for a considerable length of the time. The general gap between the two coils of the spring is around 6mm while under compression.

ABHISHEK ENTERPRISES
3

ILLUSTRATED PARTS CATALOGUE FOR BOTH ENGINE AND EQUIPMENT
OF
ABHISHEK ENTERPRISES MAKE
STONE CRUSHER
MODEL:-AE ST 201M
CAPACITY:-20 TPH

ABHISHEK ENTERPRISES

H.O.:- PLOT NO.19-20, VILLAGE SIKRI, TEHSIL BALLABGRAH, FARIDABABD-121004 (HARYANA) INDIA

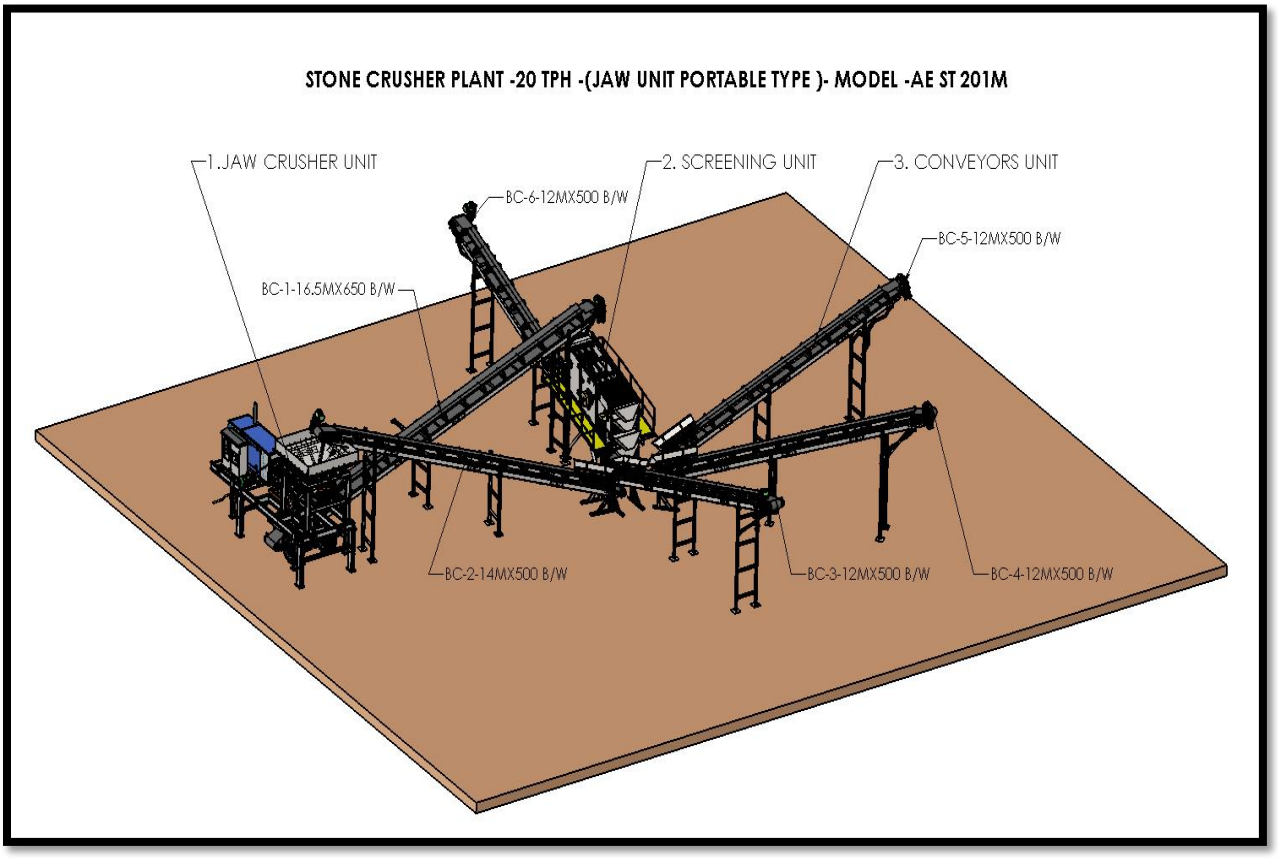
MFG. UNIT - :- PLOT NO.19-20, VILLAGE SIKRI, TEHSIL BALLABGRAH, FARIDABABD-121004 (HARYANA)

MOB: - +91-9911218421, +91-9911169984

SERVICE MAIL -:- Mehta_nareshkr@yahoo.co.in

Web: - www.aecrushers.com

20 TPH STONE CRUSHER PLANT MODEL- AE S.T 201M -MACHINE UNIT



PLANT LAYOUT (PLANT SETUP GENERAL ARRANGEMENT)

1. JAW CRUSHER UNIT PORTABLE TYPE -01NO

   I. Jaw crusher assembly

   II. M.S hopper (folding type)

   III. Pan feeder assembly

   IV. Base frame (chassis assembly)

   V. Axle assembly (with braking system)

   VI. Control panel unit

   VII. D.G unit

2. SCREENING UNIT -01NO.

   I. Screen body assembly

   II. Screen derive assembly

   III. Screen str. & Chhute assembly

3. CONVEYORS UNIT -06 NOS.

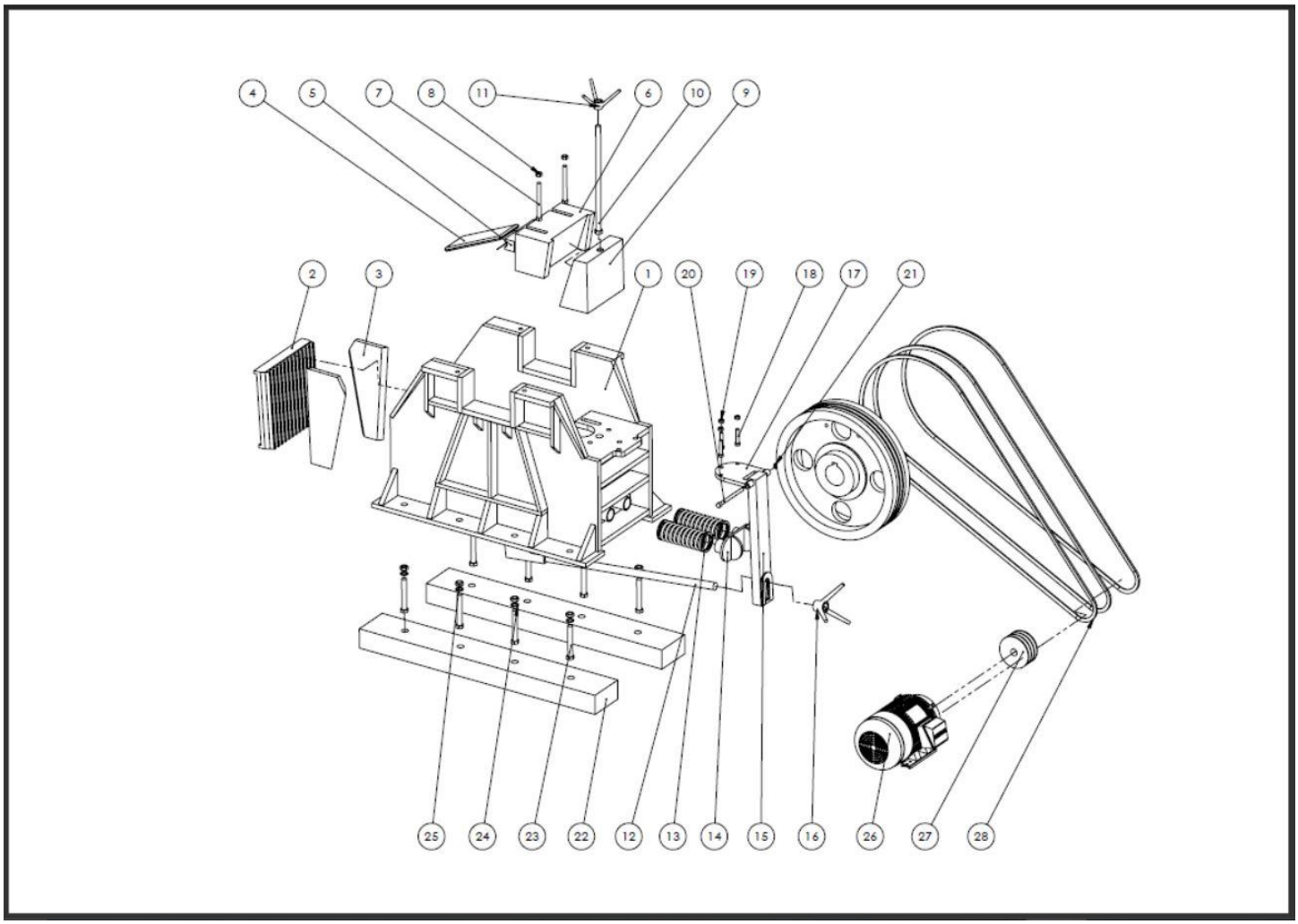
   I. Conveyor 12Mx500mm B/W assembly -04 nos +01 No 14.5mx500b/w conveyor

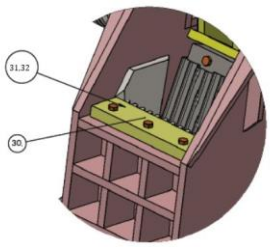
   II. Conveyor 16.5 mx650 B/W assembly -01 No.

SPARE PARTS MANUAL INDEX OF -AE ST 201M

1-Jaw Crusher Assembly (Body)–JCAB-A01

`

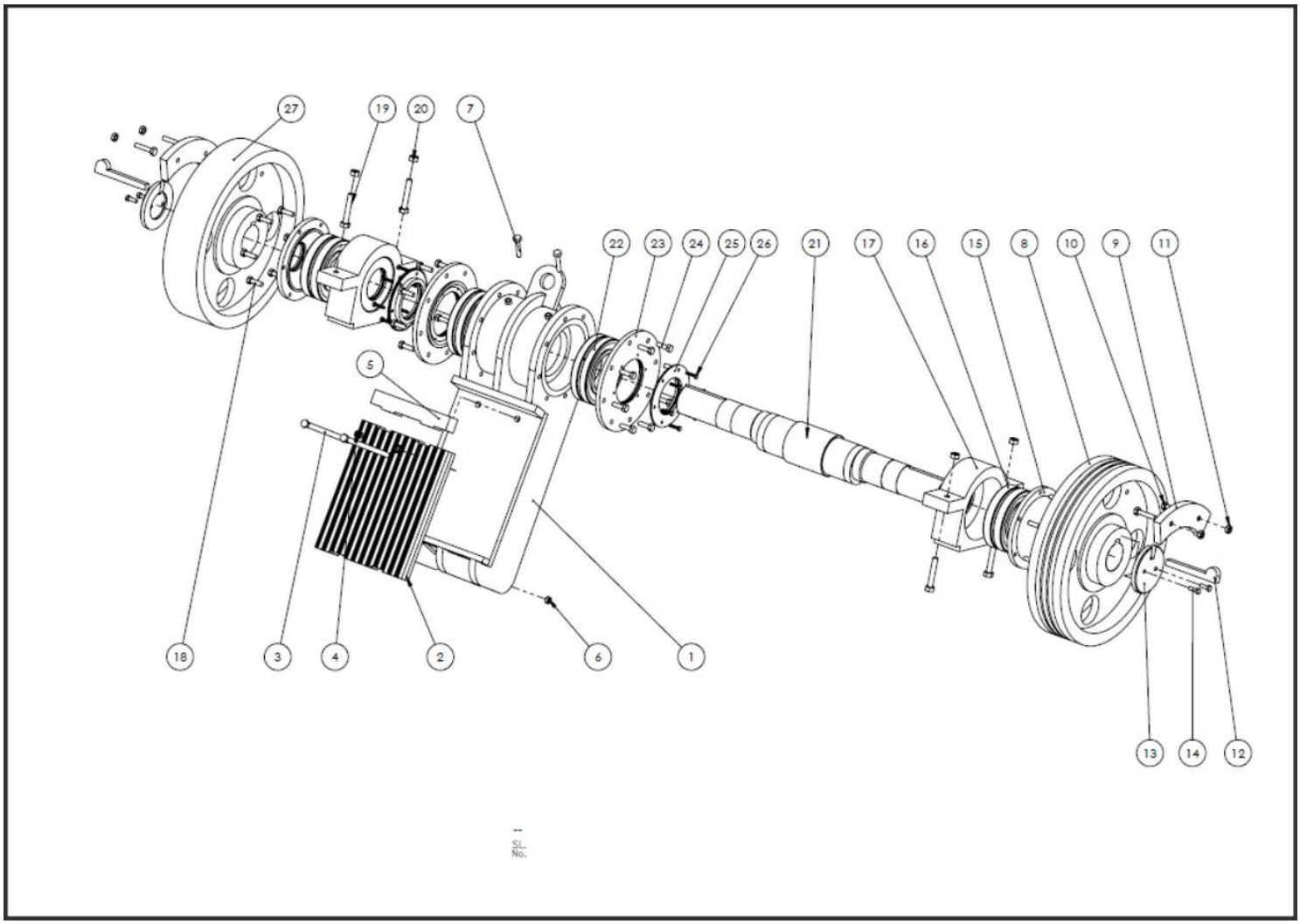




1-Jaw Crusher Assembly (Body)–JCAB-A01

S.No.	Part No.	Part Name	Description	Qty.	Remark
1	JCAB-A01-001.1	Crusher body	Mc.20x10	1	
2	JCAB-A01-002.2	Fix Jaw Plate	-	1	
3	JCAB-A01-003.3	Side Plate	-	2	
4	JCAB-A01-004.4	Toggle Plate	-	1	
5	JCAB-A01-005.5	Toggle bearing	Mc.20x10	2	
6	JCAB-A01-006.6	Toggle Block	Mc.20x10	1	
7	JCAB-A01-007.7	Toggle Bolt	As per Size	2	
8	JCAB-A01-008.8	Toggle Nut	As per Size	2	
9	JCAB-A01-009.9	Vez Block	Mc.20x10	1	
10	JCAB-A01-010.10	Vez Block bolt	As per Size	1	
11	JCAB-A01-011.11	Vez block Tighten Nut	As per Size	1	
12	JCAB-A01-012.12	Tie Rod	602 No.	1	
13	JCAB-A01-013.13	Tie Rod Spring	As per Size	2	
14	JCAB-A01-014.14	Spring Holder	Std.	1	
15	JCAB-A01-015.15	Tie Rod lever (Ch.)	Std.	1	
16	JCAB-A01-016.16	Tie Rod tighten Nut	Std.	1	
17	JCAB-A01-017.17	Tie Rod lever Plate	Std.	1	
18	JCAB-A01-018.18	Hex bolt	M-	3	
19	JCAB-A01-019.19	Hex Nut	M-	3	
20	JCAB-A01-020.20	Tie rod plate &lever bolt	Std.	1	
21	JCAB-A01-021.21	Tie rod plate &lever bolt	M20	1	
22	JCAB-A01-022.22	Wooden Sleeper	Std.	2	
23	JCAB-A01-023.23	Crusher foundation bolt	Std.	8	
24	JCAB-A01-024.24	Crusher foundation nut	Std.	8	
25	JCAB-A01-025.25	Crusher foundation washer	Std.	8	
26	JCAB-A01-026.26	Crusher Motor	Standard	1	
27	JCAB-A01-027.27	Motor Hex Bolt &Nut	Std.	4	Not shown in dwg.
28	JCAB-A01-028.28	Motor pulley	Std.	1	
29	JCAB-A01-028.29	V belt	Std.	3	
30	JCAB-A01-028.30	Fix jaw tighten plate	Std.	1	
31	JCAB-A01-028.31	Hex bolt	Std.	3	
32	JCAB-A01-028.32	Hex nut	Std.	3	

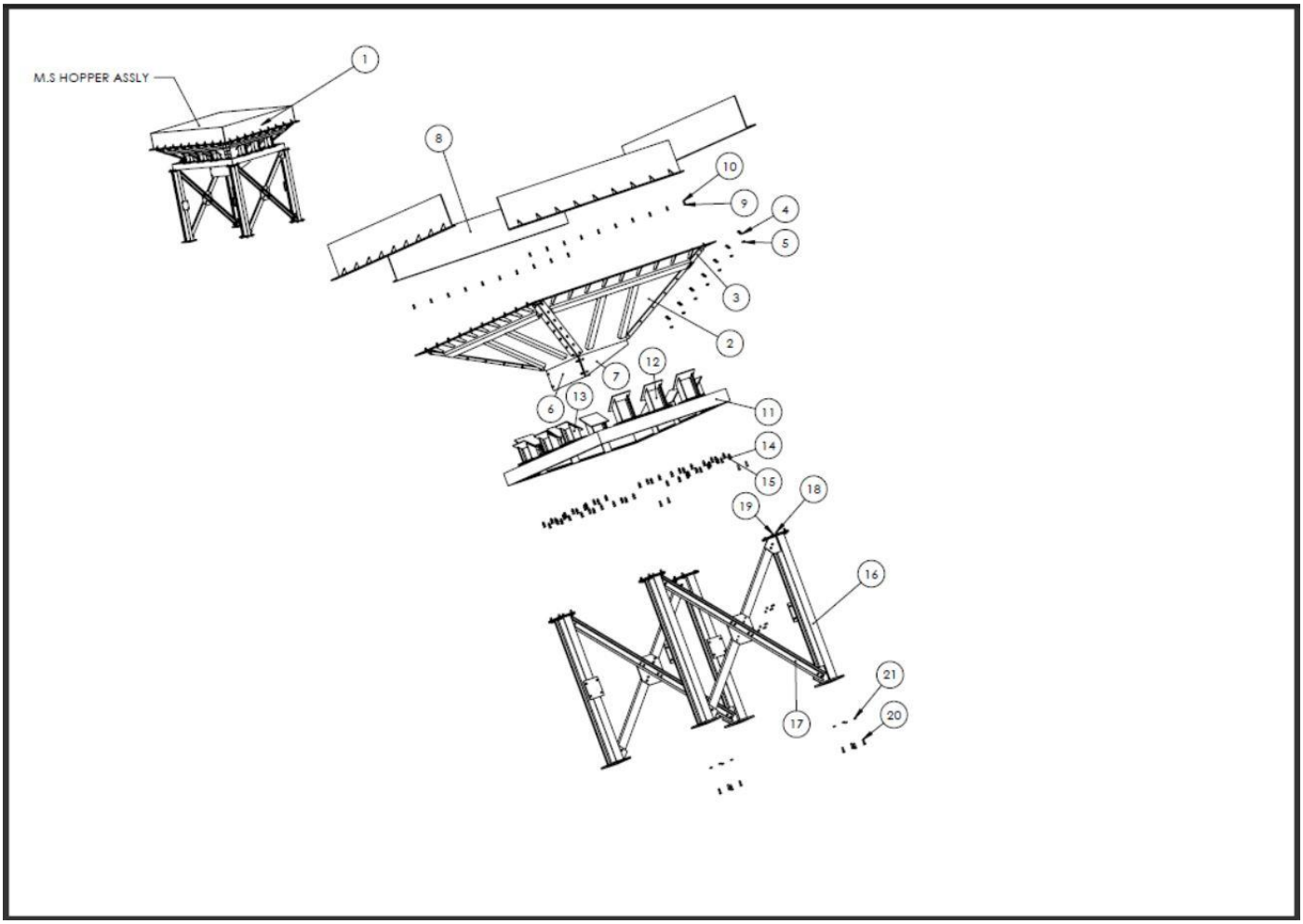
2-Jaw Crusher Assembly (Pitmen)–JCAP-01.2



2-Jaw Crusher Assembly (Pitmen)–JCAP-A02

S.No.	Part No.	Part Name	Description	Qty.	Remark
1	JCAP-A02.01.33	Pitmen Body	Mc.20x10	1	
2	JCAP-A02.02.34	Swim Jaw plate	Mc.20x10	2	
3	JCAP-A02.03.35	Swim Jaw Plate Bolt	Std.	2	
4	JCAP-A02.04.36	Swim Jaw plate Nut	1”	2	
5	JCAP-A02.05.37	Swing Jaw Tighten Block	Std.	1	
6	JCAP-A02.06.38	Tie Rod Bolt Nut	Hex-	1	
7	JCAP-A02.07.39	Grease point bolt	Std.	2	
8	JCAP-A02.08.40	Flywheel (Groove)	Std.	1	
9	JCAP-A02.09.41	Balance weight	Std.	2	
10	JCAP-A02.10.42	Balance weight Bolt	Std.	4	
11	JCAP-A02.11.43	Balance weight Nut	Std.	4	
12	JCAP-A02.12.44	Flywheel Key	Std.	2	
13	JCAP-A02.13.45	Shaft End Plate	Std.	2	
14	JCAP-A02.14.46	Shaft End Plate Bolt	Std.	4	
15	JCAP-A02.15.47	BKT. Cover	Std.	2	
16	JCAP-A02.16.48	BKT Bearing	As per Crusher	2	
17	JCAP-A02.17.49	Cam Shaft Bracket	Std.	2	
18	JCAP-A02.18.50	BKT. Cover Bolt	Std.	6	
19	JCAP-A02.19.51	BKT Bolt	As per size	4	
20	JCAP-A02.20.52	BKT Nut	Std.	4	
21	JCAP-A02.21.53	Cam Shaft	Std.	1	
22	JCAP-A02.22.54	Pitmen Bearing	As per crusher	2	
23	JCAP-A02.23.55	Pitmen Outer Cover	Std.	2	
24	JCAP-A02.24.56	Pitmen Outer Cover Bolt	Hex	16	
25	JCAP-A02.25.57	Pitmen Inner Cover	Std.	2	
26	JCAP-A02.26.58	Pitmen Inner Cover Bolt	Hex	12	
27	JCAP-A02.27.59	Flywheel (Plane)	Std.	1	
28	JCAP-A02.28.60	BKT Seal (Gland)	Std.	2	Not shown in dwg.
29	JCAP-A02.29.61	BKT Cover Seal O ring	Std.	2	Not shown in dwg.
30	JCAP-A0.2.30.62	Pitmen cover O ring	Std.	4	Not shown in dwg.

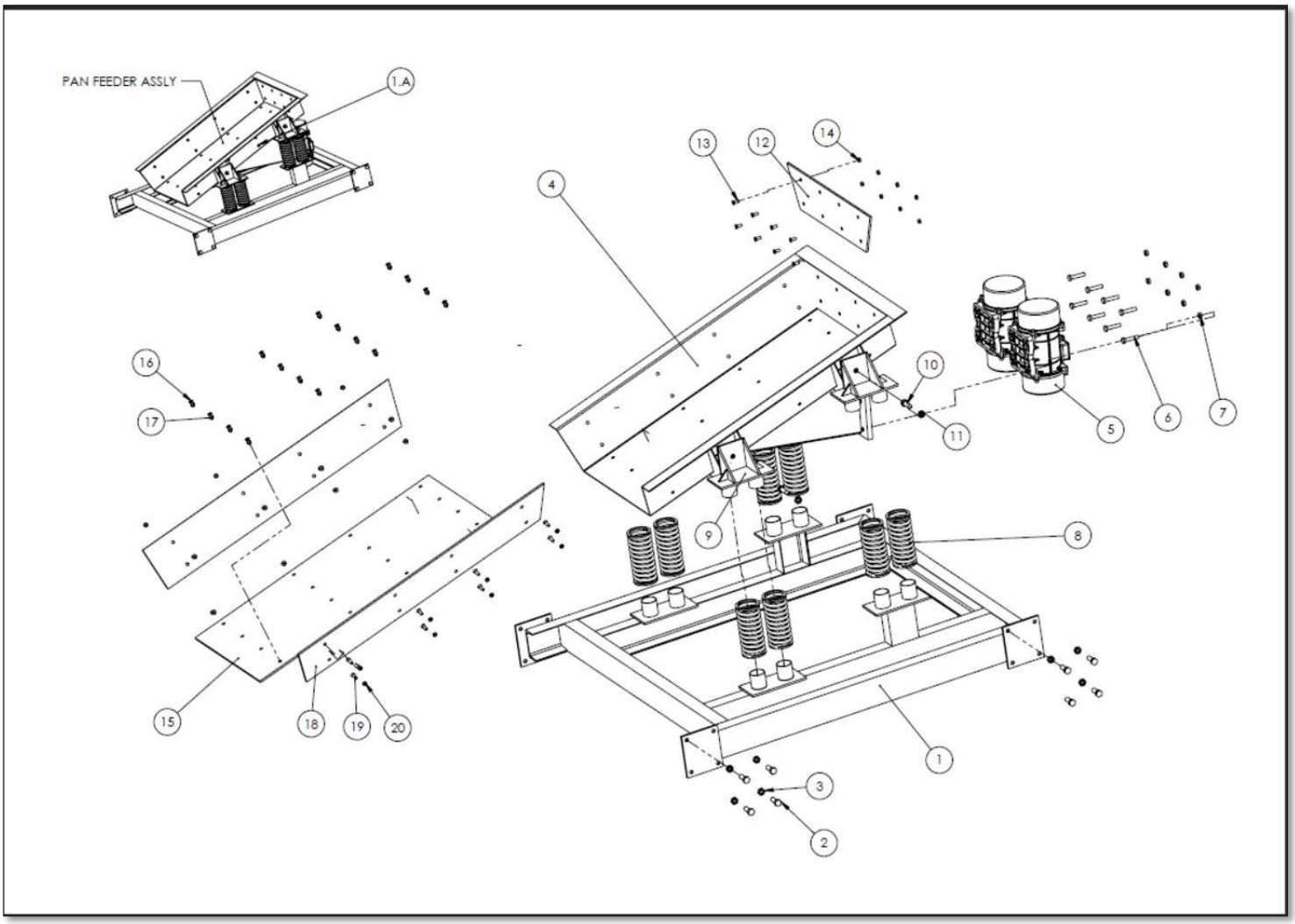
3-M.S Hopper Assembly-MHA-A03



3-M.S Hopper Assembly-MHA-A03

S.No.	Part No.	Part Name	Description	Qty.	Remark
1	MHA-A03-01.63	M.S Hopper Assembly Com.	10 T	1	
2	MHA-A03-02.64	Hopper Cone Plate	Std.	4	
3	MHA-A03-03.65	Hopper Corner Joint Flat	Flat	4	
4	MHA-A03-04.66	Hopper Corner Joint Bolt	M12	56	
5	MHA-A03-05.67	Hopper Corner Joint Nut	M12	56	
6	MHA-A03-06.68	Discharge Face Plate	Std.	1	
7	MHA-A03-07.69	Opening side Plate	Std.	2	
8	MHA-A03-08.70	Hopper Top Plate	Std.	4	
9	MHA-A03-09.71	Hopper Plate Bolt Hex	M12	40	
10	MHA-A03-10.72	Hopper Plate Nut Hex	M12	40	
11	MHA-A03-11.73	Hopper Holding Frame	Std.	1	
12	MHA-A03-12.74	Hopper Holding BKT Big	Std.	6	
13	MHA-A03-13.75	Hopper Holding BKT Small	Std.	6	
14	MHA-A03-14.76	Hopper BKT Bolt	M16	48	
15	MHA-A03-15.77	Hopper BKT Nut	M16	48	
16	MHA-A03-16.78	Hopper Leg	Std.	4	
17	MHA-A03-17.79	Hopper Bracing CH-75	CH	4	
18	MHA-A03-18.80	Hopper Leg Bolt	M16	16	
19	MHA-A03-19.81	Hopper Leg Nut	M16	16	
20	MHA-A03-20.82	Hopper Foundation Bolt	Hex	16	
21	MHA-A03-21.83	Hopper Foundation Bolt	Hex	16	
22	MHA-A03-22.84	Leg Bracing Bolt	M12	32	Not shown in dwg.
23	MHA-A03-23.85	Leg Bracing Nut	M12	32	Not shown in dwg.

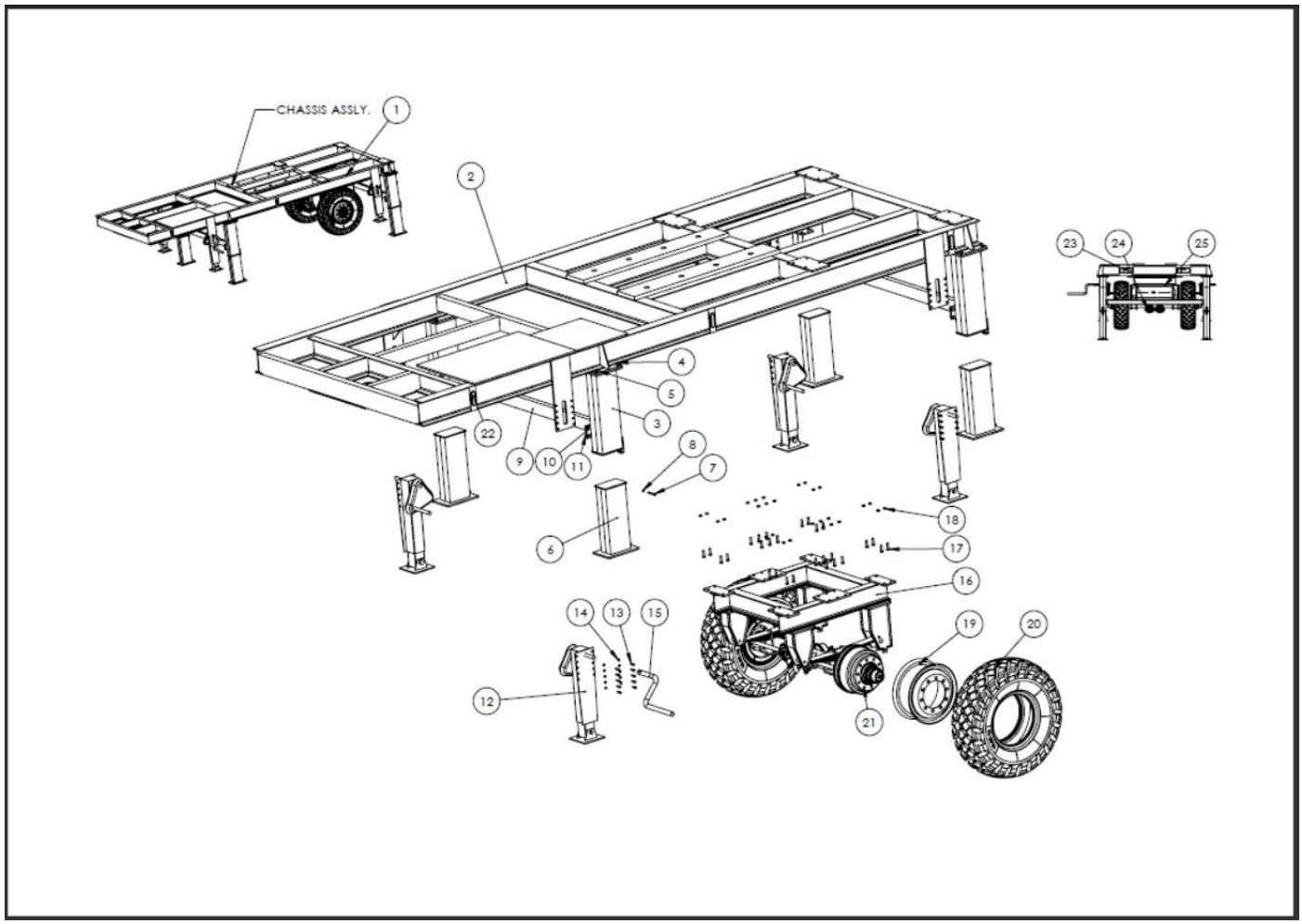
4-Pan Feeder Assembly PFA-A04



4-Pan Feeder Assembly PFA-A04

S.No.	Part No.	Part Name	Description	Qty.	Remark
1.A	PFA-A04-01.A-86	Pan feeder Assembly Com	Std.	1	
1	PFA-A04-01-87	Pan Feeder Frame	Std.	1	
2	PFA-A04-02-88	Frame Bolt Hex	M16	16	
3	PFA-A04-03-89	Frame Nut Hex	M16	16	
4	PFA-A04-04-90	Pan Feeder Body	Std.	1	
5	PFA-A04-05-91	Vibrator Motor	-	2	
6	PFA-A04-06-92	Vibrator Motor Bolt	Hex-	8	
7	PFA-A04-07-93	Vibrator Motor Nut	Hex-	8	
8	PFA-A04-08-94	Spring	Std.	8	
9	PFA-A04-09-95	Spring BKT	Std.	4	
10	PFA-A04-10-96	Spring BKT Bolt	Hex-	4	
11	PFA-A04-11-97	Spring BKT Nut	Hex-	4	
12	PFA-A04-12-98	Rear Liner	Std.	1	
13	PFA-A04-13-99	Rear Liner Bolt	CSK-12	8	
14	PFA-A04-14-100	Rear Liner Nut	M12	8	
15	PFA-A04-15-101	Bottom Liner	Std.	1	
16	PFA-A04-16-101	Bottom Liner Bolt	CSK-12	16	
17	PFA-A04-17-102	Bottom Liner Nut	M12	16	
18	PFA-A04-18-103	Side Liner	Std.	1	
19	PFA-A04-19-104	Side Liner Bolt	CSK-12	16	
20	PFA-A04-20-105	Side Liner Nut	M12	16	
21	PFA-A04-21-106	Feeder Chhute	Std.	1	Not shown in dwg.

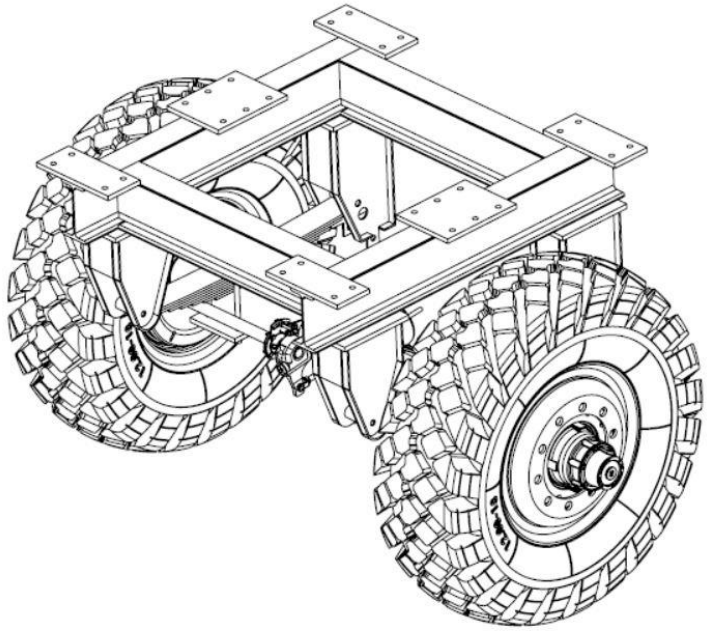
5-Chassis (Base frame) Assly-CBA-A05



5-Chassis (Base frame) Assly-CBA-A05

S.No.	Part No.	Part Name	Description	Qty.	Remark
1	CBA-A05-01.107	Chassis Assembly Comp.	Std.	1	
2	CBA-A05-02.108	Base Frame welded	Std.	1	
3	CBA-A05-03.109	Leg	Std.	4	
4	CBA-A05-04.110	Leg Bolt	M16	16	
5	CBA-A05-05.111	Leg Nut	M16	16	
6	CBA-A05-06.112	Extension Leg	Std.	4	
7	CBA-A05-07.113	Extension Leg Bolt	M12	4	
8	CBA-A05-08.114	Extension Leg Nut	M12	4	
9	CBA-A05-09.115	Leg Bracing	Std.	2	
10	CBA-A05-10.116	Leg Bracing Bolt	M16	16	
11	CBA-A05-11.117	Leg Bracing Nut	M16	16	
12	CBA-A05-12.118	Mechanical Jack	Std.	4	
13	CBA-A05-13.119	Mechanical Jack Bolt Hex	M12	40	
14	CBA-A05-14.120	Mechanical Jack Nut Hex	M12	40	
15	CBA-A05-15.121	Jack Handle	Std.	1	
16	CBA-A05-16.122	Wheel Axle With Frame	Std Truck	1	
17	CBA-A05-17.123	Axle Frame Bolt	Hex	28	
18	CBA-A05-18.124	Axle Frame Bolt	Hex-M16	28	
19	CBA-A05-19.125	Tire Rim	1020	2	
20	CBA-A05-20.126	Tire &Tube	1020	2	
21	CBA-A05-21.127	Rim stud	Std.	20	
22	CBA-A05-22.128	Side Light	Std.	6	
23	CBA-A05-23.129	Rear Brake Light	Std.	2	
24	CBA-A05-24.130	Brake	Std.	2	
25	CBA-A05-25.131	Brake Cylinder	Std.	1	
26	CBA-A05-26.132	Valve	Std.	1	Not shown in dwg.

6-Axle Wheel Assembly With brake system Complete-ABA-A06



7-Control Panel Unit – CPU-A07

PANEL INNER VIEW

PANEL KEY & DISPLAY VIEW

PANEL OUTER VIEW

7-Control Panel Unit – CPU-A07

A. SYSTEM PARTICULARS:	
1. VOLTAGE	:- 415V AC +/- 10%
2. FREQUENCE	:- 50Hz +/- 3%
3. NO OF PHASE	:- 3 PHASE 4WIRE
4. FAULT LEVEL	:- AS PER SLD
5. CONTROL SUPPLY	:- 230V AC/24V DC

B. INSTALLATION :	
1. TYPE	:- INDOOR
2. DEGREE OF PROTECTION	:- IP 55
3. MOUNTING	:- FLOOR (FREE STANDING)
4. MAX AMBIENT TEMPERATURE	:- 50° C

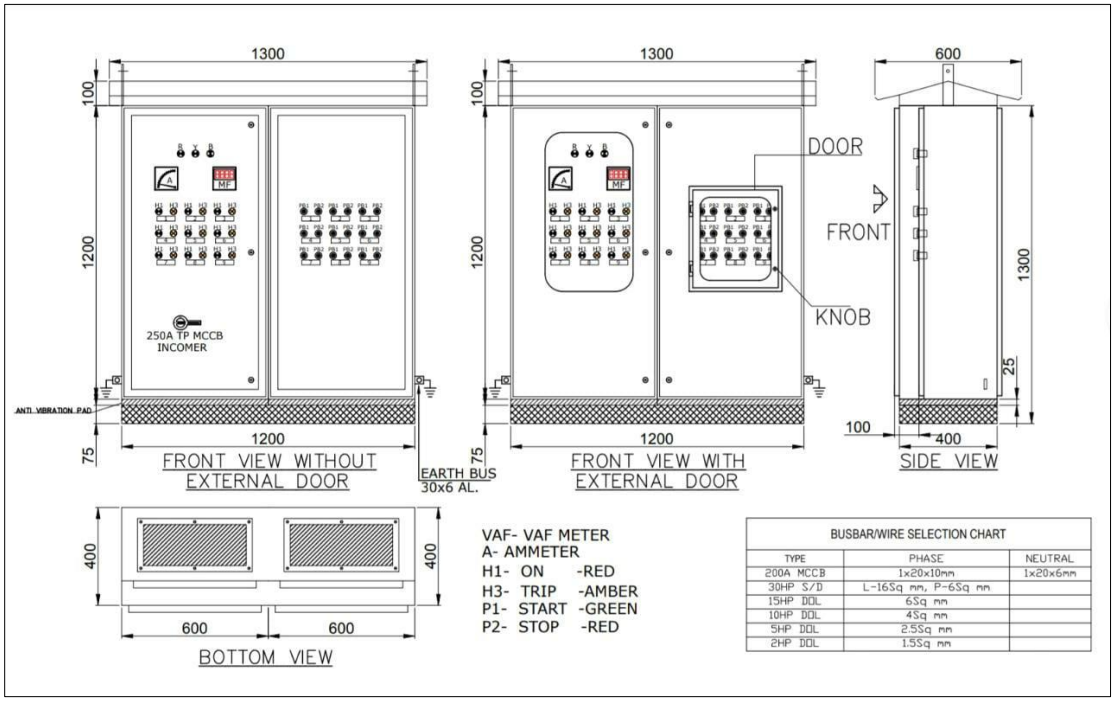
C. CONSTRUCTION :	
1. MAKE	:- ADROIT
2. FRAME (BODY)	:- 2.0mm THK. CRCA SHEET
3. DOORS & COVERS	:- 1.6mm THK. CRCA SHEET
4. PARTITIONS	:- 1.4mm THK. CRCA SHEET
5. GLAND PLATE	:- 2.0mm THK. CRCA SHEET
6. BASE	:- 75mm

D. POWDER COATING	
1. EXTERNAL COLOR	:- RAL 7035
2. INTERNAL COLOR	:- RAL 7035
3. DOOR INTERNAL SIDE	:- RAL 7035
4. MOUNTING PLATE	:- ORANGE
5. PAINTING THICKNESS	:- MINIMUM 70 MICRONS

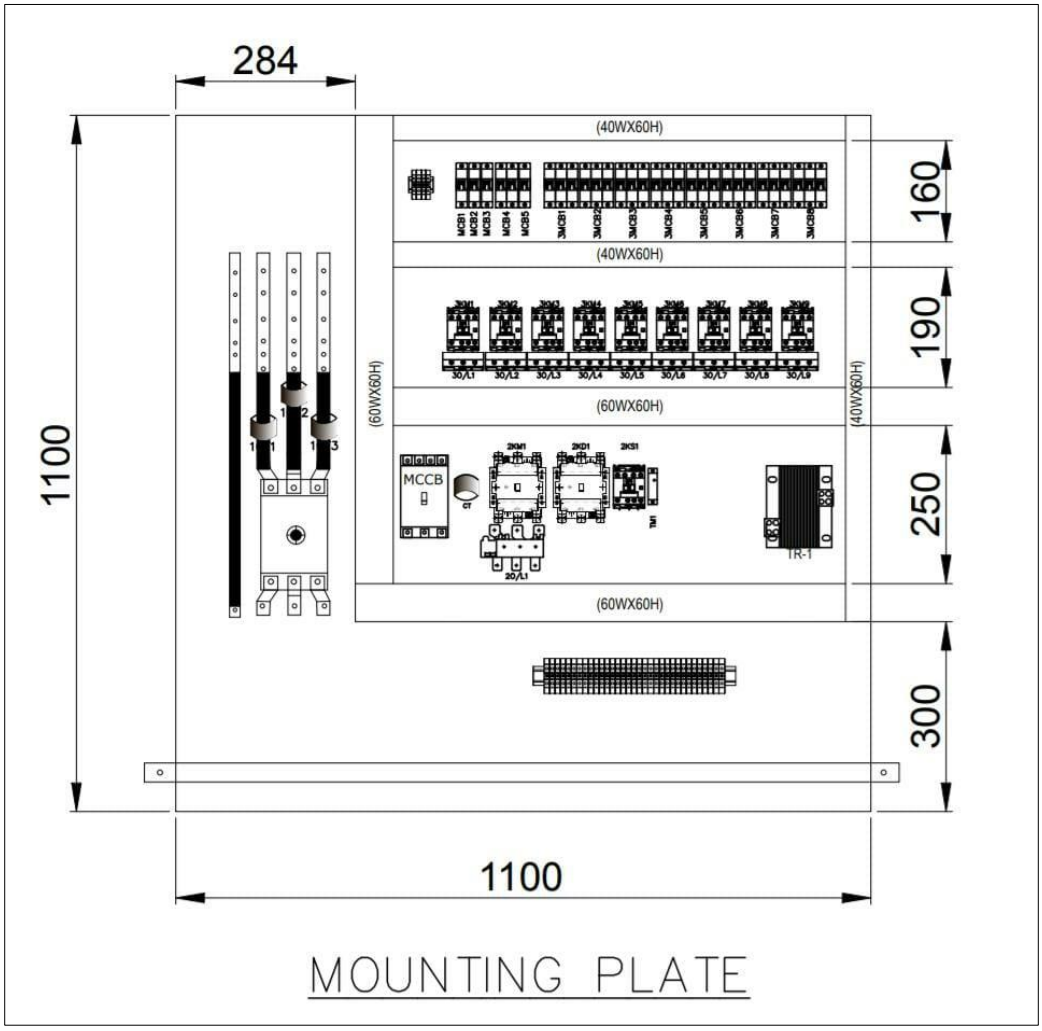
E. BUSBAR	
1. BUSBAR	:- HIGH CONDUCTIVITY E91E GRADE ALUMINIUM BUSBAR
2. BUS BAR CURRENT DENSITY	:- 1Sq. mm =1A
3. BUS BAR SUPPORT	:- SMC/DMC TYPE
4. BUS BAR SLEEVE	:- HEAT SHRINKABLE

F. WIRING (POWER & CONTROL) : PVC INSULATED FR CU.WIRE, 1100V GRADE	
1. CONTROL CIRCUIT	:- MINIMUM 0.75 Sq mm
2. C.T. WIRING	:- MINIMUM 1.5 Sq mm (RED,BLACK)
3. POWER WIRING	:- AS PER FEEDER RATING
4. COLOR CODE	:- R,Y,B - RED COLOR UPTO 16SQ.MM & ABOVE 16SQ.MM-BLACK
5. COLOR FOR AC	:- PHASE-GRAY & NEUTRAL-BLACK (WITH CONTROL TRANSFORMER)
5. COLOR FOR AC	:- PHASE-RED & NEUTRAL-BLACK (WITHOUT CONTROL TRANSFORMER)
6. COLOR FOR DC	:- POSITIVE(+) BLUE & NEGATIVE(-) WHITE
7. POTTENTIAL FREE	:- 0.75SQ.MM YELLOW COLOR
8. EARTH	:- YELLOW/GREEN

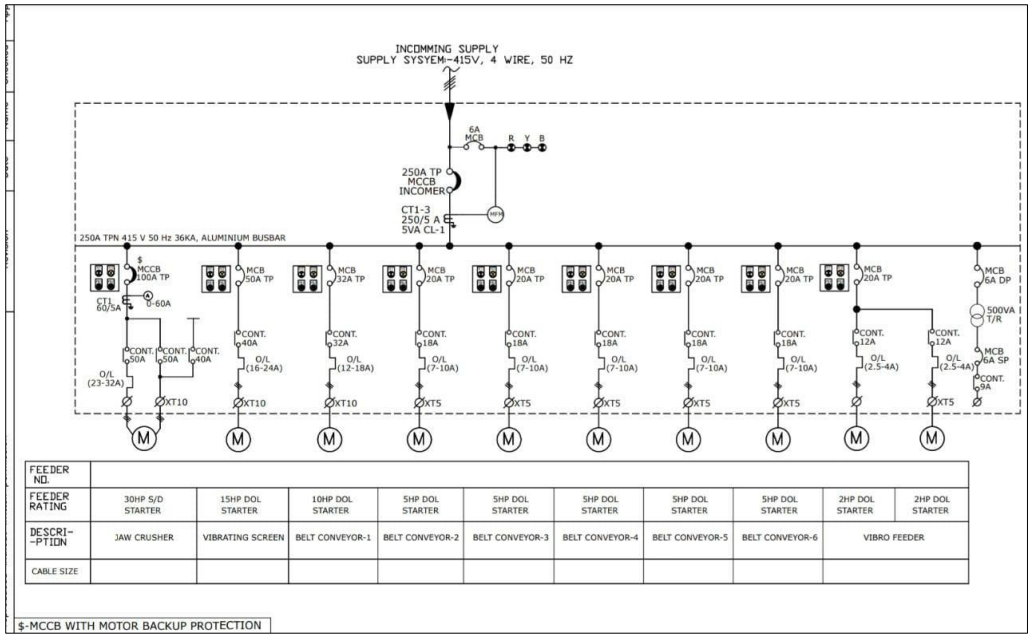
G. NAME PLATES:
1. BLACK AL. NAME PLATES WITH WHITE LETTER ON BLACK BACK GROUND
H. LIFTING HOOK:
1. LIFTING HOOK WILL BE PROVIDE FOR EACH SECTION
J. GASKET:
1. DUST & VERMIN PROOF RUBBER GASKET SHALL BE PROVIDED FOR ALL DOORS & COVERS.



BUSBAR/WIRE SELECTION CHART		
TYPE	PHASE	NEUTRAL
200A MCCB	1x20x10mm	1x20x6mm
30HP S/D	L-16Sq mm, P-6Sq mm	
15HP DOL	6Sq mm	
10HP DOL	4Sq mm	
5HP DOL	2.5Sq mm	
2HP DOL	1.5Sq mm	

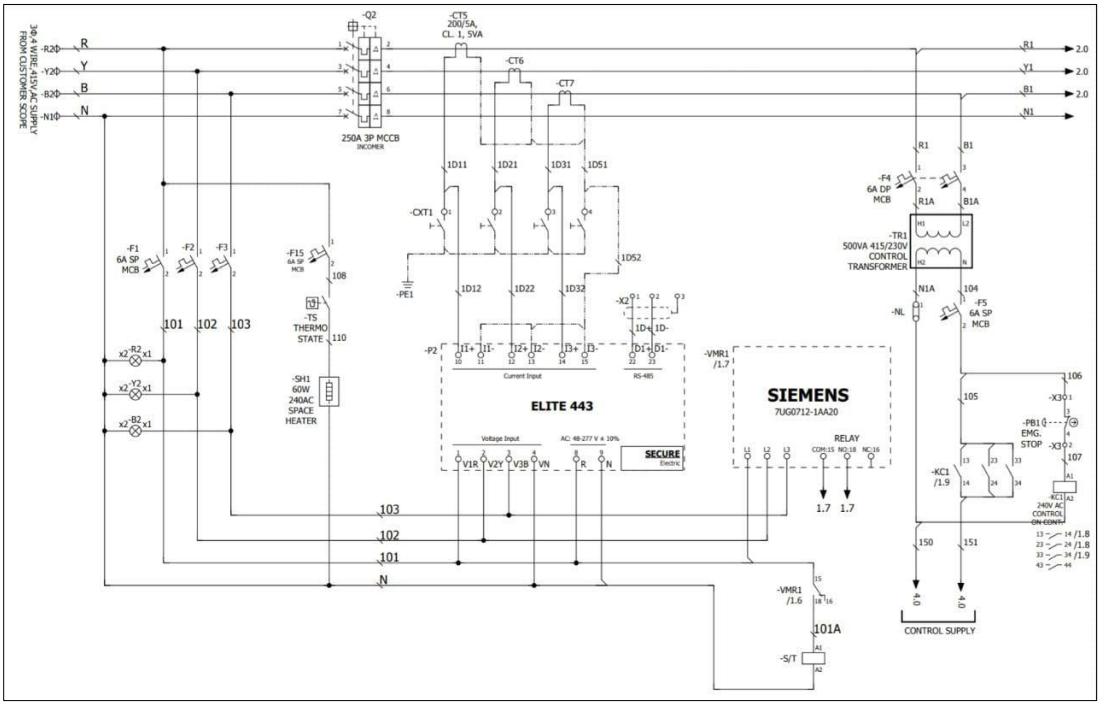


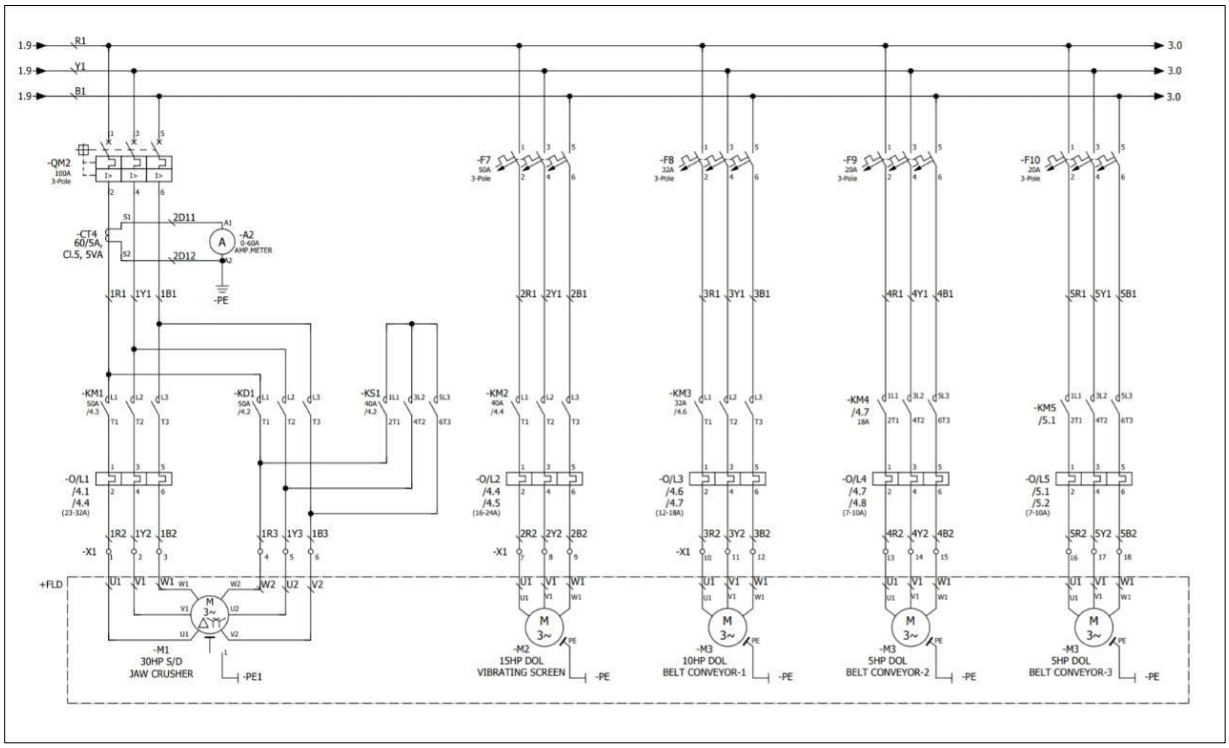
MOUNTING PLATE

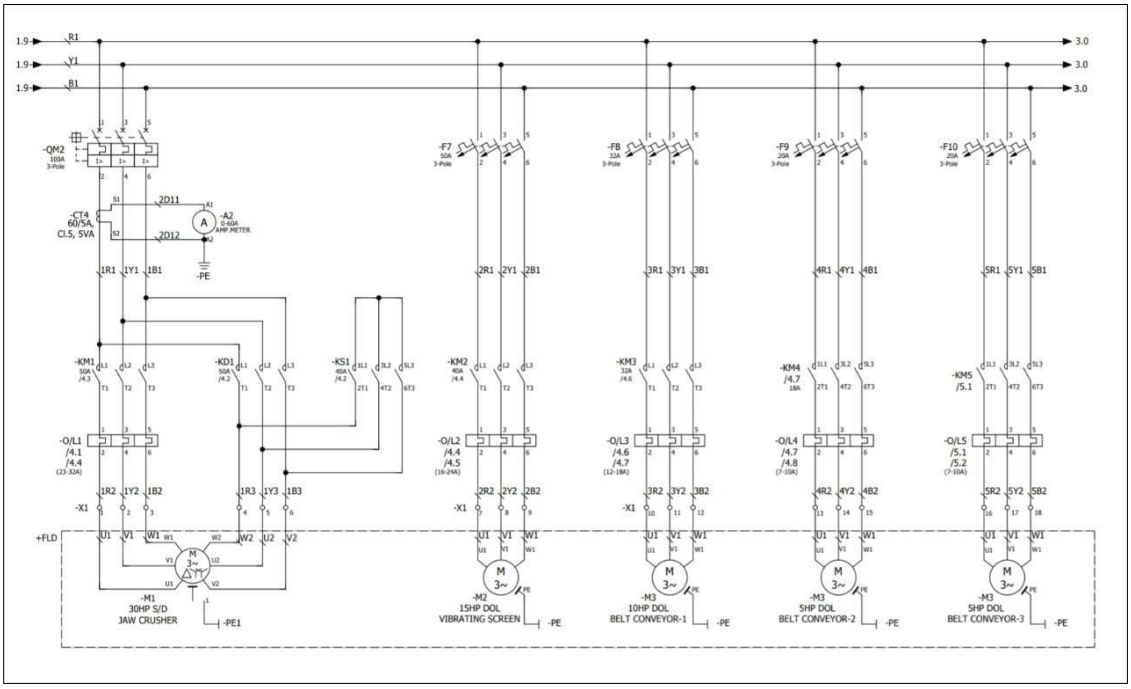


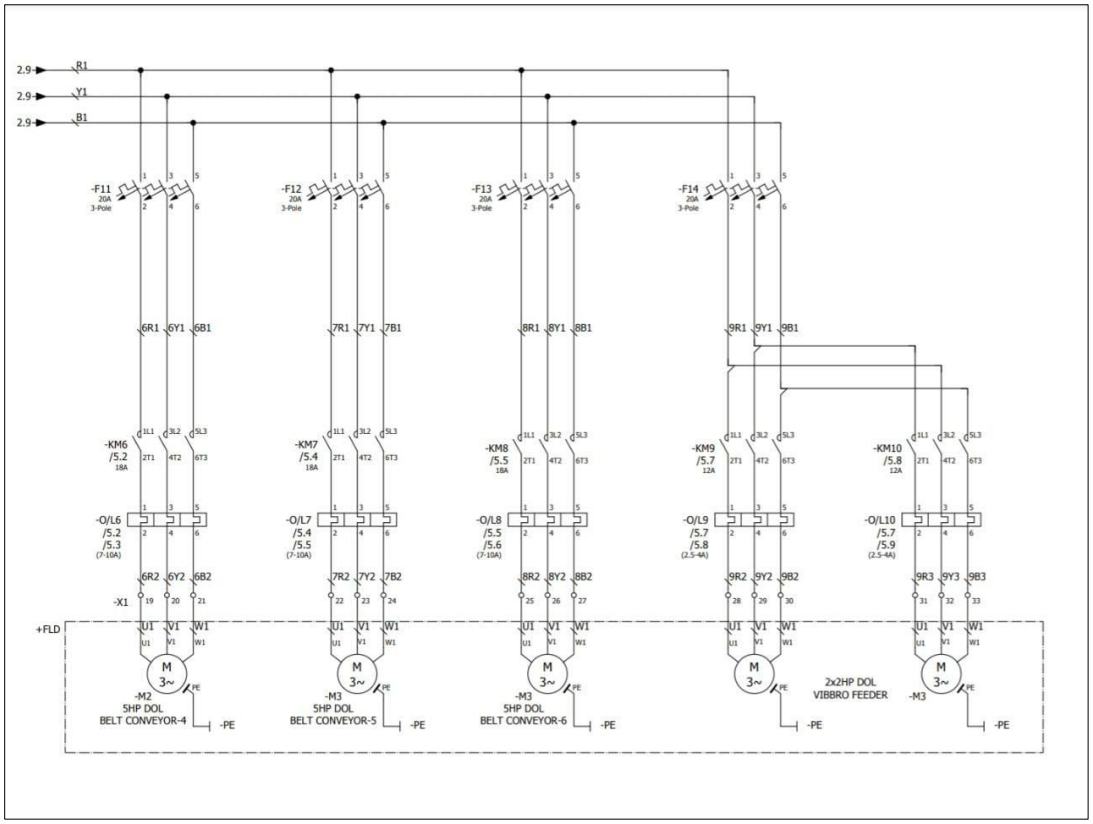
FEEDER NO.										
FEEDER RATING	30HP S/D STARTER	15HP DOL STARTER	10HP DOL STARTER	5HP DOL STARTER	5HP DOL STARTER	5HP DOL STARTER	5HP DOL STARTER	5HP DOL STARTER	2HP DOL STARTER	2HP DOL STARTER
DESCRI--PTION	JAW CRUSHER	VIBRATING SCREEN	BELT CONVEYOR-1	BELT CONVEYOR-2	BELT CONVEYOR-3	BELT CONVEYOR-4	BELT CONVEYOR-5	BELT CONVEYOR-6	VIBRO FEEDER	
CABLE SIZE										

$-MCCB WITH MOTOR BACKUP PROTECTION


3Ø 4 WIRE 415V AC SUPPLY FROM CUSTOMER SOURCE
R
Y
B
N
-Q2
250A 3P MCCB
INCOMER
-CT5
200/5A,
CL. 1, 5VA
-CT6
-CT7
-F1
6A SP
MCB
-F2
-F3
-F15
6A SP
MCB
-TS
THERMO
STATE
-SH1
60W
240AC
SPACE
HEATER
101
102
103
108
110
-PE1
-CXT1
-P2
ELITE 443
Current Input
RS-485
Voltage Input
AC: 48-277 V ± 10%
SECURE
-X2
-VMR1
/1.7
SIEMENS
7UG0712-1AA20
RELAY
-F4
6A DP
MCB
-TR1
500VA 415/230V
CONTROL
TRANSFORMER
-NL
-F5
6A SP
MCB
-PB1
EMG.
STOP
-KC1
/1.9
-VMR1
/1.6
101A
-S/T
1.7
CONTROL SUPPLY
-X3


-QM2
100A
3-Pole
-CT4
60/5A,
CL5, 5VA
-A2
0-60A
AMP.METER
-PE
-KM1
-KD1
-KS1
-O/L1
-X1
+FLD
-M1
30HP S/D
JAW CRUSHER
-PE1
-F7
-F8
-F9
-F10
-KM2
-KM3
-KM4
-KM5
-O/L2
-O/L3
-O/L4
-O/L5
-M2
15HP DOL
VIBRATING SCREEN
-M3
10HP DOL
BELT CONVEYOR-1
5HP DOL
BELT CONVEYOR-2
5HP DOL
BELT CONVEYOR-3


R1
Y1
B1
-QM2
-CT4
60/5A,
Cl.5, 5VA
-A2
0-60A
AMP.METER
-PE
-KM1
-KD1
-KS1
-KM2
-KM3
-KM4
-KM5
-O/L1
-O/L2
-O/L3
-O/L4
-O/L5
-X1
+FLD
-M1
30HP S/D
JAW CRUSHER
-PE1
-F7
-F8
-F9
-F10
-M2
15HP DOL
VIBRATING SCREEN
-M3
10HP DOL
BELT CONVEYOR-1
-M3
5HP DOL
BELT CONVEYOR-2
-M3
5HP DOL
BELT CONVEYOR-3


R1
Y1
B1
-F11
-F12
-F13
-F14
-KM6
-KM7
-KM8
-KM9
-KM10
-O/L6
-O/L7
-O/L8
-O/L9
-O/L10
-X1
+FLD
-M2
5HP DOL
BELT CONVEYOR-4
-M3
5HP DOL
BELT CONVEYOR-5
-M3
5HP DOL
BELT CONVEYOR-6
2x2HP DOL
VIBBRO FEEDER
-M3
-PE

Strip

=MCC_PANEL+SCH-X1

POWER CONNECTION TERMINAL

External targets							Internal targets		
Terminal type	Wiring	Jumper		Function text	Jumper	Wiring	Target designation	Placement
UK 10N	U1		1	R-PHASE-JAW CRUSHER		1R2	-O/L1:2	/2.1
UK 10N	V1		2	Y-PHASE-JAW CRUSHER		1Y2	-O/L1:4	/2.1
UK 10N	W1		3	B-PHASE-JAW CRUSHER		1B2	-O/L1:6	/2.1
UK 10N	W2		4	R-PHASE-JAW CRUSHER		1R3	-KD1:T1	/2.2
UK 10N	U2		5	Y-PHASE-JAW CRUSHER		1Y3	-KD1:T2	/2.2
UK 10N	V2		6	B-PHASE-JAW CRUSHER		1B3	-KD1:T3	/2.2
UK 5N	U1		7	R-PHASE-VIBRATING SCREEN		2R2	-O/L2:2	/2.4
UK 5N	V1		8	Y-PHASE-VIBRATING SCREEN		2Y2	-O/L2:4	/2.4
UK 5N	W1		9	B-PHASE-VIBRATING SCREEN		2B2	-O/L2:6	/2.4
UK 5N	U1		10	R-PHASE-BELT CONVEYOR-1		3R2	-O/L3:2	/2.5
UK 5N	V1		11	Y-PHASE-BELT CONVEYOR-1		3Y2	-O/L3:4	/2.5
UK 5N	W1		12	B-PHASE-BELT CONVEYOR-1		3B2	-O/L3:6	/2.5
UK 5N	U1		13	R-PHASE-BELT CONVEYOR-2		4R2	-O/L4:2	/2.7
UK 5N	V1		14	Y-PHASE-BELT CONVEYOR-2		4Y2	-O/L4:4	/2.7
UK 5N	W1		15	B-PHASE-BELT CONVEYOR-2		4B2	-O/L4:6	/2.7
UK 5N	U1		16	R-PHASE-BELT CONVEYOR-3		5R2	-O/L5:2	/2.8
UK 5N	V1		17	Y-PHASE-BELT CONVEYOR-3		5Y2	-O/L5:4	/2.8
UK 5N	W1		18	B-PHASE-BELT CONVEYOR-3		5B2	-O/L5:6	/2.8
UK 5N	U1		19	R-PHASE-BELT CONVEYOR-4		6R2	-O/L6:2	/3.1
UK 5N	V1		20	Y-PHASE-BELT CONVEYOR-4		6Y2	-O/L6:4	/3.1
UK 5N	W1		21	B-PHASE-BELT CONVEYOR-4		6B2	-O/L6:6	/3.1
UK 5N	U1		22	R-PHASE-BELT CONVEYOR-5		7R2	-O/L7:2	/3.2
UK 5N	V1		23	Y-PHASE-BELT CONVEYOR-5		7Y2	-O/L7:4	/3.2
UK 5N	W1		24	B-PHASE-BELT CONVEYOR-5		7B2	-O/L7:6	/3.2
UK 5N	U1		25	R-PHASE-BELT CONVEYOR-6		8R2	-O/L8:2	/3.4

0 1 2 3 4 5 6 7 8 9

Terminal diagram

Adroit_DC3

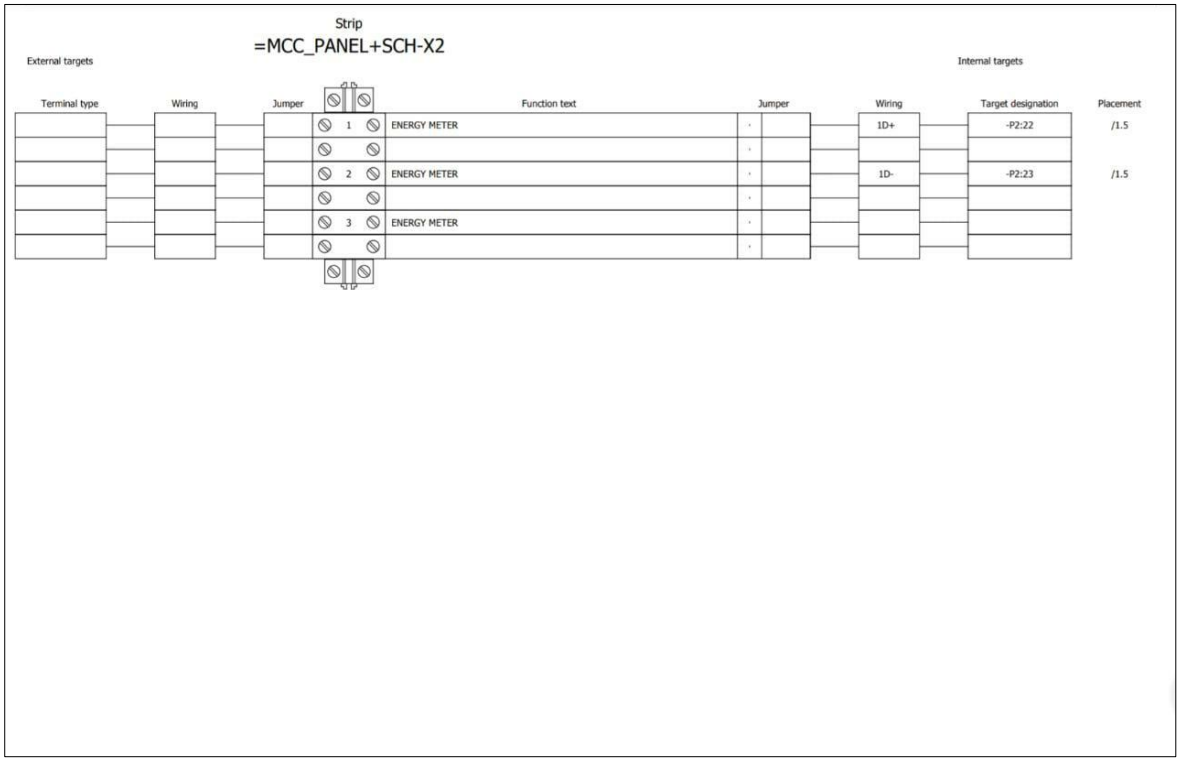
Strip

=MCC_PANEL+SCH-X1

POWER CONNECTION TERMINAL

External targets							Internal targets		
Terminal type	Wiring	Jumper		Function text	Jumper	Wiring	Target designation	Placement
UK 5N	V1		26	Y-PHASE-BELT CONVEYOR-6		8Y2	-O/L8:4	/3.4
UK 5N	W1		27	B-PHASE-BELT CONVEYOR-6		8B2	-O/L8:6	/3.4
UK 5N	U1		28	R-PHASE-VIBBRO FEEDER		9R2	-O/L9:2	/3.5
UK 5N	V1		29	Y-PHASE-VIBBRO FEEDER		9Y2	-O/L9:4	/3.5
UK 5N	W1		30	B-PHASE-VIBBRO FEEDER		9B2	-O/L9:6	/3.5
UK 5N	U1		31	R-PHASE-VIBBRO FEEDER		9R3	-O/L10:2	/3.7
UK 5N	V1		32	Y-PHASE-VIBBRO FEEDER		9Y3	-O/L10:4	/3.7
UK 5N	W1		33	B-PHASE-VIBBRO FEEDER		9B3	-O/L10:6	/3.7

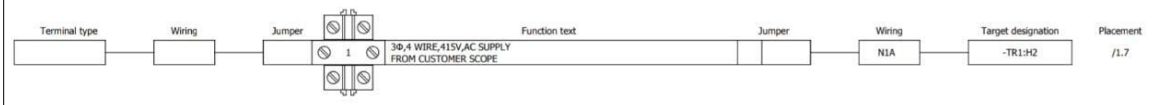
Strip
=MCC_PANEL+SCH-X2



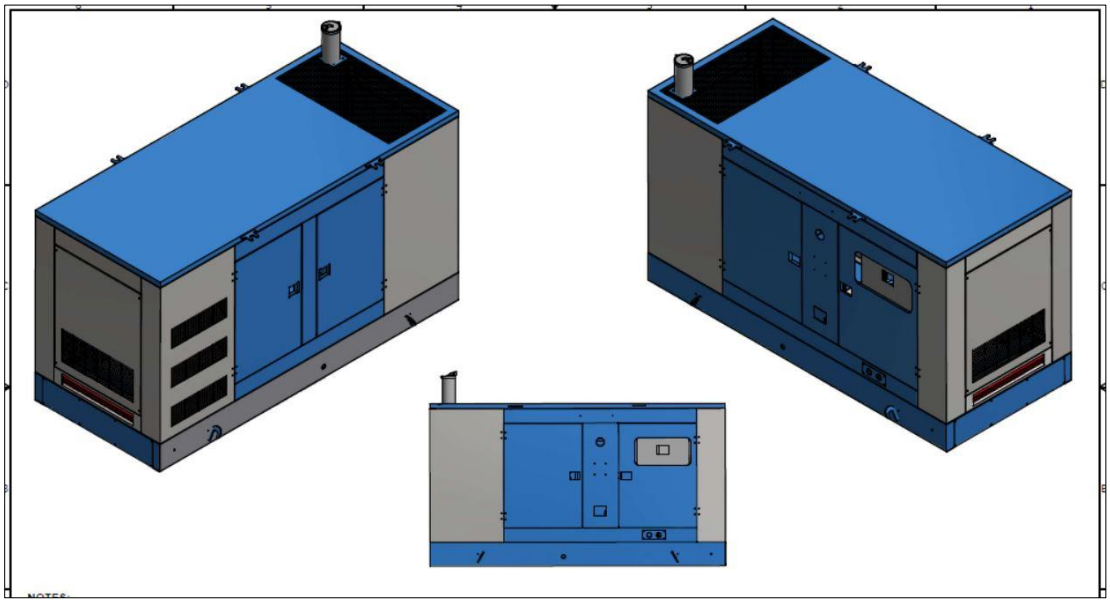
Terminal diagram

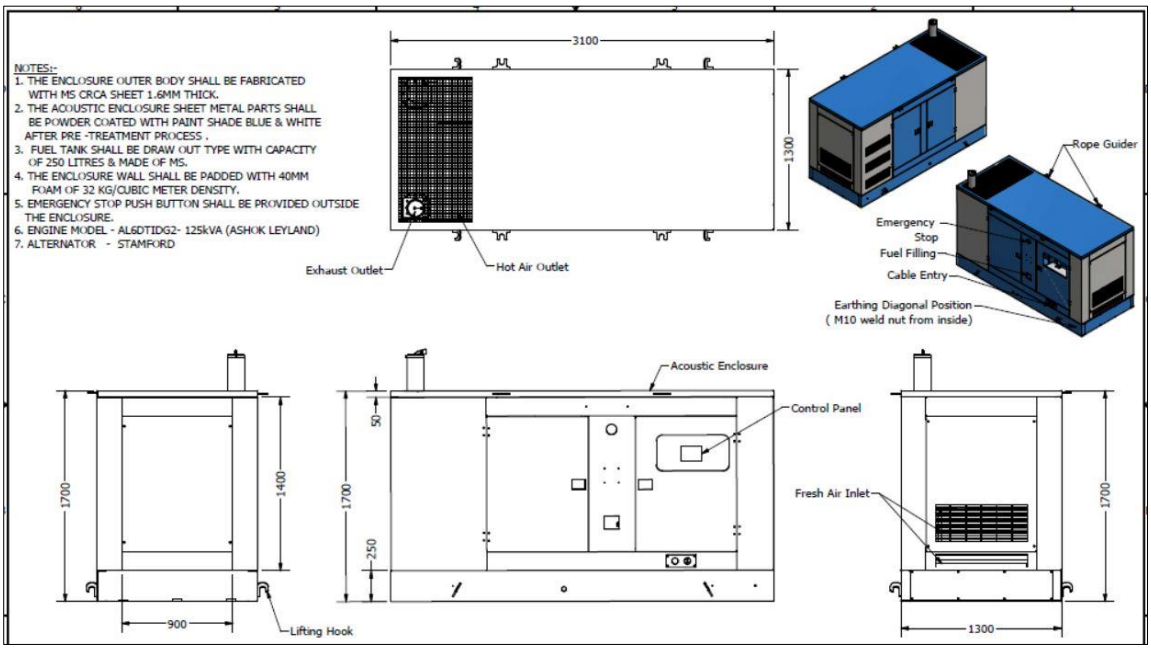
Adroit_DC3

Strip
=MCC_PANEL+SCH-NL

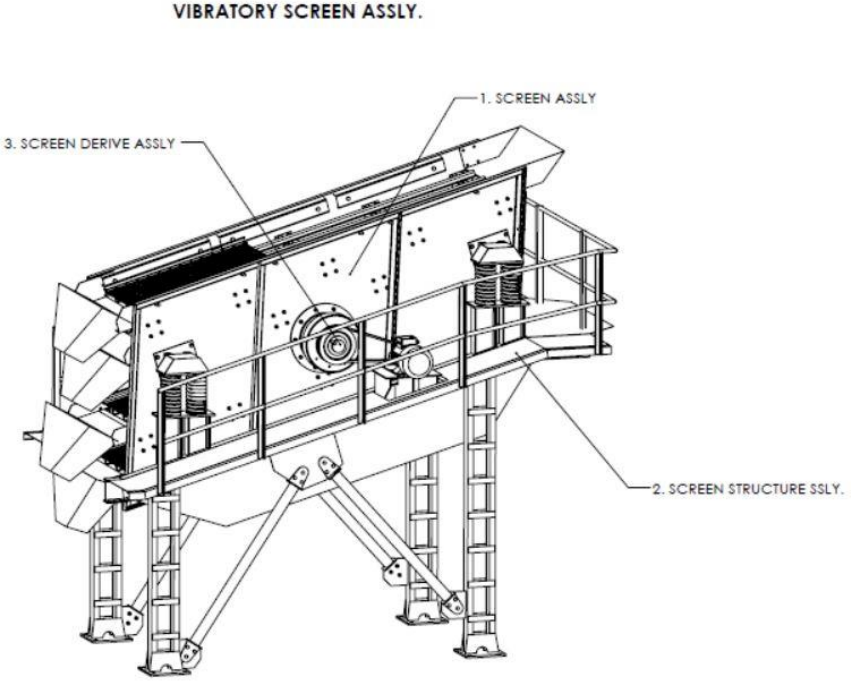


8-DG-Unit -125 kva –DGU-A08

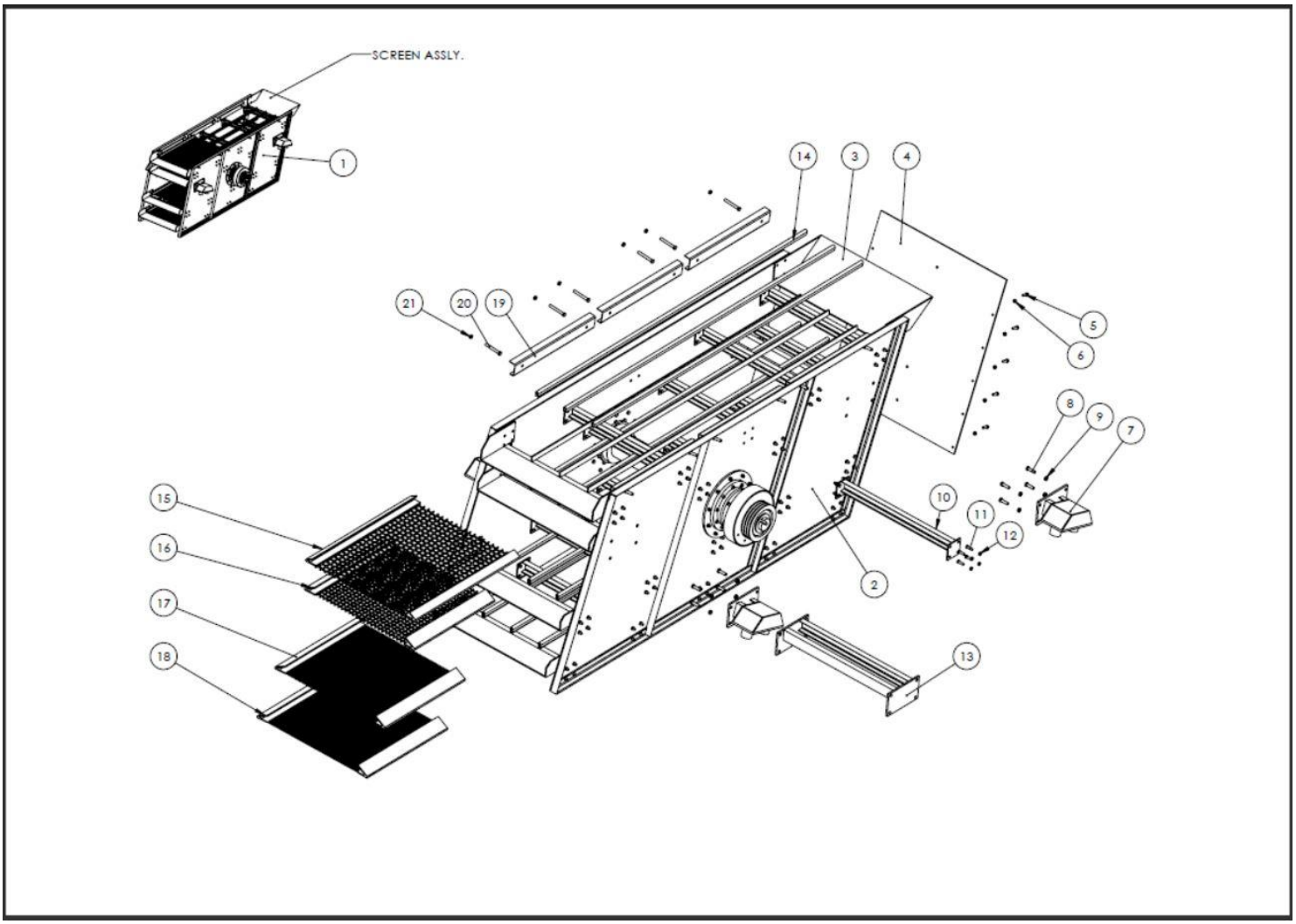




9-Screen Body Assembly (Bolted)-SBA-A09



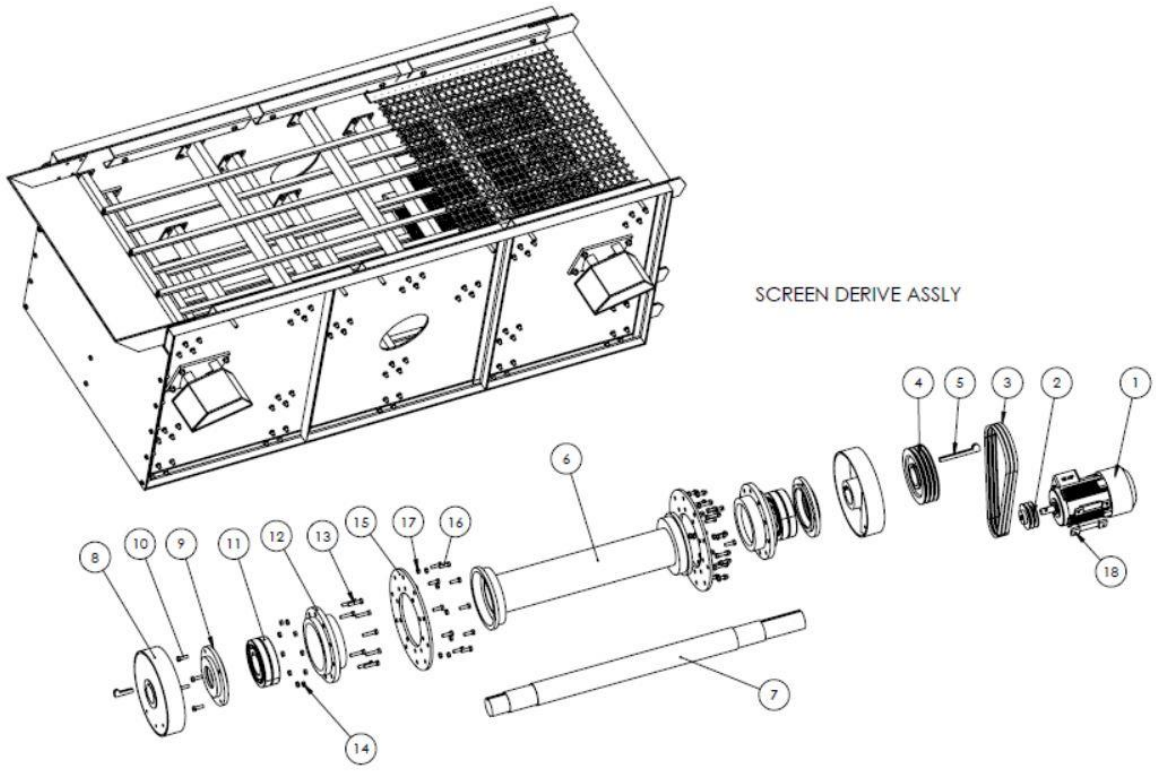
9-Screen Body Assembly (Bolted)-SBA-A09



9-Screen Body Assembly (Bolted)-SBA-A09

S.No.	Part No.	Part Name	Description	Qty.	Remark
1	SBA-A09-01.133	Screen Body Assembly	412	1	
2	SBA-A09-02.134	Screen body	412	1	
3	SBA-A09-03.135	Inlet Chhute	Std.	1	
4	SBA-A09-04.136	Back Closing Plate	As per size	1	
5	SBA-A09-05.137	Back plate bolt	Hex -12	14	
6	SBA-A09-06.138	Back Plate nut	Hex- M12	14	
7	SBA-A09-07.139	Spring BKT	Std.	4	
8	SBA-A09-08.140	Spring BKT Bolt	Hex	16	
9	SBA-A09-09.141	Spring BKT Nut	M	16	
10	SBA-A09-10.142	Cross Chanel	Std.	18	
11	SBA-A09-11.143	Cross Chanel Bolt	M1250	144	
12	SBA-A09-12.144	Cross Chanel Nut	M12	144	
13	SBA-A09-13.145	Cross For Spring BKT	Std.	4	
14	SBA-A09-14.146	Mesh Rubber Packing	Std.	12	
15	SBA-A09-15.148	Wire Mesh –Deck-1	Std.	3	
16	SBA-A09-16.149	Wire Mesh –Deck-2	Std.	3	
17	SBA-A09-17.150	Wire Mesh –Deck-3	Std.	3	
18	SBA-A09-18.151	Wire Mesh –Deck-4	Std.	3	
19	SBA-A09-19.152	Mesh tighten bend plate	Std.	16	
20	SBA-A09-20.153	Mesh tighten bend Bolt	Hex	48	
21	SBA-A09-21.154	Mesh tighten bend Nut	Hex	48	

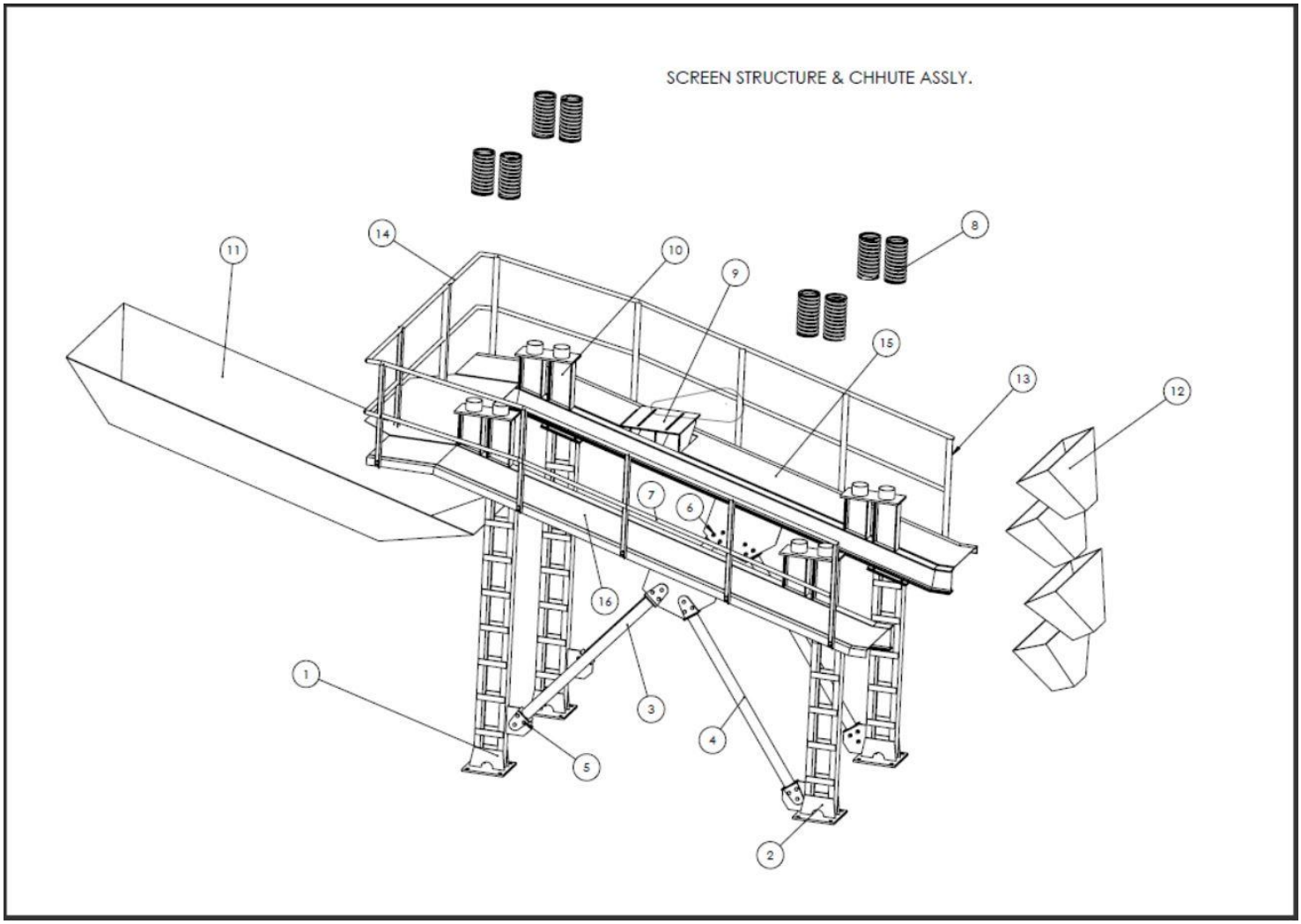
10-Screen Derive Assembly-SDA-10



10-Screen Drive Assembly-SDA-10

S.No.	Part No.	Part Name	Description	Qty.	Remark
1	SDA-A10-01.155	Motor	Std.	1	
2	SDA-A10-02.156	Motor Pulley	Std.	1	
3	SDA-A10-03.157	V-belt	As per size	3	
4	SDA-A10-04.158	Screen Pulley	Std.	1	
5	SDA-A10-05.159	Screen Pulley Key	Std.	2	
6	SDA-A10-06.160	Screen Shaft Pipe	Std.	1	
7	SDA-A10-07.161	Screen Shaft	Std.	1	
8	SDA-A10-08.162	Balance Weight Sleeve	Std.	2	
9	SDA-A10-09.163	Bearing Housing Cap	Std.	2	
10	SDA-A10-10.164	Bearing Housing cap Bolt	Hex-	4	
11	SDA-A10-11.165	Screen Bearing	Std. as per size	2	
12	SDA-A10-12.166	Bearing Housing	Std.	2	
13	SDA-A10-13.167	Housing Hex Bolt	Hex	10	
14	SDA-A10-14.168	Housing Hex Nut	Hex	10	
15	SDA-A10-15.169	Housing Round Plate	Std.16	2	
16	SDA-A10-16.170	Housing Round Plate Bolt	Hex	10	
17	SDA-A10-17.171	Housing Round Plate Nut	Hex	10	
18	SDA-A10-18.172	Motor Foundation bolt nut	Hex	4	

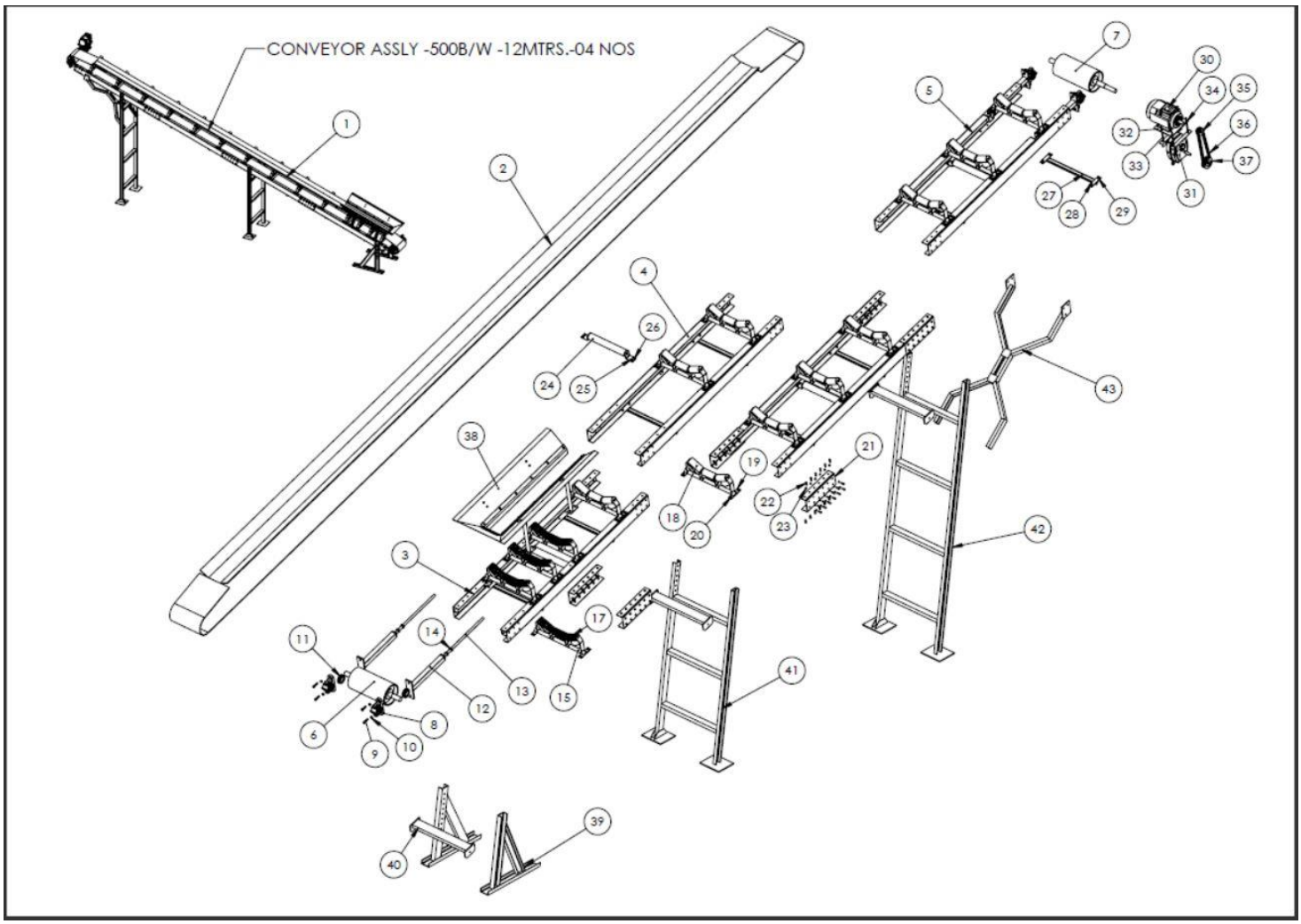
11-Screen Str. & Chhute Assembly-SSCA-A011



11-Screen Str. & Chhute Assembly-SSCA-A011

S.No.	Part No.	Part Name	Description	Qty.	Remark
1	SSCA-A011-01.173	Screen Leg Rear	Std.	2	
2	SSCA-A011-02.174	Screen Leg Front	Std.	2	
3	SSCA-A011-03.175	Leg Bracing Big	Std.	2	
4	SSCA-A011-04.176	Leg Bracing Small	Std.	2	
5	SSCA-A011-05.177	Bracing Hex Bolt	Hex	24	
6	SSCA-A011-06.178	Bracing Hex Nut	Hex	24	
7	SSCA-A011-07.179	Screen Str. Z-Frame	Std.	1	
8	SSCA-A011-08.180	Screen Spring	Std.	8	
9	SSCA-A011-09.181	Motor Stand	Std.	1	
10	SSCA-A011-10.182	Spring Holding BKT	Std.	4	
11	SSCA-A011-11.183	Bottom Chhute	Std.	1	
12	SSCA-A011-12.184	Output Chhute	Std.	4	
13	SSCA-A011-13.185	Side Railing	Std.	2	
14	SSCA-A011-14.186	Rear Railing	Std.	1	
15	SSCA-A011-15.187	Motor Side Platform	As per size	1	
16	SSCA-A011-16.188	Left Side Platform	As per Size	1	
17	SSCA-A011-17.189	Platform Hex Bolt	Hex	24	
18	SSCA-A011-18.190	Platform Hex Nut	Hex	24	
19	SSCA-A011-19.191	Railing Hex Bolt	Hex	24	Not shown in Dwg.
20	SSCA-A011-20.192	Railing Hex Nut	Hex	24	

12-Conveyor unit Assembly (500)-CUA500-12

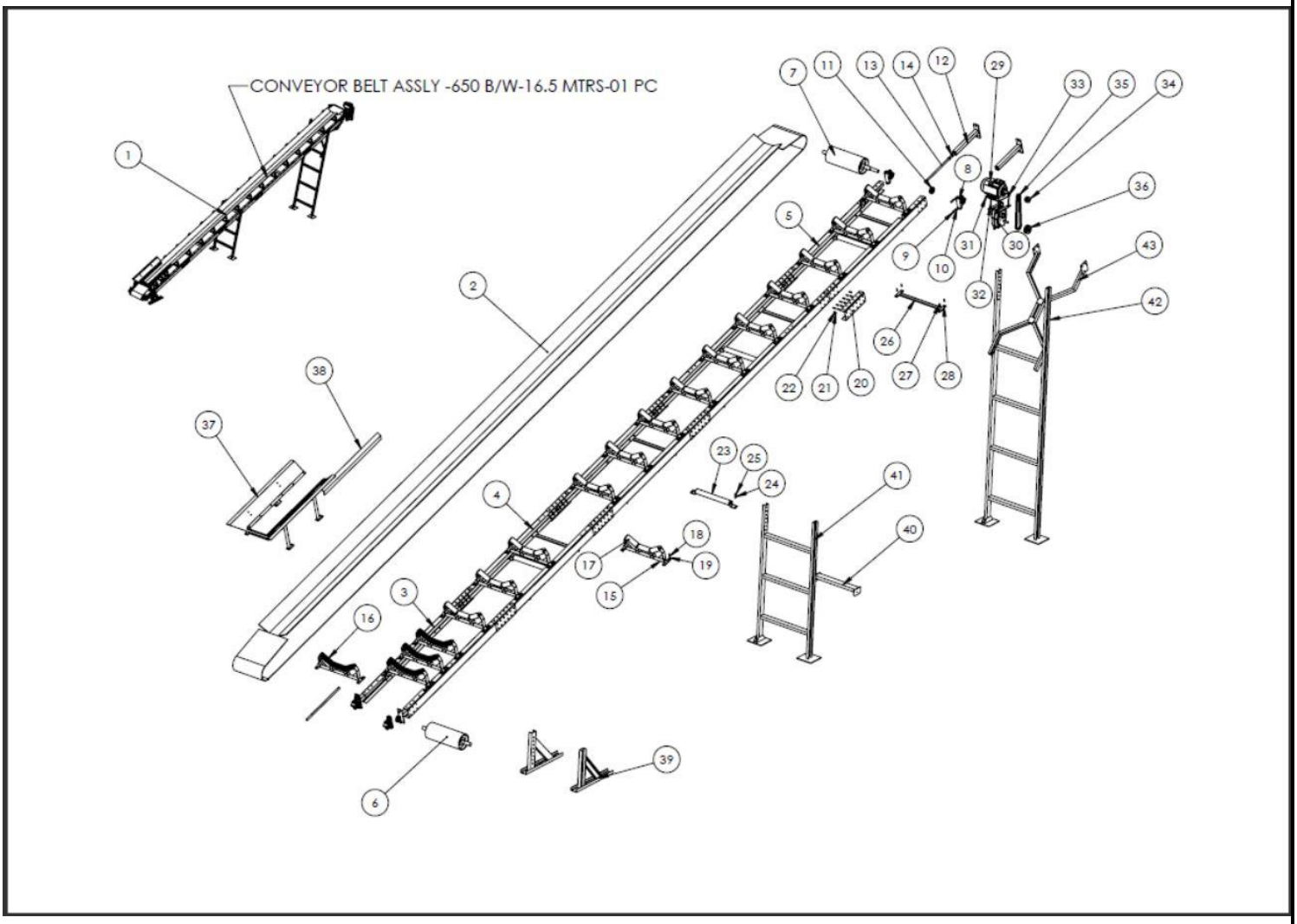


12-Conveyor unit Assembly (500)-CUA500-A12

S.No.	Part No.	Part Name	Description	Qty.	Remark
1	CUA500A12-01.193	Conveyor Assembly Comp.	500	4+1	
2	CUA500A12-02.194	Conveyor Belt	B/w	4+1	
3	CUA500A12-03.195	Tail conv. Panel	Std.	2	
4	CUA500A12-04.196	Middle Conv. Panel	Std.	4	
5	CUA500A12-05.197	Head Conv. Panel	Std.	2	
6	CUA500A12-06.198	Tail Drum Pulley	Std.	1	
7	CUA500A12-07.199	Head Drum Pulley	Std.	1	
8	CUA500A12-08.200	Plumber Block	Std.	4	
9	CUA500A12-09.201	Plumber Block Bolt	M16	8	
10	CUA500A12-10.201	Plumber Block Nut	M16	8	
11	CUA500A12-11.202	Bearing	Std.	4	
12	CUA500A12-12.203	Adjustor Stand	Std.	4	
13	CUA500A12-13.204	Adjusting Screw	Std.	4	
14	CUA500A12-14.205	Screw Nut	Std.	12	
15	CUA500A12-15.206	Carry Roller Stand	Std.	13	
16	CUA500A12-16.207	Skirt Board Rubber	Std.	3	
17	CUA500A12-17.208	Impact Roller	Std.	12	
18	CUA500A12-18.209	Carry Roller	Std.	27	
19	CUA500A12-19.210	Carry Roller Stand Bolt	M12	52	Not shown in Dwg.
20	CUA500A12-20.211	Carry Roller Stand Nut	M12	52	
21	CUA500A12-21.212	Conv. Panel Jointer	Std.	8	
22	CUA500A12-22.213	Jointer Bolt	M12	160	
23	CUA500A12-23.214	Jointer Nut	M12	160	
24	CUA500A12-24.215	Return Roller	Std.	4	
25	CUA500A12-25.216	Return Roller Bolt	M12	16	
26	CUA500A12-26.217	Return Roller Nut	M12	16	
27	CUA500A12-27.218	Width Angle Conv. Panel	Std.	6	
28	CUA500A12-28.219	Width Angle Bolt	M12	24	
29	CUA500A12-29.220	Width Angle Nut	M12	24	
30	CUA500A12-30.221	Motor	Std.	1	
31	CUA500A12-31.222	Gear Box	Std.	1	
32	CUA500A12-32.223	Motor Plate	Std.	1	
33	CUA500A12-33.224	Motor Plate Bolt	Std.	4	

S.No.	Part No.	Part Name	Description	Qty.	Remark
34	CUA500A12-34.225	Motor Plate Nut	Std.	8	
35	CUA500A12-35.226	Motor Pulley	-	1	
36	CUA500A12-36.227	V-Belt	As per size	2	
37	CUA500A12-37.228	Gear Box Pulley	-	1	
38	CUA500A12-38.229	Skirt Board	Std.	1	
39	CUA500A12-39.230	Tail Stand	Std.	2	
40	CUA500A12-40.231	Conv. Holding Chanel	Std.	3	
41	CUA500A12-41.232	Middle Stand	Std.	1	
42	CUA500A12-42.233	Head Stand	Std.	1	
43	CUA500A12-43.234	Head Stand Support	Std.	1	
44	CUA500A12-44.235	Stand Support Bolt Hex	-	4	
45	CUA500A12-45.236	Stand Support nut	-	4	
46	CUA500A12-46.237	Motor Foundation Bolt Nut	Hex-	4	
47.	AE-BJK-01.01	Cold Vulcanizing Solution	Std.	6	
48.	AE-BJK-01.02	Hardener for Vulc. Soln.	Std.	6	
					.

13-Conveyor unit Assembly (650)-CUA650-13



13-Conveyor unit Assembly (650)-CUA650-13

S.No.	Part No.	Part Name	Description	Qty.	Remark
1	CUA650-A13.01.238	Conveyor Assembly Comp.	Belt	1	
2	CUA650-A13.02.239	Conveyor Belt	B/W	1	
3	CUA650-A13.03.240	Tail conv. Panel	Std.	2	
4	CUA650-A13.04.241	Middle Conv. Panel	Std.	6	
5	CUA650-A13.05.242	Head Conv. Panel	Std.	2	
6	CUA650-A13.06.243	Tail Drum Pulley	Std.	1	
7	CUA650-A13.07.244	Head Drum Pulley	Std.	1	
8	CUA650-A13.08.245	Plumber Block	Std.	4	
9	CUA650-A13.09.246	Plumber Block Bolt	M16	8	
10	CUA650-A13.10.247	Plumber Block Nut	M16	8	
11	CUA650-A13.11.248	Bearing	Std.	4	
12	CUA650-A13.12.249	Adjustor Stand	Std.	4	
13	CUA650-A13.13.250	Adjusting Screw	Std.	4	
14	CUA650-A13.14.251	Screw Nut	Std.	12	
15	CUA650-A13.15.252	Carry Roller Stand	Std.	17	
16	CUA650-A13.16.253	Impact Roller	Std.	12	
17	CUA650-A13.17.254	Carry Roller	Std.	39	
18	CUA650-A13.18.255	Carry Roller Stand Bolt	M12	68	
19	CUA650-A13.19.256	Carry Roller Stand Nut	M12	68	Not shown in Dwg.
20	CUA650-A13.20.257	Conv. Panel Jointer	Std.	10	
21	CUA650-A13.21.258	Jointer Bolt	M12	200	
22	CUA650-A13.22.259	Jointer Nut	M12	200	
23	CUA650-A13.23.260	Return Roller	Std.	5	
24	CUA650-A13.24.261	Return Roller Bolt	M12	20	
25	CUA650-A13.25.262	Return Roller Nut	M12	20	
26	CUA650-A13.26.263	Width Angle Conv. Panel	Std.	8	
27	CUA650-A13.27.264	Width Angle Bolt	M12	32	
28	CUA650-A13.28.265	Width Angle Nut	M12	32	
29	CUA650-A13.29.266	Motor	As per rating	1	
30	CUA650-A13.30.267	Gear Box	20:1	1	
31	CUA650-A13.31.268	Motor Plate	Std.	1	
32	CUA650-A13.32.267	Motor Plate Bolt	Std.	4	
33	CUA650-A13.33.268	Motor Plate Nut	Std.	8	

S.No.	Part No.	Part Name	Description	Qty.	Remark
34	CUA650-A13.34.269	Motor Pulley	Std.	1	
35	CUA650-A13.35.270	V-Belt	As per Size	2	
36	CUA650-A13.36.271	Gear Box Pulley	Std.	1	
37	CUA650-A13.37.272	Skirt Board	Std.	1	
38	CUA650-A13.38.273	Skirt Board Rubber	Std.	3	
39	CUA650-A13.39.274	Tail Stand	Std.	2	
40	CUA650-A13.40.275	Conv. Holding Chanel	Std.	3	
41	CUA650-A13.41.276	Middle Stand	Std.	1	
42	CUA650-A13.42.277	Head Stand	Std.	1	
43	CUA650-A13.43.278	Head Stand Support	Std.	1	
44	CUA650-A13.44.279	Stand Support Bolt Hex	-	4	
45	CUA650-A13.45.280	Stand Support nut	-	4	
46	CUA650-A13.46.281	Motor Foundation Bolt Nut	Hex-	4	
47	AE-BJK-01.01	Cold Vulcanizing Solution	Std.	6	
48	AE-BJK-01.02	Hardener for Vulc. Soln.	Std.	6	
					Not shown in Dwg.

ABHISHEK ENTERPRISES

4

SPECIAL MAINTENANCE TOOL OF ABHISHEK ENTERPRISES MAKE STONE CRUSHER MODEL:-AE ST 201M CAPACITY:-20 TPH

ABHISHEK ENTERPRISES

H.O.:- PLOT NO.19-20, VILLAGE SIKRI, TEHSIL BALLABGRAH, FARIDABABD-121004 (HARYANA) INDIA

MFG. UNIT - :- PLOT NO.19-20, VILLAGE SIKRI, TEHSIL BALLABGRAH, FARIDABABD-121004 (HARYANA)

MOB: - +91-9911218421, +91-9911169984

SERVICE MAIL -:- Mehta_nareshkr@yahoo.co.in

Web: - www.aecrushers.com

To be supplied free of cost with each stone crusher plant capacity 20 TPH
Model –AE ST 201M

S.No	ITEMS	DESCRIPTION	QTY.
1	Spanner set	0.75”+1”+1.25”+1.5”+2”	
2	Grease gun	Standard (5 Kg)	
3	Oil Can case	Standard	
4	Electric tester	Standard	
5	Screw Driver	Standard	
6	Pliers	Standard	
7	Wire cutter	Standard	
8	Adjustable Wrench	Slide wrench and pipe wrench	

ABHISHEK ENTERPRISES
5

LUBRICATION CHARTS FOR COMPLETE EQUIPMENT
FOR
ABHISHEK ENTERPRISES MAKE STONE CRUSHER
MODEL:-AE ST 201M
CAPACITY:-20 TPH

ABHISHEK ENTERPRISES

H.O.:- PLOT NO.19-20, VILLAGE SIKRI, TEHSIL BALLABGRAH, FARIDABABD-121004 (HARYANA) INDIA

MFG. UNIT - :- PLOT NO.19-20, VILLAGE SIKRI, TEHSIL BALLABGRAH, FARIDABABD-121004 (HARYANA)

MOB: - +91-9911218421, +91-9911169984

SERVICE MAIL -:- Mehta_nareshkr@yahoo.co.in

Web: - www.aecrushers.com

RECOMMENDED LUBRICATION
Oil & Lubricant

1. Gear Box Oil No. 460/320 make
2. Engine Oil 20W40
3. Grease EP3 (General Purpose) make Shell

ABHISHEK ENTERPRISES MAKE: STONE CRUSHER A.E ST 201M
LUBRICATION CHART

S. NO.	PARTICULAR	DAILY	WEEKLY	MONTHLY (200HRS.)	1000 HRS.
1	Engine oil (Change)			✓	✓
2	Engine Check	Visually			
3	Engine Oil filling			✓	
4	Engine Oil (Change)			✓	✓
5	Greasing (bracket bearing)		✓		
6	Greasing Bearing (stock)		✓		
7	Clean jaw chamber	✓	✓		
8	Check the water radiator	✓		✓	
9	Check the coolant		✓	✓	

ABHISHEK ENTERPRISES MAKE: STONE CRUSHER A.E ST 201M
PERIODIC MAINTENANCE CHART

S. NO.	MAINTENANCE POINT	DAILY	50 HRS.	200 HRS.	500 HRS.	1000 HRS.
1	Fasteners checking	✓				
2	Electrical connection for engine panel		✓			
4	Discharge chute	✓				
6	Belt alignment		✓			
7	V-belt replacement				✓	
8	spring change				✓	
9	jaw plates					✓
10	V- Belt setting		✓			
11	Water of radiator			✓		
12	engine service				✓	
13	Engine filter cleaning		✓			
15	Pulleys replacement					✓