OPERATION AND MAINTENANCE MANUAL

TRUCK LOADING MACHINE
MODEL TLM : 1016 J

M/S THATTA CEMENT COMPANY
(P.O. NO. AWAITED DATED : 23.04.2014)

FLSMIDTH PRIVATE LIMITED

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TRUCK LOADER

CONTENTS

FLSmidth VENTOMATIC

MACHINE DATA SHEET

TRUCK LOADER

MACHINE DATA SHEET

P.O./L.C.NO. & DATE	TYPE	YEAR OF MANUFACTURE
AWAITED DATED: 23.04.2014	*TRUCK LOADING MACHINE MODEL TLM : 1016 J*	*2014*
POWER SUPPLY	**CONTROL VOLTAGE**	**G.A.DRG.NO.**
400 V AC	*220 VAC, 50 Hz*	*1-018-34884*
WORK ORDER NO.	**CLIENT CODE**	**CONTROL PANEL DRG. NO.**
K5101	*T 044*	*4-009-34910*

MACHINE SR.NO. 193-T044-TLM1016J-2014
MACHINE SR.NO. 194-T044-TLM1016J-2014

WHILE ORDERING SPARES PLEASE SPECIFY OUR MACHINE SR. NO., PART NO., PART CODE & PART NAME WITH REQUIRED QUANTITY

	Electrical	***Mechanical***
PREPARED BY :	***Sharad Sharma***	***Sharad Sharma***
CHECKED BY :	***Gaurav Sinha***	***Moni Singh***
APPROVED BY :		

FOREWORD

FOREWORD

This manual is intended to facilitate the user to get familiarised with the machine/plant and exploiting its application potential optionally.

The manual contains important notes on how to operate the plant/machine safely, correctly and economically. Observance of these instructions will help to avoid risks, reduce repair work and downtimes and increase the reliability and service life of the machine/plant.

The manual is to be supplemented with directives based on existing national regulations, on accident prevention and environmental protection.

The manual must always be kept at the place of installation of the machine/plant.

The manual is to be read and applied by everyone who is entrusted to work with/on the machine/plant, e.g.

- operator for setting up, remedying faults during operations, removing production waste, servicing, disposing of process materials.

- Maintenance personnel (servicing, inspection, repair) and/or

- Transport personnel

In addition to the guidelines given in the manual and other binding regulations on accident prevention applicable in the country of use and at the site, the recognised technical rules for safe and proper work are also to be observed.

SAFETY

SAFETY

Principle, "use as agreed"

The machine/equipment is constructed according to the standards of technology and the acknowledged safety rules. In spite of this there could be accidents & danger to operator's safety as well as negative effects due to environment of operation.

The machine may be used only in technically perfect condition, with due regard to safety rules and operating instructions! Factors reducing the safety to be eliminated immediately.

The machine/equipment is made exclusively for packing. A different use or use going beyond what is intended, is considered to be not agreed. Damages resulting from this cannot be attributed on the manufacturer. Deviation from agreed functions are at user risk only. Taking due note of the operating instructions and following the maintenance procedures are also a part of "use as agreed".

Organisational Measures

The operation and maintenance manuals must be kept always at the place of operation of the machine/equipment (in the toolbox or the place designated) ready at hand.

Besides the instructions in the manuals other statutory provisions/requirements as per prevailing laws for accident prevention and conservation must be followed.

Safety rules regarding handing of dangerous materials and supply/carrying of protective clothing must also be meticulously followed.

The staff ordered to work on the machine must read the operating instructions, especially the chapter safety hints before starting work. Unless certified as trained by qualified supervisor no worker to be allowed to work on the machine.

From time to time qualified supervisor is to check and satisfy himself that workers/staff are following the operating instructions and are aware of all safety procedures.

The staff not to wear slack clothes. There is risk of injury, e.g. through sticking or pulling in.

Where necessary as required by regulations, workers to wear protective clothing.
Take notice of all safety and danger/warning labels displayed on the machine.

Keep all safety and danger warnings on the machine completely readable.

If it is required to modify the machine regarding any aspect concerning safety, stop the machine and inform concerned supervisor immediately.

Don't make any changes, modifications and alterations on machine that can reduce the safety without approval of the supplier. This is also relevant for installation and adjustment of safety units, valves and welding at moving parts.

Spare parts used must conform to the technical specifications given by the manufacturer as mentioned in the manuals. This will also ensure that original spare parts are used.

Do not make any program changes (software) at programmable steering control systems.

Pneumatic pipe lines must be changed after the given periods of time, even if no safety relevant defects are perceptible.

Stick to the demanded periods or those periods mentioned in the operating instructions for repeated checks/inspections.

For carrying out maintenance operations suitable workshop equipment is absolutely necessary.

Workers are to be familiar with location and operation of the fire extinguishers, fire alarm and fire fighting procedures.

Choice of staff and qualification, fundamental duties.

The machine/equipment should be operated only by trained staff.

Use only skilled or qualified staff to ensure those employed on the machine are capable of performing range of duties for operating, preparing, maintaining, repairing.

Make sure that only authorised staff works on the machine.

Lay down the machine supervisor's responsibility. Supervisor should be vested with authority to reject safety-violating orders of third person.

Staff is to be skilled, qualified and trained. He may only work on the machine under the supervision of experienced supervisor.

Repairs/maintenance on electrical equipment of the machine to be done by qualified trained electrician or by skilled persons under the guideline of an electrical supervisor according to procedures laid down.

Safety hints about special phases of process

Do not carry out any work on which worker/supervisor has slightest doubt on safety.

Ensure that the machine works only in safe and functional condition.
Operate the machine only when all protection units and units for a safe operation, e.g. removable protection units, emergency shutdown units, sound absorbers, suction devices are available and ready to work.

Check the machine at least once per shift for externally noticeable damages and short comings. Any unexpected/abnormal occurrence (including the way of working) must be informed to the relevant officer/person immediately.

If there are malfunctions, stop the machine at once and switch off supplies.
Repair the fault as soon as possible.

Note the switch-on and off procedure, control signals according to the operating instructions.

Before switching on/setting the machine into operation make sure that there is no danger for anyone caused by the starting or movement of machine.

Do not switch off or remove dedusting and ventilation units when the machine is running.

Special works in the range of use

Follow the stipulated regulations, maintenance/inspection procedures/periodicity of the operating instructions as well as the information about replacement of parts/part equipment. These jobs are to be done only by qualified staff.

Inform the operating staff before carrying out special and maintenance works.

Take care of procedures for switch on and off according to the operating instructions and the hints for maintenance works during operation, product adaptation, modification or adjusting on the machine and its safety units.

If the machine is switched off for maintenance and repair works, it must be protected from being reconnected unexpectedly.
-lock main command units
-take off key and/or
-put up warning sign at the main switch.

Single parts and larger constructions must be fixed as lifts supports carefully when being exchanged, so that no danger can arise. Only suitable and technically perfect lifts and weight carrying devices with suitable carrying force may be used. Do not stay or work under hanging weights!

Only experienced people should be employed for lifting/erection of weights and instructing crane drivers. The supervisor must stay in visibility of the operator or keep vocal contact with him.

Use designed or other safe lifting devices and working platforms during installation above body height. Do not use machine parts as lifting devices. For erection/maintenance work at large height use crash Helmets.

Clean machines, especially connections and joins/testing before maintenance/repair from oil or cleaning products.

Check all lines for leaks/shortcomings, lose connections and damages after cleaning. Eliminate the leaks found at once.

Tighten unscrewed screw connections after maintenance and repair works.

If dismantling of safety units is necessary when preparing, maintaining and repairing, there must be re-assembly and checking of the safety units immediately after finishing the maintenance and repair.

Keep your environment clean by proper disposing of waste materials, auxiliary devices damaged components and rejected spare parts.

Hints at special kinds of danger

Electrical power :

Use only original fuses with prescribed rating. Switch off at once in case of faults in the electric power supply.

Work at the electric equipment or electrical drives may only be carried out by an qualified electrician under the supervision and control of an supervisor according to the electro-technical rules.

For machines or parts of the equipment, during inspection, maintenance or repair works, if required are to be switched off. These parts must be first checked then earthed and short-circuited and all neighbouring parts connected to power supply must be isolated.

Electric equipment of machines must be checked/inspected regularly, defects like loose links, burned cables must be eliminated at once.

While working at parts with high voltage, work with a second person, who can switched off the emergency-stop or the main switch in case of emergency.
Block the working area with a red-white safety chain and a warning sign.
Work only with proper insulation protection tools.

Welding and fire works :

Clean the machine and its surrounding from dust and inflammable materials before welding or burning. Cover rubber and PVC elements and take care of suitable air-conditioning (Danger of Explosion).

While working in small rooms and enclosed spaces, follow existing statutory provision.

Hydraulics, Pneumatics :

Only people with special knowledge and experience may work at pneumatics hydraulic elements.

All lines, hoses and fittings must be checked regularly for defects and externally noticeable damages. Repair damages without delay.

Make vacuum system elements and pressure lines (compressed air) safe before starting the repair according to the procedures in the manual.

Lay compressed air lines properly. Do not mix up the connections. Fittings, length and quality of the hose lines must meet the requirements as in lay out drawings.

Oils, Grease and other chemical substances :

Working with oil, grease and other chemical substances, follow the safety requirements specific to the substances being handled.

Take special care while working with hot materials
(Danger of burning and scalding.)

Loading of Machines/Apparatus
(Machines that often change working place)

When loading, use only lifts and load suspension devices with suitable weight carrying capacity.

Ensure that operator is trained & qualified, before entrusting him jobs for lifting.

Lift machines carefully according to the procedures laid down in operating instructions (fix points for weight-bearing elements etc.)

Use only suitable transport vehicles with suitable carrying capacity.

Provide the machine before or at once after finishing the loading with suitable supports/fasteners preventing unintentional change of position. Put up suitable warning sign.

Before Set into Use

- The operating instructions "Before Set Into Use" must be followed.
- The machine must be checked for visible failures.
- The machine may not be used with defect control signals.
- All are to stay clear of hanging loads.

Set Into Use

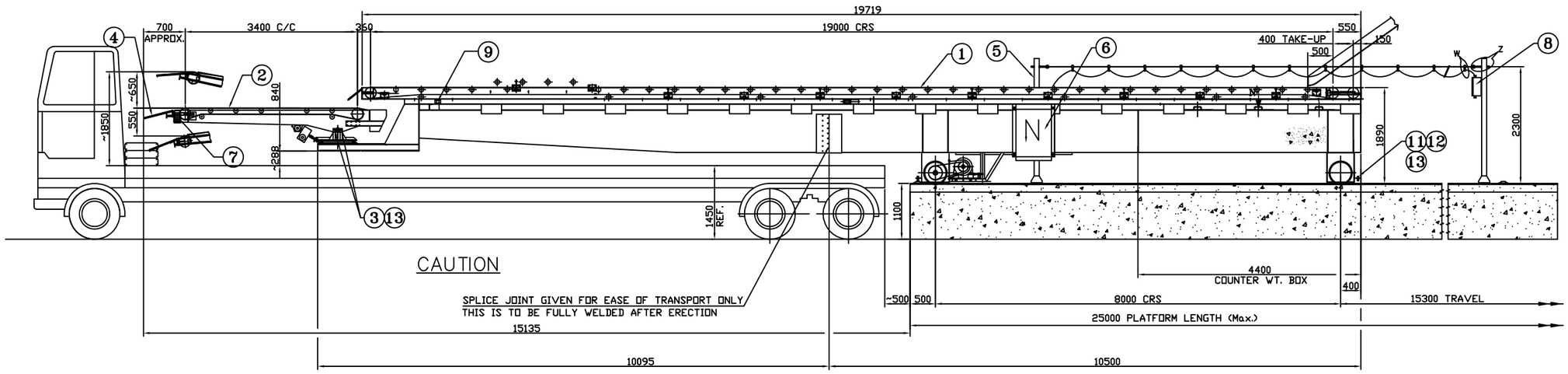
- Set into use according to the operating instructions.
- When the machine is working, do not leave it unattended.

Maintenance and Repairs

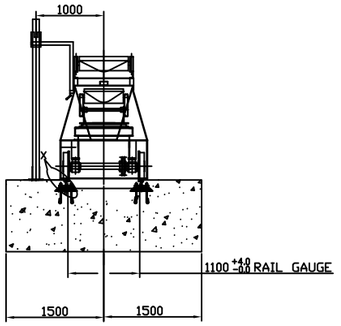
- For long life and maximum availability of machine it is of prime importance to follow the greasing and maintenance requirements as well as following the operating instructions.
- Make sure that when maintaining and repairing the main switches are off and prevented from being switched on again.
- When the machine is out of order, a warning sign must be put up and it must be prevented from unauthorised switching on.
- Repairs at the packing machine may only be done by skilled and expert staff.
- The safety elements must be installed again after the maintenance and repair works.

GENERAL ARRANGEMENT OF MACHINE

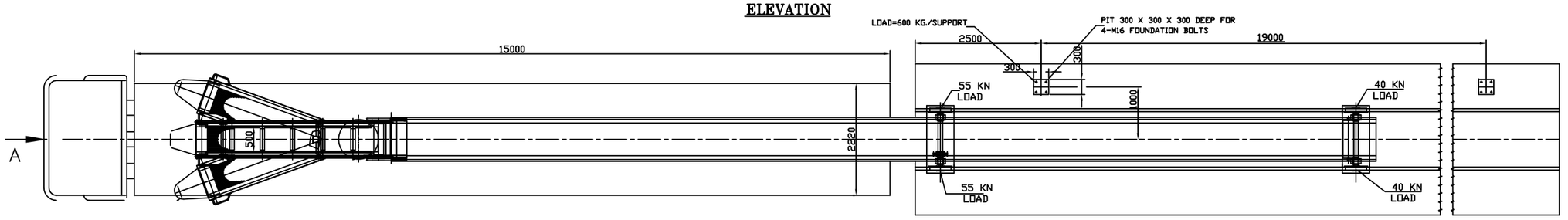
Rev	Date	Description	Drawn	Checked



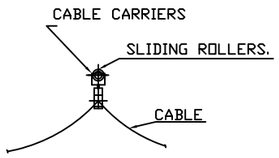
ELEVATION



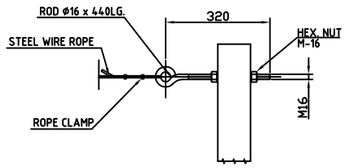
VIEW–A



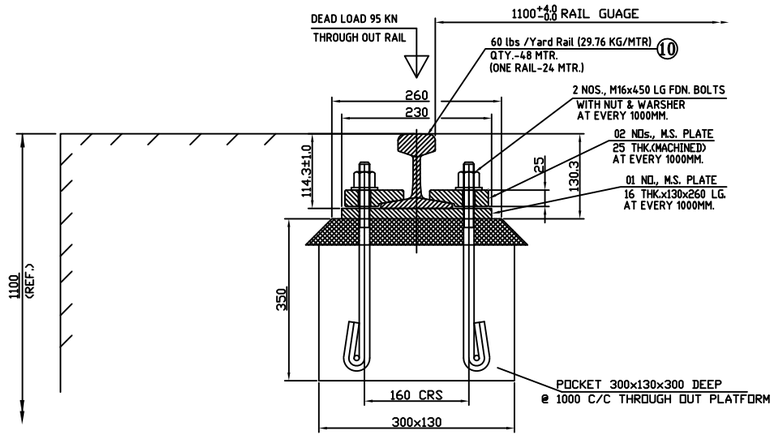
PLAN



ENLARGE VIEW–W



ENLARGE VIEW–Z



ENLARGE VIEW–X
CLIENT'S SCOPE

S.NO.	DESCRIPTION	QTY.	MATL.	REMARKS
13	PROXIMITY SWITCH	4		
12	PROXIMITY SWITCH SENSOR	2		
11	PROXIMITY SWITCH BRACKET	2		
10	RAIL & RAIL FIXING ARRANGEMENT			CLIENT'S SCOPE
9	EMERGENCY SWITCH	2		
8	JUNCTION BOX	1		
7	PUSH BUTTON BOX	2		
6	CONTROL PANEL	1		
5	CABLE FESTOONING ARRANGEMENT COMPLETE WITH CABLE	1 SET		
4	BAGGING BOARD	1		
3	PROXIMITY SWITCH MOUNTING BRACKET	1		
2	LOADING CONVEYOR	1		
1	FEED CONVEYOR	1		

PART LIST

TAG NO.

641TL1
641TL2

TECHNICAL SPECIFICATION	
EQUIPEMENT	TRUCK LOADER
MODEL	TLM 1016–J
MATERIAL HANDLED	CEMENT BAGS OF 50 K.G.
FILLED BAG SIZE	700 x 500 x 150 (APPROX.)
CAPACITTY	2400 BAGS/HOUR
LOADER BELT SPEED	1.25 M/Sec.
TRAVEL SPEED	0.14 M/Sec>
TRAVEL LENGTH	15.3 METER
GROSS WEIGHT	9 TONNES (WITHOUT COUNTER WT.)
TOTAL POWER REQUIRED	9.6 K.W.
COUNTER WEIGHT	6.5 TONNES (By Customer)
BELT DRIVE FOR FEED CONV.	DRUM MOTOR Ø216x750 LG
	2.2KW 1.25M/SEC
BELT FOR FEED CONVEYOR	650 WIDE,NY/NY,315/3 M–24
	COVER THK.2TOP/1.5 BOTTOM,PLAIN.TOP.
BELT DRIVE FOR LOADING CONV	DRUM MOTOR Ø216x600LG
	2.2KW 1.25M/SEC
BELT FOR LOADING CONVEYOR	500WIDE,NY/NY 315/3 M–24,
	COVER THK.2TOP/1.5 BOTTOM,ROUGH TOP.
DRIVE FOR TRAVELING ARGMT	GEARED BRAKE MOTOR 4 K.W. R137/11RPM, SEW EURODRIVE–MAKE
DRIVE FOR LUFFING ARGMT	MOTOR: 1.5 KWx1500RPM, 90L,
	G.BOX C050684,(EEL) WITH COUPLING
COUNTER WEIGHT FOR LOADING	0.3 TO 0.4 TONNES (By Customer)

DESCRIPTION	WEIGHT (Kg)	MATERIAL	FINISH
M/S THATTA CEMENT COMPANY LIMITED			
W.O. NO.- K5101			

Subject: GENERAL ARRANGEMENT OF TRUCK LOADING M/C MODEL-1016J

Date: 19.05.2014
Drawn: MONI SINGH
Checked: VISHNU GAUTAM
Approved: R.PANDIT

Drawing N° 1-018-34884 | Sheet 1/1 | Rev. 00 | Files: AUTOCAD dwg | Size: A1

Dimensions are in millimeters.
Tolerances must comply with ISO 2768-mK

Scale 1:40

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TECHINICAL SPECIFICATION

TRUCK LOADER

TECHNICAL SPECIFICATION

Equipment parameter

Client Name	**: THATTA CEMENT COMPANY**
P.O.No. & Dated	**: AWAITD DATED: 23.04.2014**
W.O.NO.	**: K5101**
Machine	**: Truck Loading Machine**
MODEL	**: 1016 J**
G.A.Drg. No.	**: 1-018-34884**
Conveying Material	: Cement Bags of 50 kg.
Bag Size	: 700 x 500 x150 (Approx)
Conveyor Belt Speed	: 1.25 m/sec.
Gross Weight	: 9 Tonnes (without courter wt.)
Travel Speed	: 0.14 m/sec.
Capacity	: 2400 Bags/Hour
Travel Length	: 15.3 Mtrs
Total Power Required	: 9.6 KW

Feed belt conveyor

Center Distance	: 19.0 Mtrs
Belt Drive Pulley	: Drive Pulley Dia 219 x 750 Lg., 2.2 KW
Belt	: 650 Wide, 315/3 Ply, Grade M24, 2 Top & 1.5 Bottom, (Nylon/ Nylon), Endless
Driven Pulley	: Dia 219 x 750 Lg. EP-501

TRUCK LOADER

Loading conveyor

Center Distance	: 3400 mm
Belt Drive Pulley	: Drive Pulley Dia 216 x 600 Lg. 2.2 KW
Driven Pulley	: Dia 219 x 600 Lg. EP-502
Belt	: 500 Wide, 315/3 Ply, 2 mm Top / 1.5 mm Bottom Grade M24, Rough Top Type (Nylon/ Nylon), Endless
Return Idler	: Roller Dia 89 x 600 Lg.
Carrying Idler	: Roller Dia 89 x 425 Lg.
Slewing Bearing	: 21/750.0 No. 230.20.0600.013

Luffing gear box

Gear Box	: 10:1 Ratio
Motor	: 1.5 KW/1500 RPM (SIEMENS Make)

Driven Arrangement

Motor with Gear Box	: 3.7 KW, Out Put RPM 10 (SEW Make)
Sprocket	: 19 Teeth 31.75 Pitch, Duplex
Sprocket	: Duplex Chain 31.75 Pitch, 80 Link

Body

Wheel Dia	: 420 mm

TRUCK LOADER

Electrical installation

Operating Voltage	: 400 V AC
Frequency	: 50 Hz
Control Voltage	: 220 V AC
Protection of Control Panel	: IP 55
Protection of Push Button	: IP 55
Protection of Limit Switches	: IP 55
Push buttons	: Forward - Reverse Raise - Lover On - Off With emergency stop push button on both side of Loading Conveyor
Safety arrangement	: Proximity Switches are provided for Trolley movement & Luffing movement .

Environmental protection

Generally it is not necessary to provide protective measures when using the truck loading for the transport of piece goods

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TRANSPORT & STORAGE

TRUCK LOADER

TRANSPORT AND STORAGE

During transport, attention has to be paid that the construction elements will arrive at the place of erection in a faultless way and without bucklings caused by inadequate holding device respectively by wrong posting in general, the truck loader is delivered divided in the following component parts :

(A) Feed Conveyor

Completely assembled with the drive mechanism for placing on the track.

(B) Loading Conveyor

Completely assembled with drive mechanism.

Storage

During the storage of construction elements, care has to be taken that they are not exposed to direct atmospheric influence. This are not exposed to direct atmospheric influence. This is particularly in the case of machine parts. As a rule, a transport and delivery time exceeding 6 months is considered as the time in which additional protection and preservation have if necessary to be provided.

ERECTION & COMMISSIONING

TRUCK LOADER

ERECTION & COMMISSIONING

Installation

Preparation of Site

Before the actual erection of the equipment is begun; a thorough inspection of the site is necessary. FLSmidth assumes no responsibility for site preparation. It is recommended that the site be cleared of all excess material to allow for free and easy movement by the erectors and equipment they are utilising. All foundation anchor bolts and other steel work embedded in concrete must be checked for cleanliness, of location and alignment.

Constant reference to general arrangement drawings and anchor bolts layout drawings and deligent use of surveyor transits etc, will ensure accuracy when the equipment is erected.

It is understood that, in the event of errors in location of embedded steel work or anchar bolts, they will be correctly positioned by the party or parties responsible before erection of the equipment proceeds.

Qualified workmen

This manual is intended as an aid for installation, operation and maintenance of FLSmidth equipment. It is further based on the assumption that only qualified workmen will perform the service work, utilising good workmanship and practices at all times.

Erection preparation

Correction of minor misfits and a reasonable amount of cutting and reaming are considered a part of erection. Any assembly error which prevents further assembly by moderate use of drift pairs, cutting or welding is to be reported in writing to FLSmidth.

FAILURE TO COMPLY WITH THIS PROCEDURE WILL RELIEVE FLSMIDTH OF ANY AND ALL LIABILITY IN CONNECTION WITH THE ERECTION AND OPERATION OF THE EQUIPMENT INSTALLATION PROCEDURE.

Supervisor must check all the dimensions given below before taking up the actual erection of the machine.

A. Distance between the centre line of rails provided the machine and the centre line of rails provided for the body.

TRUCK LOADER

B. The height of the platform from which the bags are feed to the feed conveyor must be of the same height.

Constant referral to general arrangement drawing and other connected drawings will ensure accuracy when the machine is placed.

Erection

The erection of the machine has to be carried out as per the steps illustrated below.

1. The body is to be placed on the rails. The Supervisor must ensure that all the four wheels are resting properly on the rails.

   The counter weight has to be filled in the body of Feed and Loading Conveyor. Counter weight must be in between 5 to 7 tons for feed & 0.3 to 0.4 tons for loading conveyor. Weight should be of M.S. grinding media or M.S. Scrap.

2. **FEED CONVEYOR ASSEMBLY** : Feed Conveyor boom is supplied in two portion. These two portion are to be fastened together & welded after proper assembly. Stringer is then kept above the body and fastened to it via bolt. Slewing ring is provided at the base of the Feed Conveyor. It must rest perfectly. Play should not be there.

   Geared Motor provides primary drive to the conveyor as shown in the drawing.

3. Movement of the unit up and down the rail track for reaching up to the truck is provided by the Gear Motor and chain arrangement provided on the front wheel of the body alongwith the Proximity switch for providing the maximum limit of the travel at the rear end.

4. Festooning arrangement is used to layout cables of the machine. This arrangement avoids elaborate cabling arrangement.

5. Central panel is mounted as per the drawing and all the electrical cable connections are done under the supervision of a electrical personnel who has thoroughly studied to various functions of the machine and having clear idea regarding the function of the machine.

6. Cable for electrical supply shall be provided on the supports as shown in the G.A. Drgs. Length of the cable shall be such that it can extend till the maximum distance of the loader.

7. Electrical connection are to be given under the supervision of electrical personnel. All the connections should be checked thoroughly before the trial start of the machine. The push button stations provided on either side of the loading conveyor stringer to be checked for the assigned function.

8. Luffing Gear Box is provided at the end of loading conveyor which provides upward and downward motion to loading conveyor. Slewing bearing provides motion of the loading conveyor on the horizontal axis.

TRUCK LOADER

Commissioning

Commissioning without material

1. Inspection of whether the erection has been done in accordance with above mentioned instructions.

2. Inspection of the bearing with regard to proper installation and oil filling, and if the gear casings are filled with oil up to be marked oil level (according to lubrication instructions).

3. Inspectioin of whether the operating voltage corresponds with the voltage indicated on the motor instruction plate.

4. Check the command buttons and the limit switches for correctness.

IMPORTANT

Check that the inbuilt brake of Trolley drive greared motor is adjusted in such a way that the Truck Loading Machine stope smoothly and not with a jerk. If the brake is tightened TOO MuCH than the TLM will stop with jerks and which may result in damage to the geared motor and its casing may break.

Verification of the belt run

Although the instalation has been checked during a trial run in the workshop it could be possible that belt does not run straight because of any influence during commissioning.

In case of longer centre distances some workers have to be positioned in sight or within call or with walkie talkies along the conveyor.

For the first start a short switch impulse should be given which starts the belt only for some meters, depending on the length of the entire installation.

In case of off centred run is noted, the correction is made at the off - track position in the conveying direction.

The belt run can be influenced by re-alignment of the tension or return drum as well as of the idlers. This correction is only possible during the run since the effects of the measure can only be seen during run.

TRUCK LOADER

If the off-track run already begins at the tension drum, the same has to be positioned correctly by loosening respectively tightening the lateral spindles.

The belt follows the reduction of tension i.e. it runs to the edge of the drum which went back by loosening the spindles.

When tightening the tensioning spindle it should be observed that the belt is only tensioned that for as it is necessary for slipless transport.

In the case of off-tracking of the belt begins in the course of the length, it has to be corrected by alignment of idlers. This is possible by fixing the rollers in the oblong holes. Thereby it is necessary to take as much care with lower strand as with the upper strand.

MAINTENANCE

TRUCK LOADER

MAINTENANCE

The following check points should be reviewed before initial operation of the equipment.

1. The structure of the feed conveyor body should firmly rest on the rails.
2. All bolts are properly torqued.
3. All belt drives and chain drives are given correct tension.
4. All reducers are filled with oil to required level.
5. All electric motors for correct direction of rotation.
6. Slewing rings are firmly screwed.
7. All bearings are lubricated.
8. All drum motors are checked for correct direction of rotation.
9. All the Proximity switches are correctly positioned and are in working condition.
10. Operation of interlocking controls and other safety controls are checked by qualified personnel who thoroughly understand the manner of operation and function of every item of the equipment.

STOP **DO NOT PUT HANDS, HEAD OR OTHER OBJECTS INTO THE OPENINGS UNLESS DRIVE UNIT IS ELECTRICALLY LOCKED OUT.**

STOP **DO NOT REMOVE OR BYPASS INTERLOCKING CONTROL OR SAFETY CONTROLS.**

SHOULD ANY ITEM BE FOUND TO MALFUNCTION, IT SHOULD BE REPLACED OR REPAIRED BEFORE THE EQUIPMENT IS PUT INTO SERVICE.

TRUCK LOADER

Initial operation

During this time, particular attention should be directed to the following : -

1. Loud of unusual sound.

2. Excess vibration.

3. Bearing over heating.

4. Drive unit over heating.

None of the above should be present if all installation instruction of this manual work followed.

Normal operation

Before start, make sure that there is no obstruction to free discharge of bags.

STOP **DO NOT MAKE ANY CHANGES IN BAG SIZE OR SPEED OF TRAVEL WITHOUT FIRST CONSULTING FLSmidth.**

Successful operation of any equipment is depended on the operator who handles the equipments.

Two operators are required for continuous and uniform functioning of the machine.

The operators should become familiar with all aspects of the construction and normal operating condition of the equipment. They should immediately recognize any abnormal situation or operating condition before serious damage occurs.

Once the truck loader is placed in full operation, preventive maintenance programme should begin. The preventive maintenance programme should include a regular inspection of the machine, set up on periodic basis and cover the following items.

Maintenance checklist

1. Check the conveyor belt for wear and belt run.
2. Check the pulley for correct rotation.
3. Check the drum motor for abnormal noise.
4. Check the idlers for proper rotation.
5. Check the power transmission belt for wear.

TRUCK LOADER

6. Check the power transmission chain and sprocket for wear.
7. Check the oil level in gear boxes.
8. Check the pinion for wear.
9. Check the fasteners of slewing rings.
10. Check the electric motors for proper functioning.

100 Hour preliminary inspection

Inspect belt run. If not perfect, rectify it as explained in article of belt run.

2000 Hour minor inspection

1. Check belt run. Also observe tension. Retension it by using tension spindle, if slackened.

2. Check the bearing of body shaft for wear.

3. Check the fasteners of the slewing ring. Replace the missing fasteners.

4. Check the power transmission belts and chains.

5. Correct all deficiencies before continuing operation.

8000 Hour (major) inspection

1. **Conveyor belt inspection**

    a) Check for wear.
    b) Check for belt run.
    c) Check for proper tension.

2. **Pulley inspection**

    a) Check for proper seating.
    b) Check for lubrication of bearings.

3. **Idler inspection**

    a) Check for proper seating.
    b) Check for proper rotation.

TRUCK LOADER

4. **Power transmission chain**

   a) Check for wear.
   b) Check sprockets for wear.

5. **Power transmission belt**

   a) Check for wear.
   b) Check for tension. Retension it, if necessary.

6. **Gear boxes and electric motors**

   See instructions given in the mainenance manual of manufacturer.

7. **Slewing ring**

   a) Check lubrication.
   b) Check for missing fasteners.

8. **Trolley shaft bearing**

   a) Check for wear
   b) Check for lubrication

20000 Hour (special) inspection

1. **Belt inspection**

   See item No. 1 of 8000 Hour (Major) Inspection.

2. **Pulley inspection**

   See iem No. 2 of 8000 Hour (Major) Inspection.

3. **Idler inspection**

   See item No. 3 of 8000 Hour (Major) Inspection.

4. **Power transmission chain**

   a) Apply lubricant to the elements of chain.
   b) Replace the sprockets if worn.

TRUCK LOADER

5. **Power transmission belt**

   a) Replace the belt if worn.

6. **Gear boxes and electric motors**

   See item No. 6 of 8000 Hour (Major) Inspection.

7. **Slewing ring**

   See item No. 7 of 8000 Hour (Major) Inspection.

LUBRICATION

TRUCK LOADER TLM-1016 J

LUBRICATION CHART OF TRUCK LOADER

LUBRICATION POINT	QTY. LITRE/KG.	LUBRICATION FREQUENCY			ISO	INDIAN OIL	HINDUSTAN PETROLEUM	BHARAT PETROLEUM
		FIRST CHANGE	SUBSEQUENT CHANGE	INSPECTION INTERVAL				
DRUM MOTOR TM220								
216 Dia/750 mm 216 Dia/600 mm	6.0 Ltr. 5.0 Ltr.	2000 h 2000 h	10000 h 10000 h			Equivalent of CASTROL ALPHA SP 150		
GEAR BOXES								
Luffing G.Box	2.0 Ltr.	2000 h	10000 h		VG 320	Servomesh SP 320	ENKOL 320	Anocan 320
Geared Motor	14 Ltr.	2000 h			VG 320	Servomesh SP 320	ENKOL 320	Anocan 320
DRIVE SPROCKET & CHAIN						Servogem 2	Lithon 2	MP Grease 2
SLEWING RING								
Bearing Raceway	0.5 Kg.		50 operating hour			Servogem EP2	Lithon EP 2	Bharat Lanthax EP Grease
Gear	0.2 Kg.		50 operating hour			Servogem CG 10		

ELECTRICAL

Rev	Date	Description	Drawn	Checked
1	22/07/14	GA has been changed for utilization of dead stock	Tufail	Gaurav

FLSmidth VENTOMATIC

customer	M/s Tatta Cement Company Limited
end user	M/s Tatta Cement Company Limited
plants	Karachi
country	Pakistan
work order	K5101
drawing number	4-009-34910
project	TRUCK LOADER (1016 J)
electric control board item	-

voltage supply	400V +/-5% 50Hz +/-2%
control voltage	24VDC
service voltage	-
installed power	9.6 kW
full-load current	21 A
short-circuit current	</= 10kA
supply max fault loop impedance	0.5 Ohm

Pos.	Q.ty	Description	Weight (Kg)	Material	Finish

Client: M/s THATTA CEMENT COMPANY LIMITED

Plant: KARACHI

Subject: GENERAL DETAIL FOR TRUCK LOADER (1016 J)

Ventomatic job: K5101

Date: 28.06.2013

Drawn: TUFAIL

Checked: GAURAV

Approved:

Drawing N° 4-009-34910

Sheet: 0

Rev.: 1

File: AUTOCAD dwg

Size: A3

Dimensions are in millimeters.

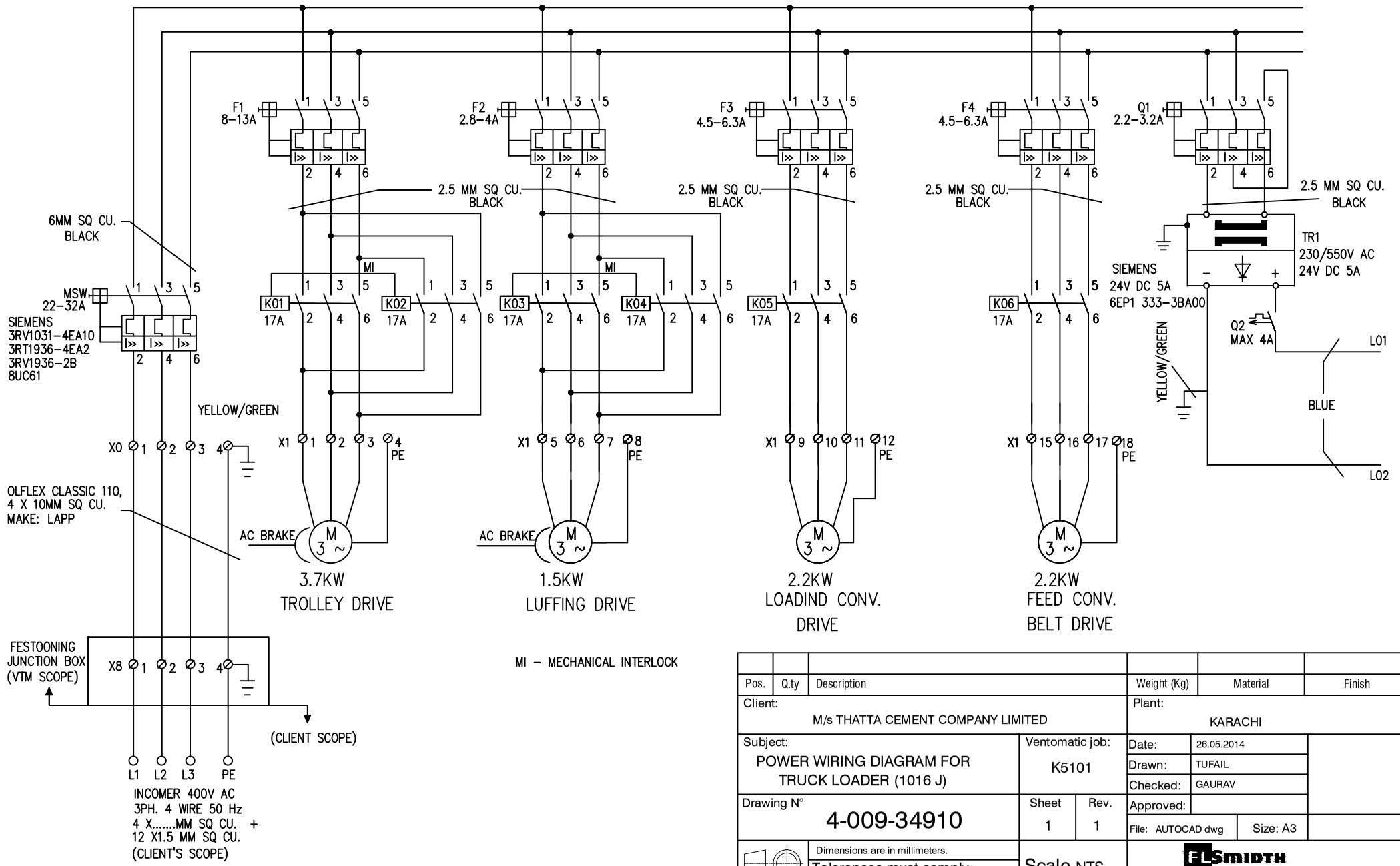
Tolerances must comply with UNI EN 22768-mK

Scale NTS

FLSmidth VENTOMATIC

ALL WIRES (POWER AND SIGNALS)
MUST BE NUMBERED

Rev	Date	Description	Drawn	Checked
1	22/07/14	GA has been changed for utilization of dead stock	Tufail	Gaurav



MI – MECHANICAL INTERLOCK

Pos.	Q.ty	Description	Weight (Kg)	Material	Finish

Client: M/s THATTA CEMENT COMPANY LIMITED

Plant: KARACHI

Subject: POWER WIRING DIAGRAM FOR TRUCK LOADER (1016 J)

Ventomatic job: K5101

Date: 26.05.2014
Drawn: TUFAIL
Checked: GAURAV
Approved:

Drawing N° 4-009-34910

Sheet 1 | Rev. 1

File: AUTOCAD dwg | Size: A3

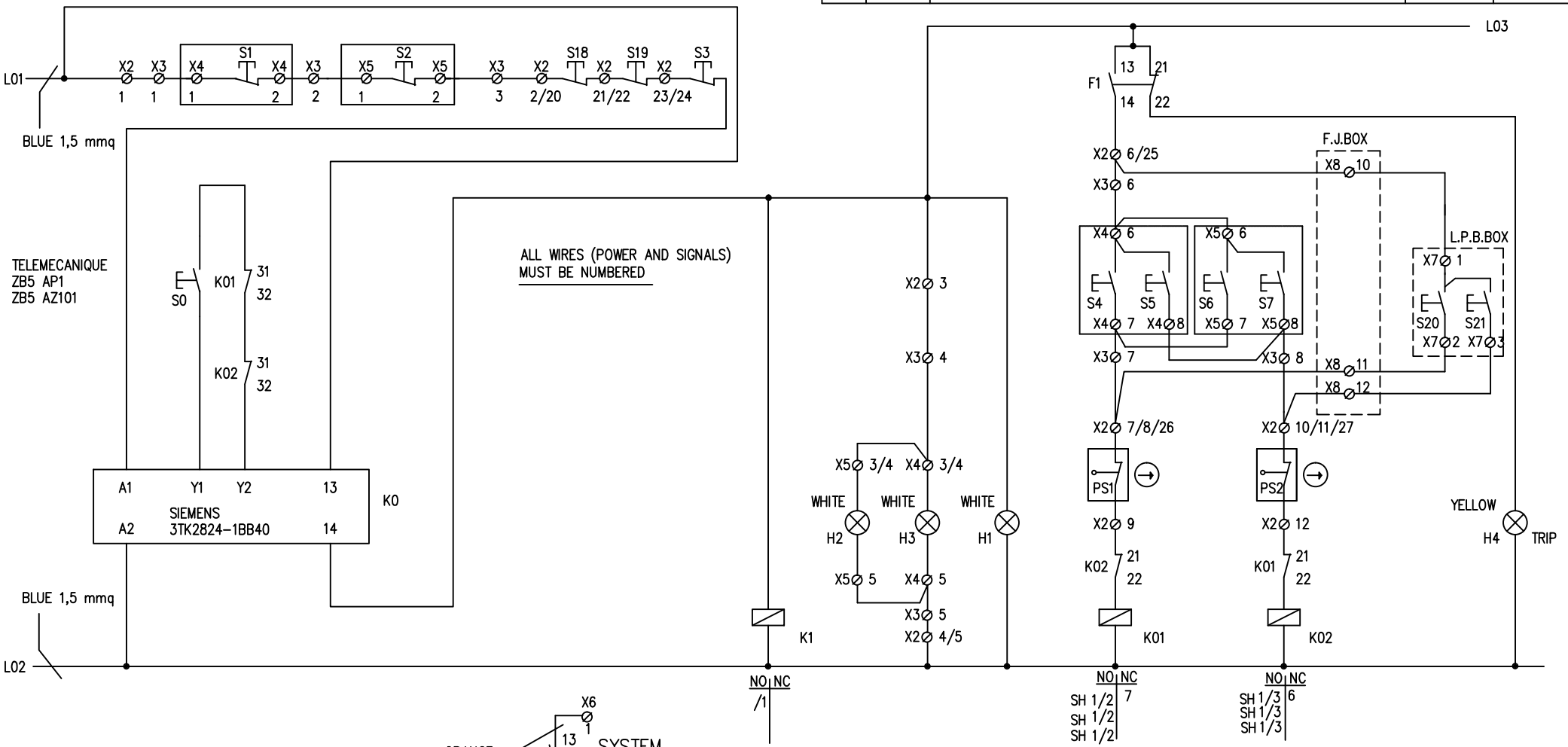
Dimensions are in millimeters.
Tolerances must comply with UNI EN 22768-mK

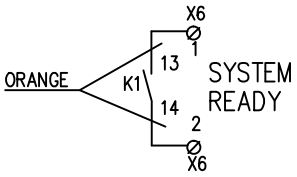
Scale NTS

FLSmidth VENTOMATIC

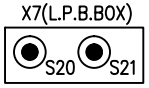
Rev	Date	Description	Drawn	Checked
1	22/07/14	GA has been changed for utilization of dead stock	Tufail	Gaurav

EMERGENCY PUSH-BUTTON WITH POSITIV OPENING
XB5AS844 AND XB5AS9445





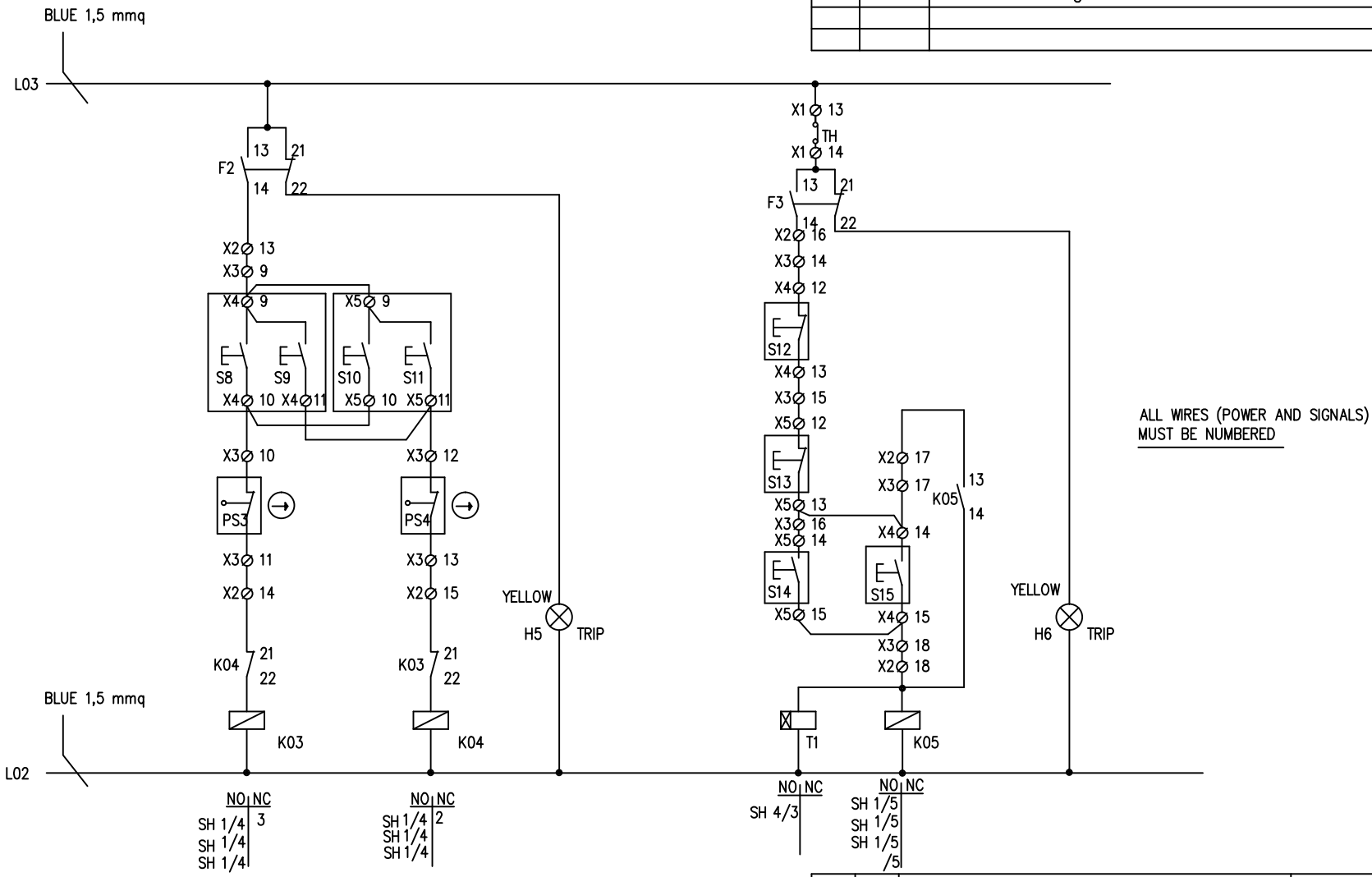
H1=CONTROL ON (ON PANEL) (RED)
H2,H3=CONTROL ON (ON L.P.B ON TLM) (RED)
S1,S2=E/STOP (ON P.B.S ON TLM) (RED)
S3=E/STOP (ON PANEL) (RED)
S18,S19=E/STOP ON FEED CONV. (RED WITH ENCLOSER)
S4,S5,S6,S7=P.BUTTON FOR TROLLEY DRIVE (GREEN)
PS1,PS2=PROXIMITY SWITCH (ON T.L.M)
H4=TROLLEY DRIVE TRIP (AMBER)
S0 = CONTROL ON
S20,S21=P.BUTTON FOR TROLLEY DRIVE (GREEN) ON L.P.B.BOX (X7)



Pos.	Q.ty	Description	Weight (Kg)	Material	Finish

Client: M/s THATTA CEMENT COMPANY LIMITED		Plant: KARACHI	
Subject: CONTROL CIRCUIT DIAGRAM FOR TRUCK LOADER (1016 J)	Ventomatic job: K5101	Date: 26.05.2014	
		Drawn: TUFAIL	
		Checked: GAURAV	
Drawing N° 4-009-34910	Sheet 2 / Rev. 1	Approved:	
		File: AUTOCAD dwg	Size: A3
Dimensions are in millimeters. Tolerances must comply with UNI EN 22768-mK	Scale NTS	FLSmidth VENTOMATIC	

Rev	Date	Description	Drawn	Checked
1	22/07/14	GA has been changed for utilization of dead stock	Tufail	Gaurav



ALL WIRES (POWER AND SIGNALS)
MUST BE NUMBERED

T1=TIMER ON DELAY (0–30 SEC)
S8,S9,S10,S11=LUFFING DRIVE UP/DOWN (ON P.B.S) (GREEN)
S12,S13,S14,S15=LOADING CONV. DRIVE ON/OFF (ON P.B/S) (RED ,RED ,GREEN ,GREEN RESPECTIVELY)
PS3,PS4=PROXIMITY SWITCH (ON T.L.M)
H5=LUFFING DRIVE TRIP (AMBER)
H6=LOADING CONV. DRIVE TRIP(AMBER)
TH=THERMOSTATE

Pos.	Q.ty	Description	Weight (Kg)	Material	Finish

Client: M/s THATTA CEMENT COMPANY LIMITED

Plant: KARACHI

Subject: CONTROL CIRCUIT DIAGRAM FOR TRUCK LOADER (1016 J)

Ventomatic job: K5101

Date: 26.05.2014
Drawn: TUFAIL
Checked: GAURAV
Approved:

Drawing N° 4-009-34910

Sheet 3 Rev. 1

File: AUTOCAD dwg Size: A3

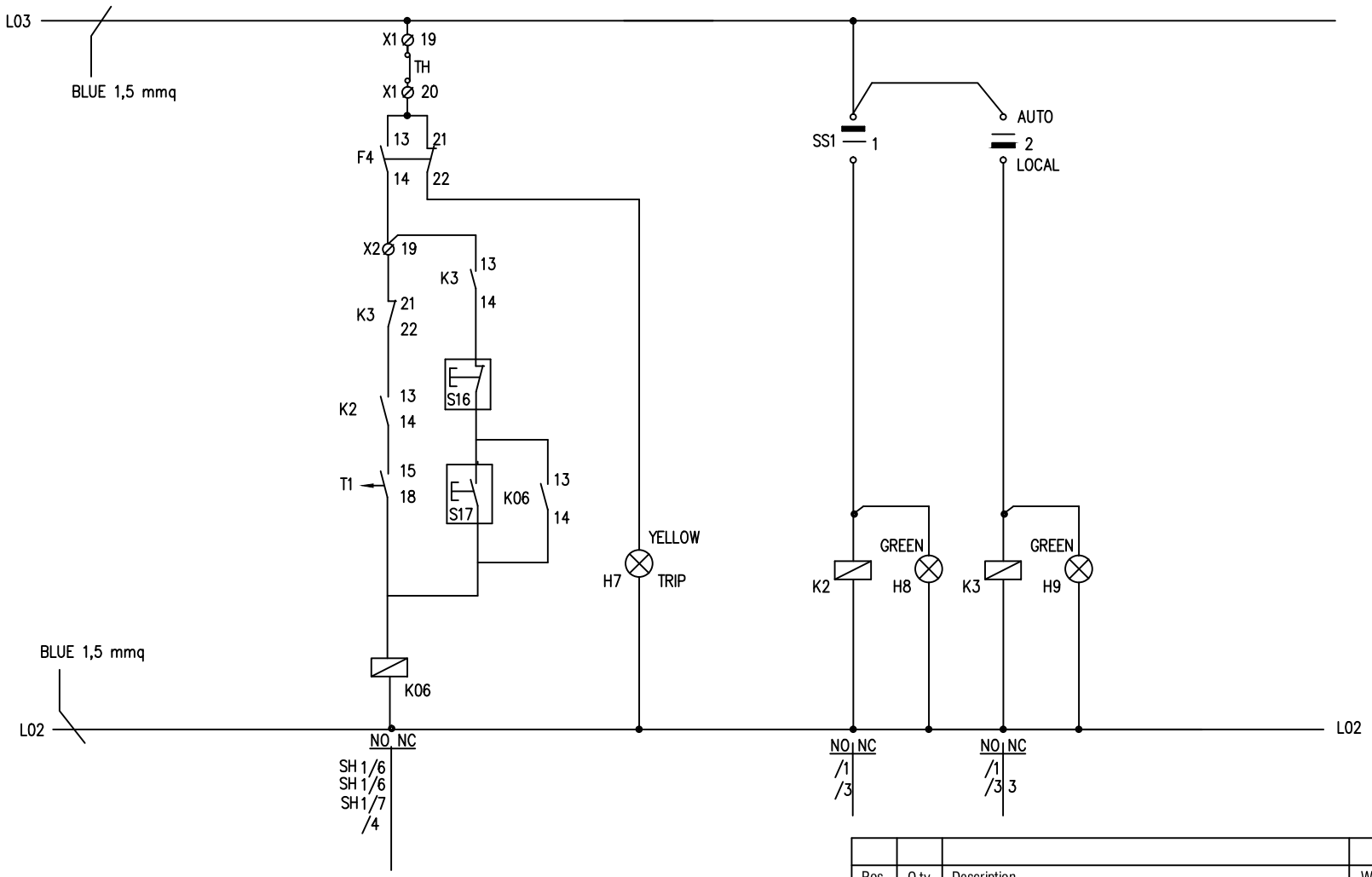
Dimensions are in millimeters.
Tolerances must comply with UNI EN 22768-mK

Scale NTS

FLSmidth VENTOMATIC

Rev	Date	Description	Drawn	Checked
1	22/07/14	GA has been changed for utilization of dead stock	Tufail	Gaurav

ALL WIRES (POWER AND SIGNALS)
MUST BE NUMBERED



SS1=SELECTOR SWITCH
S16,S17=LOCAL P.B FOR FEED CONVR. BELT ON/OFF(RED , GREEN)
H7=FEED CONV. BELT DRIVE TRIP (AMBER)
H8=AUTO MODE INDICATION (GREEN)
H9=LOCAL MODE INDICATION (GREEN)
TH=THERMOSTATE (JOKI)

Pos.	Q.ty	Description	Weight (Kg)	Material	Finish

Client: M/s THATTA CEMENT COMPANY LIMITED

Plant: KARACHI

Subject: CONTROL CIRCUIT DIAGRAM FOR TRUCK LOADER (1016 J)

Ventomatic job: K5101

Date: 26.05.2014
Drawn: TUFAIL
Checked: GAURAV
Approved:

Drawing N° 4-009-34910

Sheet 4 | Rev. 1

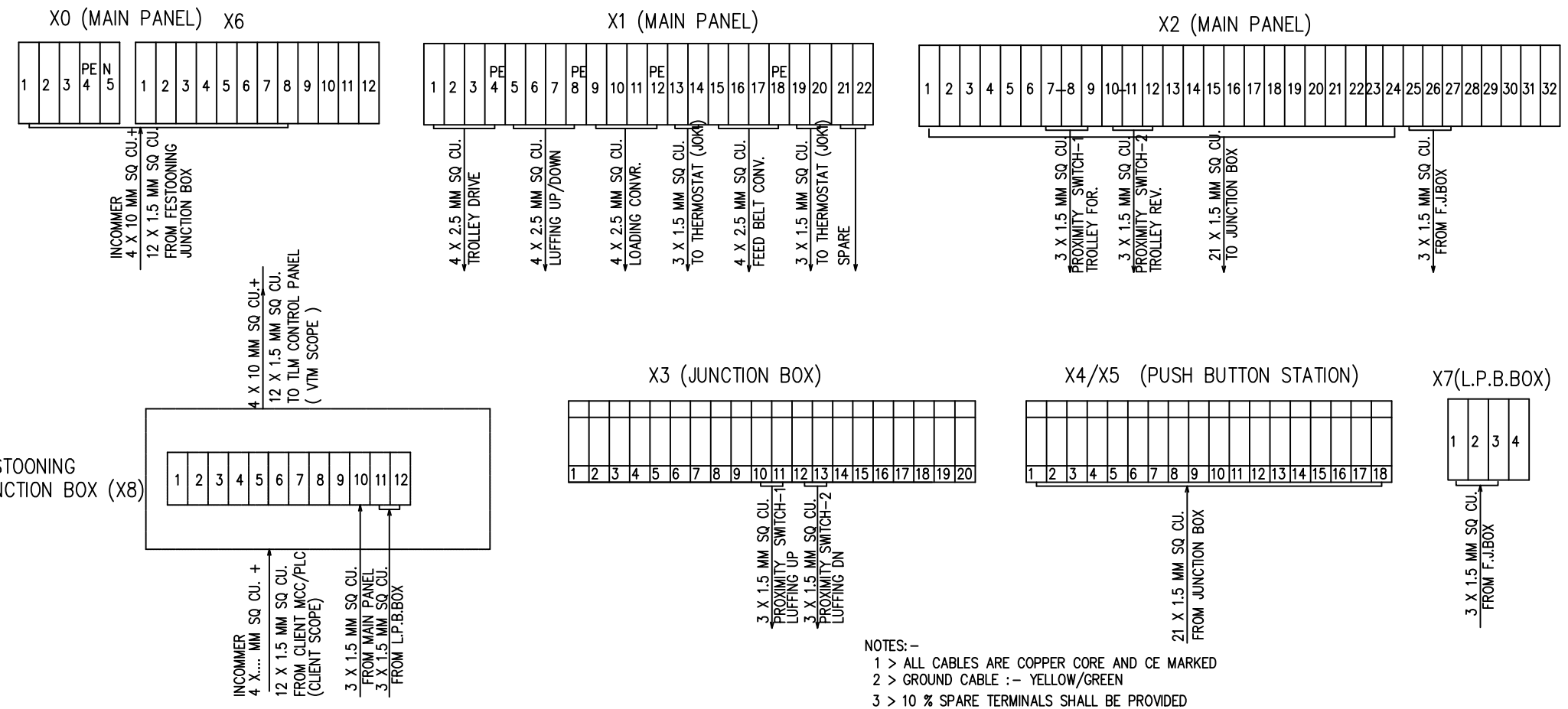
File: AUTOCAD dwg | Size: A3

Dimensions are in millimeters.
Tolerances must comply with UNI EN 22768-mK

Scale NTS

FLSmidth VENTOMATIC

Rev	Date	Description	Drawn	Checked
1	22/07/14	GA has been changed for utilization of dead stock	Tufail	Gaurav

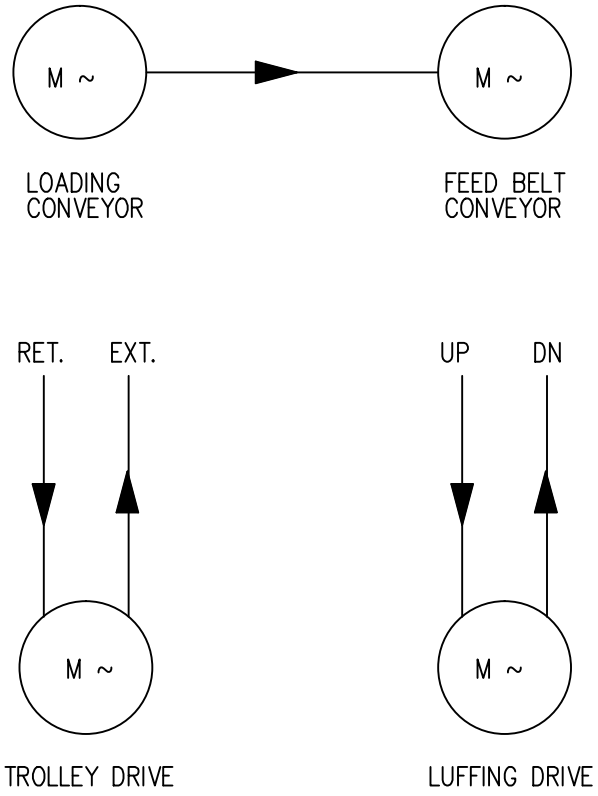


NOTES:–
1 > ALL CABLES ARE COPPER CORE AND CE MARKED
2 > GROUND CABLE :– YELLOW/GREEN
3 > 10 % SPARE TERMINALS SHALL BE PROVIDED
4 > ALL CABLES SHOULD HAVE PROPER CABLE LUGS

Pos.	Q.ty	Description	Weight (Kg)	Material	Finish

Client: M/s THATTA CEMENT COMPANY LIMITED		Plant: KARACHI	
Subject: TERMINALS DETAILS FOR TRUCK LOADER (1016 J)	Ventomatic job: K5101	Date: 26.05.2014	
		Drawn: TUFAIL	
		Checked: GAURAV	
Drawing N° 4-009-34910	Sheet 5 / Rev. 1	Approved:	
		File: AUTOCAD dwg	Size: A3
Dimensions are in millimeters. Tolerances must comply with UNI EN 22768-mK	Scale NTS	FLSmidth VENTOMATIC	

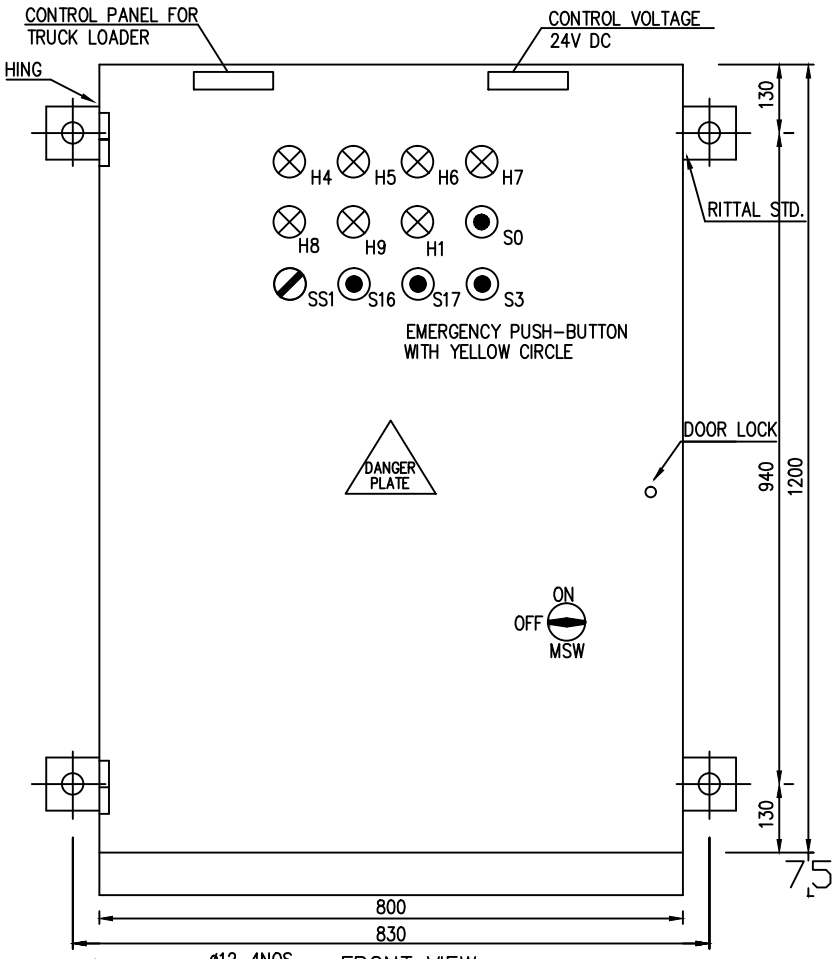
Rev	Date	Description	Drawn	Checked
1	22/07/14	GA has been changed for utilization of dead stock	Tufail	Gaurav



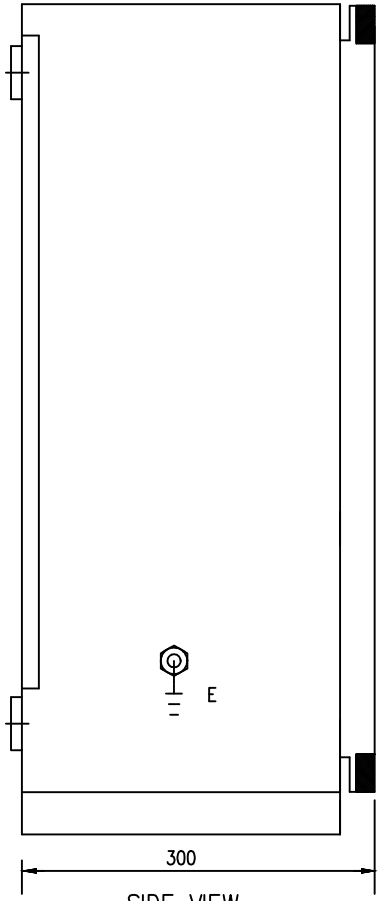
Pos.	Q.ty	Description	Weight (Kg)	Material	Finish

Client: M/s THATTA CEMENT COMPANY LIMITED		Plant: KARACHI	
Subject: BLOCK INTERLOCK DIAGRAM FOR TRUCK LOADER (1016 J)	Ventomatic job: K5101	Date: 26.05.2014	
		Drawn: TUFAIL	
		Checked: GAURAV	
Drawing N° 4-009-34910	Sheet 6 / Rev. 1	Approved:	
		File: AUTOCAD dwg	Size: A3
Dimensions are in millimeters. Tolerances must comply with UNI EN 22768-mK	Scale NTS	FLSmidth VENTOMATIC	

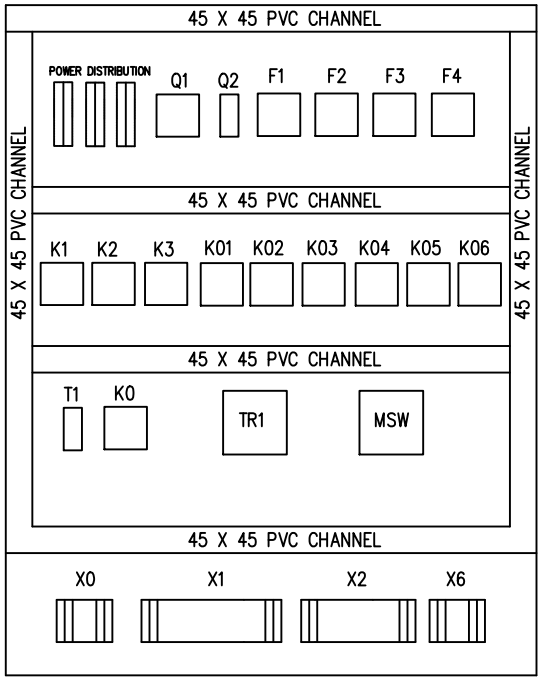
Rev	Date	Description	Drawn	Checked
1	22/07/14	GA has been changed for utilization of dead stock	Tufail	Gaurav



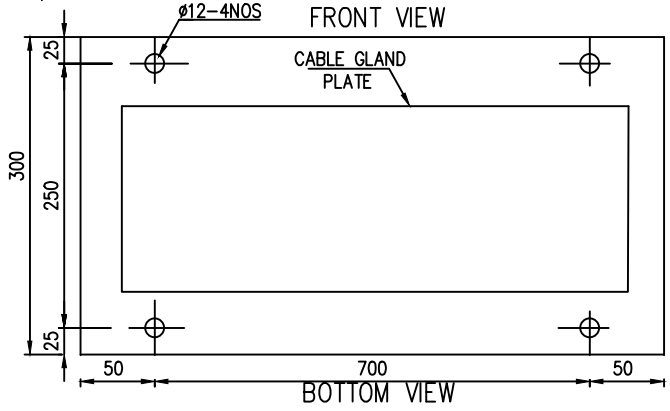
FRONT VIEW



SIDE VIEW



MOUNTING PLATE



BOTTOM VIEW

LEGENDS ON DOOR:-
S0= CONTROL ON
H1= CONTROL ON
H4= TROLLEY. DRIVE TRIP
H5= LUFFING DRIVE TRIP
H6= LOADING CONVR. TRIP
H7= FEED CONVR. TRIP
H8= AUTO MODE
H9= LOCAL MODE
S3= EMERGENCY STOP
S16= FEED CONV. STOP
S17= FEED CONV. START
SS1= SELECTOR SWITCH (AUTO/LOCAL)

NOTES:-
1 > PANEL BOX ENCLOSURE (RITTAL MAKE)
2 > ENCLOSURE IP 55
3 > PAINT:- POWDER COATED RAL 7035 OF IS:5 (RITTAL STD.)
4 > PANEL SHALL HAVE CROSS FERRULING
5 > ALL CABLE ENTRY ARE FROM BOTTOM
6 > 20 % SPARE TERMINALS SHALL BE PROVIDED
7 > PLATE LAYOUT CAN BE CHANGE FOR MODIFICATION
8 > TERMINAL STRIP SHOULD BE INCLINED AT A ANGLE WITH VERTICAL AXIS

Pos.	Q.ty	Description	Weight (Kg)	Material	Finish

Client: M/s THATTA CEMENT COMPANY LIMITED

Plant: KARACHI

Subject: CONTROL PANEL FOR TRUCK LOADER (1016 J)

Ventomatic job: K5101

Date: 26.05.2014
Drawn: TUFAIL
Checked: GAURAV
Approved:

Drawing N° 4-009-34910

Sheet 7 | Rev. 1

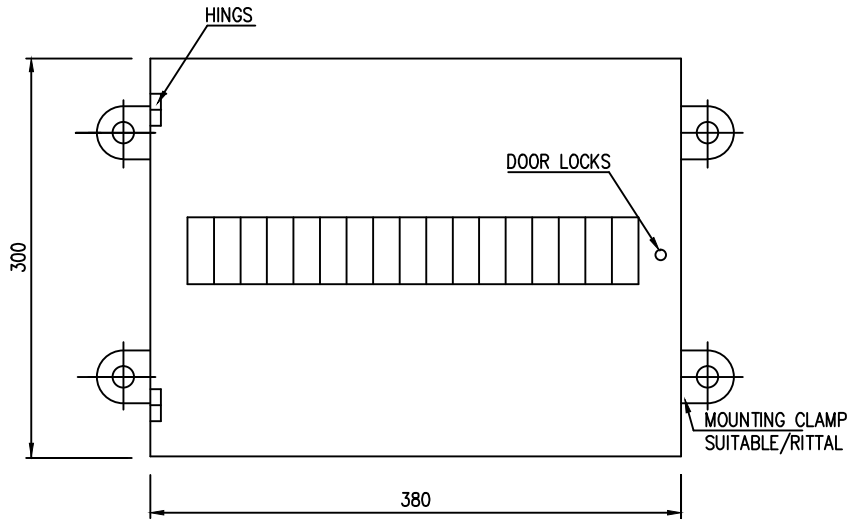
File: AUTOCAD dwg | Size: A3

Dimensions are in millimeters.
Tolerances must comply with UNI EN 22768-mK

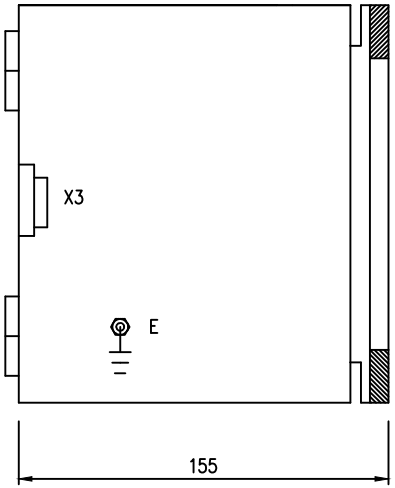
Scale NTS

FLSmidth VENTOMATIC

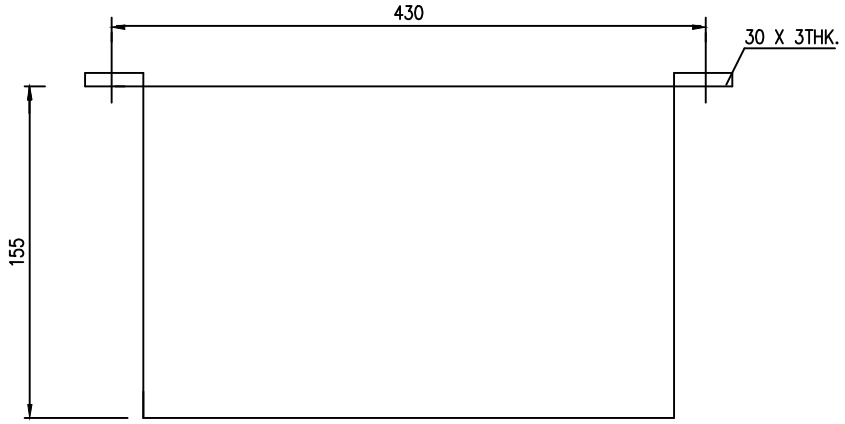
Rev	Date	Description	Drawn	Checked
1	22/07/14	GA has been changed for utilization of dead stock	Tufail	Gaurav



FRONT VIEW



SIDE VIEW



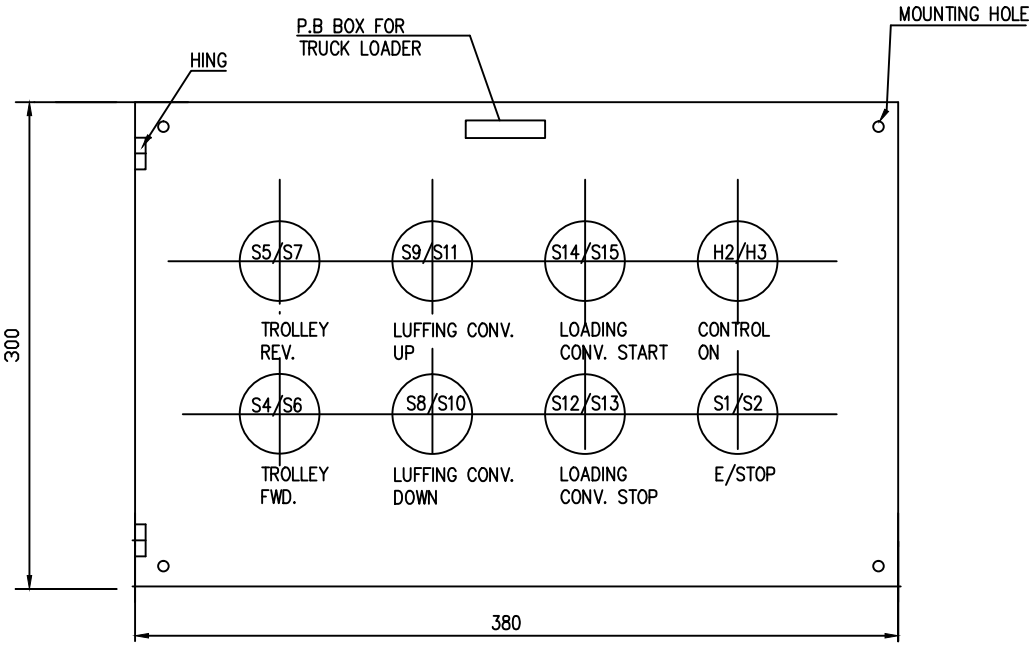
TOP/BOTTOM VIEW

NOTES:–
1 > JUNCTION BOX ENCLOSURE (RITTAL MAKE)
2 > ENCLOSURE IP 55
3 > PAINT:– POWDER COATED RAL 7035 OF IS:5 (RITTAL STD.)
4 > CABLE ENTRY SHOULD BE FROM TOP AS WELL AS BOTTOM
5 > 20 % SPARE TERMINALS SHALL BE PROVIDED

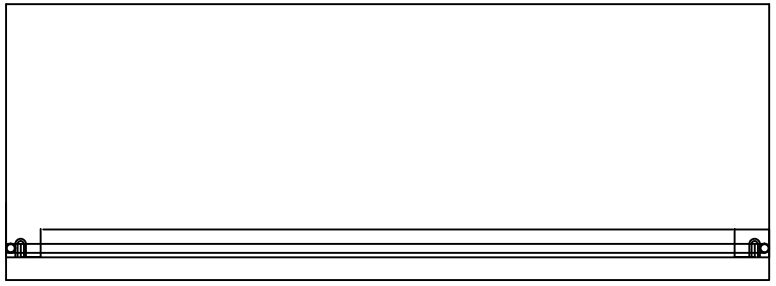
Pos.	Q.ty	Description	Weight (Kg)	Material	Finish

Client: M/s THATTA CEMENT COMPANY LIMITED		Plant: KARACHI	
Subject: JUNCTION BOX FOR TRUCK LOADER (1016 J)	Ventomatic job: K5101	Date:	26.05.2014
		Drawn:	TUFAIL
		Checked:	GAURAV
Drawing N° 4-009-34910	Sheet 8 / Rev. 1	Approved:	
		File: AUTOCAD dwg	Size: A3
Dimensions are in millimeters. Tolerances must comply with UNI EN 22768-mK	Scale NTS	FLSmidth VENTOMATIC	

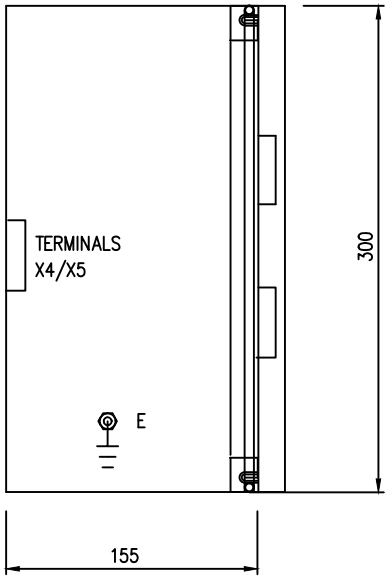
Rev	Date	Description	Drawn	Checked
1	22/07/14	GA has been changed for utilization of dead stock	Tufail	Gaurav



FRONT VIEW



BOTTOM VIEW



SIDE VIEW

NOTES:–
1 > PUSH BUTTON BOX ENCLOSURE (RITTAL MAKE)
2 > ENCLOSURE IP 55
3 > PAINT:– POWDER COATED RAL 7035 OF IS:5 (RITTAL STD.)
4 > CABLE ENTRY SHOULD BE FROM BOTTOM
5 > QTY. 2 NOS
6 > 20 % SPARE TERMINALS SHALL BE PROVIDED

Pos.	Q.ty	Description	Weight (Kg)	Material	Finish

Client: M/s THATTA CEMENT COMPANY LIMITED		Plant: KARACHI	
Subject: PUSH BUTTON STATION FOR TRUCK LOADER (1016 J)	Ventomatic job: K5101	Date: 26.05.2014	
		Drawn: TUFAIL	
		Checked: GAURAV	
Drawing N° 4-009-34910	Sheet 9 / Rev. 1	Approved:	
		File: AUTOCAD dwg	Size: A3
Dimensions are in millimeters. Tolerances must comply with UNI EN 22768-mK	Scale NTS	FLSmidth VENTOMATIC	

Rev	Date	Description	Drawn	Checked
1	22/07/14	GA has been changed for utilization of dead stock	Tufail	Gaurav

LIST OF CABLE CUSTOMER SUPPLY

CABLE TYPE	STARTING FROM	TARGET DESTINATION	DESCRIPTION
4 X....MM SQ CU.	CLIENT MCC/PLC	FESTOONING JUNCTION BOX	FESTOONING CABLE
12 X 1.5MM SQ CU.	CLIENT MCC/PLC	FESTOONING JUNCTION BOX	FESTOONING CABLE

Pos.	Q.ty	Description	Weight (Kg)	Material	Finish

Client: M/s THATTA CEMENT COMPANY LIMITED

Plant: KARACHI

Subject: LIST OF CABLE TRUCK LOADER (1016 J)

Ventomatic job: K5101

Date: 26.05.2014

Drawn: TUFAIL

Checked: GAURAV

Approved:

Drawing N° 4-009-34910

Sheet: 10

Rev.: 1

File: AUTOCAD dwg

Size: A3

Dimensions are in millimeters.

Tolerances must comply with UNI EN 22768-mK

Scale NTS

FLSmidth VENTOMATIC

FLSmidth VENTOMATIC	BILL OF MATERIAL/PART LIST		Sheet 1 of 3
Drg.No. : 4-009-34910 **Rev :** 1 **Code No.:** 919094528-1	**Machine :** TRUCK LOADER 1016J **Sub.Assy.:** Control Panel	**Client :** M/s Thatta Cement Company Limited **W.O.NO. :** K5101	34910

S.No.	Description	Qty.	Make	Designation	Commercial code
01.	MPCB 22-32A	01	Siemens	MSW	3RV1031-4EA10 3RT1936-4EA2 3RV1936-2B 8UC61
02.	Motor Protection Circuit Breaker 3VU13 with 1NO+1NC Auxiliary Contact Block Range 2.2-3.2A	01	Siemens	Q1	3VU13401NH00
03.	Safety Relay	01	Siemens	K0	3TK2824-1BB40
04.	Power supply 230-500V AC / 24V DC 5A	01	Siemens	TR1	6EP1 333-3BA00
05.	LED Type Indicating Lamp Dia 22.5 (Yellow) 24V DC	04	Telemecanique	H4,H5,H6,H7	XB7EV05BPN
06.	LED Type Indicating Lamp Dia 22.5 (White) 24V DC	03	Telemecanique	H1,H2,H3	XB7EV01BPN
07.	LED Type Indicating Lamp Dia 22.5 (Green) 24V DC	02	Telemecanique	H8,H9	XB7EV03BPN
08.	MCB SP, 4 A 10 KA	01	Siemens	Q2	5SX41047RC
09.	Timer On Delay 24 V DC (0-30 Sec.)	01	Siemens	T1	3RP15 25
10.	Selector Switch 6 A, 2 Pole	01	Salzer	SS1	61026SAB
11.	Power Contactor 17A with Mechanical Interlock 1NO+2NC, Coil Voltage 24V DC	02 Sets	Siemens	K01,K02, K03,K04	3RT10 25-1BB4
12.	Power Contactor 17 A with (2NO+2NC) Coil Voltage 24V DC	02	Siemens	K05,K06	3RT10 25-1BB4

PREPARED BY: Tufail Ahmed **CHECKED BY :** Gaurav Sinha	**APPROVED BY :**

FLSmidth VENTOMATIC	BILL OF MATERIAL/PART LIST		Sheet 2 of 3
Drg.No. : 4-009-34910 **Rev :** 1 **Code No.:** 919094528-1	**Machine :** TRUCK LOADER 1016J **Sub.Assy.:** Control Panel	**Client :** M/s Thatta Cement Company Limited **W.O.NO. :** K5101	34910

S.No.	Description	Qty.	Make	Designation	Commercial code
13.	Aux. Contactor 4 A (3NO+1NC)/ (2NO+2NC) Coil Voltage 24V DC	03	Siemens	K1,K2,K3	3RH11 31-1BB4/ 3RH11 22-1BB4
14.	Motor Protection ckt breaker with single-phase protection. Range 2.8-4A 4.5-6.3A 8-13A	01 02 01	Siemens	F2 F3,F4 F1	3RV1021-1EA10 3RV1901-19 3RV1021-1GA10 3RV1901-19 3RV1021-1JA10
15.	Emergency Stop Push Button Mushroom Head Stay Put Type, Key to release, NC, Dia 22.5, Colour Red	03	Telemecanique	S1,S2,S3	XB5AS9445N
16.	Booted Type Start Push Button 1NO, Dia 22.5 (Green)	11	Telemecanique	S4-S11,S14, S15,S17	XB5AP31N
17.	Booted Type Stop Push Button 1NC, Dia 22.5 (Red)	03	Telemecanique	S12,S13, S16	XB5AP42N
18.	Push Button Station (X4,X5)	02	Rittal	X4,X5	AE 1030
19.	Single Decker Terminal	-	Phoenix	X0-X2, X4-X6	UIK35, UK5N, UK10N
20.	Double Decker Terminal	-	Phoenix	X3	UDK4
21.	All Power & Control Cables **CE Marked** + 24V DC -**Blue** - 0 V- **Blue** Potential free **- Orange** Ground Cable (**Yellow/Green**) Power Cable (**Black**)	-	Lapp		

PREPARED BY: Tufail Ahmed **CHECKED BY :** Gaurav Sinha	**APPROVED BY :**

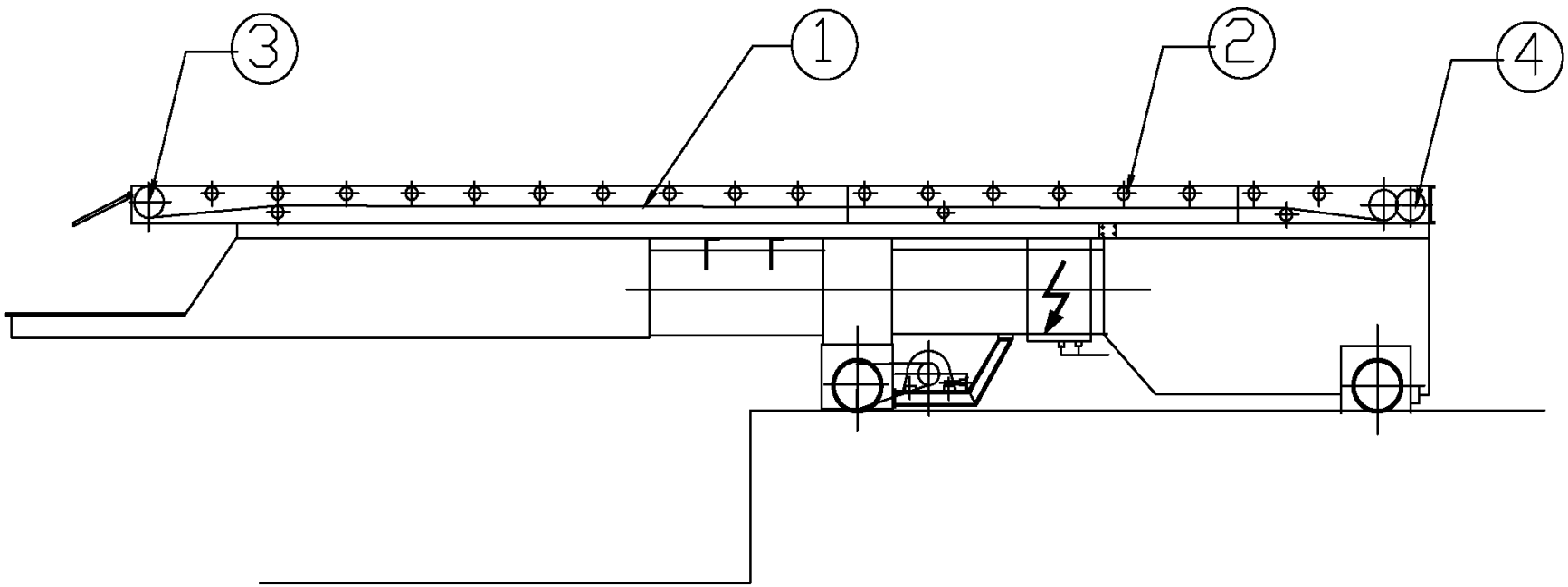
FLSmidth VENTOMATIC	BILL OF MATERIAL/PART LIST		Sheet 3 of 3
Drg.No. : 4-009-34910 **Rev :** 1 **Code No.:** 919094528-1	**Machine :** TRUCK LOADER 1016J **Sub.Assy.:** Control Panel	**Client :** M/s Thatta Cement Company Limited **W.O.NO. :** K5101	34910

S.No.	Description	Qty.	Make	Designation	Commercial code
22.	Junction Box (X3)	01	Rittal	X3	AE 1030
23.*	Proximity Switch Inductive Type 12-24V DC NC, M30	04	Telemecanique	PS1-PS4	XS230BLPBL2 (619150111)
24.	PANEL ENCLOSURE (ELECTRICAL CABINET)	01	Rittal	--	AE 1280
25.	Booted Type Start Push Button 1NO, Dia 22.5 (White)	01	Telemecanique	S0	XB5AP1
26.*	Emergency Stop Push Button Mushroom Head Dia 22.5, Stay put Type NC, Red with Enclosure	02	Telemecanique	S18,S19	XB5AS542+ XALK01 (619070021)
27.	Power Distribution Terminal	06	Wago		284
28.*	L.P.B.Box Size 150 mm X 150mm X 120 mm, Make: Rittal, with 2 nos. Green Push Button NO contact Make: Telemecanique	01	-	X7	919094192

PREPARED BY: Tufail Ahmed **CHECKED BY :** Gaurav Sinha	**APPROVED BY :**

FLSmidth VENTOMATIC

SPARE PARTS



FLSmidth VENTOMATIC

TITLE

G.A OF FEED CONVEYOR

DRG. NO. 4-018-33090

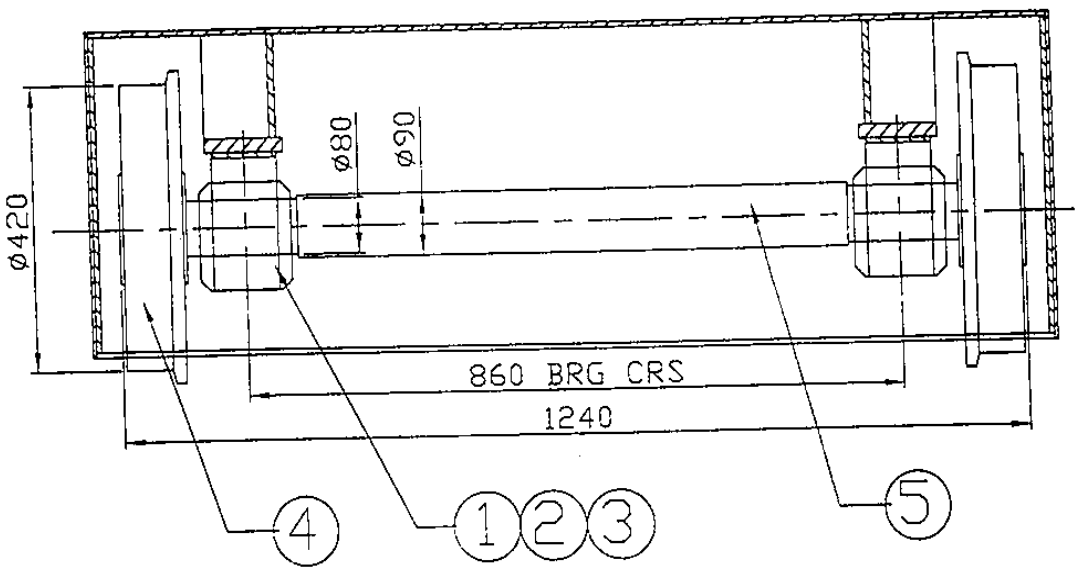
FLSmidth VENTOMATIC	SPARE PART LIST TRUCK LOADING M/C MODEL TLM-1016 J	DRG. NO. 4-018-33090 GROUP - Feed Conveyor

PART NO.	PART CODE	SUB. ASSY.	PART NAME	A
1	519010046	1.3	Belt 650 Wide, 315/3 Ply, 2mm Top, 1.5 mm Bottom, Cover Grade M24, N/N, Endless Length 39000, Plain Top	1
2	919050051-2	1.46	Rollers Dia 89x750 Lg. ER-300	45
3	919050039-3	1.1	Pulley Dia 219x750 Lg.	1
4	619090027	1.2	Drum Motor D216 220 M X 750 Lg.	1
5	919190752-1	1.7	Discharge Board Assy.	1

A = installed qty.

Client: **M/S THATTA CEMENT COMPANY**

Dated: 29. Aug. 2014



FLSmidth VENTOMATIC	TITEL	NON DRIVE WHEEL ASSEMBLY
	DRG. NO.	4-018-3271

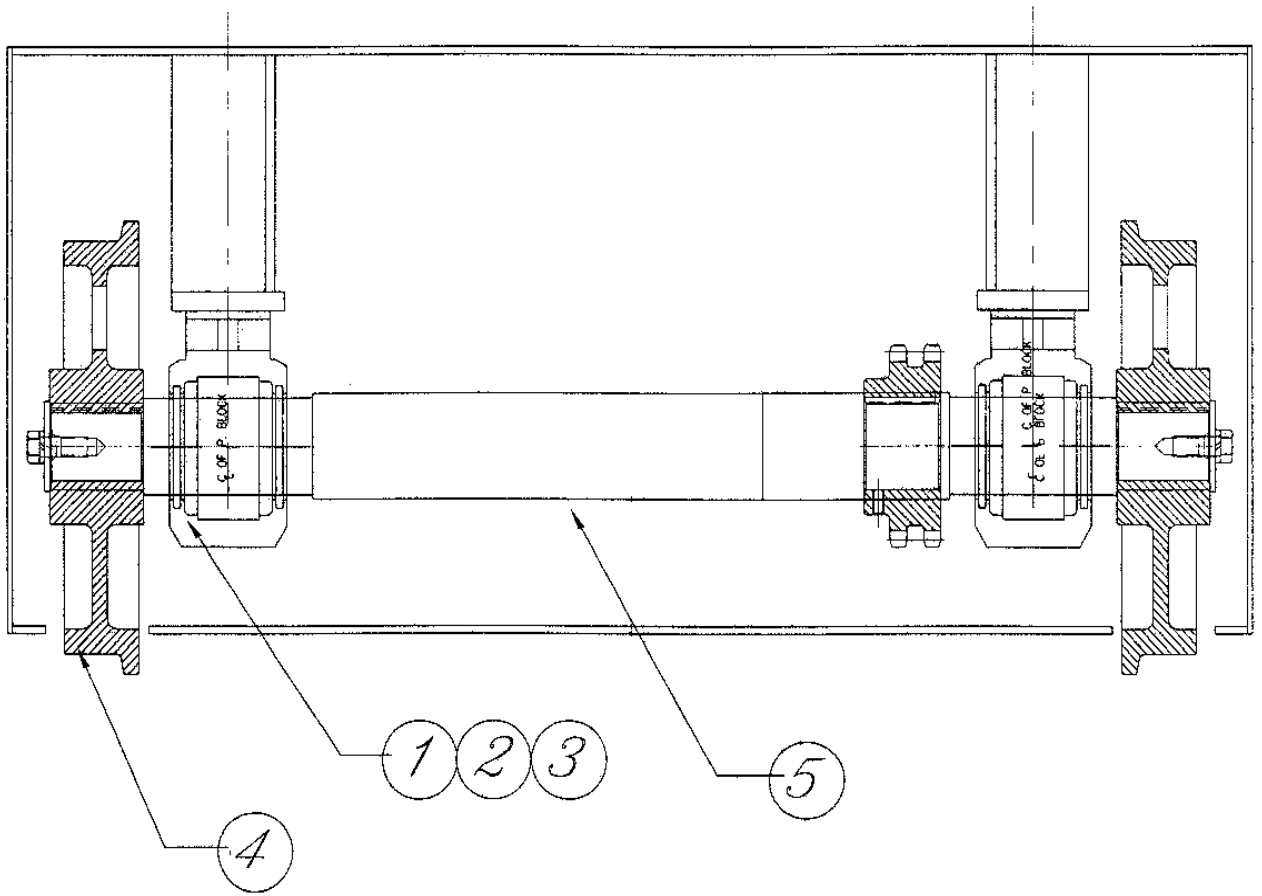
FLSmidth VENTOMATIC	SPARE PART LIST TRUCK LOADING M/C MODEL TLM-1016 J	DRG. NO. 4-018-3271 GROUP –Wheel Set with Rear Body for Feed Conveyor

PART NO.	PART CODE	SUB. ASSY.	PART NAME	A
1	119140043	1.28.4	Plummer Block SNA 518 TC	2
2	119140048	1.28.19	Spherical Roller Bearing Dia 80 No. 22218 CCK/W33	2
3	119140131	1.28.21	Locating Ring FRB 12.5/160	2
4	919080319-9	1.28.6	Wheel Dia 420	2
5	119140050	1.28.20	Bearing Sleave H318	2

A = installed qty.

Client: **M/S THATTA CEMENT COMPANY**

Dated: 29. Aug. 2014



FLSmidth VENTOMATIC

TITLE	DRIVE WHEEL ASSY.
DRG.NO.	4-018-14103

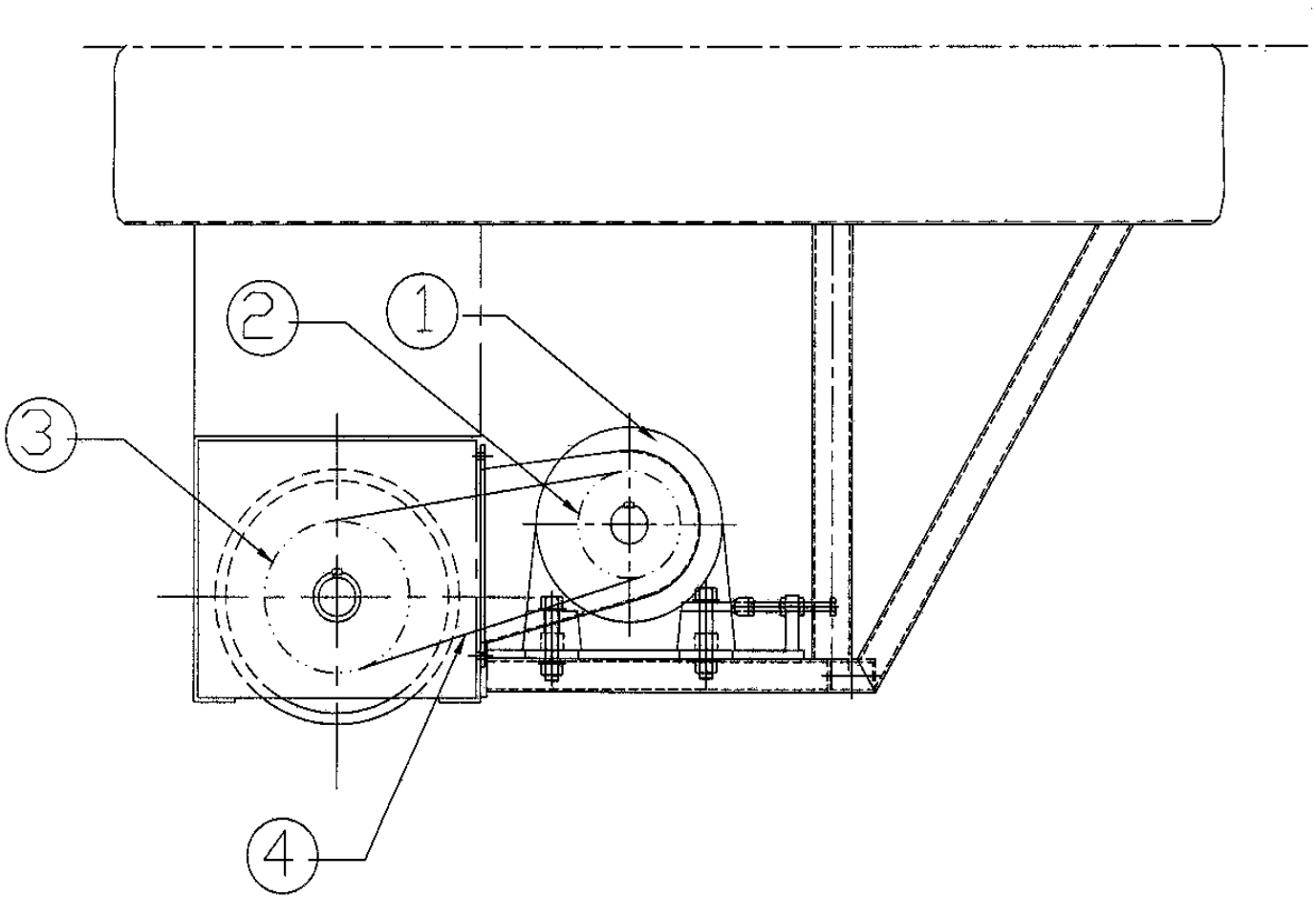
FLSmidth VENTOMATIC	SPARE PART LIST TRUCK LOADING M/C MODEL TLM-1016 J	DRG. NO. 1-018-14103 GROUP -Drive Wheel Assembly

PART NO.	PART CODE	SUB. ASSY.	PART NAME	A
1	119140085	1.23.4	Plummer Block SNA 522 TC	2
2	119140459 119140083	1.23.23 1.23.25	Spherical Roller Bearing Dia 80 No. 22222 EK/W33+H322 (Sleeve)	2
3	119140152	1.23.24	Locating Ring FRB 13.5/200	2
4	919190037-4	1.23.12	Wheel Dia 420	2
5	919190269-1	1.23.5	Drive Shaft	1

A = installed qty.

Client: M/S THATTA CEMENT COMPANY

Dated: 29. Aug. 2014



FLSmidth VENTOMATIC

TITLE
DRIVE ARRANGEMENT

DRG. NO. 4-018-33091

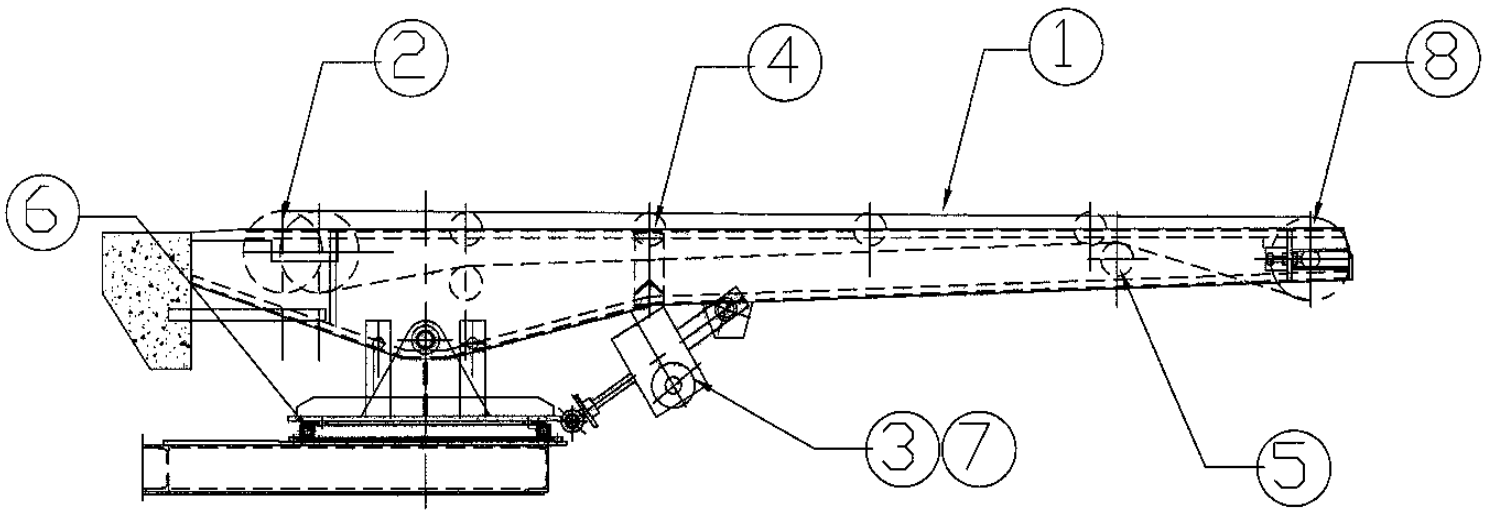
FLSmidth VENTOMATIC	SPARE PART LIST TRUCK LOADING M/C MODEL TLM-1016 J	DRG. NO. 4-018-33091 GROUP-Drive Arrangement

PART NO.	PART CODE	SUB. ASSY.	PART NAME	A
1	619090579	1.24.10	Geared Brake Motor 3.7 KW Output RPM -10 Make-SEW Eurodrive	1
2	919190267-1	1.24.9	Sprocket 31.75 P/19 T/Duplex	1
3	919190268	1.23.7	Sprocket 31.75 P/38 T/Duplex	1
4	119150016	1.24.11	Chain 31.75 P/Duplex (80 Links)	1

A = installed qty.

Client: M/S THATTA CEMENT COMPANY

Dated: 29. Aug. 2014



FLSmidth VENTOMATIC

TITLE
G.A OF LOADING CONVEYOR

DRG. NO. 4-018-31929

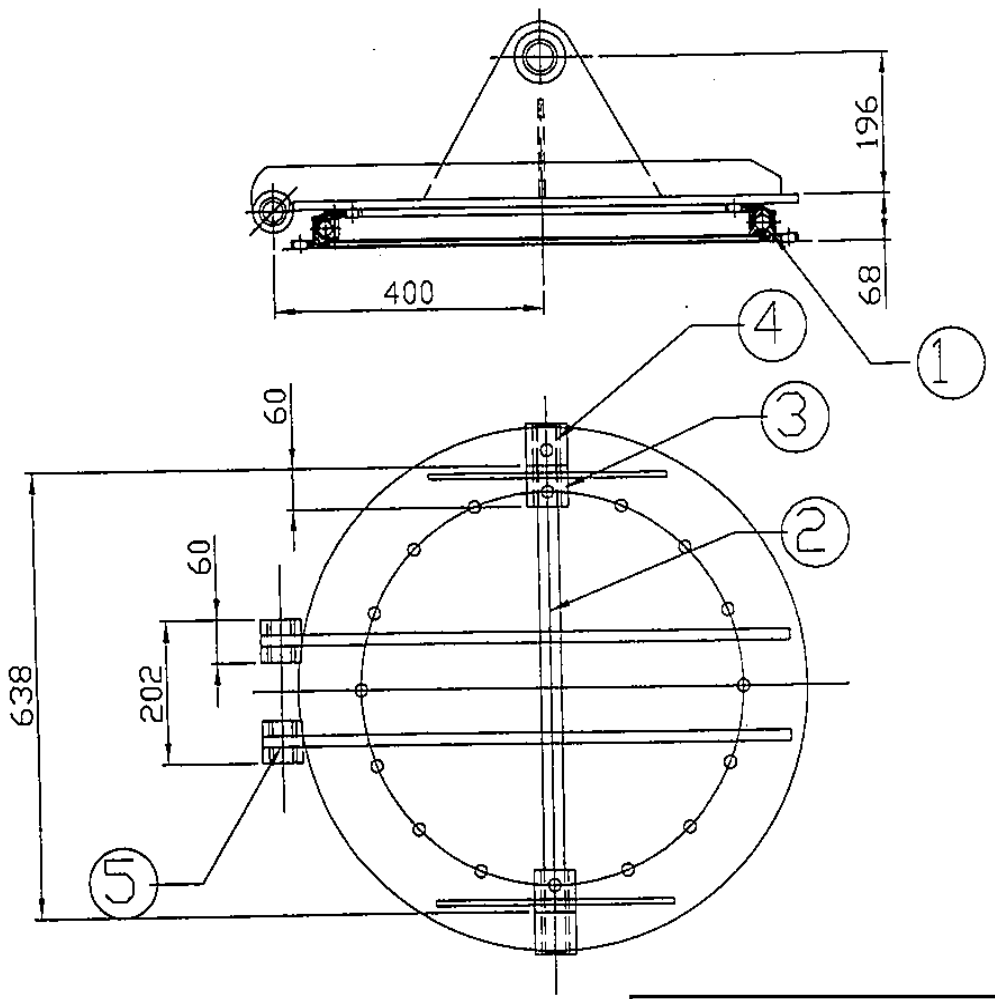
FLSmidth VENTOMATIC	SPARE PART LIST TRUCK LOADING M/C MODEL TLM-1016 J	DRG. NO. 4-018-31929 GROUP-Loading Conveyor

PART NO.	PART CODE	SUB. ASSY.	PART NAME	A
1	519010043-2	2.1	Belt 500 Wide, 315/3 2 mm Top 1.5 mm Bottom Grade M24, Endless Length 7525 mm Rough Top	1
2	619090026	2.3	Drum Motor D216 220 x 600 Lg.	1
3	119130181	2.6	Luffing Gear Box 10:1	1
4	919050048-4	2.4	Roller Dia 89x425 Lg. ER 201	4
5	919050046-3	2.5	Roller Dia 89x600 Lg. ER 101	2
6	119140032	2.8.15	Slewing Bearing 21/750 No.230.20.0600.013	1
7	619091168	2.45	Motor (for Luffing Drive) 1.5 KW, 1500 RPM, 90L, SIEMENS Make	1
8	919050040-3	2.2	Pulley Dia 219x600 Lg.	1

A = installed qty.

Client: M/S THATTA CEMENT COMPANY

Dated: 29. Aug. 2014



FLSmidth VENTOMATIC

TITLE
TURN TABLE ARRANGEMENT

DRG.NO. 4-018-1096

FLSmidth VENTOMATIC	SPARE PART LIST TRUCK LOADING M/C MODEL TLM-1016 J	DRG. NO. 4-018-1096 GROUP-Turn Table Arrangement

PART NO.	PART CODE	SUB. ASSY.	PART NAME	A
1	119140032	2.8.15	Slewing Bearing 21/750 No.230.20.0600.013	1
2	919191338	2.2	Bush For Turn Table Shaft	2
3	919010015-1	2.1	Shaft	1
4	919191339	2.3	Upper Bush	2
5	919191340-1	2.16	Lower Bush	2

A = installed qty.

Client: M/S THATTA CEMENT COMPANY

Dated: 29. Aug. 2014

ACCESSORIES