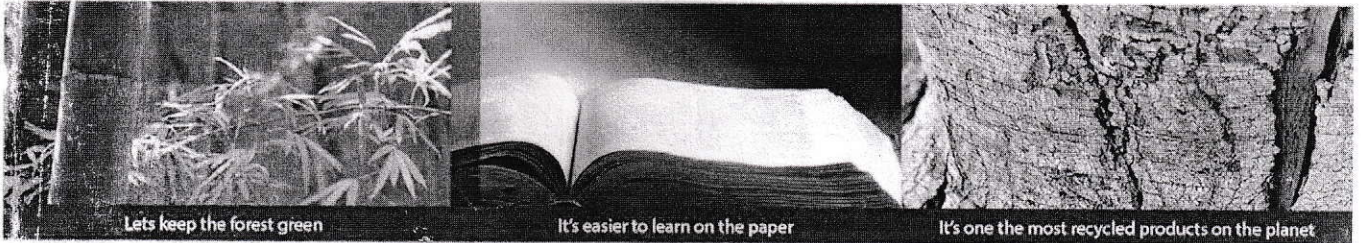


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Client : **SARDHANA PAPERS PVT LTD**

Project Details : **250 TPD, 5.1 m Kraft Paper**

Technical Specification

Offer Reference no. : **2023/05_R1**

Date : **June 26, 2023**

CAD PAPER MACHINE PVT. LIMITED

Since 1972



To,
SARDHANA PAPERS PRIVATE LIMITED
Opp Power Sub Station Meerut Road
Sardhana Meerut
Uttar Pradesh, INDIA - 250342
Email: sardhanapapers@gmail.com

Kind Attention : Mr. Sanjay Rastogi ji
Subject : 250 TPD Surface Sized Kraft Paper Machine

Dear Sir,

This is with reference to the finalization of the Kraft Paper machine with the proposed arrangement. After discussion and revision of the grammage range the following changes have been incorporated with the revised paper machine value.

The scope of supply will include a Paper Machine from Head box to Rewinder inclusive of mechanical drive.

We have considered the following –

- 1) New Pressurized headbox for Bottom layer
- 2) Single layer machine with Plain couch roll.
- 3) Inline Presses with Closed draw arrangement with suction pickup & suction transfer roll.
- 4) Cast-Iron drying cylinders with a Conventional Inclined Pond Size-Press for improving strength of paper.
- 5) Pope reel with an Automatic spool loading arrangement and mechanical drive.
- 6) Rewinder with back cutting arrangement.
- 7) Rope carrier arrangement

We hope our technical proposal will match your interest and we look forward to receiving your reply on the above subject.

Yours faithfully,

CAD Paper Machine Private Limited
Standard Engineering Company



Managing Director

Email: info@standardcad.com

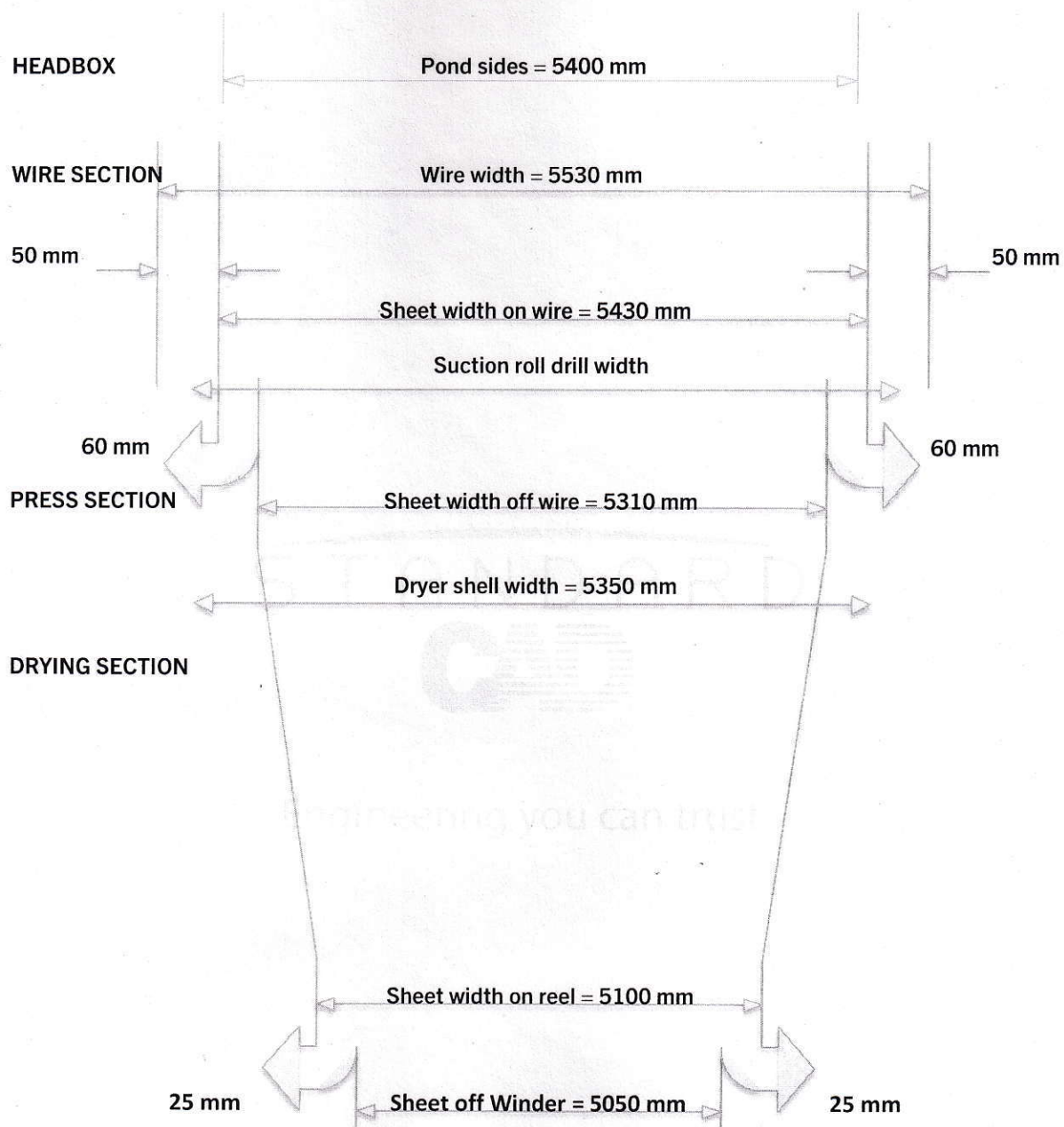
Cell: +91 9879588493

TECHNICAL SPECIFICATION

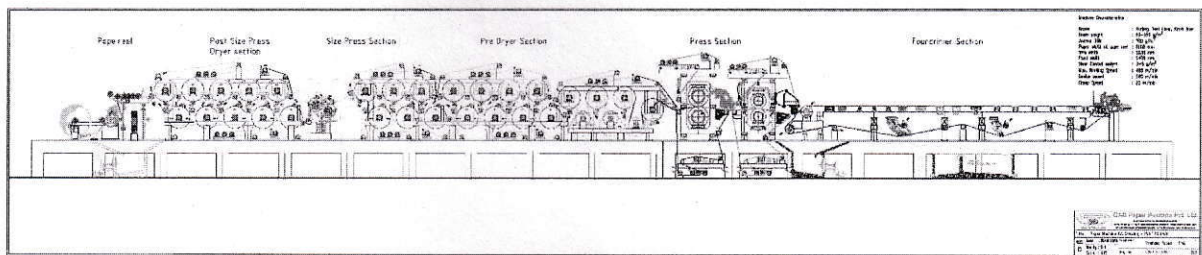
1.0 PAPER MACHINE DATA AND DESIGN BASIS

PRODUCT	:	Fluting / Test Liner / Kraft Liner
BASIS WEIGHT	:	60 – 180 g/m ²
BASIS WEIGHT (Design)	:	100 g/m ²
TRIM AT REEL	:	5100 mm (at Pope)
HEADBOX POND WIDTH	:	5400 mm
FURNISH COMPOSITION	:	100 % Wastepaper, Mix waste (AOCC, OCC + Indian)
OPERATING SPEED	:	up to 450 m/min (Reel speed)
DESIGN SPEED	:	500 m/min
MACHINE TYPE	:	Mezzanine floor
REFERENCE	:	D200 - 01885.00

GUAGE SHEET



Pond width	-	5400	mm
Wire width	-	5530	mm
Sheet width on Wire	-	5430	mm
Wire Trims, Total	-	120	mm
Sheet width to Presses	-	5310	mm
Sheet width at Reel	-	5100	mm
Winder Trims, Total	-	25	mm
Sheet width after Rewinder	-	5050	mm



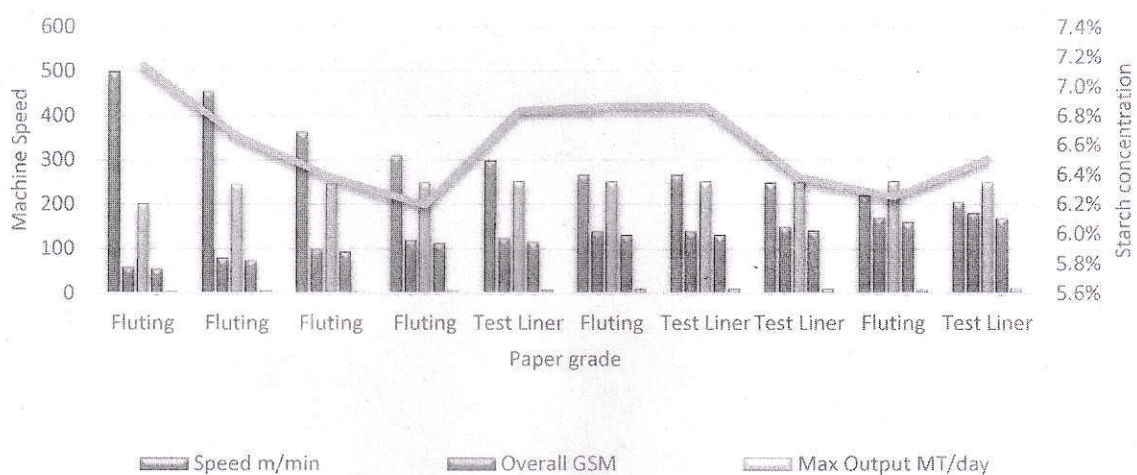
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DESIGN FEATURES

Grade	Speed	Overall	Max Output	Bottom	Starch	Starch
	m/min	GSM	MT/day	GSM	GSM	%age
Fluting	500	60	202	56	4	7.1%
Fluting	456	80	246	75	5	6.7%
Fluting	365	100	246	94	6	6.4%
Fluting	311	120	251	113	7	6.2%
Test Liner	299	125	252	117	8	6.8%
Fluting	267	140	252	131	9	6.9%
Test Liner	267	140	252	131	9	6.9%
Test Liner	249	150	251	141	9	6.4%
Fluting	220	170	252	160	10	6.3%
Test Liner	207	180	251	169	11	6.5%

Operating Speed, Production, GSM Range & %age Starch



2.0 SUMMARY OF PAPER MACHINERY

HEAD BOX

Bottom wire : Air Cushioned, Pressurised (Chinese – New)

FOURDRINIER SECTION

Bottom wire : Cantilevered with Plain Couch Roll

PRESS SECTION

Closed draw arrangement with Suction pickup & Suction Transfer roll

1st Press : Ø1250 mm, DOUBLE FELTED

2nd Press : Ø1600 mm, DOUBLE FELTED

PRE & POST SIZE DRYER SECTION

Ø1800 mm drying cylinders, 28 nos.

SIZE PRESS

Ø1000 mm Size Press rolls, pneumatically loaded

POPE REEL

Pope reel with sector gear arrangement with Auto Spool Loader system and Reel spool starter.

REWINDER

Back cutting arrangement

ELECTRICALS AND INSTRUMENTATION

Excluded from scope of supply.

MECHANICAL DRIVES

- | | | |
|---------------------------------------|---|------|
| a. Gearboxes | : | SCAD |
| b. Cardon shaft | : | SCAD |
| c. Companion flanges | : | SCAD |
| d. Couplings between motor & gearbox: | | SCAD |

- | | | |
|------------------------|---|----------------------------|
| e. Base frames | : | SCAD |
| f. Motor, VFD & Panels | : | Customer's scope of Supply |

GENERAL EXCLUSION

Mentioned in detail

GENERAL NOTES :

Based on the available data and information provided by the customer, all the new elements have been calculated for the design speed of 500 m/min.

SCAD Paper's warrantee and guarantee is applicable only for the equipment's under its scope of supply for new paper machine.

Dimensions of all equipment's mentioned from Head box to Rewinder are tentative and subject to change.

Any item not expressly mentioned in this specification should be considered excluded from SCAD's scope of supply.

Important Note :

1. All rolls – Breast roll, FDR, Drive roll, Wire roll, Press Felt roll & Dryer drive rolls spherical bearings will be from **ZKL/ZVL Slovakia**.
2. Drying Cylinder bearings will be spherical roller bearing on operating side & drive side.
3. All Roll will be dynamically balanced at 650 mpm.
4. All dewatering elements Foils & T-bars will be UHMWPE.
5. Inspection will be carried out at our works prior to dispatch.

1.0 AIR CUSHIONED HEAD BOX

Bottom wire : Air cushioned

Instrumentation & Controls will be in customer scope of supply.

(Transmitters, consistency valves, PLC and PC)

Quantity : 1 no.

BASIC DATA

Slice width : 5400 mm

Consistency : 0.65 ~ 0.85%

Structure Type

Bottom wire : Air Cushioned Pressurized Headbox

Technical Data

Grade : Normal Kraft, Kraft Liner, Low GSM, High strength fluting

Production GSM : Bottom Layer: 60-180 g/m²

Raw material : 100% Recycled wastepaper Indian, AOCC, OCC, NDLKC

Width after winder : 5050 mm

Paper width at Reel : 5100 mm

Headbox lip width : 5400 mm

Wire width : 5550 mm

Operating speed : 450 m/min

Design speed : 500 m/min

Capacity : 250 T/D (100 g/m², 339 m/min, 24hrs/d, 100% efficiency)

Headbox Throughput details

Bottom wire Headbox									
GSM	Reel Speed	Cons.	Ret.	Dryness	Headbox Flow		Slice opening	Capacity	Slice Width
g/m ²	m/min	%	%	%	LPM		mm	T/D	mm
					Slice	Header		22 hrs	
60	500	0.65	75	94	31237	34361	11.6	203.4	5400
80	465	0.65	75	94	38734	42607	15.4	252.2	5400
100	365	0.7	75	94	35290	38819	17.9	247.5	5400
120	311	0.7	75	94	36083	39691	21.5	253.0	5400
125	299	0.75	75	94	33727	37100	20.9	253.4	5400
140	267	0.8	75	94	31623	34786	21.9	253.4	5400
150	249	0.8	70	94	33855	37241	25.2	253.2	5400
180	207	0.85	70	94	31787	34966	28.4	252.6	5400

Technical Details for Bottom wire Headbox

1. Box body:

It has an attenuation room on which left and right side are overflow holes. If it is of one- side overflow or two-side overflow, it depends on the needs. Meanwhile, to avoid the stock inside the box being caught, it is inclined stock inlet. There are four inlets and outlets holes for air spring altogether. Manholes which can be opened on the 2 sides walls used to observe and cleaning the inside of box body

2. Stock-inlet pipe:

It consists of manifold and transition pipe (round top and square bottom type), fitted with pressure balance observing pipe.

3. Distribution elements:

Three-step diffuser can be opened from back side. Diameters of three step hole are designed following the paper grade and stock volume.

4. Holly-roll :

This head box has attenuation room with a throat roll and a slice roll. The roll-body holes are in helix layout to improve the effect of the evenness. The holly rolls are driven by worm-gear box with Y-series motor of power 1.1 Kw. The user can change the rotate speed of the holly roll according to the machine speed to achieve the best evenness effect when different stocks are used.

5. Top slice regulator:

The top slice regulator includes the top lip throughout adjustment, micro-adjustor and against deformation frame. For the top slice, the vertical regulation range is 0~100mm and the horizontal regulation range is 5~30 mm. There is a gauge to show the slice openness size. The micro-adjuster can partially and preciously adjust the lip openness with indicators and keep the

CD GSM transverse difference within the allowable range. Rod of the micro-adjustment is between 110-140 mm.

6. Bottom slice is fixed part.
7. Spray pipe: These parts are made from SS304. Nozzles are in stainless steel.
8. Walking board and ladder:
At the front of head box, there are walking boards and handrails. It's easy for you to adjust the slice. They are made of stainless steel.

MATERIALS:

All parts and sections that touch with the stock and the rotary parts that need adjustments are all stainless steel or copper.

1. Manifold distributor : stainless steel SS304 (flange also)
2. Step diffuser : a whole piece of PMMA plate.
3. Side wall : stainless steel plate (SS304)
4. Cover parts : stainless steel plate (SS304)
5. Bottom beam : stainless steel (SS304) and welded ribs
6. Framework of top slice : stainless seamless steel pipe (SS304)
7. Vertical small top slice lip : stainless steel SS316L
8. Bottom slice : stainless steel SS316L
9. Holly rolls : stainless seamless steel pipe
10. Micro-regulators : cast aluminum

CONTROL SYSTEM:

The general pressure and stock level fluctuation in the air-cushioned head box directly influence on the paper-sheet MD GSM and the running of the paper machine.

1. Holly rolls rotate speed gearbox control

1.0 FOURDRINIER SECTION

Main Data

Type : Cantilevered type Fourdrinier

Construction : All parts manufactured with Mildsteel; Main frames will be **SS304 CLADDED**

TECHNICAL SPECIFICATION

1. Sole plates

Cast Iron slotted sole plate for entire wire part with necessary forged T-bolts for installation of framings & components.

2. Framings, Cantilever type

- ≡ Heavy duty frames of box type section are provided.
- ≡ The longitudinal and cross machine beams, pedestals, the cantilever beams (from the tending side up to the drive side) and the supports are stainless steel clad. Fastening rails are bolted to the longitudinal beams.
- ≡ The rails are designed to accommodate the stationary drainage element in any desired sequence on the Fourdrinier table.
- ≡ Wire drive rolls are installed on the machine frame. The longitudinal beam itself rests on support columns at the front side consisting of two sections separated by aluminum blocks/light metal blocks.

3. Rolls with bearing & bearing housing assembly

The rolls will be made from Mildsteel seamless pipes. The end gudgeons will be fabricated/duly shrink fitted on both ends. The shaft will be En8 tested. The rolls will be dynamically balanced as per G6.3 tolerance grade at 550 m/min.

a. Breast Roll - 1 no.

Diameter : Ø630 mm
 Shell material : Mild Steel, ASTM Gr. 106B
 Shell cover : Black Diamond or equivalent
 Bearing no. : 23234k

b. Wire Guide Roll - 6 nos.

Diameter : Ø415 mm
 Shell material : Mild Steel, ASTM Gr. 106B
 Shell cover : Black Diamond or equivalent
 Bearing no. : 22320k

c. Couch Drive Roll 1 no.

Diameter : Ø930 mm
 Shell material : Mild Steel, ASTM Gr. 106B
 Shell cover : Fabmate or equivalent

Bearing no. : 22334k

d. Forward Drive Roll 1 no.

Diameter : Ø730 mm
 Shell material : Mild Steel, ASTM Gr. 106B
 Shell cover : Rubber
 Bearing no. : 23234k

4. 2 set manual wire tensioners.

- ≡ The stretchers will be of Mildsteel construction with cross shaft and gearbox assembly.
- ≡ These will be operated manually. The stretcher will be CAD paper standard design and will be provided with an actuator for smooth movement.

5. Auto guide 1 no.

- ≡ Positioning device or cylinder in SS construction will be provided with manual override.
- ≡ Pneumatic Palm assembly, FRL unit will be provided.
- ≡ This will be EL make.

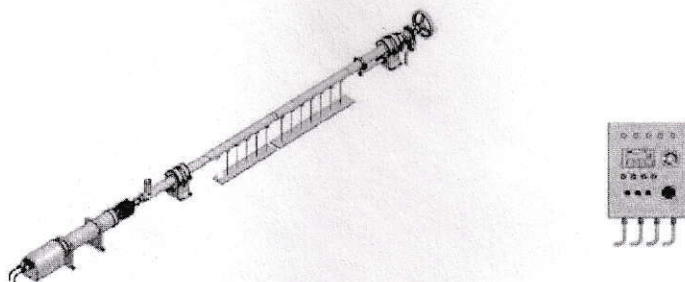
6. Doctors

- a) Breast roll : 1 no. (Stationary)
- b) Wire guide rolls : 5 nos (Stationary)
- c) Blade material : Plastic
- d) Blade holder : K35 type, SS 304 holder

- ≡ The Blade holders are mounted on mild steel fabricated back. The doctor is gravity loaded.
- ≡ The fixed doctors are lifted off the roll by hand crank & are loaded by their own weight.
- ≡ K35 type holder will be supplied in SS304. Blades will be Polysat. They will be supplied as per roll surface to avoid abrasion.

7. Showers

- ≡ 1 no, Sheet knock off shower
- ≡ 2 nos, Showers with two nozzles on each side for continuous trim knock down
- ≡ 6 no's, SS shower with fan jet nozzles for wire roll cleaning
 SS pipe details – Ø1.5" NB, Sch 10
- ≡ 1 no, Micro travel shower with linear actuator
 SS pipe details – Ø2" NB, Sch 40



The Oscillators are of fixed speed type with 300mm stroke for a nozzle pitch of 150 mm as desired by you for double coverage. The construction is all S.S for wet conditions.

Shower pipe in SS quality with 40 Sch thickness, pipe diameters maintained as $\varnothing 2''$ NB, considering the flow, pressure of operation as well as deflection on the overall length of pipe.

The fixed speed Oscillators are designed with a reversible ball screw arrangement. The system is fully oil dipped and the gear box is greased for life. The enclosures are SS for very moist condition.

HP shower is provided with nozzles of $\varnothing 0.9$ mm is SS-316. The nozzle are of PSR type dome shaped designed to prevent accumulation of any foreign particles on the inner surface.

8. Trays

All trays support and fittings will be of Stainless-Steel construction.

a. Save All pans & trays

- ≡ The table is fitted with save all trays beneath the table section and drainage elements.
- ≡ The trays supplied will collect all the white water from the wire table. These will be supplied in Stainless steel.
- ≡ The trays will be made from 2mm thick sheet. The main tray for white water outlet will be provided with heavy duty supports duly SS304 cladded.
- ≡ The supports will be supplied in SS304 sections

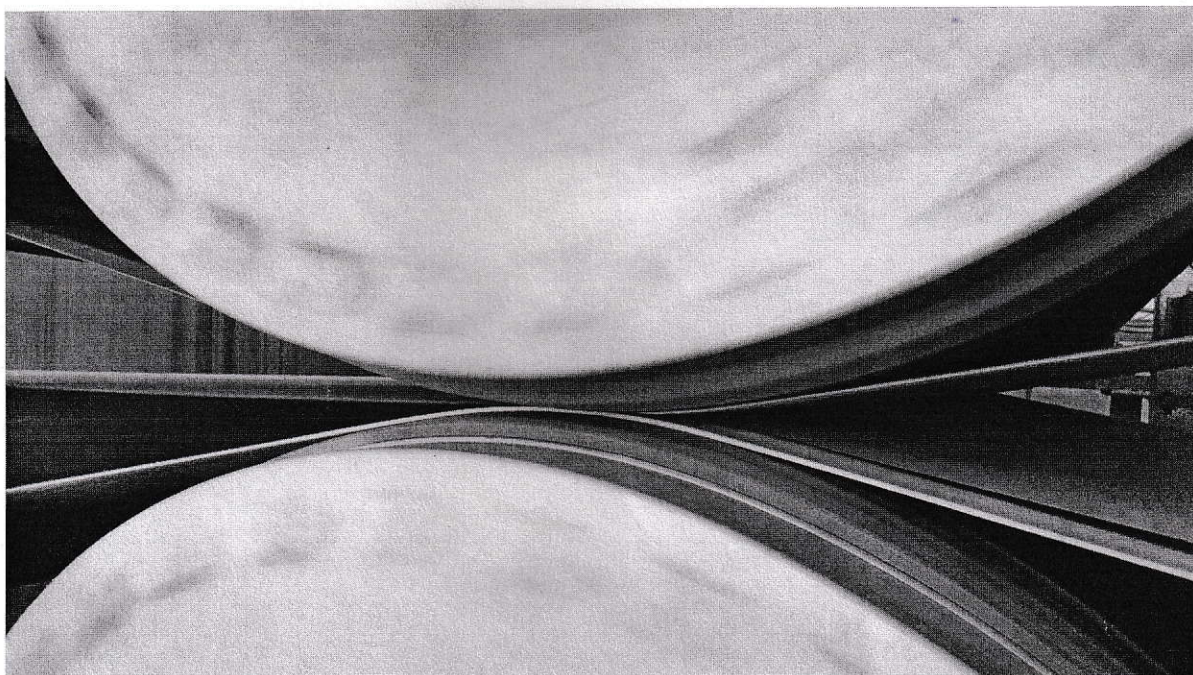
9. Drainage Elements

Drainage element boxes are SS 304 construction and Foils & T-bars are of UHMWPE & T-Bars will be in HDPE material, respectively.

- | | |
|----------------------|-----------|
| a. Forming Board | : 1 no. |
| Blades | : 1+3 pcs |
| Blade material | : UHMWPE |
| T-bar | : HDPE |
| b. Activity Foil box | 1 no. |
| Blades | : 5+4 pcs |
| Blade material | : UHMWPE |

T-bar	: HDPE
c. Hydrofoil box	: 5 nos.
Blades	: 5 pcs
Blade material	: UHMWPE
T-bar	: HDPE
d. Formation box	: 1 no.
Blades	: 6+5 pcs
Blade material	: UHMWPE
T-bar	: HDPE
e. Ultra-Low vacuum box	: 2 nos.
Blades	: 7 pcs
Blade material	: UHMWPE
T-bar	: HDPE
f. 2C Wet Suction box	: 1 no.
Blades	: 11 pcs
Blade material	: UHMWPE
T-bar	: HDPE
g. Duo Vac Suction box	: 1 no.
Top cover	: 800 mm, 1 pc
Top material	: UHMWPE
h. Bivac Suction box	: 1 no.
Top cover	: 600 mm, 1 pc
Top material	: SICER ceramic
i. Tri-Vac Suction box	: 1 no.
Top cover	: 730 mm, 1 pc
Top material	: SICER ceramic
j. Bagley box	: 1 no.
Blades	: 1 pc
Blade material	: UHMWPE
T-bar	: HDPE

2.0 PRESS SECTION (WIDENIP) : 2 Nos.



Proposal:

Closed Draw Press section with Inline/Tandem Widenip Presses.

Operating Load

1 st Press	: 200 kN/m	Double felted
2 nd Press	: 350 kN/m	Double felted

Technical Specifications :

1. Slotted sole plates
Cast Iron slotted sole plate for entire Wide-Nip press part with necessary forged T-bolts (mild steel) for installation of framings & components.
2. Framings
 - = Heavy duty frames are provided for Press section.
 - = The frames will be Mildsteel fabricated duly stress relieved.
 - = Necessary aluminum blocks/light metal blocks will be provided for felt change.
3. Rolls with bearing & bearing housing assembly
The shell will be made of cast iron and the end journals will be bolted to the shell on both ends. The journal bearing sizes will be taper shaft. The press roll will be supplied with internal cooling arrangement & rotary joint. The rolls will be dynamically balanced as per G6.3 tolerance grade at 550 m/min.

a. Suction Pickup Roll & Suction Transfer Roll - 2 nos

Diameter: Ø600 mm

Shell thickness : 30 mm

Shell material : Stainless steel (Imported)

Internal

Suction roll Internal will be fabricated design in SS304. Graded casting housings for front and drive side with bearings will be provided. Drive end journal will be cast steel. Deckle adjustment device & greasing provision on operating side will be provided. Internal bearing with labyrinth arrangement will be provided.

The roll will be provided with pickup and or holding zone respectively depending on the location and specific requirements.

b. 1st Top & Bottom Press Roll - 3 nos. (1 no spare considered)

Finish Diameter : Ø1250 mm

Shell material : Cast Iron

Shell cover : Rubber & Blind drilled

Bearing no. : 23276 k

c. 2nd Top & Bottom Press Roll - 3 nos. (1 no spare considered)

Finish Diameter : Ø1600 mm

Shell material : Cast Iron

Shell cover : Rubber & Blind drilled

Bearing no. : 23296 k

d. Felt Roll - 26 nos.

Diameter : Ø365 mm

Shell material : Mild Steel (ASME 106B)

Shell cover : Ebonite

Bearing no. : 22320 k

4. 4 set, Manual Felt stretchers for press section

- ≡ The stretchers will be of solid construction with cross shaft assembly.
- ≡ The stretcher will be provided with a SS304 screw and GM nut.
- ≡ This will be SCAD standard design.

5. Auto guide – 4 nos

- ≡ Positioning device or cylinder in SS construction will be provided, with manual override.
- ≡ Pneumatic Palm assembly, FRL unit will be provided.
- ≡ This will be EL make.

6. Doctors

- Doctor for Felt roll : 4 nos.
- Blade material : Plastic
- Blade holder : K35 type Rigid holders

The Blade holders are mounted on mild steel fabricated back. The doctor is gravity loaded. The doctor is provided with cam & lever mechanism for quick load / unload.

7. Showers

- 4 nos Roll cleaning showers with Fish tail nozzles
SS Pipe details – Ø1.5" NB, Sch 10
- 4 nos, Micro travel showers with linear actuator.
SS Pipe details – Ø1.5" NB, Sch 40

8. Uhle Box for felt conditioning -

- 4 nos Double Slotted Uhle boxes in SS304 construction with UHMWPE Foils & T-bars for 1st & 2nd Press felt circuit.

9. Save All Trays

All trays supplied will be of SS construction.

All supports for tray will be in SS.

10. Actuators and Air bellows for roll loading / unloading.

- Bottom Lead-in & Lead-out roll will be provided with air bellows for loading/unloading.
- Suction pickup roll will be provided with motorized actuator/hydraulic cylinders.
- Top Lead out roll will be provided with manual actuator.

11. Hydraulic cylinders

4 nos Hydraulic cylinders for loading/unloading press rolls.

12. HYDRAULIC POWER PACK of PRESS SECTION

Control desk & Electrical panel for Hydraulic unit will include the following hydraulic & electrical operations –

- 1st & 2nd Top Press roll loading/unloading
- Micro travel shower ON/OFF

The hydraulic power pack will be supplied with 2 motors. 1 no. will be service motor and the other will be standby motor. The power pack will be provided with an accumulator.

Control Panel

The control system will be provided with the following –

- Push buttons and indicators
- Switchgear items include – contactors, MCB, Starters & Relays
- Control/power wiring
- Panel accessories
- Hydraulic power pack junction box (wiring for hydraulic system + solenoid wiring)

We shall provide factory acceptance & training to one personal prior to dispatch.
Commissioning of panel and hydraulic system on site will be charged extra.

Hydraulic Power Pack

Complete with oil reservoir of construction mild steel with baffle, suction & return ports, drain ports, inspection / cleaning doors, filler breather, level gauge, level switch, Temperature gauges, temperature switch, return filter, etc. Tank's interior & exterior will be de-burred & epoxy painted.

Generating station will comprise of 2 sets of pump & motor station.

1 set controls for delivery of oil at 160 bars continuous at variable demand.

The oil cooling system will be off-line. Comprising of 1 set of pumps [Fixed displacement] & shell & tube type oil cooler.

Power Pack Electrical Panel

Bracket mounting to house controls for pump motor START / STOP Operation, monitoring & protection of power pack.

Hydraulic Valve Station (With Control Blocks) for Operation

- ≡ 1st Press BDR - UNLOAD / LOAD / TAIL
- ≡ 2nd Press BDR - UNLOAD / LOAD / TAIL

Loose supply material :

Throttle Check Valve - Qty. [As per the design requirements]

GENERAL NOTE FOR HYDRAULIC POWER PACK

Bracket mounting to house controls for pump motor START / STOP operation, monitoring, and protection of power pack. Pump motors MCC not included in CAD's scope of supply.

FELT & ROLL CHANGE EQUIPMENT

By paper machine bridge crane and handling trolleys (customer's scope)

The required belts and ropes are to be locally procured by customer.

Note :

- ≡ The Cast Iron shell will be supplied from China/India.

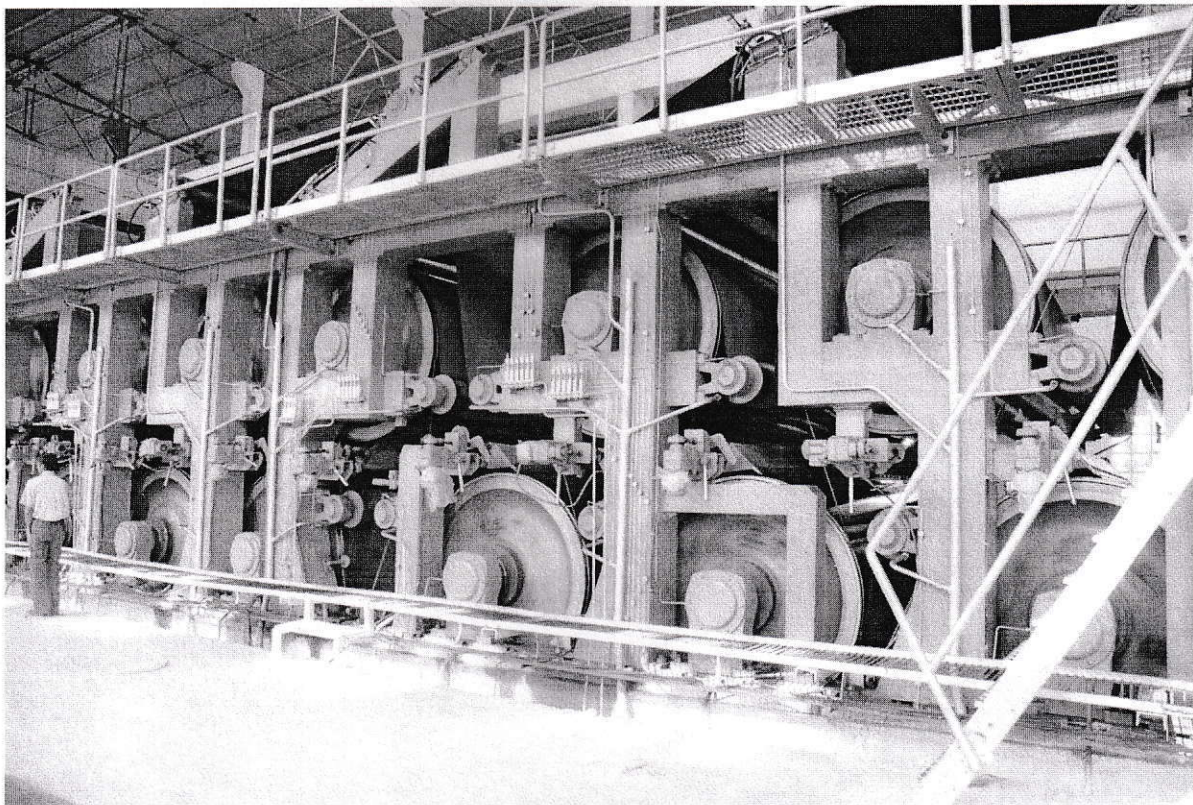
Terminal Points

- Undersides of base plates
- At roll Tray Save-all drain connection
- At Felt save all tray flange connections
- Rear side vacuum box outlet flange
- Rear side shower pipe flange connection
- Journal end of driven rolls
- Suction/vacuum box front side bleed valve and gauge connection
- Flanges/tapered connection for air supply guides & tensioner
- Terminal boxes for all electrical motors
- Terminal blocks of all control cabinets / junction boxes
- Air to suction rolls

Exclusions

- Vacuum Separator
- Moving trolley, chain pulley block and lifting rope
- All ON/OFF machine piping
- All ON/OFF machine electrical wiring including junction boxes
- Standard electric motors and complete electrical equipment like AC/DC drive motor starters, MCC's, cable and cable laying
- Electrical supply of control cabinet or field mounted equipment
- Any interlocking facilities
- Hydraulic pipelines from power pack to hydraulic cylinders
- Vacuum system
- Pumps and drive motors
- Compressed air system
- Pipes, valves and fittings
- Field piping for pneumatic loading and control system
- Platforms, Walkways and Ladders
- All civil works
- Erection and commissioning

3.0 DRYER SECTION: 28 nos, Ø1800 mm Dryer Cylinders



Pre-Dryer & Post Size Press Dryer Section

- Pre-Dryer : 18 nos, Ø1800 mm
- Size Press : Ø1000 mm
- Post Size Press Dryer : 10 nos, Ø1800 mm

TECHNICAL SPECIFICATIONS:

The Dryer section consists of the following:

1. Rolls with bearing & bearing housing assembly.

The felt roll will be made from Mild steel pipe duly fabricated/shrink fitted with end gudgeons on both ends. The roll will be machined and duly ebonite coated. The rolls will be dynamically balanced as per G6.3 tolerance grade at 550 m/min. The roll will be supplied along with bearing, bearing housing assembly. The bearing housing assembly will be designed for grease lubrication.

- a. Felt Roll - required nos. (2 nos spare considered)
 - Diameter : Ø365 mm
 - Shell material : Mild Steel (ASME 106B)
 - Shell cover : Ebonite
 - Bearing no. : 22320k

- b. Felt Drive Roll - 14 nos. (2 nos spare considered)
Diameter : Ø415 mm
Shell material : Mild Steel (ASME 106B)
Shell cover : Ebonite
Bearing no. : 22320 k

- c. Paper Roll - 3 nos.
Diameter : Ø270 mm
Shell material : Mild Steel (ASME 106B)
Shell cover : Hard chrome plated

2. Doctoring System:

- a. 22 nos, Mild steel Doctor Holder back with imported K35 type Holder in Sp. Steel. The holder will be gravity loaded and provided with quick cam & lever mechanism for blade change. Pb blade will be provided.
 - b. 6 nos K35 Type Doctor holder made from Sp. Steel for Post size press Chrome dryers. The doctor will be provided with oscillation arrangement with linear motion bearings. Pb blade will be provided.
3. 7 set Manual cum motorized felt stretcher will be provided.
4. 7 nos Auto felt guide is provided.
5. Framings for Dryer section
= Mild steel heavy duty fabricated framings for dryer section.
6. Cast iron Slotted sole plates for the entire Dryer section.
7. 56 nos Antifriction Bearings for drying cylinders. Spherical bearings will be provided for Operating side & Drive side.
8. 28 set Cast Iron Bearing Housing for Dryer Cylinder. These have provision for oil lubrication.
9. **DRYER CYLINDER: 28 nos**

The drying cylinder will be imported from China.

- Size : Ø1800 mm
Cast Iron Dryers : 26 nos
Alloy/Chrome Dryer : 2 nos (post sizing)

TECHNICAL SPECIFICATION

- Operating Pressure : 4.5 mPa
Hydro-test Pressure : 8 mPa
Balancing : Statically balanced

MATERIAL OF CONSTRUCTION:

- Shell : Cast Iron
Covers / Journals : Nodular Iron

The casted dryers will be design for 500 m/min operating characteristics.
Necessary bearing housing, bearings shall be provided.

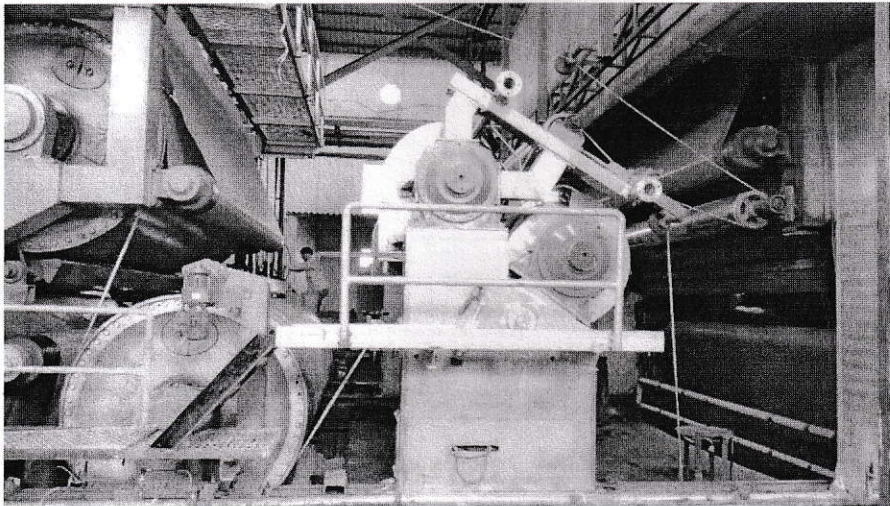
All bearing housings are considered for grease lubrication.

Exclusions:

- **Rotary Joints & syphon arrangement**
- **Steam & condensate system**
- **Field piping and connections**



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4.0 SIZE PRESS

The size press is conventional pond size press arrangement. This will be an inclined size press with designed Nip loads of 80 kg/cm. the size press section will be duly SS304 clad, and the showers will be supplied in SS304. Wipers and SS Save-all will be provided to avoid splashing of starch around the size press rolls.

TECHNICAL SPECIFICATION:

1. Cast iron slotted Sole plate for Size Press.
2. Mild steel fabricated framing duly SS304 clad with lever assembly.
3. Rolls with bearing & bearing housing assembly.
 - a. Size Press Roll - 2 nos. (1 no. spare considered)
 - Finish Diameter : Ø1000 mm
 - Shell material : Cast Iron
 - Shell cover : Micromate
 - Bearing no. : 23148 k

The shell will be made of mild steel and the end journals will be shrink fitted to the shell on both ends. The press roll will be supplied with internal cooling arrangement & rotary joint. The roll will be dynamically balanced at 550 mpm as per G6.3 tolerance grade.

- b. Size Press Roll - 2 nos. (1 no. spare considered)
 - Finish Diameter : Ø1000 mm
 - Shell material : Cast Iron
 - Shell cover : Microrok
 - Bearing no. : 23148 k

The shell will be made of Cast Iron and the end journals will be duly bolted to the shell on both ends. The press roll will be supplied with internal cooling arrangement & rotary joint. The roll will be dynamically balanced at 550 mpm as per G6.3 tolerance grade.

c. Paper Roll - 1 no.

Diameter : Ø320 mm
Shell material : Mild Steel (ASTM A58-63)
Shell cover : Hard chrome plated

4. 2 nos Air bellows for Loading size press rolls.
5. SS 304 Save-All Trays.
6. 2 no's SS 304 starch shower with individual flow control manual valves.
7. Control Panel for - Size Press Roll loading. Roll will be gravity unloaded.
8. 1 no. Ø180mm Bow roll. This will be provided with a Chrome sleeve.

Terminal Points

- Undersides of base plates
- At roll Tray Save-all drain connection
- Rear side starch shower pipe flange connection
- Journal end of driven rolls
- Terminal boxes for all electrical motors
- Terminal blocks of all control cabinets / junction boxes

Exclusions

- All ON/OFF machine piping
- All ON/OFF machine electrical wiring including junction boxes
- Standard electric motors and complete electrical equipment like AC/DC drive motor starters, MCC's, cable and cable laying
- Electrical supply of control cabinet or field mounted equipment
- Any interlocking facilities
- Pumps and drive motors
- Compressed air system
- Pipes, valves, and fittings
- Field piping for pneumatic loading and control system
- Platforms, Walkways and Ladders
- All civil works
- Erection and commissioning

5.0 SIZE PRESS KITCHEN

The following items are to be procured for the size press kitchen.

- Preparation tank, Cooker : 1 no.
- Storage tank : 1 no.
- Service tank : 1 no.
- Return tank : 1 no.
- Vibro : 1 no.
- Agitators for preparation tank

Scope of supply:

1. Size Press Kitchen Tank with Agitator (Starch preparation tank with jacketed type)

The size press kitchen tank will be fabricated from SS304. The arrangement will consist of the following –

- Main frame fabricated from in SS
- Starch preparation tank Jacketed Type
- Fabricated in SS304 with painted mild steel outside support
- Tank mounting brackets in painted mild steel
- Gearbox mounting bracket in painted mild steel fabrication
- Agitator along with Geared motor
- Capacity : 5 m³

2. Size Press Kitchen Tank with Agitator

Storage & Service tank without jacketed type but with provision of coil for heating.

The size press kitchen tank will be fabricated from SS304. The arrangement will consist of the following –

- Main frame fabricated from in SS
- Mixing/Storage tank without Jacketed Type
- Fabricated in SS304 with Mild steel outside support
- Tank mounting brackets in painted mild steel
- Gearbox mounting bracket in painted mild steel fabrication
- Agitator along with Geared motor
- Capacity : 5 m³ & 4 m³ respectively.

3. Size Press Kitchen Tank (Return tank)

The size press kitchen tank will be fabricated from SS304. The arrangement will consist of the following –

- Main frame fabricated from in SS
- Return tank without Jacketed Type
- Fabricated in SS304 with painted mild steel outside support
- Tank mounting brackets in painted mild steel
- Capacity : 1.5 m³

4. Vibro – 1 no.

Ø1200 mm

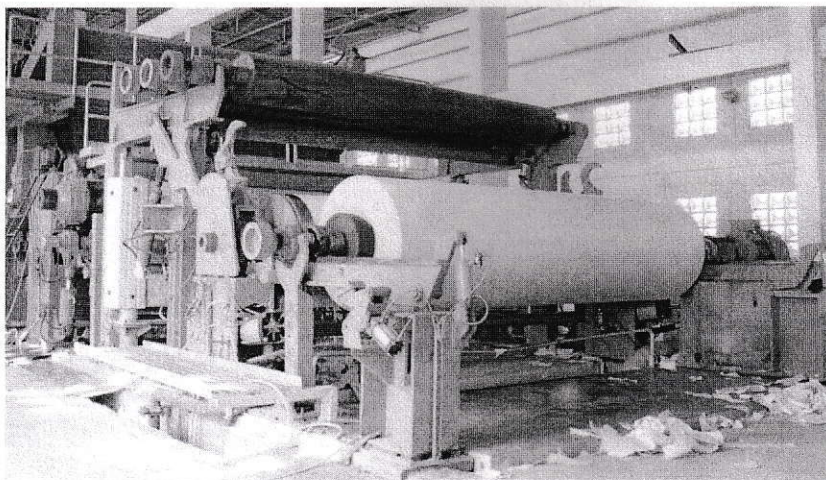
(Vibro screen will be complete with motor in ready to run condition. Material handling parts like Decks, Screen, Frame ring, Clamps are made of SS 304 and bottom structure is made of M.S).

1 no spare mesh with frame.

STANDARD

Engineering you can trust

6.0 POPE REEL with AUTO SPOOL LOADING: 1 no.



TECHNICAL SPECIFICATION:

1. Cast Iron Sole Plates to accommodate Pope Reel Framing.
2. Mild steel heavy duty Fabricated Framing.
3. **1 no, Ø1000 mm Cast Iron Drum with bearing & bearing housing assembly.**
The casted drum roll will be provided with internal cooling arrangement. The end journals will be bolted to the shell. The roll will be precision machined. The bearing will be 22238k.
4. One set of primary arms connected to pneumatic cylinder for Locking of Tambour Roll.
5. Primary arms with tambour roll engage pope reel drum for initial winding with the help of double acting pneumatic cylinder. A specially designed quarter gear is provided for initial winding. A geared motor with brake is provided for safety reasons.
6. Secondary arms are provided to give pressure on the tambour roll with help of pneumatic cylinder. It also guides the tambour roll along the rail.
7. Necessary braking arrangement is provided to stop the finished reel with the help of pneumatic cylinder.
8. Control panel for the following operations
 - ≡ Reel spool starter
 - ≡ Loading of reeling shell on the pope drum.
 - ≡ Primary arm, secondary arm
 - ≡ Tumber roll braking
 - ≡ Doctor oscillation and other ancillaries along with pope reel will be provided.
9. 1 no. camber roll to remove crease.
10. Pneumatic cylinders for -
 - ≡ Primary arm - 2 nos

- ≡ Secondary arm - 2 nos
- ≡ spool loader system - 2 nos
- ≡ Tambour roll braking - 2 nos

ONE AUTOMATIC REEL SPOOL FEEDING SYSTEM (for 4 reel spools)

The main framing

- 4 supports
- 2 top beams
- 2 cross connecting rods
- Welded steel construction
- 2 hydraulic cylinders, with supports

Terminal Points

- Undersides of base plates
- Journal end of driven rolls
- Terminal boxes for all electrical motors
- Terminal blocks of all control cabinets / junction boxes

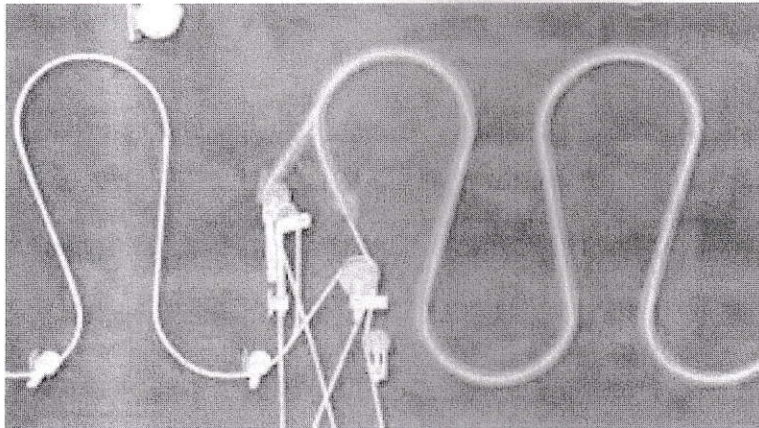
Exclusions

- All ON/OFF machine piping
- All ON/OFF machine electrical wiring including junction boxes
- Standard electric motors and complete electrical equipment like AC/DC drive motor starters, MCC's, cable and cable laying
- Electrical supply of control cabinet or field mounted equipment
- Any interlocking facilities
- Pumps and drive motors
- Compressed air system
- Pipes, valves and fittings
- Field piping for pneumatic loading and control system
- All civil works
- Erection and commissioning

7.0 REELING SHELL: 8 nos**TECHNICAL SPECIFICATION:****1. Reeling shell Ø370 mm**

Finish coated dia : Ø370 mm
Shell material : Mild steel (Seamless pipes duly tested)
Shaft : En19
Shell cover : Rubber coated
Dynamically balancing: at 1000 mpm as per G6.3 tolerance grade

Mild steel pipe of Ø350 mm duly shrink fitted with end gudgeons. The reeling shell will be Rubber coated and supplied with double bearing type Housing on both the ends. Coupling will be provided on one side of the roll suitable for engaging with Rewinder.

8.0 ROPE CARRIER SYSTEM : 1 no.**TECHNICAL SPECIFICATION:**

The rope system consists of necessary pulleys in Cast Iron with bearing and shaft. Necessary brackets for holding and height and/or length adjustment will be provided.

ROPE SYSTEM INCLUDES:

Cast Iron Pulleys with Double Row ZVL/ZKL Bearings

M.S Shaft with stationary grease fitting

M.S Mounting Hardware

Rope Stretcher with Pneumatic Loading along with panel box

- Two Rope Carrier arrangements for Dryer Section : for 4 Groups

In this case rope stretcher will be installed on ground floor subjected to space availability between dryer face and R.C.C. Beam.

- Rope Carrier Arrangement for Size Press, Pope Reel for Ground Floor machine: 2 set

Note:

- Consumables like Rope are not included in the offer.

9.0 REWINDER : 1 no.

Back cutting arrangement

TECHNICAL SPECIFICATION

1. Mild steel fabricated framings for Rewinder.
2. Cast Iron Slide is bolted to the vertical frame for mounting load roll assembly. Cross ties will be provided.
3. Cast Iron sole plates for mounting Rewinder will be provided.
4. Rewinder Rolls
 - All rolls will be dynamically balanced at 1500 m/min as per G2.5 balancing grade.
 - 2 nos. Bottom Roll of $\varnothing 600\text{mm} \times 5300\text{ mm}$ face length.
These will be mild steel pipe duly shrink fitted with end gudgeons. Rolls will have an extended drive shaft for driving arrangement. The rolls will be grooved & knurled on diameter for better grip and avoid slippage.
 - 2 nos guide rolls $\varnothing 400\text{ mm}$.
 - 2 nos chamber roll of $\varnothing 180\text{ mm}$ provided on the back side for providing crease free winding.
 - 1 no. knife roll, $\varnothing 350\text{ mm}$ with multiple bottom knife fitting.
 - 1 no. Lead-in roll, $\varnothing 320\text{ mm}$.
 - 1 no. Rider roll, $\varnothing 350\text{ mm}$
5. Hydraulic cylinder & counterweight arrangement for load roll.
6. Finish reel pushing arrangement. This will be pneumatically operated.
7. Shaft less arrangement for core holding (Manually operated)
8. Pneumatic control panel for rewinder operation
9. Cradle for unloading finished reel

Brake Drum Unit

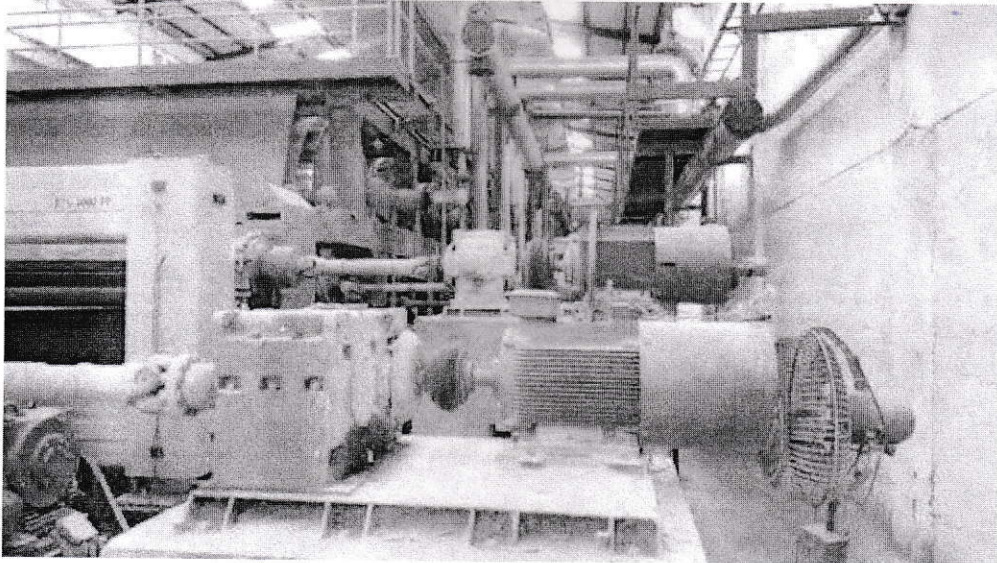
- ≡ Parent roll mounting stand
- ≡ Brake drum & brake shoe arrangement for pneumatic braking
- ≡ Brake drum is water cooled.
- ≡ Necessary coupling will be provided with brake drum to engage reeling shaft

Machine parameters

Maximum Finish Roll	: Ø1500 mm
Maximum Parent Roll	: Ø2200 mm
Maximum speed	: 1000 m/min
Multiple Bottom Knives in Full Length	: Included
Manually operated top knife	: 6 nos
Control Panel for Rewinder operation	: Included

Exclusion

- Motor, Drives (VFD), Panel & Cables
- Pneumatic fittings and pipeline
- Erection and commissioning and any other item not specially mentioned in scope of supply.

10.0 PAPER MACHINE SECTIONAL DRIVE:**MECHANICAL DRIVES**

- | | | |
|---------------------------------------|---|----------------------------|
| a. Gearboxes | : | SCAD |
| b. Cardon shaft | : | SCAD |
| c. Companion flanges | : | SCAD |
| d. Couplings between motor & gearbox: | : | SCAD |
| e. Base frames | : | SCAD |
| f. Motors, VFD & Panels | : | Customer's scope of Supply |
| g. Geared motor/Motor for Paper roll | : | Customer's scope of Supply |

TECHNICAL SPECIFICATION

The Sectional drive consists of parallel shaft gearbox with coupling at input and output end. Universal joint is used for connecting only movable rolls to gearbox.

Necessary gearboxes, couplings, cardon shafts etc. will be provided from Cad Paper Machine Pvt. Ltd.

Considering the machine speed and load parameter we shall provide you with genuine gearboxes and accessories for drive arrangement.

Our scope of supply will be between rolls to gearbox only.

Mechanical Drive details

Sr. no	Designation	Qty	Roll Details	Gearbox	Cardonshaft	Couplings
		nos	Ø - mm			
1	Couch Drive roll	1	930	✓	✓	✓
2	Forward Drive roll	1	730	✓	✓	✓
3	Suction pickup roll	2	600	✓	✓	✓
4	1 st Press Roll	2	1250	✓	✓	✓
5	2 nd Press Roll	2	1600	✓	✓	✓
6	Group - I Unirun turning roll	2	1200	✓	✓	✓
7	Group - I Felt Drive roll	1	415	✓	✓	✓
8	Group - II Felt Drive roll	4	415	✓	✓	✓
9	Group - III Felt Drive roll	4	415	✓	✓	✓
10	Size Press Roll	2	1000	✓	✓	✓
11	Group - IV Felt Drive roll	4	415	✓	✓	✓
12	Pope reel Drum	1	1000	✓	✓	✓
13	Rewinder (1500 rpm)	2	605	✓	✓	✓

Note :

1. Base frame & couplings between motor and gearbox input shaft will be supplied along with the drive arrangement. The motor will be in customer's scope of supply.

11.0 U.T.M. SLUSHING ASSEMBLY – 2 nos**Application :**

- Below Wire section
- Below Calendar & Pope reel

Technical Specification

- Application : To handle under machine broke (Kraft)
- Slushing Assembly : 1/2 nos as per requirement
- Slushing CY : 3 - 4 %
- Screen plate : Perforated plate
- Power requirement : 160~315 kW
- Motor Speed : 960 rpm
- Rotor Diameter : 800 mm

Principal Components:**Basic Machine**

- Welded screen box with outlet socket and supporting structure with screwed – on screen plate of Stainless steel.
- Slushing impeller with hard surfacing and screwed on hub protection sleeve of cast stainless steel packing contact surface with wear resistant coating.
- Stuffing box with connection for seal water
- Adjustable bearing, bearing housing of cast iron with steel shaft (EN-8)
- Anti-friction roller bearings and bearing support on one side of steel.

Foundation fasteners

Foundation bolts for equipment only.

Drive

Driven pulley of cast iron

Exclusions:

Drive Motor, Chute, VAT, Belt & Shower, Pumps, Pipelines and Shower.

EXCLUSIONS & SCOPE OF SUPPLY



12.0 SPECIFIC EXCLUSIONS

1. Steam & Condensate System (including Siphon/Turbulaters).
2. Vacuum System
3. Boiler & accessories

13.0 GENERAL EXCLUSIONS

Please note anything not explicitly mentioned in this offer would be understood to be excluded from **SCAD's scope of supply**. However, SCAD will provide the necessary details for procuring some machinery items like Vacuum system, Steam & condensate Control system, etc. which are all excluded from SCAD's scope of supply.

- Civil engineering, Civil Works.
- **Vacuum system**
- **Steam & Condensate control.**
- Felt, Wire & Dandy
- **Motors and all other Electricals**
- Water recovery system
- Finishing house equipment
- Piping, Valves, Ducts Etc.
- Consumables like Ropes, Belts, Oil and Chemicals etc.
- Spare parts unless specified
- Erection, Maintenance any other field activities
- Detail engineering not related to machine

14.0 LIST FOR SCOPE OF SUPPLY:

Pos.	Items / Section	Description	Scope of Supply	
			CAD	SPPL
1	Pressurised Headbox		✓	
2	Fourdrinier section			
	All Framings	MS/SS304 clad	✓	
	SS Boxes with Foils and T-bars	UHMWPE	✓	
	Breast roll with bearing & bearing housing		✓	
	Couch drive roll		✓	
	Forward drive roll		✓	
	Wire Guide roll		✓	
3	Press Section			
	All Framings	Mildsteel	✓	
	Press rolls + Rubber BD covering	Ø1250 & Ø1650 mm	✓	
	Suction pickup & Transfer roll	Ø600 mm	✓	
	Felt guide roll		✓	
	Hydraulic cylinders		✓	
	Control desk & Power pack		✓	
	Showers		✓	
	Doctors		✓	
4	Dryer Section			
	Drying cylinder	Ø1800 mm	✓	
	Drying cylinder Internal spider			✓
	Bearings for Dryer		✓	
	Bearing housing for Dryers		✓	
	Field instruments and pipeline			✓
	Rotary joints			✓
	Rope Carrier system		✓	
5	Size Press			
	Size Press roll	Ø1000 mm	✓	
	Starch showers - 2 nos		✓	
	Paper roll with bearing pedestal		✓	
	Control desk		✓	
	SS shower & trays		✓	
	Air bellows		✓	
	Size press kitchen		✓	

6	Post Size Press Dryer			
	Drying cylinder	Ø1800 mm	✓	
	Drying cylinder Internal spider			✓
	Bearings for Dryer		✓	
	Bearing housing for Dryers		✓	
	Rotary Joints			✓
	Rope Carrier system		✓	
7	Pope reel complete system	Autospool loading	✓	
8	Mechanical Drive			
	Gearbox		✓	
	Cardon shafts		✓	
	Companion flanges		✓	
	Motor, Drive, Panels & Motor coupling			✓
9	Rewinder with unwind stand		✓	
10	Couch pit agitator		✓	
11	UTM Pulper Slushing units		✓	
12	Walkways & Platforms	Mildsteel	✓	
13	UTM VAT with chute showers	Civil considered		✓
14	Common items in all sections			
	All Sole plates		✓	
	Mildsteel framings	Mild steel or SS cladde	✓	
	Doctor holder		✓	
	Autoguide	E+L	✓	
	Stretcher	SCAD design	✓	
	Micro travel shower with oscillator	G Vardhan, Spraying sys	✓	
15	Erection & Commissioning			✓

15.0 PRICE SUMMARY

Pos.	Item	Description	Qty	Total Value
			nos/set	₹
1	Fourdrinier Section	with Plain couch roll	1	2,69,16,773
2	Press Section	With Suction pickup & Transfer	1	6,14,43,589
3	Pre Dryer-Section	Frames + Accessories	1	3,67,42,600
4	Size Press	Frames + Accessories	1	99,63,100
5	Size Press Kitchen	SS304	1	16,50,000
6	Post Dryer Section	Frames + Accessories	1	1,57,41,400
7	Pope Reel	with Autospool loading system	1	40,40,000
8	Reeling shells	Ø380 mm	8	44,00,000
9	Rope Carrier System	Dryer + Size Press + Pope reel	6	13,50,000
10	Mechanical Drive	GB + Cardonshaft + Couplings	26	58,50,000
11	UTM Pulper	Slushing unit	2	34,25,000
12	Rewinder		1	91,00,000
13	Walkways		1	23,50,000
14	Spares		1	1,80,00,000
A	Paper Machine Section			₹ 20,09,72,462

BOUGHTOUTS

1	Pressurised Headbox		1	
2	Drying cylinders	Ø1800 mm	26	
3	Chrome Drying cylinders	Ø1800 mm	26	
B	Boughtouts Total	Headbox + Dryer (CIF)		₹ 4,91,55,920
C	TOTAL PROJECT COST	C = A+B		₹ 25,01,28,382

TOTAL ORDER VALUE : ₹ 20,01,00,000.00

The above price is ex-works, excluding GST, packing, and forwarding.

16.0 TERMS & CONDITIONS :**DELIVERY SCHEDULE / TERMS OF DELIVERY**

- ≡ The delivery will be as mentioned below
- ≡ Time estimated: 7~8 months
- ≡ Technically and commercially clear purchase order
- ≡ Timely advance payments
- ≡ Approval of drawings, whichever is later.

PRICE OF THE EQUIPMENT – TAXES

- ≡ The price stated in this contract is subject to escalation
- ≡ The prices offered are subjected to escalation clause as under:
 - A = Price offered in our quotation.
 - B = Price of steel per MT of Indian Steel as on confirmation date.
 - C = Price chargeable at the time of delivery.
 - D = Price of steel per MT of Indian Steel at the time of delivery.
- Formula: $C = A + [(A \times D/B) - A \times .65]$
- ≡ Delivery should not be delayed by the Purchaser. This may result in increase in the value of goods. The demurrages will have to be paid by the purchaser.
- ≡ Any taxes, custom duties or charges imposed in the importing country shall be paid by the Purchaser, and if paid by the Seller, Purchaser hereby agrees to repay Seller for the full amount thereof, at first request of Seller.
- ≡ Our prices quoted in Rupees are to be understood for delivery **EX-Works, unpacked and all taxes & duties are extra.**
Items covered under this category has been clearly marked (#) in the technical specification for purpose of clarity.
- ≡ The prices offered are excluding G.S.T @ 18%. The above will be charged extra as applicable at the time of delivery.
- ≡ The customer will have to arrange for Insurance. When material becomes ready for dispatch you will be intimated details of dispatch such as L/R No., Challan No. & Invoice No.
- ≡ CAD shall arrange dispatches through road transport to be recommended by customer on **Freight To-Pay basis.**

PAYMENT

The Purchaser shall pay the agreed price in accordance with the conditions of this agreement. Any delay or irregularity in the payment shall entitle the Seller to suspend the performance of this contract as well as of any other contract between the parties.

Moreover, the Seller shall have the right, with no need for any intimation to pay, to obtain interests for delayed payment, corresponding to the Indian official reference rate.

TERMS OF PAYMENT

- ≡ 45% of total Rupees order value is payable up on order placing at stage wise intervals.
 - 15% against Order confirmation
 - 15% against Engineering details submission within 20~25 days
(Civil plans, Plan & Elevation of paper machine, machine details – vacuum & drive details)
 - 15% within 90 days of PO date/work progress.
- ≡ 55% payment is against presentation of Performa Invoice against staggered delivery when the materials become ready for delivery stage wise.
- ≡ For imports 30% of the value of Drying cylinders and its accessories & Headbox to be paid in advance and balance 70% in full prior to shipment.
- ≡ All payments should be released by at par cheque payable at Vapi or can be deposited with the bank against account details provided or by NEFT/RTGS.

≡ Bank Name	: STATE BANK OF INDIA
Bank Branch	: Vapi Industrial Town Ship
Account No.	: 30177424902
IFSC Code	: SBIN0001658

TAXES AND DUTIES

GST @ 18% will be applicable on the basic value of Goods.

GSTIN no. : 24AAACC9633N1ZE

HSN Code for Parts : 84399900

HSN code for Capital Equipment : 84392000

PACKING

Machine will be dismantled and packed in necessary wooden cases, crates, gunny wrap and as loose pieces suitable for containerized shipment.

The approx. packing charges will be 1.0% of the total project cost.

Specifications of packing material:

- ≡ All the frames will be shrink wrapped with PVC film.
- ≡ All the rolls will be packed in wooden boxes
- ≡ Loose items will be packed in gunny bags, boxes or crates as required.

GUARANTEE

For the components, materials, and workmanship for a period of 6 months from date of commissioning or 12 months from date of supply whichever is early.

CAD Paper Machine Pvt. Limited, will extend the sub suppliers Warranty for the components supplied by them.

For the components, materials, and workmanship for a period of 12 months from date of supply whichever is early.

- ≡ Rubber covering cannot be guaranteed. The guarantee is applicable only if it is found that there is a material/covering defect.
- ≡ Bearing failure will be covered under 3rd Party analysis. The guarantee against any manufacturing defect will be provided from the OEM.
- ≡ CAD Paper Machine Pvt. Limited, will have no warranty obligation under the paragraph -
- ≡ If the buyer fails to ensure that the parts are operated and maintained in accordance with generally approved Industry practice.
- ≡ If the parts are repaired by someone other than CAD Paper Machine Pvt. Limited, without CAD's, written instructions.
- ≡ In cases of corrosion, erosion, ordinary wear, and tear of any parts which by their nature are exposed to severe wear and tear or are considered expandable
- ≡ In no event, whether based on contract, tort (including negligence), strict liability or otherwise, shall CAD Paper Machine Pvt. Limited, its employees, subcontractors or suppliers be liable to the Buyer or any third party for special, incidental, indirect, consequential, or punitive damages of any nature including, loss of use, profits or revenue, loss by reasons of plant shutdown, the inability to operate any facility at full capacity or increased expense of plant operations.
- ≡ Subject as hereinafter set out, the Seller undertakes to remedy any defect of the Equipment resulting from faulty materials or workmanship, provided such defect is notified to the Seller within (8) days from its detection and in any case within the guarantee period. The guarantee period is of 12 months from the date of delivery.
- ≡ The Seller's liability shall apply only to defects that appear under normal conditions of operation and proper use. It does not cover defects arising from the Purchaser's faulty maintenance or erection, or from alterations carried out without the Seller's consent in writing, or from repairs carried out improperly by the Purchaser, nor does it cover

normal deterioration. The Seller is not responsible for failures due to negligence, accident, abuse, improper storage or maintenance, or abnormal conditions of temperature, moisture, dirt, or corrosion.

- ≡ After having received from the Purchaser a written notification of the claimed defect, the Seller shall make the appropriate test and inspections, and if the Equipment is found defective, the Seller will have the option either to repair or to replace the defective parts. The costs of dismantling and installation of the equipment as well as the cost of transportation of equipment which has been replaced, or repaired at the Seller's premises, are for the Purchaser's account.

ERECTION

Should be arranged by the buyer as per our supplied drawing

GENERAL

These general conditions shall apply, save as varied by express agreement accepted in writing by both parties. Additional or different terms proposed by the Purchaser shall not apply, unless expressly accepted in writing by the Seller. In case of contradiction between these general conditions and any special conditions agreed upon between the parties, the special conditions shall prevail.

DRAWINGS AND DESCRIPTIVE DOCUMENTS

The weights, dimensions, capacities, prices, performance ratings and other data included in catalogues, prospectuses, illustrated matter, price lists or similar documents, constitute an approximate guide. Such data shall not be binding, save to the extent that they are by reference expressly included in this contract.

SUPPORT INFORMATION

As an accommodation to the Purchaser, the Seller will utilize available sources, and make calculations and assumptions based thereon, to meet the Purchaser's requests regarding information pertaining to connections at terminal points of the Equipment's as such points relate to design, construction and procurement of buildings, foundations, sill beams, vacuum pumps, and piping. The utilization of this information as furnished by the Seller and the consequences of such use shall remain the responsibility of the Purchaser.

SUBSEQUENT CHANGES

The Purchaser may request changes in the design, drawings and specifications, shipping instructions and shipment schedules of the Equipment. As promptly as practicable after receipt of a written request, the Seller will inform the Purchaser of the amendments to the terms and conditions of the contract (such as price, specifications, delivery schedule) which will be necessitated by the requested changes. Such changes will become effective upon the written acceptance by the Purchaser of the conditions proposed by the Seller.

The Seller reserves the right to make minor changes in detail of design, construction or arrangement of the Equipment as shall, in its judgement, constitute an improvement with respect to the former practice shown or described in the specifications.

DELIVERY

Save as otherwise agreed in writing, delivery shall be on To-Pay basis to Seller's premises. Unless special shipping instructions are received from the Purchaser substantially before the shipment date, the Seller is hereby authorized to decide on behalf of the Purchaser as to the best means of shipment and routing consistent with the nature of the equipment and shipment schedule.

The delivery date has been established on the basis of prompt receipt of the Purchaser's approval of engineering production layout drawings and receipt of the Purchaser's decision on any other engineering changes within 30 days after submission by the Seller. If the Purchaser's approvals and decisions are not received within the periods set forth above, the Seller may extend the delivery date.

The Seller will use all reasonable diligence to meet the dates schedules for delivery. However, the seller shall not be liable for any loss, damage, expense, or charges resulting from delay in delivery.

TRANSFER OF RISK

Unless otherwise agreed in writing, the risk, in respect of the Equipment shall pass to the Purchaser when the goods are handed over to the first carrier.

However, if the Purchaser refuses to take over the Equipment or if he does not so in due time, the risk (as well as the responsibility for any expenses relating to the Equipment) passes when the goods are placed at his disposal, and he commits a breach of contract by failing to take delivery.

INTELLECTUAL PROPERTY

It is agreed that all drawings, specifications, plans, software, and any other documents provided by the Seller or by anyone on his behalf (Intellectual Property), and any other property rights related to the Intellectual Property will remain the exclusive property of the Seller.

The Intellectual Property will be used exclusively to carry out the obligations referred to in the present contract and cannot be used by the Purchaser or his employees or agents for the execution of other contracts, that is, for the completion of the present contract utilizing any party(ies) which is not the Seller, without the prior written consent of the Seller. The Purchaser undertakes to maintain strictly confidential the Intellectual Property which comes into his possession or knowledge, even after the resolution of the present contract.

FORCE MAJEURE

The Seller shall not be liable for any failure or delay in performance of its obligations not be deemed to be in breach of this contract if such failure or delay has arisen from "force majeure".

Upon written notice by the Seller the deadlines for the fulfilment of contractual obligations shall be automatically extended for a period of time equal to the period of delay caused by the circumstances of force majeure plus the delay reasonably incident to the resumption of normal production.

"Force majeure" means circumstances or conditions beyond the reasonable control of either party which make it substantially impossible to fulfil its obligations or which delay such fulfilment. Shall be in particular considered as circumstances of force majeure: strike, non-delivery of material by suppliers, acts of God, war, insurrection, governmental actions, war or national emergency, acts of terrorism, protests, riot, civil commotion, lockouts, go slow, fire, explosion, flood, epidemic, strikes or other labour disputes (whether or not relating to either party's workforce), power cuts, restraints on shipping, action of states and its statutory bodies, or any other reasons beyond our control or restraints or delays affecting carriers or inability or delay in obtaining supplies of adequate or suitable materials or the discovery by the Seller of any defects in castings manufactured by the Seller for the Contract etc.

LIMITATION OF LIABILITY

The limited warranties set forth herein are exclusive and in lieu of all other warranties, express of implied by law or trade usage, including any warranties of merchantability or fitness for a particular purpose and shall be the the Purchaser's sole and exclusive remedy. Purchaser waives any other basis for recovery against Seller, and Seller shall not under any circumstances, be liable for any incidental or consequential damages, including, but not limited to loss of use, loss of anticipated profits loss of or reduced production or loss of contract.

VALIDITY

The quotation is strictly valid for **30 days** from the date of issue. However, if unforeseen increase in cost of raw material and other incidentals occurred during the course of delivery duration the quoted price shall be subject to revision.

ARBITRATION

In the event of any question of dispute arising under or in any way touching the contract, the same shall be referred by Arbitration in accordance with the Indian conciliation and Arbitration act 1996 and rules made there under. The venue of Arbitration shall be Vapi (Gujarat).

JURISDICTION

Subject to courts of Vapi in India.

TERMINATION

Order once is placed it can only be cancelled on mutually agreed terms in writing.

INSURANCE

CUSTOMER shall arrange transit insurance on prior intimation at the time of dispatch with the details of L/R No, Challan no and Invoice No.