

JMW INDIA PVT LTD

Works : JMW INDIA PVT. LTD. Unit-II, E-530-531, RIICO Ind. Area, Chopanki, Bhiwadi Dist. Alwar,
(Rajasthan)-301019, GST No. 08AAACJ3260C1Z1
Ph. No. 8058007072 (Akhilesh Tiwari)

Purchase Order

To,
DIVINE MACHINES PVT. LTD.
SURVEY NO. 246 / P2, B/H GRAM SWARAJ MANDAL,
NEAR BHUMI INDUSTRIAL AREA,
VILLAGE : VERAVAL (SHAPAR) RAJKOT - 360 024


Dated: 25.08.2022

Dear Sir,

With reference to your offer no. DMPL/188 Dated 06.08.2022 we are pleased to place our purchase order as following:

| Sr. No. | Description | QTY. | Rate | Amount |
|---------|---|------|-----------|------------------|
| 1 | PRECISION SLITTING LINE DOUBLE LOOP TYPE WITH TRAVELING DRAG TENSIONS & COILER WITH PROVISION FOR INTERCHANGING DRUMS | 1 | 78,00,000 | 78,00,000 |
| | GST 18% | | | 14,04,000 |
| | Total Ex Supplier Works | | | 92,04,000 |

Billing Detail: - JMW INDIA PVT. LTD.
E-530-531, RIICO INDUSTRIAL AREA,
CHOPANKI, BHIWADI, DIST. ALWAR,
RAJASTHAN-301019
GST No.: -08AAACJ3260C1Z1

For JMW India Pvt. Ltd.

Authorized Signatory

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PRECISION SLITTING LINE DOUBLE LOOP TYPE WITH TRAVELING DRAG TENSIONS & COILER WITH PROVISION FOR INTERCHANGING DRUMS

| | |
|------------------------------|--|
| Material | Copper and its Alloys |
| Strip Thickness | 0.025 mm (min) 0.50 mm (max) |
| Strip Width Incoming Coil | 100mm (min) 450mm (max) |
| Decoiler Mandrel Dia. | 500 mm (Hyd. Expand Collapse) Collapse: 390mm Expand 500mm |
| Incoming Coil O.D. | 1400 mm (max) 400 mm (min) |
| Incoming Coil Weight | 4,000 Kqs (max) |
| Outgoing Coils Weight | 500MM/2000KG, 400MM/1500 KG, 300MM/800 KG, 200 MM/500, 150 MM/370 KG, 100MM/300KG, 75 MM/150KG |
| Slit Width (*) | 10 mm - 450 mm ,Tolerance +/-0.1 MM |
| Recoiler Mandrel Diameter | Individual shaft + Mandrel of 75mm as well as Shaft and mandrel of 100mm, 125mm, 150mm (Total 4 Drums) ,Recoiler mandrill should be interchangeable with thick gauge slitter |
| Coil O.D. | 800 mm (max) |
| Recoiler Mandrel Diameter | 75mm, 100mm, 125mm & 150mm (Customer to Order Separately the Drums required by them time to time. |
| No. of Cuts | 20 Cuts at 0.050 Thickness |
| Line Speed | 0-200 MPM |
| Threading Speed | 0-20 MPM |
| Mode of Slitting | Driven Slitter Head, Double Loop, Configuration for Entry And Exit. |
| Line Direction | To be Decided by Customer. |
| Hydraulic Pressure | Max. 105 Bars. |
| Compressed Air | 20 CFM FAD @ 100 psi |
| Re-Circulating Water | 4m3/hour @ 28 degree C |
| Connected Load Power Supply | Approximately 80 KW 415 Volts +/- 10%, 3 Phase, 50 Hz +/- 3%, 4 wire system |

List of Equipment:

1. Pit Type Coil Car With Saddle to accommodate 2 coils of 450mm width.
2. Single Mandrel 4 Jaw Uncoiler - Driven type for Electrical tension through A.C. Motor & Drive.
3. Pinch Roll Unit with 3 Roll Bridle Rolls
4. Entry Loop Quadrants (Loop Pit Equipment) with Bridging Table No. 1 and Side Guides.
5. Slitter Head/ Slitter Arbor Assembly driven with Manual Nut arrangement.
6. Bridging Table No. 2 in line to remove the scrap.

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7. Scrap Baller Unit. scrap Baller shall have Hardened side plates, speed match Slitting Speed, Rotary Drum Type Baller Unit.
8. Loop Quadrants on Exit of the Slitter Head.
9. Bridging Table No. 3
10. Retractable and Traveling type drag wipe tension unit with in- line separators, Pinch Rolls and Deflector Rolls.
11. Recoiler without Out-Board support system which would retract when the slit coil would be pushed out.
12. Complete Hydraulic System with Power Pack, Valve Stand, Heat Exchanger etc.
13. Machine Trial at Supplier's factory with 0.045 thick soft Copper and Hard Copper Strip would be take before the shipment of the machine.

Customer's Scope of Supply

- i) Hydraulic Piping and Fitting etc.
- ii) All Electrical Power Cabling & Control Cabling would be in the Customer's Scope.
- iii) Foundation Bolts and Packing Plates iv) All Tooling for Slitter Head, Inline separators and other tooling. v) Recoiler Drums

01 PIT TYPE COIL CAR WITHOUT SADDLE

| | |
|-------------------|----------------------------------|
| PLATFORM TOP | : STEEL 'V ' NYLONI TEFLON FACED |
| PLATFORM LIFT | : BY HYDRAULIC CYLINDER |
| PLATFORM TRAVERSE | : BY HYDRAULIC CYLINDER |

General Construction

The car shall be of rugged fabricated steel construction.

Lift Platform

The 'V' type platform is raised and lowered for coil positioning by means of a hydraulic cylinder. Guide bars guide the platform in its vertical motion.

Wheels

The car is mounted on four hardened wheels. Wheels are single collar with channel type rails. Wheels are supported in grease lubricated roller bearings. The car is pushed / pulled using hydraulic cylinder.

Storage Saddle

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Coils awaiting processing shall be loaded by coil storage saddles. This will provide storage for two maximum width coils. Saddle is of welded steel construction fitted with nylon pad facing on the supporting faces and are secured to foundation on either sides of the coil car track.

Hydraulics

Hydraulic power is supplied from the line hydraulic unit.

Piping

The machine is pre-piped to suitably located manifold till the outside or battery limit.

02. SINGLE MANDREL UNCOILER

Basic Expansion

By Hydraulic Cylinder, 385 mm to 415 mm

Centering Adjustment

Traverse Sliding base through Hydraulic Cylinder

Back Tension

By Electric AC Motor, 12 KW, drive to maintain variable Back tension through the operator desk.

Unwind Type : Bottom Unwind.

By Electric AC Motor, 12 KW, drive to maintain variable Back tension through the operator desk.

Unwind Type : Bottom Unwind.

Main Housing, Shaft and Bearings

This housing is of welded steel construction incorporating all necessary ribbing for strength of structure. The main forged steel (EN-9) shaft is supported in grease lubricated antifriction roller bearings. Suitable Gearbox Housing with hardened and ground gears having splash lubrication.

Mandrel (Drum)

This unit would have a four segment wedge type expanding mandrel, to grip the inside diameter of the coil/sleeve. Expansion is by means of a hydraulic cylinder operating a pull rod passing through a bore provided all along the length in the shaft. The hydraulic cylinder

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is fixed on the back side of the shaft and is powered hydraulically through 2way rotary union.

Back Tension

The back tension is obtained by providing AC Motor of 12 KW and Suitable Drive.

Centering Adjustment

The entire un-coiler housing is mounted on the machined bronze lined guide ways incorporated in the fabricated steel sub-base, and is laterally adjustable for coil centering by means of a hydraulic cylinder.

Hydraulic Power

Hydraulic power is supplied from the line hydraulic unit.

03 THREE ROLL BRIDLE UNIT & PINCH ROLL UNIT

Three Roll Bridle unit:

Forged Alloy, Hardened & Ground, 62HRC Steel Roll diameter of 60mm x 3 Roll, supported in grease lubricated bearing system with Centre Roll Moving through a manual jackuator. The assembly would be provided before the Pinch Roll to keep the material taut and Stretched to avoid Creasing / Folding of the strip on the pinch Rolls.

PINCH ROLL

| | |
|-------------|--|
| Top Roll | : Dia 100mm (PU Coated of 90 Shore A) |
| Bottom Roll | : Dia 100mm (PU Coated of 90 Shore A) |
| Drive | : 5 KW / 7.5 HP AC Drive Motor (AC Close Loop Vector Controlled) |

The pinch rolls are tubular steel fabricated roll supported in grease lubricate bearing. Both roll would be polyurethane lined/ coated.

Roll Actuation

Bottom roll is actuated by pneumatic cylinder. Top Roll Fix. Bottom roll has a drive and forms a pass line roll.

Roll Drive

Bottom roll is driven by AC WVF drive motor (AC Closed Loop vector controlled)

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Base frame

This is fabricated steel constructed provided with flanged footings for foundation bolts.

04. ENTRY - LOOP QUADRANTS (Loop Pit Equipment)

These comprise of the following:

- i) Entry & Exit Loop Quadrant Curved table, arranged in basket type, with NonWoven Carpet, Quick Changeable. Angle of the curved table shall be decided in the GA Drwing.
- ii) A suitable radius will have to be provided at entry and exit of the looping pit to support the strips going and coming out of the pit.
- iii) Carry over table for initial threading.
- iv) Side Guide for Entry at Slitter head with both motion i.e. left and right and complete centering.

The quadrant system with felt / carpet of suitable radius will facilitate free flow of strips into and out of the loop pit.

Side Guide

One No, side guide would be provided at the entry of the slitter. The Side guide comprises of 1 set of hardened wedge / plate. The adjustment of banks is accomplished with a lead screw provided with handle for manual adjustment.

BRIDGING TABLE No.1 (Carryover Table mentioned as point iii above)

The Off Line bridging table for bridging the loop pit for threading of strips from pinch roll to slitter head would be actuated by pneumatic cylinder.

05. SLITTER ASSEMBLY

Slitter Arbor Diameter : 70mm
Slitter Knife Diameter : 125mm
Drive : 7.5 H.P. AC VVVF Drive Motor (AC Closed Loop Vector Controlled)
Scrap on each side : 10mm (min), 25mm (max)

The slitter head comprises a pair of precision machined arbors mounted in rugged steel housing. The arbors run in High Precision Angular contact Ball bearings (Precision Class P4) in the inboard housing, and in single sleeve roller bearings in the outboard housing.

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Fixed housing would have 2 sets (match Pair) aligned back to back and movable housing would have two sets (match Pair).

The outboard movable housing is manually retractable to facilitate tool changing; the open gap shall have 100mm Minimum.

Main Base

The main base is of welded steel construction, incorporating all necessary ribbing for strength of structure.

Drive

The slitter arbors are driven via coupling, pinion stand and gear reducer.

5a. BRIDGING TABLE No.2 (In-Line to remove the Scrap)

The In Line bridging table No.2, is required for diverting the Scrap below to the vacuum blower.

This table is a combination of Hinged as well as fixed table and is collapsible.

The Hinged portion acts like an apron, which drops (horizontal to ground) towards the Slitter Head (exit side) to maintain the pass line and to immediately give a support to the slitted strips to avoid any kinks and dents when the machine is running.

During tool changing this apron would be raised towards the sky and the total table is pushed back manually towards the drive side. Once the tools are changed the table is brought in place and the apron again is dropped horizontal to the ground.

06. SCRAP BALLER UNIT

| | |
|------------------|-------------------|
| Max. strip width | : 25 mm. |
| Max. Ball Dia | : 500 mm |
| Max. Ball Width | : 450 mm |
| Main Drive | : 7.5 KW AC |
| Balling speed | : 50 Mtrs. speed. |

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Location : Operator side

Scrap Weight : 100 kg. max.

This unit is designed to ball 100 kg max edge scrap from the slitter.

Baller Mandrel

The steel mandrel is supported in pillow blocks and connected to the output shaft of an enclosed helical speed reducer/Gear motor. The mandrel is tapered and provided with a slot for holding the scrap end. The edges on the housing would be lined with hardened plate.

The basket surrounding the mandrel and scrap ball is of heavy welded steel and is integral with the main base. The drive base is mounted on bronze lined guides supported by the main base. A hydraulic cylinder is mounted on the main base and moves the drive base to slide the mandrel out of the ball.

Compacting Roll

A compacting roll rides on top of the scrap ball as it is wound. This roll is mounted from a hydraulically actuated pivoting arm. A limit switch shuts off the drive when the ball is of proper size.

Drive

The mandrel drive consists of an AC motor & DOL Starter driving a helical reducer.

Hydraulic Power

Hydraulic Power is supplied from the line hydraulic unit.

07. LOOP QUADRANTS ON EXIT OF THE SLITTER HEAD

These comprise of the following:

- i) Exit Loop Quadrant Curved table, arranged in basket type, with 4 light weight Nylon 6x, rolls with antifriction ball brgs. A suitable radius will have to be provided at entry and exit of the looping pit to support the strips going and coming out of the pit.
- ii) Carry over table for initial threading.

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The quadrant rolls are free rotating rolls arranged over a radius to facilitate free flow of strips into and out of the loop pit.

BRIDGING TABLE No.3

The Off Line bridging table for bridging the loop pit for threading of strips from Bridging Table No.2 to Traverse Type Brake/ Drag unit.

08. TRAVELING TYPE DRAG WIPE TENSION UNIT WITH IN- LINE SEPARATORS, PINCH ROLL AND DEFLECTOR ROLL

Means of Tension : Pneumatic
Means of Actuation : A.C. Asynchronous Servo Controlled

In-Line Separators

In line separator is a free rotating roll provided with a collar on which separator toolings are assembled before and after tension pad. The shaft is designed to facilitate easy tool set-up change. A hold down roll is provided for preventing the slit strips from jumping over the separator discs.

In Line separators - 3 sets: i.e. one in the pit, one before the Pressure Pad/ Drag unit and one after the Pressure Pad. (Discs & Spacers are in Customer Scope).

Tension Pad

The tension pad consists of a top wooden pad located in the pivoted and counter balanced top yoke and a bottom pad constructed from flexibly compiled wooden fingers of 25mm pitch resting on large diameter "Wind Jammer" i.e. "Air bellow" of 8" diameter tubes. The top pad is located in position using manual lock. The wind jammers are air tubes of large diameter with canvas coating and when inflated, exert drag pressure on the strips passing through the tensioner.

Traveling Feature

The complete tensioning unit is mounted on a traveling unit and operated by AC Servo Motor on a ball screw guide way. The unit is positioned closed to recoiler mandrel while starting the coiling and progressively traversed away from recoiler as the built-up increases. The gap between the recoiler mandrel and the Deflector Roll shall be 50mm or less on the starting and then the last point shall be calculated by considering the maximum built up (800mm) on 100mm, 150mm as well as 200mm recoiler drums.

Deflector roll

Chrome plated deflector roll is provided for deflecting the strip before rewinding. The line speed would also be measured through an encoder

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Hydraulic Power

Hydraulic power is obtained from the line hydraulic system. ,

09. RECOILER WITHOUT OUT-BOARD SUPPORT

Type : Manually Expandable type 3, Jaw self-centering all three jaw
movable.

Mandrel Diameter :

| ID | OD | WEIGHT |
|-----|-----------|----------|
| 400 | 1200 | 2500 KG |
| 300 | 800 | 2000 KG |
| 200 | 600 | 1500 KG. |
| 150 | 500 - 550 | 800 KG. |

ALL THE DRUMS ARE TO BE ORDERED SEPERATLY BY CUSTOMER AS & WHEN REQUIRED.

Expansion / Collapse : Manual

Drive : 30 H.P. AC Close Loop Drive

Housing and Base

The Recoiler housing and base is of welded steel construction incorporating all necessary ribbing for strength of structure.

Shaft and Bearings

The main Recoiler shaft is running in grease lubricated anti-friction bearings and supported in the main housing.

Gear box

The Recoiler shall be driven by motor through reduction gear box. A holding brake is featured.

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Stripper Plate

A push-off for stripping the coils off the Recoiler drum is mounted on top of the housing. The push-off consists of fabricated steel plate supported by guide rods which slide in bronze bushings. The push-off is moved in and out by hydraulic cylinder.

Out-Board Support.

Hydraulically actuated out-board support is provided.

Hydraulic Power

Hydraulic power is supplied from the line hydraulic unit.

Turn Style Jack Type Manual operated

10. HYDRAULIC POWERPACK

To Supply pressurized fluid to all hyd. actuators at desired pressure and quantity.

- Self contained fabricated unit.
- Oil tank with partition, level indicator & filler breather.
- Pump, motor, controls mounted on top for easy setting & accessibility.
- For ease in operation some valves are mounted on individual machines.
- Low noise device.
- Heat exchanger is provided as option for continuous duty cycle. - Layout piping is not included in DMPL scope of supply.

TECHNICAL DATA

| | |
|----------------|--------------|
| Max. delivery | : 12 G.P.M. |
| Max. pressure | : 75 Bar |
| Motor capacity | : 5 H.P. |
| Tank capacity | : 150 Liters |

11. CONTROL PANEL

For Electrical controlling of line equipment.

CONSTRUCTION

- Fabricated sheet metal enclosure.
- Easy accessibly mounting of components.

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- Front panel with operator interface, push button panel, meters & indicators.
- In case of CNC or PLC units are ready wired to be connected with line CVT or UPS of customer.
- All CNC or PLC are with Rs. 232 port or PC connectivity.
- For ease of operation operator pendent can be at difference desired place on line. - Layout (Trench) cables wires are not in DMPL scope of supply, to be those, arranged by customer.
- Mains with 3 phase 4 wire necessary protections to be arranged by customer near main panel console.

STD ACESSORIES:-

Offered line includes following standard accessories free of cost with the equipment supplied.

- One set of setting screw, spanner, hand wheels etc. required to set & operate equipment.
- One set of installation, operation & maintenance manuals with figs. & tables.

Following Items can be supplied at extra cost if required:-
Set of shims, spacers, dies, tools etc. used for line production.

- Set of installation materials, line foundation bolts, wiring cables hydraulic/pneumatic pipes, spanners, hammers etc. tools hydraulic/pneumatic.
- Set of recommended maintenance spare parts (electrical & mechanical) wear parts used in line equipment.

Terms & Conditions:-

- | | |
|---|---|
| 1. Terms of Payment: | 20% Advance with order, 20% after one month progress and 55% payment with 100% taxes against Inspection & Approval of equipment at supplier factory against Proforma invoice prior to loading & dispatch. Balance 5% retention amount to be paid after Successful commissioning at customer site. |
| 2. Delivery Period: | Within 5 Month from the date of Order with advance payment. |
| 3. Fright and Insurance: | As per actual on our account. |
| 4. Packing Charges :- | NIL |
| 5. Forwarding Charges :- | NIL |
| 6. Guarantee: | 12 Months from the date of Commissioning or from the date of dispatch whichever is earlier. |
| 7. Trail :- | Trial of the machine will be held at customer site only. Trial material will be supplied by Customer. |
| 8. Training :- | Supplier shall provide free training to customer person at customers factory only. |
| 9. Supervision to Installation & Commissioning:- | Mechanical Erection Shall Be Done By Customer. For Electrical Commissioning, DMPL Shall Depute Their Engineer for Only 2 Days as Free of Charge. If Additional Days Stay Required by Customer, Then Rs.8000 Per |

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Day Shall Be Charged.

- (a) Preparing site lay out drawing & equipment foundation marking at site.
- (b) Site inspection by supplier engineer during civil work. Civil work to be complete by customer team
- (c) Cold start & Dry run of all equipment. Fine tuning of all equipment at customer site.
(To be done jointly by customer team & supplier team)
- (d) Production up to 3 coils of various sizes. (To be done jointly by customer team & supplier team)

10. **Tolerances:** Tolerance & drawing matter acceptable by supplier only after technical discussion with customer.

11. **FORCE MAJEURE:** Standard force major clause will be applicable.

