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| Manufacturing, Supplying and Installing in position Composite Art Conserving units should be comprising of  4-pull out panels block ‘A-TYPE’ (Single Aisle) having overall size including operating aisle of ‘4050’mm and as per details given below | |
| Quantity: ‘1’ block | |
| UOM: One Block as per dimensions given and as description given above. | |
| A -TYPE | Height : 1900  Width :1625  Depth : 2200  Clear Opening -1850 (All are in mm.) |

**Specifications**

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| **1.0 Frame- Assembly** | Frame assembly comprises of :  **1.1 Frame Upright (1)** : Frame upright should be of Roll formed construction of section size minimum ‘80’ mm wide x ‘80’ mm deep x ‘1.6’ mm thick made in single piece without welding. It should have minimum of 8 bends with holes / slots at every ‘50’ mm for flexibility. The manufacturing process of punching and forming is to be in one flow and a synchronized operation, thereby providing dimensional accuracy and contour uniformity.  **1.2 Bracings (2)** : Diagonal and Horizontal bracing channels are to be used to join uprights to make frames. The bracing channels should be of lipped ‘C’ profile of section size ‘30’ mm x ‘30’ mm x ‘6’ mm lip x ‘1.6’ mm thick. The channel should be of single piece Roll formed construction.  **1.3 Base Plate (3) :** Stopper should be made from Mild steel rod of minimum ‘8’mm diameter and bent in the form of ‘C’ to give the adequate strength. Base plate should be grouted to the floor, to distribute the load to ground, using ‘2’ numbers of expansion bolts.  **1.4 Stability tie rods (4):** Top of the frames should be provided stability by means of ‘3’ pairs of tie rods for ‘8’ pullout panels unit & ‘6’ pairs of tie rods for ‘16’ pullout panels unit of minimum ‘9’mm diameter with standard turn buckle adjustment.  **1.5 Rear Stability Beams (5):** Rear end of the frames should be stabilized using stability beams. Beams should be of box type construction, made of two ‘C’-section, through crimping technology. The Beam section should be minimum ‘75’ mm x ‘50’ mm x ‘1.6’ mm thick. No welding is to be done throughout the beam length and only the beam ends are welded to the end connectors.  The end connectors should be of minimum ‘3.5’mm thickness with minimum ‘3’ holes for bolting. The beams are to be bolted on to the vertical uprights through end connectors.  **1.6 Top horizontal Beam (6):** A top horizontal beam should be provided to connect the extreme end of the frames to provide support for the guiding uprights (7). Beams should be of box type construction, made of two C-sections, through crimping technology. The Beam section should be minimum ‘75’ mm x ‘50’ mm x ‘1.6’ mm thick. No welding is to be done throughout the beam length and only the beam ends are welded to the end connectors. The end connectors should be of minimum ‘3.5’mm thickness with minimum ‘3’ holes for bolting. The beams are to be bolted on to the vertical uprights through end connectors.  The beams should be welded with Roll formed angle section of ‘2.5’ mm to enable fitment of the guiding upright (7). The beams are to be bolted on to the vertical uprights between the frames, perpendicular to the movement of trolleys.  **1.7 Guiding Upright (7):** Guiding Upright should be of Roll formed construction of section size minimum ‘110’ mm wide x ‘90’ mm deep x ‘1.8’ mm thick made in single piece without welding. It should have minimum ‘12’ bends with holes / slots at every ‘50’ mm for flexibility. The manufacturing process of punching and forming is to be in one flow and a synchronized operation, thereby providing dimensional accuracy and contour uniformity.  **1.8 Stopper (8):** Stoppers should be provided in the front and rear of the frame to arrest movement of trolley beyond desired point. Front stopper is to be provided to ensure that trolley will not come out of the frame totally. Rear stopper is to be provided to ensure that the trolley does not hit the rear stability beam and the trolley front cover aligns with the face of the front frame upright.  **1.9 Module cover (9):** Module cover should be comprised of panels forming an enclosure at top, back and both extreme sides of the art storage unit. Each panel shall be of minimum ‘6’ bend construction and roll formed for the entire height without welding / other joints. The panels should be of maximum ‘300’ mm width and of ‘0.8’ mm thick. |
| **2. Understructure assembly:** | Understructure should hold the trolley and bottom wheel assembly, it should comprise of,  **2.1 Undercarriage (10):** Undercarriage is to be made up of roll formed construction of section size minimum ‘110’mm wide x ‘90’ mm deep made in single piece without welding. The thickness of the section should be of ‘2.5’ mm. Undercarriage section should have minimum ‘12’ bends with holes / slots at every ‘50’ mm for flexibility. The manufacturing process of punching and forming is to be in one flow and a synchronized operation, thereby providing dimensional accuracy and contour uniformity.  **2.2 Bottom wheel assembly (11):** Two castor wheels per undercarriage, one at each end should be provided. Castor wheels shall be of ‘100’ mm outer diameter and ‘12’ mm inner diameter. Castor wheels should have in-built high quality, self lubricated, sealed antifriction bearings of SKF make or equivalent. Wheel material should be of engineering plastic/ polymer / Neoprene of Rexello make or equivalent. |
| **3. Superstructure assembly:** | Superstructure houses the paintings and facilitates retrieval of paintings by enabling “Pull-out”. & it comprises of :  **3.1 Trolley upright (12):** Trolley Uprights should be of Roll formed construction of section size minimum ‘110’ mm wide x ‘90’ mm deep made in single piece without welding. The other three enclosing uprights of the frame should be of ‘1.8’ mm thick.  The trolley uprights should have minimum ‘12’ bends with holes / slots at every ‘50’ mm for flexibility. The manufacturing process of punching and forming is to be in one flow and a synchronized operation, thereby providing dimensional accuracy and contour uniformity.  **3.2 Weld mesh assembly (13):** Each trolley should comprise of two weld mesh frame assemblies. Each weld mesh frame assembly should be made of rigid tubular frame of welded construction and have weld mesh welded on both sides. Tube should be of size ‘30’mm x ‘30’mm x ‘1.6’ thick. The weld mesh should be with ‘75’ mm x ‘75’ mm grid with a wire diameter of ‘5’mm.  **3.3 Front fascia (14) & Rear Cover (15):** Each Trolley should be provided with a front fascia and a rear cover. The front fascia and rear cover should be bolted to the trolley assembly and not welded. Both front fascia and rear cover should be of minimum ‘4’ bend construction with a section of ‘300’ mm x ‘40’ mm and thickness ‘1.25’ mm.  **3.4 Top guiding wheel assembly (16):** Each trolley should be provided with minimum two nylon guiding wheels, one at each end on the top side of the trolley. Wheels should roll smoothly on high quality, self lubricated, sealed antifriction bearings, 61906 ZZ of SKF make or equivalent. Wheels should be of minimum ‘60’ mm diameter.  **3.5 Handle (17):** A stainless steel (SS304) handle of minimum ‘250’ mm length should be fitted to the front cover to facilitate pull out of the trolley. Position of handle should be at a height of around 1200mm from ground. |
| **4. Accessories:** | **Label Holder:** A label holder to suit ‘A5’ size paper insertion should be provided on the front cover. The label holder should be of suitable acrylic material to enable reading the inserted label.  **Clamp:** Clamps should be provided as per drawing no. 18. Minimum ‘60’ clamps should be provided per trolley (Average of ‘5’ clamps per painting x ‘12’ paintings per trolley)  **Straps:** Straps should be provided to secure the paintings to weld mesh. The strap should be of flexible polymer of minimum width ‘50’mm. The strap should have length adjustment feature with buckle or lock to enable fixing of different sizes of paintings. |

All the above items are to be **bolted at site** together to make the trolley assembly