

ITB/2026/63393 - Section II -Schedule of Requirements - Supply and Delivery of Various Equipment to Salima Technical College - Malawi
Industrial Workshop Machinery and Hardware Consumables

Any reference to pictures, catalogs, brands, and model numbers provided in this tender is for guidance only and is not restrictive. Bidders are to quote for equipment/devices that are fit for purpose and meet the minimum specifications stipulated in the technical specification sheet provided by UNOPS (Form D).

LOT 1: Welding Tables and Benches

#	Equipment	Equipment Description/Specification	Picture (For Illustration Purpose only)	UOM	Qty
1	Welding Tables for Gas Welding	•Tabletop material: Refractory (firebricks); •Frame material: Heavy-duty steel tubing or angle iron (50 mm x 50 mm); •Size: 1m length x 0.7m width x 0.85m height		Ea	2
2	Welding Tables for Arc Welding	• Tabletop material: Mild steel or cast iron; • Top thickness: Minimum 10mm; • Frame material: Heavy-duty steel tubing or angle iron (50 mm x 50 mm); • Size: 1m length x 0.7m width x 0.85m height" • Grounding Point: Integrated heavy-duty grounding (earth) lug.		Ea	2
3	Welding Tables for TIG and MIG Welding	• Tabletop material: Smooth stainless steel or mild steel (non-corrosive, non-magnetic preferred); • Top thickness: 8-10mm; • Frame material: Heavy-duty steel tubing or angle iron (50 mm x 50 mm); • Size: 1m length x 0.7m width x 0.85m height • Grounding Point: Integrated heavy-duty grounding (earth) lug		Ea	4
4	Work Bench	• Type: Heavy-duty industrial steel fabrication workbench for fitting, assembly, and maintenance work • Worktop size: 1250WX1800LX950H • Dual-sided benchwork for 2 persons working back-to-back • Mounting provision: Pre-drilled holes for bench vice installation (minimum 2 vice mounting positions per bench). • Storage: Built-in lower shelf or drawer unit for tools and fittings.		Ea	9
5	Parts Washing Station	• heavy-duty industrial cleaning unit; • Tank capacity of 40 - 150 litres; • Support manual brush cleaning or pump-assisted circulation with a flow rate of 5–15 L/min minimum		Ea	1
6	Tool Cabinet (Tools inclusive)	• Steel body, • multiple drawers, • lockable		Ea	2

LOT 2: Welding Plants and Machinery

#	Equipment	Equipment Description/Specification	Picture (For Illustration Purpose only)	UOM	Qty
1	Oxy Acetyline Welding and Cutting Set	• Heavy duty • Welding Capability: Up to 5 mm thick metal; • Cutting Capability: Up to 100 mm thick mild steel. • Cylinders: Oxygen Cylinder – 47 L, 150–200 bar, steel. Acetylene Cylinder – 40–50 L water capacity, 15–25 bar, steel; • Regulators: Heavy duty, dual-stage brass regulators for both gases; • Hoses: 5–10 m reinforced rubber hoses (6 mm dia., color-coded); • Torch: Heavy duty brass mixing-type welding and cutting torch complete with 5 interchangeable welding nozzles, cutting attachment and assorted cutting nozzles suitable for cutting up to 100 mm mild steel; • Safety features: Flashback arrestors fitted at both torch and regulator ends; • Accessories included: Welding goggles (shade 5/6), Face shield for oxy-fuel cutting, Spark lighter, Tip cleaners, Spanner set and cylinder key, cylinder trolley for mobility. • The bidder must provide a minimum 12-month comprehensive manufacturer warranty valid for commercial/industrial operating conditions their authorized national distributor • The bidder must provide the product datasheet		Set	4
2	AC Arc Welding Set	• Heavy-duty industrial AC arc welder; • input voltage 380V, 50Hz, 3-phase; • maximum output welding current 500A; • minimum duty cycle 60% at peak load; • fan-cooled with class H insulation. • Accessories included: Electrode holder (heavy-duty, 300–500A), Earth clamp (heavy-duty), Set of welding cables (minimum 10 m, 35–70 mm² copper), Cable connectors and standard installation fittings.		Set	3

3	DC Arc Welding Set	• Heavy-duty Industrial DC inverter welder; • input 380V - 415 V, 50Hz, 3-phase; • Adjustable output current: maximum output welding current 500A; • minimum duty cycle 60%; • dynamic arc control with digital current display meters. • Accessories Included: heavy duty electrode holder, Earth clamp, 25 - 50 mm² welding cables, 10 m welding cables.		Set	3
4	MIG Welding Machine set	• Heavy duty industrial multi-process MIG/MAG machine; • input voltage 380V - 415 V, 50 Hz, 3-phase; • Adjustable output current: maximum current 500A; • minimum duty cycle 60%; • solid wire electrode diameter capability range of 0.8mm to 1.6mm; • integrated heavy-duty wire feeder assembly. • Digital voltage and current display. • Four-roll wire feeder. • Gas-shielded and gasless (FCAW) welding capability. • Suitable for 0.8 mm, 1.0 mm and 1.2 mm solid and flux-cored wires. • Forced-air cooling. • Class H insulation. • IP23 or higher protection rating. • Accessories: Shielding gas equipment (Argon cylinder, 47 L, 200–230 bar; Carbon dioxide (CO₂) cylinder, 47 L, 50–60 bar, or Argon/CO₂ mixed-gas cylinder (e.g., 75% Argon / 25% CO₂), 47 L, 200–230 bar; Heavy-duty two-stage gas regulator with flowmeter (0–25 L/min); Gas hose with fittings; Cylinder trolley; Cylinder securing chain or restraint), MIG welding torch (4–5 m), Earth clamp with welding cable, Interconnecting cables, Gas regulator, Gas hose, Four-roll wire feeder, Contact tips (0.8 mm, 1.0 mm, 1.2 mm), Spare gas nozzles, Drive rollers for different wire sizes, Wire spool holder, Gas diffusers, liners for aluminum wire. • Supply shall include user training		Set	3
5	TIG Welding Machine set	• Heavy-duty industrial TIG welder with High-Frequency (HF) arc ignition; • input 380V – 415 V; • Adjustable output current: maximum output current 500A; • minimum duty cycle 60%; • wire electrode diameter range 0.8mm to 1.6mm; • pulse control adjustable parameters. • AC balance adjustment. • AC frequency adjustment. • Pre-flow and post-flow gas control. • Digital display • Forced-air cooling • Class H insulation • IP23 or higher protection rating. • Thermal overload protection. • Accessories: Air-cooled or water-cooled TIG torch, Shielding gas equipment (Argon cylinder, 47 L, 200–230 bar; Heavy-duty two-stage argon regulator with flowmeter [0–25 L/min]; Gas hose with appropriate fittings, cylinder trolley, cylinder securing chain or restraint) Earth clamp with welding cable, Gas regulator, Foot pedal or fingertip remote current control, Collet bodies, Collets (various sizes), Ceramic nozzles/cups (assorted sizes), Back caps (short, medium, and long). • Supply shall include user training		Set	3
6	Spot Welding Machine	• Heavy-duty stationary spot-welding machine; • input 380–415 V AC, 50 Hz, 3-phase; • maximum current output 400A; • minimum duty cycle 60%; • adjustable pneumatically-actuated welding throat and mechanical arm controls. • Electrode stroke: Adjustable. • Throat depth: Minimum 450 mm. • Arm length: Minimum 450 mm. • Electrode force: Adjustable, 1.5–6.0 kN. • Insulation class: Class H. • Protection rating: IP23 or higher. • Cooling system: Water-cooled transformer • Accessories: Upper and lower electrode holders, Adjustable electrode arms, Water cooling hoses and fittings, Water flow indicator, Cable set, Electrode tip set (flat, pointed, domed shapes), Machine tool kit.		Ea	1
7	Welding Screen/Curtains	• Curtain Material: Fire resistant, UV- and IR-resistant PVC welding curtain • Size: 1.5m width x 2m height • Complete with a freestanding structural metal frame.		Ea	8
8	Welding Helmets	• Professional auto-darkening solar/lithium-powered welding helmet; • variable shade filter range DIN 9–13; • switching speed less than 0.1 milliseconds;		Ea	30

9	Plasma Cutter	1. Electrical & Power Specifications • Input Voltage: 380V, Three-Phase (+/-10%), 50/60Hz industrial power supply. • Maximum Output Current: Adjustable up to 400A maximum cutting current for heavy plate processing. • Duty Cycle: 60% at 400A (at 40°C ambient temperature), ensuring sustained high-output operation under demanding production environments. • Technology Architecture: Advanced IGBT Inverter Type power source, optimizing energy efficiency, arc stability, and high power-to-weight performance. 2. Capacity & Physical Characteristics • Equipment Weight: Maximum 25 kg (power source only), providing extreme portability and exceptional power density for a 400A rated industrial machine. • Cooling System: Heavy-duty, high-velocity forced air cooling (Fan-On-Demand system preferred to minimize internal dust intake). • Enclosure Rating: Minimum IP21S or IP23 protection class to guard against dust and moisture ingress in rugged workshop or field conditions. 3. Torch & Cutting Performance • Pilot Arc System: Non-HF (High Frequency) or advanced low-interference pilot arc ignition to ensure reliable arc starting without disrupting surrounding digital CNC or workshop electronics. • Gas Requirements: Clean, dry compressed air or specialized shielding gases (e.g., Nitrogen/Argon-Hydrogen mixes for clean stainless/aluminum cuts). • Regulator Unit: Supplied with an integrated rear-mounted air filter, moisture separator, and digital/analog pressure gauge. 4. Cutting capacity: up to 20-25 mm for mild steel 6. Air pressure requirement: 5-7 bar (70 -100 psi). 7. Control Panel & Interface • Display: Digital LED/LCD display indicating real-time cutting current (Amperage), gas pressure diagnostics, and error codes. • Control Knobs/Buttons: * Infinite variable current control adjustment wheel. Post-flow gas timer adjustment to maximize torch consumable life. 2T/4T trigger latching mode selection for long-distance cutting comfort. 8. Safety & System Protection • Thermal Overload Protection: Automatic thermal shutdown indicators to prevent transformer or IGBT failure if the 60% duty cycle is exceeded. • Electrical Safety: Built-in over-voltage, under-voltage, and over-current protective circuitry. • Gas Pressure Sensor: Low air pressure safety interlock that automatically cuts power to the torch if gas pressure drops below safe operating limits. 9. Deliverables & Warranty • Accessories Package: Supplied complete with a heavy-duty plasma torch assembly (minimum 4-meter cable length), earth clamp with ground cable, a starter kit of consumables (nozzles, electrodes, swirl rings), air pressure regulator and filter unit, power cables and connectors, and torch stand or holder. • Documentation: Operational guide, gas flow charts, consumable selection wear guides, and troubleshooting schematics in English. • Warranty: Minimum 12-month comprehensive warranty covering the inverter power source, internal electronics, and labor.		Ea	2
10	Mobile Fume Extractor	• Airflow capacity of 800–1,500 m³/hour minimum; • Equipped with a flexible articulated extraction arm of 2.0–3.0 m length; • Capable of 360° rotation and precise positioning at the source of contamination; • Should incorporate a multi-stage filtration system including pre-filter, HEPA filter (≥99.97% efficiency at 0.3 µm), activated carbon filter, and spark arrester, with filter clogging indicators and replaceable cartridges; • Powered by a 220–240 V AC motor with overload protection; • Mounted on a heavy-duty mobile base with lockable castor wheels; • Operate at a noise level not exceeding 75 dB(A); • Supplied with spare HEPA and carbon filters, user and maintenance manual.		Ea	2
LOT 3: Workshop Machinery and Metal Forming Equipment					
#	Equipment	Equipment Description/Specification	Picture (For Illustration Purpose only)	UOM	Qty
1	Anvil	• Material: Drop-forged high-grade alloy steel anvil; • total weight 100kg; • hardened face plate surface with round horn and hardy hole; • base mounting dimensions: 26cm x 18.5cm" • Mounting base: Solid steel base or timber stump mounting block • Accessories: Anvil stand or mounting base (steel or hardwood stump).		Ea	1

2	Hydraulic Press Fitting Machine	• Type: Heavy duty industrial floor-mounted hydraulic H-frame press; • Maximum press force capacity 30 Metric Tons; • Adjustable bed level heights; • Integrated pressure gauge indicator; • Accessories: Pressing tool kit (Set of V-blocks, Flat pressing plates, Bearing press adapters (assorted sizes), Mandrels, Hydraulic ram extension rods), Pressure gauge protection guard, Operating manual and safety instructions.		Ea	1
3	Power Rolling Machine	• Type: Motorized heavy sheet metal 3-roll initial pinch rolling mill machine; • Plate rolling capacity: maximum rolling thickness capability of 10mm mild steel plate; • Motor power: Minimum 2.2 kW – 7.5 kW (3-phase, 380–415 V) depending on capacity. • Rolling speed: Variable speed control (forward and reverse operation). • Motorized drive with forward/reverse foot pedal safety controls. • Control system: Foot pedal or pendant control for forward/reverse operation. • Safety system: Emergency stop button, overload protection, and safety interlocks. • Accessories: Cone rolling attachment, Set of hardened rollers, Material support stands (front and rear), Foot pedal control unit, Calibration and adjustment tools, Operating manual and maintenance guide, Foundation bolts and installation kit. • Supply shall include installation and user training		Ea	1
4	Bending Brake	• Heavy-duty industrial manual • 36" manual benchtop pan, box, and folder brake; • Bending capacity: up to 3.0 mm mild steel; • features 12 removable fingers of varying sizes (2", 3", 4"); • Bending angle range: up to 135° with adjustable stop for repeat bends; • Operation: Manual lever-operated • Accessories: Adjustable back gauge system, Angle stop guides (0°-135°), Clamping tools and adjustment spanners, Material support arms (front support tables, Measuring scale (engraved or mounted), Tool kit for adjustment and maintenance, Operating manual and safety instructions. • Supply shall include installation and user training		Ea	1
5	Pipe Bender	1. Capacity & Performance • Pipe Diameter Capacity: Must accept and process a pipe outer diameter (OD) range from 25 mm to 50 mm. • Bending Angle: Capable of executing smooth bends up to 180° depending on the selected former. • Operation Type: Manual-hydraulic mechanism (hand-pump operated) providing high-tonnage output for effortless bending of thick-walled pipes without kinking or flattening. 2. Design & Portability • Configuration: Standalone, self-supporting frame design. It must feature a stable, heavy-duty tripod base or integrated floor stand to eliminate the need for permanent workbench bolting. • Top Frame Access: Top plate/wing design should feature a quick-release or swing-open mechanism for easy pipe loading and removal after a bend is completed. • Cylinder: High-quality industrial hydraulic cylinder with reliable seals to prevent oil leakage under high pressure. 3. Tooling & Formers • Precision Radius Formers: Supplied as a complete kit containing precision-machined bending formers to fit standard pipe sizes within the 25 mm to 50 mm range. • Corner Grooves/Guides: Included adjustable counter-supports (crossbar rollers) to properly secure the pipe during the bending stroke and minimize wall deformation. 4. Safety & Maintenance • Overload Bypass: Integrated hydraulic bypass valve to prevent structural damage or cylinder failure if maximum capacity is exceeded. • Finish: Durable, corrosion-resistant powder-coated or painted finish suitable for harsh workshop environments. 5. Deliverables & Warranty • Documentation: Clear user guide in English outlining correct pin placements for different pipe sizes and maintenance/bleeding instructions for the hydraulic fluid. • Warranty: Minimum 12-month warranty covering the frame, hydraulic pump cylinder, and tooling against manufacturing defects.		Ea	1

6	Radial Arm Drilling Machine	1. Electrical & Power Requirements • Input Voltage: 240V, Single-Phase or Three-Phase (Vendor to specify configuration to match standard workshop supply). • Power Output: Minimum 2600 W (2.6 kW) heavy-duty drive motor to ensure high torque at low spindle speeds. 2. Machining Capacity & Geometry • Drilling Capacity: Minimum 45 mm diameter in standard mild steel. • Arm Movement: * Motorized or smooth manual vertical elevation of the arm on the column. • 360° rotation of the radial arm for flexible workpiece positioning. • Spindle Head Travel: Smooth horizontal movement of the drilling head along the arm rail with an effective locking mechanism. 3. Spindle & Feed System • Spindle Taper: Standard Morse Taper (MT4 preferred) to accommodate large-diameter drill bits. • Speed Selection: Multi-step geared or variator speed control to optimize cutting speeds for different hole diameters and material types. • Feed Mechanism: Choice of manual fine feed and automatic mechanical power feeds with automatic depth shut-off to prevent over-drilling. 4. Structural Design & Bed • Column & Arm: Heavy-duty, precision-ground cylindrical column and rigid arm structure to eliminate deflection and vibration during maximum 45mm drilling loads. • Worktable: Supplied with a heavy, machined T-slot box table for secure clamping of workpieces. • Coolant System: Integrated, self-contained coolant pump and reservoir system to extend tool life during heavy drilling cycles. 5. Safety & Operator Protection • Spindle Guard: Adjustable safety shield over the rotating chuck/spindle area. • Clamping Locks: Independent, secure clamping mechanisms for the arm, column, and drilling head to freeze coordinates during operation. • Emergency Stops: Highly accessible, prominent emergency stop button located on the main drilling head control panel. 6. Accessories: Drill chuck with key (up to 20 mm capacity), MT4 arbor, Drill drift (taper removal wedge), Coolant system complete with pump and tank, Machine vice (minimum 150 mm jaw width), Clamping kit (T-bolts, nuts, step blocks, and clamps), Tool kit for operation and maintenance; 7. Deliverables & Warranty • Manuals: Complete operator, maintenance, and electrical schematic manuals in English. • Warranty: Minimum 12-month comprehensive warranty covering parts, motor, and labor from the date of commissioning. Supply shall include installation and user training		Ea	1
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7	Power Guillotine	1. Key Performance Requirements - Maximum Cutting Capacity: Minimum 6.0 mm (based on standard mild steel). - Cutting Length: 2500 mm - Blades: High-grade, wear-resistant steel blades. The upper and lower blades must have multiple cutting edges (minimum 2-sided upper, 4-sided lower) to allow flipping before sharpening. - Blade Gap Adjustment: Quick-set manual or motorized adjustment handle to easily match different sheet thicknesses. 2. Construction & Drive System - Frame: Rigid, all-welded heavy steel frame to prevent flexing or distortion under maximum load. - Drive: Heavy-duty hydraulic or mechanical drive system capable of continuous workshop operation. - Material Clamping: Automatic hold-down cylinders that securely clamp the metal sheet down before the cut begins to prevent material slippage. 3. Gauges & Controls - Motorized Backgauge: Controlled via a digital readout or simple controller on the front panel. Must have a travel range of at least 20 mm to 800 mm with an accuracy of $\pm 0.15 \text{ mm}$. - Front Support: Includes front support arms, a squaring arm with an embedded metric scale rule, and a shadow-line lighting system for precise manual alignment. - Foot Pedal: Remote mobile foot pedal switch for hands-free operation, featuring an integrated emergency stop. 4. Accessories: Front sheet support arms (roller type), Rear sheet support system, Standard shear blades installed (top and bottom set), Back gauge system with measuring scale, Blade clearance adjustment tools, Tool kit for maintenance and blade adjustment. 5. Safety & Compliance - Front Finger Guard: Physical barrier at the front of the machine to protect the operator's hands during feeding. - Rear Safety Barrier: Light curtains or physical safety fencing at the back of the machine to prevent rear entry while operating. - Emergency Stops: Clearly marked, easily accessible emergency stop buttons on the main console and the foot pedal. - Overload Protection: System must include built-in safety valves or mechanisms to prevent damage if an oversized plate is accidentally inserted. 6. Deliverables & Warranty - Manuals: Comprehensive Operation and Maintenance manuals provided in English. - Warranty: Minimum 12-month comprehensive warranty covering parts and labor from the date of commissioning. *Supply shall include installation and user training		Ea	1
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8	Press Brake	1. Key Dimensions & Footprint • Bending Length: Minimum 2300 mm (6 feet) total folding width. • Working Width / Footprint: Compact design with a maximum side-to-side footprint width of 1.2 meters to optimize floor space. • Distance Between Uprights: Optimized to maximize usable bending length for full-width sheets. 2. Hydraulic & Drive System • Drive Mechanism: Integrated hydraulic pump and heavy-duty dual-cylinder system. • Synchronization: Torsion bar or electro-hydraulic system to ensure parallel ram movement, delivering consistent bend angles across the entire 6-foot length. • Pressure Control: Adjustable tonnage control valve with a visible pressure gauge to prevent over-bending or tool damage. 3. Tooling & Bed Setup • Multi-Vee Die Block: Supplied with a multi-V bottom die block (featuring various V-opening sizes to handle different material thicknesses) and a matching standard top punch. • Clamping: Promecam-style or standard quick-change top tool clamping system for fast setup. • Bed Alignment: Precision-machined bed to ensure exact tooling alignment. 4. Gauges & Controls • Backgauge System: Manual or motorized backgauge with a digital readout, featuring adjustable flip-finger stops for accurate batch processing. • Control Panel: Front-mounted operator control panel for pressure adjustments, stroke depth settings, and mode selection (inching, single stroke). • Foot Switch: Heavy-duty, mobile foot pedal station with an integrated emergency stop button for hands-free operation. 5. Safety & Compliance • Safety Light Curtains: Integrated optoelectronic safety light curtains guarding the front bending zone to instantly freeze operation if interrupted. • Side & Rear Guards: Physical interlocked steel enclosure panels to prevent hazardous access to the back and sides of the machine. • Overload Protection: Automatic hydraulic relief valve to prevent mechanical damage if machine capacity is exceeded. 6. Deliverables & Warranty • Manuals: Full operational, maintenance, and hydraulic schematic manuals in English. • Warranty: Minimum 12-month comprehensive warranty covering parts, hydraulics, and labor from the date of commissioning. • Supply shall include installation and user training		Ea	1
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9	CNC Lathe Machine	1. Capacity & Work Envelope - Center Distance (Bed Length): Minimum 1500 mm (1.5 meter) between centers. - Center Height: 200 mm to 300 mm, providing a Swing Over Bed range of minimum 400 mm to 600 mm to accommodate medium-to-large diameter workpieces. - Swing Over Cross Slide: Optimized relative to the swing over bed to maximize machining clearance for turning profiles. 2. Spindle & Headstock - Spindle Bore: Minimum [Specify size, e.g., 52 mm] to allow passing of standard bar stock through the headstock. - Spindle Speed Range: Variable speed drive system ranging up to at least 2500 RPM (or higher) to handle both roughing and fine-finishing cycles. - Chuck Type: Supplied with a precision 3-jaw self-centering hydraulic or manual chuck (minimum diameter [e.g., 200 mm]) and a 4-jaw chuck. 3. Axis, Travel & Tooling System - Guideways: High-precision, hardened, and ground bed ways (or linear motion guideways) to ensure rigid, vibration-free tool travel. - Tool Turret: Automatic 4-way, 6-way, or 8-station indexing tool turret for fast, programmable tool changes during automated cycles. - Tailstock: Heavy-duty manual or hydraulic tailstock with a programmable or manual quill adjustment (minimum MT4 taper) to support 1-meter long workpieces. 4. CNC Control System - Controller Interface: Industry-standard CNC controller (e.g., Fanuc, Siemens, or equivalent) featuring a user-friendly color LCD screen. - Programming Capability: Supports standard G-code/M-code programming, conversational programming, and USB/Ethernet data transfer for CAD/CAM integration. - Positioning Accuracy: High-precision ball screws on X and Z axes delivering a positioning accuracy of ± 0.005 and repeatability of ± 0.003 mm. 5. Safety & Auxiliary Systems - Enclosure: Fully enclosed, interlocked sliding safety door cabin with impact-resistant viewing windows to contain chips and high-pressure coolant. - Coolant & Lubrication: Automatic centralized lubrication system for the guideways and ball screws, paired with a high-flow flood coolant pump system. - Emergency Safety: Readily accessible mushroom-head emergency stop buttons, integrated system overload protection, and internal work area lighting. 6. Accessories: 3-jaw hydraulic chuck, 4-jaw independent chuck, Tool holder set for turret, Carbide cutting tool starter set, Tailstock live center and dead center, Coolant system complete (tank + pump + hoses), Machine leveling pads and anchor bolts, CNC controller with programming manual, Tool setting gauge, Maintenance toolkit. The CNC lathe shall be supplied with CNC training and simulation software for student instruction, capable of G-code programming, tool path simulation, collision detection, and virtual machining. The software shall support at least 10- 30 concurrent users and be compatible with the supplied CNC controller system. 7. Deliverables & Warranty - Documentation: Full set of operating instructions, programming manuals, maintenance guides, and electrical schematics in English. - Warranty: Minimum 12-month comprehensive warranty on all electronic control units, mechanical components, and labor from the date of final commissioning. - Supply shall include installation and user training		Ea	1
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10	Power Hacksaw (Metal Cutting Band Saw)	1. Electrical & Power Requirements - Power Supply: 3-Phase industrial voltage (e.g., 380V - 415V, 50/60Hz; Vendor to specify exact connection wiring). - Motor Type: Industrial-grade induction motor, continuous duty rated, with fan cooling. 2. Capacity & Structural Design - Throat Capacity: 12 inches (approx. 305 mm), defining the maximum width/distance from the blade to the inner frame arm. - Dual Orientation: Convertible configuration capable of operating as a standard Horizontal cutoff saw with gravity/hydraulic downfeed, and as a stationary Vertical band saw for manual contour cutting. - Equipment Weight: Net weight of approximately 190 kg, indicating a heavy cast-iron bed, bow, and base assembly to dampen vibrations and ensure cutting rigidity. - Mobility: Built-in heavy-duty wheels or integrated transport castors on the base stand to allow flexible shop floor relocation despite the industrial mass. 3. Blade & Feed Control System - Blade Guide System: Precision ball bearing blade guides paired with carbide inserts to maintain straight, accurate cuts and maximize blade life. - Feed Control: Adjustable hydraulic downfeed cylinder (as shown on the side profile of the unit frame) to precisely regulate the bow descent rate during horizontal cutting operations. - Tensioning: Quick-adjust handwheel tensioning system with an integrated gauge indicator to prevent over-tightening or blade slippage. - Speed Range: Multi-step pulley system or electronic variable speed drive to match linear blade speed with various hard or soft metals. 4. Workholding & Accessories - Vise Mechanism: Heavy-duty, quick-clamping swiveling vise built into the horizontal bed, allowing angled cuts from 0° to 45°. - Vertical Table Attachment: Supplied with a removable, precision-ground steel utility worktable for secure material support when the saw bow is locked upright in the vertical position. - Coolant System: Integrated, self-contained flood coolant pump and reservoir built into the machine's lower base pan to flush chips and lower cutting temperatures. - Set of bi-metal HSS band saw blades - Blade tensioning and alignment tools - Machine tool kit (spanners and adjustment tools) - Measuring scale / cutting guide. 5. Safety & Operator Protection - Automatic Shut-Off: Limit switch mechanism that automatically cuts power to the 3-phase motor immediately upon completion of a horizontal cut. - Drive Guards: Fully enclosed pulley, belt, and wheel blade guards with safety microswitches that prevent startup if the panels are left open. - Emergency Stops: Highly visible, latching mushroom-head emergency stop button mounted cleanly on the main motor/switch frame. 6. Deliverables & Warranty - Documentation: Full operational manuals, blade selection guides for specific metal tempers, maintenance instructions, and 3-phase electrical schematics in English. - Warranty: Minimum 12-month comprehensive warranty protecting against structural failures, electrical defects, and hydraulic seal leaks from the date of final delivery.		Ea	2
11	Nibblers (Power Shears)	- Industrial Cutting Capacity: Engineered to deliver clean, distortion-free cuts in sheet metal with a maximum capacity of 3.0 mm for mild steel, 2.0 mm for stainless steel, and 3.5 mm for aluminum. - High-Torque Electric Motor: Powered by a heavy-duty single-phase electric motor (220V-240V, minimum 550W) operating at over 1,000 strokes per minute (SPM) to prevent stalling under maximum load. 360° Multi-Directional Cutting: Features a slim, adjustable die head that rotates and locks at 90° intervals, allowing the operator to cut in any direction and execute tight-radius curves without warping the material. - Ergonomic & Safe Operation: Designed with a lightweight, slim-line body grip for reduced user fatigue, a lock-on safety switch, and a downward chip-ejection system that directs sharp metal debris away from the operator. - Complete Kit & Warranty: Supplied ready for operation with a pre-installed punch/die set, die holder assembly, maintenance tools (adjustment keys and spanners), carrying case, an English instruction manual, and a comprehensive 12-month commercial warranty on the motor and gear mechanism.		Ea	2

12	Pedestal Grinding Machine	• High-Output Power Rating: Driven by a continuous-duty 2600 W industrial-grade motor designed to maintain constant grinding speeds and high torque under heavy material-dressing and tool-sharpening loads. • Workshop Electrical Standard: Engineered to operate on a standard single-phase 240V (50/60Hz) power supply, incorporating a heavy-duty, oil-resistant power cable with an industrial grounded plug. • Large Dual-Wheel Capacity: Features a heavy-duty balanced shaft configured to hold 12-inch (230 mm) grinding discs/wheels, maximizing wheel surface area for rapid stock removal and extended wheel service life. • Rigid Pedestal Construction: Built on a heavy, vibration-dampening cast iron pedestal stand featuring a wide, pre-drilled floor-mounting base plate to ensure absolute stability during operation. • Comprehensive Operator Safety: Fully equipped with adjustable steel wheel guard enclosures, heavy-duty adjustable tool rests, spanner set for wheel replacement, shatterproof clear eye shields, an integrated water cooling tray, and a 12-month commercial warranty.		Ea	1
13	Bench Grinder	• High-Output Motor Drive: Powered by a heavy-duty 2600 W industrial induction motor, engineered to deliver smooth, high-torque operation and maintain constant RPM under heavy tool-sharpening and stock-removal loads. • Standard Workshop Power: Designed for standard single-phase 240V (50/60Hz) electrical supply, equipped with a heavy-duty, dust-sealed power switch and a grounded, oil-resistant electrical cord. • Dual 10-Inch Wheel Setup: Balanced double-ended shaft configuration designed to accommodate 10-inch (250 mm) grinding wheels, typically supplied with one coarse and one fine grit wheel for versatile workshop application. • Robust Bench-Mount Chassis: Features a compact, heavy-duty cast iron housing with pre-drilled rubber-isolated mounting holes, allowing secure bolting to any standard workshop workbench to minimize operational vibration. • Complete Safety & Tooling Kit: Equipped with fully enclosed steel wheel guards, heavy-duty spark deflectors, clear shatterproof eye shields, adjustable workpiece tool rests, spanner set for wheel replacement, wheel flanges and locking nuts, an industrial-grade wheel dressing tool (diamond or tungsten carbide type), and backed by a comprehensive 12-month commercial warranty.		Ea	2
14	Pillar Stand Drilling Machine	• High-Torque Power System: Driven by a heavy-duty 2600 W industrial motor engineered to maintain continuous torque and stable spindle speeds when drilling large-diameter holes through thick metal stock. • Standard Workshop Power: Designed to run on a standard single-phase 240V (50/60Hz) power supply, featuring a dust-sealed industrial On/Off switch with integrated safety no-volt release protection. • Maximum drilling capacity (mild steel): Minimum 25 mm – 40 mm. • Compact Footprint & Rigid Column: Built with a heavy-duty 90 kg cast iron construction featuring a 0.6 m length x 0.4 m width base footprint, ensuring maximum dampening of operational vibrations and absolute stability without requiring massive floor space. • Adjustable Work Table & Capacity: Features a robust, precision-ground tilting work table with integrated T-slots for secure vice clamping, optimized to maximize the machine's 9-inch throat/travel capacity. • Accessories: It should be supplied complete with drill chuck set (up to 13 mm or 16 mm capacity), chuck key, machine vice, taper adapters (MT3/MT4 as applicable), depth stop gauge, maintenance tools and user and maintenance manual. • Comprehensive Safety & Warranty: Fully equipped with a transparent, height-adjustable chuck safety guard, a prominent emergency stop button, a heavy-duty rack-and-pinion table elevating mechanism, and a 12-month commercial warranty.		Ea	1

LOT 4: Material Handling, Lifting and Logistics Equipment

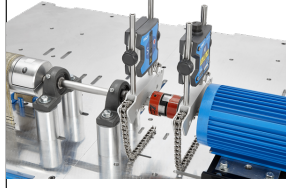
#	Equipment	Equipment Description/Specification	Picture (For Illustration Purpose only)	UOM	Qty
1	Freestanding Gantry Crane	• Crane type: electric chain hoist; • Load capacity: 5-10 ton; • Motion Type: Electric control type; • Max. Lifting Height: Up to 12m, adjustable height; • Span: 8m; • mobile; weight: 350Kg • supplied with a valid load test certificate • equipped with an electric hoist unit/system (wire rope or chain hoist system), lifting accessories [shackles, slings (nylon/chain), hooks, and spreader bars], motorized or manual trolley, installation bolts and anchoring system, operation and maintenance manual, fail-safe braking system, overload protection, and limit switches.		Ea	1

2	Mini Gantry Crane	• Portable, adjustable steel-frame lifting system; • Safe Working Load (SWL) of minimum 1 tonne, with optional configurations up to 3 tonnes, and shall include adjustable height range of 2.0 m to 3.5 m and adjustable span width of 2.0 m to 4.0 m; • Equipped with a manual chain block or electric hoist, load chain of Grade 80 or higher, swivel lifting hooks with safety latches, engine lifting slings/chains, adjustable height locking pins, load rating certificate, user manual and a beam trolley system for controlled horizontal movement; • Fitted with heavy-duty lockable castor wheels and floor stabilisers for safe operation.		Ea	1
3	Jack	• Type: Heavy-duty industrial hydraulic floor trolley jack. • Capacity range: Minimum 10 tons • Lifting mechanism: Hydraulic piston with manual pump operation. • Accessories: Detachable pump handle, extension screw (for additional height adjustment), steel saddle head, Operating manual and maintenance guide, Basic repair kit (seals and O-rings for selected models), Jack stand set, Rubber pad saddle protector.		Ea	2
4	Ladders	• Industrial-grade telescoping/extension aluminum ladders; • maximum load capacity rating 150kg; • 3 sectional fully extended reach length 10 meters; • fitted with slip-resistant rubber safety feet. Accessories: • Rubber anti-slip feet, stabilizer bars, safety locking mechanisms		Ea	2
5	Forklift	• Lift capacity 3- 5 tons, • Lift height 3-6m, • fork length 1m • Accessories: Tool kit for basic maintenance, user and maintenance manual		Ea	1
6	Winches	• Electric winch with wired remote; • Load capacity: 10 ton; • Line speed: Approx. 2-5 m/min (depending on load); • Cable Length: 50 meters steel cable; Floor-mounted; • Control system: Pendant control with emergency stop; wireless remote control preferred. • Mounting system: Heavy-duty reinforced mounting plate with pre-drilled base, anchor bolts, and foundation fixing system suitable for installation on reinforced concrete or structural steel support. • Load monitoring: Integrated electronic load limiter or cable tension monitoring system with overload warning • Accessories: Galvanized wire rope with forged steel hook and safety latch, Heavy-duty mounting plate, anchor bolts and installation hardware, snatch block(s) compatible with the rated capacity, forged bow shackles, Wire rope slings of appropriate capacities and lengths, Cable lubrication and maintenance kit, Wire rope inspection gauge for monitoring rope wear, User and maintenance manual.		Ea	1
7	Tool Trolleys	• Heavy-duty industrial mobile trolley fitted with four industrial castor wheels (two swivel with brakes and two fixed) • Metallic • Lockable drawers mounted on heavy-duty ball-bearing telescopic. • Minimum total load capacity of 150-300 kg		Ea	3
8	Pallet racks	• Heavy duty, metallic, • Beam capacity: 1000 – 2000 kg per level (heavy-duty), • 5 levels including floor level, • 2.5m length x 0.9 m width		Ea	2

LOT 5: Heavy Diagnostics and Calibration Equipment

#	Equipment	Equipment Description/Specification	Picture (For Illustration Purpose only)	UOM	Qty
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1	Induction Bearing Heater	- Bench-mounted electromagnetic induction heating system designed for the safe and uniform heating of bearings, gears, couplings, bushings, sleeves, and other interference-fit components used in marine engines and propulsion systems. - Should accommodate workpieces weighing up to 80 kg, with a maximum outside diameter of 500 mm and a minimum bore diameter of 20 mm. - Should provide a heating temperature range from ambient to 240°C, with digital temperature and time control, an accuracy of $\pm 3^{\circ}\text{C}$ or better, automatic demagnetization, and automatic shut-off upon completion of the heating cycle. - Powered by 220–240 V AC, single phase - Should include a minimum of three interchangeable induction yokes, a magnetic temperature probe, heat-resistant gloves, Protective carrying/storage case for yokes, power cable, user and maintenance manual and a factory calibration certificate. - Should incorporate over-temperature, over-current, and thermal overload protection, an emergency stop button, and a minimum IP54 protection rating.		Ea	2
2	Universal Testing Machine	- Computer-controlled electromechanical floor-standing system with a minimum load capacity of 100 kN, Capable of performing tensile, compression, flexural, shear, and peel tests on metallic, composite, plastic, timber, adhesive, and rope specimens. - Should incorporate a servo-controlled drive, precision ball screw mechanism, high-accuracy load cell, electronic extensometer, and integrated testing software for automatic analysis and reporting. - Should be supplied complete with a computer workstation, licensed software, tensile grips, compression platens, three-point and four-point bending fixtures, rope grips, composite grips, calibration certificate, installation, commissioning, operator training, tool kit, and user and maintenance manuals. - Supply shall include installation and user training		Ea	1
3	Impact Testing Machine	- Floor-mounted digital pendulum impact tester capable of performing both Charpy and Izod impact tests. - Minimum energy capacity of 300 J, with interchangeable pendulums providing 50 J, 150 J, and 300 J testing ranges - Impact velocity of approximately 5.2–5.5 m/s, and an accuracy of $\pm 1\%$ or better. - Should include digital controls, automatic energy calculation, data storage, USB connectivity, and computer interface. - Supplied complete with Charpy and Izod fixtures, striker heads, specimen centering gauge, calibration certificate, software, installation, commissioning, operator training, tool kit, and user and maintenance manuals. - Supply shall include installation and user training		Ea	1
4	Universal Digital Hardness Testing Machine	- floor-standing, computer-controlled machine capable of performing Rockwell, Brinell, and Vickers hardness tests. - It should feature automatic load application, dwell time control, digital hardness measurement, and automatic hardness scale conversion. - Supplied with diamond indenters, carbide ball indenters, flat and V anvils, certified hardness test blocks, calibration certificate, computer software, installation, commissioning, operator training, tool kit, dust cover, and user and maintenance manuals. - Supply shall include user training		Ea	1
5	Propeller/shaft alignment tool	- A digital laser alignment system designed for precision alignment of marine engines, gearboxes, propeller shafts, stern tubes, and shaft couplings. - Should measure angular and parallel misalignment with an accuracy of ± 0.01 mm or better and a resolution of 0.001 mm, and shall support shaft diameters from 20 mm to 300 mm and coupling diameters from 50 mm to 500 mm. - Should include dual laser transmitter/detector units, a rugged minimum 7-inch colour touchscreen display, automatic alignment calculations, soft foot analysis, thermal growth compensation, real-time graphical guidance, and report generation. - Supplied complete with universal chain mounting brackets, magnetic fixtures, calibration fixture, protective carrying case, rechargeable batteries, charger, software licence, USB connectivity, and a traceable calibration certificate.		Set	1

6	Propeller/shaft alignment training system	- Bench-mounted marine propeller/shaft alignment training system designed to demonstrate and develop practical skills in the alignment of marine propulsion shaft systems. - Should consist of a heavy-duty steel base frame supporting an adjustable engine simulator, gearbox simulator, precision stainless steel propeller shaft, flexible and rigid couplings, stern tube assembly, cutlass bearing housing, thrust bearing, shaft support bearing, and propeller hub simulator. - It should enable students to perform vertical, horizontal, angular, and parallel alignment, coupling face and rim alignment, soft foot correction, shaft run-out measurement, and bearing alignment. - Should include a digital laser shaft alignment system, dial indicators with magnetic bases, precision straight edge, stainless steel shim kit, feeler gauges, and all necessary adjustment tools. - All rotating components shall be protected by transparent safety guards, and the unit shall be compact for mounting on a standard workshop bench. - Should be supplied with an instructor's manual, student practical workbook, maintenance manual, and calibration certificates for measuring instruments		Set	1
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LOT 6: General Hand Tools and Fastening Equipment

#	Equipment	Equipment Description/Specification	Picture (For Illustration Purpose only)	UOM	Qty
1	Manual Rivet Gun	- Heavy-duty long-handle manual lever type pop riveter; - structurally designed for blind (pop), multi-grip, and tri-fold rivets; - compatible rivet size diameters 2.4mm (3/32") up to 6.4mm (1/4"); - includes 5 interchangeable nosepieces.		Ea	2
2	Pneumatic Rivet Gun	- Type: Industrial pneumatic (air-powered) rivet gun; - Compatible with blind, solid, multi-grip, and tri-fold rivets; - Rivet capacity: size range 2.4mm to 6.4mm; - Pulling force: 8,000–18,000 N; - Operational working air pressure: 6–8 bar (90–115 PSI); - Air inlet: Standard 1/4" BSP quick-connect fitting. - Accessories: Set of interchangeable nosepieces (3.2 mm, 4.0 mm, 4.8 mm, 6.4 mm), Air hose (minimum 5–10 m, reinforced rubber), Quick-release air coupler (1/4" BSP), Spare pulling mandrels and jaw sets, quick-connection fittings, Tool carrying case (heavy-duty impact-resistant), User manual and maintenance guide.		Ea	1
3	Cordless Rivet Gun	- Industrial battery-powered cordless rivet gun; - Battery system: 18V or 20V lithium-ion rechargeable battery - Rivet capacity: 2.4mm to 6.4mm for blind/multi-grip rivets; - Pulling force capacity: 8,000–18,000 N; - LED indicator: Battery level and overload status indicator; - Supplied with two lithium-ion battery packs and a rapid smart charger (compatible with 220–240V, 50Hz supply), Interchangeable nosepieces (2.4 mm, 3.2 mm, 4.0 mm, 4.8 mm, 6.4 mm), Spare jaws and jaw housing set, Carrying case (heavy-duty impact-resistant)		Ea	2
4	Portable Grinding Machine	- High-Output Power System: Driven by a high-torque, industrial-grade 2600 W electric motor designed to maintain optimal rotational speed and prevent stalling under heavy metal dressing and cutting loads. - Standard Electrical Compliance: Configured for standard single-phase 240V (50/60Hz) workshop power input, featuring an extra-length, heavy-duty rubber-insulated power cord with integrated strain relief. - Large Capacity Disc Size: Engineered explicitly to accommodate 9-inch (230 mm) cutting discs, grinding wheels, and wire cups for deep-depth cutting and rapid material removal over large surface areas. - Operator Safety Features: Equipped with an adjustable, tool-less rotatable steel wheel guard, a dual-stage safety lock-off switch to prevent accidental startups, and integrated soft-start electronics to eliminate initial startup kickback. - Ergonomics & Complete Kit: Built with a vibration-dampening 3-position auxiliary side handle, a durable aluminum gear housing, and supplied complete with a flange wrench, wheel guard, English user manual, and a 12-month commercial warranty.		Ea	2

5	Portable Drilling Machine	• Extreme-Output Power System: Driven by a massive 2600 W industrial-grade motor, engineered to deliver maximum low-end torque required for drilling large-diameter holes through thick structural steel without stalling. • Standard Corded Power Supply: Operating on standard single-phase 240V (50/60Hz) power, equipped with a heavy-duty, high-insulation grounded power cord with reinforced strain relief for rugged job site durability. • Heavy-Duty Industrial Chuck & Capacity: Features a high-precision, industrial-grade chuck or Morse Taper spindle system designed to securely lock heavy-duty twist drills, annular cutters, and core bits. • Chuck size: Keyed or keyless chuck, 13 mm (½ inch) minimum • Advanced Operator Safety & Stability: Equipped with a safety slip clutch to prevent dangerous torque kickback if a bit binds, a dual-stage safety power switch, and a heavy-duty adjustable stabilizer arm or magnetic base interlock. • Ergonomic Design & Complete Kit: Built with an all-metal gear housing, multi-position auxiliary handles for maximum leverage, and supplied complete with a chuck key, keyed or keyless chuck (13 mm), depth stop rod, spanner or tool kit for maintenance, specialized cooling fluid reservoir, rugged carrying case, and a 12-month commercial warranty.		Ea	4
6	Complete Tool Kit for Boat Building	• Professional master technician tool chest layout tailored for boatyard fabrication. • Metallic and lockable. • must include hammers, set of spanners, set of files, nozzle cleaner tip, vice grip, set of screw drivers, leg callipers, filter gauges, engine panel gauges, wrenches, sliding bevel, combination square, measuring tape, try square, chisels, set of pliers, centre punch, steel rule, chipping hammers, hack saw, wire brush, snips, divider, micrometre, Vernier caliper, scriber, scrapers, wire cutter, pincers, bradawl, welding goggles, clear goggles, leather gloves, and leather apron. Tool material standards: HSS cutting tools, chrome-vanadium spanners and hardened carbon-steel chisels.		Kit	15
7	Marine Tool Kits	• Metallic and lockable. • must contain hammers, set of spanners, set of files, nozzle cleaner tip, vice grip, set of screw drivers, leg calipers, filter gauges, engine panel gauges, wrenches, sliding bevel, combination square, measuring tape, try square, chisels, set of pliers, Centre punch, steel rule, hack saw, wire brush, snips, divider, Vernier caliper, scriber, wire cutter, pincers, leather gloves and safety glasses		Set	15
8	Pipe Dies	• Professional manual ratchet pipe threading set; • Material: high-speed steel (HSS); • Thread standard: NPT/BSPT standard; • Pipe size range: From 1/2" up to 2" diameter; • supplied with an extended ratcheting handle assembly.		Set	2
9	Set of Taps and Dies	• Master metric tap and die thread restoration kit; • precision ground HSS composition; • includes taper, plug, and bottoming taps alongside corresponding circular split dies spanning sizes M3 up to M24; • includes die stocks and adjustable tap wrenches.		Set	5
10	Torque Wrench	• Torque range:100–300 Nm; • Type: Heavy-duty industrial click-type • Material: Chrome Vanadium steel • Ratchet head: Reversible ratchet head (clockwise/anti-clockwise operation). • Calibration: Factory calibrated with certification. • Accessories: Protective storage case (impact-resistant plastic or metal), Calibration certificate, Adjustment key or locking mechanism tool.		Ea	3
11	Torque Wrench	• Torque range:10–80 Nm; • Type: Heavy-duty industrial click-type • Material: Chrome Vanadium steel • Ratchet head: Reversible ratchet head (clockwise/anti-clockwise operation). • Calibration: Factory calibrated with certification. • Accessories: Protective storage case (impact-resistant plastic or metal), Calibration certificate, Adjustment key or locking mechanism tool.		Ea	2
12	Hammer	• Type: Heavy-duty industrial sledge hammer. • Head weight: 14 pounds. • Material: Drop-forged high-carbon steel head • Head hardness: Approximately 48–55 HRC • Handle material: Reinforced fiberglass core or high-grade hickory hardwood with anti-vibration properties. • Handle length: Approximately 900–1000 mm • Grip: Non-slip rubber or textured grip	 Club Hammer	Ea	2

13	G-Clamp	• Type: Heavy-duty industrial G-clamp (C-type screw clamp). • Material: Drop-forged high-carbon steel • Clamping capacity (size range): 4"-10" range • Load rating: Heavy-duty models capable of withstanding high clamping force without deformation.		Ea	10
14	Bench Vices	• Type: Heavy-duty industrial engineer's bench vice, swivel base type. • Maximum jaw opening: Minimum 200 mm. • Body material: High-strength ductile cast iron or forged steel construction • Jaws: Replaceable, hardened and serrated steel jaws with a hardness of 45-55 HRC. • Swivel base: 360° swivel base with dual locking mechanism • Mounting: Four-bolt bench mounting arrangement for secure installation. • Accessories: Replaceable hardened jaw plates, Mounting bolts, nuts, and washers, Swivel base locking handles.		Ea	18
15	Sash Clamp	• Type: Heavy-duty industrial sash clamp. • Clamping capacity: Adjustable, from 24 to 48 inches (600 - 1200 mm). • Bar: High-strength rolled steel bar with corrosion-resistant finish. • Clamp heads: Fixed and sliding heads manufactured from forged steel. • Pressure pad: Swivel pressure pad • Clamping force: Minimum 4,000 N. • Accessories: Protective jaw pads, Sliding clamp head, Fixed clamp head, Operating handle.		Ea	2
16	Impeller Puller Tool	• Heavy-duty marine-grade mechanical puller system designed for safe removal of rubber, composite, and light metal impellers from marine water pumps used in inboard, outboard, and stern drive engines. • Two-jaw self-centering gripping mechanism with a high-tensile fine-thread forcing screw for controlled extraction. • Suitable for impeller hub diameters ranging from 20 mm to 100 mm. • Should include interchangeable jaw sets, central forcing screw assembly, spacer adapters, shaft protection sleeves, instruction manual and a protective storage case.		Set	2
17	Cordless Drill Driver	• Professional-grade brushless cordless drill driver • Powered by an 18 V or 20 V Max lithium-ion battery system, supplied with two rechargeable batteries of at least 5.0 Ah each and a fast charger. • Should feature a 13 mm (½-inch) all-metal keyless chuck, a two-speed gearbox with speeds of 0-550 rpm and 0-2,000 rpm minimum, and a maximum torque of 70 Nm or greater with at least 20 adjustable clutch settings plus drilling mode. The drill shall have a brushless motor, electronic brake, variable-speed trigger, forward/reverse operation, and integrated LED work light. • Capable of drilling at least 13 mm in steel and 50 mm in wood • Should include overload, thermal, and battery protection systems and be supplied with a carrying case, belt clip, magnetic bit holder, magnetic bit holder, double-ended screwdriver bit, and user manual.		Ea	4
18	Soldering Station	• Professional temperature-controlled electric soldering system • Rated between 60 W and 120 W, • Adjustable temperature range of 200°C to 480°C minimum and stable thermal control of ±2°C to ±5°C. • Should feature a rapid heat-up ceramic heating element, ESD-safe design, replaceable soldering tips, and heat-resistant ergonomic soldering iron with silicone cable. • Should include a digital or analog temperature control system with stable regulation, overheat protection, set of interchangeable soldering tips (fine, medium, chisel types), tip cleaning tool, Solder wire (starter roll), user manual and a heat-resistant iron stand with cleaning sponge or brass wool holder.		Ea	3
19	Heat Gun	• Professional variable-temperature electric heat gun • Rated at 1,800-2,000 W, • Operating on 220-240 V AC, 50/60 Hz. • Should provide an adjustable temperature range of 50°C to 650°C minimum with electronic temperature control and a minimum airflow range of 250-500 L/min. • Should incorporate a durable ceramic heating element, rapid heat-up capability, digital temperature display (preferred), and at least two airflow settings with variable airflow control preferred. • Supplied with flat, concentrator, reflector, and glass protection nozzles, a carrying case, scraper, and user manual. • Should include overheat protection, automatic thermal cut-off, cool-down mode, double insulation, and an integrated hands-free support stand.		Ea	3

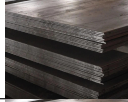
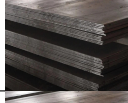
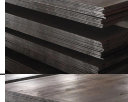
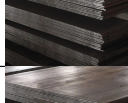
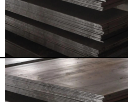
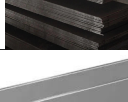
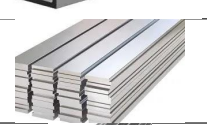
LOT 7: Marine Pullers and Fluid Maintenance Equipment

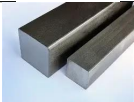
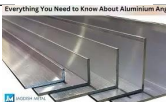
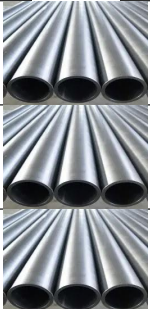
#	Equipment	Equipment Description/Specification	Picture (For Illustration Purpose only)	UOM	Qty
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1	Gear Pullers	• Heavy-duty 3-jaw self-centering mechanical puller designed for removal of gears, bearings, pulleys, couplings, and press-fitted components in marine engines and propulsion systems. • Pulling capacity of 3–10 tonnes, with a jaw opening range of 50 mm to 300 mm and adjustable reach suitable for recessed components. • Should include reversible interchangeable jaw sets (standard and heavy-duty), extension rods, spacer adapters, central forcing screw assembly, instruction manual and a protective storage case.		Set	2
2	Mechanical Bearing Pullers	• Heavy-duty manual system designed for removal of press-fitted bearings, bushings, sleeves, and seals in marine engines, gearboxes, and propulsion systems. • Should include 2-jaw and 3-jaw configurations, internal bearing puller attachments, and interchangeable jaw sets (standard and heavy-duty) suitable for bearing diameters ranging from 20 mm to 300 mm. • Should operate using a high-tensile fine-thread forcing screw compatible with spanner or breaker bar operation, capable of delivering controlled pulling force of 3–15 tonnes depending on configuration. • Should include extension rods and spacers, adapter sleeves (various sizes), separator plates, reaction plates, central forcing screw assembly, instruction manual and a protective storage case. • Adjustable		Set	2
3	Propeller Puller Set	• Heavy-duty universal marine-grade mechanical puller system designed for removal of inboard, outboard, and stern drive propellers fitted on tapered or spline shafts. • Capable of generating a minimum pulling force of 5–15 tonnes, and shall include a 2-jaw or 3-jaw adjustable self-centering puller mechanism. • Should include interchangeable jaws sets (standard and heavy-duty), extension adapters, spacer kits, central forcing screw assembly, a protective storage case, and instruction manual. • Suitable for shaft diameters of 20 mm to 100 mm (standard range) with expandable accessories for larger applications.		Set	2
4	Shaft Bearing Puller/Installer	• Hydraulic marine-grade system designed for removal and installation of propeller shaft bearings, stern tube bearings, cutlass bearings, and bushings ranging from 20 mm to 150 mm shaft diameter. • Should operate using a hydraulic ram system with hand or foot-operated hydraulic pump, capable of generating a controlled force of minimum 10–30 tonnes. • The system should include a high-pressure hydraulic cylinder (ram) with pressure gauge, release valve, and safety overload protection. • Should be supplied with interchangeable bearing pulling/extraction cups, installation press sleeves set, bearing adaptor kit, pulling rods and spindle assembly, shaft protection sleeves, instruction manual, heavy-duty storage case or rack, and alignment guides to ensure accurate and damage-free bearing handling. • Should be suitable for both bench-mounted and floor-mounted operation, with a reinforced steel frame designed to withstand repeated hydraulic loading without deformation. • The hydraulic system shall include a manual hydraulic pump with pressure relief valve, high-pressure hoses, quick couplings, and integrated safety lock mechanism to prevent accidental release under load.		Set	2
5	Seal installer Kit	• Universal mechanical seal installation system designed for precise, aligned, and damage-free installation of mechanical seals in marine pumps and rotating equipment. • Suitable for shaft diameters ranging from 10 mm to 100 mm (minimum range) and should include full set of interchangeable anodized aluminium installation sleeves (multiple sizes), stainless steel driver plates, alignment cones and adapters, spacer rings, a universal handle system, instruction manual, mechanical seal removal tool kit and protective foam-lined storage case.		Kit	2
6	Valve Spring Decompressor	• Heavy-duty mechanical valve spring compressor tool suitable for marine diesel and petrol engines, capable of servicing inline and V-type cylinder heads. • Should feature a forged steel frame with hardened compression arms, adjustable throat depth, interchangeable adapters, and a controlled screw or lever-operated compression mechanism to safely compress valve springs for removal and installation of valve components. • Suitable for valve spring diameters of 20 mm to 50 mm, with reinforced construction for high-tension marine diesel valve springs. • Should include multiple interchangeable valve adapters (various sizes), extension arms for deep-set valves, retainer/collet removal hook tool, valve stem seal pliers, a protective storage case, and user instruction manual.		Ea	3

7	Oil Extractor Pump	• Portable 12 V DC electric self-priming pump designed for extracting engine oil, gearbox oil, stern drive oil, hydraulic oil, and other approved lubricants from marine engines and propulsion systems. • Motor power of 80-120 W, a minimum flow rate of 1-5 L/min, and be capable of extracting warm oil at temperatures up to 80°C. • Supplied with a minimum 1.5 m suction hose, 2.0 m discharge hose, battery connection leads with insulated clamps, spare fuse, hose clamps, and carrying case. • The electrical system shall incorporate thermal overload protection, reverse polarity protection, an in-line fuse, and a splash-resistant ON/OFF switch. • The pump shall also be supplied with a set of flexible dipstick extraction probes (minimum 4 mm, 6 mm, 8 mm, and 10 mm diameters) and a minimum 20 L oil collection container.		Ea	2
8	Oil Drain/Disposal Unit	• Heavy-duty mobile collection and waste handling system designed for draining, collecting, and safely disposing of used lubricants. • Waste oil capacity of 50-80 litres • Should include an adjustable height drain funnel (400-600 mm diameter) with anti-splash mesh screen and swivel positioning capability. • Should operate via gravity drainage or a manual pump system, with a pressure relief valve and overflow protection. • Mounted on a reinforced mobile frame with lockable castor wheels. • Should include a flexible oil-resistant discharge hose, quick-connect couplings, and secure drain valve system.	EASY TO MOVE 	Ea	1

LOT 8: Steel and Aluminum Materials

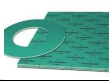
#	Equipment	Equipment Description/Specification	Picture (For Illustration Purpose only)	UOM	Qty
1	Mild Steel Plates	3mm		Ea	40
2	Mild Steel Plates	4mm		Ea	40
3	Mild Steel Plates	5mm		Ea	40
4	Mild Steel Plates	6mm		Ea	40
5	Mild Steel Plates	10mm		Ea	10
6	Mild Steel Plates	12mm		Ea	10
7	Mild Steel Plates	16mm		Ea	20
8	Mild Steel Plates	20mm		Ea	30
9	Steel U Channel	100mm x 75mm x 10mm		Ea	40
10	Steel Flat Bar	100mmx10mm		Ea	40
11	Angle Irons	50mmx50mmx6mm		Ea	75

12	Angle Irons	100mmx100mmx10mm		Ea	20
13	Steel Square Bar	50mmx50mm		Ea	40
14	Steel Pipes	100mm		Ea	40
15	Steel Pipes	150mm		Ea	20
16	Steel Pipes	200mm		Ea	10
17	Steel Chequer Plates	5mm		Ea	50
18	Aluminium Plates	4mm		Ea	40
19	Aluminium Plates	5mm		Ea	40
20	Aluminium Plates	6mm		Ea	40
21	Aluminium U Channel	100mm x 75mm x 10mm		Ea	40
22	Aluminium Flat Bar	100mmx10mm		Ea	40
23	Aluminium Angles	50mmx50mmx6mm		Ea	40
24	Aluminium Angles	100mmx100mmx10mm		Ea	20
25	Aluminium Square Bar	50mmx50mm		Ea	40
26	Aluminium Pipes	100mm diameter		Ea	40
27	Aluminium Pipes	150mm diameter		Ea	20
28	Aluminium Pipes	200mm diameter		Ea	10
29	Aluminium Chequer Plates	5mm		Ea	50

30	Shaft	60mm diameter		Ea	10
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LOT 9: Workshop Consumables and Hardware Items

#	Equipment	Equipment Description/Specification	Picture (For Illustration Purpose only)	UOM	Qty
1	Welding Rods	- Electrode Classification: Premium general-purpose rutile-coated mild steel welding electrodes. - Dimensional Specifications: 10 Gauge / 10 SWG (3.15 mm diameter) core wire size with a standard length of 350 mm, optimized for clean welding on thin to medium-gauge carbon-manganese steel plates. - Packaging & Delivery: Supplied in secure, moisture-resistant industrial boxes		Kg	1000
2	Welding Rods	- Electrode Classification: Specially formulated general-purpose, high-cellulose or rutile-coated mild steel welding electrodes (amex). - Dimensional Specifications: 10 Gauge / 10 SWG (3.15 mm diameter) core wire size with a standard production length of 350 mm, providing excellent deposition rates for medium-thickness steel fabrications. - Packaging & Power Compatibility: Supplied in sealed, moisture-proof industrial boxes to preserve flux coating integrity, fully optimized for use		Kg	500
3	Cutting Disc	- Dimensions & Compatibility: Features a standard 9-inch (230 mm) outer diameter with a 22.23 mm (7/8 inch) center arbor hole, designed to fit all standard commercial 9-inch heavy-duty angle grinders. - Material Composition: Formulated with premium-grade Aluminum Oxide or Silicon Carbide abrasive grains, reinforced with high-tensile fiberglass mesh layers for maximum structural stability and break resistance at high speeds. - Packaging & Quantity: Supplied in heavy-duty, moisture-sealed industrial boxes to preserve the resin bond integrity against ambient workshop humidity.		Ea	1000
4	Cutting Disc	- Dimensions & Compatibility: Features a standard 6-inch (150 mm) outer diameter with a 22.23 mm (7/8 inch) center arbor hole, designed to fit all standard commercial 6-inch high-output angle grinders. - Premium Material Matrix: Constructed using high-grade, heat-treated Aluminum Oxide abrasive grains bonded with high-quality synthetic resin and reinforced with multi-layer fiberglass mesh for enhanced safety and rupture resistance. - Industrial Packaging: Supplied in moisture-proof, rigid industrial packs to protect the disc composition from humidity degradation during long-term storage.		Ea	200
5	Grinding Disc	- Dimensions & Fitment: Engineered with a standard 9-inch (230 mm) outer diameter and a 22.23 mm (7/8 inch) center bore, ensuring compatibility with all major brands of heavy-duty industrial angle grinders and pedestal units. - Heavy-Duty Wheel Profile: Designed as a Type 27 (depressed center) grinding wheel with a robust thickness (typically 6.0 mm to 6.8 mm) optimized for heavy stock removal, weld blending, and beveling. - Abrasive Compound Matrix: Constructed using high-performance Aluminum Oxide or Zirconia Alumina abrasive grains bonded with synthetic resin and heavily reinforced with multi-layered fiberglass mesh for structural safety under intense side loads.		Ea	200
6	Grinding Disc	- Dimensions & Fitment: Engineered with a standard 6-inch (150 mm) outer diameter and a 22.23 mm (7/8 inch) center bore, ensuring seamless compatibility with all industrial-grade 6-inch angle grinders and bench units. - Heavy-Duty Wheel Profile: Designed as a Type 27 (depressed center) grinding wheel with a robust thickness (typically 6.0 mm to 6.5 mm), specifically optimized for aggressive stock removal, weld bead flattening, and edge beveling. - Abrasive Compound Matrix: Features high-performance Aluminum Oxide or Zirconia Alumina abrasive grains bonded with synthetic resin and reinforced with multi-layered fiberglass mesh to withstand intense side-load pressures without fracturing.		Ea	100
7	Steel Paint	Oil paint		Litres	500
8	Buffing Wheels	4inches		Ea	20
9	Buffing Wheels	6 inches		Ea	20
10	Buffing Wheels	8 inches		Ea	10

11	Grease	1kg, water resistant		Kg	20
12	Bearings	60 diameter hole		Ea	10
13	Rivets	5mm		Box	200
14	Bolts and Nuts	6mm		Ea	400
15	Bolts and Nuts	8mm		Ea	400
16	Bolts and Nuts	10mm		Ea	400
17	Bolts and Nuts	12mm		Ea	400
18	Bolts and Nuts	14mm		Ea	400
19	Roller Brushes	rollers		Ea	10
20	Paint Brushes	4 Inches		Ea	10
21	Paint Brushes	6 Inches		Ea	10
22	Paint Brushes	8 Inches		Ea	10
23	Engine Oil	SAE 10W-30W (Petrol), marine grade		Litres	30
24	Engine Oil	SAE 15W-40W (diesel), marine grade		Litres	30
25	Gear Box Oil	SAE 80W-90		Litres	20
26	Coolant	Pre-mixed, marine safe		Litres	20
27	Gasket Sheets	3mm thick		Sheets	3
28	Gasket Sheets	5mm thick		Sheets	5
29	Spark Plugs	NGK or equivalent		Ea	10
30	Oil Filters	For outboard and inboard engines		Ea	10
31	Hose Clamps	Stainless steel, ½ inch – 2 inch		Ea	50
32	Mutton Cloth	Poly cotton 80/20		Rolls	40
33	Marine Degreaser	Biodegradable heavy duty		Litres	20

34	Scrubbing Brushes	Medium bristle		Ea	10
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LOT 10: Precision Instruments and Handheld Devices

#	Equipment	Equipment Description/Specification	Picture (For Illustration Purpose only)	UOM	Qty
1	Viscometer	- Digital rotational bench-top viscometer with a viscosity measuring range of 10 to 2,000,000 mPa·s (cP), an accuracy of $\pm 1\%$ or better, and repeatability of $\pm 0.5\%$ or better. - Should feature a variable speed range of 0.1–200 RPM, a digital display showing viscosity, spindle speed, torque, and temperature, and shall be supplied with 4–6 interchangeable stainless steel spindles, a laboratory stand, digital temperature probe, sample beakers, calibration fluids, calibration certificate, and user manuals. - The supply shall also include Ford viscosity cups (No. 3 and No. 4), DIN flow cups, a cup stand, cleaning brush, and digital stopwatch.		Ea	1
2	Vibration Analyser	- Handheld digital vibration analyser and condition monitoring system capable of measuring vibration velocity, acceleration, and displacement with frequency spectrum (FFT) analysis. - Operate within a measurement range of 0.1–200 mm/s (velocity), 0.1–200 m/s² (acceleration), and 1–10,000 μm (displacement) with a frequency range of 5 Hz to 10 kHz minimum. - Should include a high-sensitivity piezoelectric accelerometer with magnetic mounting base, sensor cable set handheld colour LCD display (minimum 3.5–5 inches), internal data storage, charger unit, user manual, calibration certificate, USB data export, and PC-based analysis software. - Should support fault detection including imbalance, misalignment, bearing defects, and gear mesh issues. - Should be rugged, shock-resistant, and rated at minimum IP54, with rechargeable lithium-ion battery.		Kit	1
3	Feeler Gauge	- Metric blade-type measuring instrument covering a range of 0.02 mm to 1.00 mm minimum, consisting of 20–32 hardened stainless steel or high-carbon steel blades. - Should include standard straight blades as well as angled or offset blades specifically designed for restricted access areas such as OHC marine engines, rocker arm assemblies, and camshaft clearances. - Each blade shall be accurately calibrated to a tolerance of ± 0.005 mm or better, with clearly engraved metric markings. - The set should include a reinforced protective storage case with blade guards or separators - The set shall be folding or fan-type with a secure pivot mechanism		Set	5
4	Micrometer	- Digital micrometer set consisting of both outside and inside micrometers suitable for marine engineering applications. - The outside micrometers shall cover a minimum range of 0–100 mm (standard set) with optional extension to larger sizes, while the inside micrometers shall cover a range of 50–300 mm with extension rods for deep bore measurement. - Should provide a resolution of 0.001 mm and accuracy of ± 0.002 mm or better, with hardened stainless steel or carbide-tipped measuring faces, ratchet-controlled measuring force, and digital LCD display with zero-setting and hold functions. - The set should include calibration standards gauge block or setting ring, extension rods, spare battery, user manual, calibration re-certification kit, calibration certificate and a protective foam-lined carrying case.		Set	3
5	Cylinder Bore Gauge	- Digital indicator with extended sets; - Minimum range of 50 mm to 160 mm, with extension kits up to 300 mm or 500 mm; - Should provide a resolution of 0.001 mm with an accuracy of ± 0.003 mm; - Should include a self-centering measuring head, hardened steel or carbide contact points, extension rods for deep bore measurement, and a digital LCD display with zero-setting, hold function, and unit conversion; - Should be supplied with master setting rings, calibration certificate, spare battery, user manual, and a protective foam-lined storage case.		Set	3

6	Digital Multimeter	- A handheld True RMS, capable of measuring AC/DC voltage, current, resistance, continuity, diode testing, capacitance, frequency, and temperature. - Should feature auto-ranging capability, backlit LCD display, data hold function, and overload protection. - Supplied with internal fuse protection, spare fuse set, insulated test leads/probes, temperature probe (thermocouple type K), battery, user manual, and rugged shock-resistant housing with protective rubber holster. It shall be powered by standard batteries with auto power-off functionality. - Ignition Frequency: 0.1Hz ~ 20KHz · - Pulse Width: 0.1 ~ 999.9ms · RPM: 2STR - 300 ~ 19999 rpm, 4STR - 600 ~ 19999 rpm · - Voltage Range: 20V / 200V. (Auto-ranging, marine-rated, digital)"		Ea	5
7	Clamp Meter	- Professional True RMS digital clamp meter capable of non-contact measurement of AC current up to 600 A minimum, with optional DC current measurement using Hall-effect technology. - Measure AC/DC voltage up to 1000 V DC and 750 V AC, resistance, continuity, diode testing, frequency, and temperature. - Should feature a clamp jaw opening of at least 30–40 mm, auto-ranging capability, backlit LCD display, data hold function, and non-contact voltage detection. It should also include inrush current measurement mode for capturing high starting current surges in marine engine starter motors, battery systems, alternators, and inductive loads such as pumps and compressors. The instrument shall further include MIN/MAX recording functions. - Supplied with battery set, user manual, protective carrying case and calibration certificate		Ea	4
8	Insulation Resistance Tester	- Professional digital megohmmeter - capable of measuring insulation resistance from 0.01 MΩ to at least 200 GΩ, with selectable test voltages of 50 V, 100 V, 250 V, 500 V, and 1000 V, and 2500 V capability preferred for testing larger marine motors and generators. The instrument shall also measure AC/DC voltage up to at least 600 V, and should include automatic live-circuit detection, automatic discharge of stored test voltage after testing, Polarization Index (PI) and Dielectric Absorption Ratio (DAR) measurement, leakage current measurement, programmable PASS/FAIL indication, and timed insulation testing. - Should feature a large backlit LCD display with bar graph, auto-ranging, data hold function, and low battery indicator. - Should have a minimum safety rating of CAT IV 600 V / CAT III 1000 V, with double insulation, overvoltage protection, and audible and visual safety warnings. - Supplied with insulated test leads, remote test probe, alligator clips, rechargeable battery or battery set, battery charger, protective carrying case, user manual and a factory calibration certificate or annual calibration schedule.		Ea	2
9	Battery Load Tester	- Professional digital battery analyser - Capable of testing 6 V, 12 V, and 24 V marine battery systems, including flooded, AGM, gel, EFB, and spiral AGM batteries, with LiFePO₄ compatibility preferred. - Should perform battery load testing, State of Health (SOH), State of Charge (SOC), Cold Cranking Amps (CCA), cranking system, starter motor, charging system, alternator output, ripple voltage, internal resistance, and battery voltage tests. - Should support batteries rated from 30 to 2,000 CCA minimum and comply with major battery standards including CCA (SAE), IEC, EN, DIN, JIS, MCA, and CA. - Should feature a backlit LCD display with PASS/FAIL indications, battery health percentage, automatic test sequencing, reverse polarity protection, overload protection, and spark-proof heavy-duty insulated clamps with flexible test leads. - Powered directly from the battery under test and supplied with a protective carrying case, user manual, and a factory calibration certificate or annual calibration schedule.		Ea	2