

Diesel Mechanic Trade ITI Shamshi District Kullu (H.P.)

C. General Installation / Machineries for Diesel Mechanic Trade Govt. ITI Shamshi District Kullu (H.P.)

SR. NO.	PRODUCT NAME	PRODUCT SPECIFICATION	MAKE	Documents
3	Diesel Engine - CRDI - 4 stroke for Dismantling and assembling with swivelling stand	<p>The device should be designed based on latest technology diesel engines with Common rail direct fuel injection system to illustrate the structure and working principle of CRDI engines</p> <p>Engine type: Diesel Engine (New) Cc: 1200-1500cc Number of cylinders: 4 Minimum Power: 85 Bhp @ 4000-4500 rpm Number of valves per cylinder: 4 DOHC Fuel system: CRDI Compression ratio: 17:1 to 20 :1 with turbo charger Diesel tank capacity: 10 litres</p> <p>This Engine should be made out of Original new parts (proof required) with power system, Cooling system, Lubricating system, Electrical system, charging system, Fuel feed system and Intake system with Dash board including gauges and warning indicators/Instrument cluster and maintenance free Lead Acid 12V Battery.</p> <p>All system should be mounted on a sturdy frame with castor wheel.</p> <p>This model should contain three trolleys with Name board and detailed diagram indicating parts printed on the board.</p> <p>First trolley should contain- Radiator assembly with perforated safety guard.</p> <p>Second trolley Should contain Engine with Swivelling stand.</p> <p>Third trolley should contain Battery & Dash board fuel tank with wiring harness.</p> <p>Quick connectors should be provided for easy connection and disconnection of wiring harness.</p>		Manufacturer's /Authorized Dealer's Invoice to be submitted as a Proof of Brand New Engine and Parts.



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		<p>Arrangement should be such that when all the trolleys are connected, engine should start running.</p> <p>The engine make and model are to be mentioned.</p> <p>Original Invoice of engine should be submitted.</p> <p>Engine service manual and battery warranty card to be submitted</p> <p>Engine dismantling and assembling procedure manual with tools box should be provided.</p> <p>Note: Proof of New Engine should be provided.</p>			
4	Diesel Engine-(Running Condition) Stationary type	<p>Diesel Engine (Running condition) Stationary type</p> <ul style="list-style-type: none"> - Type: Vertical, Single Cylinder, -Air Cooled, Four stroke Cycle -Compression ignition Diesel Engine -Minimum Rated Power : 8HP -Minimum Engine Displacement 660CC 			
5	Discrete Component Trainer / Basic Electronics Trainer	<p>Model should be IC based DC regulated power supply:</p> <ul style="list-style-type: none"> +12 V / 500 mA, 0 to 12V / 500mA, -12V / 500mA 0 to -12V / 500 mA, +5V / 500 mA <p>AC Supplies:</p> <ul style="list-style-type: none"> 9 -0- 9 V AC / 500 mA <p>Vero board:</p> <p>Unique Vero board type socket with termination for use of external components IC's up to 20 pin without soldering. and Board with Locking facility.</p> <p>Display:</p> <p>LCD display for measuring Volts, Amps, ohms (Multimeter)</p> <p>Potentiometer:</p> <p>Three potentiometers (1k, 10k & 100k) with termination.</p> <p>Speaker:</p> <p>8 ohms miniature</p>			

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		<p>speaker with terminations.</p> <p>Power On: Power on switch with indicator for mains on indication and fuse for protection.</p> <p>Patch cards: Set of 20 assorted coloured multi – stand wires with 2mm termination at both ends. – 2 sets</p> <p>Power: 230V 10% single phase AC.</p> <p>Instruction Manual: One detailed instruction manual with well thought out experiments covering in this kit. (Minimum : 10 experiment)</p> <p>Accessories: Assorted components: - Resistor, Capacitor, Inductor, Diode, Zener diode, SCR, DIAC, TRIAC, FET, UJT, MOSFET, LDR, LED (2 colour). Each component 5 nos.</p>			
13	Working Condition of Diesel Engine-CRDI-4stroke Engine Assembly with fault simulation board	<p>The device should be designed based on latest technology diesel engines with Common rail direct fuel injection system. The trainer helps to simulate engine start up, speedup, slowdown and other actions so as to illustrate the structure and working principle of CRDI engines.</p> <p>Features:-</p> <p>Latest Diesel Engine CRDI 4 Stroke 6 Cylinders, Turbocharged Engine in running condition. 4500 - 6000 cc, and Power 100 – 150 KW @ 2300 – 2700 RPM. All original new part (proof required) like sensors, wiring, fuel feed, cooling system & instrument cluster.</p>			Manufacturer's /Authorized Dealer's Invoice to be submitted as a Proof of Brand New Engine and Parts.

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		<p>1. Real and operating CRDI Diesel engine, illustrating the structure and working process.</p> <p>2. Engine management circuit diagram with wiring color code and part listing and naming will be printed on to Color printed board base.</p> <p>3. Test points will be provided on the printed base so that different voltages/current, resistance values etc. can tested/understood using a multi-meter.</p> <p>4. Automobile meters are fitted on to the training module along with the printed circuit diagram, to demonstrate engine speed, temperature, fuel pressure, charging light etc.,</p> <p>5. The training module is fitted with diagnostic socket (DLC) for universal automobile decoder (Scan tool) to read fault codes, clear fault codes and read data stream.</p> <p>6. Fault setting switch bank will be provided to induce faults.</p> <p>7. Diagnostic reader will be attached to the model to display the error codes.</p> <p>8. Brand new working condition engine will be provided with fuel tank and battery. Throttle control is provided on the module to accelerate.</p> <p>9. The training module is fabricated using steel pipe frame with spray painted for good looks and the entire setup is provided with caster wheels with brakes for easy movement of the same.</p> <p>10. Manual in English should be provided.</p> <p>Note: Proof of New Engine should be provided.</p>			

LIST OF TOOLS AND EQUIPMENT MACHNIC MOTOR VEHICLE

SR. NO.	Name of the Tools & Equipment	Technical Specification	Features	Accessories	Qty.	Documents
6	Front axle (Rzeppa Joint) with stand for Dismantling And assembly	<p>Front axle (Rzeppa joint) with stand for dismantling and assembly.</p> <ul style="list-style-type: none"> • Whole assembly should be mounted on suitable stand with caster wheel and tray. • Brand New material provided. • Manual should be provided. <p>The Front axle with rzeppa joint will be of original NEW vehicle accessories, will be mounted on to stand as per the original design of the vehicle with left & right wishbones, struts, knuckles, etc.</p> <p>All the aggregates should be Painted with suitable Colour Paint.</p>				
7	Diesel Engine - CRDI - 4 stroke for Dismantling And Assembling with Swiveling Stand.	<p>The device should be designed based on latest technology diesel engines with Common rail direct fuel injection system to illustrate the structure and working principle of CRDI engines</p> <p>Engine type: Diesel Engine (New) Cc: 1200-1500cc Number of cylinders: 4 Minimum Power: 85 Bhp @ 4000-4500 rpm Number of valves per cylinder: 4 DOHC Fuel system: CRDI Compression ratio: 17:1 to 20 :1 with turbo charger Diesel tank capacity: 10 litres</p> <p>This Engine should be made out of Original new parts (proof required) with power system, Cooling system, Lubricating system, Electrical system, charging system, Fuel feed system and Intake system with Dash board including gauges and warning</p>				Manufacturer's /Authorized Dealer's Invoice to be submitted as a Proof of Brand New Engine and Parts.

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		<p>indicators/Instrument cluster and maintenance free Lead Acid 12V Battery.</p> <p>All system should be mounted on a sturdy frame with castor wheel.</p> <p>This model should contain three trolleys with Name board and detailed diagram indicating parts printed on the board.</p> <p>First trolley should contain- Radiator assembly with perforated safety guard.</p> <p>Second trolley Should contain Engine with Swivelling stand.</p> <p>Third trolley should contain Battery & Dash board fuel tank with wiring harness.</p> <p>Quick connectors should be provided for easy connection and disconnection of wiring harness.</p> <p>Arrangement should be such that when all the trolleys are connected, engine should start running.</p> <p>The engine make and model are to be mentioned.</p> <p>Original Invoice of engine should be submitted.</p> <p>Engine service manual and battery warranty card to be submitted</p> <p>Engine dismantling and assembling procedure with tools box should be provided.</p> <p>Note: Proof of New Engine should be provided.</p>				
9	Cut section of 4/6 cylinder diesel engine in moving condition to show movement of internal parts	The model should be made out of full size original six cylinder, four strokes used Diesel engine. Maximum parts and accessories like five cylinders, cylinder head, inlet and Exhaust manifolds, Fuel pump, oil pump, Water pump, Fuel Filter, Fuel Injection pump, injectors, self-starter, Dynamo, etc are sectioned to show the internal				

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		<p>constructional details of the engine. 220/230V A.C. suitable Motor should be coupled through a Reduction drive unit to the engine by which the model can be demonstrated at very low speed of about 15 to 20 rpm. By running the engine, the working of individual parts and accessories like Crankshaft, Camshaft, connecting rod, Pistons, Valves, different pumps, etc can be demonstrated. Glowing LED's should be provided to show the firing order and also diesel spray from the nozzles should be visible. This model should be provided up to Flywheel and complete engine is mounted on a sturdy iron frame Manual should be provided.</p>				
10	Diesel Engine six Cylinder in running condition	<p>The device should be designed based on latest technology diesel engines with Common rail direct fuel injection system. The trainer helps to simulate engine start up, speedup, slowdown and other actions so as to illustrate the structure and working principle of CRDI engines.</p> <p>Features:-</p> <p>Latest Diesel Engine CRDI 4 Stroke 6 Cylinders, Turbocharged Engine in running condition. 4500 - 6000 cc, and Power 100 – 150 KW @ 2300 – 2700 RPM. All original new part (proof required) like sensors, wiring, fuel feed, cooling system & instrument cluster.</p> <p>1. Real and operating CRDI Diesel engine, illustrating the structure and working process. 2. Original Instrument Cluster</p>				<p>Manufacturer's /Authorized Dealer's Invoice to be submitted as a Proof of Brand New Engine and Parts.</p>

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		<p>is fitted on to the training module to demonstrate engine speed, temperature, fuel pressure, charging light etc.,</p> <p>3. Brand new working condition engine will be provided with fuel tank and battery. Throttle control is provided on the module to accelerate.</p> <p>4. The training module is fabricated using steel pipe frame with spray painted for good looks and the entire setup is provided with caster wheels with brakes for easy movement of the same.</p> <p>5. Manual should be provided</p> <p>Note: Proof of New Engine should be provided.</p>				
11	Four stroke Petrol engine with CNG setup working condition	<p>The Brand New Four stroke MPFI petrol engine with CNG setup should be prepared by using brand new four-cylinder car engine with all the fittings of the engine along with latest brand new CNG tank& Kit, all mounted on to a sturdy iron frame with caster wheels (mobile trolley).</p> <p>Engine type - 4-cylinder, naturally aspirated petrol, Displacement: 1100 - 1400cc. Minimum power: 75 BHP Valve Gear: 4 per cylinder, DOHC</p> <p>Fuel supply system: M.P.F.I. Ignition System - Spark ignition Cooling System - Water Cooling Fuel Tank - 10 Liter</p> <ul style="list-style-type: none"> Complete Panel Board Control with all Brand New Original Equipment Parts (Proof to be provided- Invoice of manufacturer or 				Manufacturer's /Authorized Dealer's Invoice to be submitted as a Proof of Brand New Engine and Parts.

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		<p>manufacturer's authorized dealer) like ECM, BCM, Ignition Switch with Keys, Wiring Harnesses, Instrument Cluster, OBD II Compliant Diagnostic Socket, Accelerator Pedal, Alternator, Starter Motor, Radiator with Cooling Fan, Air Filter Assy., Fuse Box, Fuel Pump & Filter, Engine Sensors like Crank Angle/RPM/TDC Sensor, Oxygen/Lambda Sensor, Coolant Temperature Sensor, Engine Oil Pressure Switch, Absolute Pressure Sensor, Throttle Position Sensor. CNG/Petrol Selector switch to be provided on the board.</p> <ul style="list-style-type: none"> ● Instrument Cluster should display Fuel level, Battery Charging Light, Engine Oil Pressure Light, and Coolant High Temperature Warning Light. ● Fuel Tank 10 Liter, CNG Tank 7 – 10Kgs. ● Engine Accessories- Silencer, New Battery with clamp, and Wire Mesh/Perforated Sheet Safety Guards for Radiator and Silencer. 				

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		<ul style="list-style-type: none"> ● Engine should be in running condition with speed controlled from the accelerator pedal. ● CNG Tank should be provided on a separate trolley with provision for filling gas. <p>All the fittings such as meter, fuel tank, radiator etc., along with the engine should be arranged on to the paint finished trolley with its original fittings such as rubber dampers and clamps so as to contain the vibrations.</p> <p>The wiring for the sensors, indication meters etc., should be done so that by cranking the ignition the engine should start working.</p> <p>The engine assembly should be serviced, painted with single color paint.</p> <p>MPFI engines should be fitted with all necessary sensors, injectors and other MPFI accessories, ECU etc., which should be duly connected by its original wiring harness and should be made to work along with necessary indications.</p> <p>Note: Proof of New Engine should be provided.</p>				

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		4. The training module is fabricated using steel pipe frame with spray painted for good looks and the entire setup is provided with caster wheels with brakes for easy movement of the same. Manual should be provided Note: Proof of New Engine should be provided.				




91	Sight rail and bonning rod	. 1000x600x50 mm . Boning rods in T - shape for easy Levelling. One set consists of two half and one full T-patterns. Material : wood (superior Quality)	1NO.	
92	Ratchet pipe die 15 mm to 32 mm	15 to 32 mm	1NO.	
93	Bench drilling machine with chuck and key upto 15mm capacity	Chuck Capacity : 1.5 -15mm, Power Requirement : 350W, 230V -50Hz, No Load RPM	1NO.	
94	Double face hammers		1NO.	
95	Dormat, Pickaxe, Spade, Girmale		1EACH	
96	Pipe bender(Hydraulic type)	Dies : 1/2,3/4,1,1.1/4,1.1/2,2,2.1/2,3,4 Inch, Size (inch): ½ to 4, Thickness : 2.5mm – 6mm,	1NO.	
99	Solar water heater system	Type of Collector : Evacuated Tube Collectors (ETC), Tube Dimensions : 47 – 1800 mm or 58 – 1800 mm, Inner Tank Materials : High-grade Stainless Steel, Outer Tank Materials : Stainless Steel / Powder Coated, Temperature : 65 degree C to 85 degree C, Method of Welding : Seamless and Non-Welding Technology, Tank Insulation : High-quality PUF Tank Volume : 100 Ltr, Frame Angle : 27 Degrees, Stand Frame : Galvanized Powder Coated, Type of Circulation : Thermo Siphon, Type of Grommets : Silicon Rubbers	1NO.	
100	Ring guage 15 mm,20mm,25mm,32mm	15 mm, 20mm ,25 mm,32 mm	1NO.	