

1.PUSA BATTERY MINI ELECTRIC PRIME MOVER

Dc Geared Motor (24v, 350w), Motor Controller (25 Amps Low Voltage Protection 20.5v) With Throttle 1-4v., Other Specifications Are As Per Prototype Available In The Division Of Agricultural Engineering, Iari, New Delhi- 12



2. PUSA ELECTRONIC SAFETY ALARMING DEVICE FOR CHAFF CUTTER,



Box and mounting	Overall dimensions (32.5 × 9 × 5.5 cm), Material (Plastic/Metal with cover and waterproof), Cut size at the bottom (size 5cm Ø, 02 No.), Stand for mounting (24 × 26 × 0.2 cm)
PCB	Size (length- 300mm, width-75mm, thickness 1-1.6mm), layers: 02, material FR-4, minimum track spacing 6/6mil, minimum hole size 0.3 mm, Solder mask Green, Silk screen White, Surface finish HASL, power line thickness as 30A near the relays
Sensors/controller	PIR Sensor (02 No.), LDR sensor (08 No.), Temperature and humidity sensor (01), Vibration Sensor (02 No.), Controller ATMEGA 2560
Input/ Output	Relay (Single Channel, Trigger voltage 5V, Switch voltage 250VAC@ 30A), Buzzer High sound, LED Red Green Yellow, Power switch, Restart switch, Reset Switch, signal and power output for servomotors with capacitors charge backup, USB output, Charging connector, etc.
Battery and Charging	Solar panel charging (Size, 7 × 7 cm, 5V, 80mA, 3 No.), Battery (lithium, 3.7V, 1200 mAh, 4 no.)
Name sticker	PUSA SAFETY ALARMING DEVICE
Logo sticker	ICAR & IARI, logo size : Round shape (2 inch diameter or as per available space)

ICAR logo link

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3. PUSA TELE-ROBOTIC PESTICIDE APPLICATOR FOR GREENHOUSE,

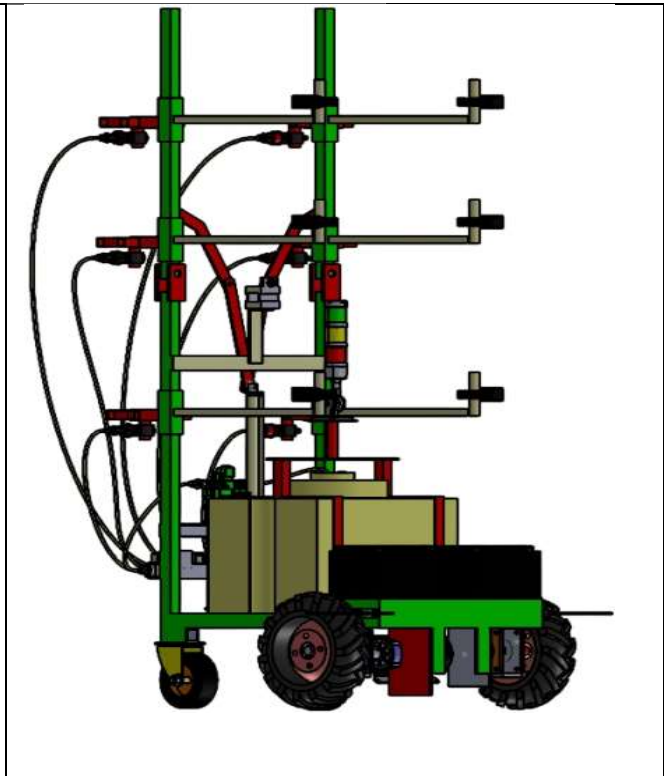
Robotic vehicle: Overall dimensions (0.7 × 0.65 × 2.1 m), Speed range: 1-3 km/h.
Drive Wheel (30-50 cm diameter), Caster wheel (Size 8 inch, width 10cm), Gearbox (02)
Battery (12V, 100 Ah Lithium ion battery), charger (Input: 240-150V AC, Output: 24 V DC, 15A (maximum), DC Motors (24 V, 250 W and 120 rpm, nominal torque: 20 N.m.), Motor driver (6V-30V DC, 64 A peak, 32A continuous, dual channel)), Pixhawk, with GPS and other accessories.

Ground control station: Remote control with receiver (FS-RM003 2.4GHz Module), Range 1 km (minimum), 12V, 9 Channel

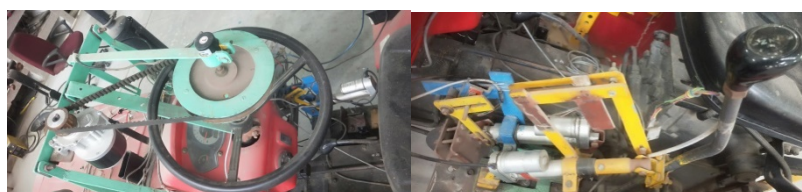
Real-time video transmission unit:

Camera with transmitter (1200 pixel), Display with receiver (4-6 inch, 480 pixel, range 1 km

Spraying system: Tank (50 litre, size 500 × 450 × 400mm), solenoids (6 No.s, 12V on-off type solenoids, operating pressure; 0.02-0.8 MPa, rated current, 1A), spray pump (12V DC diaphragm pump, 5 L.min⁻¹ and 8.5 kg cm⁻²), Pressure gauge (1 No, analog type, working pressure 0-7 kg cm⁻²), Nozzle (flat fan nozzle; flow rate, 1.1 L.min⁻¹, working pressure 2.8 bar), nozzle chocking sensor, linear actuator (24 volt, relay, driver), Controller, Step down converter (24 to 12 volt, 300 Watt)



4. PUSA TELEROBOTIC CONTROL SYSTEM FOR TRACTOR



Steering control	DC Motors (24 V, 250 W and 120 rpm, nominal torque: 20 N.m.), Motor driver (6V-30V DC, 64 A peak, 32A continuous, dual channel)
Clutch and gear	Two linear electric actuators (stroke length: 100 mm; speed: 10 mm. s ⁻¹ , operating voltage: 12V DC), two linear potentiometers (voltage: 3.5V, 5V; port: analog; resistance: 10kΩ), motor driver (4-channel motor driver; voltage: 7-25 V DC; peak current: 10 A)
Brake	Linear electric actuator (stroke length: 120 mm; speed: 30 mm. s ⁻¹ , operating voltage: 12V DC), linear potentiometer (voltage: 3.5V, 5V; port: analog; resistance: 10kΩ)
Accelerator	Servo motor (Torque: 60 kg.cm, operating voltage: 6 to 8.4 V, operating Angle: 180 degrees), MOSFET driver module (voltage: 3.3V and 5V; output load voltage: 0-24 V; output load current: <5A), linear potentiometer
Obstacle avoidance system	LiDAR distance sensor (Operating range: 10–1200 cm; distance resolution: 1 cm; accuracy: ±1%; supply voltage: 5±0.1 V)
Ground control station	Remote control with receiver (2.4GHz Module), Range 1 km (minimum), 12V, 9 Channel
Real-time video transmission unit	Camera with transmitter(1200 pixel), Display with receiver (4-6 inch, 480 pixel, range 1 km)
Battery with charger	Battery (12V, 100 Ah Lithium ion battery), charger (Input: 240-150V AC, Output: 24 V DC, 15A (maximum),
Name sticker	PUSA TELEROBOTIC CONTROL SYSTEM FOR TRACTOR
Logo sticker	ICAR & IARI, Size and Shape : Round (2 inch diameter)

ICAR logo link

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IARI logo link

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5. PUSA AREA METER

Overall dimensions	Length: 10 cm, width: 4-6 cm, Height: 12.8 cm. Material (Plastic/Metal with cover and waterproof) Bearing Supported shaft with sprocket Size – .75 cm Ø, Length- 16 cm Material: plastic/metal Box stand: Mild Steel
Power	Input power – 12 V , Backup battery- (Lithium, 3.7 V, 1200 mAh, 4 no.), buck converter 12V to 5V, etc.
Body	Material (Waterproof plastic/metal with cover and stand)
PCB	Size (length- 11 cm, width- 9 cm, thickness 1-1.6 mm), layers: 02, layers: 02, material FR-4, minimum track spacing 6/6mil, minimum hole size 0.3 mm, Solder mask Green, Silk screen White , Surface finish HASL, power line thickness as 30A near the relays
Microcontroller, display and sensors	ESP-32 (Wi-Fi connectivity and other features as per the available prototype), OLED display, Atmega328, hall effect sensors, etc. as per available prototype
Name sticker	PUSA AREA METER
Logo sticker	ICAR & IARI, logo size : Round shape (2 inch diameter or as per available space)

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6. PUSA HOT AIR DRYER COUPLED WITH BIOMASS-FIRED STEAM HEATER

,As per the specification of the prototype available in the Division of Agril. Engg, Tray Size: mesh tray (24X18X2 in), Number of trays: 15, Air circulation: battery operated motor-driven (11 in), Heating medium: heat exchanger (10 X 3 in), Biomass Steam generator: 30 lit. capacity, The MS sheet covering from all sides with glass wool insulation, Digital temperature meter



7. PUSA DRUM TYPE VEGETABLE WASHER

As per the specification of the prototype available in the Division of Agril. Engg", Perforate drum (22x35 inch and 5 mm hole) with 4-inch-wide internal screw flights (9-inch pitch), Frame size: 42 X 21 X 52 inch; Nozzle: 8 number; water circulating unit: Two diaphragm water pumps of 12 V, 72 W, and 150 PSI pressure (7-9 lit/min), Drum rotating motor: 12 V DC gear head motor of 24 W, Power supply: Two 12-V 18-Ah



8. PUSA BATTERY OPERATED VARIABLE HEIGHT PLATFORM

System	Component	Sub-component Specification	Dimensions	
Lifting system	Hydraulic cylinder	Piston rod length	200 mm	
		Piston rod diameter	30 mm	
		Cylinder wall thickness	5 mm	
		Cylinder external diameter	60 mm	
		Oil capacity	0.5 liter	
Transmission system	Hydraulic foot pump	Lever length	220 mm	
		Piston rod diameter	12 mm	
		Oil reservoir capacity	1 liter	
		Pressure rating	700 bar	
		Hydraulic hose	Internal diameter	6.25 mm
Transmission system	Scissor legs	Length × Width × Thickness (mm)	7520×50×12	
		Hand wheel	External diameter	440 mm
		Rotating pipes	Inner pipe	1100×25.4 mm
			Outer pipe	1100×31.75 mm
		Bevel gear(driving)	Gear ratio, Bore	1:1,24 mm
		Bevel gear(driven)	Gear ratio, Bore	2.66:1,22 mm
Ground wheel	Size	7.6mm×30.4mm (3 inch×12 inch)		
Structural system	Base frame	MS Angle Iron	2700×40×40×5 mm	
		MS Square Pipe	1500×38.1 mm	
	Upper frame	MS Angle Iron	2100×40×40×5 mm	
		MS Square Pipe	1000×38.1 mm	
		MS Square Pipe	4380×25.4 mm	
Wooden platform	Size	1200×38.1 mm		
Self-aligning bearings	Hole diameter	1050×750 mm		
Nuts, Bolts and Washers	Weight	20 mm		
			3 kg	



9. PUSA PORTABLE HYBRID DRYER WITH BIOMASS-FIRED STEAM HEATER: As per the specification of the prototype available in the Division of Agril. Engg Overall dimension: 32 X 21 X 52 in, Tray Size: mesh type tray (24X18X2 in), Number of trays: 12, Air circulation: battery operated blower (12 V DC high speed 11 inch blower); Heating medium: heat exchanger (10 X 3 in), Upper and lower plenum chamber: (29 X19 X 7 in), 1.5 inch HDPE pipe for support frame and air channel; polycarbonate sheet cover (5 mm) on all sides to enhance greenhouse effect; Biomass Steam generator: 30 lit. Capacity; Power supply: 12 V batteries.



10. PUSA SAFE MANUAL CHAFF CUTTER

SAFE CHAFF CUTTER WITH SAFETY DEVICE

Blade Guard

Serrated Roller

Warning roller

Main Rod

Spring

Barrel

End cap

Lock holder

Flywheel lock

Main Rod

Spring

Barrel

End cap

Lock holder

Flywheel lock