



## Corporate Presentation

*World's No.1 and Largest Ignition Coil Manufacturer*

*Celebrating 51 year's of Trust, Quality & Manufacturing Excellence*

# Synopsis Chheda Group of Companies



- **Year of Establishment** 1971 , 51 years of Manufacturing Excellence
- **Plant Location** State of Maharashtra and Uttarakhand INDIA
- **Quality Certification** IATF 16949:2016 and ISO 9001:2015
- **Manpower Strength** 1000+ Employees
- **Patents Application** Total 27 Patents (Applied / Granted)
- **Annual Sales** FY 2021-22 **USD 50 million**
- **Major Customers** Honda, Suzuki, Hero Motocorp, TVS, Bajaj, Yamaha, Continental, Kawasaki, Royal Enfield, Piaggio, Sym Atul Auto, Delphi, KTM, Modenas, Kymco, Vitesco, Ashok Leyland, Escorts, Greaves

# Chheda Group of Companies – Plant Locations

Pirangut Plant

(Pune, Maharashtra, INDIA)



Area : 70,000 sq.ft

**Jagdish Electronics India Pvt. Ltd.**

Shirwal Plant

(Pune, Maharashtra, INDIA)



Area : 180,000 sq.ft

**Chheda Electricals & Electronics Pvt. Ltd.**

Rooke Plant

(Roorkee, Uttarakhand, INDIA)



Area : 50,000 sq.ft

# Product Category



Bendix



Horn



Micro Relay



Switches



Temperature Sensor



Starter Motor



E-Throttle



Stator Plate



Rotor Assly



Igniter



Ignition Coil



Regulator



Starter Relay



Throttle Assy PVC



CDI Unit



Suppressor Cap



Flasher



Magneto Assembly



Side Stand Sensor



TCI Unit



BLDC Fuel Pump

# Electric Vehicle Product Range



Electronics

Battery Management System    Power Distribution Unit    Telematics    Vehicle Control Unit

Instrument Cluster

Capsule LED 3W ( Passenger )    Diamond LED 2W    Capsule LED 3W ( Cargo )

E-Throttle

L1R1 Model    LR1 Model    LR Model

## LFP Battery

48V 30Ah    60V 30Ah    72V 30Ah

**Features**

- Fixed / Swappable
- Inbuilt Thermal Management
- Smart Connected BMS
- Remote Diagnostic / Controls
- PowerSnug™ Technology
- PowerLifeIndex™ Technology

E-Throttle

L1R1 Model    LR1 Model    LR Model

Horn

74 Dia    82 Dia

Sensors

Side Stand Sensor    Speed Sensor

Switch

Jupiter Type    Activa Type

Flasher

Flasher with Buzzer ( 23W )    Flasher ( 23W )    Flasher with Buzzer ( 6.5W )

Cruise Control

Cruise Control Device

# Manufacturing Plant Setup



Electronic Manufacturing Assembly Line



Tool Room Setup



Electronic Manufacturing Assembly Line



Winding Assembly Line



Pre Heating & Final Curing Oven Line



Research & Quality Control Lab

### EIU /DIU

- Smooth start ability
- Compact in size
- Annual production capacity 600K



### Regulator & Rectifier

- AC & DC out put without flicker
- AC & DC load will work without battery
- Better heat dissipation
- Annual production capacity 600K



### Electronic Flasher

- One Bulb Failure condition can work
- Hazard Mode can work.
- Retro Fitment
- EMI,EMC –ARAI test passed
- Annual production capacity 6 million



### Side Stand Switch

- Superior temperature stability
- Side stand switch assembly that uses shunt plate to actuate the hall sensor that will give high switching accuracy from ON position to OFF position
- Out put short circuit protection
- Reverse battery protection
- Waterproof coupler to avoid water entry.
- Sensor switch off position can be set ( 10 – 25 Degree )
- Can work on 5V & 12V input supply – both design available
- Annual production capacity 600K



**SIDE STAND SWITCH**



**ROTARY SIDE STAND SWITCH**



**PLUNGER TYPE SIDE STAND SWITCH**

### Speed Sensor

- True zero speed operation
- Air gap independent switch points
- Wide operating voltage range ( 4- 24 )V
- Fast start up
- Under voltage lock out
- Digital out put representing target profile
- Annual production capacity 150K



### Electronic Starter Relay

- Solid State switch for smooth cranking
- Programmable Cranking Duration
- In built protection for over current, over temperature, over & under voltage
- Short circuit protection
- No sparking hence best suited also for LPG/ CNG Rickshaw
- Annual production capacity 100K



## Ignition Coil

- Low weight, high robustness & compact design
- Flexible design & customer specific adaptation possible
- Reliable high voltage for the ignition



## Horn

- Crystal clear sound quality
- Sealed construction (IP 67)
- Mechanical stability & rust protection
- Inbuilt Capacitor for spike voltage suppression



## Switch

- Proprietary design
- Mechanical switch
- Use of silver contact
- Tested for 500,000 click life cycle



## Starter Motor

- Range of 300~650 Watts Starter Motor
- Production in process for Honda Activa & Passion Pro with gear reduction type
- Fully automatic Machine Setup for armature & Motor assembly



## Bendix Assembly

- Long life and durable
- Compact in size and low weight
- Use of high-grade material



### Starter & Micro Relay

- Excellent mechanical stability & corrosion protection
- Excellent working at temperature (-0°C to + 80°C)
- Fast “ON” and “OFF” action(<10ms)



### Temperature Sensor

- Insert molding design for 100% waterproof
- Operating range : -55°C to 250°C
- Measurement accuracy:  $\pm 3\%$
- High pullout force  $\leq 20$  Kgf
- Silicon sleeve for withstanding high temperature
- Pigtail design for cable to connect under seat / tank



### Flywheel Magneto

- Single phase, 2 phase and 3 phase A C Generator
- Output wattage from 50W ~ 350W, Star and Delta connection
- Suitable for BS4 BS6 Scooter, motorcycle and 3-wheeler
- Excellent mechanical and electrical properties
- Operating range - 30°C to + 180°C



### Noise Suppressor Cap

- Use of Patented hot embedding process
- EMI & EMC test done and approved by ARAI
- Better water resistivity due to hot embedding process
- Corrosion resistive due to use of nickel-plated connectors and resistor end cap
- Can withstand 30G vibration



### Stator Assembly

- 6 pole, 8 pole, 12 pole & 18 pole stator assembly
- Output wattage from 50W ~ 350W, Star and Delta connection
- Suitable for BS3, BS4 BS6 scooter, motorcycle and 3-wheeler
- Operating range - 30°C to + 180°C



### Rotor Assembly

- Use of Patented Laser welding technology
- Long life and better quality
- Lower cost due to use of laser welding technology



## Instrument Cluster- Diamond Type (LED)

- CAN enabled
- Bluetooth enabled
- Turn by turn navigation
- Total 17 tell tales are available, all are configurable
- Sun Readability with Smoky / Dark Display
- Operating Temp Range -30°C to +60°C
- IP65/ IP66 Rating
- Developed Cluster for EV Version Can Accommodate CNG, PERTOL, DEISEL
- Suitable for 2W and 4W application



## Trapezoidal & Capsule Type (LED)

- CAN enabled
- Bluetooth enabled
- Total 14 tell tales are available, all are configurable
- Sun Readability with Smoky / Dark Display
- Operating Temp Range -30°C to +60°C
- IP65/ IP66 Rating
- Suitable for 2W and 3W application
- Handlebar / Dashboard mounted design



### Features

- Fixed / Swappable
- Inbuilt Thermal Management
- Smart Connected BMS
- Remote Diagnostic / Controls
- PowerSnug™ Technology
- PowerLifeIndex™ Technology

Parameter	48V 30Ah	60V 30Ah	72V 30Ah
Nominal Voltage	48V	57.6V	73.6V
Operating Voltage	40.5V - 50.3V	48.6V - 65.7V	62.1V - 83.9V
Energy	1.44kWh	1.73kWh	2.21kWh
Capacity	30Ah	30Ah	30Ah
Cell Chemistry	LiFePO4	LiFePO4	LiFePO4
No of Cells in Series	15	18	23
No of Cells in Parallel	1	1	1
Dimensions ( L x W x H ) in mm	216 x 163 x 285	216 x 163 x 315	216 x 163 x 380
Weight	14kg	17kg	21kg
Usable Energy	100%	100%	100%
Cycle Life ( No's )	1200+	1200+	1200+
No. of Temperature Sensors	Upto 9	Upto 9	Upto 9
Compliance	AIS048	AIS048	AIS048
IP Class	IP 65	IP 65	IP 65
Max Charge C Rate	2C for 10 seconds, 0.5C continuous		
Max Discharge C Rate	2C for 10 seconds, 1.5C continuous		
Power Distribution Unit	MOSFET based with short circuit protection, current rating 80A cont.		
Type of Cooling	Natural air cooled with heat sink		
CAN Parameters	SOC   Avg Cell Temp   Pack Voltage   Current   Mode Charge/Discharge Warnings & Faults   Charge Current Limit   Drive Current Limit		
48V 40Ah	Energy 1.92 kWh   Dimension 250 x180 x 250 mm   Weight 17 kg		
60V 40Ah	Energy 2.30 kWh   Dimension 250 x180 x 290 mm   Weight 21 kg		

### Patents Applied

Application No. 202121004956  
An Integrated Smart Battery Electrical System For Lithium-ion Battery Packs

Application No. 202121017732  
Means For Measurement Of Thermal State Of A Battery Pack

Application No. 202121035297  
A Compressed Assembly Of Battery Pack

Application No. 202121004955  
High Operating Voltage Circuit Architecture Keeping The Touch Points At Low Voltage For EV

Application No. 202121014926  
A Compressed Battery Pack Assembly (with Convex Top Plate)

Application No. 202121014927  
An Assembly Of Battery Module For A Battery Pack

# Production Machinery Setup



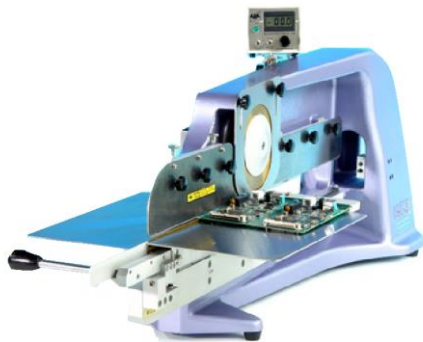
Panasonic Radial Lead Insertion  
Model – RG131



Panasonic Pick & Place  
Model NPM-W



Panasonic Screen Printer  
Model - SPD



TST PCB Slicer With Integrated  
Stress Checker Model T-MW33Z



Autorek PCB Router S168 SW



Scheugenpflug Vacuum  
Potting Plant Model – VDS P6030

# Production Machinery Setup



Winding Machine  
Taga Japan



Winding Machine  
Taga Japan



Winding Machine  
Synthesis



Laser Welding  
Trumpf Germany



Rotor Magnetiser



FWM Automated  
Performance Test Setup



Laser Source Trumpf  
Germany TruDisk 3001



CNC Machine with  
Robotic Arm Fuji Japan



Stator Captive  
Testing



Vertical Keyway Broaching  
Machine Axisco Taiwan

# Production Machinery Setup



ERSA Wave Soldering With Nitrogen  
Model – Power Flow – e N2



ERSA Reflow Oven With Nitrogen  
Model – HOTFLOW 3/20



Scheugenpflug Vacuum  
Potting Plant Model – VDS P6030



SAKI AOI 2D  
Model– BF Comet 18



JANOME PCB  
Router JR2300N



Kyoritsu ICT Tester  
Model – FOCUS - 2000



SAKI AOI 3D  
Model – BF 3DI – D1



PARKER Nitrogen Plant  
Model – Maxigas

# Tool Room Setup



Mitsubishi CNC Wire  
EDM MV1200-S



Mitsubishi CNC Spark  
EDM EA 12D



Makino VMC KE 55



Fanuc Robodrill  
D14MiB



Electronic EDM  
EMS 5535

# Quality Control Setup



Digital Microscope  
Keyence VHX7000



Fully Automatic Image Dimension  
Measuring System Keyence IM800



GE Phoenix NDT  
Analyser



Moisture Analyzer  
HX204



Thermal Cycling  
Chamber Vötsch



Thermal Shock  
Chamber Vötsch



Thermal Cycling with  
Vibration Chamber Vötsch



Vibration Test System  
Spectral Dynamics

# Quality Control Setup



CMM Machine  
Accurate Gauging



Micro Vickers  
Hardness Tester



Fischer  
Scope X-Ray



Digital Force  
Measurement Machine



Salt Spray Chamber  
Weiss Technik

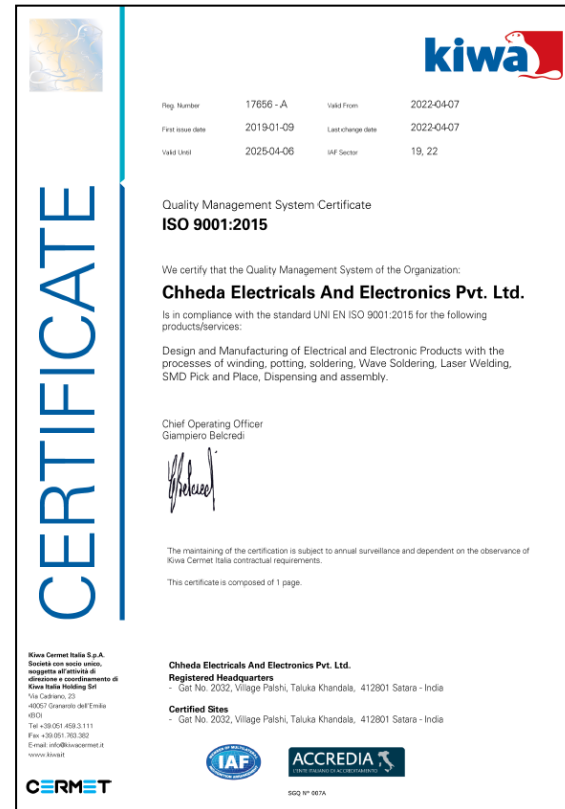


Torsion Test  
Machine



Universal Test  
System

# Awards and Certificates



# Our Customers





# Thank You

## **Jagdish Electronics India Pvt. Ltd.**

- Pune Plant  
Lavale Road, Pirangut, Pune - 412 115,  
Maharashtra, India.

## **Chheda Electricals & Electronics Pvt. Ltd.**

- Satara Plant  
Gat No. 2032, Village Palshi, Tal. Khandala,  
Dist. Satara - 421 801, Maharashtra, India.
- Roorkee Plant  
30, KIE Industrial Area, Mundiyaiki 249 406,  
Teh. Roorkee, Uttrakhand, India.

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