

DNA

DELIVERING NEXT-GEN AUTOMATION

UNLOCKING LITHIUM POWER WITH **INTELLIGENT AUTOMATION**

www.dnatechnologies.co.in
www.prolithium.in

DNA TECHNOLOGIES

INNOVATE | AUTOMATE | ELEVATE

INNOVATION UNLEASHED

Smart. Seamless. Future-ready. We don't follow trends—we create them.

FEARLESS & FORWARD

Big ideas. Bold moves. Calculated risks.

SOLUTIONS > PROBLEMS

Challenges fuel us. Precision and efficiency define us.

AUTOMATE. ACCELERATE. DOMINATE.

AI-driven. Lightning-fast. Unstoppable.

MISSION MODE: ALWAYS ON

Relentless passion. Endless possibilities.

BALANCE = BRILLIANCE

Think sharp. Work smart. Achieve more.

CREATE. DISRUPT. REDEFINE

We don't just build technology. We build the future.

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WHO WE ARE

SINGLE SOURCE SOLUTION FOR ALL LITHIUM-ION BATTERY TECHNOLOGY APPLICATIONS

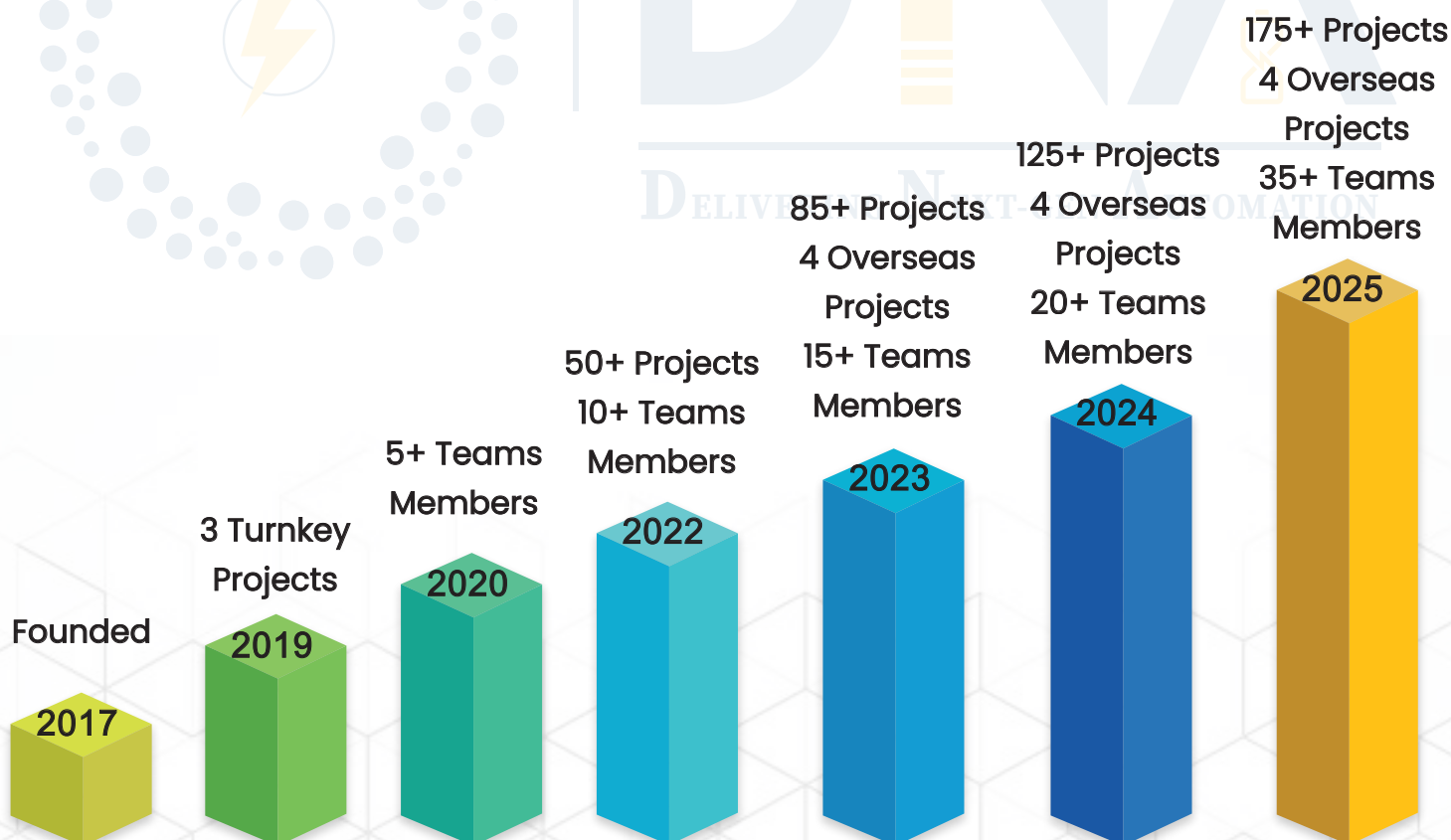
DNA Technologies develop Solutions that thrive in real - world applications.

Our businesses are aligned in 3 segments to power today and anticipate tomorrow's megatrends. From Li-ion Battery Packs and its solutions, developing and manufacturing Equipment in India, and Equipment integration; our team is well versed in Technical & Commercial aspects of Innovative Product Development. DNA Technologies is promoted by a group of Professionals having rich experience of Turnkey Project Management in the field of Lithium Battery Pack Assembly. Equipped with an in-house designing facility, it aims to develop cost-effective and optimal Lithium-ion Battery Solutions and applications for the increasing demands of the Energy Industry.



DR. DEEPAK WADHWA

Dr. Deepak Wadhwa, Founder & Director of DNA Technologies, leads the company with a focus on advanced lithium battery manufacturing and automation solutions. Under his guidance, DNA Technologies has established itself as a trusted partner for complete lithium battery plant setups, providing customized automation for EVs and Battery Energy Storage Systems (BESS). With a commitment to innovation and process optimization, he ensures that DNA Technologies delivers high-precision machinery, seamless automation, and industry-leading support to clients across India and beyond. His expertise in technology integration and operational efficiency continues to drive DNA Technologies toward excellence in energy storage solutions.



Living Our **CORE VALUES**



Pursuing Excellence

Through Ongoing Growth



Dedicated to

Delivering Tangible Outcomes



Building

Trust and Expressing Gratitude



Dynamic and Forward-Thinking

Responsiveness



Committed

to Enduring Customer Partnerships



Unwavering

Honesty and Integrity

Doing business Ethically, Legally and with Integrity are the foundation of our Company's culture.



VISION

To accelerate Make in India mission through Sustainable value creation.



MISSION

Our goal when we created **DNA Technologies**, was the same it is Today:
To accelerate the advent of sustainable energy by bringing innovative Commercially Viable Technologies to INDIA as soon as possible.

**SERVICE
FOR YOUR
EQUIPMENT**

**SPARE
PARTS
MANAGEMENT**

**REMOTE
SERVICE**

**ONSITE
SERVICE**

DNA INDIA CUSTOMER SERVICE

Spare Parts Management



Fast

Reduced maintenance times and downtimes



Locally available



OEM Certified

Commissioning, configuration and programming by certified service technicians



Card level repair

Remote Services

Secure Remote Maintenance



24-hour service

Round-the-clock support by well trained engineers



Reliable

Guaranteed response times



Secure

Full data control and transparency



Cost Optimization

Less costs for customer and full efficacy

Onsite Services

We Troubleshoot and Train Your People



High Yield

Optimized and reliable system productivity



On the Job Trainings

Maximum efficiency from the manpower



Documentation

Comprehensive documentation of corrective & preventive maintenance procedures



Reduced Downtimes

Avoidance of unscheduled system downtime

OUR SCOPE OF SERVICES

DNA Technologies acts as a single window partner for Turnkey solution of Manufacturing / Assembling Lithium Battery Packs.



CONCEPT TO COMMISSIONING MODEL

with Consultative Approach



PROJECT MANAGEMENT

with detailed Planning & Scheduling



TECHNOLOGY & EQUIPMENT SELECTION

based on 'Target' Markets and 'Existing' Business Network



LAYOUT DESIGN

Considering space Available, Materials Movement, Utilities Placement, RM & FG Storage, Manpower Movement, etc.



FACILITIES & UTILITIES

Selection, Supply & Implementation Support



BATTERY PACK DESIGN SUPPORT

Considering target application & existing business portfolio



BOM SELECTION

Complete bill of Material from India and Abroad, as required



MANPOWER SELECTION

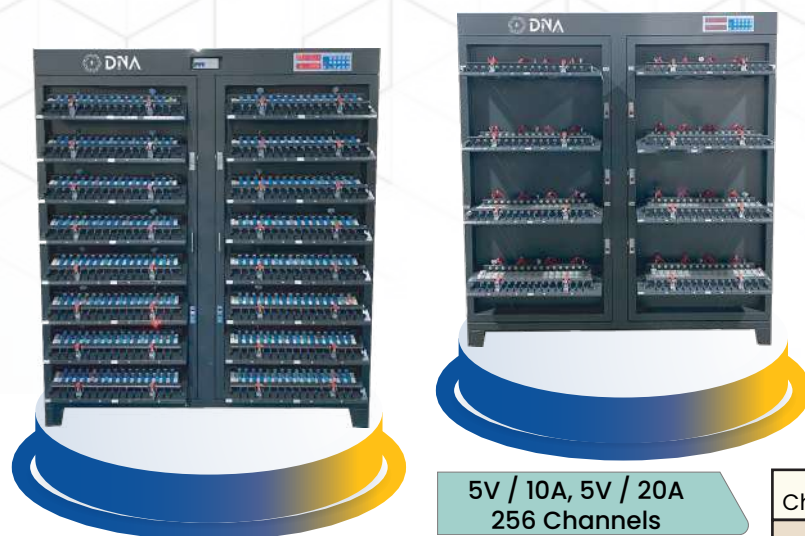
and On-Site Training



AMC & AFTER SALES SUPPORT

and On-Site Training

CELL GRADING / CAPACITY / CYCLER MACHINE (CYLINDRICAL CELLS)



5V / 3A, 5V / 6A
512 Channels

5V / 10A, 5V / 20A
256 Channels

1. For all type of cylindrical cells.
2. Charging (constant current charging and constant voltage charging), Suspending (static, shelving) and discharging.
3. Adopt the four-wire test method.
4. Adopt advanced constant current source technology no impact from constant current to constant voltage switching, especially suitable for charging requirements of lithium-ion batteries.
5. Final test Reports can be exported in excel / text format.

COMPATIBLE CELL SIZES:

18650, 21700, 26650, 32700,
32138, 33140 & 34189

*Production Equipment
(For Incoming Cylindrical Cells
Quality Check)*

*With universal horizontal loading
unloading trays - for Cylindrical Cells*

Channel quantity	Upto 512 channels
Communication method	RS232, TCP/IP protocol
Input power	Three phase four wire system AC380v±3%, 50Hz
Max. output power	≤ 14KW
Continuous cycle range	1-999 times
Sleep time setting range	1-720 minutes
Time measurement resolution	1S
Heat dissipation mode	Cold wind

CURRENT

Measurement Range
0.001A-3A, 6A, 10A, 20A

Measurement Accuracy
0.1%FS+0.1%RD

Control Range
0.05A-3A, 6A, 10A

VOLTAGE

Measurement Range
0.01V-5V

Measurement Accuracy
0.1%FS+0.1%RD

Control Range
Constant current charging 0.01V-5V,
Constant voltage charging 3V-5V
Discharge 0V-5V

*Laboratory & R&D Equipment
(For Incoming Cylindrical Cells Quality Check)*

*APPLICATIONS: Cylindrical Cells & (Upto 34189)
Pouch Cells*

Channel quantity	8 Independent Channels
Communication method	RS232, TCP/IP protocol
Input power	Three phase four wire system AC380v±3%, 50Hz
Max. output power	240KW
Continuous cycle range	1-1999 times
Sleep time setting range	1-720 minutes
Time measurement resolution	1S
Heat dissipation mode	Cold wind

5V/6A, 10A, 12A, 20A (8 Independent Channels)



CELL GRADING / CAPACITY / CYCLER MACHINE (PRISMATIC CELLS)

Device Parameters (5V upto 100A)



Charge Retention



Cycle Life Test



Charge-Discharge Performance Test



Current Rate Test



Voltage Testing

Channel quantity	Upto 96 channels
Communication method	RS232, TCP/IP protocol
Input power	Three phase four wire system AC380V±3%, 50Hz
Max. output power	Depends on Current Rating
Continuous cycle range	1-1999 times
Sleep time setting range	1-720 minutes
Time measurement resolution	1S
Heat dissipation mode	Cold wind

CURRENT

Measurement Range
0.001A - upto 100A

Measurement Accuracy
0.1%FS + 0.1%RD

Control Range
0.05A - upto 100A

VOLTAGE

Measurement Range
0.01V-5V

Measurement Accuracy
0.1%FS + 0.1%RD

Control Range
Constant Voltage charging
0.01V-5V, Discharging 0V - 5V

Device Parameters (5V upto 500A)



Charge-Discharge Performance Test



Cycle Life Test



Over-charge & Over-Discharge Rate Durability



Work Condition Simulation



Pulse Test



DCIR Test



Voltage Testing

SOC
Static / Dynamic SOC Test

Special Function

- Energy Feedback / Regenerative Type
- Support Multi-Channel Curve Comparison
- Support Multi-Channel Parallel Connection

Channel quantity	Upto 96 channels / Rack
Communication method	LAN
Input power	Three phase four wire system AC380V±3%, 50Hz
Response Time / Sampling Time	< 10 ms
Heat dissipation mode	Cold wind

CURRENT

Measurement Range
0.001A - upto 100A

Measurement Accuracy
0.02%FS + 0.1%RD

Resolution
0.1mA

VOLTAGE

Measurement Range
0.01V-5V

Measurement Accuracy
0.02%FS + 0.1%RD

Resolution
0.1mV



Current Rate Test



Temperature Feature Test



Charge Retention

AUTOMATIC CELL SORTING MACHINE (OCV & IR) (Cylindrical All Sizes)

11 Channel



1 18650, 21700, 26650, 32700

2 Sorting Based on Pneumatic System

3 Comes with inbuilt PC

Sorting Speed	80 ppm (upto 4500 cells / hour)
Equipment Up-Time	More than 95%
IR Test Range & Accuracy	80 mΩ, +/- 0.5% FS, Display Resolution 0.01 mΩ
Voltage Test Range & Accuracy	8V, +/- 0.05% FS, Display Resolution 0.01 mV
Voltage Repeatable Error	< 1 mV
Air Pressure	0.6Mpa
Input Power	AC220V / 50Hz 1KW

With HIOKI IR TESTER

IR Test Range & Accuracy	30 mΩ / 300mΩ / 3 / 30 / 300 / 3 k, +/-0.5% FS, +/- 5 Digits, Display Resolution upto 1 μΩ
Voltage Test Range & Accuracy	6V / 60V / +/-0.01% FS, +/- 3 Digits Display Resolution upto 10 μV



5 Channel



1 32135, 32138, 33140, 34189

2 Sorting Based on Pneumatic System

3 Comes with inbuilt PC

Sorting Speed	80 ppm (upto 4500 cells / hour)
Equipment Up-Time	More than 95%
IR Test Range & Accuracy	80 mΩ, +/- 0.5% FS, Display Resolution 0.01 mΩ
Voltage Test Range & Accuracy	8V, +/- 0.05% FS, Display Resolution 0.01 mV
Voltage Repeatable Error	< 1 mV
Air Pressure	0.6Mpa
Input Power	AC220V / 50Hz 1KW



**KEYENCE
SCANNER**



AUTOMATIC PRISMATIC CELL SORTING MACHINE (OCV & IR)



Equipped with original
Japness BT3562
HIOKI OCV & IR tester



Voltage Measurement Ranges:
upto 100V

Resistance Measurement Ranges:
 $3\mu\Omega \sim 3k\Omega$

MACHINE FEATURES

1. Capacity: 400-600 Cells / hour

5. Adaptable air pressure:
0.5~0.8 MPa

2. Applicable power supply:
AC 220V / 50HZ

6. Loading and unloading method:
Manual

3. Overall Size:
Length*Width*Height
3300mm*1100mm*1700mm
(Reference Size)

7. Number of channels:
10 channels, 9 OK gears and
1 NG gear

4. Compatible cell specifications:
Length- 100-300mm,
Thickness- 20-60mm,
Height- 100-350mm

8. Highest accuracy and stability
due to **HIOKI IR** tester
Made in **JAPAN**

MANUAL CELL IR TESTER

Cell Sorting (OCV & IR) Machine (All Sizes)

**BT3561 A**

Measurement Parameter	OCV & ACIR
Max Voltage	60V, 100V, 300V, 1000V
Internal Resistance	From 1μΩ upto 3kΩ, +/-0.5% FS
Voltage	Upto 1000V, +/- 0.01% FS
Interface	LAN, RS232 and Analog
Function	Contact Check, Average, Memory Storage etc

Measurement Parameter	OCV & DCIR
Max Voltage	upto 60V
Internal Resistance	From 10μΩ upto 3kΩ, +/- 0.5%
Voltage	upto 60V, +/- 0.01% FS
Interface	RS232 / RS485
Function	Comparator, Contact

**HK3561**

Measurement Parameter	OCV & DCIR (only for Cylindrical Cells)
Max Voltage	upto 50V
Internal Resistance	From 1Ω upto 100Ω, +/- 0.5% FS
Voltage	Upto 50V, +/- 0.1%FS
Interface	NA
Function	Open Circuit Voltage & IR

**TG100**

BATTERY IMPEDANCE TESTER

BT 4560 HIOKI (Japan Make)

Device Parameters

Measurement Parameters	Impedance, Voltage, Temperature
Impedance	upto 100μΩ
Temperature	-10°C to 60°C +/- 0.5°C
Voltage	upto 5V, +/- 0.4%FS
Interface	RS220 / USB, Ext. I/O
Functions	Comparater, Self Calibration, Sample Delay, Contact Check, etc

Achieve long service life battery modules by measuring reaction resistance



INSULATION PAPER STICKING MACHINE

All in one (with seperate moulds)



Voltage Supply	Single Phase ~ 220V 50Hz
Rated Power	2kW
Surface Pad Material	Highland barley paper or PVC material
Material specification requiremnts	The max diameter of barley paper roll material is 350MM, the inner diameter of paper roll core is 72-75MM.
Battery Type	18650/21700/26650/32700 battery cell positive or negative pole is automatically pasted with barley paper mat or PVC material.
Feeding Method	Insert battery cell hopper: 400pcs each time, available for 2 separate inserting units BNX-350 auto pasting.
Pneumatic Pressure	0.4-0.8Mpa barley paper machine
Cushioning Power	Electric or Pneumatic
Control device	7.5 inch touch screen, PLC programmer and servo motor
Barley paper roll width	100mm
Speed	4000-4500PCS/hour, 4PCS per punch
Dimensions & Weight	L1110mm*W710mm*H1580mm, 200Kgs
Dimensions & Weight	Slow-moving wire processing method, high precision

CCD TESTER / POLARITY DETECTOR

Offline & Inline

INLINE (with belt conveyor) can be customised



- 1 In process quality control before Spot-Welding.
- 2 Automatic Polarity detection without manual intervention.
- 3 100% Yield after Spot Welding.
- 4 Can be integrated with existing assembly lines.

STEP 1
Feeding
Positioning
of Cells

STEP 2
Positive and
Negative pole
detection

STEP 3
Positive and
Negative
solder joint
detection
(CCD)

STEP 4
NG Automatic
Sorting

STEP 5
OK
Automatic
Discharging

AUTOMATIC LITHIUM BATTERY PACK SPOT WELDING MACHINE WITH ROTATION HEAD



1. Transistor Based Power Supply upto 10000A
2. Nickel Wire thickness upto 0.3 mm
3. Water Cooling Features (Optional)
4. Servo Controlled Welding Heads
2. Maximum Jig Size: 600x600 350mmx450mm (can be customised)
3. AutoCAD program can be uploaded through controller directly

For All Types of
CYLINDRICAL CELLS



Input Power	220VAC + 10%, 50Hz + 10%Hz	X-axis Travel	500mm (can be customized)
Max. Output Power	2.5 - 5KW	Y-axis Travel	600mm (can be customized)
Single Hole Spot Welding Times	1.5 Adjustable	Z-axis Travel	(Customizable 150mm)
Equipment Utilization Rate	99%	Equipment	Five-axis Servo Control
Welding Time	1.0ms - 20.0ms adjustable, Accuracy 0.1ms	Working Temperature	10°C ~ 40°C
Output Maximum Short Circuit Current	Upto 1000A	Spot Welding Speed	0.3s/spot, 0.7s-0.8s/spot
Scope of Application : Maximum thickness of Nickel Wire (with & without bump)	0.03mm ~ 0.3mm	Number of file groups that can be stored	99 Groups
Air Pressure	0.4 ~ 0.8Mpa	Welding Mode	Transistor
Control Mode	Constant current control, Constant Voltage Control, Current and Voltage Combination mode	Touch Screen	7inch / LCD Screen / Can Attach PC
Transfer Method	Servo + Stepping + Imported Precision Linear Guide	Equipments	2200 x 1300 x 2090 PC
Type of Spot Welding	Electrical Spot Welding / Pneumatic Spot Welding		

MANUAL SPOT WELDING MACHINE



Two Models :
5000A (upto 0.2mm Nickel Wire)
10000A (upto 0.3mm Nickel Wire)

1. Single Electrode can weld upto 10000-15000 Spot Welds depending on the Current King
2. IGBT Based Technology
3. Height of the Welding Head is adjustable.
4. Pneumatic Controlled Operation
5. Pre-welding and Welding Current can be adjusted, as per requirement
6. Use Friendly Interface

LITHIUM BATTERY PACK LASER WELDING MACHINE



Automatic Robot Laser Welding Machine

Consists of Fiber Laser, Laser Power Supply, Control System, Laser Indicating Positioning System, WOBBLE Laser Welding Head, Cooling System, etc which has very high stability, flexibility and can be rotated 360 degrees.

Power (Laser Source)	1000W, 1500W, 2000W, 6000W
Wave Length	1080nm
Material Thickness	SS, Aluminum Alloy $\leq$ 3mm
Aiming & Positioning	CCD, Red Light Indicator
Repeat Positioning Accuracy	0.05mm
Cooling	Water cooling

Upto 12000W Power

Inline & Offline Operation

Product cycle: 10CPM

Available with
IPG or MAX Laser Source

Bed, Cabinet & Rack	Herolaser
Accuracy	+/- 0.02mm
Water Chiller	S&A
Galvo Welding Head	OSPRI / WSX
Dust collector	Villo / Puhua
Laser range finder	Keyence
Servo Motor (x,y,z)	ANOVANCE
CCD Camera	Keyence
Stabilizer (50kVa)	Nanlin
PLC	Siemens / OMRON
Electrical Control System	Siemens / Mitusbishi / Omron

Busbar Laser Welding Machine



Handheld Fiber Laser Welding Machine



Wobble Welding Technique + Fiber Laser Source

Adopts the latest generation of fiber laser and is equipped with a self-developed wobble welding head.

Advantages of simple operation, beautiful welds, fast welding speed, and no consumables.

Power (Laser Source)	500W to 3000W
Wave Length	1070nm
Work Way	Continuously modulated
Suggested Welding Thickness	0.5-5mm
Working Voltage	220V/380V 50Hz
Cooling	Industrial thermostatic water tank

PRISMATIC BATTERY PACK STACKING / PRESSING MACHINE

Machine Features:

1. Adaptable to various battery sizes with editable parameters, allowing easy customization for different types.
2. 7-inch touch screen with PLC for intuitive control and seamless operation.
3. Equipped with a screw module, servo motor, and reducer, ensuring high extrusion output force and precise positioning.
4. Built-in high-precision pressure sensor, maintaining pressure accuracy within 0.1 KG for optional performance.

Work Process:

Prismatic Cell Feeding
Into Extrusion Channel



Pressing

Unloading the
Battery Pack



Strapping

PLASMA CLEANING MACHINE



WORK FLOW:

Feeding: Manually load
the lithium cell into
the fixture.



Safety Check: Close the
machine cabinet door,
ensure safety, and click
to start.



Activation: Power on
the linear module.



Verification: CCD
captures photos and
tests polarity.



Plasma Cleaning:
Clean the front side
of the module



Plasma Cleaning: Flip
the module and clean
the backside.



Completion: After all
process, the cabinet
door is released, and
the operator removes
the module.



Error Handling (NG)
release the machine
door safety restriction,
and the operator
removes the module.

Machine Features:

1. Overall dimensions of the device:
L*W*H: 1500mm*1200mm*2000mm.
2. The cleaning range is 800*500mm.

DIGITAL TENSILE STRENGTH TESTER



Measure range	500N (or custom)
Measurement Accuracy	Better than + 0.5%
Measurement Resolution	1/250000 (0.01N)
Effective Measurement Range	0.5 -100%FS
Indication Accuracy	Indication error $\pm 1\%$, Indication volatility $\leq 1\%$
Positional Accuracy	$\leq 0.01\text{mm}$
Transmission Way	High precision ball screw drive
Test Speed	1-500mm/min (adjustable)
Effective Travel of Beam	1000mm
Return Rate	1-500mm/min (adjustable)
Measurement Range	120mm
Display System	PC display
Machine Dimension	L-180*W-560*H-1250mm
Machine Weight	About 90kg

LASER CLEANING & MARKING



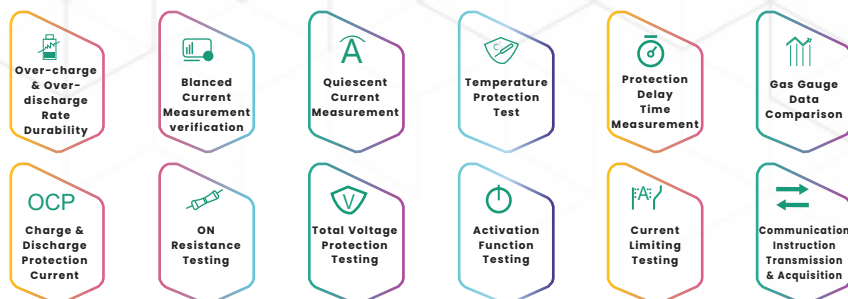
Machine Features:

1. Wide welding work range.
2. High welding density and smooth effect
3. Fast fiber laser welding speed
4. Less electricity consumption than pluse laser Welding machines
5. Adopting a 1500 -6000 watt fiber laser

Power	380V+10 HZ three-phase five-wire system 380+10% 50HZ
Compressed air	3Mpa-1.3Mpa Dry filtered air 1Mpa - 1.3Mpa
Nitrogen	99.99% purity nitrogen, pressure 1.2Mpa to 2.5Mpa
Alarm Interface	Historical alarm records can be relized, When the power is cut off, the alarm records will be cleared; press and hold in the alarm display area for 5 seconds to clear the alarm display.
Ground Requirements	Continuous and flat dry concrete ground: Thickness $\geq 20\text{CM}$ flatness 2mm/total length
Humidity Temperature	Environmental humidity $\leq 80\%$, environmental temperature 0-40 degrees celsius

PCBA / BMS TESTER upto 300A upto 52 series

Applied in the testing of Power Battery pack Protection Board System,
Testing of PCB Performance and its technical items along with complete report generation.



- Composed by Virtual Battery, Short Circuit free, Safety guaranteed.
- Pluggable design of virtual batteries enables it to be expandable.
- The secondary development function enables it to develop testing items as required.
- support PLC Start-up test, can be used in Automation Production Line.
- Complete and fully function high precision test result.
- Software supports modular settings of test projects, production v verification and rsearch and development testing.
- Testing fuction can be customised as required.
- Highly compatible, supports different types of Protection Board Testing.

Device Parameters ~ (Upto 300A)

Number of Series	Upto 48 strings (optional)
Overcharge Protection	0-5V $\pm$ 1mV
Overcharge Protection Release	0-5V $\pm$ 1mV
Overdischarge Protection	0-5V $\pm$ 1mV
Overdischarge Protection Release	0-5V $\pm$ 1mV
Over-discharge Current Protection Value	Upto 300A $\pm$ 0.1A (continuous long-time discharge)
Over-charge Current Protection Value	1A-50A $\pm$ 1ms
Overcurrent Protection Delay	0-10S $\pm$ 1ms
Short Circuit Protection	400A (maximum duration 10ms)
Short Circuit Protection Delay	0-10000uS $\pm$ 1uS
Temperature Protection	60 C - 90 C $\pm$ 1 C
Equalization Function Turn On Voltage	0 -5V $\pm$ 1mV
Equalization Current	0-1000mA $\pm$ 1mA
Total self-Power Consumption Test	0-10,000uA $\pm$ 1uA
Single Cell self-Power Consumption	0-100uA $\pm$ 1uA
Main Circuit Internal Resistance Test	0-200 milliohms $\pm$ 0.1 milliohms
Dimensions	50 * 43.5 * 21CM
Net Weight	150kg



BATTERY PACK AGEING MACHINE

Regenerative Type



Device Parameters ~ (Upto 300A)

Channel Quantity	Upto 96 channels (depending on Current rating)
Communication Method	TCP/IP protocol
Input Power	Single phase / Three phase AC 220/380 $\pm$ 3%, 50Hz
Max. Output Power	Depends on current rating and no. of channels
Output Current Range	Upto 1000A
Output Voltage Range	12V - 1000V $\pm$ 10mV
Data Output Mode	EXCEL, TXT
Working Mode of Main Channel	Constant current charging (CC), Constant voltage charging (CC), Constant current & voltage charging (CCCV), Discharge mode: Constant current discharge (CD)
Equipment Protection Function	Transformer over-temperature protection, Output short circuit protection, Power module over-temperature protection, Equipment over-voltage protection, Equipment over-current protection, Equipment battery reverse connection, Emergency shutdown
Voltage and Current Detection Sampling	Four wire connection
Cooling Mode	Forced air cooling
Channel Control Mode	Independent control
Working Temperature	-10°C - 45°C

TEST ITEMS:

- Test Battery Open Circuit Voltage,
- Battery AC Internal Resistance,
- Continuous Charging Current,
- Continuous Charging Voltage,
- Continuous Discharging Current,
- Continuous Discharging Voltage,
- Charging Overcurrent Protection
- Current, Discharge Overcurrent Protection Current,
- And Short Circuit Protection Time.
- Overcurrent Delay Time, Voltage After Test.

The device use an Infrared scanning gun bar code input (SN) to start the test or automatically starts the test when a voltage is detected.

- 1 Suitable for cylindrical prismatic & pouch battery pack.
- 2 Adpt the four-wire test method
- 3 With anti-reverse connection function, Voltage upper and lower protection and maximum Current protection.
- 4 Complete Charging and Discharging as per field Performance.
- 5 Charging (constant Current charging and constant Voltage charging), suspending (static, shelving and Discharging)



BATTERY COMPREHENSIVE TESTING MACHINE



SCOPE OF APPLICATION

For Lithium-ion Batteries (CH+P+CH-P-),
all series of Power Batteries

- 3.6V-100V Test Open Circuit Voltage.
- Trial Charging Voltage Test.
- Charging Current Test (0-30A).
- Internal Resistance Test (0-4000 Milliohms).
- Discharge Current Test (0-200A).
- Load Voltage Test.
- Overdischarge Current Test (0-500A) for 3 Overcurrent Recovery Voltage Test.
- Setting of Shelf Time.
- Setting of Discharge Time and Current.
- Overcurrent Protection Delay Time Setting.
- Overcurrent Step Current Setting.
- Short Circuit Test (8000A).

Technical Parameters:

Voltage Range	(0-100V) Can be customised for higher voltages
Accuracy	1mV, RD $\pm$ 0.1% $\pm$ FS $\pm$ 0.1%
Internal Resistance Range	(0-2000 milliohms)
Accuracy	0.001 milliohms RD $\pm$ 0.1% + FS $\pm$ 0.1%
Charging current	(0-30A)
Accuracy	0.001A, RD $\pm$ 0.1% + FS $\pm$ 0.1%
Discharge Current	0-200A (at the highest Voltage) Continuous Discharge Current 200A, RD $\pm$ 0.1% + FS $\pm$ 0.1%
Short-circuit Time	(0-2000 μ s) Accuracy: 1 μ s
MAX Power	3000W

The Test Data can be generated in excel format, and the test data can be interfaced with the MES System.
Note: The test result OK is displayed in green PASS, and the test NG is displayed in red.

TEST ITEMS:

- Voltage
- Internal Resistance
- Charging Overcurrent Protection Current
- Continuous Charging Current
- Discharge Overcurrent Protection Current
- Continuous Discharge Current
- Short Circuit Protection Time

The device has no inrush Current during the working process and will not damage the BMS in the battery pack.



Machine Features

- 1 Suitable for cylindrical prismatic & pouch battery pack.
- 2 Adpt the four-wire test method
- 3 With anti-reverse connection function, Voltage upper and lower protection and maximum Current protection.
- 4 Complete Charging and Discharging as per field Performance.
- 5 Charging (constant Current charging and constant Voltage charging), suspending (static, shelving and Discharging)

BATTERY PACK BALANCER

Maintenance & Repair

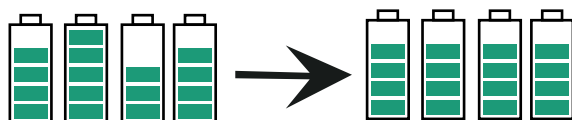


APPLICATIONS:

Applied in Battery Pack
Balance / Equalize for:

- E-vehicles
- Solar
- Energy Storage (BESS)

Battery Balance of Battery Pack



Support charge and discharge current	The charging and discharging port supports upto 20A $\pm$ 0.5A
Display functions and touch controls	Display all cell voltages and touch control
Number of battery strings supported	2 to 3 strings of any string number
Support balanced current	1 to 20A current adjustable
Supported battery types	NMC, LFP
Function	Support multi-machine serial use
Temperature Protection Function	The product reaches the internal temperature of 50°C with automatic control function
Equipment working voltage	DC12V
Protection Method	The machine comes with instant protection for wrong connection, super series connection, reverse connection can be protected
Operation Mode	Support charge equalization or discharge equalization, both modes are compatible

- 1 Enlarges Battery Lifetime
- 2 Support Charge and Discharge Balance
- 3 Active Balance & Maintenance
- 4 Modular design, Hot pluggable, Strong expandability, Easy to maintain

BATTERY PACK CHARGE DISCHARGE TESTER

Maintenance & Repair

9-99V 10A Charging 20A Discharging

Machine Features

Input Voltage	Single-phase $\sim$ 220V $\pm$ / 50Hz-10%
Charging Method	Constant current & constant voltage
Discharging Method	Constant current
Maximum Power	900W
Charging & Discharging Voltage	9V-99V adjustable
Charging & Discharging Current	0.5-10A adjustable Charging 0.5-20A adjustable Discharging
Accuracy	$\pm$ 0.03
Maximum Loop	16 times
Loop Idle Interval	0-20 mins adjustable
Communication Part	LAN
Operation Mode	Panel / Software



DNA-20 is a high-precision capacity charging & discharging equipment.

Suitable for EV and static battery packs.

The device can be managed through the computer and a single PC can manage multiple devices simultaneously.



Manufacturing Execution System Software

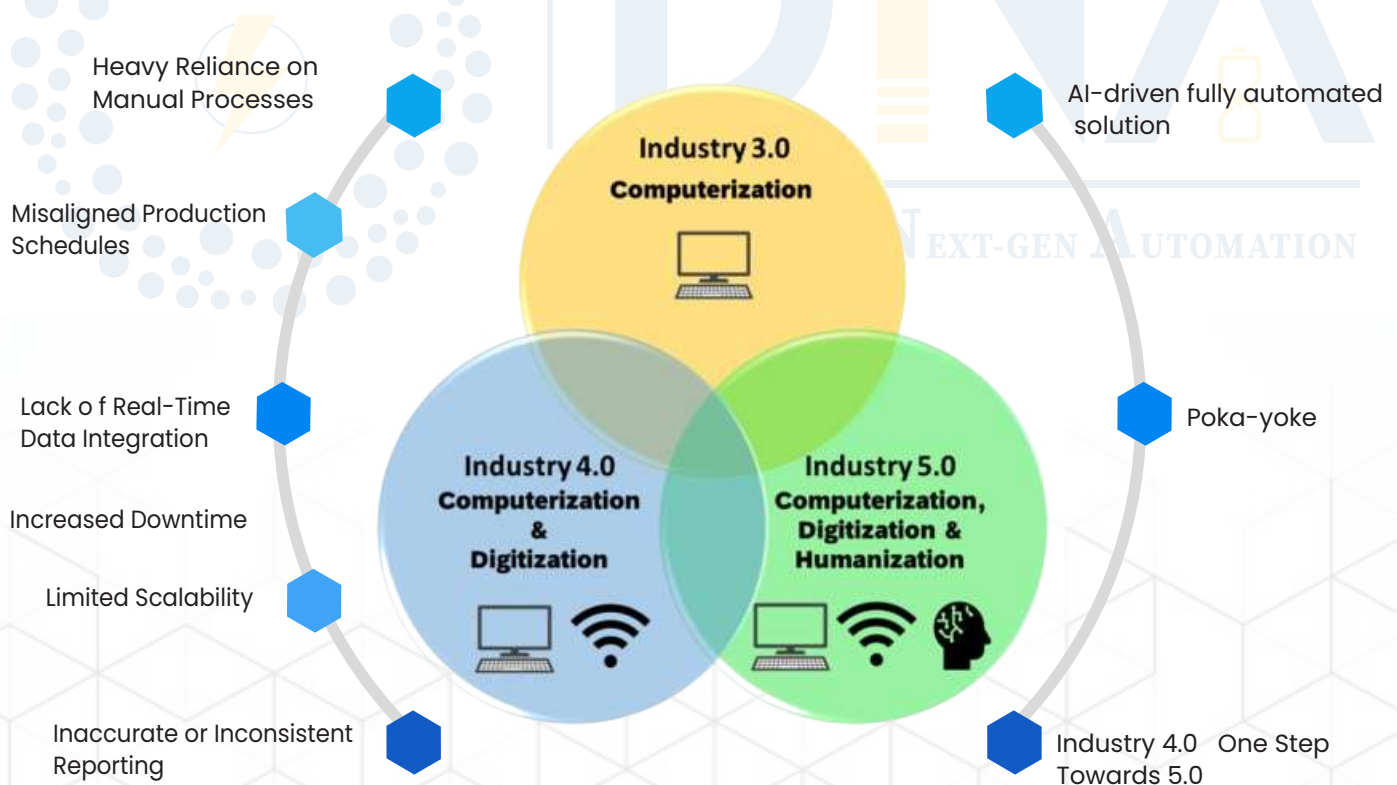
INTELLIGENT MANUFACTURING SOLUTIONS

MES SOFTWARE OVERVIEW

Our Manufacturing Execution System (**MES**) streamlines production processes by providing real-time monitoring and control, ensuring efficient operations from the shop floor to enterprise systems. With robust data analytics and seamless integration, **MES** enhances decision-making, reduces downtime, and improves overall productivity.

- Real-time monitoring for production, inventory, and resource management.
- AI Data-driven insights for enhanced decision-making and operational efficiency.

PROBLEM STATEMENT TOWARDS SOLUTION



BENIFITS OF MES OVER MANUAL PROCESS

Improved Operational Efficiency

MES optimizes production workflows, reducing bottlenecks and improving resource utilization.

Real-time Data Access

Provides instant access to critical data, enabling quick decision-making and minimizing delays.

Enhanced Product Quality

Continuous monitoring ensures quality control and reduces defects, ensuring consistent product standards.

Reduced Downtime

You can simply impress your audience and add a unique zing and appeal to your Presentations.

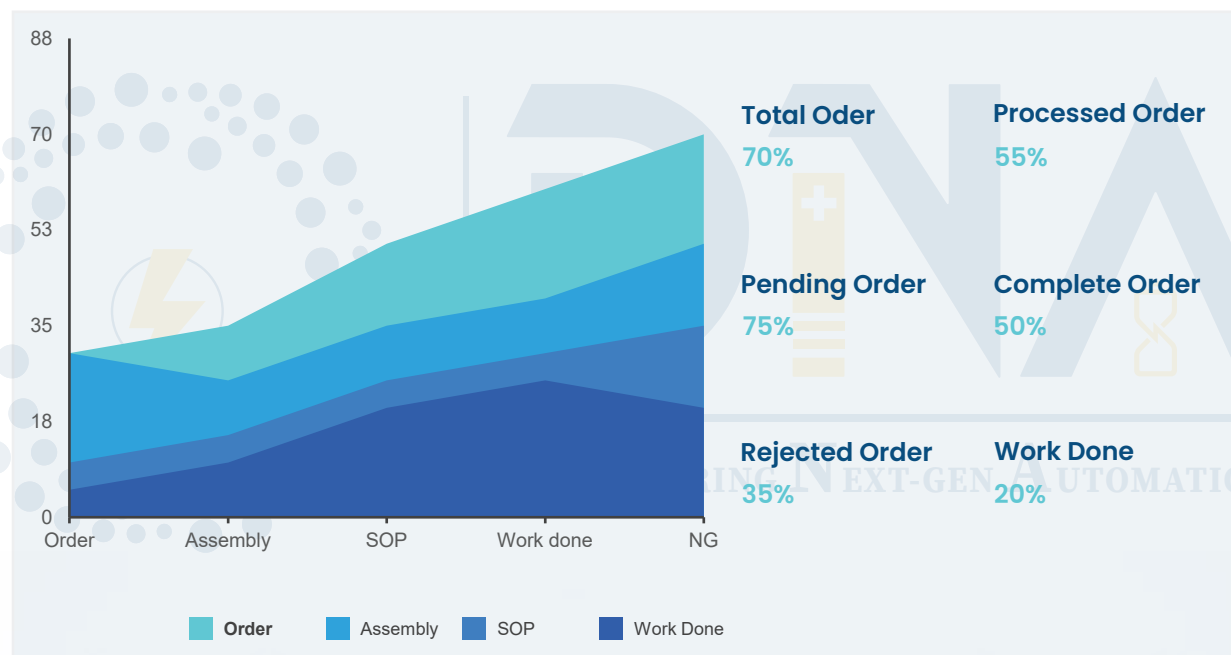
Increased Traceability

You can simply impress your audience and add a unique zing and appeal to your Presentations.

Better Resource Management

You can simply impress your audience and add a unique zing and appeal to your Presentations.

REAL TIME DATA REPORT



DISPLAY-DASHBOARD



Dashboard and display analytics similar to this

NEXT-GEN AUTOMATION ASSEMBLY



High-Precision Features:

➤ Automatic Cell Feeding

Cells are fed by trays and stored in an automated warehouse.

➤ Gantry Crane Transfer

Cells transferred from warehouse to conveyor via gantry crane.

➤ Reject Handling

Defective cells are automatically separated.

➤ SCADA for Recipe Selection & Control

Enables recipe selection, monitoring, and control

➤ Engineering & Safety Compliance

Designed to meet strict safety standards.

➤ Inspection System

Camera system inspects cells for defects and pole orientation.

➤ Testing Stations

Conducts OCV, DCIR, and insulation tests on cells.

➤ Data Storage & Quality Tracking With MES

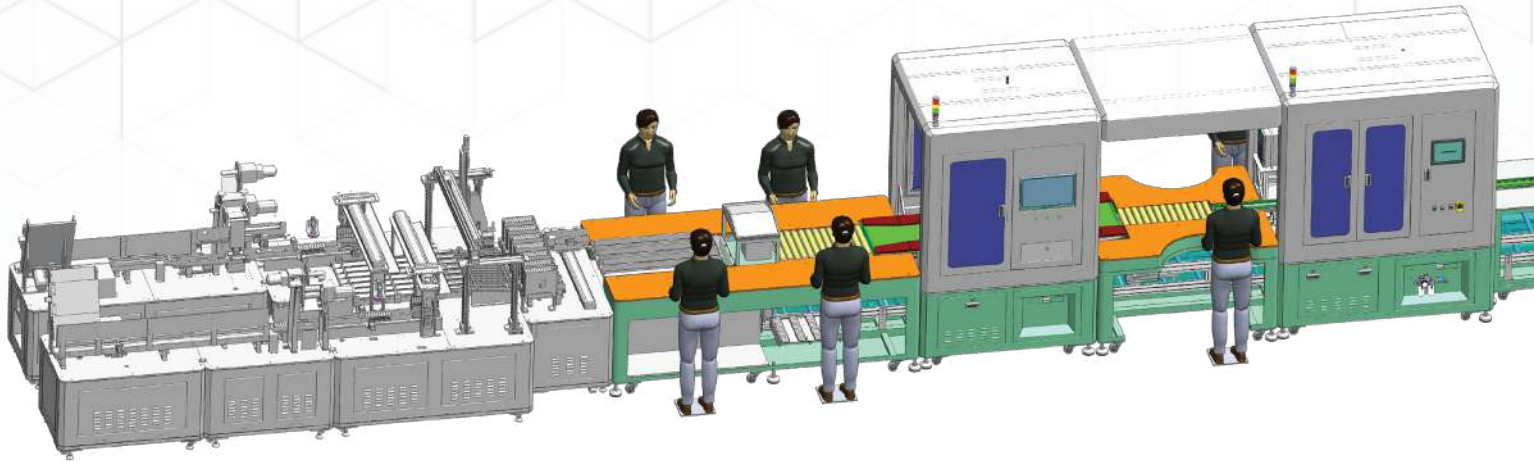
Tracks quality parameters and stores data for MES.

This advanced assembly line represents a leap in automation, precision, and data-driven quality management for prismatic cell production.

LINE FOR PRISMATIC CELL



INNOVATIVE AUTOMATION LINE FOR



Key Features:

➤ Automated Cell Feeding System

Utilizes precision tray-fed cells, systematically stored in an intelligent automated warehouse.

➤ Rigorous Engineering & Safety Compliance

Engineered to company with the highest safety standards for optimized operational integrity.

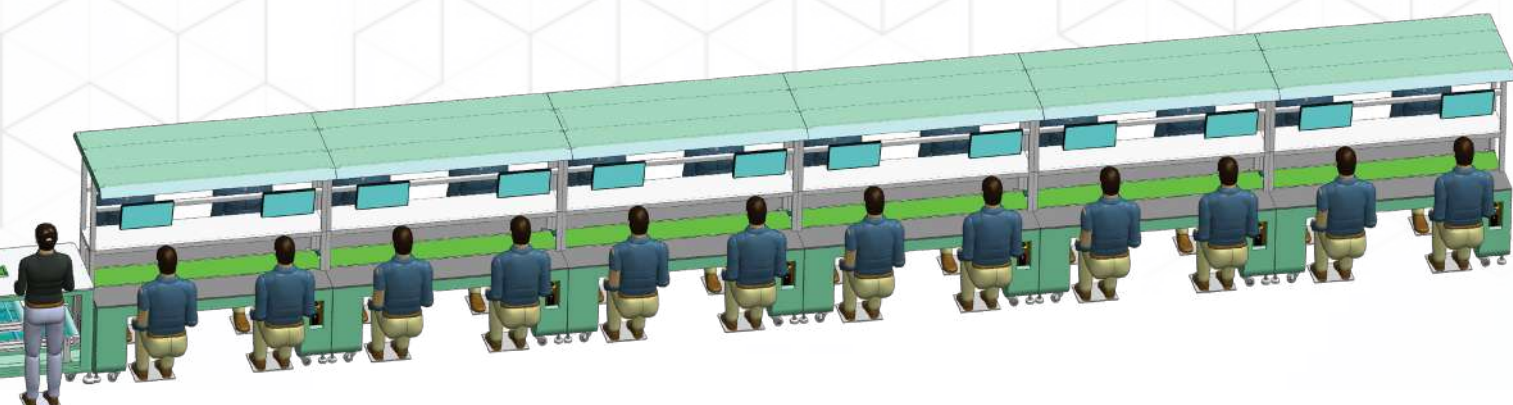
➤ Robotic Gantry Crane Transfer

Robotic gantry crane seamlessly transfers cells from the warehouse to the conveyor, ensuring precise positioning.

➤ Advanced Inspection System

High-resolution camera inspection detects defects and ensures correct pole orientation for stringent quality assurance.

DUAL 18650 AND 21700 CELLS



➤ Automated Defect Segregation

Defective cells are identified and separated automatically to maintain a smooth workflow.

➤ Integrated Testing Station

Performs comprehensive OCV (Open Circuit Voltage), DCIR (Direct Current Internal Resistance), and insulation testing for superior cell validation.

➤ SCADA-Driven Recipe Selection & Control

SCADA integration enables automated recipe selection, real-time monitoring, and exact control over production parameters.

➤ MES-Enhanced Data Storage & Quality Tracking

Manufacturing Execution System (MES) integration allows end-to-end traceability and quality parameter tracking for total quality assurance.

OFFLINE EQUIPMENT & ACCESSORIES



AUTOMATIC NICKEL WIRE CUTTING MACHINE

Cutting Length	upto 9999.9 mm
Cutting Width	upto 300 mm
Cutting Speed	3000 Cycles / hour
Dimension	900mm x 450mm x 450mm
Weight	Mesh with 30Kgs loading capacity
Power	220V AC, 50Hz, 100W

Stepper motor driven, Suitable for cutting PVC & Nickel wirexc

HEAT SHRINK MACHINE

Source Voltage	Ac 380V, 50Hz
Power	8.0KW
Heating Mode	Far infrared ray heat combined with circulating hot air
Tunnel size	600mm x 400mm x 300mm
Conveyor Type	Mesh with 30Kgs loading capacity
Speed	0.1-6M/min, Infinitely adjustable-speed
Temperature Range	RT-180°C, With 2°C accuracy, Closed Loop temperature
Battery out Temperature	<60°C



SINGLE SIDED AND DOUBLE SIDED ESD WORKSTATIONS

Material	Mild Steel / Aluminum (ESD Safe)
Table Top Size	1200 x 600mm (can be customised)
Height	1800mm (can be customised)
Usage	Industrial Workshop / Electronics / Assembly / Battery pack Assembly
Storage	As per requirement
Optional	Footrest, Universal Socket with code, Swivel Light, Conductive bins, Writing Board, Tool Tray, Modular system with Lock



MATERIAL MOVEMENT TROLLEYS

Material	upto 9999.9mm
Load Capacity	Upto 300mm
Dimensions	can be customised
Wheels	Nylon / PU



CONVEYOR SYSTEM AUTOMATIC & MANUAL

Horizontal Type Belt Conveyor



- Standard Range of Modules (can be customised).
- 2Ply non-mono belting.
- Mild Steel / Aluminum Workstation (ESD Safe) Automatic OR Semi-Automatic (as per request).
- Facilities belt change within 30 minutes.
- Belt Speed: 30 – 100 fpm.
- Travel direction can be reversed.
- Can carry load upto 30kgs with speed upto 60mtrs /minute.

Footrest, Universal Socket with Code, Tubelights, Tool Tray, Soldering Iron with drawer can be customised.



Designed for moving and handling heavy loads (upto 100 kgs)

The use of pallets to move individual products allows non-synchronous movement, so each product can be transported and routed independently.

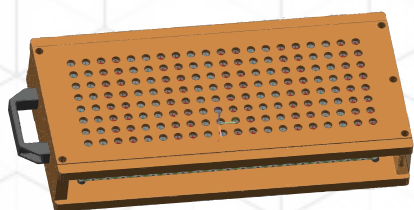
Because the pallets are precisely machined, they can be accurately positioned and located via sensors, and RFID tags or other data carriers can be attached to each pallet to track and document individual product movements.

Pallets can be diverted and merged for offline operations, and accumulation allows products to be buffered, smoothing the flow of downstreams operations.

Pallet Conveyor With Movement Control



BILL OF MATERIAL (BOM) FOR LITHIUM BATTERY PACK

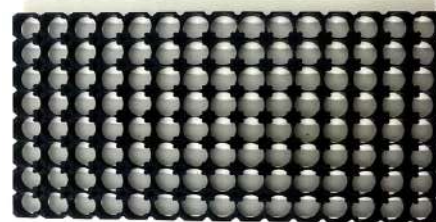


Jigs For Automatic Spot Welding

- For Single Side and Double Side Automatic Welding.
- For all Cylindrical Cell Sizes WITH and WITHOUT Holders.
- Can be customised according to Welding Machine Fixture.
- Made of Hylam material.

Cylindrical Cell Holder

- For all Cylindrical Cell Sizes..
- Can be customised according as per any Series / Parallel Configuration.
- Can withstand upto 150C



Spot Welding Electrodes

- For Automatic & Manual Spot Welding Equipment.
- Made of Copper and Beryllium Alloy.
- Can be Customised according to Welding Machine Fixture.
- Lifespan upto 10,000 to 15,000 Strokes depending on program.

Cell Sorting Pins

- For Automatic Cell Sorting Equipment.
- Comes in standard sizes.



Battery Management System (BMS)

- Can Support upto 20S with RS485 Communication.
- Continuous current upto 80A with CAN Communication.
- Passive Balancing function.
- Bluetooth and GPS optional.
- LED Indicator Interface.

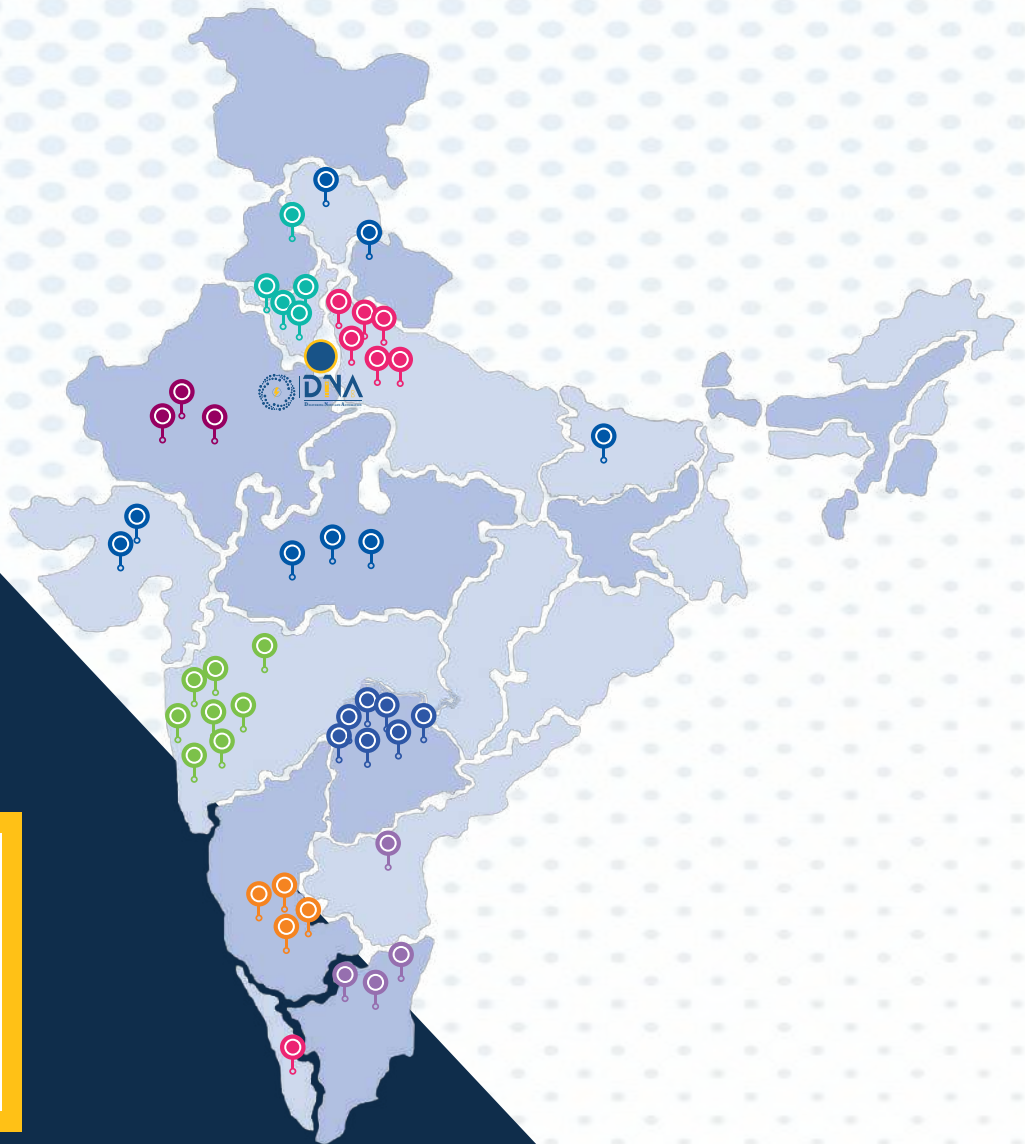
Pure Nickel Strip

- Nickel 200 N6 99.5 Strip.
- H Type 2P and 3P available'
- 0.15mm - 0.20mm thickness.





PAN INDIA INSTALLATION



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