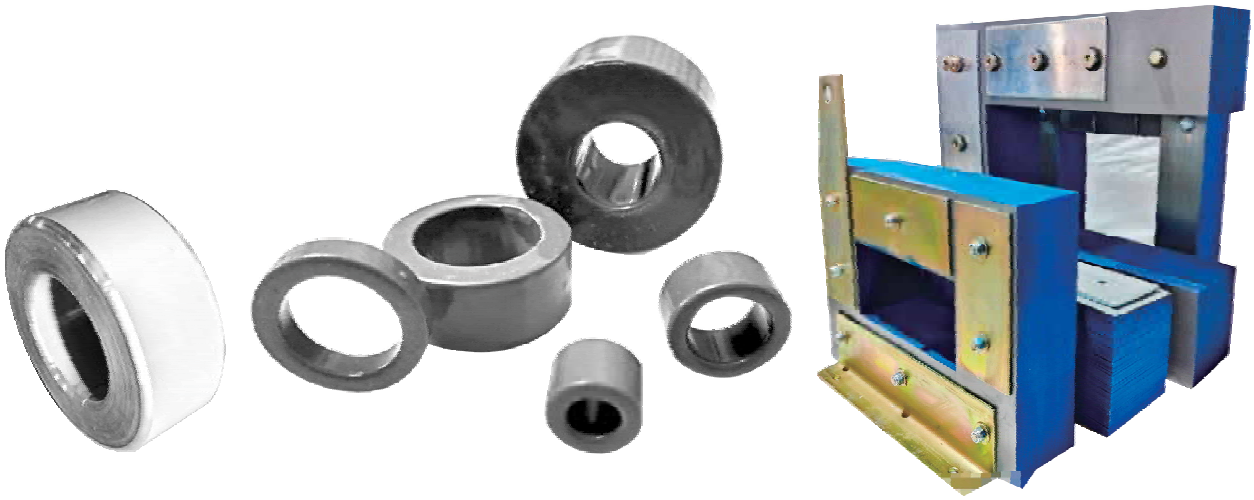
REPUTED AND RELIABLE NAME FOR ELECTRICAL STEEL

EXPERIMENT... INNOVATE... PROGRESS...

VIKARSH NANO®

Vikarsh Nano Technology
& Alloys Pvt. Ltd.



Vikarsh Nano Technology
& Alloys Pvt. Ltd.

About Us:

"Vikarah Nano Technology And Alloys Private Limited" is among the leading Manufacturers, Exporters of high quality and performance oriented Nano crystalline ribbons and cores. These include CT cores, ELCB, RCCB, METERING cores, blocks, cut cores, Welding cores & transformers as well as CRGO products which can be made available in both standard and customized specifications. Established in the year 2013, at Pune, Maharashtra. Over the years the company achieved considerable growth in output and customer base. The company is located at Dhangarwadi near Shirwal (about 50 kms from Pune) adjoining Pune-Bangalore highway and hence become an ideal and strategic location for production and dispatch of its products. Our business operations are being handled by professional team having wide range experience. Their experienced approach as well as in depth knowledge of the involved processes guides us in meeting the customer specification of all our products.

Vikarsh Nano Technology And Alloys Private Limited has made a firm consolidation in its business through meticulous planning and continual improvement in quality of its products to fully meet customer's requirements. Today, our consistency in meeting the emerging demands of the transformer industry has assisted us in making many reputed clients in the domestic as well as international market. Further, our production expertise which allow us to deliver the range to the clients' specification has also aided us in strengthening our position in the market.

OUR VISION:

To be preferred partners in electrical & electronics sector.

OUR MISSION:

To be technocrat leaders in chosen line of business.

Transformer core lamination for Power and distribution Transformer

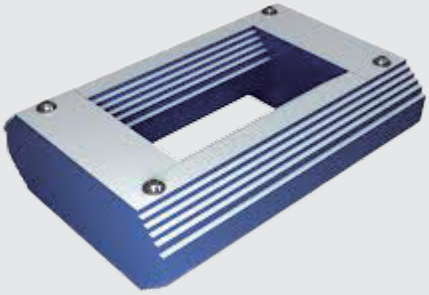
Range : 10KVA to 30MVA
Type : Mitred, Vertical and Horizontal step lap design
Grade : All conventional & Hi-b CRGO grades
Applications : Distribution & Power Transformers, Isolation Transformer, Furnace transformers etc.


Transformer Core Assemblies

Range : 10 KVA to 30 MVA


Rectangular Strip Lamination

Range : From 11KV to 420 KV
Type : Interleaved, Assembled CORES
Grade : All conventional & Hi-b CRGO grades
Applications : PT, IVT, CVT, REACTORS, CHOKES, INDUCTORS and all Electromagnetic applications




Toroidal cores

Range : Mini Cores - Min. ID 15 mm HT - 10 mm
Big Cores - upto 1500 mm OD

Grade : All conventional & Hi-b CRGO grades & CRNGO grades.
(With chamfering as per customer's requirements)

Applications : P S Class CTs, Metering class CTs, Protection CTs, Transformers.

Slit coils

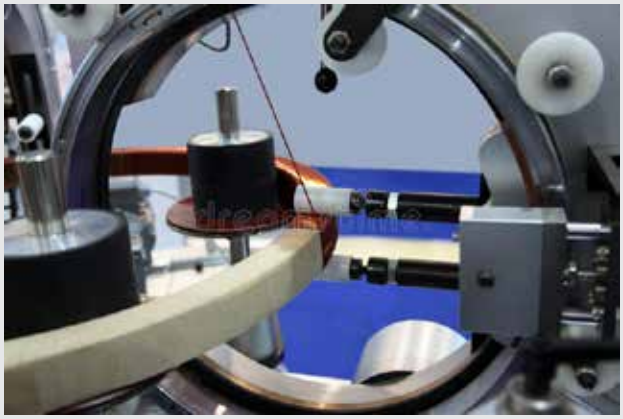
Range : 8mm to 900mm

Grade : All conventional & Hi-b CRGO grades & CRNGO grades

Secondary Wound C T cores

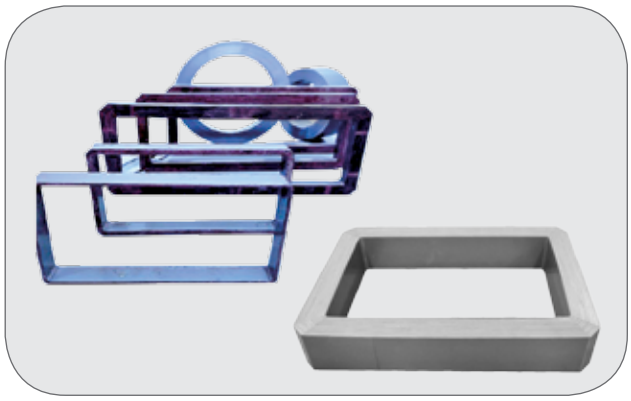
Range : Upto 765 KV

Grade : All PS class and Metering class cores.



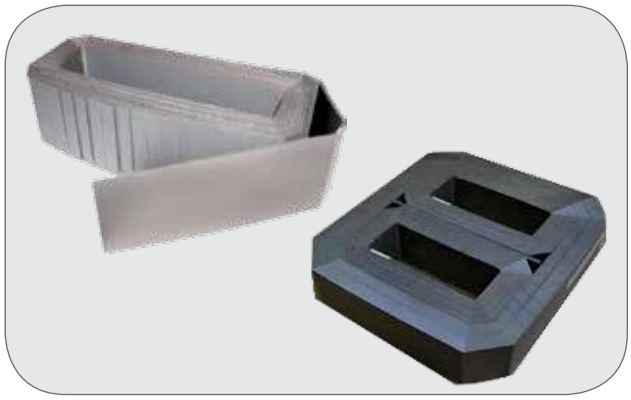
Toroidal cut cores

Rectangular CT cores

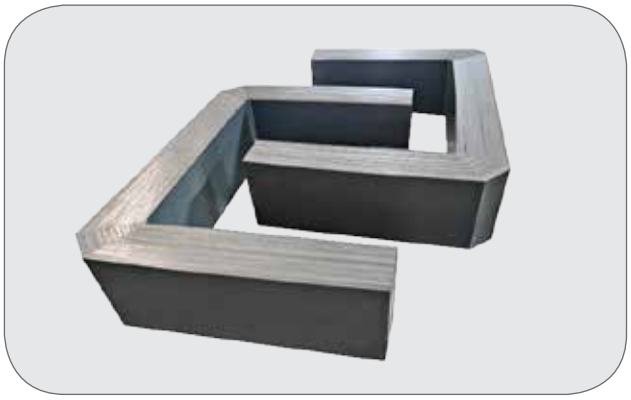


Rectangular cut cores

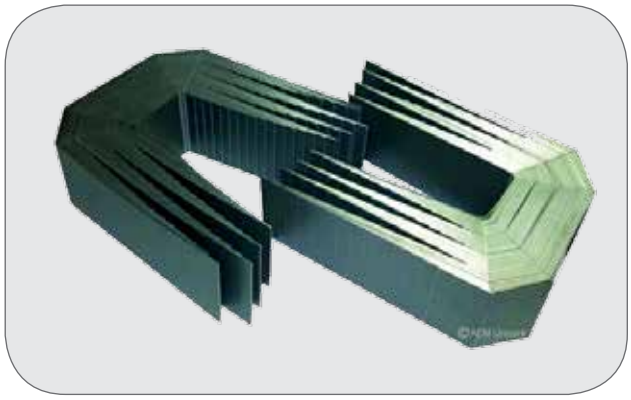
Distributed Gap cores



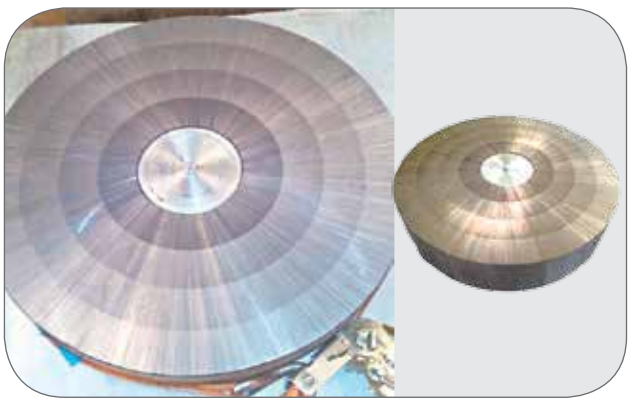
Butt Cores



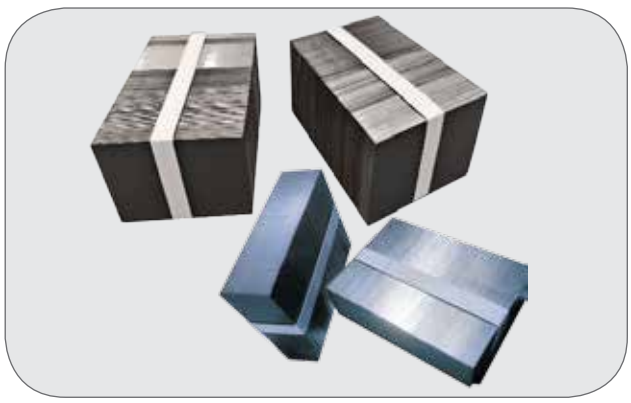
Duo Cores



Reactor core Lamination



Cake lamination



TEST FACILITIES

1. Magnetic Materials Analyzer (Hysteresis loop tester) Conventional Frequency 50Hz – 1 Set
2. High Frequency Analyzer Upto 100Khz- 1 Set. MATS-2010SA-AC
3. Core V-I Testers of Various Test Ranges, Digital Multimeters,Meggers,AC HV Testers, IR Tester
4. Panel and Burden Box of Eltel-AITTS (Instrument Transformer Tester) system for CT for RatioError and Phase Angle Error.
5. LCR Testers (Inductance,Capacitance,Resistance) Range: 50Hz-10Khz & 50Hz-100Khz-1Set
6. Overvoltage InterturnFaultTester
7. InsulationResistance Tester
8. Power Analyzer for Wattloss testing
9. Omicron Meter for CT wound core testing.
10. Calibrated scales, Verniers and Micrometers.

PLANT & MACHINERIES

Key Machines:

- Slitting Machines
  Capacity : 600mm Width & 1200mm width
- Automatic Cut to Length Machines for rectangular strip cutting
  Capacity: Upto350mm
- Automatic CTL Machines for mitred lamination cutting
  Capacity: 70mm to 640mm
- Uni core forming Machine
  Capacity : Min 40mm to 350mm
- PID controlled Roller Hearth Furnaces
  Capacity: 250Kgs/hr
- Batch Annealing Furnaces
  Capacity : 100Kgs to 500 Kgs
- Copper Winding Machines
  Capacity: upto 700mm OD
- Toroidal core winding Machines
  Capacity: Mini Cores from min. 15 mm to 50 mm OD and HT min 8 mm
  Big Cores from 50 mm OD to 1500 mm OD
- Power Presses:Capacity : Upto 30 T

Other Machines:

- Manual Shearing Machines
- EOT cranes : 5T, 10T, 20T
- Blade Sharpening Machine
- Cutters& Tools Grinding Machines
- DG set: 200KVA
- Vacuum Pressure Impregnation Plant
- Toroidal core Powder coating plant
- Material Handling Equipments

Table 1 : Magnetic Properties of Conventional Grain Oriented (CGO) Electrical Steel

IS 3024 2015 • (Clauses 4.2, 5.2, 8.1 and 8.2)

Grade	Nominal Thickness mm	Maximum Specific Core Loss at 1.5 T W/kg		Maximum Specific Total Loss at 1.7 T W/kg		Minimum Polarization in Tesla at a Field Strength of 800 A/m	Minimum Stacking Factor
		50 Hz	60 Hz	50 Hz	60 Hz		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
23CG110	0.23	0.73	0.96	1.10	1.45	1.78	0.945
23CG120	0.23	0.77	1.01	1.20	1.57	1.78	0.945
23CG127	0.23	0.80	1.03	1.27	1.65	1.75	0.945
27CG120	0.27	0.80	1.07	1.20	1.58	1.78	0.950
27CG130	0.27	0.85	1.12	1.30	1.68	1.78	0.950
27CG140	0.27	0.89	1.15	1.40	1.75	1.75	0.950
30CG120	0.30	0.83	1.09	1.20	1.58	1.78	0.955
30CG130	0.30	0.85	1.15	1.30	1.71	1.78	0.955
30CG140	0.30	0.92	1.21	1.40	1.83	1.78	0.955
30CG150	0.30	0.97	1.25	1.50	1.90	1.75	0.955
35CG145	0.35	1.03	1.36	1.45	1.91	1.78	0.960
35CG155	0.35	1.07	1.41	1.55	2.04	1.78	0.960
35CG165	0.35	1.11	1.52	1.65	2.12	1.75	0.960

NOTE - Normally the tests should be performed at 50Hz. However, countries where power supply at 50 Hz is not available, testing may be carried out at 60 Hz and accordingly product shall conform to the specified values given in the above Table. However, in all such cases, the product shall also conform to the specified values of above Table when tested in importing country having power supply at 50Hz.

Table 2 Magnetic Properties of High Permeability Grain Oriented (HPGO) Electrical Steel

(Clauses 4.2, 5.2, 8.1 and 8.2)

Grade	Nominal Thickness mm	Maximum Specific Total Loss at 1.7 T W/kg		Minimum Polarization in Tesla at a Field Strength of 800 A/m	Minimum Stacking Factor
		50 Hz	60 Hz		
(1)	(2)	(3)	(4)	(5)	(6)
23HP75[d]	0.23	0.75	0.99	1.85	0.945
23HP80[d]	0.23	0.80	1.04	1.85	0.945
23HP85[d]	0.23	0.85	1.12	1.85	0.945
23HP90[d]	0.23	0.90	1.19	1.85	0.945
23HP95	0.23	0.95	1.25	1.85	0.945
23HP100	0.23	1.00	1.32	1.85	0.945
27HP85[d]	0.27	0.85	1.12	1.85	0.950
27HP90[d]	0.27	0.90	1.19	1.85	0.950
27HP95[d]	0.27	0.95	1.25	1,85	0.950
27HP100	0.27	1.00	1.32	1.88	0.950
27HP110	0.27	1.10	1.45	1.88	0.950
30HP95	0.30	0.95	1.25	1.88	0.955
30HP100	0.30	1.00	1.32	1.88	0.955
30HP105	0.30	1.05	1.38	1.88	0.955
30HP110	0.30	1.10	1.46	1.88	0.955
30HP120	0.30	1.20	1.58	1.88	0.955
35HP110	0.35	1.10	1.45	1.88	0.960
35HP115	0.35	1.15	1.51	1.88	0.960
35HP125	0.35	1.25	1.64	1.88	0.960
35HP135	0.35	1.35	1.77	1.88	0.960

Tolerance Chart for CRGO Cut Laminations

ATTRIBUTE	Guaranteed limits by VIKARSH NANO
THICKNESS	+ /-0.02 mm. Total difference in thickness in a direction Perpendicular to rolling direction should not exceed 0.02 mm
LENGTH	Upto 700 mm + 0.0 /-0.5 mm 701 to 2000 mm + 0.0 /-1.0 mm Over 2000 mm +0.0 /-1.5 mm
WIDTH	Upto 150mm + 0.0/-0.2 mm 151 to 500 mm +0.0/-0.3 mm 501 mm and above + 0.0/-0.4 mm
CAMBER	0.9 mm max. on a length of 2000 mm per side on surface table
V NOTCH	90 deg + / - 5 minutes
MITRED ANGLE	45 deg + / -5 minutes
HOLE DIAMETER	+ 0.10/-00 mm
STACKING FACTOR	95 % min. for 0.23 mm thick material 96 % min. for 0.27 mm and 0.30 mm thick material 96.5 % min. for 0.35 mm thick material
INSULATION RESISTANCE	Min 10 ohms /cm^2 as per Franklin method described in IS 649 -1997
BURR	20 microns maximum
WEIGHT OF EACH STEP	+0.5% TO 1.0% or as per customers requirements.

* Tolerances can be achieved as per customer's specific requirement also.

Tolerance Chart for Toroidal Cores

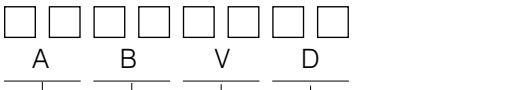
ATTRIBUTES	Guaranteed limits by VIKARSH NANO		
OUTSIDE DIAMETER	OVER (MM) 40 MM 100 MM ABOVE 300	UPTO (MM) 100 MM 300 MM —	TOLERANCE IN MM +0.5 MM +0.5 to 1 MM +1 MM
INSIDE DIAMETER	-0.0 MM / +0.5 to 1 MM		
WIDTH / HEIGHT	UPTO 200MM OD: -0.0/ + 1 MM OVER 200MM OD: -0.0/ + 1.5 MM		
SLIT BURR	20 MICRONS		
MAGNETIC CHARACTERISTICS	GRADE M3 0.27 AT/CM at 1.5T/50Hz M4 0.29 AT/CM at 1.5T/50Hz M5 0.34 AT/CM at 1.5T/50Hz M6 0.40 AT/CM at 1.5T/50Hz		

* Tolerances can be achieved as per customer's specific requirement also.

Comparative B-H Curves Tabulated Values For Different Grades Of CRGO Toroidal Core Of Size 150MM Od X 100Mm Id X 25MM Ht

FLUX DENSITY (TESLA)	METERING CLASS CORES (0.5 CLASS)	METERING CLASS CORES (0.2S CLASS)	P. S. CLASS CORES	PROTECTION CLASS CORES
	AT/cm	AT/cm	AT/cm	AT/cm
0.01	0.0035	0.003	0 0038	0.013
0.02	0.0058	0.0043	0 0061	0.017
0.03	0.0081	0.0058	0.0076	0.021
0.04	0.01	0.0071	0.0094	0.023
0.05	0.012	0.0086	0.01	0 026
0.06	0.015	0.01	0.012	0 03
0.07	0.017	0.011	0.014	0.032
0.08	0.018	0.0117	0.015	0.035
0.09	0.021	0.013	0.02	0.037
0.1	0.023	0.014	0.022	0.041
0.2	0.041	0.026	0.039	0 057
0.3	0.057	0.038	0.053	0.07
0.4	0.07	0.048	0.064	0.086
0.5	0.082	0.060	0.076	0.099
0.6	0.093	0.066	0.086	0.111
0.7	0.103	0.075	0.094	0.123
0.8	0.112	0.083	0.104	0.132
0.9	0.122	0.091	0.113	0.145
1	0.131	0.1	0.122	0.16
1.1	0.137	0.104	0.13	0.165
1.2	0.145	0.114	0.137	0.175
1.3	0.155	0.122	0.147	0.201
1.4	0.175	0.13	0.16	0.224
1.5	0.193	0.14	0.173	0.252
1.6	0.216	0.162	0.19	0.3
1.7	0.259	0.185	0.21	0.351
1.75	0.295	0.21	0.23	0.42
1.8	0 397	0.26	0.262	0.483
1.85	0.544	0.36	0.338	0.6
1.9	1.22	0.79	0.62	0.942
1.95	---	---	1.35	---

Designation Of Crgo Steel As Per Is 3024:2015



- A: One hundred times the nominal thickness of material in mm
- B: Material symbol CG or HP
- V: Guaranteed value of total specific loss (core loss). A value 100 times the iron loss, at a frequency 50 Hz and a maximum flux density of 1.7 Tesla.
- D: Symbol "d" as suffix (as appearing in the diagram) for indicating domain refinement

NOTES

A = one hundred times the nominal thickness of the product, in mm.

B = the letter symbol:
a) CG, for conventional grain oriented electrical steel
b) HP, for high permeability grain oriented electrical steel.

C = One hundred times the maximum value of specific total loss in W/kg at 1.7 Tesla, 50 Hz.

D = Indicates domain refined grade

Examples

1) A sheet or strip of conventional grain oriented electrical steel 0.23 mm thickness, tested at 1.7 Tesla, 50 Hz and specific total loss 1.20 W/kg shall be designated as 23CG120.
2) A sheet or strip of high permeability grain oriented electrical steel, domain refined 0.23 mm thickness, tested at 1.7 Tesla, 50 Hz and specific total loss 0.75 W/kg shall be designated at 23HP75[d].

(Clause 11.2) **All dimensions in millimetres.**

Sl No. (1)	Nominal Width *"l"* mm (2)	Tolerance mm(3)
i)	$l < 150$	+0.2
		-0.0
ii)	$150 < l \leq 300$	+0.3
		-0.0
ii)	$300 < l \leq 600$	+0.5
		-0.0
iv)	$600 < l \leq 1000$	+1.0
		-0.0
v)	$l > 1000$	+1.5
		-0.0

NOTE-As per agreement, width tolerance can be -ve or both -ve and + ve subject to tolerance band as given in table.

BIS Equivalent Grades From Different Mills

GRADES AS PER BIS	JFE	POSCO	NLMK/ VIZSTAL	AK STEEL	WISCO	NIPPON
23CG120						23M3
23CG110	23JG110		NV 23-1 10	23M3110	23Q110	
23HP90D	23JGSD090	23PHD90		TCHOC	23RK090	23ZDKH95
23HP85D	23JGSD085	23PHD85		TCHODR	23RK085	23ZDKH85
27CG130	27JG130				27Q130	
27CG120	27JG120	27PG120	NV27-120	27M4120	27Q120	27M4
27HP110	27JGH110	27PG110	NV27-110	27M4130	27QG110	27ZH110
27HP100	27JGH100	27PH100		TCH1C	27QG100	27MOH
27HP95D	27JGSD095	27PHD 95			27RKO95	27 ZDKH95
27HP90D	27JGSD090	27PHD 90		TCH1DR	27RK090	27 ZDKH90
30CG140	30JG140	30PG140				
30CG13Q	30JG130	30PG130	NV30-130	30M5130	30Q130	30M5
30CG120	30JG120	30PG120	NV30-120	30M5120	30Q120	
30HP105	30JGH105	30PH105	NV30L105	TCH2Carlite	30QG105	30MOH
35CG155	35JG155	30PG145				35M6
35CG145	35JG145	30PG145			35Q145	

QUALITY POLICY

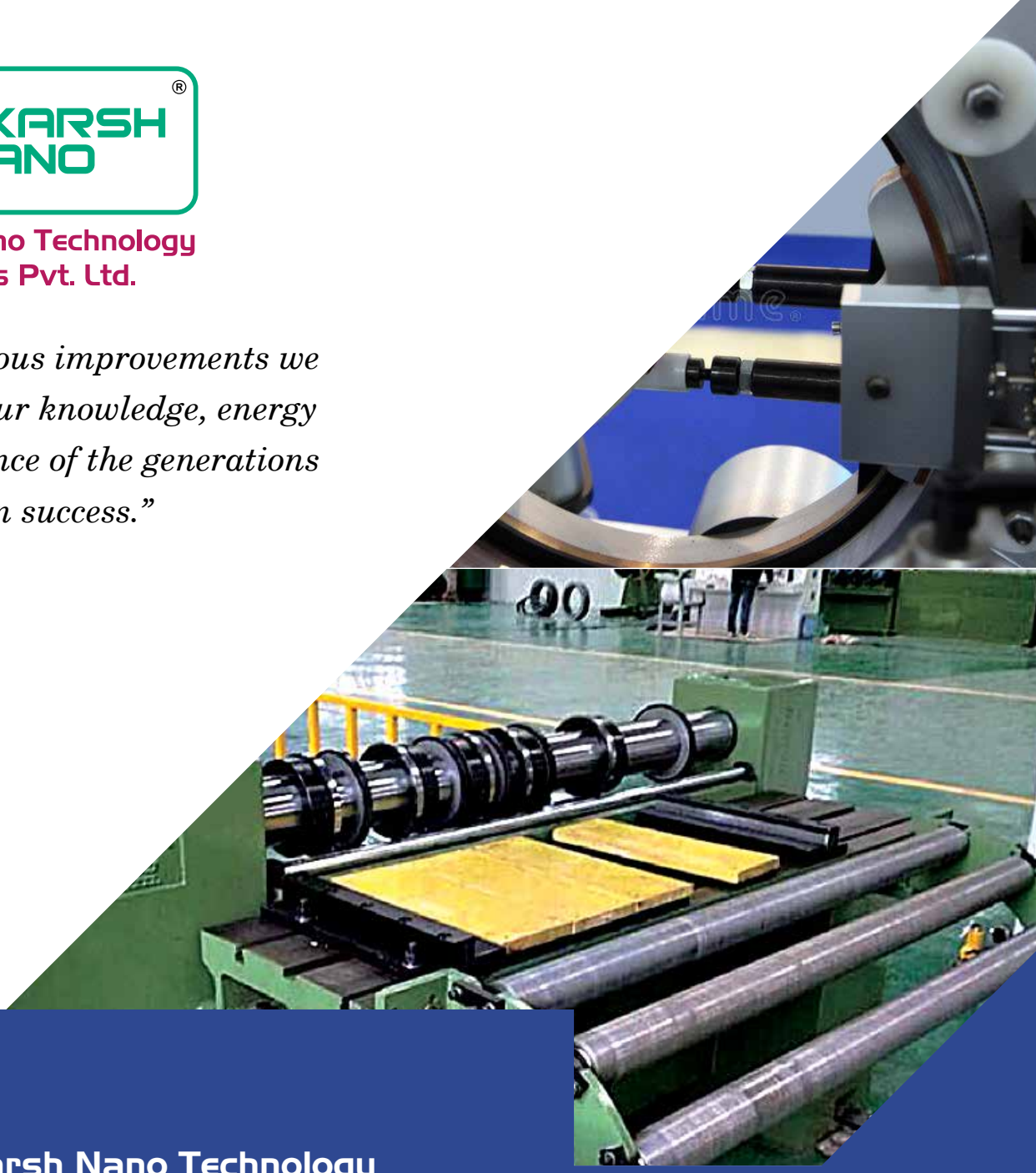
"We
the Management & Employees
of Vikarsh Nano Technology And Alloys Pvt. Ltd. are committed to enhance customer satisfaction by, Design, Development and Manufacture of Nanocrystalline Alloy Ribbons & Cores, Amorphous Alloy Ribbons & Cores, Welding Rectifier Cores, Nanocrystalline and Amorphous Blocks and Canopies. Manufacture of Welding Rectifier Transformers, CRGO -Toroidal cores, slit coils, strips, mitered cores and CRGO & Nanocrystalline secondary copper wound current transformers. and Providing Powder Coating Services for Wound Cores for Electrical and Electronic Industry.
This will be achieved by complying with the quality management system (ISO 9001:2015)/ other applicable requirements & continually improving its effectiveness through quality objectives."

Sameer Shinde
Director

VIKARSH NANO®

Vikarsh Nano Technology
& Alloys Pvt. Ltd.

"By continuous improvements we transform our knowledge, energy and experience of the generations into common success."



CONTACT DETAILS

Vikarsh Nano Technology
& Alloys Pvt. Ltd.
CRGO PRODUCTS DIVISION

Office : Office No. 2, Uttekar Heights, 572, Shaniwar Peth, Kelkar Road, Opp. Kesari Wada, Pune - 411030, Maharashtra, INDIA.

Ph No: +91 - 20 - 24452797 / 24468999

FACTORY :
Gat No. 273 & 274, A/P. Dhangarwadi, (Shirwal) NH-4, Tal. Khandala, Dist. Satara- 412 801, Maharashtra, INDIA.

email : vikarshnano@gmail.com

www.vikarsh.com

IS 649

CM/L-7500254615