

COMPANY PRESENTATION

February 2022

About Siddhi Group

3+ decades of experience in Aluminum Precision Drawn Tubes & Metal Cops



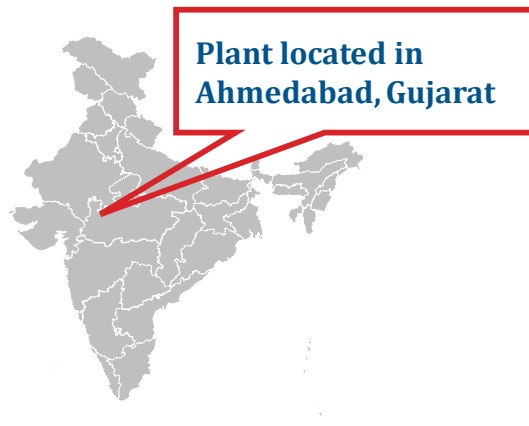
— Our products are used across multiple industries —

Who are we?

Diversified Group with 2 holding companies

- **Siddhi Engineers** : Manufacturer of Aluminum Precision Drawn Tubes from 20 different alloys since 1988
- **Samrudhi Engineering** : Engaged in manufacture of Metal Cops (bobbins/ pirns) for synthetic yarn winding since 1992

Strategically located in Western India to wide range of industrial segments

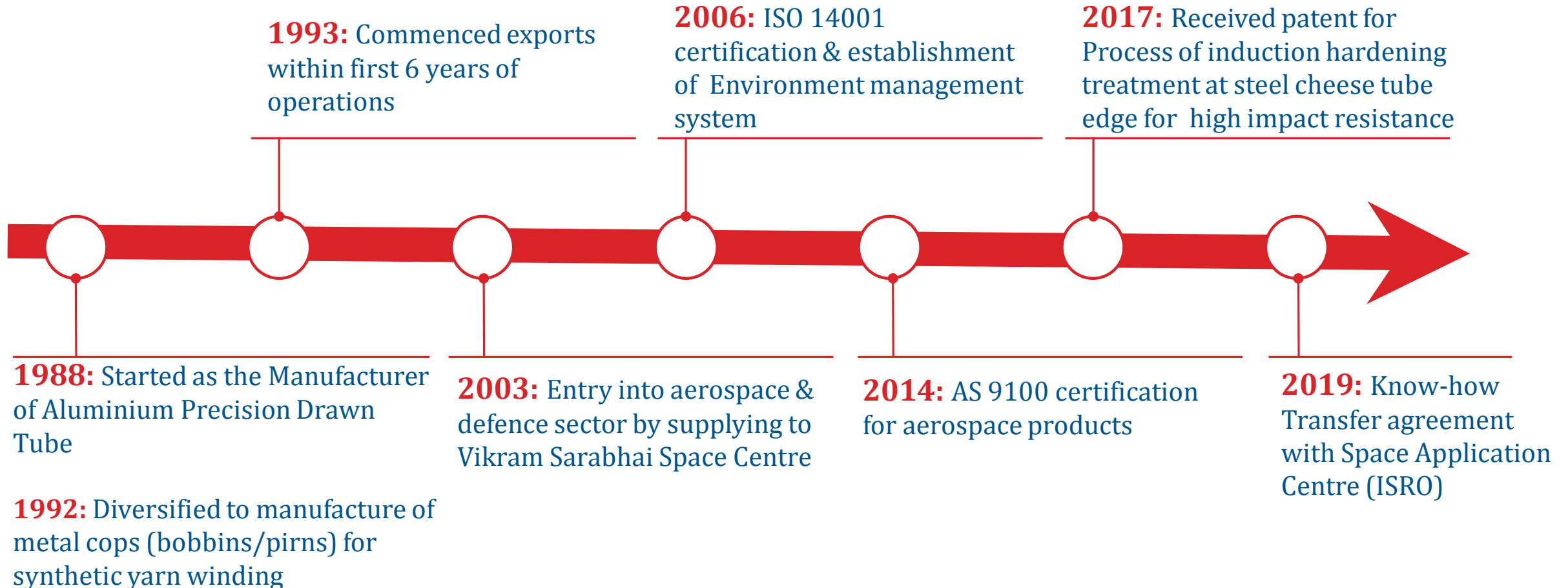


Textile (incl. packaging)

Aerospace & Defence

Industrial & General Engineering

Our innovation led Journey that aimed import substitution for India...



Our manufacturing & quality assurance capabilities



Draw Benches



Annealing Furnace



Straightening Machine



UTS Machine



Adapter Fitting Arrangement



Spindle Guide Fitting



Cop Assembly



Running Measurement Arrangement



Cop Vibration Checking Arrangement

..that helps us manufacture wide range of products



Aluminium Precision Drawn Tubes



Metal & Plastic Cops



Aluminium & Steel Cheese Tubes



Plastic tubes & accessories



**30 million mtrs
aluminum
tubes delivered**

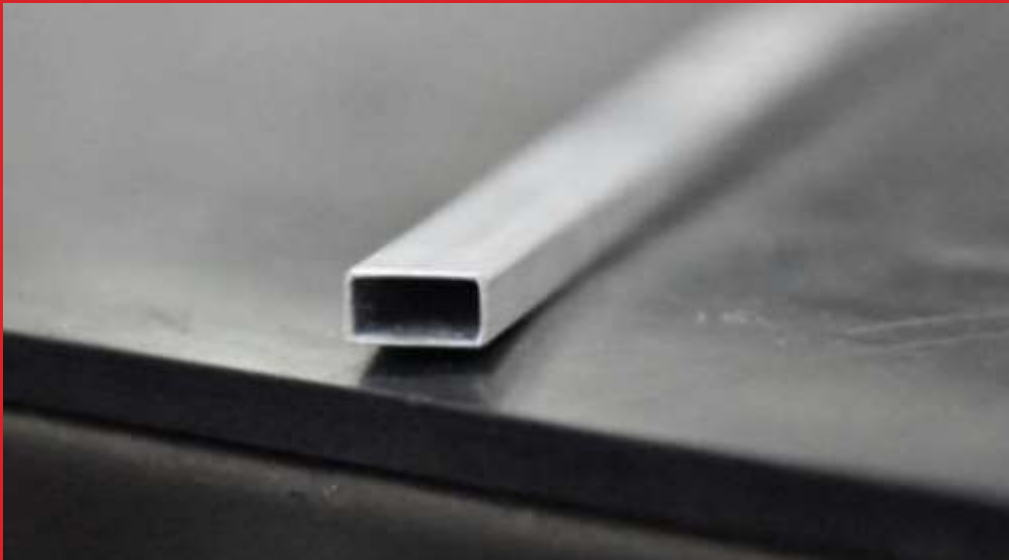


**15 million
metal cops
exported**



Waveguide Introduction

At Siddhi Engineers, **straight aluminum waveguide tubes** are already being produced and supplied to the **Indian Space Research Organization (ISRO)** as raw material for finished waveguides.



Product Development

- The company decided to grow vertically and **fabricate the finished product** i.e. formed waveguides with bends and twists whose design is specified by the customer.



What Siddhi Engineers would like to offer

- **The end product.**

How?

- **Technology Transfer with ISRO.**



Types of Waveguides, Bends and Twist

Waveguide Nomenclature (EIA)

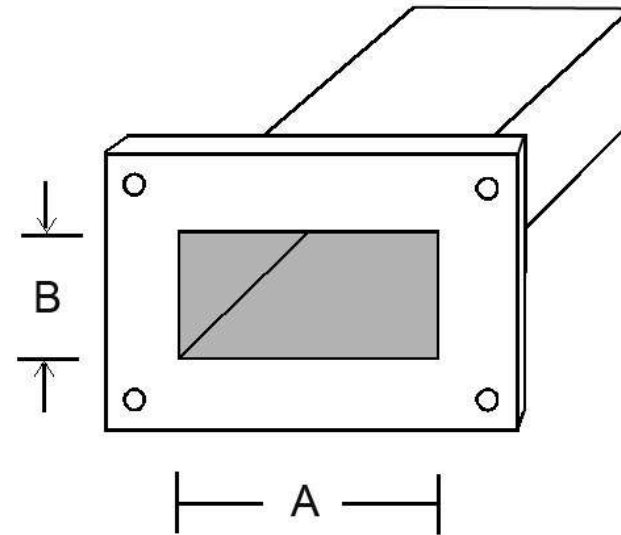
(e.g.) WR75

A (larger inner dimension)

= $75/100$ inch = 0.75 in = **19.05 mm**

B (smaller inner dimension)

= $19.05 / 2 =$ **9.525 mm**



Waveguide
Sizes
offered by
Siddhi
Engineers

WR 75

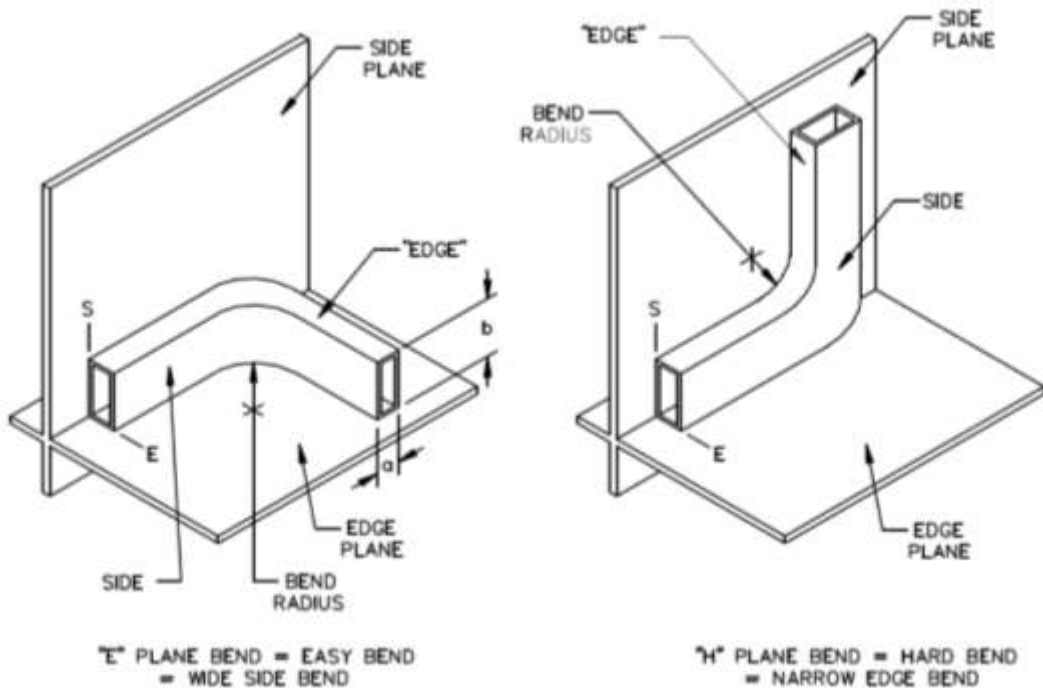
WR 51

WR 28

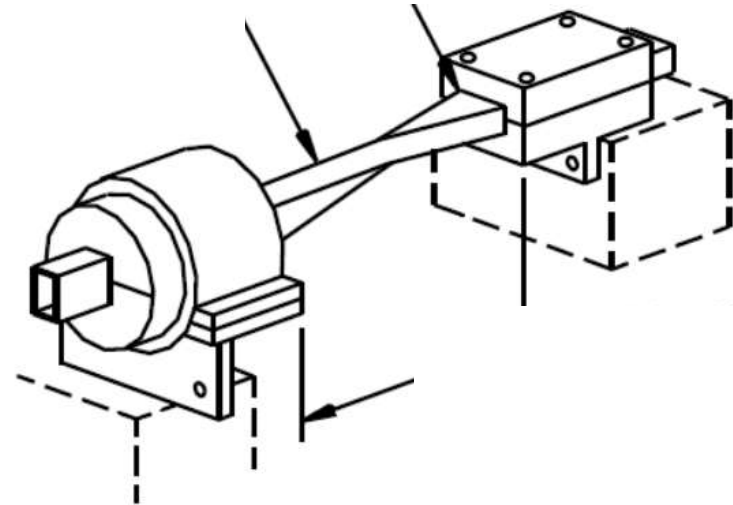
Types of Waveguides, Bends and Twist

Waveguide
 Sizes
 offered by
 Siddhi
 Engineers

BENDS



TWISTS



WR 75
 WR 51
 WR 28

Process from straight tube to end product:

In-House

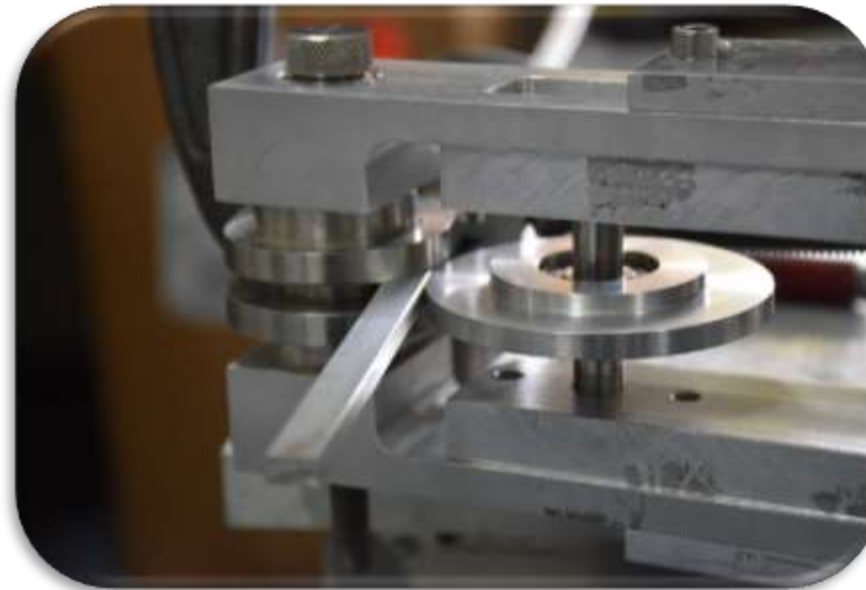
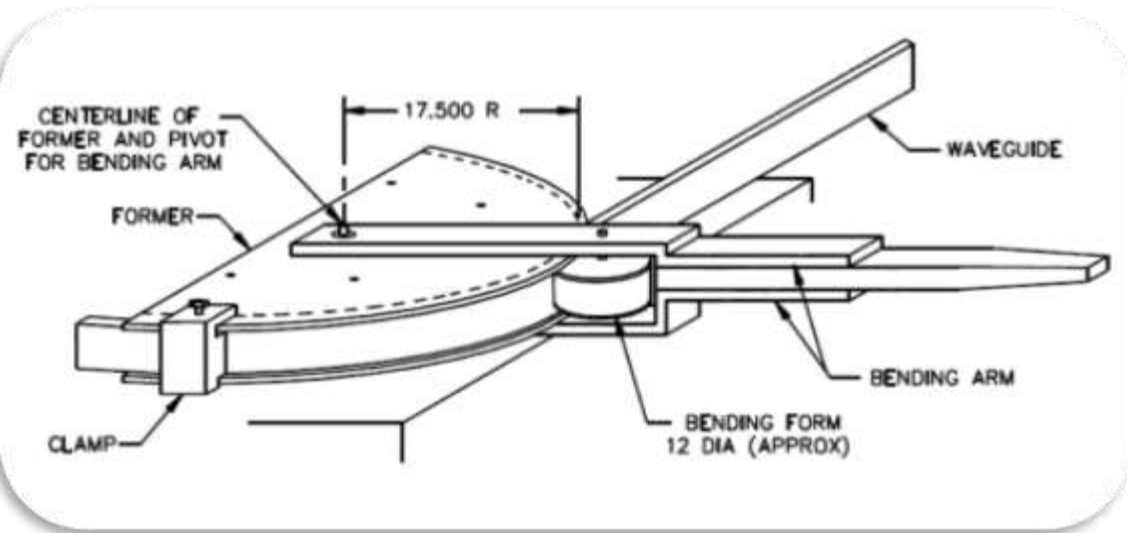
1. Straight waveguides
2. Annealing
3. Filling with filler material
4. Bending and twisting
5. Cutting/Machining
6. Removal of filler material
7. Joining of flanges
8. Silver plating
9. Black anodising

In-House:
ISRO
Technology
Transfer

Outsourcing

Bending of Waveguide

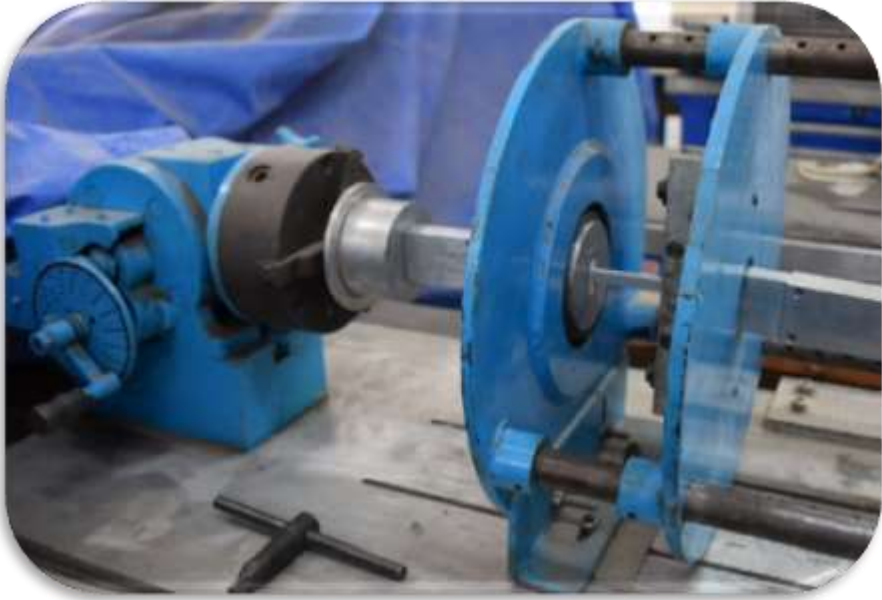
Hand Bending Machine



Twisting & Joining Flange



Twisting of Waveguide



Joining of Flange with Waveguide



Finished Waveguide



Waveguide Applications

Sr. No.	Ground Application	Waveguide type
1	Satellite – RF communication	Bent rectangular waveguides
2	Military Ships	Rectangular bent waveguides
3	Telecomm infrastructures	Bent circular waveguides
4	Broadcaster market	Bent circular waveguides
5	Optical Fiber communication	Circular waveguides
6	Microwave ovens	Straight rectangular waveguides
7	Satellite Antenna/Broadcasting and Radar Installations	Bent circular waveguides
8	Scientific Instruments	Circular waveguides
9	MRI	Circular waveguides
10	Ultrasound machines	Straight circular waveguides

We have strong clientele base that can vouch for our commitment & delivery standards

— Aerospace & Defence —



"Siddhi Engineers uses its decades old experience and highly skilled work force to produce aluminium profiles and sections of utmost quality and precision "

Managing Director, Deep Explo

"Siddhi Engineers truly partnered with us to help solve technical challenges with positive attitude; good technical and manufacturing support provided by the firm"

Scientist, DRDL

Awards & Certifications

45+ awards and counting



Export Excellence



Research & Development



Entrepreneurship



Banker's award



Society of Aerospace Manufacturing Engineers



Make in India award

Certifications



ISO 9001 - 2015 quality management



ISO 14001 - 2015 Environment management



EN 9100 - 2018 Aerospace Products

Patent Applications made and in process

High focus on research and innovative solutioning

Spends around **5% of revenue** on R&D

1 patent received



Process of induction hardening treatment at steel cheese tube edge for high impact resistance

5 Patents applications in process



India

Process for **manufacturing of Aluminium alloy cheese tube**, cheese pipe or bobbin for woven sack



India

Process for **manufacturing steel cheese tubes**, jumbo tubes, pipes for woven sacks and cops, bobbin, pirns for synthetic yarn



India

Process for **manufacturing of steel cops/ bobbins/ pirns** for synthetic yarn



India

Method of **manufacturing Aluminium tubes** for telescopic mast



Israel

Process for **Manufacturing Steel Cheese tubes/ jumbo tubes/ pipes** for woven-sacks and cops/ bobbins/ pirns for synthetic yarn

Why **Siddhi Group** is best suited partner for your business



State-of-the-art manufacturing facility with robust quality management processes that ensures reliability and consistency



Our commitment to manufacture products that have enhanced features for higher functional performance



In-house product development capabilities & customization to embedded in strong in-house research and development



Our demonstrated success of delivery in import substitution in 30+ years



Our partnership centric approach with our customers to solve their deepest problem in cost-effective and efficient way (E.g. ISRO, DRDL, BAPL etc.)

Successful client case studies of co-development, innovation and problem solving

Select Examples



Helping ISRO design and build efficient and cost-effective satellite systems

Context: ISRO wanted low weight substitutes for wave guide tube: brass/copper-based wave guide tube of thickness 1.2 mm used

Approach: Siddhi Engineers developed & innovated 0.63 mm aluminium based wave guide tubes



Helping Israel-based textile player in developing cost-effective bobbin to save reverse logistics cost

Context: Nilit used heavy metal cops that led to cost (reverse logistics) and supply chain hassles (inventory management, paper work, etc.)

Approach: Samruddhi Engineers re-designed & commercialized optimal grade steel tubes

15-20%



lower weight leading to efficient space system design

Gold Medal



from Indian Space and Defense Programme (2009)

60%



lower weight and zero reverse logistics

2 pronged approach to drive research and development within the group



Collaboration and partnership with institutions to drive research and development



Building culture of innovation and continual improvement



Monthly cadence of idea generation by involving shopfloor manpower (Karmayogi) to improve **product and processes**



Have developed **full time in-house innovation team** to drive change in equipment, process and products



Development of unique product features (light weight, better tolerance, optimal alloy composition, exceptional concentricity, etc.)

Innovative team & culture building practices being adopted



Daily Exercise, Prayer and Good News Sharing



Quarterly Karmayogi Meet



Graveyard for negative thoughts



Good Book every month to all team members with their salary



Blood Donation & Dental Health check up Camps



Media publication and press releases

Siddhi Engineers awarded for outstanding entrepreneurship

BIG ON EXCELLENCE

SMILE ENTERPRISES		RESEARCH & DEVELOPMENT	
Award Winner	Company	Award Winner	Company
Vishwanath Parikh	Shreevastu Systems	Chandrayan Dholakiya	Mobile Refrigerators
Satish Parmar	Energy Mission Engineers	Maganbhai Patel	Capitan Tractors
Maganbhai Patel	Capitan Tractors	Bhagvat Patel	Techno Industries
Harish Patel	Vasu Healthcare	Bhagvat Patel	Siddhi Engineers
Bhagvat Patel	Techno Industries	Harish Patel	Vasu Healthcare
Dinesh Daga	Shree Hans Alloys	QUALITY PRODUCTS	
Chandubhai Kothiyar	Ganesh Chemicals	Award Winner	Company
Bhagvat Patel	Siddhi Engineers	Ramesh Kulkarniya	Capitan Polypast
Nilesh Shah	Swan Sweets		

15 State-Based MSMEs Receive Awards From Centre For Innovation, Quality

Himanshu Dahiya
Awards

SMART is sometimes big. It is not for Kala-based 80-odd small and medium enterprises for an outstanding entrepreneur award in New Delhi on Aug 26, 2009.

Siddhi Engineers manufactures aluminium pipes for aircraft industries and supplies them to Indian Space Research Organisation (ISRO) and Space Applications Satellite Centre, Ahmedabad. These pipes were originally imported from France. Now with Siddhi Engineers supplying these pipes, we are able to bring in savings on goods, but also the cost of the pipes is 20%.

Appreciating the contribution in 8th prime minister Manmohan Singh presented a award to Bhagavat Patel, chairman of the company, in New Delhi.

"We are honoured to be a part of this event, led by



સિદ્ધી ગ્રુપની સમૃદ્ધિ એન્જીનીયરીંગને માઈક્રો એન્ટરપ્રાઈઝ એવોર્ડ મળ્યો

સિદ્ધી ગ્રુપની સમૃદ્ધિ એન્જીનીયરીંગને માઈક્રો એન્ટરપ્રાઈઝ એવોર્ડ મળ્યો. આ એવોર્ડને આપવામાં આવેલા એવોર્ડીયાર્થી સિદ્ધી ગ્રુપની સમૃદ્ધિ એન્જીનીયરીંગને માઈક્રો એન્ટરપ્રાઈઝ એવોર્ડ મળ્યો. આ એવોર્ડને આપવામાં આવેલા એવોર્ડીયાર્થી સિદ્ધી ગ્રુપની સમૃદ્ધિ એન્જીનીયરીંગને માઈક્રો એન્ટરપ્રાઈઝ એવોર્ડ મળ્યો.

J. S. GROUP

EPC INDIA

ENGINEERING THE FUTURE

TIMES OF INDIA - AHMEDABAD
DTD 5/9/2009
PAGE NO 5

Sky's the limit to their aspirations

Nayan Dave | TNN



Prashant Gandhi (left) and Bhagavat Patel

Ahmedabad: During their college days in early 80s, these two roommates dreamt of reaching for the sky. Three decades on, the mechanical engineers have done it, literally. Siddhi Engineers, a firm promoted by Bhagavat Patel (50) and Prashant Gandhi (50) recently bagged an award from Union Ministry of Micro, Small & Medium Enterprises for designing high-precision tubes for Indian Space Research Organisation (ISRO). The space organisation will use these tubes to establish contact with GSAT-12, which is likely to be launched in 2010.

After passing out from Birla Vishwakarma Mahavidyalaya in Vallabh Vidyanagar, both Patel and Gandhi worked for seven years in different companies. "It was our dream that brought us together again in 1988. We thought of doing something on our own and launched a partnership firm with an initial invest-

firm supplied fuel supply line to ISRO for GSLV F01 satellite. There has been no looking back since then. Today, the Rs 10-crore firm employs over 150 persons.

"Scientists from Space Application Centre (SAC) wanted us to design a hollow aluminium rectangular tube, which is extremely lightweight and sturdy at the same time. Even a variation of 10 microns was not allowed. We took it as a challenge and succeeded," said Gandhi, talking about the award-winning product, which is used to manufacture 'Wave Guide', a crucial component for space-earth linkage. Siddhi Engineers managed to nudge out a large multinational giant to bag the project from ISRO.

ધસરોના ઉપગ્રહમાં ગુજરાતની લઘુ ઉદ્યોગ ક્ષેત્રની કંપનીનું મોટું યોગદાન

ગુજરાતના 15 એકમને આર એન્ડ ડી એમએસએમઇ મેજનાલ એવોર્ડ

સિદ્ધી ગ્રુપની સમૃદ્ધિ એન્જીનીયરીંગને માઈક્રો એન્ટરપ્રાઈઝ એવોર્ડ મળ્યો.

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ENGINEERING THE FUTURE



SIDDHI GROUP

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