

Next Generation Hydraulic Clamping Technology to rule the manufacturing Industry

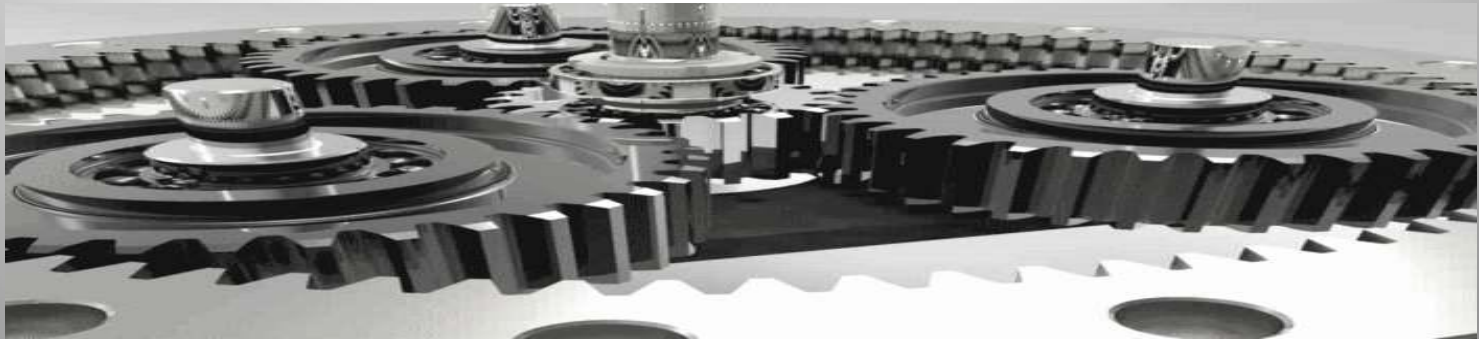


Technology Transfer

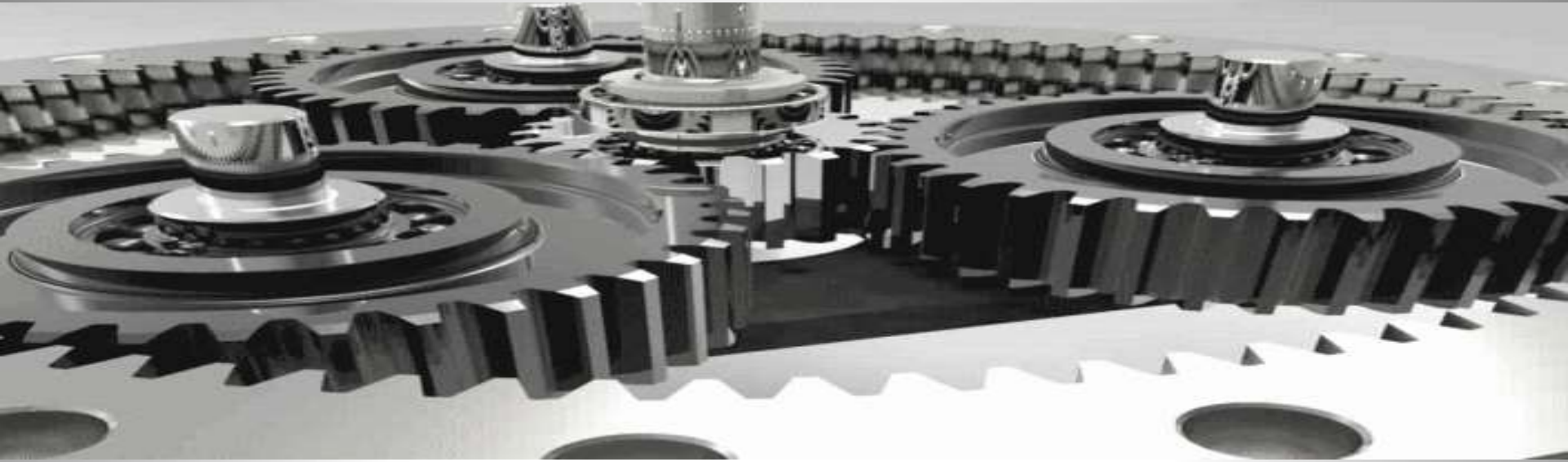
Kaizen.tools@gmail.com **+91 9008133001**

contact@emergeindiafoundation.com

www.emergeindiafoundation.com



Innovative Next Generation Clamping system – Technological Marvel now in India also



**No Matter – What state of art CNC M/C's & CMM you have –
it matters nothing in the absence of our Invented advanced
technology Hydraulic tool /component / Work holding
devices**

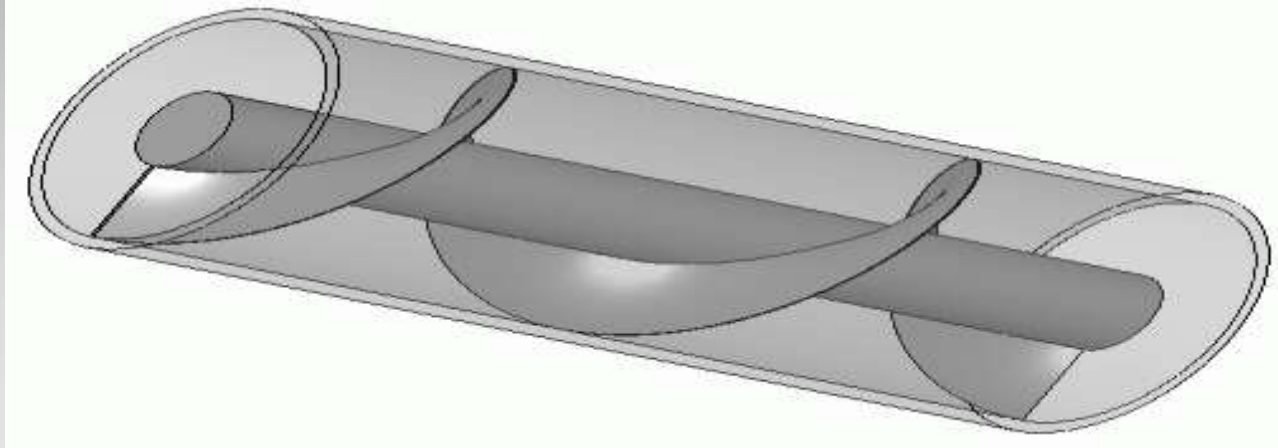


4 th Industrial Revolution



- ❖ Long life cycle of this technology – at-least for a century
- ❖ Mechanical Clamping devices & systems became out dated & replaced by Innovative Hydraulic devices
- ❖ No moving parts - No wear & Tear - Long life
- ❖ Low-cost Automation , Nil Manpower & Poka – Yoke

Current challenges – Indian Manufacturing Industries – Your Opportunity



- ❖ **BHARAT - VI Emission Compliance**
- ❖ **Global Quality Competitiveness**
- ❖ **6 Six sigma – Cp & Cpk Pressure**
- ❖ **R & R as a Night-mare**
- ❖ **Aero space & Defense Quality compliance**
- ❖ **Operational Efficiency – Cost competitiveness**
- ❖ **Market share**

Over view of Inventions & Technology transfers



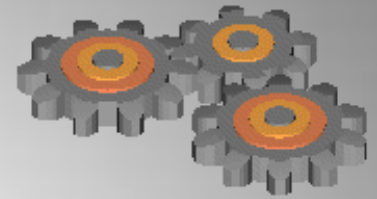
- ❖ **Promoter Back ground**
- ❖ **Products – Specialty Hydraulic Devices**
(Hydraulic Expansion mandrels ,Chucks, work holding devices, Hydraulic tool holders & Collet holders)
- ❖ **Services – Lean & six sigma consultancy – Quality management**
- ❖ **Inventions ,Patents & copy rights**

Current challenges – Indian Manufacturing Industries – Your Opportunity



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Own Inventions & Technology



- ❖ Chemical technology of Hydraulic medium . The wonder substance – which is a open challenger
- ❖ Hydraulic devices manufacturing processes, Metallurgy & Treatment .
- ❖ Speciality rare alloy – Expands & Springs back like rubber – with Micron accuracy & Hardness
- ❖ Managing Torque Vs Clamping Pressure
- ❖ Miniature Hydraulic Power packs
- ❖ Pascal's law of Hydraulics
- ❖ Modulus of Elasticity
- ❖ Impossible for Copy cats



Invented own Hydraulic devices of Kaizen Tools Corporation



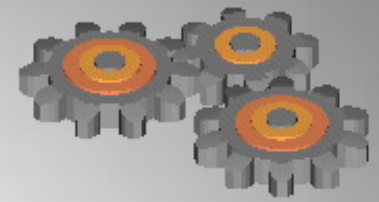
Unlimited ranges of Invented Hydraulic Devices

Hydraulic Expansion Mandrels , Hydraulic Chucks, Hydraulic Work holding devices and CNC Tool Holders





The Jelly



- ❖ Hydraulic devices as described
- ❖ Replace Hydraulic Oils & Over come disadvantages
- ❖ Innovation in Hoists, Lifts & Shock - absorbers and unlimited present Hydraulic applications
- ❖ Earth movers & Heavy vehicles Hydraulic systems
- ❖ Off-set Printing machine rollers & Rubber stamps
- ❖ Hydraulic Fixtures
- ❖ Defense – Aero space – Launch Vehicles

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Unlimited ranges of Invented Hydraulic devices

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Inventor back ground – A snap shot

Inventor Ramesh, a mechanical engineer having 35 yrs of sound technical back ground in all fields of High precision engineering manufacturing, specially in Automotive and Aerospace components .

- Promoter of Kaizen Tools Corporation
- Lean & Six Sigma Black belt
- Appreciated by beloved Dr.Late Dr. APJ. Abdul kalam for new Inventions
- Rendered services senior management positions
At several MNCs



Applications Invented of Hydraulic devices

With reference to machines : Design & manufacture of Complete ranges of Hydraulic devices for all types of CNC machines & conventional machines.

With reference to usage : Design & manufacture of Complete ranges of Hydraulic devices for all types of usages like CNC turning, CNC milling, CNC & conventional grinding and Inspection purposes .

Hydraulic Expansion Mandrels & chucks
Hydraulic gears PCD clamping devices
Hydraulic Inspection Fixtures & rotary assemblies
Hydraulic Profile clamping Systems
Hydraulic Mutli components clamping systems
Hydraulic Tool – holders
Hydraulic nuts .



Significance of Invented Hydraulic Devices

Customer complaints resolving – SLA rates up

New product / new Process Development

Cutting tool life improvement

Superior surface finish – no tool vibration

Negligible / less set up time

R & D – Innovations in manufacturing

Mass Production with repeatability

Design, Methods & Re Engineering

QA & QC

Micron accuracy requirement specifications in mass production

Resolving Process capability & Performance issues

Resolving R & R issues

Minimise or Eliminate CMM over occupancy

Low cost - Line Inspection in par with standards room

Versatility by low /semi skilled man power

Poka – Yoke (Mistake Proof)

Greater EBITDA – Challenge

Turn around Time

Value addition & Through put



Hydraulic clamping - Revolution in Clamping System ?

- Zero Defect Manufacturing
- Multiple components in a single set up
- Cp & CPk up
- Cycle time Improvements
- Cost reductions & ROI
- 6 Sigma level of Quality
- Technology Protected
- Less or No wear parts – Zero error – Zero variations
- Extra Long life
- Rs 6000/Cr Indian Market
- No Competition – Blue Ocean strategy
- Impossible for Copy cats & Reverse engineering
- Unlimited Varieties – Ranges
- Applicable in all Precision manufacturing
- Both Attribute types & Direct measurements



Various types of Hydraulic Devices as Example

Hydraulic Devices – Ex. CNC Hydraulic (Hydrogrip) Tool holders – Collet holders -

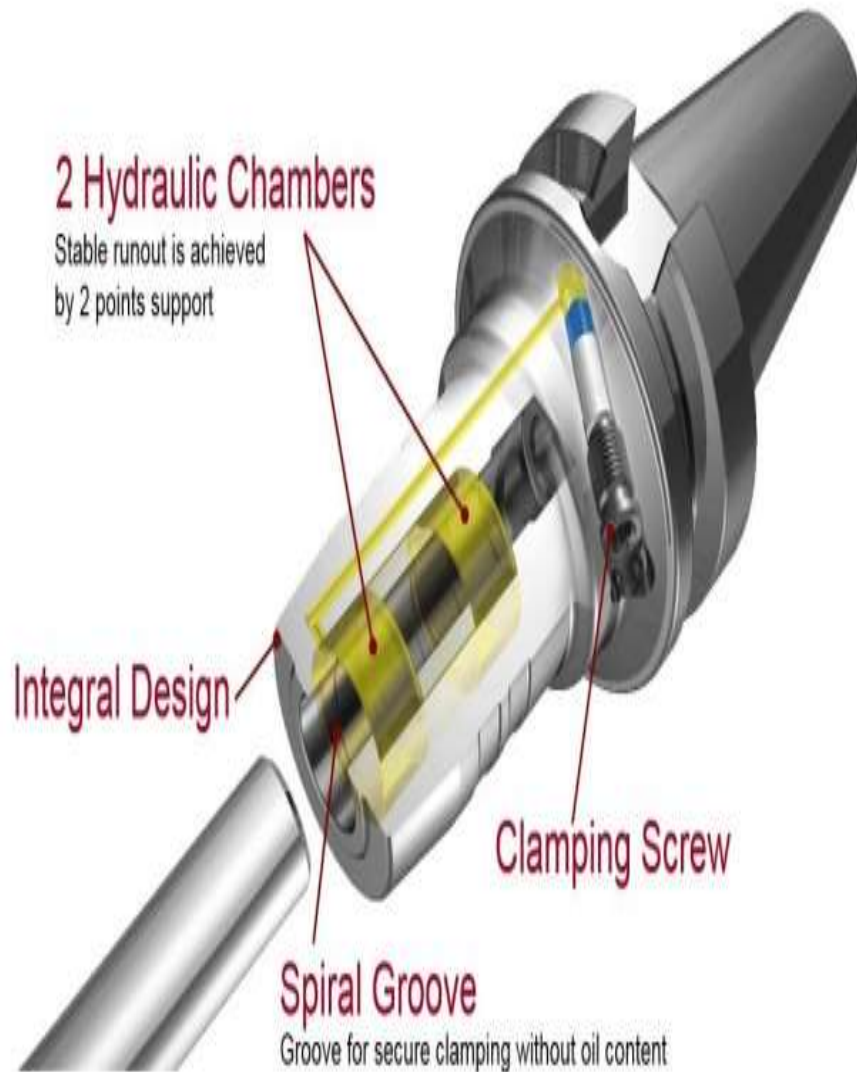


Hydraulic Devices – Hydraulic Expansion Mandrels and Hydraulic Chucks



Hydraulic Devices – Hydraulic (Hydrogrip) Tool-holder

Hydraulic Chuck Construction



**Going to Replace below fast moving , High volume
Conventional consumables as Hydraulic clamping
system Incorporated**

Shell Mill Holders



ER collet Holders



Side Lock holders



Face Mill Arbors



Kaizen tools corporation – Inventions

– Patents applied at various stages

PATENT OFFICE
INTELLECTUAL PROPERTY BUILDING
G.S.T. Road, Guindy, Chennai-600032
Tel No. (091)(044) 22502061-84 Fax No. 044 22502066
E-mail : Chennai-patent@ipc.in
Web Site : www.ipindia.gov.in



CHALLAN : TR-5
DOCKET NO:8106

Date/Time : 06/02/2018

To,
RAMESH BABU. R

Agent Number:

NO. 13, SATHYANARAYANA TEMPLE STREET, 1 ST FLOOR PRECISION FOTO TYPE SERVICES, NEAR
GUPTA LAYOUT, HALA SURU, BANGALORE - 560008 KARNATAKA INDIA. kaizen.tools@gmail.com

Sr. No.	CBR No.	Reference Number /Application Type	Application Number	Title/Remarks	Amount Paid
1	3316	ORDINARY APPLICATION	201841004410	MULTI FUNCTIONS MULTI PRODUCTS ID OR OD HYDRAULIC DEVICE	1750
2		E-101/2804/2018-CHE	201841004410	Correspondence	0
3		E-101/2804/2018-CHE	201841004410	Correspondence	0



PATENT OFFICE
INTELLECTUAL PROPERTY BUILDING
G.S.T. Road, Guindy, Chennai-600032
Tel No. (091)(044) 22502061-84 Fax No. 044 22502066
E-mail : Chennai-patent@ipc.in
Web Site : www.ipindia.gov.in

Docket No 4243

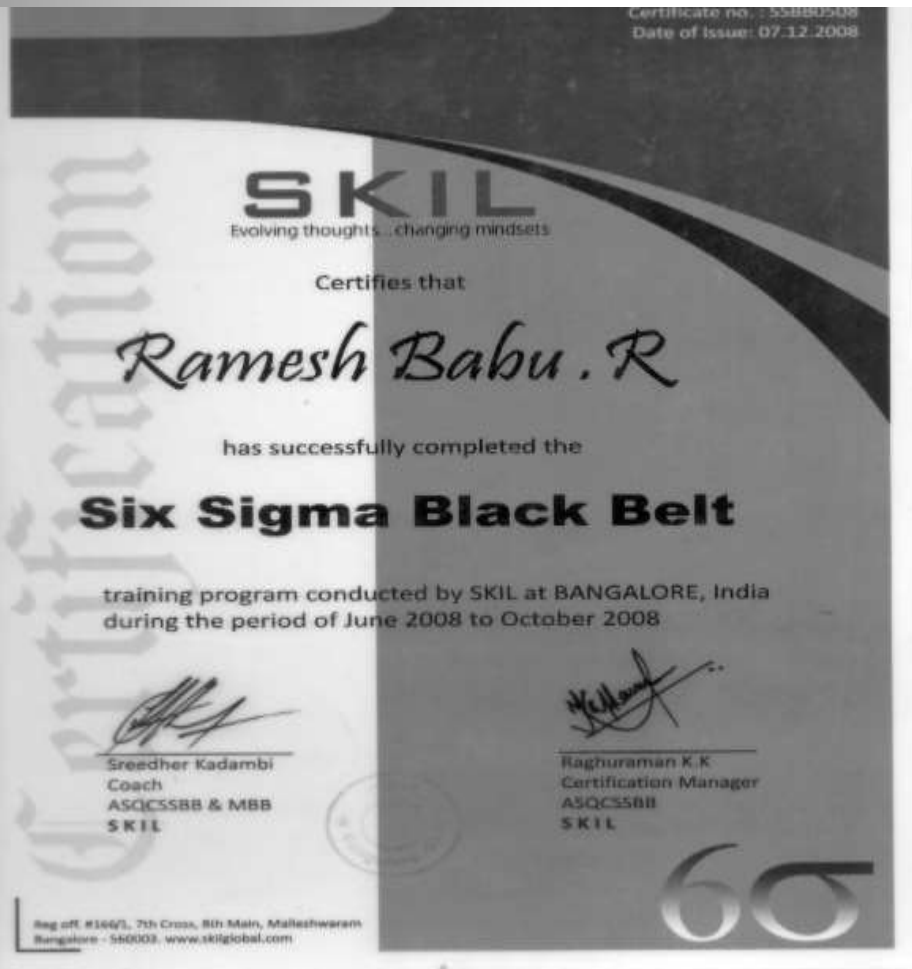
RAMESH BABU.R no:13,sathyanarayana temple street,1st floor precision
fotype services,near gupta layout,Ulloor,Bangalore-560008.

Sr. No.	Ref. No./Application No.	App. Number	Amount Paid	C.I.R. No.	Fee Payment	Remarks



Date/Time 18/02/2014

Hydraulic Devices applicable for Speciality Applications – Innovations – Complex problem solving – R & D Parts Manufacturing Environments as example



Hydraulic devices – Speciality Inspection fixtures

Hydraulic Devices as Inspection solution for Precision machined Pressure die casting parts – Following slides

Advantages

Reveals True geometry by centralising the reference points to various measurement entities / Dimensions

Eliminates need, dependency / over utilisation of CMM

Line Inspection at standards room quality

Poka – Yoke



Examples of few Auto Components

Crank cases and End covers

Cylinder heads , Mountings, Housings, Body , End covers

Starter motors / Alternators / Magneto Body & end covers

Clutch housings, covers and casings

Gear box & Transmission housings and end covers

Fuel pump & Vacuum pump body and end covers

Carburetor housings, casings and end covers

Water pump & Oil pump housings and end covers

Hydraulic devices – Engineering marvel – Eliminates CMM – Sky is the limit



Hydraulic devices Market Analysis

– Ball park

Minimum market potential

sno	Market analysis	Rs in crores
1	Present Indian market 2018	6,000
2	Annual growth of 20%	1,500
3	Proposed Indian market by 2022	12,000
4	Present global market 2018	50,000
5	Annual growth of 20%	10,000
6	Proposed Global market by 2022	90,000

Hydraulic devices ROI - Ball park

Financial projection - Ball park - ROI - 2 years - EBITDA - 40% - 3 types of Investment Projections

sno	Investments Vs returns	Rs 1/- Cr invest	Rs 10/- Cr invest	Rs 30/- Cr invest
1	Plant & Machinery Inhouse -capacity	1	10	30
2	6 months time to - set up of plant & machineries			
3	1st year - Pilot / sample production			
4	2nd year onwards - commercial production - turn over	3	30	90
5	Opportunity India - out sourcing model lean concept	6000		
6	Opportunity Global - out sourcing model lean concept	50000		
7	Utilised Indian market (Rs 6000/ Cr)	0.05%	0.50%	1.50%
8	Utilised global market (Rs 50,000 CR)	0.006	0.06%	0.18%
9	EBITDA 40 % 2nd year	1.2	12	36

With minimum capital invested , you may wish to adopt out sourcing concept by retaining only finishing & assembly with in In-house whereas rest of all others operations out sourced

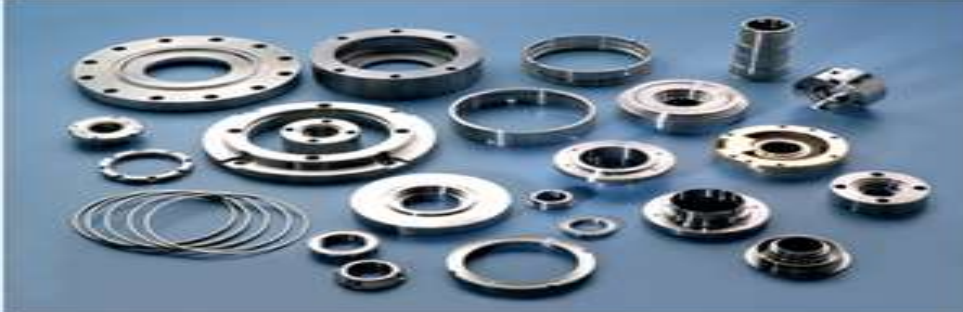
Various technology transfer Opportunities

(Design , Manufacturing processes , trade secrets , Technology and confidential Informations – To Choose from)

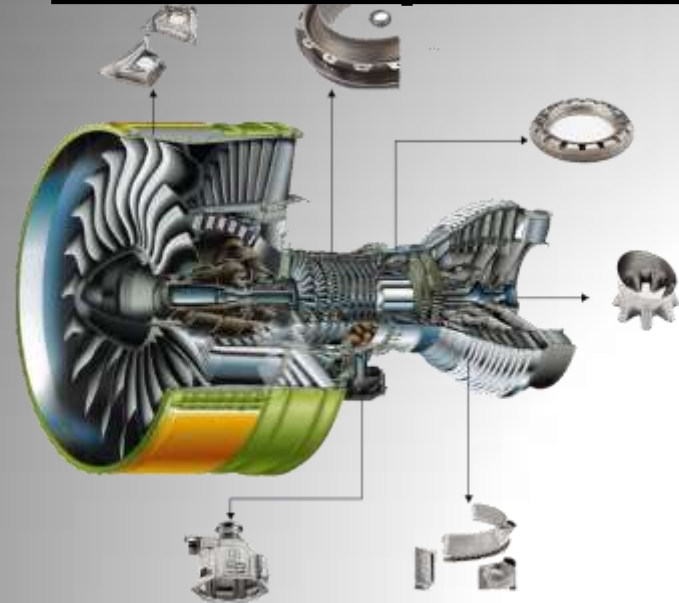
Package type	Hydraulic work & Tool holding devices like
A to J	Jelly type Hydraulic expansion mandrels , Hydraulic chucks , Hydraulic tool-holders (Hydrogrip tool-holders both Oil type & Jelly type) and the Jelly
A	Jelly type Hydraulic expansion mandrels , Hydraulic chucks , Hydraulic tool-holders and the Jelly
B	Jelly type Hydraulic expansion mandrels & Hydraulic chucks + Oil type Hydraulic tool-holders and the Jelly
C	Jelly type Hydraulic expansion mandrels and Hydraulic chucks and the Jelly
D	Jelly type Hydraulic expansion mandrels and Hydraulic chucks
E	Both Jelly & Oil type Hydraulic tool-holders (Hydrogrip tool-holders) and the Jelly
F	Jelly type Hydraulic tool-holders (Hydrogrip tool-holders) and the Jelly
G	Both Jelly & Oil type Hydraulic tool-holders (Hydrogrip tool-holders)
H	Jelly type Hydraulic tool-holders (Hydrogrip tool-holders)
I	Oil type Hydraulic tool-holders (Hydrogrip tool-holders)
J	The Jelly

**Hydraulic Devices applicable for Various
Components (Parts) Manufacturing
Environments as example**

Parts manufacturing for various segments



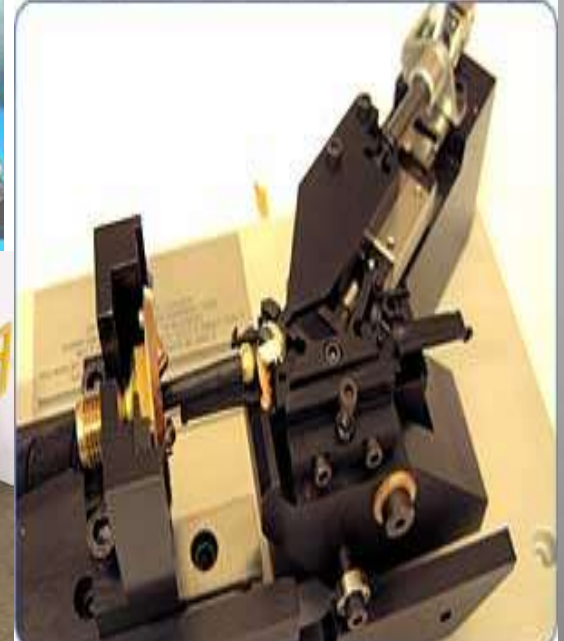
For Aerospace & Defense Components Sector



For High Precision Ground Auto Components



Hydraulic Jigs & Fixtures + welding & Inspection fixtures



Hydraulic Devices applicable for Various Types of Manufacturing Plant applications as example

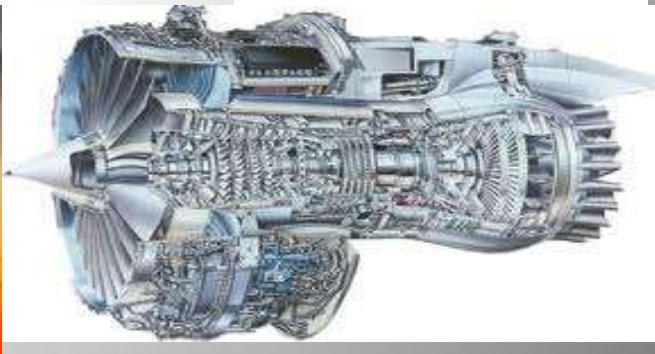


**Hydraulic Devices applicable for Various
wide spread – Diversified Business
(Manufacturing) Segments among 36 Major
business segments as example**

Application of Hydraulic Devices with ref to Industry

Auto OEMs	Railways & Metro Rails Mfg
Starters & Motors	R & D centres
Refrigeration & AC	Power plant
Compressors Mfg	Textile machinery Mfg
Air craft Industry	Off set printing press Mfg
Defense	Gen sets
CNC machine tools	All Pumps Mfg
Analog Machine tools	Photo copying M/Cs Mfg
SPMS	Inspection Fixtures Mfg
Gauges & QA	Commercial Tool - rooms
Cutting Tooling Mfg	FMCG
Computer hardwares	Tractors Mfg
Home appliances	Agro & Farm Equipts Mfg
Automation	Instruments Mfg
Auto Tiers 1 & 2	Satellite & Launch vehicles Mfg
Robotics Mfg	Name any Mfg environment

Presence in Multiple Diverse Business Segments



Presence in Multiple Diverse Business Segments



Holy Grail

–

Khamadhenu



Thanks for investing your valuable time

feel free to contact us :+91 9008133001

www.emergeindiafoundation.com

Kaizen.tools@gmail.com

contact@emergeindiafoundation.com

Scope 1 : Technology Transfers

Scope 2 : Technology Transfers + Setting up the business & demonstrating results