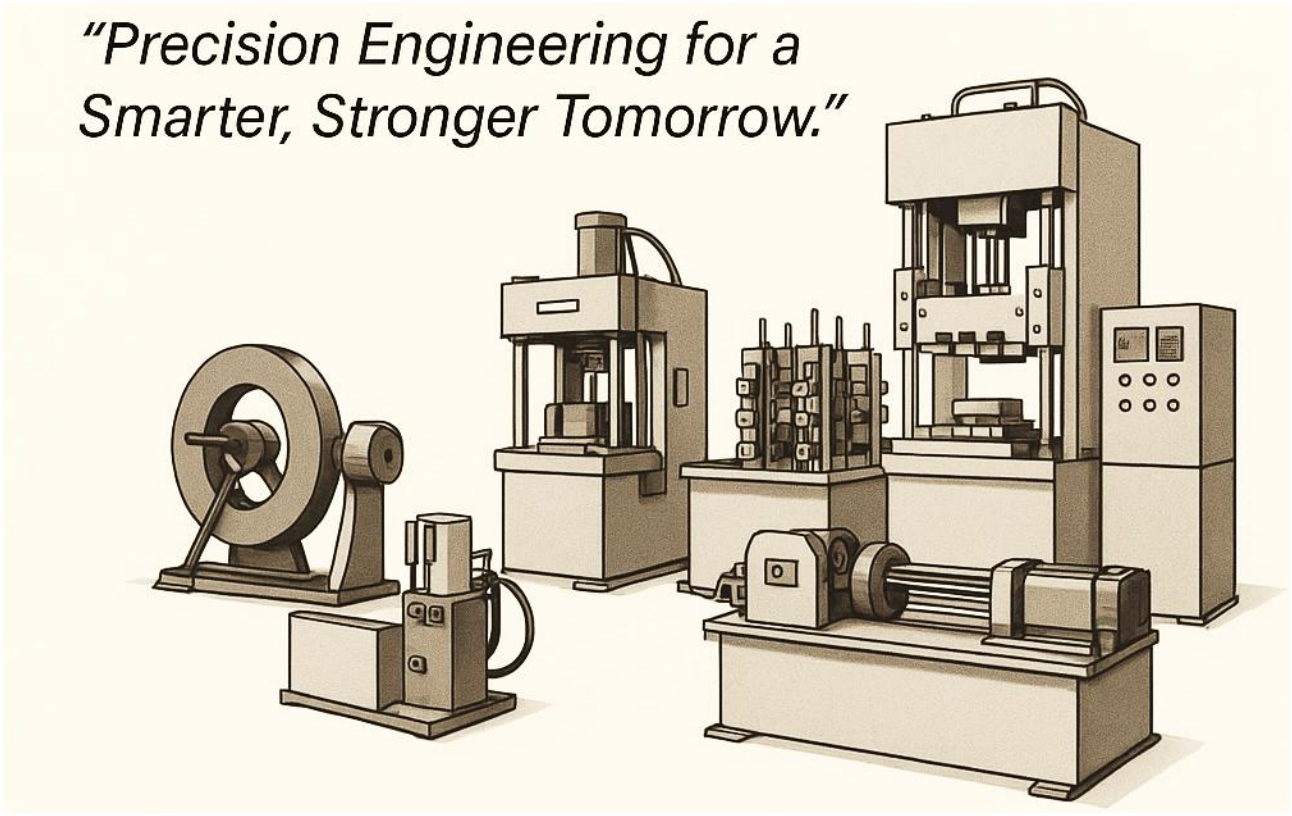
VV TOOLS

"Precision Engineering for a Smarter, Stronger Tomorrow."



PRODUCT CATALOG

Company Profile

VV Tools is an established venture in the field of mechanical engineering doing business in the arc of SPM manufacturing having a key focus on timely delivery with high-precision work.

- The firm came into existence a decade ago with a vision to serve the industry with a cost-effective and time-bound manner under the leadership of Mr. Krishan Kumar whose vast experience in the field of mechanical engineering is a bonus to the organization. He is having a rich experience of more than 30 years in flexible Hose industry.
- Since 2013 The company has become known for its robust machines that can withstand harsh environments and perform well under pressure.
- The products manufactured by the company are highly durable and easy to use. Since its inception, the company has been following strict quality control measures as per international standards to manufacture its range of machines.
- With the sole aim of providing quality products at competitive prices, the company is quickly gaining ground in the highly demanding markets.

Leadership Message

"For over three decades, I have witnessed the evolution of the flexible hose and engineering industry. At VV Tools, we founded this organization with a singular belief: that Indian engineering can compete with the best in the world.

Our goal is not just to sell you a machine but to provide a production advantage. Whether it is a complex Hydroforming Corrugator or a robust Hydraulic Press, every piece of equipment we build carries my personal commitment to durability, precision, and performance. We look forward to being a partner in your growth."

— Mr. Krishan Kumar *(Founder)*

Our Vision

"To be the premier provider of innovative engineering solutions, setting the benchmark for excellence in flexible hose technology, precision machining, and SPM manufacturing. We strive to push the boundaries of innovation, fostering long-term partnerships and empowering industries worldwide to thrive in an ever-evolving landscape.

Our Quality Policy

We are strictly committed to offering optimum quality products and services.

- **Standards:** All products conform to globally acceptable quality standards with strict quality norms and regular tests at every level of production.

- **Infrastructure:** Our state-of-the-art facility is equipped with sophisticated technology to supply innovative products.
- **Support:** To ensure productivity, we offer **Preventive Maintenance Contracts (AMC)** and calibration services for various instruments

Industries We Serve

VV Tools delivers specialized engineering solutions across a diverse spectrum of high-demand sectors. Our machines are operating successfully in:

- **Automotive & Transportation:** Exhaust systems, EGR tubes, chassis components, and fluid transfer lines.
- **HVAC & Refrigeration:** Expansion joints, heat exchanger tubing, and flexible connectors.
- **Industrial Piping:** High-pressure metal hoses, bellows, and pipeline damping systems.
- **Aerospace & Defence:** Precision tubing, high-temperature alloy forming, and critical structural components.
- **General Engineering:** Hydraulic power systems, deep draw components, and structural fabrication.

Manufacturing Infrastructure

Located in Faridabad, our manufacturing facility is designed for end-to-end production control. We house a complete range of machinery to ensure every SPM that leaves our floor meets global standards.

- **Precision Machining:** Equipped with VMC, CNC Turning Centers, and Grinding machines for micron-level accuracy.
- **Fabrication Shop:** Heavy-duty welding and fabrication setups for robust machine base construction.
- **Assembly & Testing:** Dedicated bays for machine assembly, hydraulic testing, and electrical panel integration.
- **Design Lab:** In-house CAD/CAM design team utilizing the latest software for 3D modeling and simulation.

Our Product Range

1. Tube & Pipe Mill Solutions

- SS Tube Mill
- High-Precision Tube Mill for Low Thickness Sheets (up to 0.8mm)

2. Metal Bellow & Hose Forming (Hydroforming)

- Hydroforming Hose Forming Machine
- Hydroformed Bellow Forming Machine
- Hydroformed EGR Forming Machine
- Interlock Hose Forming Machine

3. Mechanical Bellow Manufacturing

- Mechanical Bellow Forming Machine
- Auto/Manual Punch Former
- Bellow Trimming / Tangent Cutting Machine
- Bellow Rerolling SPM
- Bellow Compressing SPM
- Bellow Expanding & Crimping Machines

4. Pipe Bending & Forming Solutions

- 3-Roller Pipe Bending SPM
- Single Axis & Three Axis Pipe Bending Machines
- Pipe Flaring, Expanding & Reducing SPMs
- Pipe Cutting SPM & Bar Bending Machine

5. Welding Automation & Fixtures

- Longitudinal Seam Welding Machine (SPM)
- Longitudinal Seam Welding Fixtures
- Rotary Welding Fixtures (TIG / MIG)
- Shell Welding Fixtures

6. Hydraulic Presses & Power

- Hydraulic Power Presses (10T - 100T)
- Hydraulic Power Packs (Custom Configurations)

7. Material Handling & Coil Processing

- Industrial Decoilers (Manual & Motorized)
- Coil Take-Up and Pay-Off Systems
- Strip Rolling & Sheet Rolling SPMs (Manual/Motorized)
- Sheet Straightening SPM (Manual/Motorised)

8. Testing & Quality Control

- Spring Fatigue Testing Machine
- Metallic Hose Testing (U-Bend, Radius, Cycle Life)
- Erichsen Cupping Testing Machine
- Bellow Cycle Life Testing Machine

9. Services

- **Tool Room:** Gauges, Fixtures, and Precision Tooling
- **Maintenance:** Machine Retrofitting, Breakdown Support, and AMCs

Table of Contents

Stainless Steel Tube Mill

Product Description

The Stainless-Steel Tube Mill is a precision-engineered machine designed for manufacturing thin-walled stainless steel tubes with high accuracy and superior surface finish. Ideal for industrial, automotive, and engineering applications, this tube mill handles a wide range of diameters and wall thicknesses with advanced automation and seamless TIG welding integration. The system supports both automatic and manual longitudinal seam welding for flexibility across production scales.

Key Features

- Designed for stainless steel grades including 304, 316L, and 321
- TIG welding system for clean, consistent longitudinal seam welding
- Supports automatic and manual operations
- High-precision forming and welding for thin-wall tubes
- Available in three models for different diameter ranges
- Rugged construction with user-friendly interface
- Suitable for low to medium production volumes
- Modular design for easy maintenance and upgrade

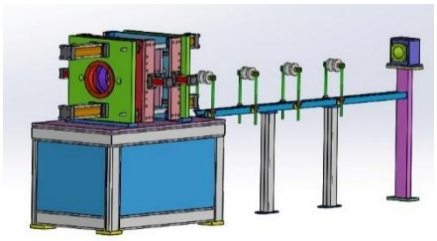
Technical Specifications

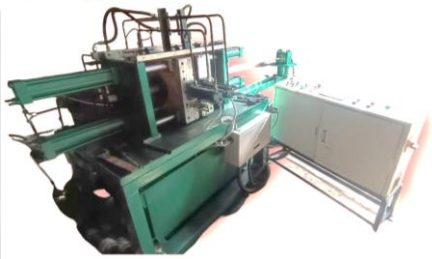
Parameter	Specification
Tube/Strip Material	SS 304, 316L, or 321
Welding Type	TIG Longitudinal Seam Welding (Auto/Manual)
Diameter Range	12–50mm, 50–150mm, 200–300mm
Wall Thickness Range	0.2–0.5mm (12–50mm dia), 0.3–0.8mm (200–300mm dia)
Weld Length	As Per Requirement
Power Source	3-Phase Industrial Supply
Operation Mode	Semi-Automatic / Manual
Tube Length	Customizable as per application

Applications of SS Tube Mill

- Automotive exhaust components
- Heat exchanger tubing
- Decorative architectural tubes
- Instrumentation tubing
- Food and pharmaceutical process tubing
- Precision mechanical and structural tubing
- Agricultural and dairy pipelines, Emission control and EGR systems

Hydroforming Corrugator Machine





Product Description

The Stainless Steel Corrugator Machine is a precision-engineered solution designed for forming single-pitch corrugations in stainless steel hoses, expansion bellows, and EGR tubes. Built to handle a wide range of diameters and metal grades, this semi-automatic machine ensures consistent pitch and depth with superior control. Ideal for automotive, industrial, and high-temperature fluid transfer applications, it offers robust performance across three machine sizes to accommodate diameters from 12mm to 300mm.

Key Features

- Compatible with stainless steel grades SS304, SS202, SS316, SS321, and Inconel
- Single-pitch forming for uniform and repeatable corrugations
- Semi-automatic operation with intuitive controls
- Three model variants for 12–35mm, 40–100mm, and 150–300mm diameter ranges
- Precision tooling for consistent corrugation geometry
- Heavy-duty construction for long service life
- Easy changeover between tooling sets
- Ideal for making SS hoses, bellows, and EGR tubes

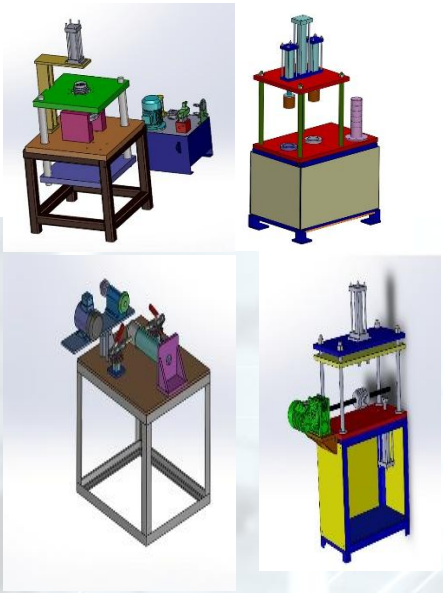
Technical Specifications

Parameter	Specification
Material Compatibility	SS304, SS202, SS316, SS321, Inconel 600 Series and 800 Series, Hastelloy
Forming Type	Single-Pitch Corrugation Forming
Diameter Ranges	12–35mm, 40–100mm, 125–250mm
Operation Mode	Semi-Automatic
Pitch Control	Sensor Based Adjustment
Drive System	Hydraullic Based
Power Source	3-Phase Industrial Power Supply 440V
Output Capacity	Depends on model and material specifications

Applications

- Flexible metal hoses for fluid and gas transfer
- Automotive exhaust bellows and EGR tubes
- Expansion joints for piping systems
- Industrial vibration dampening solutions
- High-pressure and high-temperature conduit systems

Automotive Exhaust Bellow Connector Assembly Cell



Product Description

The Automotive Bellow Manufacturing Cell is an integrated production setup engineered to manufacture high-performance automotive bellows used in exhaust systems, EGR assemblies, and flexible connectors. This semi-automated cell combines precision trimming, expanding, crimping, and quality assurance processes to ensure durability, leak-tightness, and long cycle life. Each machine in the cell is designed for reliability and repeatability, making it ideal for high-volume, quality-driven manufacturing environments.

Key Features

- End-to-end solution for automotive bellow production
- Integrated machines for trimming, expanding, crimping, cutting, and rolling
- Compatible with stainless steel and high-temperature alloys
- Semi-automatic operation with high production efficiency
- Precision-controlled processes for consistent bellow geometry
- Dedicated testing and marking system for quality traceability
- Cycle life testing system for product validation and R&D
- Modular design for easy maintenance and scalability

Technical Specifications

Parameter	Specification
Material Compatibility	SS304, SS321, SS316, Inconel, Other Alloys
Diameter Range	40mm to 150mm (customizable)
Operation Mode	Semi-Automatic
Process Capability	Trimming, Expanding, Crimping, Cutting, Rolling, Testing
Power Supply	3-Phase Industrial Power
Output Capacity	150–300 bellows/day (depending on model setup)
Control System	Relay/PLC-based (varies by machine)

Applications

- Automotive exhaust flexible connectors
- Engine EGR system bellows
- Expansion joints in vehicle exhausts
- Vibration and thermal expansion compensation components
- High-durability flexible elements for commercial and passenger vehicles.

Metallic Expansion Bellows Manufacturing Machine Cell

Mechanical Expansion Bellow Forming Plant Machine

Expansion Joint Manufacturing Machine Cell is a modular production cell designed to fabricate high-precision metallic expansion joints used in industrial piping, HVAC, and exhaust systems. This setup integrates welding, forming, trimming, and rerolling processes to deliver robust, leak-proof, and dimensionally accurate expansion joints. Designed for stainless steel and high-performance alloys, the system supports both automatic and manual operations, making it ideal for custom or batch production.

Key Features

- Complete in-house solution for metallic expansion joint manufacturing
- Supports forming, trimming, seam welding, and rerolling operations
- Compatible with SS304, SS316, SS321, and Inconel materials
- Longitudinal seam welding system for high-integrity joints
- Manual and auto punch forming for flexible production needs
- High dimensional accuracy and repeatability
- Rugged design for industrial-scale production
- Ideal for low- to medium-volume manufacturing with customization

Technical Specifications

Parameter	Specification
Material Compatibility	SS304, SS316, SS321, Inconel
Diameter Range	100mm to 600mm
Wall Thickness Range	0.30mm to 1.0mm
Welding Type	TIG Longitudinal Seam Welding
Operation Mode	Semi-Automatic / Manual
Forming Type	Mechanical Punch Forming (Auto/Manual)
Power Supply	3-Phase Industrial Power
Output Capacity	50–100 units/day (depending on configuration)

Applications of the Expansion Joint Manufacturing Machine

- Industrial and HVAC pipeline expansion joints
- Exhaust system compensators
- Thermal expansion absorbers for high-temperature lines
- Vibration isolation bellows in process plants
- Flexible joints for fluid and gas piping systems

Interlock Hose Forming Machine

Machine Description

The Interlock Hose Forming Machine is a precision-engineered system designed for manufacturing stainless steel metallic interlock hoses. These hoses are widely used in high-temperature, high-pressure, and dynamic motion applications such as automotive exhausts, industrial piping, and protective cable sheaths. The machine forms tightly wound interlocking profiles from stainless steel strips, ensuring consistent pitch, strength, and flexibility. Built for durability and reliability, this machine delivers high-quality interlock hoses with smooth internal surfaces and excellent mechanical performance.

Features

- Specially designed for forming SS metallic interlock hoses
- Compatible with stainless steel grades SS304, SS316, SS321, and SS202
- High-precision forming rollers for consistent interlock geometry
- Adjustable forming parameters for different strip widths and profiles
- Smooth feeding and winding system for continuous production
- Rugged frame and long-life components for industrial environments
- Ideal for manufacturing flexible conduit, exhaust interlocks, and protective hose sheaths
- Semi-automatic operation with easy control interface

Technical Details

Parameter	Specification
Material Compatibility	SS304, SS316, SS321, SS202
Strip Width Range	Customizable (commonly 20–60mm)
Strip Thickness	0.2mm to 0.5mm
Hose Diameter Range	10mm to 100mm (customizable)
Forming Type	Mechanical Interlock Profile Forming
Operation Mode	Semi-Automatic
Production Speed	Up to 1.5 meters/min (depending on material)
Power Supply	3-Phase Industrial Supply
Control System	Manual/Relay or PLC-Based (as per model)

Applications

- Automotive exhaust interlock hoses
- Protective sheaths for high-temperature cables
- Vibration-absorbing flexible metallic hoses
- Industrial steam and gas conduit
- Machine tool cable guards and robotic arm covers

Pipe Flaring/Reducing SPM

Machine Description

The Hydraulic Pipe Flaring and Reducing Machine is a versatile and robust solution designed for shaping pipe ends through precision flaring and diameter reduction. Engineered for stainless steel and other metal pipes, this semi-automatic machine uses hydraulic force to achieve accurate and repeatable results without compromising material integrity. Widely used in automotive, HVAC, hydraulic systems, and industrial piping applications, the machine supports both inward and outward flaring, as well as end reductions to custom specifications.

Features

- Dual functionality: flaring and reducing in one machine
- Suitable for stainless steel, carbon steel, copper, and alloy pipes
- Precision hydraulic cylinders ensure uniform shaping
- Available with interchangeable tooling for different pipe sizes
- Heavy-duty construction for high-volume industrial use
- Semi-automatic operation for easy handling and consistent output
- User-friendly controls for adjusting stroke and pressure
- Ideal for exhaust connectors, brake lines, tube fittings, and hydraulic pipe ends

Technical Details

Parameter	Specification
Material Compatibility	SS304, SS316, SS202, Copper, Mild Steel
Pipe Diameter Range	12mm to 60mm (customizable up to 100mm)
Flaring Types	37°, 45°, Custom Angle / Single & Double Flaring
Reducing Capability	Diameter reduction up to 50% (as per tooling)
Pipe Length Compatibility	Up to 500mm (customizable)
Operation Mode	Semi-Automatic
Drive Type	Hydraulic (Vertical/Horizontal Cylinder Setup)
Power Supply	3-Phase Industrial Power
Cycle Time	15–30 seconds per pipe (depending on size)
Tooling Changeover	Quick-change modular die sets

Application

- Automotive exhaust pipes and connectors
- Hydraulic and pneumatic pipe fittings
- HVAC tube shaping and flare connections
- Brake line and fuel line manufacturing
- Industrial piping systems and fluid transfer lines

Manual/Motorised Decoilers

Decoiler Machine is a robust and efficient material handling system designed to feed metal coils into forming, cutting, or welding processes with smooth and controlled unwinding. Engineered to handle stainless steel and other metal strips, this machine is available in three capacity variants—up to 250 kg, up to 800 kg, and up to 2 tons—suitable for light-duty to heavy-duty applications. Its compact footprint, reliable tension control, and sturdy construction make it ideal for feeding sheet material in tube mills, corrugators, expansion joint lines, and more.

Key Features

- Available in 250 kg, 800 kg, and 2-ton capacity models
- Supports SS304, SS316, SS202, mild steel, and other metal strips
- Smooth coil unwinding with adjustable brake/tension system
- Optional motorized or free rotation models (as per capacity)
- Rigid spindle and heavy base design to prevent vibration
- Easy coil loading with mechanical or hydraulic expansion (2T model)
- Ideal for feeding material to forming or welding machines
- Compact, low-maintenance design for continuous operation

Technical Details

Parameter	Specification
Material Compatibility	SS304, SS316, SS202, Mild Steel, Aluminum
Coil Width Range	Up to 600mm (customizable)
Coil Weight Capacity	250 kg / 800 kg / 2000 kg
Inner Coil Diameter	400–600mm (adjustable mandrel)
Outer Coil Diameter	Up to 1200mm (varies by model)
Operation Mode	Manual / Motorized (as per model)
Rotation Control	Free Rotation / Motor Drive with Speed Control
Brake System	Manual / Pneumatic / Hydraulic (based on model)
Base Frame	Heavy-duty welded steel structure

Applications of Decoiler Machine

- Stainless steel tube mills
- Corrugated hose and interlock forming lines
- Expansion joint welding and forming setups
- Coil-fed cutting and punching lines
- Sheet metal fabrication and forming processes

Coil Take up for Wire

Machine Description

The Coil Take-Up Machine for Wire is a heavy-duty, high-tension coiling solution designed for rewinding or assembling heat-treated wire into compact, stable coils. Engineered for the wire and metallurgical industry, this machine is built to handle high tensile loads and continuous operation, with a carrying capacity of up to 2 tons. It is ideally suited for downstream processes where the wire needs to be wrapped in coil form after annealing, heat treatment, or drawing. Its rugged design ensures smooth tension control, uniform layering, and secure coil formation.

Features

- Designed for high-tension take-up of heat-treated wire
- Handles wires of various diameters and materials
- Carrying capacity up to 2 tons
- Equipped with hydraulic or mechanical tensioning system
- Robust spindle and heavy base frame for stable operation
- Variable speed drive for controlled winding speed
- Uniform and compact coil formation with precise layering
- Optional auto-stop and coil locking mechanisms
- Compatible with continuous production lines

Technical Details

Parameter	Specification
Material Compatibility	Stainless Steel, Carbon Steel, Copper, Alloys
Wire Diameter Range	6mm to 16mm (customizable)
Coil Weight Capacity	Up to 2000 kg (2 Ton)
Coil Outer Diameter	Up to 1200mm (customizable)
Core/Spindle Type	Rigid/Expandable Mandrel (as per requirement)
Operation Mode	Motorized with Variable Speed Control
Tension Control	Hydraulic / Mechanical Brake System
Drive System	AC Motor with Gearbox or Servo (optional)
Power Supply	3-Phase Industrial Power
Safety Features	Emergency Stop, Guard Panels, Load Monitoring

Application

- Wire drawing and heat treatment plants
- Spring wire and cable manufacturing
- High-tension steel wire winding
- Annealed or tempered wire collection
- Coil bundling for transport and dispatch

Manual Sheet Rolling Machine

Machine Description

The Manual Sheet Rolling Machine is a high-torque, 3-roll bending system designed for the precise curving and cylindrical forming of Stainless Steel and Mild Steel sheets. Engineered with a heavy-duty pyramid-style configuration, this machine allows for consistent radius bending with minimal physical effort. It is an essential tool for workshops manufacturing tubes, tanks, and curved profiles where electrical power is not accessible or required.

Features

- Pyramid Roller Configuration for symmetrical bending and easy material handling.
- Top Roller Adjustment via precision-threaded lead screws for setting desired diameters.
- Heavy-Duty Manual Drive utilizing a dual-stage gear reduction for smooth operation on 3mm sheets.
- Hardened & Ground Rollers made from high-grade alloy steel to ensure longevity and prevent surface marking.
- Drop-End Design (Optional) for quick and easy removal of finished cylindrical components.
- Stable Base Frame constructed from industrial-grade MS channels to eliminate vibration and flexing.
- Anti-Friction Bearings used on all rotating shafts to reduce the manual force required by the operator.

Technical Details

Parameter	Specification
Material Compatibility	SS 304, 316L, or Mild Steel
Max. Rolling Width	1250mm and customizable
Max. Thickness (Full Width)	3.0mm
Roller Diameter (Top/Bottom)	70mm (EN8 Hardened)
Bending Stages	3-Roll Pyramid Type
Drive System	Manual Handwheel with 60:1 Reduction Ratio
Gear Module	Module 6 Spur Gears
Adjustment Mode	Manual Screw Jack Type
Construction	40mm MS Side Plates (Factor of Safety 2.5)

Applications of Sheet Rolling Machine

- Manufacturing of SS Hoses and protective outer casings.
- Custom Tank and Vessel Fabrication for chemical and food industries.
- Exhaust and Silencer Components for automotive applications.
- HVAC Ducting and industrial ventilation systems.
- Architectural Curved Panels and decorative metalwork.
- Precision Tube Forming for small-batch engineering projects.

Sheet Rolling SPM

Machine Description

The Motorized Sheet Rolling Machine is a powerful and precision-engineered solution designed for rolling metal sheets into cylindrical or curved shapes. Suitable for sheet thicknesses ranging from 1mm to 6mm and working widths up to 1250mm (customizable), this machine is ideal for fabricators, automotive manufacturers, ducting units, and heavy metal processing units. Powered by a robust 3 HP 3-phase motor with a gearbox and controlled by a Variable Frequency Drive (VFD), the machine delivers smooth, adjustable rolling speeds with superior control and torque.

Features

- Motorized operation with smooth and consistent rolling performance
- Handles sheet thickness from 1mm to 6mm (custom thickness on request)
- Rolling width up to 1250mm (customizable for wider sheets)
- Equipped with a 3 HP 3-phase motor and heavy-duty gearbox
- VFD (Variable Frequency Drive) for adjustable rolling speed and torque control
- Hardened rollers for long life and precise forming
- Rigid frame for stability under load
- Suitable for rolling SS, MS, aluminum, and alloy sheets
- Option to customize for higher thickness (up to 8–10mm) with enhanced motor and gearbox setup

Technical Details

Parameter	Specification
Material Compatibility	SS304, SS316, Mild Steel, Aluminum, Alloys
Sheet Thickness Range	1mm to 6mm (customizable up to 10mm)
Rolling Width	Up to 1250mm (customizable)
Drive System	Motorized with Gearbox
Motor Power	3 HP, 3-Phase AC
Speed Control	VFD for Variable Rolling Speed
Roller Material	Hardened Steel Rollers
Operation Type	Semi-Automatic
Frame Type	Heavy-duty Steel Fabricated
Optional Features	Cone rolling

Strip Straightening Machine

Machine Description

The Strip Straightening Machine is a heavy-duty, precision-engineered leveller designed for flattening Stainless Steel and Mild Steel strips with high accuracy. Ideal for industrial manufacturing and metal processing applications, this machine eliminates material memory and coil set, ensuring a perfectly flat output for downstream processes. The system is built with a focus on structural rigidity and high mechanical advantage, making it suitable for manual operation without sacrificing performance on thicker materials.

Key Features

- **Designed for high-strength grades** including SS 304, 316L, and MS.
- **7-Roller Leveling System** with a symmetric 3-over-4 configuration for maximum flatness.
- **Heavy-duty manual operation** supported by a 60:1 total gear reduction ratio.
- **Zero-Deflection Technology** featuring central backup supports to prevent roller bowing across the 1250mm span.
- **Induction-hardened alloy rollers** (55 HRC) to prevent surface scarring when processing stainless steel.
- **Rugged construction** featuring 30 mm thick MS side plates for absolute stability.
- **Independent dual-side adjustment** via high-precision trapezoidal lead screws.
- **Modular design** allowing for easy maintenance and bearing replacement.

Technical Specifications

Parameter	Specification
Material Type	SS 304, 316L, or Mild Steel
Max. Working Width	1250mm
Thickness Range	1.0–3.0mm
Number of Stages	6 Bending Stages (7 Rollers)
Roller Diameter	110mm (EN8 Hardened)
Gear System	Module 6 Spur Gears with 30:1 Worm Reduction
Total Drive Ratio	60:1
Operation Mode	Manual Hand-Operated
Frame Thickness	30mm MS Plate

Optional Features- Motorised Operation, Control Panel with VFD.

Strip Rolling SPM

Machine Description

The Strip Rolling SPM with 3 Rollers is a specially designed machine for precision forming and flattening of metal strips before they enter downstream processes such as welding, corrugation, or hose forming. This robust, high-performance machine uses a 3-roller configuration—two fixed and one adjustable—to ensure uniform thickness, smooth surface finish, and consistent strip alignment. Ideal for stainless steel, mild steel, and alloy materials, the SPM is suitable for coil-fed or manually fed strip lines, offering high productivity with minimal maintenance.

Features

- 3-roller configuration for smooth and precise strip rolling
- Suitable for SS304, SS316, SS321, MS, and other metal strips
- Adjustable center roller for accurate gap and thickness control
- Sturdy steel frame for vibration-free operation
- Manual or motorized operation based on model
- Compatible with coil-fed or cut-length strip feeding
- Ideal for pre-processing before seam welding, corrugation, or interlock forming
- Optional VFD-controlled drive for variable rolling speed

Technical Details

Parameter	Specification
Strip Material	SS304, SS316, SS202, MS, Aluminum
Strip Width Range	Up to 1250mm (customizable)
Strip Thickness Range	0.15mm to 1.2mm (customizable)
Roller Diameter	80mm to 150mm (as per design)
Roller Material	EN8 / EN24, Hardened and Ground
Drive Type	Manual / Motorized / VFD Controlled
Center Roller Adjustment	Manual Screw or Hydraulic (optional)
Frame Construction	Heavy-Duty Welded Steel
Operation Mode	Semi-Automatic / Automatic
Power Supply	3-Phase AC Industrial Power

Application

- Pre-rolling of strips for longitudinal seam welding
- Preparation of raw material for interlock and corrugator machines
- Flattening and stress-relief before bellows and hose forming
- Feeding lines in tube mills and precision strip handling systems
- Pre-processing in automotive exhaust, HVAC, and industrial piping sectors

Hydraulic Power Press

Machine Description

The Hydraulic Press Machine is a high-performance pressing solution designed for a wide range of metal forming, punching, and deep drawing applications. Available in 10 Ton, 20 Ton, 50 Ton, and 100 Ton capacities, this press features a top-mounted hydraulic cylinder, precision-guided rams, and a sturdy welded frame. Each model is equipped with an electrical control panel, digital stroke counter, and foot switch. The system supports both auto and semi-automatic operation modes and is available in customizable sizes and table configurations to suit specific industrial needs.

Features

- Available in 5T,10T, 20T, 50T, and 100T capacities
- Top-mounted hydraulic cylinder for compact design and easy maintenance
- Foot switch operation for hands-free control
- Supports auto and semi-auto modes
- Electric control panel with digital counter
- Heavy-duty steel structure for stability and long life
- Customizable daylight, stroke, and table size
- Ideal for forming, bending, punching, and pressing operations

Parameter	Specification
Pressing Capacity	10 Ton / 20 Ton / 50 Ton / 100 Ton
Operation Mode	Auto / Semi-Auto with Foot Switch
Cylinder Position	Top Mounted
Stroke Length	Customizable
Table Size	Customizable
Power Pack	Hydraulic with cooling (optional)
Control Panel	Electric Panel with Digital Counter
Power Supply	3-Phase Industrial Power
Frame Type	Rigid Welded Steel Construction

Applications of Hydraulic Press Machine

- Sheet metal bending and forming
- Deep drawing of components
- Punching, notching, and embossing
- Assembly and press-fit operations
- General industrial fabrication and tooling

Hydraulic Power Pack

Machine Description

The Hydraulic Power Pack is a compact, modular, and high-performance unit designed to supply pressurized hydraulic fluid for operating a wide range of hydraulic machinery and equipment. Engineered for industrial durability, these power packs are available in various configurations based on flow rate, pressure, tank capacity, and motor size. Built with precision components like gear or vane pumps, pressure relief valves, directional control valves, and high-efficiency motors, the system ensures smooth, reliable, and energy-efficient performance. Ideal for use with hydraulic presses, bending machines, bellow forming machines, and special-purpose equipment.

Features

- Available in customizable pressure and flow configurations
- Supports single or multiple actuators (cylinders or motors)
- Compatible with 3-phase electric supply
- Integrated with pressure relief valve, suction strainer, and return filter
- Tank capacities from 25L to 300L or more (custom sizes available)
- Gear, vane, or piston pumps (as per application)
- Optional cooling unit, accumulator, and oil level indicator
- Compact skid-mounted design for easy installation and maintenance
- Ideal for presses, forming machines, hose crimpers, and automation cells

Technical Details

Parameter	Specification
Flow Rate	5 LPM to 80 LPM (customizable)
Working Pressure	Up to 250 Bar (higher on request)
Motor Power	1 HP to 20 HP, 3-Phase AC
Tank Capacity	25L / 50L / 100L / 200L / 300L (customizable)
Pump Type	Gear / Vane / Piston Pump
Control Options	Manual / Solenoid / Remote Control
Cooling	Optional Oil Cooler (Air or Water Type)
Filters	Return Line, Suction Strainer
Frame Design	Skid-Mounted Heavy-Duty Steel
Power Supply	3-Phase Industrial Power

Application

- Hydraulic press machines (10T to 100T)
- Hydraulic pipe flaring and reducing machines
- Hose crimping machines and SPMs
- Bellow and expansion joint forming systems
- Injection molding, shearing, and bending systems
- Lifting, clamping, and industrial automation setups

3 Roller Tube Bending SPM

Machine Description

The Three-Roller Pipe Bending Machine is a precision-engineered solution for bending round, square, or rectangular pipes and tubes into smooth curves and circular shapes. Designed with a three-roller system—two fixed and one adjustable—it allows controlled, gradual bending with minimal deformation or flattening. Ideal for manufacturing applications in automotive, furniture, railings, and structural components, the machine is available in manual, motorized, or CNC-controlled versions, and supports bending of steel, stainless steel, and aluminium pipes.

Features

- Three-roller pyramid design for smooth and uniform bends
- Suitable for round, square, and rectangular profiles
- Available in manual, motorized, or servo-controlled variants
- Adjustable center roller for precise bend radius control
- Rigid frame with hardened and ground rollers
- Capable of bending thick pipes with large radii
- Suitable for mild steel, SS304, SS316, and aluminum tubes
- Optional digital readout for position control
- Custom tooling available for non-standard profiles

Technical Details

Parameter	Specification
Pipe Diameter Range	Up to 76mm OD (customizable)
Pipe Thickness	Up to 4mm (depending on material)
Bending Radius	Min. 5x OD (material dependent)
Operation Mode	Manual / Motorized / Servo (as per model)
Drive System	Gearbox + Motor Drive (Motorized Models)
Center Roller Adjustment	Manual Screw / Hydraulic / Motorized
Frame Construction	Rigid Steel Welded Frame
Roller Material	EN8 / EN24 Hardened Steel
Power Supply	3-Phase AC (for motorized units)

Applications

- Fabrication of exhaust and roll cages in automotive
- Metal furniture frames and stair railings
- Architectural structures and decorative frames
- Conveyor frames and material handling assemblies
- Circular frames, rings, and coils for industrial use

Single Axis Tube/Pipe Bending

Machine Description

The Single-Axis Pipe Bending Machine is a reliable and efficient solution for producing precise bends in metal pipes and tubes along a single fixed axis. Engineered for simplicity and robustness, this machine is ideal for standard 2D bending applications in industries such as automotive, fabrication, furniture, and construction. It accommodates round and rectangular pipes of varying sizes and can be operated manually, semi-automatically, or fully motorized depending on production needs. The machine delivers accurate and repeatable bends with minimal distortion, making it ideal for high-precision jobs.

Features

- Designed for bending pipes along a single fixed axis (2D)
- Suitable for round, square, and rectangular metal pipes
- Available in manual, semi-automatic, and motorized models
- Rigid bending arm with high-torque gear or hydraulic drive
- Supports various pipe materials: mild steel, stainless steel, aluminum
- Adjustable bending radius with easy tool changeover
- Foot switch operation for hands-free control (motorized models)
- Digital angle setting (optional) for precise repeatability
- Sturdy base structure for vibration-free operation

Technical Details

Parameter	Specification
Pipe Diameter Range	10mm to 76mm OD (customizable)
Wall Thickness Capacity	Up to 4mm (depending on material and die)
Bending Angle Range	0° to 180°
Operation Mode	Manual / Semi-Automatic / Motorized
Bending Axis	Single-Axis (2D Plane)
Bending Mechanism	Hydraulic or Gear Drive (as per model)
Tooling System	Interchangeable Dies for Different Sizes
Power Supply	3-Phase AC (for powered units)
Optional Features	Digital Angle Display, Programmable Controller

Application

- Automotive exhaust pipes and chassis components
- Furniture frames and stair railings
- Agricultural and structural tubing
- Piping systems for industrial installations
- Playground and gym equipment

Three Axis Pipe Bending Machine

Machine Description

The Three-Axis Pipe Bending Machine with PLC Control is a high-precision, fully automated bending system designed for complex 3D pipe bending applications. Featuring programmable control over feeding (X-axis), rotation (Y-axis), and bending (Z-axis), this machine enables precise and repeatable bending of tubes and profiles with tight tolerances. Ideal for automotive exhaust systems, aerospace structures, industrial pipelines, and furniture fabrication, it offers a seamless blend of speed, accuracy, and flexibility through a user-friendly PLC/HMI interface.

Features

- Fully automatic 3-axis control: Feeding (X), Rotation (Y), and Bending (Z)
- Integrated PLC control with HMI touchscreen for programming and diagnostics
- High-precision servo motors on all axes for repeatable bends
- Capable of executing complex multi-plane bending sequences
- Stores multiple bend programs with memory for batch production
- Sturdy frame for high-load applications and vibration-free operation
- Real-time error alerts and diagnostic display
- Suitable for SS, MS, aluminum, and copper pipes and profiles
- Optional: USB data upload, barcode reader integration, auto clamp/release

Technical Details

Parameter	Specification
Pipe Diameter Range	Up to 76mm OD (customizable)
Wall Thickness	Up to 4mm (material dependent)
Bending Radius	Customizable as per tooling
Bending Angle	0° to 190° (Programmable)
Operation Mode	Fully Automatic with PLC + HMI
Axes Control	X (Feeding), Y (Rotation), Z (Bending)
Axis Drive	Servo Motor (All 3 Axes)
Power Supply	3-Phase AC, 5 to 10 HP (based on configuration)
Data Storage	100+ Programs / 1000+ Bends
Safety Features	Emergency Stop, Limit Switches, Overload Alerts

Application

- Automotive exhaust and chassis systems
- Aerospace and aviation fluid lines
- Hydraulic and pneumatic tubing systems
- Furniture and architectural frames
- Fitness and medical equipment components
- Industrial and HVAC pipe routing

Tube Expanding SPM

Machine Description

The Tube Expanding SPM is a precision-engineered machine used to expand the ends or full length of metal tubes to meet specific dimensional or assembly requirements. This special-purpose machine is ideal for applications such as automotive exhaust systems, EGR tubes, heat exchangers, and flexible metal hose assemblies, where precise expansion ensures tight fitment, improved sealing, or preparation for welding or coupling. Designed for high accuracy and repeatability, it operates using hydraulic or servo-driven expanding mandrels and offers quick tooling changes for different tube sizes.

Features

- Designed for axial or radial expansion of metal tubes
- Compatible with SS304, SS316, SS321, Copper, MS, and Inconel
- Custom die and mandrel setup for precise expansion profiles
- Hydraulic or servo-driven expansion system
- Heavy-duty structure for high-repeatability and durability
- Suitable for single-end or dual-end expansion (customizable)
- Foot pedal or PLC-based control for semi-automatic operation
- Quick tool change mechanism for efficient batch production

Technical Details

Parameter	Specification
Tube Material	SS304, SS316, SS321, MS, Copper, Inconel
Tube Diameter Range	12mm to 100mm (customizable up to 150mm)
Expansion Length	Up to 200mm (longer lengths on request)
Expansion Type	Internal Mandrel / External Die
Drive Type	Hydraulic / Servo Motor Driven
Operation Mode	Semi-Automatic with Foot Switch / PLC Control
Power Supply	3-Phase AC Industrial Power
Cycle Time	10–30 seconds per tube (depending on size)
Safety Features	Emergency Stop, Limit Switches, Overload Safety

Application

- Automotive exhaust tube expansion
- Heat exchanger tube end expansion
- Flexible metal hose assembly preparation
- Expansion of EGR tubes and bellows before welding
- Industrial and HVAC piping systems manufacturing

Tube I/O Sizing SPM

Machine Description

The Tube Expanding SPM is a precision-engineered machine designed to expand the ends or entire length of tubes to achieve tight tolerances, improve fitment, or prepare them for subsequent forming, welding, or assembly processes. Ideal for stainless steel, mild steel, copper, and alloy tubes, this special-purpose machine ensures uniform expansion using high-force hydraulic or mechanical systems. It is widely used in manufacturing exhaust components, EGR tubes, heat exchangers, and flexible metal hose assemblies.

Features

- Accurate inner and outer diameter sizing for tubes
- Compatible with stainless steel, mild steel, copper, Inconel, and more
- High-force hydraulic or servo-driven operation for precision sizing
- Customizable tooling for various tube sizes and thicknesses
- Ensures roundness, dimensional accuracy, and fitment consistency
- Suitable for both welded and seamless tubes
- Optional dual-head configuration for simultaneous I/O sizing
- Rugged construction for industrial, high-volume usage
- PLC-controlled or foot-switch-operated for ease of use

Technical Details

Parameter	Specification
Tube Material	SS304, SS316, SS202, MS, Copper, Inconel
Tube Diameter Range	12mm to 100mm OD (customizable)
Wall Thickness Range	0.3mm to 2.5mm
Operation Type	Hydraulic / Servo-Driven
Sizing Mode	ID and/or OD (Single or Dual Station)
Control System	PLC or Relay Control with HMI/Foot Pedal
Cycle Time	10–25 seconds per tube (based on size)
Tooling	Interchangeable Hardened Sizing Tools
Power Supply	3-Phase AC Industrial Power

Application

- Automotive exhaust components and EGR tubing
- Heat exchanger and condenser tube manufacturing
- Hydraulic and pneumatic tube fittings
- Aerospace fluid transfer lines
- Pre-weld sizing and post-weld calibration for tube assemblies
- Precision tubing for instrumentation and medical devices

Mechanical Bellow Forming Machine

Machine Description

The Mechanical Bellow Forming Machine is a high-precision, robust forming system designed to produce metallic bellows through mechanical punch-forming technology. It is ideal for manufacturing **expansion bellows, automotive exhaust bellows, and flexible connectors** using stainless steel and high-performance alloys. This machine utilizes a segmented die system operated via mechanical linkages or cams, delivering consistent convolutions with excellent repeatability, speed, and strength. Suitable for medium- to high-volume production, it offers low operating costs and minimal maintenance.

Features

- Mechanical forming system using punch and segmented die design
- Suitable for SS304, SS316, SS321, Inconel, and other alloys
- High-speed forming with consistent convolution geometry
- Adjustable stroke and indexing for variable pitch and height
- Rigid frame for vibration-free and long-life operation
- Low operating cost compared to hydraulic systems
- Ideal for expansion joints, exhaust systems, and EGR bellows
- Minimal power consumption with continuous duty cycle
- Optional automatic loading/unloading system

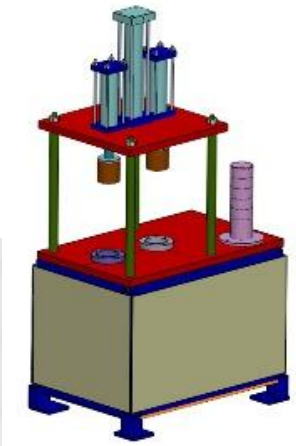
Technical Details

Parameter	Specification
Material Compatibility	SS304, SS316, SS321, Inconel
Bellow Diameter Range	40mm to 250mm (customizable up to 400mm)
Sheet Thickness Range	0.15mm to 0.6mm
Convolution Pitch	Customizable via die configuration
Drive Type	Mechanical (Flywheel/Cam or Gear System)
Operation Mode	Manual / Semi-Automatic
Forming Tool	Segmented Dies (Single or Multi-Pitch)
Power Source	3-Phase AC Motor (3–5 HP)
Cycle Time	5–15 seconds per convolution (depending on size)

Application

- Automotive exhaust bellows and flex connectors
- Industrial expansion joints for pipelines and ducts
- Metal bellows for pressure vessels and valves
- Flexible joints for HVAC and fluid transfer systems
- EGR tube convolution and sealing systems

Bellow Compressing Machine



Machine Description

The Automotive Bellow Compression Machine is a specialized pneumatic system designed to compress and size metallic bellows to their final dimensions for use in automotive exhaust systems, EGR assemblies, and flexible connectors. This machine utilizes **precisely regulated pneumatic pressure** to ensure uniform axial compression, improving the dimensional accuracy and performance of the bellows. It is ideal for quality-sensitive applications where consistency in bellow height and shape is critical. The machine allows adjustable pressure and stroke for handling various bellow sizes and materials.

Features

- Pneumatically powered axial compression for accurate bellow sizing
- Ideal for SS bellows used in automotive exhaust and EGR systems
- Adjustable compression stroke and air pressure settings
- Ensures uniform height and profile across multiple bellows
- Quick-change fixtures for different bellow diameters and lengths
- Compact, low-maintenance design suitable for production lines
- Foot-operated or semi-automatic control options
- Ensures repeatability, speed, and product consistency

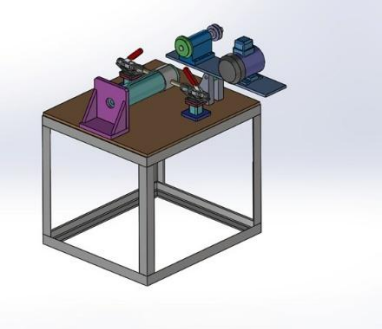
Technical Details

Parameter	Specification
Material Compatibility	SS304, SS316, SS321, Inconel
Bellow Diameter Range	40mm to 150mm (customizable)
Bellow Length (Before Compression)	Up to 300mm
Compressed Height Range	Customizable as per bellow design
Drive System	Pneumatic Cylinder with Regulated Air Supply
Operating Pressure	4–6 Bar (adjustable)
Operation Mode	Foot Pedal / Semi-Automatic
Fixture System	Interchangeable Clamping Dies
Frame Construction	Heavy-Duty Welded Steel Frame
Power Supply	Compressed Air + 230V/3-Phase for controls

Application

- Final sizing of automotive exhaust bellows
- EGR bellows and flexible joint compression
- Assembly preparation before welding or clamping
- Dimensional calibration of convoluted bellows
- Ensures installation readiness and tolerance matching

Braid Cutting SPM



Machine Description

The Braid Cutting Machine is a specialized solution designed to cut **stainless steel wire braids** to precise lengths for use in **metal bellows assemblies**, **flexible connectors**, and **automotive exhaust components**. Engineered for clean, accurate cuts, this machine ensures fray-free ends and consistent length control, which are critical for proper clamping and welding in bellow fabrication. The system supports both **manual and semi-automatic operation**, with options for pneumatic or motorized cutting action, and is compatible with a wide range of braid diameters and materials.

Features

- Specially designed for cutting metallic braided sleeves for bellows
- Supports SS304, SS316, and custom braid materials
- Clean, fray-free cuts for efficient and quick assembly
- Adjustable cutting lengths for different bellow designs
- Pneumatically or motor-driven cutting blade system
- Heavy-duty clamping system ensures precise alignment
- Optional digital counter for batch and length control
- Safe, operator-friendly design with minimal maintenance
- Compact footprint—ideal for production lines and workshop

Technical Details

Parameter	Specification
Braid Material	SS304, SS316, Mild Steel Wire Braid
Diameter Range	25mm to 150mm (customizable)
Cutting Length	50mm to 500mm (programmable/customizable)
Operation Mode	Semi-Automatic / Foot Switch / Manual Feed
Cutting Mechanism	Circular Blade / Shear Blade (motor or pneumatic)
Clamping System	Manual or Pneumatic Holders
Drive System	Motorized / Pneumatic (based on model)
Safety Features	Guarded Cutting Area, Emergency Stop
Power Supply	230V Single Phase or 3-Phase AC

Application

- Automotive exhaust bellow manufacturing
- Flexible metal hose production
- SS braid cutting for vibration dampers and flex connectors
- Preparation of outer covers for expansion joints
- Metal braid processing in HVAC, petrochemical, and piping systems

Bellow Rolling SPM

Machine Description

The Bellow Rolling SPM is a specially designed machine used to **secure and press stainless steel braid over formed bellows**, ensuring a tight, uniform fit and proper alignment. This process is crucial for maintaining the structural integrity, flexibility, and leak-proof performance of **automotive exhaust bellows, EGR tubes, and flexible connectors**. The machine uses a powered rolling mechanism to press the braid onto the bellow surface without damaging the underlying convolutions.

Features

- Specifically built for pressing SS wire braid over metallic bellows
- Uniform and consistent rolling pressure for secure braid fitment
- Suitable for SS304, SS316, and Inconel braided sleeves
- Adjustable rollers for different diameters and bellow lengths
- Smooth operation prevents braid slippage or damage
- Semi-automatic control with foot pedal or HMI (optional)
- Heavy-duty frame for vibration-free precision pressing
- Fast setup and changeover for different bellow models

Technical Details

Parameter	Specification
Bellow Diameter Range	40mm to 150mm (customizable)
Bellow Length	Up to 500mm (as per application)
Braid Material	SS304 / SS316 / Mild Steel Wire Braid
Rolling Mechanism	Powered Rollers with Adjustable Pressure
Operation Mode	Semi-Automatic / Manual with Foot Pedal
Control System	Manual Switch / Optional PLC with HMI
Roller Material	Hardened Steel / Custom Profile Dies
Frame Type	Heavy-Duty Welded Steel
Power Supply	3-Phase AC (1–3 HP Motor, depending on model)

Application

- Final assembly of automotive exhaust bellows
- Pressing braid on EGR flexible connectors
- Hose and expansion joint outer layer pressing
- Preparing flexible braided hoses for welding or clamping
- Vibration isolator and thermal compensator production

Bellow Expanding SPM

Machine Description

The Bellow Expanding Machine (Cap Locking Type) is a specialized forming machine designed to **expand the ends of metallic bellows** and **securely lock end caps or collars** onto them. This machine is an essential part of the final assembly stage in the production of **automotive exhaust bellows**, **flexible connectors**, and **expansion joints**, ensuring a tight, leak-proof mechanical bond between the bellow and its mating components. It operates using high-force **hydraulic or pneumatic expansion tools**, delivering uniform expansion without deforming the convolution profile.

Features

- Purpose-built for expanding and locking end caps onto metal bellows
- Ensures tight and secure mechanical joint between bellow and cap
- Maintains bellow shape and alignment during expansion
- Suitable for SS304, SS316, SS321, and Inconel bellows
- Hydraulic or pneumatic expansion system based on application
- Quick-change tooling for different cap and bellow sizes
- Precise stroke and pressure control for consistent performance
- Compact design ideal for integration into bellow assembly lines
- Optional foot switch or PLC control for semi-automatic operation

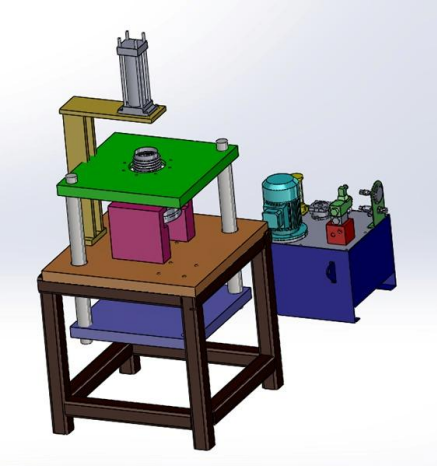
Technical Details

Parameter	Specification
Bellow Diameter Range	40mm to 150mm (customizable)
Expansion Stroke	Up to 100mm (customizable)
Cap Types Supported	Flat Caps, Collar Ends, Flanged Ends
Expansion System	Hydraulic / Pneumatic
Tooling	Hardened Expansion Segments or Sleeves
Cycle Time	10–20 seconds per part
Operation Mode	Semi-Automatic with Foot Pedal / PLC (Optional)
Power Supply	3-Phase AC + Pneumatic Line (if applicable)
Safety Features	Guarded Zone, Emergency Stop, Overload Relief

Application

- Final assembly of automotive exhaust bellows
- Cap locking for EGR bellows and flexible metal connectors
- Expansion joint end fitting preparation
- Leak-proof sealing before welding or clamping
- Manufacturing of vibration isolators and metal compensators

Bellow I/O Sizing SPM



Machine Description

The Bellow I/O Sizing Machine is a precision special-purpose machine designed to **calibrate both the inner and outer diameters** of metallic bellows, ensuring tight dimensional tolerances and perfect roundness before welding or final assembly. This machine enhances fitment accuracy between the **bellow and its mating components (such as end caps, pipes, or flanges)**, ensuring leak-proof and structurally sound assemblies. Ideal for **automotive exhaust bellows**, **EGR connectors**, and **expansion joints**, the system provides consistent, repeatable results across production batches.

Features

- Simultaneous inner and outer diameter sizing for bellows
- Ensures perfect roundness, tight tolerances, and proper fitment
- Hydraulic or pneumatic force for controlled expansion/compression
- Compatible with SS304, SS316, SS321, Inconel, and more
- Quick-change sizing dies for different bellow sizes
- Rigid machine frame minimizes vibration during operation
- Available in manual, semi-automatic, or PLC-controlled variants
- Ideal for pre-welding or post-forming calibration

Technical Details

Parameter	Specification
Bellow Diameter Range	40mm to 150mm (customizable)
Sizing Type	Inner (ID) and Outer (OD) Sizing
Material Compatibility	SS304, SS316, SS321, Inconel, MS
Actuation System	Hydraulic / Pneumatic
Tooling	Interchangeable Sizing Dies (Hardened Steel)
Cycle Time	10–25 seconds per unit (depending on size)
Operation Mode	Semi-Automatic / Manual / PLC Control
Power Supply	3-Phase AC + Pneumatic Line (if applicable)
Safety Features	Emergency Stop, Guarded Press Area

Application

- Automotive exhaust bellow and EGR tube preparation
- Expansion joint and flexible connector manufacturing
- Dimensional calibration for leak-proof welding
- Tube-to-bellow joint fitment and sealing accuracy
- Standardization of bellows for modular assembly.

Bellow Trimming/Tangent cutting Machine

Bellow End Trimming Machine, also known as the **Tangent Cutting SPM**, is a precision machine designed to **cut and trim the ends of metallic bellows** with clean, burr-free, and perfectly tangent edges. This process is essential to ensure accurate length, concentricity, and proper fitment for welding or assembly of **automotive exhaust bellows, EGR tubes**, and **expansion joints**. The machine ensures uniform cutting regardless of convolution depth or bellow material, and is built to withstand continuous industrial operation.

Features

- Precise end trimming of stainless steel and alloy bellows
- Ensures tangent, clean, and burr-free cuts for accurate welding
- Adjustable holding system to center bellows of various sizes
- Suitable for SS304, SS316, SS321, Inconel, and more
- Rigid clamping system prevents deformation during cutting
- Available with **manual, pneumatic, or servo-driven cutting blade**
- Quick-change fixtures for various bellow diameters and lengths
- Compact, low-maintenance design ideal for production lines
- Optional digital counter for length preset and repeat cuts

Technical Details

Parameter	Specification
Bellow Diameter Range	40mm to 200mm (customizable)
Cutting Type	Tangent / Straight End Trimming
Material Compatibility	SS304, SS316, SS321, Inconel, MS
Cutting Mechanism	Circular Saw / Shear Blade (Manual or Powered)
Clamping System	Manual / Pneumatic Vise Clamping
Operation Mode	Manual / Foot Pedal / Semi-Automatic
Cycle Time	10–15 seconds per piece (approximate)
Power Supply	230V or 3-Phase AC (model dependent)
Safety Features	Safety Cover, Emergency Stop, Limit Switches

Applications of Bellow End Trimming Machine

- Trimming and length calibration of automotive exhaust bellows
- End preparation of EGR tubes and flex connectors
- Tangent edge cutting for expansion joint welding
- Bellow length standardization before final assembly
- Clean cut surface preparation for welding or flanging

Longitudinal Seam Welding SPM

Description

The PLC-Controlled Longitudinal Seam Welding Machine is a highly automated and precise welding system, designed for producing metal bellows and expansion joints with exceptional consistency and weld quality. This machine is a critical component in the manufacturing process of stainless steel bellows, offering advanced control, ease of operation, and the flexibility to adapt to various materials and thicknesses.

Controlled via a user-friendly PLC system, this welder ensures uniform longitudinal seams with minimal operator intervention, making it ideal for high-precision, high-reliability applications. The system supports both argon arc (TIG) welding and Laser welding.

Key Features

- PLC-based control system for high automation and accuracy
- Supports TIG or MIG/MAG welding methods as per application needs
- Capable of welding thin-walled materials starting from 0.3mm
- Suitable for a minimum tube diameter of 75mm
- Clean, consistent seam welds with minimal distortion
- Adjustable clamping and alignment system for different tube sizes
- Ideal for stainless steel (SS304, SS316, SS321), Inconel, and other alloys
- Ergonomic operator interface and robust construction
- Optional features: automatic wire feeder, digital weld parameter setting

Parameter	Specification
Welding Method	TIG (Argon Arc) / MIG-MAG (Gas Shielded)
Material Thickness Range	0.3mm to 1.5mm (customizable)
Tube Diameter Range	Minimum 75mm and above
Weld Length Capacity	Up to 1250mm (customizable)
Welding Control	PLC + HMI Interface
Clamping System	Pneumatic / Manual with adjustable fixtures
Power Supply	3-Phase Industrial Supply
Applications	Metal bellows, exhaust connectors, expansion joints

Applications

- Bellows for automotive, HVAC, and industrial expansion joints
- Longitudinal welding of SS pipes and flexible connectors
- Pre-weld process in tube mills and bellow fabrication lines
- Welded cylinders, ducts, and pressure containment assemblies

Longitudinal Seam Welding Fixture

Longitudinal Seam Welding Fixture is a precision-engineered system designed for automatic TIG welding of longitudinal seams in stainless steel bellows and thin-walled cylindrical tubes. Built to handle a wide diameter range with exceptional accuracy, this fixture is ideal for manufacturing expansion joints, exhaust components, and other precision-welded tubular parts. Integrated with a PLC-HMI control system and LM guide with lead screw motion, it ensures consistent weld quality and efficient operation across customizable lengths.

Key Features

- Designed for bellow diameters from 100 mm to 600 mm
- Supports stainless steel grades like 304, 316L, Inconel, and Hastelloy
- Automatic TIG welding with motorized torch movement
- Integrated PLC with HMI for easy parameter control and monitoring
- High-precision LM guide and lead screw for smooth linear motion
- Modular clamping system for quick diameter changeovers
- Heavy-duty construction for vibration-free welding
- Available in multiple weld lengths: 600 mm, 800 mm, 1000 mm, 1250 mm (customizable)
- Compact and user-friendly layout, suitable for low to medium production

Technical Specifications

Parameter	Specification
Workpiece Material	SS 304, 316L, Inconel, Hastelloy
Welding Type	TIG Longitudinal Seam Welding (Automatic)
Diameter Range	100 mm – 600 mm
Sheet Thickness Range	0.34 mm – 1.5 mm
Weld Length Options	600 / 800 / 1000 / 1250 mm (customizable)
Drive System	LM Guide with Precision Lead Screw
Clamping System	Adjustable Modular Fixture for Round Tubes
Torch Travel Control	PLC-controlled, motorized movement
Power Source	3-Phase Industrial Supply
Operation Mode	Semi-Automatic (with HMI Interface)
Machine Base	Steel/Aluminum Fabricated Frame

Applications of Seam Welding Fixture

- Stainless steel metal bellows and expansion joints
- Automotive exhaust and EGR assemblies
- Precision cylindrical tubing fabrication
- Industrial flexible hose welding
- Instrumentation and process piping.

Expansion Joint Rerolling Machine

The **Expansion Joint Rerolling Machine** is a specialized piece of equipment designed for precision rerolling of stainless steel expansion joints and metal bellows. This machine restores the corrugation profile and enhances the circularity and surface finish of bellows after forming, welding, or assembly. It is an essential process to ensure dimensional accuracy, uniformity, and proper alignment in high-performance bellow systems used in piping, exhausts, and industrial joints.

Key Features

- Designed specifically for stainless steel bellows and expansion joints
- Restores corrugation sharpness and radial consistency
- Improves roundness and concentricity of formed bellows
- Adjustable rollers for different diameters and corrugation depths
- Robust frame with precision alignment fixtures
- Manual, semi-automatic, or fully automatic versions available
- Optional digital display for speed and pressure monitoring
- Compatible with SS 304, SS 316L, Inconel, and other alloys

Technical Specifications

Parameter	Specification
Workpiece Type	Expansion Bellows / Metal Joints
Material Compatibility	SS 304 / 316L / Inconel / Hastelloy
Diameter Range	100 mm – 600 mm (customizable)
Corrugation Depth	Up to 25 mm (adjustable)
Operation Type	Manual / Semi-Automatic / Automatic
Roller Adjustment	Motorized / Manual
Drive System	Gearbox + Electric Motor / Hydraulic (Optional)
Control Panel	Digital or PLC-based (as per model)
Machine Base	Fabricated Steel Structure

Applications

- Rerolling of expansion bellows after hydroforming or welding
- Enhancing circularity and pitch uniformity before final inspection
- Preparing bellows for flanging, welding, or assembly
- Used in the manufacture of piping systems, automotive exhausts, thermal expansion joints.

Shell Welding Fixture for Bellow

Shell Welding Fixture for Bellow is a precision alignment and clamping system designed to support accurate and repeatable circumferential welding between bellows and end flanges, pipes, or shell components. It ensures concentricity and angular accuracy, minimizing deformation and improving weld quality during TIG or MIG welding processes. This fixture is essential for the reliable assembly of stainless steel bellows used in pressure vessels, exhaust systems, piping networks, and flexible joints

Key Features

- Specifically engineered for circumferential/shell welding of bellows
- Rigid structure for vibration-free welding support
- Self-centering clamps for precise axial and radial alignment
- Adjustable jaws or chuck system for various bellow diameters
- Compatible with manual and automated welding setups
- Suitable for TIG, MIG, or plasma welding applications
- Customizable for bellow sizes, lengths, and material grades
- Optional rotation mechanism with variable speed control

Technical Specifications

Parameter	Specification
Application	Circumferential/Shell Welding for Bellows
Diameter Range	50 mm – 600 mm (customizable)
Clamping System	Manual or Pneumatic Self-Centering Jaws
Compatible Weld Processes	TIG / MIG / Plasma Welding
Rotation Mechanism	Manual / Motorized with Speed Control (Optional)
Fixture Frame	Fabricated Steel Base with Precision Slides
Alignment Accuracy	±0.1 mm
Customization	Available for special sizes or integration needs

Applications

- Welding of stainless steel bellows to end rings, flanges, or tubes
- Precision assembly of exhaust bellows in automotive and industrial use
- Flexible joint fabrication in pressure piping and expansion systems
- Used in manufacturing of EGR systems, vibration dampeners, and thermal compensators

MIG Welding Rotary Fixture

The Welding Fixture for Bellows is a high-precision Special Purpose Machine (SPM) specifically engineered for MIG welding operations involving bellows and their end components (flanges, pipes, or shells). This machine ensures superior welding accuracy, consistent concentricity, and robust clamping, making it ideal for manufacturing critical components in exhaust systems, pressure vessels, and expansion joints.

Key Features

- Dedicated Fixture Design: Tailored for circumferential/shell welding of stainless steel bellows.
- PLC-Based Control Panel: Automates the welding sequence, ensuring precision and repeatability.
- Motorized Workpiece Rotation: Controlled via a Variable Frequency Drive (VFD) to allow speed adjustments based on weld parameters.
- Torch Movement Mechanism: Pneumatically actuated MIG torch mounted on a clock arm for synchronized and uniform weld tracking.
- Self-Centering Chuck System: Ensures precise radial and axial alignment across various bellow diameters.
- Sturdy Enclosure with Safety Measures: Equipped with safety glass, protective doors, and interlocks for operator protection.
- 3-Phase or Single-Phase Compatibility: Supports flexible motor setups as per operational requirements.

Technical Specifications

Parameter	Specification
Application	Circumferential/Shell Welding for Bellows
Diameter Range	50 mm – 600 mm (customizable)
Clamping System	Manual/Pneumatic Self-Centering Jaws
Weld Process	MIG (also compatible with TIG/Plasma if needed)
Rotation System	Motorized with VFD-based Speed Control
Motor Type	3-Phase / Single-Phase
Torch Movement	Pneumatically Controlled Clock Arm
Alignment Accuracy	±0.1 mm
Control System	PLC-Based with Touch HMI
Frame Structure	Heavy-Duty Fabricated Steel
Safety	Full Enclosure, Safety Glass, Interlocked Doors

Applications

- Welding of bellows to end flanges, rings, or tubular connectors
- Manufacturing of exhaust systems in automotive, railways, and gensets
- Production of flexible joints and vibration absorbers in piping systems
- Fabrication of EGR pipes, thermal compensators, and expansion bellows

TIG Welding Rotary Fixture

TIG Rotary Welding Fixture is a specialized equipment designed to enable precise and consistent rotary welding operations for circular components such as bellows, rings, flanges, and cylindrical assemblies. Built to support Tungsten Inert Gas (TIG) welding, this fixture delivers high-quality, repeatable welds with tight control over rotation, alignment, and torch movement.
Engineered for use in high-precision manufacturing environments like automotive, aerospace, HVAC, and industrial piping, it supports both manual and semi-automatic welding modes.

Key Features

- **High-Precision Rotary Table**: Ensures smooth and stable rotation for consistent weld quality.
- **TIG Torch Mounting System**: Torch can be fixed or adjustable to accommodate various weld paths and angles.
- **Variable Speed Control**: Integrated **VFD drive** allows for fine control over rotation speed.
- **Self-Centering Chuck or Fixture Plate**: Accurately holds round components for concentric welding.
- **PLC/HMI Optional**: Can be integrated with automation controls for programmable welding sequences.
- **Robust Construction**: Rigid steel body minimizes vibration and maintains accuracy over time.
- **Safety Features**: Equipped with covers, interlocks, and optional fume extraction.

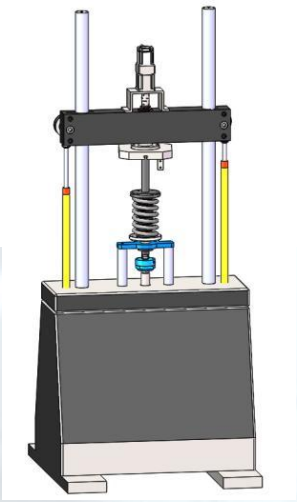
Technical Specifications

Parameter	Specification
Welding Process	TIG (GTAW)
Workpiece Diameter Range	50 mm – 600 mm (customizable)
Rotation Mechanism	Motorized with VFD-based Speed Control
Speed Range	0.5 to 20 RPM (adjustable)
Clamping System	Self-Centering Chuck / Fixture Plate
Torch Movement	Manual / Pneumatic Arm (optional)
Power Supply	Single or Three Phase
Control Panel	Basic Panel / PLC + HMI (customizable)
Frame Construction	Heavy-Duty Fabricated Steel
Safety	Operator Shield, Emergency Stop, Door Sensors

Applications

- Welding stainless steel bellows to end rings or flanges
- Joining of circular pipe fittings and collars
- Rotary TIG welding of pressure vessel components
- Precision fabrication of exhaust systems, EGR pipes, and expansion joints
- Ideal for industries like automotive, HVAC, petrochemical, and process equipment manufacturing.

Spring Testing Machine



Machine Description

Spring Fatigue Testing Machine is a high-performance, precision-engineered system designed to evaluate the **endurance and lifespan of compression, tension, and torsion springs** under repetitive cyclic loading. This machine simulates real-world stress conditions by subjecting springs to controlled, high-speed cyclic loads over extended periods—making it essential for **automotive, aerospace, railway, and industrial spring manufacturers** focused on quality assurance and durability testing.

Features

- Suitable for **compression, tension, and torsion springs**
- High-speed cyclic loading for accelerated fatigue testing
- Adjustable stroke length, load, and test frequency
- Test capacity from light-duty springs to heavy industrial types
- Cycle counter with failure detection and auto-stop function
- Digital display or PLC+HMI interface for test monitoring
- Rugged frame for vibration-free long-duration operation
- Safety enclosure and overload protection
- Customizable fixtures for various spring sizes and types

Technical Details

Parameter	Specification
Spring Types Supported	Compression, Tension, Torsion
Load Capacity	Up to 10 kN (customizable up to 50 kN or more)
Stroke Range	5mm to 100mm (adjustable)
Frequency Range	1–10 Hz (higher options on request)
Max Test Cycles	Up to 10 million cycles
Test Speed	10 – 600 cycles per minute
Control System	Digital Counter / PLC with HMI
Drive Type	Servo Motor / AC Motor with VFD
Power Supply	3-Phase AC, 415V / 50Hz
Safety	Emergency Stop, Guarded Enclosure, Auto Shutdown

Application

- Automotive suspension and valve spring durability testing
- Aerospace spring component fatigue analysis
- Railway buffer and brake system spring validation
- Industrial spring manufacturers' quality control
- R&D and life cycle prediction for mechanical springs

Hose Testing Machine

Machine Description

The Hose Bend Radius Testing Machine is a purpose-built system designed to evaluate the flexibility, durability, and mechanical integrity of corrugated metal hoses and hose assemblies under repeated bending, as specified in ISO 10380. This machine simulates real-world dynamic bending conditions by subjecting the hose to a defined bend radius and cyclic movement, ensuring compliance with international performance standards for industrial, HVAC, automotive, and fluid transfer applications.

Features

- Fully compliant with **ISO 10380 bend radius test procedures**
- Tests dynamic flexibility and fatigue life of metallic hoses
- Adjustable bend radius and bending angle
- Programmable cyclic movement with digital cycle counter
- Heavy-duty clamping system to hold hoses securely in place
- Servo or motor-driven system for consistent repeatable movement
- Emergency stop, safety interlocks, and failure detection
- Ideal for **corrugated stainless steel hoses, braid-covered hoses**, and assemblies

Technical Details

Parameter	Specification
Test Standard	ISO 10380
Hose Diameter Range	6mm to 100mm (customizable up to 150mm)
Bend Radius Range	3× to 10× hose diameter (adjustable)
Bending Angle	30° to 180° (programmable)
Test Cycles	Up to 1 million cycles
Test Speed	10 to 60 cycles per minute
Drive System	Servo Motor / AC Motor with VFD
Control System	PLC with HMI / Digital Cycle Counter
Clamping Fixtures	Interchangeable for different hose sizes
Power Supply	3-Phase AC, 415V / 50Hz
Safety Features	Emergency Stop, Safety Guards, Overload Protection

Application

- Durability testing of stainless-steel corrugated hoses
- Quality assurance for hose manufacturers
- Validation of hose assemblies used in automotive and aerospace
- R&D for new flexible hose designs
- Compliance testing for ISO 10380 certification

Erichson Cupping Testing Machine

Description

The Erichsen Cupping Test Machine is a standardized material testing instrument used to evaluate the ductility and formability of sheet metals under biaxial stress conditions. This test determines a material's ability to withstand stretching and deformation—critical in processes such as deep drawing, stamping, and forming. The machine performs the test according to ISO 20482 / DIN EN 10132-2 / IS 10175, generating a cupping value (in mm) that indicates the material's drawability. This test is essential for automotive, aerospace, appliance, and metal packaging industries, where sheet metal formability directly impacts product quality and manufacturing efficiency.

Key Features

- Complies with **ISO 20482**, **DIN 50101**, and **IS 10175** standards
- Measures sheet metal formability via cupping depth before rupture
- Manual, motorized, or fully automatic operation models available
- Rigid frame with precision-aligned punch and blank holder
- Fine-adjustable loading speed for accurate control
- Digital or analog depth measurement indicator
- Optional data logging system and graphical output for lab analysis
- Safety enclosures and overload protection for operator safety

Technical Specifications

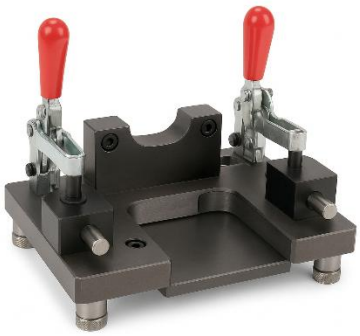
Parameter	Specification
Standard Compliance	ISO 20482 / IS 10175 / DIN 50101
Test Method	Erichsen Cupping (Deformation with hemispherical punch)
Punch Diameter	20mm (as per standard)
Max Sheet Thickness	Up to 2.0 mm (customizable)
Cupping Depth Range	0–15 mm
Operation Type	Manual / Motorized / PLC-Controlled
Material Type	Mild Steel, SS, Aluminum, Copper, Brass, Coated Sheets
Display	Analog Dial / Digital Depth Gauge / HMI (Optional)
Power Supply	230V / 3-Phase AC (for motorized models)

Applications of Erichsen Cupping Test Machine

- Formability testing of cold-rolled or coated steel sheets
- Quality control in automotive panel production
- Evaluation of mild steel and alloy sheets for various applications.
- Sheet metal selection for deep drawing and stamping processes
- R&D and material characterization in metallurgy labs

Tool Room & Fixtures

Our Precision Tool Room division is dedicated to designing and manufacturing high-accuracy gauges, jigs, and fixtures that ensure the highest quality standards in mass production. Leveraging our expertise in SPM manufacturing, we produce robust checking aids and machining fixtures that streamline production processes and guarantee part interchangeability. Whether for automotive components, tubular parts, or general engineering, our tool room utilizes advanced CNC machining and precision grinding to deliver micron-level accuracy.



Key Features

- **Custom Fixture Design:** Tailored solutions for welding, machining (VMC/HMC), and assembly.
- **High-Precision Gauging:** Manufacturing of plug, ring, and snap gauges to international standards.
- **Durable Material Selection:** Use of high-grade tool steels (OHNS, D2, Carbide) for long service life.
- **Heat Treatment & Grinding:** Hardened and ground surfaces for superior wear resistance.
- **Poka-Yoke Integration:** Mistake-proofing designs to prevent operator error during assembly.
- **Repair Services:** Refurbishment of worn-out gauges and fixtures to restore original accuracy.
- **Calibration Support:** All gauges can be supplied with inspection reports.

Technical Specifications

Parameter	Specification
Fixture Types	Welding Fixtures, VMC/CNC Clamping Fixtures, Receiver Gauges, Drill Jigs
Gauge Types	Plain Plug/Ring Gauges, Snap Gauges, Flush Pin Gauges, Profile Gauges
Material Compatibility	OHNS, D2, En31, Carbide, Mild Steel (Case Hardened)
Hardness	58-62 HRC (or as per application requirement)
Accuracy/Tolerance	Up to 5 Microns (depending on type)
Surface Finish	Precision Ground / Lapped
Max Fixture Size	Customizable (Standard up to 1000mm x 1000mm)

Applications

- **Quality Control:** Go/No-Go testing for production lines.
- **Machining Operations:** Rigid work-holding for VMC and CNC turning centers.
- **Welding Assembly:** Precise holding fixtures for robotic or manual welding.

Machine Maintenance & Retrofitting

Industrial Machine Maintenance & Retrofitting Services

VV Tools offers comprehensive Machine Maintenance and Retrofitting services designed to extend the lifecycle and performance of your industrial equipment. We understand that machine downtime is costly; therefore, we provide rapid breakdown support, preventive maintenance, and complete system overhauls. Our expertise allows us to upgrade legacy manual machines into modern, semi-automatic, or PLC-controlled systems, improving efficiency and safety without the cost of purchasing new equipment. We specialize in hydraulic, mechanical, and electrical maintenance for all types of metal forming machinery.

Key Features

- **Complete Retrofitting:** Upgrading old relay-based panels to modern PLC & HMI control systems.
- **Hydraulic System Overhaul:** Repairing power packs, cylinders, pumps, and valve banks.
- **Preventive Maintenance (AMC):** Scheduled check-ups to identify wear and prevent sudden failures[1].
- **Breakdown Support:** Rapid troubleshooting for mechanical and electrical faults.
- **Geometric Alignment:** Re-aligning rollers, guides, and beds for precise operation.
- **Spare Parts Manufacturing:** In-house fabrication of shafts, gears, and bushes to reduce lead time.
- **Installation & Commissioning:** Professional setup and leveling of new or relocated machines.

Technical Details

Parameter	Specification
Service Scope	AMC, Breakdown Repair, Retrofitting, Reconditioning
Machines Covered	Hydraulic Presses, Tube Mills, Rolling Machines, Bending SPMs
Automation Upgrades	Conversion from Manual to Servo/PLC Systems
Hydraulic Services	Oil filtration, Seal replacement, Pump/Motor repair (Vane/Gear/Piston)
Electrical Upgrades	Panel rewiring, VFD installation, Sensor integration
Mechanical Repair	Guide scraping, Spindle reconditioning, Gearbox repair
Availability	On-site support and In-house repair facility

Applications

- **Tube Mill Alignment:** Correcting roller alignment for straight, defect-free tubing.
- **Control Panel Modernization:** Replacing obsolete electronics with modern automation.
- **Leakage Arresting:** Fixing hydraulic leaks in power packs and cylinders.
- **General Plant Maintenance:** Supporting MSMEs with outsourced maintenance teams.

Partnering in Your Growth with Precision Engineering

Why Choose Us?

With over a decade of established excellence and leadership backed by 30+ years of industry experience, we don't just build machines; we build competitive advantages.

- **Robust Engineering:** Machines designed to withstand harsh industrial environments and perform under pressure.
- **Custom Solutions:** From SS Tube Mills to complex Welding Automation, we tailor every SPM to your exact needs.
- **End-to-End Support:** We offer more than just sales—we provide installation, calibration, and Preventive Maintenance Contracts (AMC) to keep your plant running.
- **Quality Assurance:** Strict quality control measures and international standards at every stage of production.

GET IN TOUCH *Ready to upgrade your manufacturing capabilities? Contact our engineering team today.*

Corporate Office & Works: Plot No. D19, Dabua Pali Road, Opp. Karan Metal Press, Faridabad, Haryana

Contact Support:

Phone: +91-8130973922 ,9811628272, 7982684578, 8920760637
Email: info@veuflex.com , vvtoolsfbd@gmail.com, info@veuflex.in

Visit Us Online:
Web: www.veuflex.com ,www.veuflex.in

"Precision Engineered Solutions for Modern Manufacturing"