Swager Feeding Systems

Optimize your Swaging operation and increase operator safety with a FENN Feeding System. Benefits include:

**Safety**  FENN recommends all Swagers have a Feeding System to isolate the operator from the material

**Productivity**  Feeders help establish a department takt time and reduce material re-work.

**Accuracy**  Feeding Systems are engineered to be accurate and repeatable for decades of use

**Custom Application Feeder**
FENN can design a customized feeder to meet your unique and demanding production needs. Systems are available for unique shapes, varying sizes or high capacity products. Available for all FENN Swagers; sizes NF–8F.

**Manual Feeder (12M)**
This economical feed promotes operator safety and greater precision. The handwheel is used to feed material into the Swager for end forming a discrete length, while removing the operator from direct material contact. Available for FENN Swagers 2F–4F.

**Door Mounted Feeder (DM500–DM1250)**
This Feeding System is mounted to the door of the Swager and feeds material using hydraulically powered pinch rolls. This feeder is engineered to work well with wire & rod customers to point material for drawbench use. Also ideal for continuous thru-swaging of spool material such as high tensile wire rope. Available for FENN Swagers 3F–8F, others upon request.

**Hydraulic Table Feeder (25H, 45H & 60H)**
This table feeder uses a rigid base with a hydraulically powered, accurate, sliding top for precision applications. The system is controlled using a HMI touch screen with Allen Bradley or Siemens components. Available for FENN Swagers 3F–8F, others upon request.

**Spare Parts:**
In addition to a reliable machine, producing high quality swaged parts also requires precision tooling. Every Swager die, hammer or wear part is crafted specifically with your machine and application in mind. Our application specialists and spare parts department are available to assist you with a full range of stocked parts ready for shipment. Contact us today to learn more.

Swagers

An efficient, low cost way to point, reduce & form rod, wire or tube.

Trust the Leading Supplier of Swaging Machines & Dies

For more than a century, FENN has been the most trusted provider of precise, dependable metal forming machinery, including its full range of Swaging machines. Swaging can be defined as metal forming without cutting chips and is used for reducing wire, tube or rod. Swaging machines form metal by rapid succession of hammer blows, and FENN offers several different types of Swagers to meet the diverse application requirements of our clients. From initial design, to manufacturing and equipment support, FENN has a full team of experts ready to help ensure your project’s success.

At FENN, our experts take the time to design and build the right machine to fit your specifications and fulfill your production requirements at our Connecticut, USA headquarters. Contact us today to see how FENN can customize a Swager best suited for your unique application requirements.

Swaging benefits include:

- **Improves physical characteristics** because metal is forged with improved grain structure, and increased elastic limit and tensile strength.
- **Imparts a high finish**, which can eliminate secondary operations.
- **Permits control** of wall thickness through the use of a mandrel.
- **Speeds assembly** where tubes are to be crimped together, fittings attached to tubing, rod, hose, flexible tubing, or wire cable.
- **Permits lower stock inventory**: Swaging to the required size and finish permits stocking fewer sizes.
- **Saves on material** because metal is displaced longitudinally as it is hammered - not wasted into chips by removal.
- **Tooling is relatively low in cost**: Dies are quickly changed and tooling is extremely flexible.
- **Saves on labor** because highly skilled operators are not essential. Several machines incorporating feeders & material handling systems can be tended by a single operator.

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www.fenn-torin.com

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Basic Types of Swaging

Assembling:
A fitting is set over a cable, then inserted into the Swager and the cold forming force of the hammer actions produces a complete assembled piece. Examples include: Sailing rigging equipment, architectural cable railings and recreational rope course cables.

End Forming:
A single piece of tube or rod is inserted into the Swager to a specified depth and reduced to a smaller diameter. The piece may be complete or ready for secondary operations such as drawing, drilling or tapping. Examples include: Aerospace tube components and fluid control tubes.

Through Swaging/Reducing:
Long lengths of cable, rod or tube are passed through the Swager. The entire length of the material is reduced to a smaller overall diameter, and the cold forging process produces a desired tensile strength or material property. Examples include: Cartridge heaters and logging industry applications.

Rotary Swagers:
In a Rotary Swager, the dies and hammers revolve around the work, producing perfect symmetrical pieces with an exceptional finish. FENN offers nine basic sizes of Rotary Swaging machines ranging in capacity from needle size to 6” O.D. tubing. Rotary Swagers are available in two types: 2-die for simple applications or 4-die for harder materials, which generally achieve greater reductions per pass.

Stationary Die Swagers:
For non-circular cross sections: because the dies and hammers do not revolve in a Stationary Die Swager, it is possible to forge asymmetrical shapes. Two basic types are available: simultaneous blow (fluted shapes, circular cross sections) and the patented alternate blow (rectangular shapes, squares and hexagons).

Long Die Swagers:
For tapering tubing up to 24” long. FENN Long Die Swaging Machines economically & rapidly produce long, shallow tapers for items such as furniture legs, sporting goods and aerospace products. These machines serve a wide variety of materials: both welded and seamless tubing of either ferrous or nonferrous metals, from stainless steel to aluminum. Coolant/Slushing Systems are available as an option on all size swagers.

Industries Served by Swagers
- Materials Research – Development related to improving grain structure and finish
- Aerospace – Wire rope flight control cable assemblies, control rods, fluid transfer tubing
- Medical – Catheter band assemblies, hypodermic needles, optical instruments
- Automotive – Drive shaft, half shaft/axles, emergency brake cable assemblies, steering components
- Renewable Energy – Superconducting material, zirconium rod and cartridge heaters
- Military – Anti-tank rocket tips, gun barrels, MS-spec fittings swaged into cable

Capacities & Dimensions: Rotary Swaging Machines
Swager capacities (*) listed are maximums for normal reductions 60,000 PSI tensile material. Capacity must be reviewed for each specific application. Measurements are in inches.

<table>
<thead>
<tr>
<th>Model</th>
<th>NF</th>
<th>2F</th>
<th>3F</th>
<th>4F</th>
<th>5F</th>
<th>6F</th>
<th>7F</th>
<th>8F</th>
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<tbody>
<tr>
<td>Capacity-Solid</td>
<td>1/16&quot;</td>
<td>1/32&quot;</td>
<td>5/64&quot;</td>
<td>1/16&quot;</td>
<td>1/24&quot;</td>
<td>2/32&quot;</td>
<td>3/32&quot;</td>
<td>3/32&quot;</td>
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<tr>
<td>Capacity-Tubing</td>
<td>1&quot;</td>
<td>2-1/4&quot;</td>
<td>3-3/8&quot;</td>
<td>4-1/2&quot;</td>
<td>6&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Swager capacities listed are maximums for normal reductions on low-tensile material. Capacity must be reviewed for each specific application.