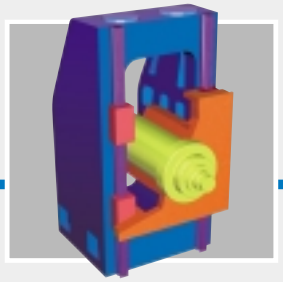
SKF

Russell T. Gilman, Inc.

Flexible Manufacturing Cells









SKF Module-Mation™ Manufacturing Cells -

Facing application challenges

Regardless of the type of manufacturing engineering you do - whether designing for in-house use or as a custom machine tool builder - every specialized application presents challenges. From configuration to components ... from the materials to the machining specifications ... your requirements demand solutions that assure quality, consistency and reliability.

SKF's global manufacturing engineering network provides that assurance in the form of a worldwide knowledge base, allowing you access to the vast experience and expertise that turns your local requirements into specifications, then quickly translates them into value-added solutions.

The following chart shows SKF manufacturing cell options available to you in designing and assembling your manufacturing lines. SKF offers a complete range of work envelopes, tooling, motion control methods and control ready accessories.

Changing work envelope

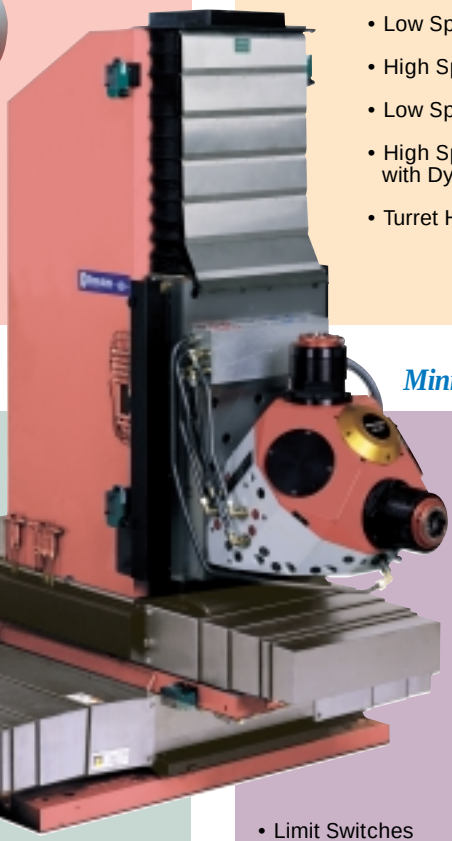


- 6"-8" Cube - EDM Electrodes, Pistons
- 12"-16" Cube - Pump Housings
- 24" Cube - Engine Components

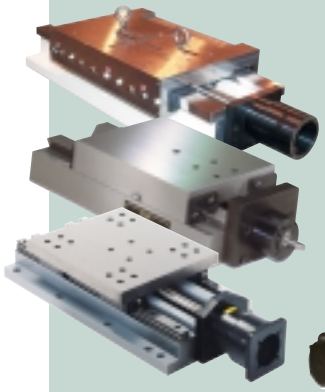
Adapting to many tooling needs



- Low Speed Belt Driven Spindles
- High Speed Belt Driven Spindles
- Low Speed Integrally Motorized Spindles
- High Speed Integrally Motorized Spindles with Dynamic Preload Control
- Turret Head with multiple spindles



Optimizing cycle times



- Hardened Ways with Low Friction Bearing Surface
- Dovetail Ways are self lubricating
- Roller Bearing for High Cycle, High Speed

Minimizing integration work





- Limit Switches
- Feedback Systems
- Piping & Wiring
- Motor Mount

Meeting the Demands of Production and Versatility

High performance alternative to machining center technology

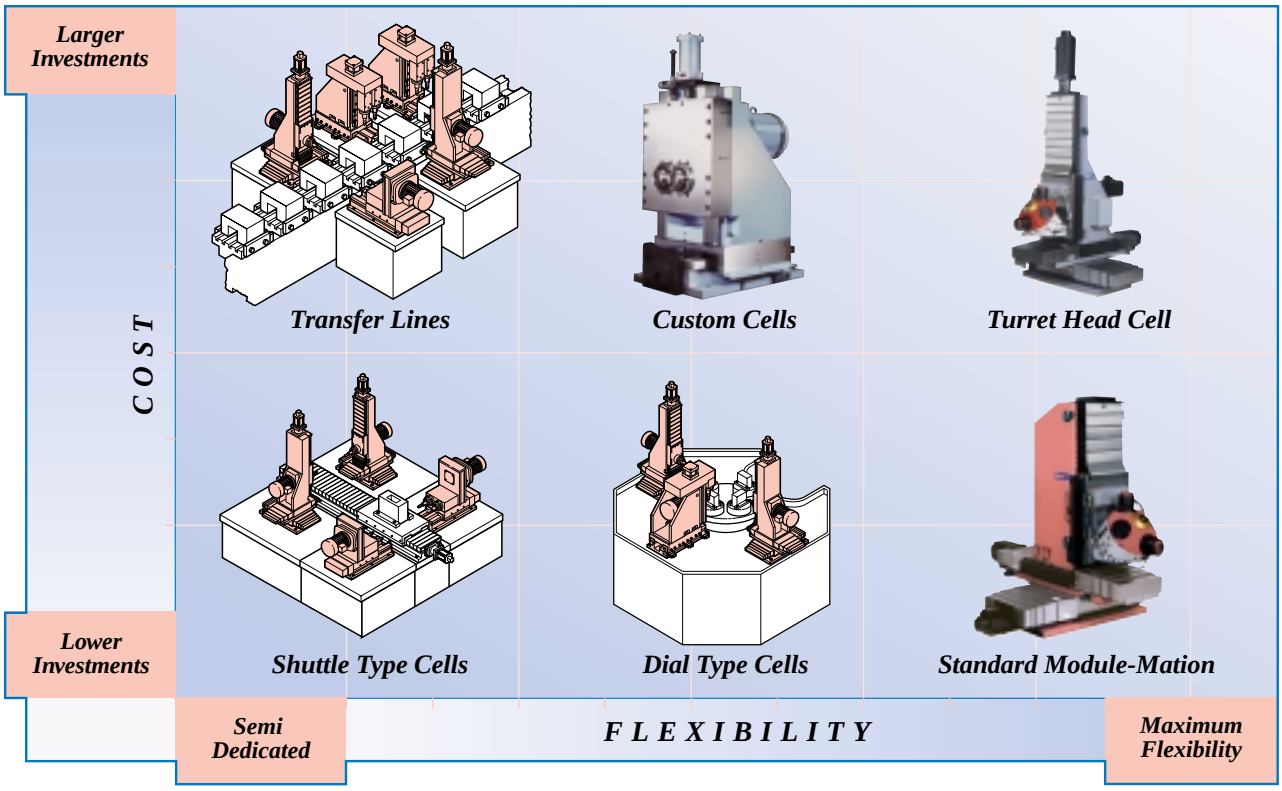
Every successful manufacturing engineer depends on partners who can enhance the design process. Because we continually research and develop machining and component applications, SKF is uniquely qualified to help you identify and incorporate the best solutions from both existing and emerging technologies.

Flexible performance alternative to transfer technology

The following charts illustrates the various manufacturing cells offered for a variety of application requirements ranging from stand-alone units for maximum flexibility to custom-built units for high-volume flexible transfer lines.

Whatever your need, SKF will deliver components to satisfy all your demands, from single modules or shuttle-type cells to multiple-module rotary transfer or special systems.

From stand-alone modules to custom cells SKF has the experience



Smaller, flexible manufacturing cell benefits

	Capacity Comparison	Labor Comparison	Economic Comparison	Flexibility Comparison
Modular Cells of two to six machines	Incremental Capacity	Multiple Stations: One Operator	Scalable Investments	Fully Programmable
Machining Centers	Large Quantities Required	One Operator Per Unit	High Unit Cost	Fully Programmable
Large Special Systems	Fixed Output	High Set Up Costs	High Initial Investment	Dedicated process

Addressing Flexibility In Production Systems

Introducing the Module-Mation™ machining concept

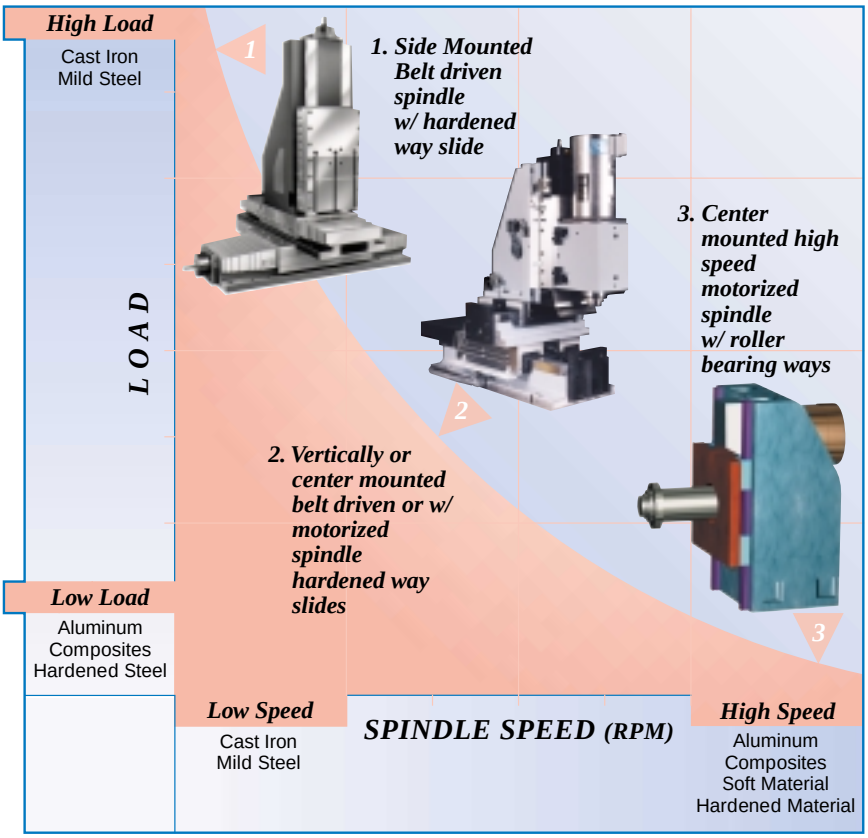
Historically, special machines have offered low unit part costs, but with limited flexibility to produce more than one part. Machining centers have offered very high levels of flexibility to produce different parts, but required high investment in machines to produce the desired volume, resulting in higher unit costs.

The flexible cell concept provides a better mix of volume production at low cost and flexibility to produce a number of different parts.

New Module-Mation™ design configuration selections

- Choice of axis structures
- Reconfigurable column
- Interchangeable spindles
  - Belt-driven
  - High speed
  - Indexing head
- Standardized axes travels
- Industry-standard control compatibility
- Precision geometry
- Available accessories
  - Limit switches
  - Way covers
  - Lubrication systems
  - Motor mounts
  - Wiring and cable carriers
  - Tooling systems

NEW Module-Mation™ Spindle Configuration Selections



MODULE-MATION™ SOLUTIONS

The Cost Challenge:

Traditionally, many manufacturing cells have been beyond a manufacturer's budget, especially custom design machines and custom machines with significant engineering required to meet specialized applications.

Solution:



SKF's new line of CNC Modules have been designed to accommodate a flexible array of applications while utilizing a standard design and work envelopes.

By building these highly adaptable modules in quantities, we can now deliver state-of-the-art cell solutions at costs never before possible.

While we'll continue to offer our renowned customizable lines of manufacturing cell modules, we're confident that this new reconfigurable line will answer the needs of machine tool builders for more economical and more flexible manufacturing cell solutions.

The Configuration Challenge:

Manufacturing cells have frequently been hard to modify once installed.

Solution:

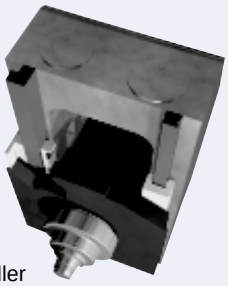
SKF's new Module-Mation Units will accept a variety of different spindles. For example, a belt-driven, high-horsepower spindle configuration might be employed to bore cast iron while a high-speed, integrally-motorized spindle configuration used to cut aluminum molds. Given the ability to mount spindles horizontally or vertically — center or side mount — builders can quickly and easily adapt a module for multiple applications.

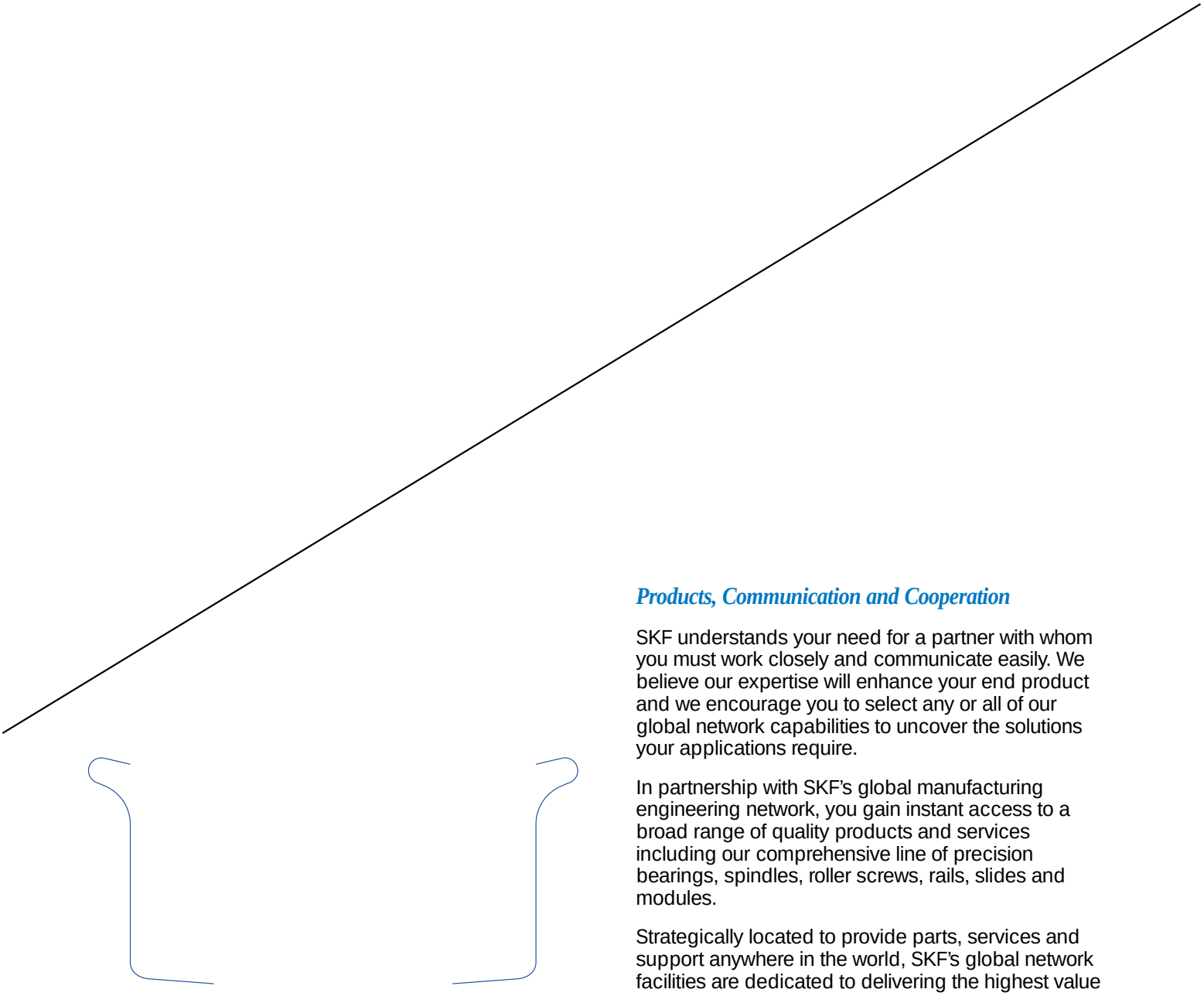
The Complexity Challenge:

Manufacturing cells are too complex.

Solution:

Though their design does indeed spring from complex analysis of builders' requirements, SKF's new Module-Mation Unit breaks new ground by utilizing standardized concepts. Each module is delivered with your choice of three spindle types — belt, motorized or turret — and hardened way or roller bearing slides.





Products, Communication and Cooperation

SKF understands your need for a partner with whom you must work closely and communicate easily. We believe our expertise will enhance your end product and we encourage you to select any or all of our global network capabilities to uncover the solutions your applications require.

In partnership with SKF's global manufacturing engineering network, you gain instant access to a broad range of quality products and services including our comprehensive line of precision bearings, spindles, roller screws, rails, slides and modules.

Strategically located to provide parts, services and support anywhere in the world, SKF's global network facilities are dedicated to delivering the highest value to our manufacturing partners.

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