

# Flex Finger Tooling

## 100/125 Series

FLEX 100/125 Finger Tooling allows quick and easy changeover of tools between new die sets. Our modular components are simple to configure due to the ability to adjust one axis at a time without disrupting the position of the other axis. This saves time and resources by allowing more throughput per press line.

Atlas FLEX Finger Tooling is the strongest available on the market today, providing joint strength of up to 400 foot pounds. Our patented wedge style of swivel clamp holds its position accurately during high speeds and heavy volumes of production. In fact, testing has proven that our tooling holds nearly 100% of its clamping strength even when it is readjusted and reused, unlike other tooling brands on the market..

## Atlas Spare Parts & Service Contacts

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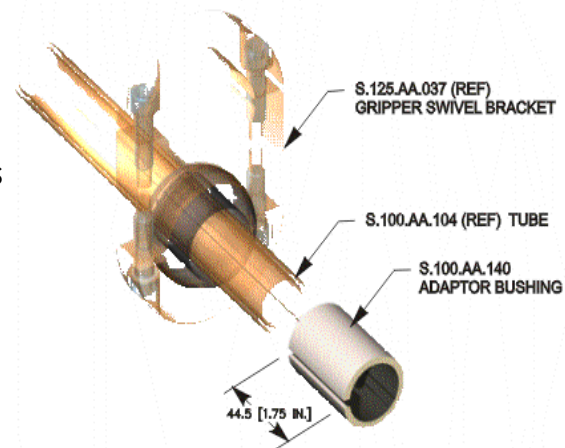
3100 Copper Ave., Fenton, MI 48430 USA  
Phone: 1-810-629-6663 Fax: 1-810-629-8145  
[www.atlastechnologies.com](http://www.atlastechnologies.com)

## Adapter Bushing

### Features & Benefits

The Adapter Bushing is a universal adapter that allows the Series 100 tooling arms to have complete access to all Series 125 components with .125 identification in the catalog including:

Knuckles  
Quick Disconnect Adapters  
Tooling Links  
Gripper Assemblies  
Edge Sensing Assemblies



Flex 100 & 125 Adapter Bushing  
Part #S.100.AA.140

If you are purchasing any of our Adapter Bushing, you might also want to look at:

- *Adapters*
- *Tooling Links*

These additional components can be found online in our Tooling section at [www.atlastechnologies.com](http://www.atlastechnologies.com).

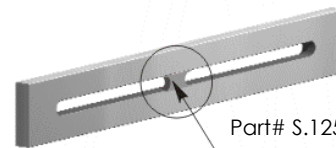
## Crossbars

### Features & Benefits

- Solid one piece machined aluminum for structural integrity.
- Slots to mount multiple shovels on a single finger tool.
- Slots to accept the machined key on the wedge clamp assembly for mounting to Series 100 and Series 125 tooling arms while maintaining radial orientation.
- Numerous standard lengths to accommodate a double shovel arrangement for various width parts.

### Crossbars

Part Number	.xx =	Length (mm)	Length (inches)
S.125.AA.132.01	0.01	152.4	6
S.125.AA.132.03	0.03	203.2	8
S.125.AA.132.05	0.05	254	10
S.125.AA.132.07	0.07	304.8	12



Part# S.125.AA.132.XX

Bridge machined in crossbars:  
.03, .05, & .07. No bridge in .01.

If you are purchasing our Crossbars, you might also want to look at:

- *Tooling Arms*
- *Shovels*

Additional components can be found online in our Tooling section at [www.atlastechnologies.com](http://www.atlastechnologies.com).

## Edge Sensing Assemblies

### Features & Benefits

- Designed to straddle all available standard shovels, shovel stops and shovel traps for part present detection.
  - Will not lose part present detection for minor part flutter within the shovel and shovel trap minimizing part present faults to the transfer.
  - Accommodates all commercially available 12 mm cylindrical proximity sensors
  - May be purchased with or without sensor.
- Dependable and consistent gravity return of edge sensing flipper.
  - Edge sensing assemblies protect the sensor by eliminating any potential contact with the part being detected.
  - Fits Series 125 components and Series 100 components with the use of the adapter bushing.



S.125.AA.041



S.125.AB.022



S.125.AB.039



S.125.AB.040

Part Number	Component
S.125.AA.041	Edge Sensing Assembly - No Sensor Included. Suitable for the cast 1 1/2" box & 1 1/2" Spade Shovels with <i>Torsion Spring Return</i> .
S.125.AB.022	Edge Sensing Assembly - No Sensor Included. Suitable for the cast 1 1/2" box & 1 1/2" Spade Shovels with gravity return.
S.125.AB.039	Spade Shovel Edge Sensing Assembly - No Sensor Included. Use with 2" Spade Shovel, not suitable for the 2" Stamped Box Shovel.
S.125.AB.040	2" Stamped Box Shovel Edge Sensing Assembly - No Sensor Included. Use With 2" Stamped Box Shovel, Not Suitable for 2" Spade Shovel.
P.063.AA.100	Sensor - AB 12mm cylindrical micro 3-pin QD, AC/DC shielded (for use with edge sensing assemblies).
P.063.36.100	Sensor -AB 12mm cylindrical, micro 4-pin QD DC (PNP) (for use with edge sensing assemblies).

If you are purchasing our Edge Sensing Assemblies, you might also want to look at: ·

·Shovels ·Crossbars

Additional components can be found online in our Tooling section at [www.atlastechnologies.com](http://www.atlastechnologies.com).

# In-Line & 90° Offset Arms

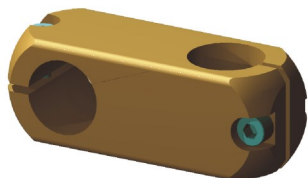
### Features & Benefits

The In-line Offset Arm and the 90° Offset Arm provide a cost effective solution for simple 90° transitions or in-line offsets without the expense or added flexibility of our patented Swivel Clamp Assemblies.

- Solid one piece machined aluminum for structural integrity.
- Machined to close tolerance for maximum clamping force on standard bases, tooling arms and tooling links.
- Ideal for a simple 90 degree offset or an in-line offset of standard bases to tooling arms or tooling arm to tooling arm transitions.
- Independent adjustability in two axis.
- Metric fasteners.
- Anodized finish for appearance and durability.

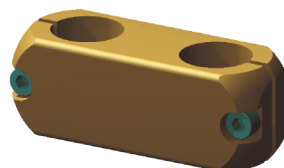
### Flex 100 Offset Arms

Part Number	Component
S.100.AA.171	Offset Arm 90°
S.100.AA.172	Offset Arm In-line



### Flex 125 Offset Arms

Part Number	Component
S.125.AA.171	Offset Arm 90°
S.125.AA.172	Offset Arm In-line



If you are purchasing any of our In-Line & 90° Offset Arms, you might also want to look at:

- *Standard Bases*
- *Tooling Links*

These additional components can be found online in our Tooling section at  
[www.atlastechnologies.com](http://www.atlastechnologies.com).

## Mounting Assemblies

### Features & Benefits

- Machined to close tolerance for maximum clamping force on standard bases, tooling arms, tooling links and grippers.
- Adapts most commercially available grippers to Series 100 and Series 125 finger tooling components.
- Available with or without spherical steel ball.
- Independent adjustability in two axis.
- Metric fasteners.
- Anodized finish for appearance and durability.

### Flex 125 Mounting Assemblies

Part Number	Component
S.125.AA.038	End Tooling Swivel Mounting Assembly
S.125.AA.037	Gripper Mounting Assembly - Spherical Type for BTM
S.125.AA.128	Gripper Mounting Assembly - 90° Type for BTM

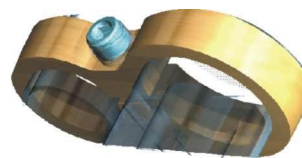
*Note: This product is only available in the 125 Series.*



Part #S.125.AA.038



Part #S.125.AA.037



Part #S.125.AA.128

If you are purchasing any of our Mounting Assemblies, you might also want to look at:

- *Edge Sensing Assemblies*
- *Tooling Links*

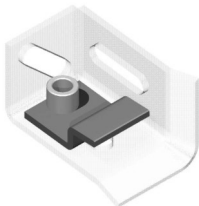
## Shovel Stops and Traps

### Features & Benefits

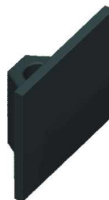
- Large family of stamped steel standard shovel stops and shovel traps.
- Shovel stops and traps are designed to fit the part contour by utilizing the integrated slots in the box and spade shovels for mounting and adjustment.
- Shovel stops and traps have integrated nuts to simplify adjustment.
- Shovel stops and traps are black oxide coated to prevent rust.
- Versatile scissor shovel may be used as a one piece shovel and trap combination or rotated 90 degrees for a side guide and trap.

### Shovel Stops and Traps

Part Number	Component
S.125.AA.146	Shovel Trap
S.125.AC.131	Shovel Stop - 38 mm (1.5 in.)
S.125.AA.147	Scissor Shovel



Part#S.125.AA.146



Part#S.125.AC.13



Part#S.125.AA.147

If you are purchasing our Crossbars, you might also want to look at:

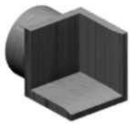
- *Tooling Arms*
- *Shovels*

Additional components can be found online in our Tooling section at [www.atlastechnologies.com](http://www.atlastechnologies.com).

# Shovels

### Features & Benefits

- Large family of stamped steel standard box shovels, spade shovels, shovel stops and shovel traps.
- Box and spade shovels have integrated slots for mounting and adjustment of shovel to cross-bars or tooling arms.
- Box and spade shovels have integrated slots for mounting and adjustment of shovel stops and traps to fit the part contour.
- Integrated shovel mounting slots are designed to fit over the key on the wedge clamp assembly to prevent rotation of the shovels mounted to tooling arms.
- All shovels are designed to accept the use of Edge Sensing Assemblies for part present detection.
- Shovels are black oxide coated to prevent rust.
- Versatile scissor shovel may be used as a one piece shovel and trap combination or rotated 90 degrees for a side guide and trap.
- Custom Shovels are available upon request.



Part # S.125.AA.120

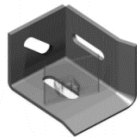


Part # S.125.AB.141



Part # S.125.AB.142

Part Number	Component
S.125.AA.120	Cast Box Shovel
S.125.AA.141	Stamped Box Shovel - 38 mm (1.5 in.)
S.125.AB.142	Spade Shovel
S.125.AA.130	Stamped Box Shovel - 51 mm (2 in.)
S.125.AB.143	Sheet Metal Shovel - 51 mm (2 in.)
S.125.AA.147	Scissor Shovel



Part #S.125.AA.130



Part # S.125.AB.143



Part # S.125.AA.147

If you are purchasing any of our Shovels, you might also want to look at our:

- *Edge Sensing Assemblies*
- *Shovels Stops & Traps*

These additional components can be found online in our

Tooling section at [www.atlastechnologies.com](http://www.atlastechnologies.com).





## Standard Tooling Bases

Atlas FLEX 100 & 125 Standard Finger Tooling Bases are made of machined aluminum and maintain their structural integrity due to their one piece design. We apply an anodized finish to our tooling for durability and appearance.

Maximum clamping forces of mating components is achieved through the close tolerances of our machining process.

Standard bases may be utilized with Atlas standard tooling rails or customer supplied tooling rails. Mounting of the base is accomplished with four mounting holes, providing secure attachment of the finger tooling assembly.

Our Flex 100 & 125 Standard Finger Tooling Bases are available in two sizes:

- Flex 100 Series Base has a standard 1" post:

*Part# S.100.AA.105*

- Flex 125 Series Base has a standard 1.25" post.

*Part# S.125.AA.105*

If you are purchasing our Standard Finger Tooling Bases, you might also want to look at:

- *Swivel Clamp Assemblies*
- *Tooling Links*
- *In-Line & 90 Degree Offset Arms*

Additional components can also be found online in our Tooling section at [www.atlastechnologies.com](http://www.atlastechnologies.com).



## Swivel Clamp Assemblies

### Features & Benefits

- Machined to close tolerance for maximum clamping force on standard bases, tooling arms and tooling links.
- Infinite adjustability in three axis.
- Independent adjustability of a single axis without affecting the other two axis.
- 360 degree swivel clamp joint capable of holding *400 foot pounds of torque*.
- Clamp collar rotates 360 degrees independently for ease of tightening clamp fasteners.
- Metric fasteners.
- Anodized finish for appearance and durability.

### Components

Our Flex 100 & 125 Swivel Clamp Assemblies are available in two sizes:

Flex 100 Series Swivel Clamp Assembly:



U.S. Patent # 6,116,845

Part# S.100.AA.020

Flex 125 Series Swivel Clamp Assembly:



U.S. Patent # 6,116,845

Part# S.125.AB.020

If you are purchasing our Swivel Clamp Assemblies, you might also want to look at:

- *Tooling Arms*
- *Tooling Links*

Additional components can be found online in our Tooling section at [www.atlastechnologies.com](http://www.atlastechnologies.com).

# Tooling Arms

## Features & Benefits

- Drawn aluminum tubing for close tolerances of the O.D. for maximum clamping force of all mating components.
- Available in 1" diameter Series 100 and 1-1/4" diameter Series 125.
- Available in standard lengths from 4" to 24".
- Inexpensive component designed to be the sacrificial components of the finger tooling assembly.
- Anodized finish for appearance and durability.



Flex 100 Tooling Arms Specifications

Flex 100	.xx =	LENGTH (mm)	LENGTH (inches)
S.100.AA.104.04	0.04	101.6	4
S.100.AA.104.06	0.06	152.4	6
S.100.AA.104.08	0.08	203.2	8
S.100.AA.104.10	0.10	254	10
S.100.AA.104.12	0.12	304.8	12
S.100.AA.104.14	0.14	355.6	14
S.100.AA.104.16	0.16	406.4	16
S.100.AA.104.20	0.20	508	20
S.100.AA.104.24	0.24	609.6	24



Flex 125 Tooling Arms Specifications

Flex 125	.xx =	LENGTH (mm)	LENGTH (inches)
S.125.AA.104.04	0.04	101.6	4
S.125.AA.104.06	0.06	152.4	6
S.125.AA.104.08	0.08	203.2	8
S.125.AA.104.10	0.10	254	10
S.125.AA.104.12	0.12	304.8	12
S.125.AA.104.14	0.14	355.6	14
S.125.AA.104.16	0.16	406.4	16
S.125.AA.104.18	0.18	457.2	18
S.125.AA.104.20	0.20	508	20
S.125.AA.104.24	0.24	609.6	24

If you are purchasing any of our Tooling Arms, you might also want to look at:

- *Swivel Clamp Assemblies*
- *90° Off-Set & In-Line Off-Set*

These additional components can be found online in our Tooling section at [www.atlastechnologies.com](http://www.atlastechnologies.com).

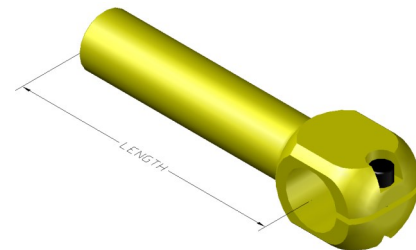
## Tooling Links

### Features & Benefits

- Solid one piece machined aluminum for structural integrity.
- Machined to close tolerances for maximum clamping force of all mating components.
- Idea for simple 90 degree in line transition.
- Metric fasteners.
- Anodized finish for appearance and durability.

### Tooling Links

Part Number	Length (mm)	Length (inches)
S.125.AA.136.01	69.85	2.75
S.125.AA.136.03	101.6	4.00
S.125.AA.136.04	152.4	6.00
S.125.AA.136.05	203.2	8.00
S.125.AA.136.06	254.0	10.00
S.125.AA.136.07	304.8	12.00



Part # S.125.AA.136.XX

If you are purchasing any of our Tooling Links, you might also want to look at our:

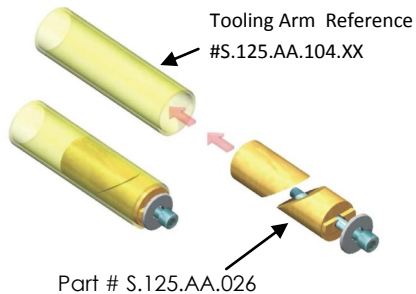
- *Tooling Arms*
- *Swivel Clamps*

These additional components can be found online in our Tooling section at [www.atlastechnologies.com](http://www.atlastechnologies.com).

## Internal Wedge Assemblies

### Features & Benefits

- Machined to close tolerance for maximum clamping force on I.D. of all tooling arms.
- Used for mounting all standard stamped steel shovels and crossbars to all tooling arms.
- Machined key engages the slot on the shovels and crossbars to maintain radial orientation.
- Available in 1" diameter Series 100 and 1-1/4" Series 125.



Our Internal Wedge Assemblies are available in two versions:

- Flex 100 Series Internal Wedge Assembly  
Part# S.100.AA.026
- Flex 125 Series Internal Wedge Assembly  
Part# S.125.AA.026

If you are purchasing our Internal Wedge Assemblies, you might also want to look at:

- *Tooling Arms*
- *Shovels*

Additional components can be found online in our Tooling section at [www.atlastechnologies.com](http://www.atlastechnologies.com).

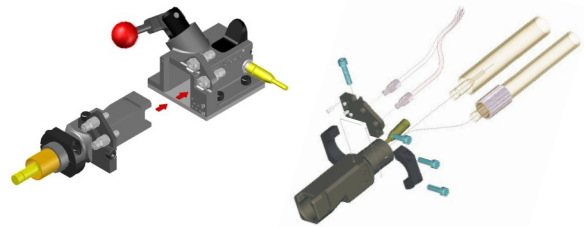
# Universal Tooling Adapter

## Features & Benefits:

- Easy adapter removal & installation with extra clearance.
- Hard coated aluminum reduces wear & nicking.
- Rugged Acme lock screw and handle.
- Three axis "wedge action" eliminates all unwanted movement.
- Square design prevents rotation of tooling.
- Detent latch provides double safety lock.
- Automatic connection for air and electronic sensors.
- Mechanical coding keys tooling to specific receiver.
- Compact design makes mounting easy.
- Light weight improves transfer performance.
- Easier changeover handling and storage of fingers.
- More economical than permanently mounted bar systems.
- Compatible with 1-1/4" diameter tooling fingers.

## Component Selection & Sizes:

- Basic with no option: #S.125.AA.080
- With pneumatic option: #S.125.AA.081
- With electric option:
  - 3 Pin: #S.125.AA.086
  - 4 Pin: #S.125.AA.087
- With mechanical option: #S.125.AA.090
- With electric and pneumatic option:
  - 3 Pin: #S.125.AA.082
  - 4 Pin: #S.125.AA.083



If you are purchasing our Universal Tooling Adapter, you might also want to look at:

- *Universal Tooling Receiver*
- *Tooling Arms*
- *Universal Tooling Rails*

These additional components can be found online in our Tooling section at [www.atlastechnologies.com](http://www.atlastechnologies.com).

## Universal Tooling Receiver

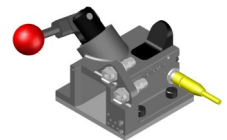
### Features & Benefits

- Utilizes anti-rotational (square design) tooling receivers and adapters which also provides generous clearance for quick tooling changeover.
- Incorporates the FLEX Cam Lock, which is a rugged cam operated lever used as the primary lock for the tooling adapter.
- Includes an automatic detent latch which provides double the protection for securing the tooling adaptor in place.
- Provides automatic connection of electrical for part detection and pneumatic for clamping (if required).
- Receiver/Adaptor interface offers mechanical coding which insures proper tool placement in the correct receiver.
- Incorporates light weight components to improve transfer performance.
- Easier changeover, handling and storage of fingers.
- Hard coated aluminum reduces wear & nicking.
- Compact design makes mounting easy.
- More economical than permanently mounted dedicated rail systems.
- Compatible with 1" & 1-1/4" diameter tooling fingers.

### Component Selection & Sizes

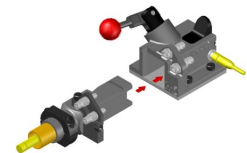
- Basic with no option: #S.125.AA.060
- With pneumatic option: #S.125.AA.061
- With electric option-3 Pin: #S.125.AA.066
- With electric option-4 Pin: #S.125.AA.067
- With Mechanical option: #S.125.AA.070
- With electric and pneumatic option:
  - 3 Pin: #S.125.AA.072
  - 4 Pin: #S.125.AA.073
- With electric, pneumatic, & mechanical option:
  - 3 Pin: #S.125.AA.076
  - 4 Pin: #S.125.AA.077

U.S. Patent No. 6,427,996



If you are purchasing our Universal Tooling Receiver, you might also want to look at:

- *Universal Tooling Adapter*
- *Tooling Arms*
- *Universal Tooling Rails*



Additional components can also be found online in our Tooling section at [www.atlastechnologies.com](http://www.atlastechnologies.com).