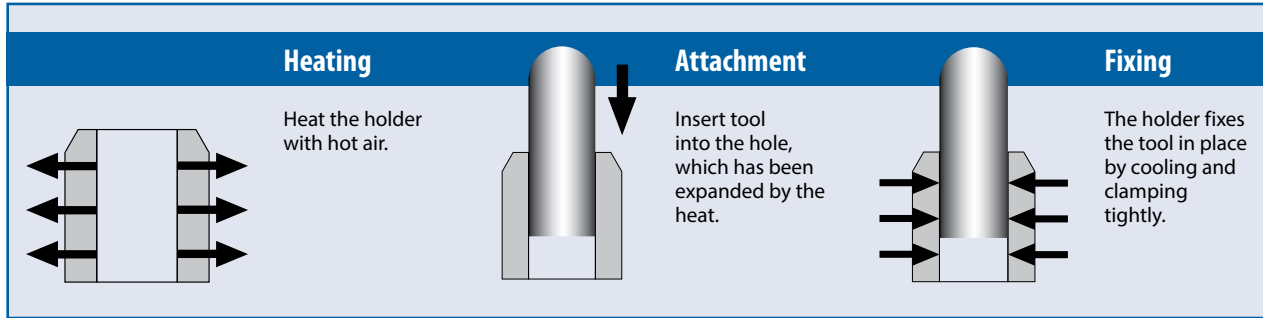
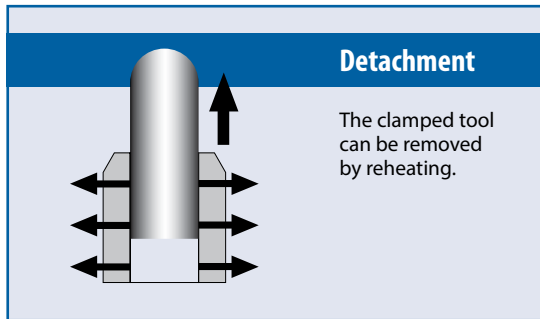




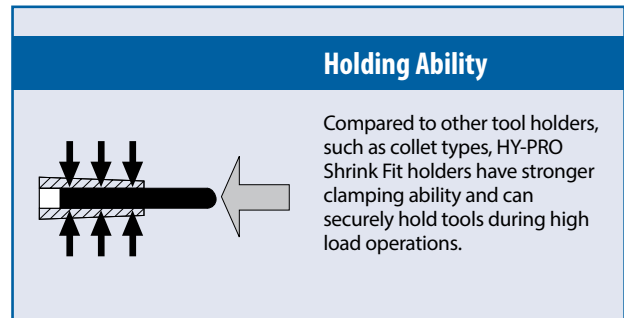
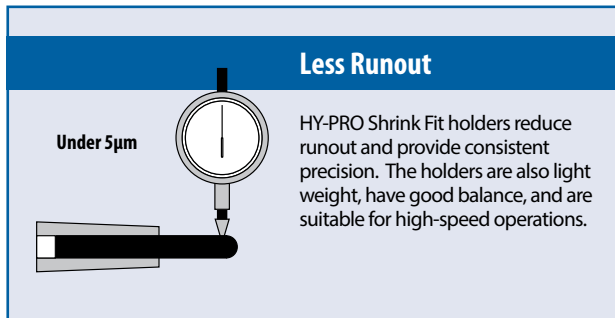
## Tool Insertion



## Tool Removal

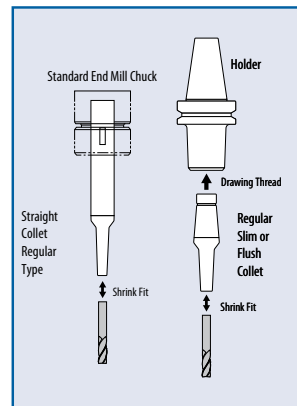


## Features

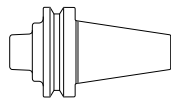
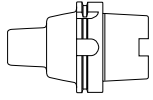
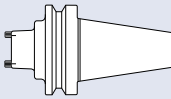
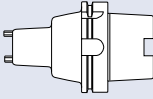





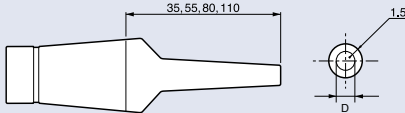
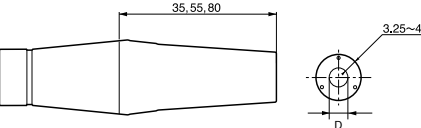
Holders	Shrink Extensions	Cutting Tools
<b>Basic</b> CAT40 CAT50 BT30 BT40 BT50 HSK-E50 HSK-A63 HSK-F63M HSK-A100  <b>Nozzle</b> CAT40 CAT50 BT40 BT50 HSK-A63 HSK-A100	<b>Slim</b> Ø3 - 12mm Ø1/8 - 1/2"  <b>Regular</b> Ø3 - 12mm Ø1/8 - 1/2"  <b>Flush</b> Ø3 - 12mm Ø1/8 - 1/2"	<b>Carbide End Mills</b>  <b>Carbide Drills</b>  <b>Other Carbide Tools</b>



## Holders

Type	Specifications	CAT, BT Holders	HSK Holders
Basic Holders	Holder for Shrink Extension	CAT40, CAT50 BT30, BT40, BT50 	E50 A63, A100 F63M 
Nozzle Holders	Holder for Shrink Extension (with optional coolant supply nozzle)	CAT40, CAT50 BT40, BT50 	A63, A100 

## Extensions

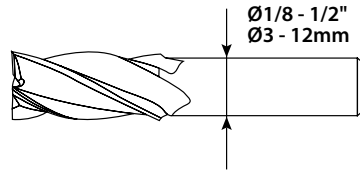
Type	Application	Dimension/Size
Regular Type	For General Operations and Coolant-Through Tool	 inch/metric
Slim Type	Use this type when a slim holder is needed to avoid interference between the tool and the work piece	 inch/metric
Flush Type	Use this type when you want coolant supplied from the end face of the extension	 inch/metric



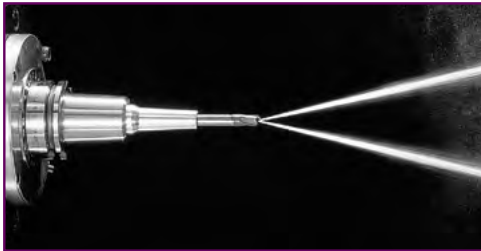


## For Small Shank Diameter use h6 Shanks

The HY-PRO Shrink System can be used for tools with a minimum shank diameter of 1/8" or 3mm. For tools with a shank diameter of Ø1/4-1/2" or Ø6-12mm, the system requires at least an h7 shank tolerance; for tools with a shank diameter of Ø1/8-3/16" or Ø3-5mm, use an h6 shank tolerance. A wide variety of tools are applicable.



## Various Coolant Supply Devices



### Through the Tool

Suitable when using a tool with internal coolant to supply the point of the cutting edge. This is especially effective for drilling because the coolant is guaranteed to reach the cutting area.



### Through the Holder

Supplies coolant from the front face of the holder. This is used for tools without internal coolant supply and regular or slim type extensions.



### Through the Collet

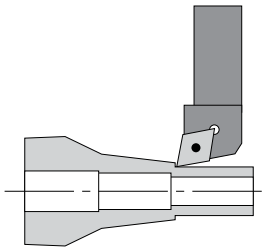
Supplies coolant from the front face of the shrink extensions. Although the diameter of the collet end face increases, coolant supply becomes even more effective.





## Do-It-Yourself Extensions

If necessary, the shape of the shrink extension can be easily modified. This design provides the best holder shape for operations that have major interference with work materials.

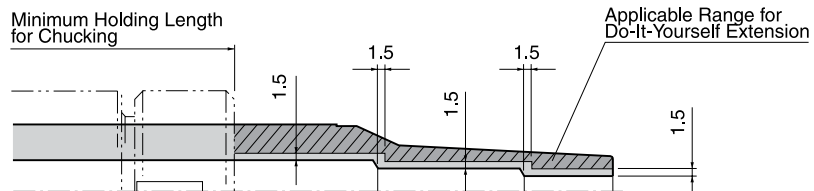
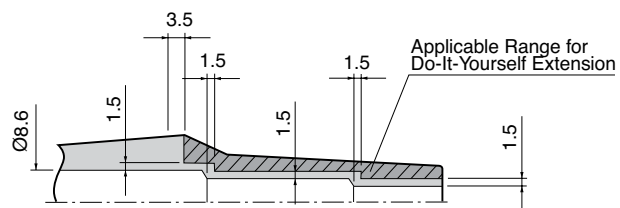


1. The shape of the flush collet cannot be adjusted.
2. Other adjustments should be based on the ranges described below. (Wall thickness should be at least 1.5mm)
3. DO NOT change the overall length.
4. For details, please refer to the instruction manual attached to the product package.

## Recommended Cutting Conditions for Extension Modification

1. The cutting depth should be kept small.
2. Use water soluble coolant.
3. Use positive-rake inserts for stainless steel.

Cutting Speed (m/min)	Cutting Speed (m/min)	Feed (mm/rev)	Cutting Depth (mm)
Roughing	30 - 50	0.1	0.2
Finishing	30 - 50	0.05	0.1





## HY-PRO® Shrink - Proper Care Information

Please follow these guidelines to ensure your HY-PRO® Shrink extensions stay looking and performing like new for years to come:

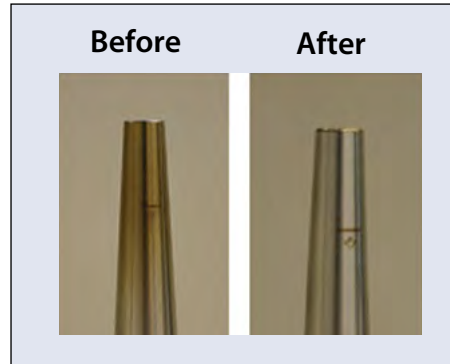
- When not in use, remove tool and clean/dry the inside & outside of holder as thoroughly as possible. Apply rust-proofing oil (WD-40® for example) to help inhibit oxidation. Excessive internal rusting will lead to hairline fractures in the steel.
- Be sure to use cutters with shank diameters that adhere to ISO tolerance requirements. Remember, HY-PRO® Shrink holders are made to accommodate the following:

Ø1/8-3/16" and Ø3-5mm	→	h6 tolerance ONLY!
Ø1/4-1" and Ø6-25mm	→	h7 tolerance ONLY!

- Failure to use tools that adhere to these standards may result in complications with respect to inserting and removing tools.
- Be sure to observe minimum chucking lengths on extensions. Failure to do so can result in poor accuracy, deformation, or cracking of tool or extension.

### Care Tips:

- Simple household bleach will remove oxidation from the outside of extensions. Use it to clean metal powder and debris from the insides as well to help prevent scratching & abrasions.



- Be sure to keep threads on the end of the extensions well oiled to allow for easy installation and removal from the holders.

