

### MILLING - TOOL HOLDERS

Featuring  
**INNOFIT™**  
adaption

#### Pilot Diameters

0.750-1.500"  
22-40 mm

#### Modular Adaptions

InnoFit Z4  
InnoFit Z5

#### Master Shank Adapters

BT40 Z4  
BT50 Z4, Z5  
CAT40 Z4  
CAT50 Z4, Z5  
DIN69871-40 Z4  
DIN69871-50 Z4, Z5  
HSKA63 Z4  
HSKA80 Z4, Z5  
HSKA100 Z4, Z5

# ! ABSORBER™

An **INNOFIT™** Product

# AHB

**TOOLING & MACHINERY**

**COMPLETE METALWORKING SOLUTIONS**  
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ISO Certified      customerservice@ahbinc.com

#### Modular Damping System for Shell Mills

- » Damping extension reduces vibration in long reach milling applications
- » Fully compatible with all InnoFit holders and extensions
- » Modular InnoFit connection features 3-point clamping for maximum rigidity
- » Suitable for use with 2-6" (50-160 mm) cutter bodies



See it in  
action! »



**WINSPEED™**  
ADVANCED MACHINING

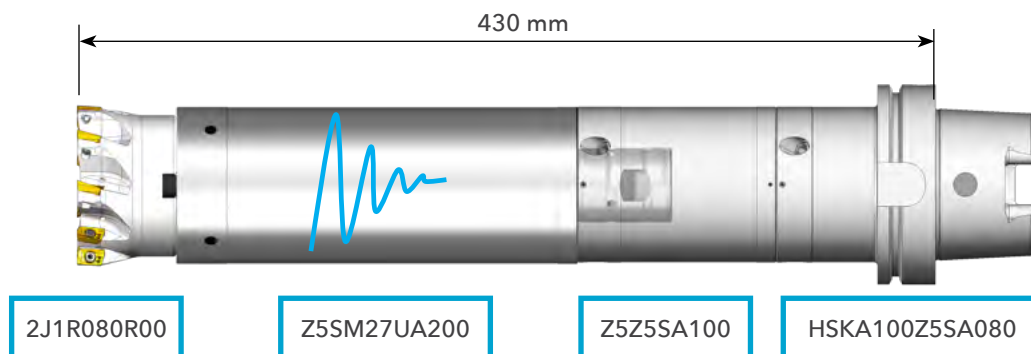
ingersoll-imc.com   

## Overview

Ingersoll's proven **InnoFit** modular adaption system is expanding to include the new **I-Absorber** vibration damped shell mill extension. The new **I-Absorber** anti-vibratory shell mill extension is available in the Z4 and Z5 **InnoFit** adaption with both inch and metric pilot diameters and is compatible for use with all standardized **InnoFit** master shank adapters, reducers, and extenders.

## Application Range

In long reach applications that exceed 4xD, the operation is oftentimes only possible when vibration damped tool combinations are utilized. The new standardized I-Absorber vibration damped shell mill extensions were specifically designed to handle the radial milling loads in these long reach applications. The self centering 3-point clamping connection of the modular InnoFit adaption prevents misalignment of the damped extension while resisting bending forces uniformly, transmitting axial forces from cut to spindle. The example below shows how the I-Absorber can be combined with InnoFit master shank adapters and InnoFit extensions to achieve an overall length of 430 mm with an 80 mm cutter body.

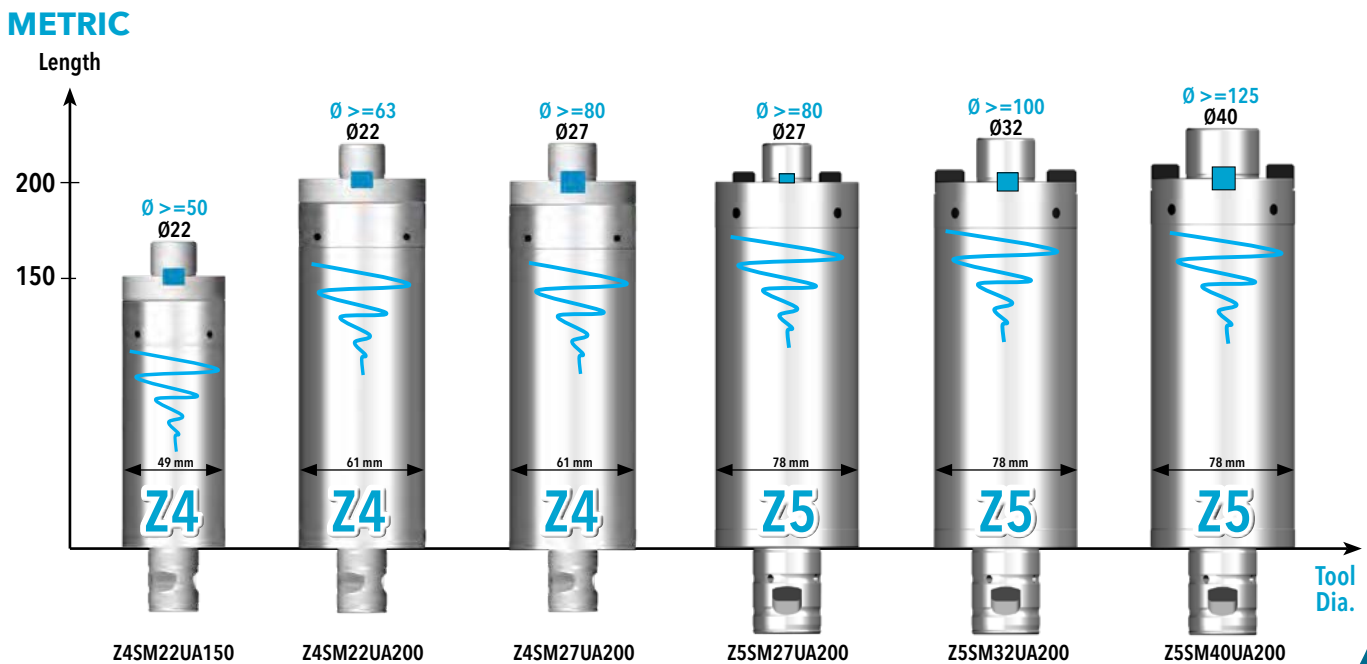
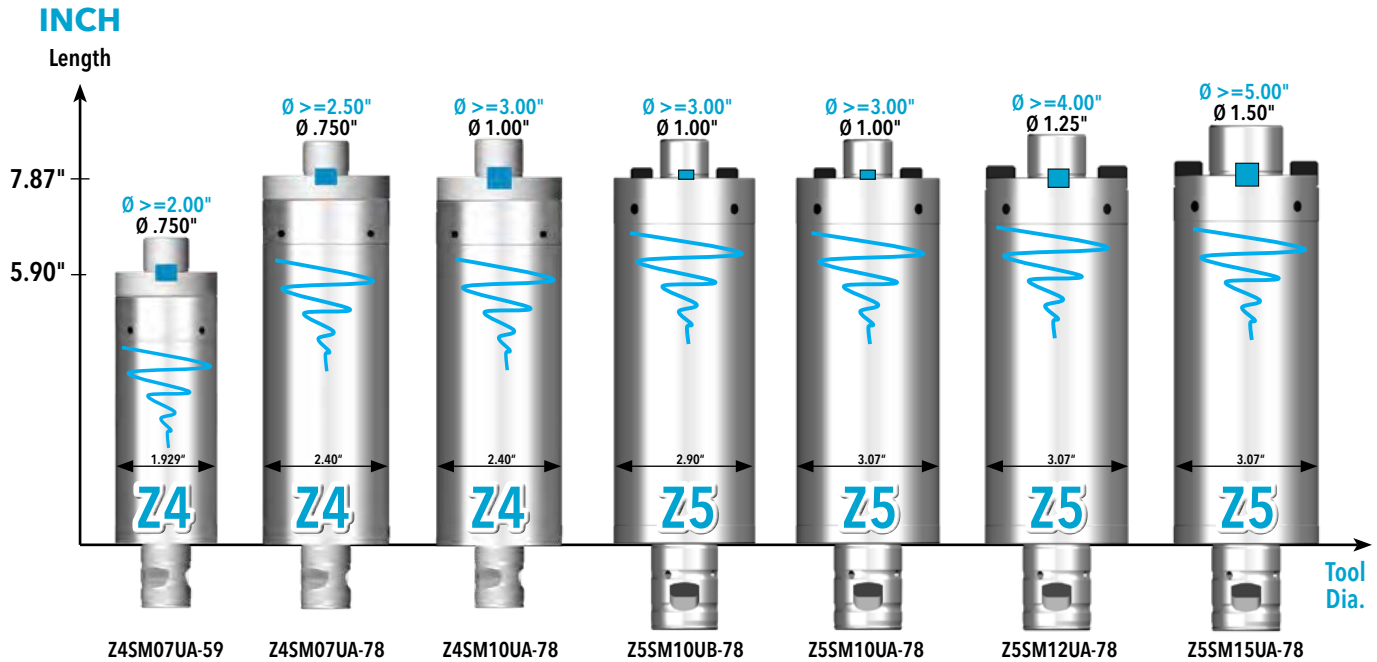


## Use and Care

- Preliminary indications suggest a max 2000 RPM limit when using **I-Absorber** shell mill adapters.
- **I-Absorber** shell mill adapters should be wiped clean, free of debris, and stored in a vertical position when not in use.

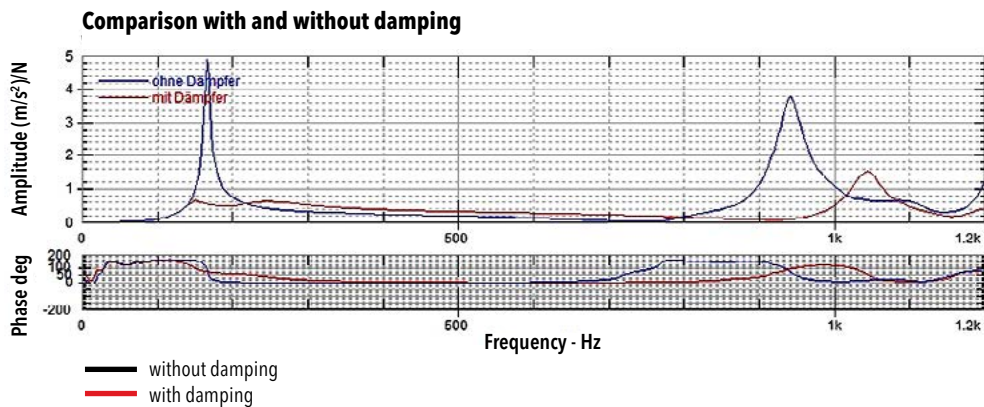
## Technical Features

The standardized I-Absorber shell mill extensions are designed and tuned for the typical standard milling tool weights according to each pilot diameter and cannot be misaligned.



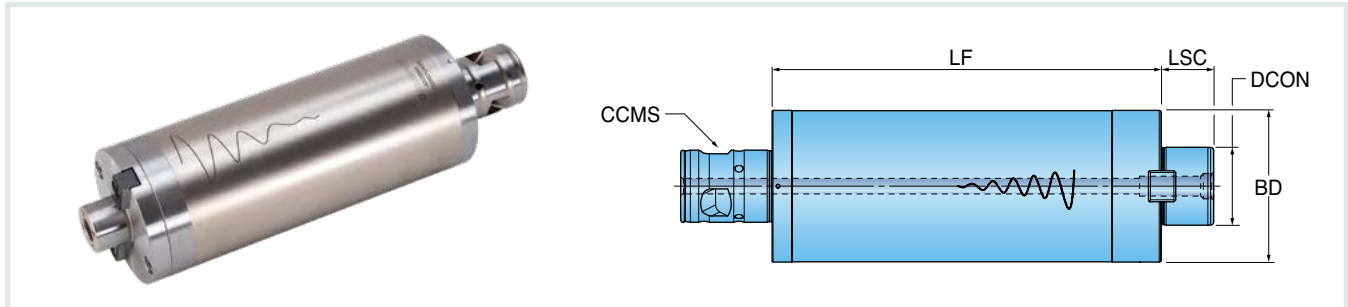
## Advantages

- Vibration damping prolongs tool life
- Increased productivity
  - a) Larger DOC can be applied due to the damping effect
  - b) Higher feed rates can often be achieved with the use of a damped combination
- Better surface finish quality can be obtained in long reach applications
- Cannot be misaligned
- Modular system compatible with standard InnoFit Z4 & InnoFit Z5 adaptations
- Significant improvement using damped combination when compared with standard extensions (see graph below)



## Series Z\_SM\_UA

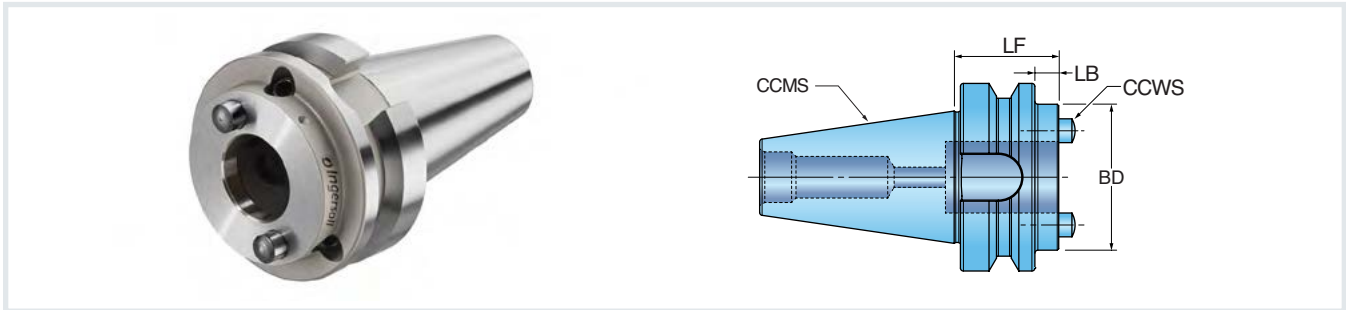
### ANTI-VIBRATION SHELL MILL ADAPTER FOR INNOFIT MODULAR SYSTEM



| Part Number   | CCMS<br>Connection Code<br>Machine Side | DCON<br>Pilot<br>Diameter | LF<br>Functional<br>Length | BD<br>Body<br>Diameter | LSC<br>Clamping<br>Length |
|---------------|-----------------------------------------|---------------------------|----------------------------|------------------------|---------------------------|
| <b>INCH</b>   |                                         |                           |                            |                        |                           |
| Z4SM07UA-59   | Z4                                      | 0.750                     | 5.900                      | 1.929                  | 0.68                      |
| Z4SM07UA-78   | Z4                                      | 0.750                     | 7.870                      | 2.400                  | 0.68                      |
| Z4SM10UA-78   | Z4                                      | 1.000                     | 7.870                      | 2.400                  | 0.68                      |
| Z5SM10UA-78   | Z5                                      | 1.000                     | 7.870                      | 3.070                  | 0.68                      |
| Z5SM10UB-78   | Z5                                      | 1.000                     | 7.870                      | 2.900                  | 0.68                      |
| Z5SM12UA-78   | Z5                                      | 1.250                     | 7.870                      | 3.070                  | 0.68                      |
| Z5SM15UA-78   | Z5                                      | 1.500                     | 7.870                      | 3.070                  | 0.94                      |
| <b>METRIC</b> |                                         |                           |                            |                        |                           |
| Z4SM22UA150   | Z4                                      | 22 mm                     | 150 mm                     | 49 mm                  | 19 mm                     |
| Z4SM22UA200   | Z4                                      | 22 mm                     | 200 mm                     | 61 mm                  | 19 mm                     |
| Z4SM27UA200   | Z4                                      | 27 mm                     | 200 mm                     | 61 mm                  | 21 mm                     |
| Z5SM27UA200   | Z5                                      | 27 mm                     | 200 mm                     | 78 mm                  | 21 mm                     |
| Z5SM32UA200   | Z5                                      | 32 mm                     | 200 mm                     | 78 mm                  | 24 mm                     |
| Z5SM40UA200   | Z5                                      | 40 mm                     | 200 mm                     | 78 mm                  | 27 mm                     |

## Series BT\_Z\_SA

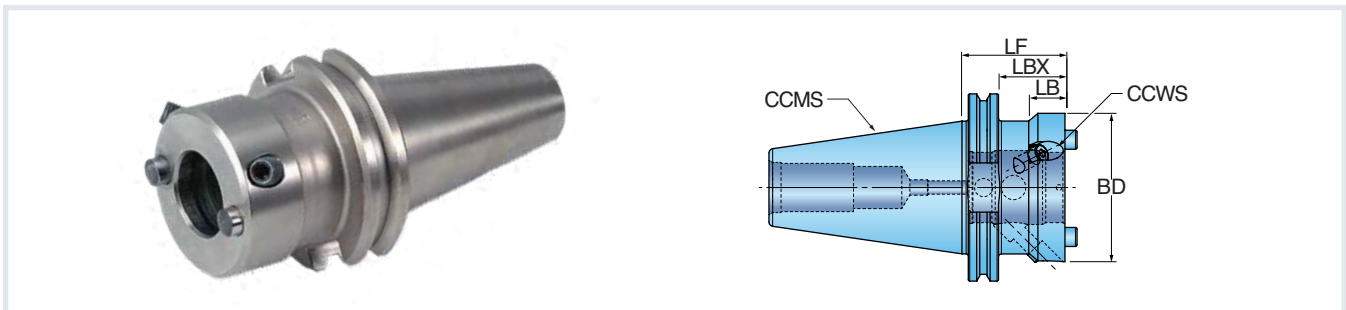
### BT V-FLANGE - INNOFIT MASTER SHANK ADAPTER



| Part Number   | CCMS<br>Connection Code<br>Machine Side | CCWS<br>Connection Code<br>Workpiece Side | LF<br>Functional<br>Length | LB<br>Body<br>Length | BD<br>Body<br>Diameter |
|---------------|-----------------------------------------|-------------------------------------------|----------------------------|----------------------|------------------------|
| <b>METRIC</b> |                                         |                                           |                            |                      |                        |
| BT40Z4SA035   | BT40                                    | Z4                                        | 35 mm                      | 7 mm                 | 49 mm                  |
| BT50Z4SA045   | BT50                                    | Z4                                        | 45 mm                      | 6 mm                 | 49 mm                  |
| BT50Z5SA045   | BT50                                    | Z5                                        | 45 mm                      | 6 mm                 | 78 mm                  |

## Series CAT\_Z\_SA

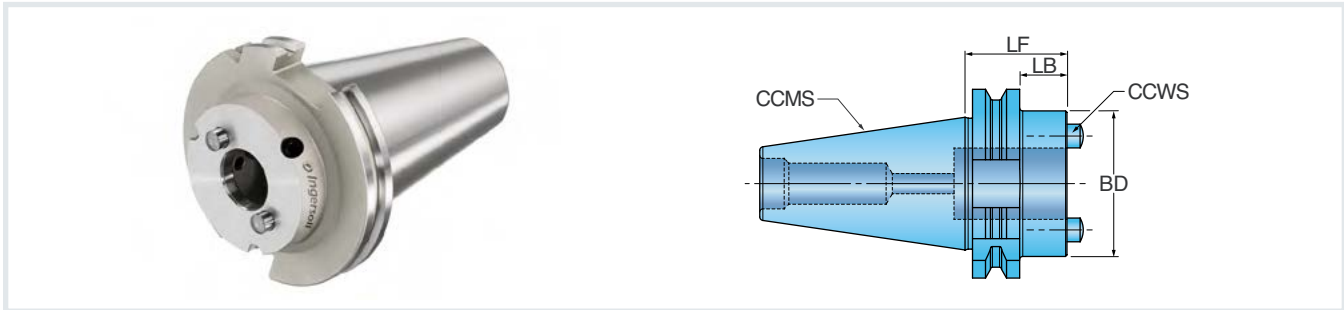
### CAT V-FLANGE - INNOFIT MASTER SHANK ADAPTER



| Part Number           | CCMS<br>Connection Code<br>Machine Side | CCWS<br>Connection Code<br>Workpiece Side | LF<br>Functional<br>Length | LB<br>Body<br>Length | LBX<br>Body<br>Length Max. | BD<br>Body<br>Diameter |
|-----------------------|-----------------------------------------|-------------------------------------------|----------------------------|----------------------|----------------------------|------------------------|
| <b>INCH</b>           |                                         |                                           |                            |                      |                            |                        |
| C40Z4SA-13            | CAT40                                   | Z4                                        | 1.375                      | 0.625                | -                          | 1.937                  |
| C40Z4SA-21-01         | CAT40                                   | Z4                                        | 2.125                      | 1.375                | -                          | 1.937                  |
| <b>NEW</b> C50Z4SA-13 | CAT50                                   | Z4                                        | 1.375                      | 0.625                | -                          | 1.929                  |
| C50Z5SB-21            | CAT50                                   | Z5                                        | 2.125                      | 0.75                 | 1.375                      | 3.07                   |
| C50Z5SA-21-03         | CAT50                                   | Z5                                        | 2.125                      | 0.75                 | 1.375                      | 2.90                   |

## Series DIN69871\_Z\_SA

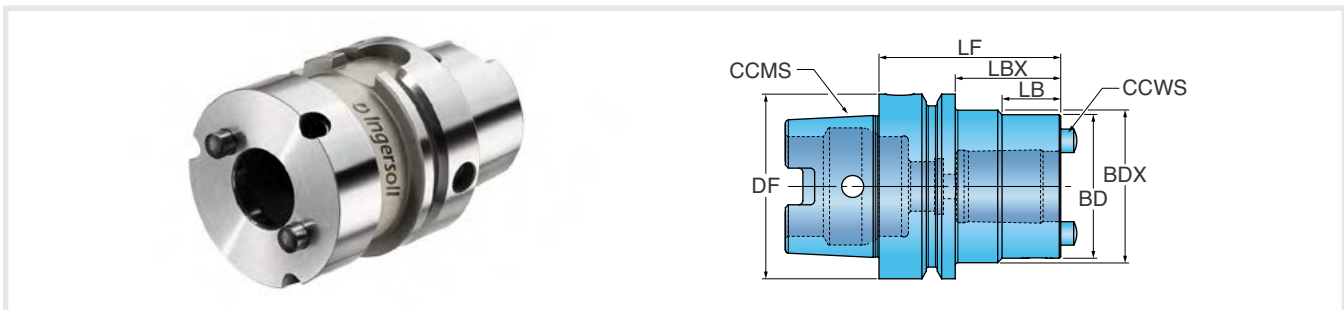
### INNOFIT MASTER SHANK ADAPTER



| Part Number       | CCMS<br>Connection Code<br>Machine Side | CCWS<br>Connection Code<br>Workpiece Side | LF<br>Functional<br>Length | LB<br>Body<br>Length | BD<br>Body<br>Diameter |
|-------------------|-----------------------------------------|-------------------------------------------|----------------------------|----------------------|------------------------|
| <b>METRIC</b>     |                                         |                                           |                            |                      |                        |
| DIN6987140Z4SA035 | DIN69871-40                             | Z4                                        | 35 mm                      | 15 mm                | 49 mm                  |
| DIN6987150Z4SA035 | DIN69871-50                             | Z4                                        | 35 mm                      | 13 mm                | 49 mm                  |
| DIN6987150Z4SB035 | DIN69871-50                             | Z4                                        | 35 mm                      | 15 mm                | 61 mm                  |
| DIN6987150Z5SA035 | DIN69871-50                             | Z5                                        | 35 mm                      | 15 mm                | 78 mm                  |

## Series HSKA\_Z\_SA

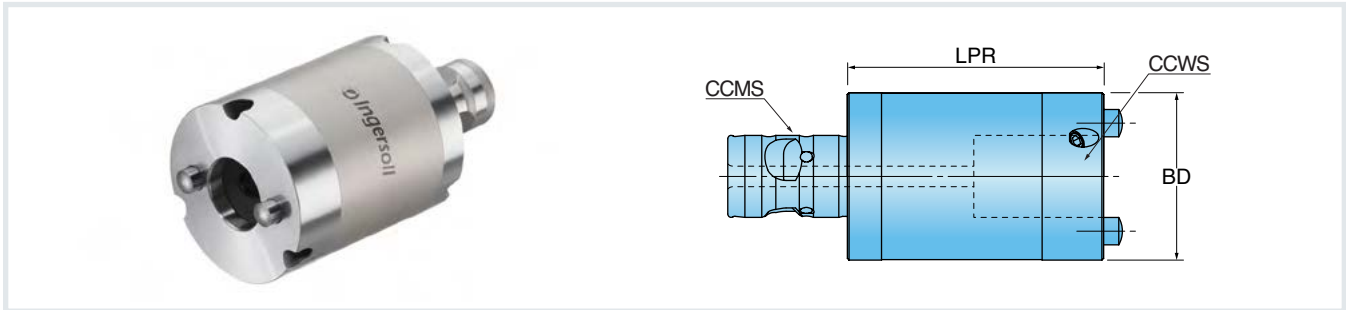
### INNOFIT MASTER SHANK ADAPTER



| Part Number    | CCMS<br>Connection Code<br>Machine Side | CCWS<br>Connection Code<br>Workpiece Side | LF<br>Functional<br>Length | LB<br>Body<br>Length | LBX<br>Body<br>Length Max. | BD<br>Body<br>Diameter | BDX<br>Body<br>Dia. Max. | DF<br>Flange<br>Diameter |
|----------------|-----------------------------------------|-------------------------------------------|----------------------------|----------------------|----------------------------|------------------------|--------------------------|--------------------------|
| <b>METRIC</b>  |                                         |                                           |                            |                      |                            |                        |                          |                          |
| HSKA100Z4SA080 | HSKA100                                 | Z4                                        | 80 mm                      | 51 mm                | -                          | 49 mm                  | -                        | 100 mm                   |
| HSKA100Z4SB080 | HSKA100                                 | Z4                                        | 80 mm                      | 51 mm                | -                          | 61 mm                  | -                        | 100 mm                   |
| HSKA100Z5SA080 | HSKA100                                 | Z5                                        | 80 mm                      | 51 mm                | -                          | 78 mm                  | -                        | 100 mm                   |
| HSKA63Z4SA062  | HSKA63                                  | Z4                                        | 62 mm                      | 20 mm                | 36 mm                      | 49 mm                  | 52 mm                    | 63 mm                    |
| HSKA63Z4SB062  | HSKA63                                  | Z4                                        | 62 mm                      | 18 mm                | 38 mm                      | 61 mm                  | -                        | 63 mm                    |
| HSKA80Z4SA068  | HSKA80                                  | Z4                                        | 68 mm                      | 42 mm                | -                          | 49 mm                  | -                        | 80 mm                    |
| HSKA80Z5SA080  | HSKA80                                  | Z5                                        | 80 mm                      | 32 mm                | 54 mm                      | 78 mm                  | -                        | 80 mm                    |

## Series Z\_Z\_SA

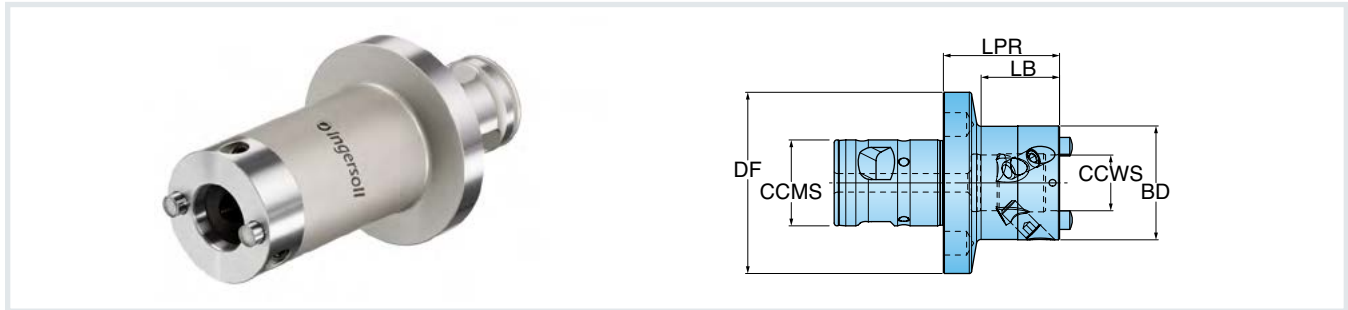
### EXTENSIONS FOR INNOFIT MODULAR SYSTEM



| Part Number | CCMS<br>Connection Code<br>Machine Side | CCWS<br>Connection Code<br>Workpiece Side | LPR<br>Protruding<br>Length | BD<br>Body<br>Diameter |
|-------------|-----------------------------------------|-------------------------------------------|-----------------------------|------------------------|
| <b>INCH</b> |                                         |                                           |                             |                        |
| Z4Z4SA050   | Z4                                      | Z4                                        | 1.97                        | 1.93                   |
| Z4Z4SA075   | Z4                                      | Z4                                        | 2.95                        | 1.93                   |
| Z4Z4SA100   | Z4                                      | Z4                                        | 3.94                        | 1.93                   |
| Z5Z5SA075   | Z5                                      | Z5                                        | 2.95                        | 3.07                   |
| Z5Z5SB-29   | Z5                                      | Z5                                        | 2.95                        | 2.90                   |
| Z5Z5SA100   | Z5                                      | Z5                                        | 3.94                        | 3.07                   |
| Z5Z5SA125   | Z5                                      | Z5                                        | 4.93                        | 3.07                   |
| Z5Z5SB-49   | Z5                                      | Z5                                        | 4.93                        | 2.90                   |

## Series Z5Z4SA

### REDUCERS FOR INNOFIT MODULAR SYSTEM



| Part Number | CCMS<br>Connection Code<br>Machine Side | CCWS<br>Connection Code<br>Workpiece Side | LB<br>Body<br>Length | LPR<br>Protruding<br>Length | BD<br>Body<br>Diameter | DF<br>Flange<br>Diameter |
|-------------|-----------------------------------------|-------------------------------------------|----------------------|-----------------------------|------------------------|--------------------------|
| <b>INCH</b> |                                         |                                           |                      |                             |                        |                          |
| Z5Z4SA025   | Z5                                      | Z4                                        | 0.355                | 0.99                        | 1.93                   | 3.07                     |
| Z5Z4SA050   | Z5                                      | Z4                                        | 1.370                | 1.97                        | 1.93                   | 3.07                     |
| Z5Z4SA075   | Z5                                      | Z4                                        | 2.320                | 2.96                        | 1.93                   | 3.07                     |
| Z5Z4SA100   | Z5                                      | Z4                                        | 3.310                | 3.94                        | 1.93                   | 3.07                     |



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