Sizes (INCH)
1.00” ---> 0.75”
1.25” ---> 1.00”
1.50” ---> 1.25”
2.00” ---> 1.50”

Sizes (METRIC)
25mm ---> 20mm
32mm ---> 25mm
40mm ---> 32mm
50mm ---> 40mm

Adjustment Capability:
MILL: +.016” / -.008”

(LATHE: +.008” / -.000”

ECCENTRIC SLEEVES

Ingersoll has changed the design of its Eccentric Sleeves for reducing or enlarging nominal drilling diameters.

The new sleeves can be used on machining centers, lathes and even misaligned turning centers. The eccentric sleeves are available in four inch sizes and four metric sizes.

When using on a milling machine, refer to the “MILLING” scale on the frontal flange of the sleeve. When using on a lathe, refer to the “LATHE” scale.

Please read the instructions thoroughly before using.
## DRILL CENTER ADJUSTMENT SLEEVES

### ECCENTRIC SLEEVES

![Eccentric Sleeve Diagram](image)

### Item Number | Description | DCONWS Bore Dia. (ID) | DCONMS Shank Dia. (OD) | BD Body Dia. | OAL Overall Length | Stock
---|---|---|---|---|---|---
### INCH
4504977 | ECCENTERSLEEVE0.75X1.00 | 0.75 | 1.00 | 1.654 | 2.205 | •
4504978 | ECCENTERSLEEVE1.00X1.25 | 1.00 | 1.25 | 1.969 | 2.402 | •
4504979 | ECCENTERSLEEVE1.25X1.50 | 1.25 | 1.50 | 2.559 | 2.402 | •
4504980 | ECCENTERSLEEVE1.50X2.00 | 1.50 | 2.00 | 2.874 | 2.835 | •

### METRIC
4504973 | ECCENTERSLEEVE20X25 | 20 | 25 | 40 | 44 | 2 WEEKS
4605064 | ECCENTERSLEEVE25X32 | 25 | 32 | 50 | 46 | 2 WEEKS
4605065 | ECCENTERSLEEVE32X40 | 32 | 40 | 65 | 55 | 2 WEEKS
4605066 | ECCENTERSLEEVE40X50 | 40 | 50 | 75 | 77 | 2 WEEKS

### Notes:
- Holes for inserting a pin are used to facilitate radial adjustment of the sleeve (pin not supplied).

## BU TO ECCENTER CROSSOVER

<table>
<thead>
<tr>
<th>OLD ITEM#</th>
<th>OLD DESCRIPTION</th>
<th>NEW ITEM#</th>
<th>NEW DESCRIPTION</th>
</tr>
</thead>
</table>
7031186 | BU16-16 | 4504978 | ECCENTERSLEEVE1.00X1.25 |
7031185 | BU24-44 | 4504979 | ECCENTERSLEEVE1.25X1.50 |
7031184 | BU32-02 | 4504980 | ECCENTERSLEEVE1.50X2.00 |
7031725 | BU032-10 | 4605064 | ECCENTERSLEEVE25X32 |
ADJUSTMENT

During initial setting ensure the flat on the eccentric sleeve coincides with the flat on the drill shank. (Both planes must be in parallel condition to each other)

To facilitate the rotation of the sleeve, a metal rod or a screw key may be inserted into the hole on the eccentric sleeve flange. Unlock adapter screw before adjusting sleeve.
MILLING APPLICATION

On a milling machine the sleeve can change the drill’s nominal diameter by shifting the drill’s axis out of the tool spindle.

To enlarge the diameter, turn the sleeve clockwise.
To reduce the diameter, turn the sleeve counterclockwise.
Drill diameter: 1.181”

Hole dia. 1.173”
Hole dia. 1.181”
Hole dia. 1.197”
On a lathe, the eccentric sleeve can shift the drill's axis to coincide with the spindle axis.

The eccentric sleeve enables the user to align the drill's axis with the spindle axis to within .008" range (turn the sleeve counterclockwise to raise it).
**RECOMMENDED FEED WHEN USING ECCENTRIC SLEEVE**

![Graph showing recommended feed rates for different eccentric sleeve sizes.]

**TEST**

**ECCENTER SLEEVE 1.00x1.25**

Tool: QR0254076N6R01 (1.00" Dia. QuadTwist Drill)  
Insert: SOMT08T306SK IN1030

Material: Alloy steel (AISI: 4140)  
Coolant: Internal  
Drilling depth: 2.36" on Milling Machine

Cutting condition: V=525 SFM  
f = .004 IPR

**Drill diameter : 1.000" (3XD)**

<table>
<thead>
<tr>
<th>Eccentric Sleeve (in)</th>
<th>Hole size (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1.000</td>
</tr>
<tr>
<td>+.002</td>
<td>1.002</td>
</tr>
<tr>
<td>+.008</td>
<td>1.008</td>
</tr>
<tr>
<td>+.012</td>
<td>1.012</td>
</tr>
<tr>
<td>+.016</td>
<td>1.016</td>
</tr>
<tr>
<td>-.004</td>
<td>.996</td>
</tr>
<tr>
<td>-.008</td>
<td>.992</td>
</tr>
</tbody>
</table>

Note: The result can be changed by machining condition.