KOMET GROUP


# MicroKom® hi.flex
# FINISH BORING SYSTEM

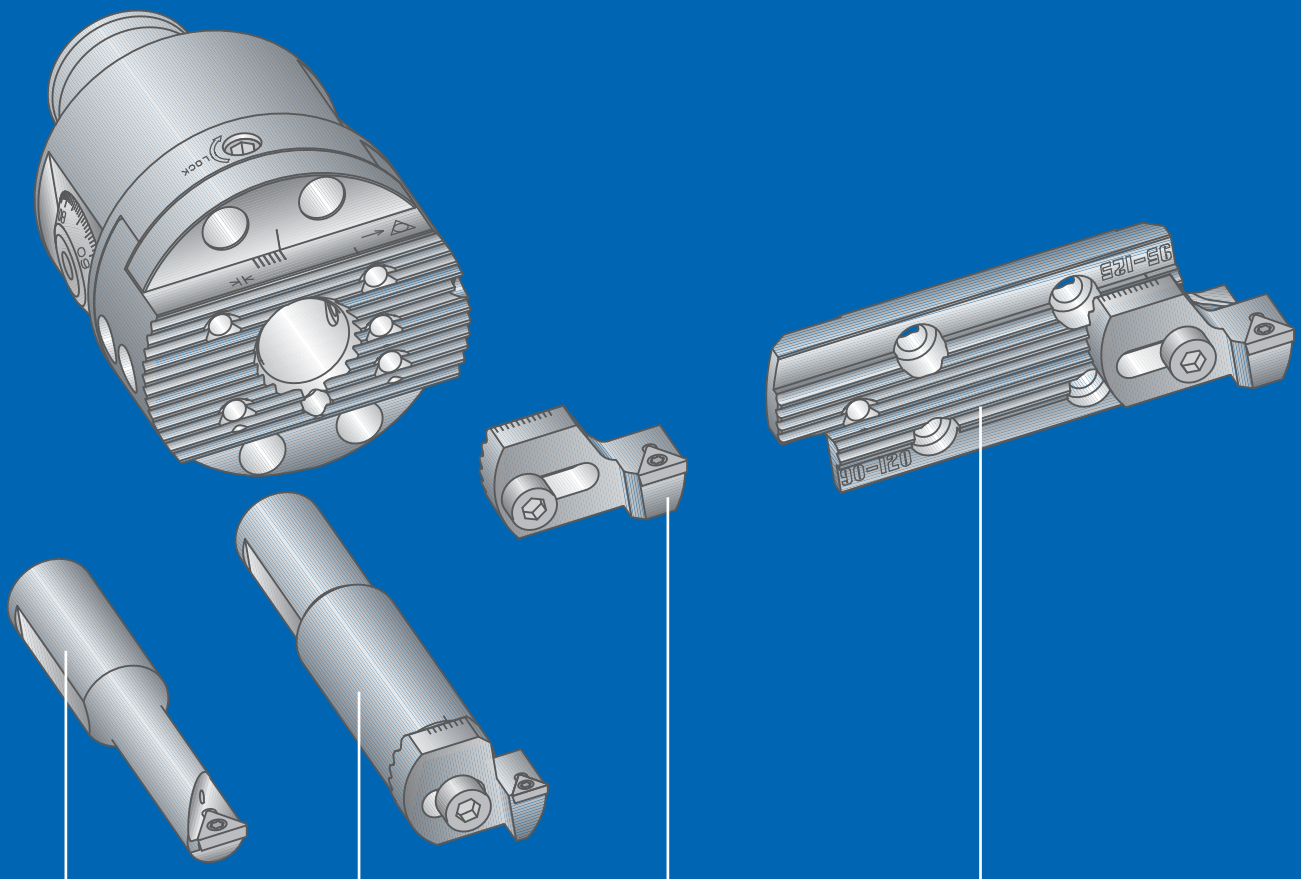
# MicroKom® *hi.flex*

## Fine adjustment system for diameters 0.236" to 4.921"

KOMET Group extended its MicroKom® micro adjustable boring product line with the new M05 hi.flex system. The unique finish boring system is specially designed for high flexibility and covers the diameter ranges from 0.236" to 4.921" with just one adjustable boring head. The availability of various boring bars and the new intelligent adapter design contribute to this wide diameter range.

The adjustable head offers an adjustment accuracy of 0.0004" per graduation on an easy-to-read scale and 0.00008" from a vernier with a total adjustment path of up to 0.197". The system is balanced in zero position and provides an internal coolant supply directly on to the cutting edge throughout the entire cutting diameter range.
The standard set includes four boring bars for diameters 0.236" to 0.984". According to the individual combination, a serrated body, a bridge and two different holders for inserts provide for cutting diameters up to 4.921".

The MicroKom® hi.flex is compatible with existing ABS® and cylindrical shank fine boring components. The set can be extended with standard boring tools and UniTurn® products, for which the turning range starts at 0.020". Variable overhang lengths and a single key for clamping, adjusting and mounting bridges and insert holders illustrate how easy the new system is to operate.




**Ø 0.236" – 0.984"**

Dia. range covered with 4 different boring bars

**Ø 0.984" - 2.480"**

Dia. range covered with serrated body and 2 different insert holders

**Ø 2.480" – 3.661"**

Dia. range covered with insert holder

**Ø 3.543" – 4.921"**

Dia. range covered with bridge and insert holder

# Finish boring kit with inch adjustment


## Finish boring kit Ø 0.236" - 4.921"
## Order No. M05 00610

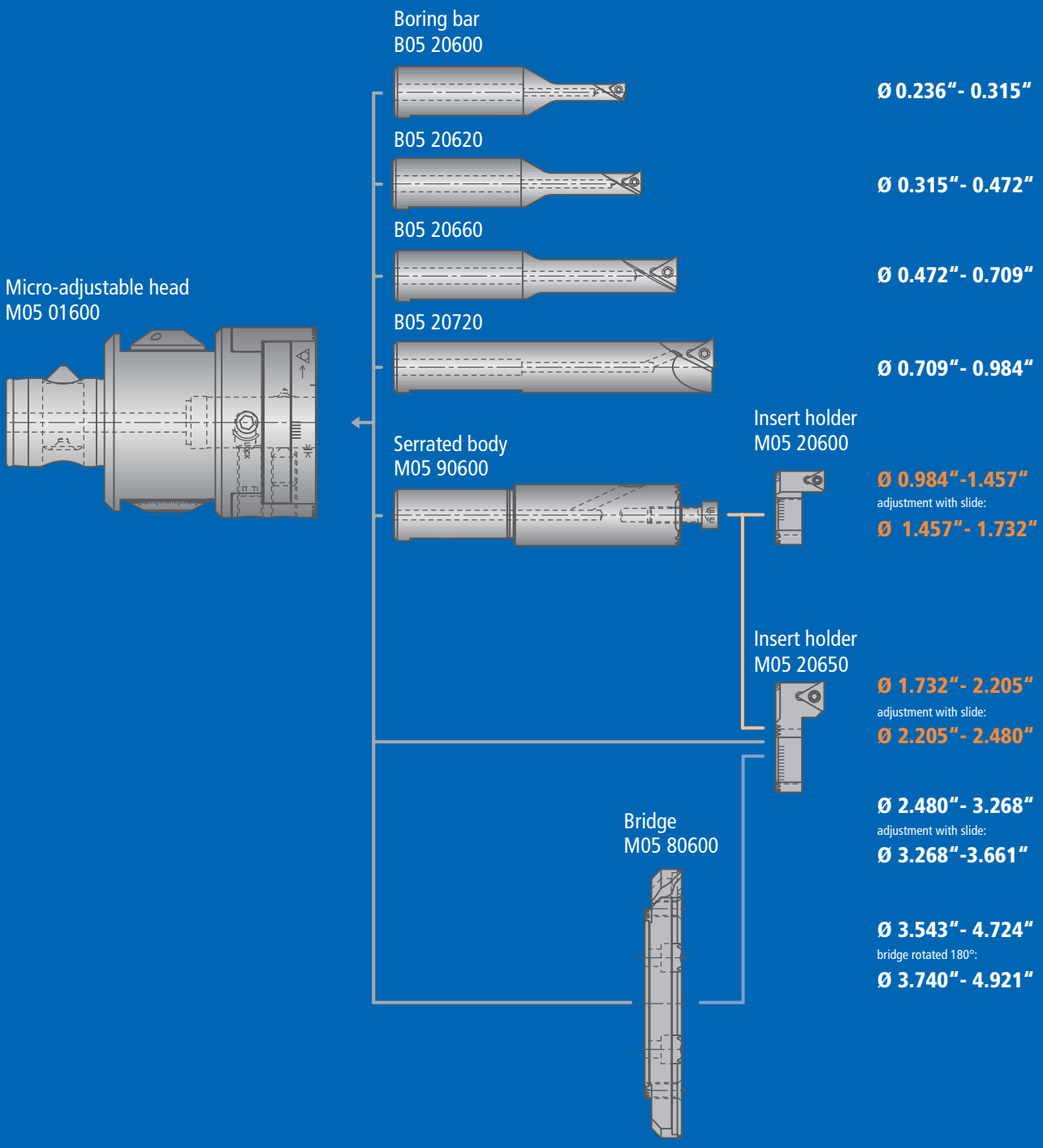
| Contents of case | | | |
|---|---|---|---|
| | Order No. | Qty. | Description |
| ① | M05 01600 | 1 | Micro-adjustable head |
| ② | M05 20600 | 1 | Insert holder Ø 0.984" - 1.732" |
| ③ | M05 20650 | 1 | Insert holder Ø 1.732" - 4.921" |
| ④ | M05 80600 | 1 | Bridge |
| ⑤ | M05 90600 | 1 | Serrated body |
| ⑥ | M05 90500.11 | 1 | Packing piece |
| ⑦ | B05 20600 | 1 | Boring bar Ø 0.236" - 0.315" |
| ⑧ | B05 20620 | 1 | Boring bar Ø 0.315" - 0.472" |
| ⑨ | B05 20660 | 1 | Boring bar Ø 0.472" - 0.709" |
| ⑩ | B05 20720 | 1 | Boring bar Ø 0.709" - 0.984" |
| ⑪ | A5210150 or A5210350 | 1 | ABS 50 CAT 50 or ABS50 CAT 40 Adapter |
| ⑫ | 1805010040 | 1 | Allen key SW4 |
| ⑬ | L05 01110 | 1 | Flag key 5IP |
| | L05 01120 | 1 | Flag key 6IP |
| | L05 01240 | 1 | Flag key 8IP |
| | 5501105016 | 5 | Cylindrical screw M5×16 |
| ⑭ | W57 04140.0260 | 4 | Insert BK60 |
| | W57 14140.0460 | 4 | Insert BK60 |
| | W00 04120.0164 | 2 | Insert BK64 |

# MicroKom® *hi.flex*

## Variable Options

**Only 9 tool components**

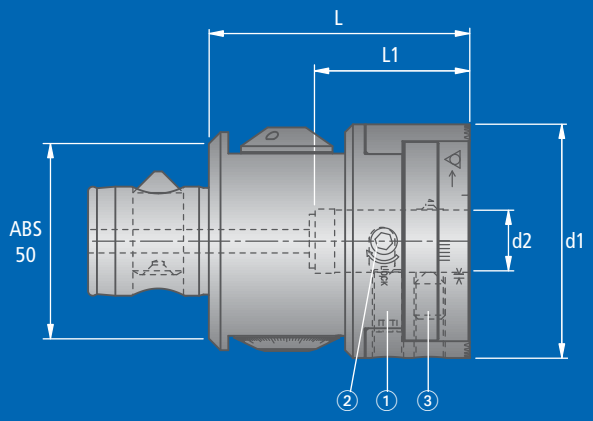
**covering diameters 0.236" – 4.921"**



| Machine Connection | Coolant Supply Central | Adjustable | Rotating Tool | Tool Connection | Tool Connection |
|---|---|---|---|---|---|
| ABS® | | | | ABS® | Cylindrical shank |

# Micro-adjustable boring head with ABS® connection

with ABS® and cylindrical tool adapter




| | Order No. | ABS d | d1 | d2 | Adjustment S | L | L1 | lbs | Replacement Part: Clamping screw ① DIN913 Order No. Description | Replacement Part: Clamping screw ② DIN913 Order No. Description | Replacement Part: Gripper screw ③ Order No. Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ABS50/16 | **M05 01600** | **50** | 2.362 | **ABS32** | 0.197 | 2.638 | 1.575 | 2.70 | **5505108116** M8×1×16 | **5505108008** M8×8 | **N00 02061** ABS32-F1 |

**The micro-adjustable boring head is balanced in the zero position.**
Adjustment must be in line with cutting parameters and spindle speed.

## Features :

- Diameter range 0.020" - 4.921" with existing KOMET standard tools
- Large adjustment range from -0.020 to + 0.394" on dia.
- Easy to use
- Adjustment per graduation = Ø 0.0004"
- Adjustment accuracy Ø 0.00008" with vernier
- Easy-to-read scale
- Existing ABS32 tools can be used
- Internal coolant supply over entire range
- ABS32 spindle connection and 0.630" cylindrical shank
- Can be adapted for any machine tool with standard tool adapters
- Head diameter: 2.362"

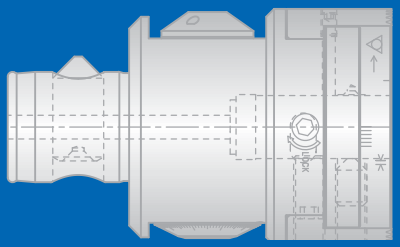
**Important: See page 10 for more application details and safety notes!**

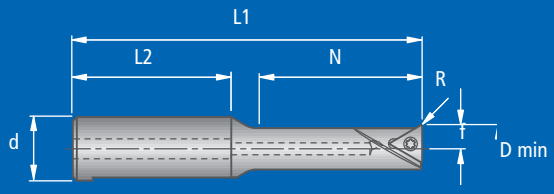
# MicroKom® *hi.flex* Boring bar Ø 0.236" – 0.709"

| L / D | Through hole | Blind hole | Slanted Surface | Cross Hole | Boring Backwards | HRC > 54 Through Hole | HRC > 54 Blind Hole | Vibration Dampening |
|---|---|---|---|---|---|---|---|---|
| 3.5×D | ● | ● | ◐ | ◐ | ✕ | ● | ● | ✕ |

● highly recommended ◐ recommended ○ may be suitable ✕ not recommended

## with cylindrical shank
## $\varkappa$ = 90° R.H. cutting






| D min | Order No. | d | L1 | L2 | N | f | lbs | Basic Recommendation: Insert W00 Order No. Size | Insert W30 / W57 ISO Insert Description | for Workpiece Material P | M | K | N | S | H | Replacement Part: Clamping screw Order No. Description | TORX PLUS Order No. Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.236 | **B05 20600** | 0.630 | 2.823 | 1.575 | 0.872 | 0.118 | 0.14 | **W00 04120.0164** | WOHX02T001EL-G12 BK64 | ● | ● | | | | | **N00 56011** S/M1.8×2.9-5IP 3.4 in-lbs | **L05 00800** 5IP |
| | | | | | | | | **W00 04120.0121** | WOHX02T001FL-G12 K10 | | | ● | ● | ● | | | |
| 0.315 | **B05 20620** | 0.630 | 3.047 | 1.575 | 1.102 | 0.157 | 0.15 | **W57 04140.0260** | TOGX06T102EN-14 BK60 | ● | ● | | | | | **N00 56021** S/M2×3.8-6IP 5.5 in-lbs | **L05 00810** 6IP |
| | | | | | | | | **W57 04120.0223** | TOGX06T102FN-12 K10 | | | | ● | ● | | | |
| 0.472 | **B05 20660** | 0.630 | 3.472 | 1.575 | 1.654 | 0.236 | 0.19 | **W30 04990.0240** | TOGX06T102TN CBN40 | | | | | | ○ | | |
| | | | | | | | | **W30 04060.036110** | TOHX06T103EL-G06 BK6110 | | | ● | | | <52 HRC | | |
| 0.709 | **B05 20720** | 0.630 | 3.937 | 1.575 | 2.362 | 0.354 | 0.31 | **W57 14140.0460** | TOGX090204EN-14 BK60 | ● | ● | | | | | **N00 56101** S/M2.6×5.2-8IP 11.3 in-lbs | **L05 00830** 8IP |
| | | | | | | | | **W57 14120.0423** | TOGX090204FN-12 K10 | | | ● | ● | ● | | | |
| | | | | | | | | **W30 14990.0440** | TOGX090204TN CBN40 | | | | | | ○ | | |
| | | | | | | | | **W30 14060.046110** | TOHX090204EL-G06 BK6110 | | | ● | | | <52 HRC | | |

**Delivery:**
Boring bar with clamping screw. Please order inserts and accessories separately.

# Cutting Recommendations

## Guideline for finish boring with MicroKom® hi.flex Fine boring system

| Material group | | Tensile Strength (lbf/in²) | Hardness HB | Material | Material example AISI / SAE | Cutting speed $v_c$ ft/min | Maximum Feedrate **f**, in/rev Ø 0.236 - 0.311 | Ø 0.315 - 0.469 | Ø 0.472 - 0.984 |
|---|---|---|---|---|---|---|---|---|---|
| 1.0 | P | ≤72500 | | **Unalloyed steel** | A570.36<br>1213<br>A573.81 | 980 | .002 | .003 | .004 |
| 2.0 | P | 72500 - 130000 | | **Low alloy steel** | 5120<br>1055<br>5115 | 820 | .002 | .002 | .005 |
| 2.1 | P | <72500 | | **Lead alloy** | 12L13 | 980 | .002 | .003 | .005 |
| 3.0 | P | >130000 | | **High alloy steel** heat resistant structural, heat treated, nitride steels | 4140<br>1064 | 790 | .001 | .002 | .004 |
| 4.0 | P | >130000 | | **Tool steel** | H13<br>H21 | 660 | .001 | .002 | .004 |
| 4.1 | P | | | **HSS** | | 390 | .001 | .002 | .003 |
| 5.0 | S | | 250 | **Special alloy:** Inconel, Hastelloy, Nimonic, etc. | Inconel® 718<br>Nimonic® 80A | 110 | .000 | .002 | .003 |
| 5.1 | S | 58000 | | **Titanium, Titanium alloy** | AMS R54520 | 100 | .000 | .002 | .003 |
| 6.0 | M | ≤87000 | | **Stainless steel:** austenitic 300 series | 304L<br>316 | 660 | .000 | .002 | .004 |
| 6.1 | M | <130000 | | **Stainless steel** | 630 | 590 | .000 | .002 | .004 |
| 7.0 | M | >130000 | | **Stainless steel:** martensitic/ferritic 400 series | 420<br>403 | 390 | .000 | .002 | .003 |
| 8.0 | K | | 180 | **Grey cast iron** | No 35 B<br>No 50 B | 790 | .002 | .004 | .006 |
| 8.1 | K | | 250 | **Alloy grey cast iron** | A436 Type 2 | 660 | .002 | .004 | .006 |
| 9.0 | K | ≤87000 | 130 | **Nodular cast iron** ferritic | 60-40-18 | 590 | .002 | .003 | .006 |
| 9.1 | K | | 230 | **Nodular cast iron** ferritic / pearlitic | 80-55-06 | 590 | .002 | .003 | .006 |
| 10.0 | K | 87000 | 250 | **Nodular cast iron** pearlitic **Malleable cast iron** | 100-70-03<br>70003 | 520 | .002 | .003 | .006 |
| 10.1 | K | | 200 | **Alloyed nodular cast iron** | A43D2 | 460 | .001 | .003 | .005 |
| 10.2 | K | | 300 | **Vermicular cast iron** | | 390 | .001 | .004 | .006 |
| 12.0 | N | | 90 | **Copper alloy, brass, Lead alloy, Bronze, Lead bronze:** good cut | UNS C36000 | 1310 | .001 | .002 | .003 |
| 12.1 | N | | 100 | **Copper alloy, Brass, Bronze:** average cut | | 980 | .002 | .003 | .006 |
| 13.0 | N | | 60 | **Wrought aluminum alloy** | | 1640 | .001 | .002 | .004 |
| 13.1 | N | | 75 | **Aluminum alloy:** Si content <10% **Magnesium alloy** | GD-AlSi12 | 1150 | .002 | .003 | .005 |
| 14.0 | N | | 100 | **Aluminum alloy:** Si content >10% | A360.2 | 980 | .002 | .003 | .005 |
| 15.0 | H | 203000 | | **Hardened steel** < 45 HRC | | 390 | – | .002 | .003 |
| 16.0 | H | 261000 | | **Hardened steel** > 45 HRC | | 300 | – | .002 | .003 |

**Please see page 10 for more application details and safety notes!**

## Alternative Insert

KOMET®

### For better chip control

| D | Order No. size | ISO Insert Description (Insert .32.. / .39..) | for Workpiece Material P M K N S H |
|---|---|---|---|
| 0.236-0.311 | – | | |
| 0.315-0.469 | **W30 04120.3232** | TOHX06T102EL-US12 CK32 | ◐ ◑ ◐ |
| | **W30 04120.3977** | TOHX06T1ZZEL-39G12 BK77 | ◐ |
| 0.472-0.984 | **W30 14120.3232** | TOHX090202EL-US12 CK32 | ◐ ◑ ◐ |
| | **W30 14120.3977** | TOHX0902ZZEL-39G12 BK77 | ◐ |

### For better wear resistance

| D | Order No. size | ISO Insert Description (Insert W57 / W30 / W30 PCD CBN) | for Workpiece Material P M K N S H |
|---|---|---|---|
| 0.236-0.311 | – | | |
| 0.315-0.469 | **W57 04140.0232** | TOGX06T102EN-14 CK32 | ◐ ◑ ◐ |
| | **W30 04120.0238** | TOGX06T102EL-G12 CK38 | ◐ ◑ ◐ |
| | **W30 04990.0255** | TOGX06T102FN PCD55 | ◐ |
| | **W30 04990.0257** | TOGX06T102FN CBN57 | ◑ only GG25 |
| 0.472-0.984 | **W57 14140.0432** | TOGX090204EN-14 CK32 | ◐ ◑ ◐ |
| | **W30 14120.0238** | TOGX090202EL-G12 CK38 | ◐ ◑ ◐ |
| | **W30 14990.0455** | TOGX090204FN PCD55 | ◐ |
| | **W30 14990.0457** | TOGX090204FN CBN57 | ◑ only GG25 |

### For better surface finish

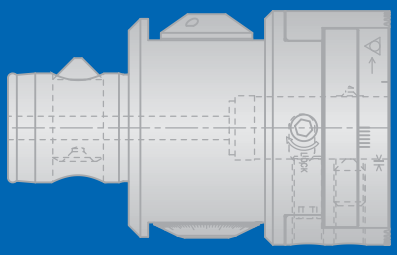
| D | Order No. size | ISO Insert Description (Insert W57 / W30 / W30 PCD) | for Workpiece Material P M K N S H |
|---|---|---|---|
| 0.236-0.311 | – | | |
| 0.315-0.469 | **W57 04140.0232** | TOGX06T102EN-14 CK32 | ◐ ◑ ◐ |
| | **W30 04060.036110** | TOGX06T103EL-G06 BK6110 | ◑ ◐ ◐ |
| | **W30 04200.0321** | TOGX06T103FL-G20 K10 | ◐ ◐ |
| | **W30 04990.0255** | TOGX06T102FN PCD55 | ◐ |
| 0.472-0.984 | **W57 14140.0432** | TOGX090204EN-14 CK32 | ◐ ◑ ◐ |
| | **W30 14060.046110** | TOGX090204EL-G06 BK6110 | ◑ ◐ ◐ |
| | **W30 14200.0421** | TOGX090204FL-G20 K10 | ◐ ◐ |
| | **W30 14990.0455** | TOGX090204FN PCD55 | ◐ |

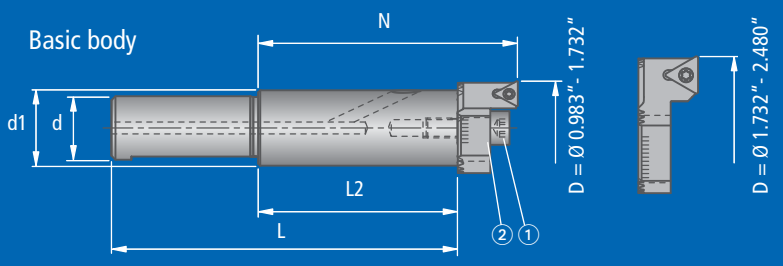
# MicroKom® hi.flex Basic body / Insert holder Ø 0.984" – 3.661"

| L / D | Through hole | Blind hole | Slanted Surface | Cross Hole | Boring Backwards | HRC > 54 Through Hole | HRC > 54 Blind Hole | Vibration Dampening |
|---|---|---|---|---|---|---|---|---|
| < 2.5×D | ● | ● | ◐ | ◐ | ✕ | ● | ● | ✕ |

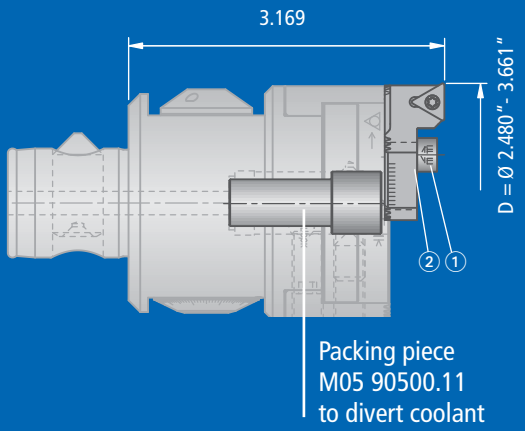
● highly recommended ◐ recommended ○ may be suitable ✕ not recommended

## Ø 0.984" – 2.480"






## Ø 2.480" – 3.661"




| Basic body | | | | | | | Replacement parts | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Location screw ① | Cup spring ② |
| Order No. | d | d1 | N | L | L1 | lbs | Order No. Description | Order No. Description |
| **M05 90600** | 0.630 | 0.748 | 2.559 | 3.484 | 2.028 | 0.36 | **5501105016** M5×16 ISO4762 | **5677110053** A12.5Ø6.2×0.35 |

**Delivery:** Serrated body complete with location screw and cup spring.

| Insert Holder | | | Basic Recommendation | | | | Replacement Part | |
|---|---|---|---|---|---|---|---|---|
| | | | Insert -12 -14 -G06 | | for Workpiece Material | | Clamping screw | TORX PLUS |
| D | Order No. | lbs | Order No. Size | ISO Insert Description | P M K N S H | | Order No. Description | Order No. Description |
| 0.983 - 1.732 | **M05 20600** | 0.042 | **W57 04140.0260** | TOGX06T102EN-14 BK60 | ● ● | | **N00 56031** S/M2×4.9-6IP 5.5 in-lbs | **L05 00810** 6IP |
| | | | **W30 04060.0361** | TOHX06T103EL-G06 BK61 | ● | | | |
| | | | **W57 04120.0223** | TOGX06T102FN-12 K10 | ● | | | |
| 1.732 - 3.661 | **M05 20650** | 0.057 | **W57 14140.0460** | TOGX090204EN-14 BK60 | ● ● | | **N00 56111** S/M2.6×6.2-8IP 11.3 in-lbs | **L05 00830** 8IP |
| | | | **W30 14060.0461** | TOHX090204EL-G06 BK61 | ● | | | |
| | | | **W57 14120.0423** | TOGX090204FN-12 K10 | ● | | | |

**Delivery:** Insert holder complete with clamping screw.

Please order inserts and Torx Plus screw driver separately.

# Cutting Recommendations

## Guideline for finish boring with MicroKom® hi.flex Fine boring system

| Material group | | Tensile Strength (lbf/in²) | Hardness HB | Material | Material example AISI / SAE | Cutting speed $v_c$ ft/min | Maximum Feedrate **f**, in/rev Ø 0.984 - 1.732 | Maximum Feedrate **f**, in/rev Ø 1.732 - 3.661 |
|---|---|---|---|---|---|---|---|---|
| 1.0 | P | ≤72500 | | **Unalloyed steel** | A570.36<br>1213<br>A573.81 | 980 | .003 | .004 |
| 2.0 | P | 72500 - 130000 | | **Low alloy steel** | 5120<br>1055<br>5115 | 820 | .003 | .005 |
| 2.1 | P | <72500 | | **Lead alloy** | 12L13 | 980 | .004 | .006 |
| 3.0 | P | >130000 | | **High alloy steel** heat resistant structural, heat treated, nitride steels | 4140<br>1064 | 790 | .003 | .004 |
| 4.0 | P | >130000 | | **Tool steel** | H13<br>H21 | 660 | .002 | .004 |
| 4.1 | P | | | **HSS** | | 390 | .002 | .003 |
| 5.0 | S | | 250 | **Special alloy:** Inconel, Hastelloy, Nimonic, etc. | Inconel® 718<br>Nimonic® 80A | 160 | .002 | .003 |
| 5.1 | S | 58000 | | **Titanium, Titanium alloy** | AMS R54520 | 100 | .002 | .003 |
| 6.0 | M | ≤87000 | | **Stainless steel:** austenitic 300 series | 304L<br>316 | 660 | .003 | .004 |
| 6.1 | M | <130000 | | **Stainless steel** | 630 | 590 | .002 | .004 |
| 7.0 | M | >130000 | | **Stainless steel:** martensitic/ferritic 400 series | 420<br>403 | 390 | .002 | .004 |
| 8.0 | K | | 180 | **Grey cast iron** | No 35 B<br>No 50 B | 790 | .006 | .008 |
| 8.1 | K | | 250 | **Alloy grey cast iron** | A436 Type 2 | 660 | .006 | .008 |
| 9.0 | K | ≤87000 | 130 | **Nodular cast iron** ferritic | 60-40-18 | 590 | .004 | .006 |
| 9.1 | K | | 230 | **Nodular cast iron** ferritic / pearlitic | 80-55-06 | 590 | .004 | .006 |
| 10.0 | K | 87000 | 250 | **Nodular cast iron** pearlitic **Malleable cast iron** | 100-70-03<br>70003 | 520 | .004 | .006 |
| 10.1 | K | | 200 | **Alloyed nodular cast iron** | A43D2 | 460 | .004 | .006 |
| 10.2 | K | | 300 | **Vermicular cast iron** | | 390 | .004 | .006 |
| 12.0 | N | | 90 | **Copper alloy, brass, Lead alloy, Bronze, Lead bronze:** good cut | UNS C36000 | 980 | .004 | .006 |
| 12.1 | N | | 100 | **Copper alloy, Brass, Bronze:** average cut | | 890 | .004 | .006 |
| 13.0 | N | | 60 | **Wrought aluminum alloy** | | 1640 | .003 | .005 |
| 13.1 | N | | 75 | **Aluminum alloy:** Si content <10% **Magnesium alloy** | GD-AlSi12 | 1150 | .004 | .006 |
| 14.0 | N | | 100 | **Aluminum alloy:** Si content >10% | A360.2 | 820 | .004 | .006 |
| 15.0 | H | 203000 | | **Hardened steel** < 45 HRC | | 390 | .003 | .003 |
| 16.0 | H | 261000 | | **Hardened steel** > 45 HRC | | 300 | .002 | .003 |

**Please see page 10 for more application details and safety notes!**

## Alternative Insert

KOMET®

### For better chip control

| D | Order No. size | ISO Insert Description | for Workpiece Material P | M | K | N | S | H |
|---|---|---|---|---|---|---|---|---|
| 0.984 - 1.732 | **W30 04120.3232** | TOHX06T102EL-US12 CK32 | ◐ | ◑ | | | | |
| | **W30 04120.3060** | TOHX06T100EL-G12 BK60 | ◐ | ◑ | | | | |
| | **W57 04120.0223** | TOGX06T102FN-12 K10 | | | | ◐ | ◑ | |
| 1.732 - 3.661 | **W30 14120.3232** | TOHX090202EL-US12 CK32 | ◐ | ◑ | | | | |
| | **W30 14120.3060** | TOHX090200EL-G12 BK60 | ◐ | ◑ | | | | |
| | **W57 14120.0423** | TOGX090204FN-12 K10 | | | | ◐ | ◑ | |

### For better wear resistance

| D | Order No. size | ISO Insert Description | for Workpiece Material P | M | K | N | S | H |
|---|---|---|---|---|---|---|---|---|
| 0.984 - 1.732 | **W57 04140.0232** | TOGX06T102EN-14 CK32 | ◐ | ◑ | | | | |
| | **W30 04990.0355** | TOGX06T103FN PCD55 | | | | ◐ | | |
| | **W30 04990.0357** | TOGX06T103TN CBN57 | | | ◐ | | | |
| 1.732 - 3.661 | **W30 14120.3232** | TOHX090202EL-US12 CK32 | ◐ | ◑ | | | | |
| | **W30 14120.3060** | TOHX090200EL-G12 BK60 | ◐ | ◑ | | | | |
| | **W57 14120.0423** | TOGX090204FN-12 K10 | | | | ◐ | ◑ | |

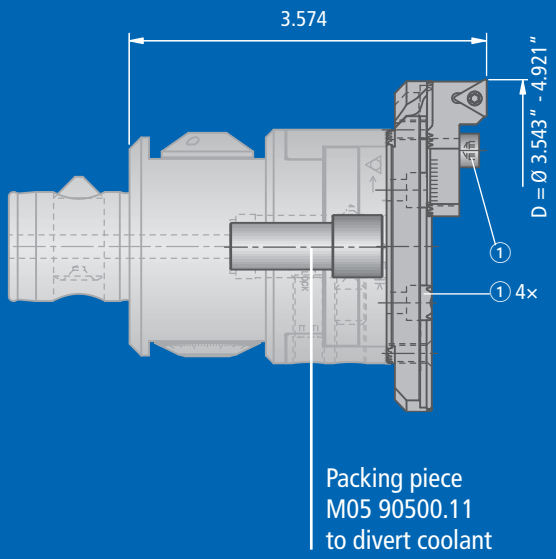
### For better surface finish

| D | Order No. size | ISO Insert Description | for Workpiece Material P | M | K | N | S | H |
|---|---|---|---|---|---|---|---|---|
| 0.984 - 1.732 | **W30 04120.3160** | TOHX06T102EL-UF12 BK60 | ◐ | ◑ | | | | |
| | **W30 04990.0355** | TOGX06T103FN PCD55 | | | | ◐ | | |
| | **W30 04990.0357** | TOGX06T103TN CBN57 | | | ◐ | | | |
| | **W30 04990.0240** | TOGX06T103TN CBN40 | | | | | | ◐ |
| 1.732 - 3.661 | **W30 14120.3160** | TOHX090202EL-UF12 BK60 | ◐ | ◑ | | | | |
| | **W30 14120.3060** | TOHX090200EL-G12 BK60 | ◐ | ◑ | | | | |
| | **W57 14120.0423** | TOGX090204FN-12 K10 | | | | ◐ | ◑ | |
| | **W30 14990.0440** | TOGX090204TN CBN40 | | | | | | ◐ |

# MicroKom® hi.flex Bridge / Insert holder Ø 3.543" – 4.921"

| Through hole | Blind hole | Slanted Surface | Cross Hole | Boring Backwards | HRC > 54 Through Hole | HRC > 54 Blind Hole | Vibration Dampening |
|---|---|---|---|---|---|---|---|
| ● | ● | ◐ | ◐ | ✕ | ● | ● | ✕ |

● highly recommended ◐ recommended ○ may be suitable ✕ not recommended




| | Bridge | | Insert holder | Basic Recommendation | | | Replacement Part | |
|---|---|---|---|---|---|---|---|---|
| | | Location screw ① | | Insert -12 -14 -G06 | | for Workpiece Material | Clamping screw | TORX PLUS |
| D | Order No. | Order No. Description | Order No. | Order No. Size | ISO Insert Description | P M K N S H | Order No. Description | Order No. Description |
| 3.543 - 4.921 | **M05 80600** 0.32 | **5501105016** M5×16 ISO4762 | M05 20150 0.06 | **W57 14140.0460**<br>**W30 14060.0461**<br>**W57 14120.0423** | TOGX090204EN-14 BK60<br>TOHX090204EL-G06 BK61<br>TOGX090204FN-12 K10 | ● ● ● ● | **N00 56111** S/M2.6×6.2-8IP 11.3 in-lbs | **L05 00830** 8IP |

**Delivery:** Bridge with location screw.
Insert holder with clamping screw.

Please order inserts and Torx Plus screw driver separately.

The technical notes provided in the **application details** depend on the environmental and application conditions (such as machine, environmental temperature, lubrication/coolant used and desired machining results): these are based on proper application conditions, use and compliance with the spindle speed limits given for the tools.

# Cutting Recommendations

## Guideline for finish boring with MicroKom® hi.flex Fine boring system

| Material group | | Tensile Strength (lbf/in²) | Hardness HB | Material | Material example AISI / SAE | Cutting speed $v_c$ ft/min | Maximum Feedrate **f**, in/rev Ø 3.543 - 4.921 |
|---|---|---|---|---|---|---|---|
| 1.0 | P | ≤72500 | | **Unalloyed steel** | A570.36<br>1213<br>A573.81 | 980 | .004 |
| 2.0 | P | 72500 - 130000 | | **Low alloy steel** | 5120<br>1055<br>5115 | 820 | .005 |
| 2.1 | P | <72500 | | **Lead alloy** | 12L13 | 980 | .006 |
| 3.0 | P | >130000 | | **High alloy steel** heat resistant structural, heat treated, nitride steels | 4140<br>1064 | 790 | .004 |
| 4.0 | P | >130000 | | **Tool steel** | H13<br>H21 | 660 | .004 |
| 4.1 | P | | | **HSS** | | 390 | .003 |
| 5.0 | S | | 250 | **Special alloy:** Inconel, Hastelloy, Nimonic, etc. | Inconel® 718<br>Nimonic® 80A | 160 | .003 |
| 5.1 | S | 58000 | | **Titanium, Titanium alloy** | AMS R54520 | 100 | .003 |
| 6.0 | M | ≤87000 | | **Stainless steel:** austenitic 300 series | 304L<br>316 | 660 | .004 |
| 6.1 | M | <130000 | | **Stainless steel** | 630 | 590 | .004 |
| 7.0 | M | >130000 | | **Stainless steel:** martensitic/ferritic 400 series | 420<br>403 | 390 | .004 |
| 8.0 | K | | 180 | **Grey cast iron** | No 35 B<br>No 50 B | 790 | .008 |
| 8.1 | K | | 250 | **Alloy grey cast iron** | A436 Type 2 | 660 | .008 |
| 9.0 | K | ≤87000 | 130 | **Nodular cast iron** ferritic | 60-40-18 | 590 | .006 |
| 9.1 | K | | 230 | **Nodular cast iron** ferritic / pearlitic | 80-55-06 | 590 | .006 |
| 10.0 | K | 87000 | 250 | **Nodular cast iron** pearlitic<br>**Malleable cast iron** | 100-70-03<br>70003 | 520 | .006 |
| 10.1 | K | | 200 | **Alloyed nodular cast iron** | A43D2 | 460 | .006 |
| 10.2 | K | | 300 | **Vermicular cast iron** | | 390 | .006 |
| 12.0 | N | | 90 | **Copper alloy, brass, Lead alloy, Bronze, Lead bronze:** good cut | UNS C36000 | 980 | .006 |
| 12.1 | N | | 100 | **Copper alloy, Brass, Bronze:** average cut | | 890 | .006 |
| 13.0 | N | | 60 | **Wrought aluminum alloy** | | 1640 | .005 |
| 13.1 | N | | 75 | **Aluminum alloy:** Si content <10%<br>**Magnesium alloy** | GD-AlSi12 | 980 | .006 |
| 14.0 | N | | 100 | **Aluminum alloy:** Si content >10% | A360.2 | 820 | .006 |
| 15.0 | H | 203000 | | **Hardened steel** < 45 HRC | | 390 | .003 |
| 16.0 | H | 261000 | | **Hardened steel** > 45 HRC | | 300 | .003 |

## Alternative Insert

KOMET®

### For better chip control

| D | Insert W30 / W57 Order No. size | ISO Insert Description | for Workpiece Material P M K N S H |
|---|---|---|---|
| 3.543 - 4.921 | **W30 14120.3232** | TOHX090202EL-US12 CK32 | ◐ ◐ |
| | **W30 14120.3060** | TOHX090200EL-G12 BK60 | ◐ ◐ |
| | **W57 14120.0423** | TOGX090204FN-12 K10 | ◐ ◐ |

### For better wear resistance

| D | Insert W57 / W30 / W30 PCD CBN Order No. size | ISO Insert Description | for Workpiece Material P M K N S H |
|---|---|---|---|
| 3.543 - 4.921 | **W30 14120.3232** | TOHX090202EL-US12 CK32 | ◐ ◐ |
| | **W30 14120.3060** | TOHX090200EL-G12 BK60 | ◐ ◐ |
| | **W57 14120.0423** | TOGX090204FN-12 K10 | ◐ ◐ |

### For better surface finish

| D | Insert W57 / W30 / W30 PCD CBN Order No. size | ISO Insert Description | for Workpiece Material P M K N S H |
|---|---|---|---|
| 3.543 - 4.921 | **W30 14120.3160** | TOHX090202EL-UF12 BK60 | ◐ ◐ |
| | **W30 14120.3060** | TOHX090200EL-G12 BK60 | ◐ ◐ |
| | **W57 14120.0423** | TOGX090204FN-12 K10 | ◐ ◐ |
| | **W30 14990.0440** | TOGX090204TN CBN40 | ◐ |

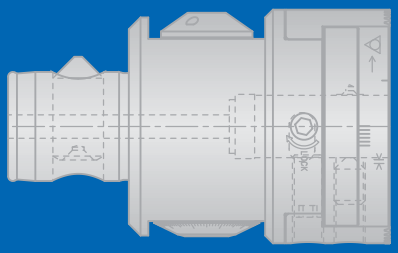
**Please see page 10 for more application details and safety notes!**

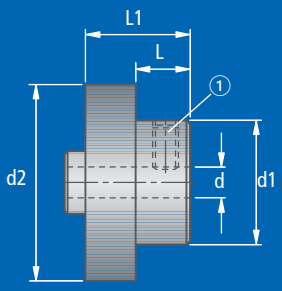
# MicroKom® *hi.flex* Optional Equipment

## Boring Bar Adapter

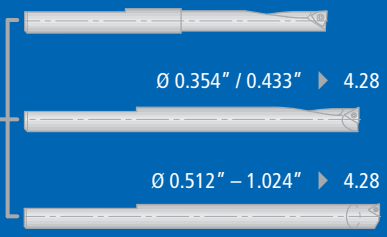
### Adapter

with cylindrical tool location
for clamping vibration dampened fine boring bars






Compass Catalog
Reference Page

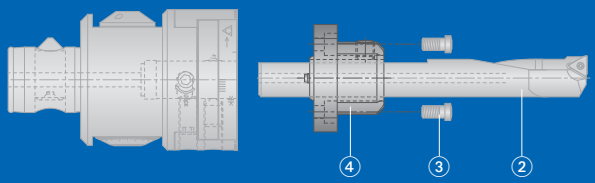




| Order No. | d | d1 | d2 | L | L1 | lbs | Assembly parts: Clamping screw ① DIN913 Description | Assembly parts: Clamping screw ① DIN913 Order No. |
|---|---|---|---|---|---|---|---|---|
| M05 90200 | 0.236 | 1.220 | – | 0.630 | – | 0.25 | M8×10 | **55051 08010** |
| M05 90210 | 0.315 | 1.220 | – | 0.630 | – | 0.26 | M8×10 | **55051 08010** |
| M05 90220 | 0.394 | 1.220 | 1.811 | 0.590 | 0.984 | 0.34 | M8×10 | **55051 08010** |
| M05 90230 | 0.472 | 1.220 | 1.811 | 0.590 | 0.984 | 0.32 | M8×10 | **55051 08010** |
| M05 90240 | 0.630 | 1.220 | 1.811 | 0.787 | 1.181 | 0.32 | M8×8 | **55051 08008** |

**Supplies include:** Adapter complete.

**Instruction for adapter M05 90240**




**Please note:**
Before tightening the holding screw ③, center the adapter ④ with shank Ø for the boring bar ② on the micro-adjustable head.

KOMET®

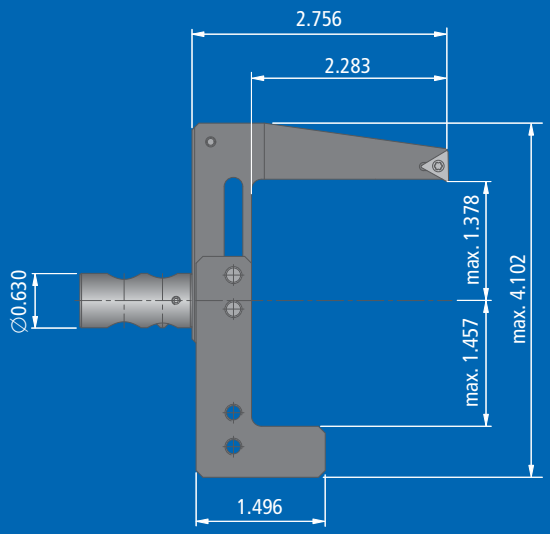
# Mounting bridge
## for O.D. machining Ø 0.197" – 2.756"


## Setting the diameter

- Position the mounting bridge on the micro-adjustable head.
- Set the coarse position on the upper scale, tighten screw ①.
  **Important note: check position of screw ① for required Ø range!**

**Ø 0.197" – 1.338"** **Ø 1.299" – 1.732"** **Ø 1.693" – 2.756"**

- Align the front scale for the mounting bridge with the positioning mark on the adjustable head, tighten the pull stud ②.
- Carry out fine adjustment on the setting device using the scale on the micro-adjustable head.




| D | Order No. | lbs | Basic Recommendation: Insert Order No. size | Basic Recommendation: ISO Insert Description | Basic Recommendation: for Workpiece Material P M K N S H | Replacement Parts: Clamping screw Order No. Description | Replacement Parts: TORX PLUS Order No. Description | Replacement Parts: Cylindrical screw ① Order No. Description |
|---|---|---|---|---|---|---|---|---|
| 0.197" – 2.756" | M05 90300 | 0.014 | **W57 14140.0460**<br>**W30 14060.0461**<br>**W57 14120.0423** | TOGX090204EN-14 BK60<br>TOHX090204EL-G06 BK61<br>TOGX090204FN-12 K10 | ● ● ● ● | **N00 56111**<br>S/M2.6×6.2-8IP<br>11.3 in-lbs | **L05 00830**<br>8IP | **55011 05030**<br>M5×30 |

**Supplies include:** Mounting bridge with assembly parts.
Please order inserts and accessories separately.

# Notes

# Notes

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