

MANURHIN K'MX NEWSLETTER

Innovative technology

Experience the clamping force of MANURHIN K'MX swiss type lathes!

In [TAJMAC-ZPS a.s.](#), in Zlín, Czech Republic we develop and manufacture the swiss type lathes **Manurhin K'MX** since 2006, after we have as TAJMAC-ZPS in 2004 **Manurhin K'MX** acquired and made it a member of TAJMAC GROUP.

TAJMAC GROUP is an international group of companies, where the headquarters TAJMAC-MTM are seated in Italian Milan and sister companies are located in the whole world : two in Italy, two in France, two in Germany, one in United Kingdom, one in Brasil, two in India, one in China, three in the USA and seven in the Czech Republic.

From all those companies the biggest is TAJMAC-ZPS from Zlín, Czech Republic.

The swiss type lathes **Manurhin K'MX** are because of its construction the strongest swiss type lathes on the market both in turning or milling. During past years with hundreds of installations of **Manurhin K'MX** machines to our customers we have often experienced the complaints from the users of various brands of swiss machines about the bar material being pushed inside the collet of main spindle, when going with tool deeper into material. The cause of this phenomenon, if it occurs, is not always only the machine. There is impact of chemical composition of the bar material as well, the tolerance class of bar material, roughness of material, the type of used coolant and also used collets. We have prepared for you comparison of measured clamping force on four (4) different grinded diameters of bars in the same collet. This measurement we have done for three (3) different collets (smooth, slotted, super-grip).

The tests have been done on model **Manurhin K'MX 532 TREND** for all collets and for comparison we have made test for the most often used slotted collet on main spindle on our strongest model **Manurhin K'MX 732 EVO**. This model is as you will see so strong, that the clamping force on main spindle collet exceeds the capacity of axial servomotor. So even when the overload was reached, clamping was still stronger and material was not pushed into the collet.



Machine model:

K'MX 532 TREND

Serial number:

V115L0055

material:

ocel (11 109)

Pressured air:

max. 0,55MPa

Equipment:

4x test bar (length L=300mm), with diameters:

No.1. : $\Phi 25,948$ (lower h9 tolerance)

No.2. : $\Phi 25,870$ (lower h11 tolerance)

No.3. : $\Phi 25,790$ (lower h12 tolerance)

No. 4. : $\Phi 26,000$ (upper h tolerance)

Portable dynamometer

Clamping collet 164E (F38/72) - slotted

Clamping collet 164E (F38/72) - smooth

Clamping collet 164E (F38/72) - supergrip

Pad for dynamometer centering

TEST DESCRIPTION:

- setting of clamping force on main spindle on bar No. 4 according to machine’s user manual (following tightening by 180 degrees)
- clamping of bar approx 85mm towards the spindle
- pushing on bar with contra spindle (dynamometer supported at one side on bar material and the other side on pad and contra spindle) - the maximum force before the pushing is recorded.
- testing and measuring of clamping force on all other bars (without any change in clamping force setting)
- test was executed for two different feeds (in MPG mode for increments 0.01mm a 0.001mm)

MEASURED VALUES:

Model: K´MX 532 TREND / Clamping collet 164E (F38/72) - smooth

Bar number	Bar diameter [mm]	Force [kN] increment 0,01mm	Force [kN] increment 0,001mm
4.	26,000	3,4	3,1
1.	25,948	2,4	2,1
2.	25,870	2,1	1,9
3.	25,790	2,1	2,4



Model: K´MX 532 TREND / Clamping collet 164E (F38/72) - slotted

Bar number	Bar diameter [mm]	Force [kN] increment 0,01mm	Force [kN] increment 0,001mm
4.	26,000	5,1	4,8
1.	25,948	3,6	3,6
2.	25,870	3,0	3,0
3.	25,790	2,6	2,5



Model: K´MX 732 EVO / Clamping collet 164E (F38/72) - slotted

		Measurement 1. (clamping force set to approx 180°)		Measurement 2. (clamping force set to approx 270°)
Bar number	Bar diameter [mm]	Force [kN] increment 0,01mm	Force [kN] increment 0,001mm	Force [kN] increment 0,01mm
4.	26,000	6,4	6,3	7,6 (axis overload)
1.	25,948	5,1	5,4	7,6 (axis overload)
2.	25,870	4	4,3	6,4
3.	25,790	3,3	4	4,2



Model: K'MX 532 TREND / Clamping collet 164E (F38/72) - supergrip

Bar number	Bar diameter [mm]	Force [kN] increment 0,01mm	Force [kN] increment 0,001mm
4.	26,000	7,6 (axis overload)	7,6 (axis overload)
1.	25,948	7,6 (axis overload)	7,6 (axis overload)
2.	25,870	2,9	2,6
3.	25,790	2,5	2,3



In the case that you are interested in additional information, in the case that you need an explanation of these clamping force tests, in the case that you experience the issues with bar material being pushed into the main spindle collet when turning, drilling or milling, either from the face or radial and if you want to know more about us and technological possibilities of Manurhin K'MX machines, then contact your local dealer or come to visit us. If you have the drawing of component and you are curious what can Manurhin K'MX do with it, send us both your drawing and a question you have.

Find our local representative here:

<https://www.tajmac-zps.cz/sales-representatives>

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