passion
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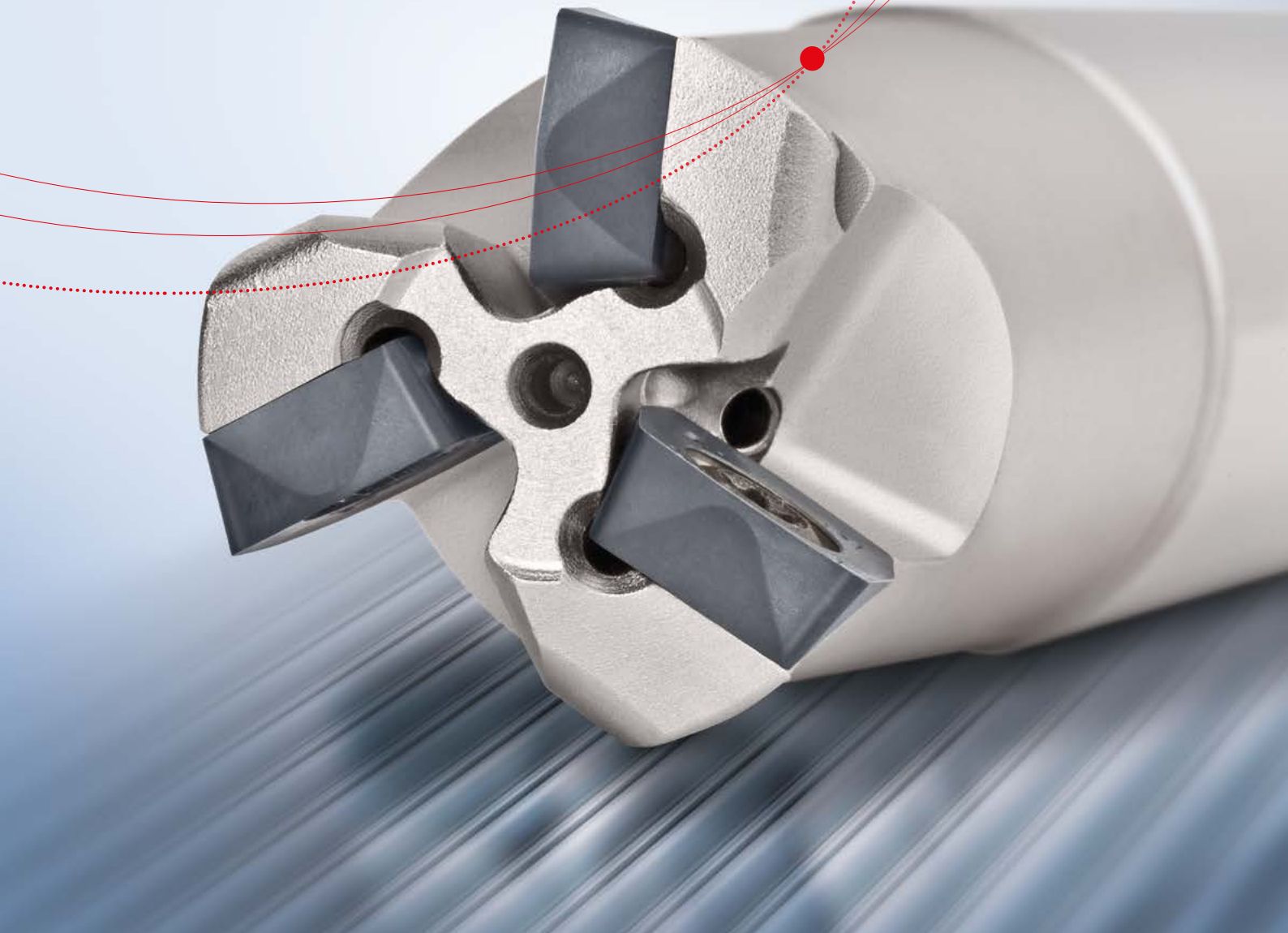
fraisa

HFC indexable insert milling tools



High-performance roughing
with HFC indexable milling insert

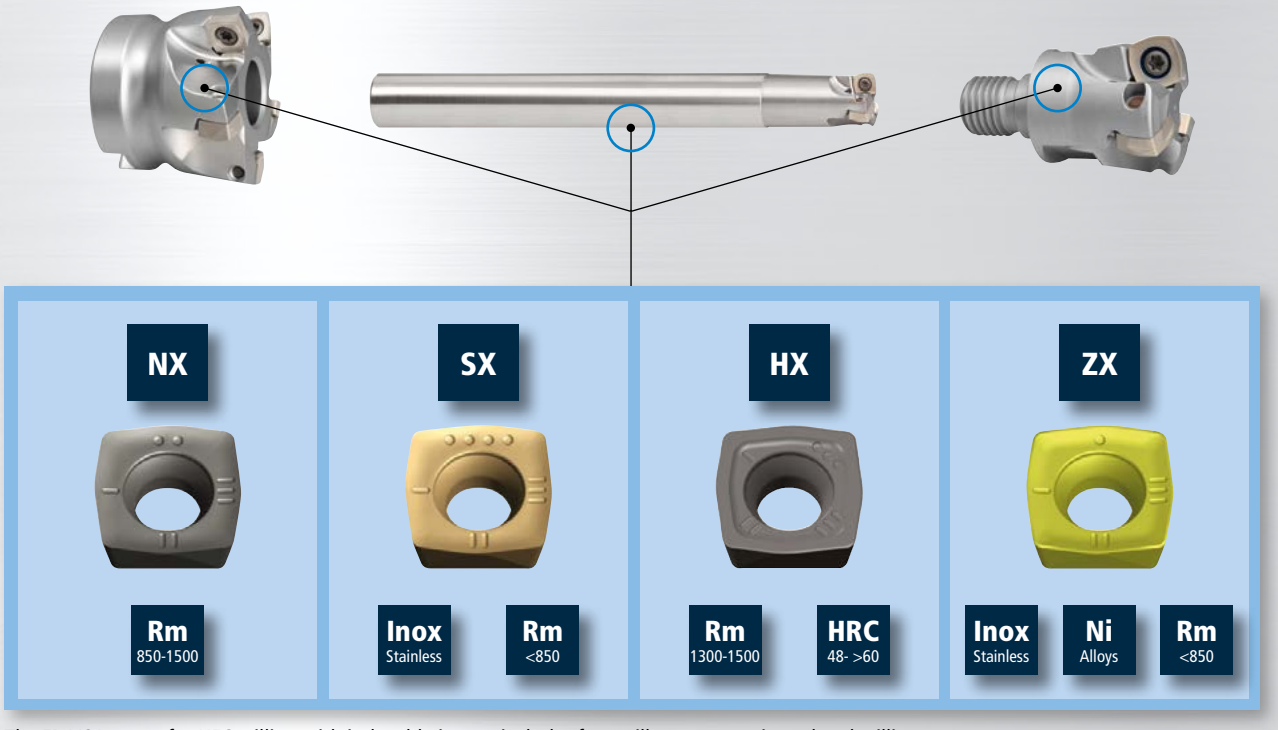
The main application of the **HFC** milling system is high-performance rough machining. The variety of materials which can be effectively machined by means of the **HFC** range, comprises all kinds of steel with a hardness up to 54 HRC, stainless steel (INOX) as well as all difficult-to-machine materials.

HFC milling has several advantages compared to milling with round indexable inserts, which make a migration to this technology very attractive.
HFC milling is significantly more productive, safer in process and additionally less expensive than milling with conventional round indexable insert systems.
The higher degree of optimisation of the **HFC** system as well as the reduction of set-up times are further arguments in favour of **HFC**.

The advantages:

- **Higher degree of productivity:** Reduction of the machine utilisation time which results in a reduction of the machine costs and investments
- **Higher degree of process security** and more controllable wear development
- **Better price-performance ratio:** Lower insert costs per workpiece
- **Minimal set-up costs and set-up times:** Simple and quick insert changing process
- **Higher level of efficiency** and reduced requirements for machine rigidity
- **Better process stability:** Reduced number of control checks and tools

Range structure



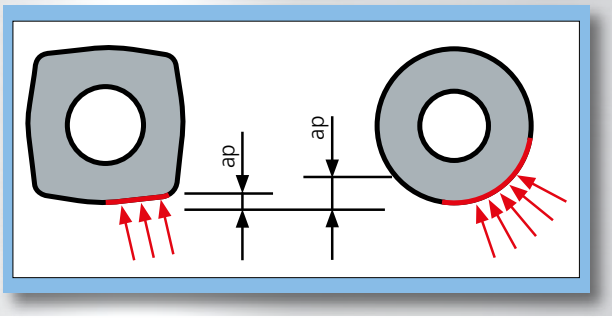
The FRAISA range for HFC milling with indexable inserts includes face mill type, screw-in and end milling cutters.

All holding devices can be combined with the four indexable inserts for the areas of steel (NX), stainless steel (SX), hardened steel (HX) and special requirements (ZX). All versions are available for inserts with sizes of 10 and 13 mm.

Comparison with the round indexable insert technology

As part of the **HFC technology** the axial infeed depth ap is distributed over a very large cutting edge length thanks to the inclination of the insert edge. The specific stress of the cutting edge remains low. As a result, significantly higher infeed rates can be used process-safely compared to applications with round indexable inserts.

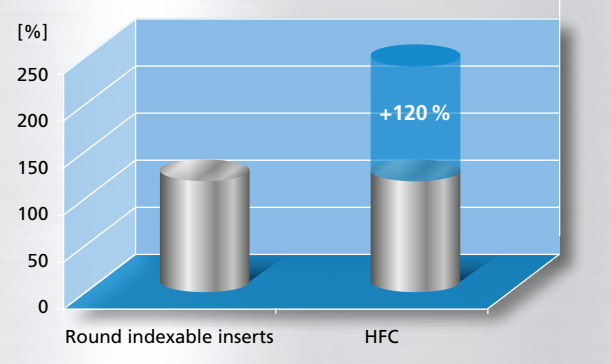
Direction of the cutting forces of HFC and round indexable inserts



Higher degree of productivity

The metal removal volume when using **HFC** is considerably higher compared to the round indexable insert system. The **HFC** productivity capacity is 120% higher!

Productivity using HFC and round indexable inserts



Higher level of process security

The wear and the mechanical stress are uniformly distributed over a longer cutting edge which enables the wear development to be controlled more easily. Thus, the process-secure operating time can be increased by 30%.

Better price-performance ratio

A longer process-secure operating time and an increased metal removal volume result in a considerably higher overall removal volume per tool body and insert combination. The costs for indexable inserts for the **HFC technology** are about 40% lower than for the round indexable insert technology.

Minimal set-up costs and set-up times

HFC inserts can be positioned easily and safely. This results in shorter set-up times and a high process security. Compared to the round indexable insert systems with their complex fine positioning of inserts, savings in terms of set-up time of up to 50% are achieved.

Higher degree of efficiency

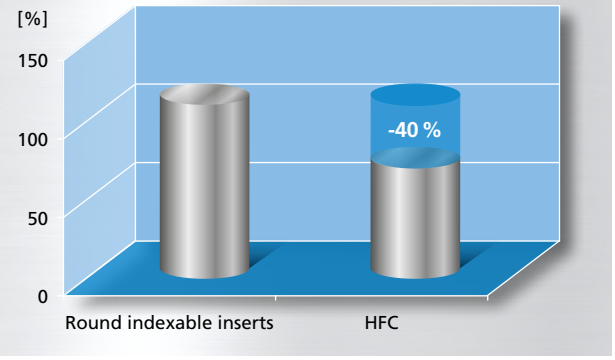
Due to the tool stabilisation in the axial direction and the reduction of radial cutting forces the stress on the machine tool is lower. This also enables the use on less efficient machines. The power input of the spindle is lower, which results in an improved energy efficiency.

Better process stability

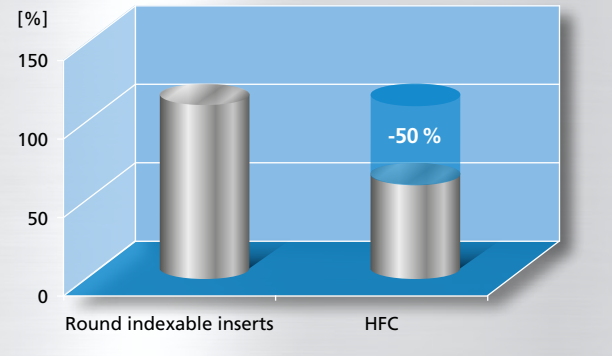
Thanks to the process security at highest metal removal volume, more components per cutting edge can be manufactured. This increases the degree of optimisation, reduces cutting edge control checks and requires less tools.

Zones of wear

Wear development in the case of round indexable inserts and HFC



Savings in terms of time when setting up with HFC inserts



High feed end mills for inserts 10mm

N° W02140

N° W02180

NX	λ 2° γ 14°	d, 25	**Rm** 850-1500		
SX	λ 2° γ 15°	d, 25	**Inox** Stainless	**Rm** <850	
HX	λ 2° γ 2°	d, 25	**Rm** 1300-1500	**HRC** 48- >60	
ZX	λ 2° γ 15°	d, 25	**Ni** Alloys	**Inox** Stainless	**Rm** <850

High feed end mills for inserts 13mm

N° W02150

N° W02190

NX	λ 0° γ 12°	d, 35	**Rm** 850-1500		
SX	λ 0° γ 13°	d, 35	**Inox** Stainless	**Rm** <850	
HX	λ 0° γ 0°	d, 35	**Rm** 1300-1500	**HRC** 48- >60	
ZX	λ 0° γ 13°	d, 35	**Ni** Alloys	**Inox** Stainless	**Rm** <850

High feed end mills for inserts 10mm

N° W02400

NX	λ 4° γ 16°	d, 40 – 63	**Rm** 850-1500		
SX	λ 4° γ 17°	d, 40 – 63	**Inox** Stainless	**Rm** <850	
HX	λ 4° γ 4°	d, 40 – 63	**Rm** 1300-1500	**HRC** 48- >60	
ZX	λ 4° γ 17°	d, 40 – 63	**Ni** Alloys	**Inox** Stainless	**Rm** <850

High feed end mills for inserts 13mm

N° W02410

NX	λ 4° γ 16°	d, 50 – 80	**Rm** 850-1500		
SX	λ 4° γ 17°	d, 50 – 80	**Inox** Stainless	**Rm** <850	
HX	λ 4° γ 4°	d, 50 – 80	**Rm** 1300-1500	**HRC** 48- >60	
ZX	λ 4° γ 17°	d, 50 – 80	**Ni** Alloys	**Inox** Stainless	**Rm** <850

High feed end mills for inserts 10mm

N° W02200

NX	λ 2° γ 14°	d, 25	**Rm** 850-1500		
SX	λ 2° γ 15°	d, 25	**Inox** Stainless	**Rm** <850	
HX	λ 2° γ 2°	d, 25	**Rm** 1300-1500	**HRC** 48- >60	
ZX	λ 2° γ 15°	d, 25	**Ni** Alloys	**Inox** Stainless	**Rm** <850

High feed end mills for inserts 13mm

N° W02210

NX	λ 0° γ 12°	d, 35	**Rm** 850-1500		
SX	λ 0° γ 13°	d, 35	**Inox** Stainless	**Rm** <850	
HX	λ 0° γ 0°	d, 35	**Rm** 1300-1500	**HRC** 48- >60	
ZX	λ 0° γ 13°	d, 35	**Ni** Alloys	**Inox** Stainless	**Rm** <850

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