

# TIP TALK

AUGUST 2014

WWW.ISCAR.CO.NZ

0800 808 477

## COOL STUFF COMING



Spindle speed-up head...driven by your machine's coolant! Yes, that's correct. Now you can have a speed-up head that can go in your tool-changer!

The new SPINJET spindles have been developed for use when high RPM is required for small diameter tools on limited RPM machines. The new spindles are for semi-finish and finish machining applications such as milling, drilling, and grinding.

The system utilises the machine tool's existing coolant supply, driven by a high pressure pump (minimum 20 bars) as an energy source to rotate a turbine up to 40,000 RPM.

SPINJET is not intended to replace the machine's spindle, but rather to upgrade the existing machine.



**Available in 2-3 months; talk to your Iscar rep today!**

## Double-Sided Triangular Insert With Six 90° High Positive Cutting Edges *AND Ramps*

Find another tool that does that!

**HELIDO H690** evolution of the original **HELIDO** line: a new family of tools for 90° milling.

The new **H690** TNKX 1606 triangular inserts feature six helical right-hand cutting edges, and due to their thickness are very strong.

The **HELIDO H690** helical design of the triangular insert, coupled with a rigid pocket design, provides extremely high durability and very stable performance.

The new family includes face mills in 50 to 250 mm diameters. Each tool size is available in both fine and coarse pitch configurations.

The tools can machine 90° shoulders up to 13.5 mm depth, and in addition perform slotting, ramping down, and facing operations.

**Advantages of the H690 double-sided triangular insert with six helical cutting edges:**

- **Strong:** its thick insert design provides stable and reliable performance.
- **Longer life:** unique shape and positive rake face exert low cutting forces; more tool life for you!
- **High finish:** wiper for high surface-finish quality and helical cutting edge that provides 90° shoulder and soft and clean cut.



- **Adjusts:** ramp down application up to three degrees depending on cutter size.

- **Keeps cool:** cutters above 125mm have coolant holes at the insert.

- **Holds fast:** special tightening mechanism for a tight fit between insert and pocket, providing long life and consistent output.

- **Hard-Touch coated:** provides better chip flow and protection from corrosion and wear.

The **HELIDO H690** family combines the most advantageous features of both the **HELIMILL** (helical cutting edge and positive rake angle) and the **HELIDO H490** (strong construction), which are most suitable for heavy milling applications.



## ISOTURN

### Big Savings In Small Packages

In many turning applications, people tend to use larger inserts than are actually needed. As it turns out, the most popular depth of cut is between 1 to 3 mm. It stands to reason, therefore, that small-sized inserts could be used. This has been tried before, but those smaller inserts were also thinner and less stable.

So Iscar said why should our customers pay for a big insert they are not fully utilising? Why not create an insert range that is smaller in overall size to handle the 3mm depth of cut? But let's keep the thickness the same as a regular inserts, for strength.

To fill the niche, Iscar introduced a wide range of ISOTURN small-sized inserts, which are less costly than a full-size insert, - FLASH TURN.

The new inserts are available in a wide range of geometries, corner radii, new chip-formers, and the most advanced SUMO TECH carbide grades.

The available geometries are WNMG 0604..., WNMG 06T3..., WNMX 0606..., CNMG 0904..., CNMX 0906..., SNMG 0904..., DNMG 1104..., TNMG 1304.. and TNMX 1606...



These inserts are thicker than the standard inserts of the same sizes, providing higher durability, and they can run at feed rates similar to the larger inserts of 4.76mm.

We introduced these last year and performance results have them machining better than their larger counterparts at less cost!

So we have introduced a new promotion to make everyone aware of how cool these tools are.

Go to [Grabatool.co.nz](http://Grabatool.co.nz) and check out our hot deals on these inserts!

**Inserts for \$3, tool-holders with 50% off, drills at 1/4 of the price!**

**Grab a bargain at [Grabatool.co.nz](http://Grabatool.co.nz)**

## Fact or Fiction?

**NASA Spent Millions to Develop a Pen that Would Write in Space, Whereas the Soviet Cosmonauts Used a Pencil.**

During the height of the space-race in the 1960's, legend has it NASA scientists realised that pens could not function in space. They needed to figure out another way for the the astronauts to write things down, so they spent years and millions of taxpayer dollars to develop a pen that could put ink to paper without gravity. But their crafty Soviet counterparts, so the story goes, simply handed their cosmonauts pencils.

**See over for the answer.**



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# The MILLION DOLLAR PEN

Originally, NASA astronauts, like the Soviet cosmonauts, used pencils, according to NASA historians. In fact, NASA ordered 34 mechanical pencils from Houston's Tycam Engineering Manufacturing, Inc., in 1965. They paid \$4,382.50 or \$128.89 per pencil. When these prices became public there was an outcry and NASA scrambled to find something cheaper for the astronauts to use.

Pencils may not have been the best choice anyway.



The tips flaked and broke off, drifting in microgravity where they could potentially harm an astronaut or equipment. And pencils are flammable- a quality NASA wanted to avoid in onboard objects after the Apollo 1 fire.

The Fisher Pen Company reportedly invested \$1 million to create what is now commonly known as the space pen.

In 1965, Fisher patented a pen that could write upside-down, unlike most ballpoint pens.

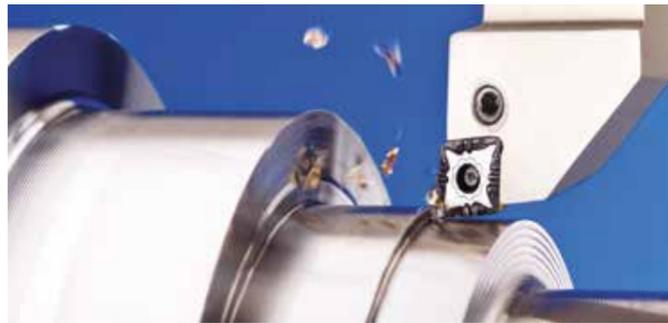
Fisher's pen does not rely on gravity to get the ink flowing. The cartridge is instead pressurised with nitrogen at 35 pounds per square inch. This pressure pushes the ink toward the tungsten carbide ball at the pen's tip.

According to an Associated Press report from February 1968, NASA ordered 400 of Fisher's antigravity ballpoint pens for the Apollo program at \$2.39 per pen. A year later, the Soviet Union ordered 100 pens and 1000 ink cartridges to use on the Soyuz space missions.

## Dry Machining: What are the chances?

### What do we want?

Dry machining refers to machining without any fluids, while near-dry machining or Minimum Quantity Lubrication (MQL) is the use of a minute amount of fluid that is applied directly to the cutting edge (either internally or externally). Near-dry machining features fluid vaporisation during the process, leaving dry chips behind. The practice of dry or near-dry machining has already proved in numerous machining case studies that much faster cutting conditions can be successfully applied.



Metalworking machining fluids are a pain; they are expensive, messy, difficult to manage, an environmental disaster to dispose of, and a health hazard.

Twenty years ago the purchase, management, and disposal of lubricating fluids accounted for less than 3 percent of the production costs. Today, in comparison, the same operations constitute 16 percent of the cost of the average job.

Traditionally during machining, without metalworking fluid, excessive tool wear and inferior surface finish would occur during machining.

The use of fluids during machining serves several functions, such as effective lubrication and cooling at the tool/workpiece interface,

as well as effective flushing of the chips. Failing to evacuate the chips efficiently can result in subsequent occurrences of re-cutting,

A long-lasting debate among research engineers revolves around the question of whether cutting fluid actually reaches the zone interfacing between the bottom side of the chip and the cutting tool.

So where is the future in dry machining?

The latest technology of cutting tool materials, such as advanced coated carbide, ceramics, cermets, cubic boron nitride (CBN), and polycrystalline diamond (PCD) has been developed.

The submicron grain structure of the solid carbide substrate provides the retention of cutting edge integrity, so they can run at higher temperatures. The TiAlN, in particular, has emerged as an outstanding coating that exhibits thermal stability up to a temperature of 900°C. The coating displays a very low friction coefficient, enabling its use under almost all dry machining conditions.

So why aren't we using them dry?

Well does the following matter to you?

- Good surface finish requirements: dry machining just doesn't cut it.
- Good dimensional stability of the part being machined: not good when they get hot.
- A shortening of tool life due to higher temperatures.
- Meeting the market demand for higher cutting speeds.

The industry has not seen any increase in dry machining beyond its current use for cast iron. Dry machining, presumably, cannot overcome the positive benefits of using metalworking fluids. The trade-off in using metalworking fluids is normally a compromise between fluid-disposal costs and productivity.

So we are not there yet. Don't hold your breath, and don't cancel through tool coolant on your new machine just yet.



## Why YCM For Your Shop?

Because it's made the way a machine should be made. Check this out and then compare the machines in your workshop with this construction:

**Each casting is made in YCM's own foundry.** Most of its castings weigh 20-30% more than its competitors'.

**Each component is made in-house;** most Taiwanese machine builders are just assemblers, buying finished castings machined with no grinding.

**The servomotor mounts are cast into each bed and table** for long term accuracy...how is your machine put together? Dowels and bolted?

**“Isn't it time you took a fresh look at what ‘Made in Taiwan’ means to you?”**

**All mating surfaces of castings are hand scraped** for the perfect matching fit to reduce resonance-induced vibration.

**Each YCM slide is ground on a US\$10 million SUMITOMO grinder.** Does your machine have a ground slide way for mounting the linear guides?

**Spindles are all made in-house,** designed especially for each machine. Is the name on your spindle the same as the machine builder?

Bearings and linear guides are supplied by the recognised industry leaders in quality...check which brand is on your machine.

Now compare the price of a YCM to any top shelf machine from Japan or Europe. **Isn't it time you took a fresh look at what “Made in Taiwan” means to you?**

## TANG-GRIP IQ

DOUBLE THE NUMBER OF INSERT POCKETS

The new Tang-Grip blades feature the same general dimensions as the current blades, with the addition of two extra pockets.

This provides the advantage of half the price per pocket when compared with the current tools and blades.

**No other company offers such advantages.**

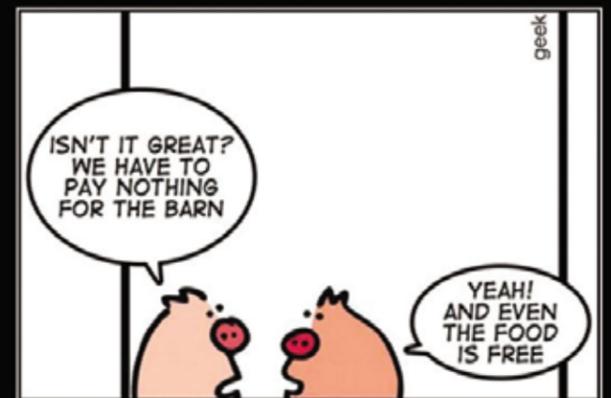
- The new blades ( TGSU) and tools feature high rigidity and are capable of bearing heavy tooth load (high feed).
- No chip obstruction under any possible machining conditions.
- Free chip flow provides excellent surface finish.
- Excellent surface straightness due to high blade rigidity.



- Can be used for deep grooving and parting applications (the 35 mm high blades are 30 mm longer than any other standard blade).
- Unique design.
- Most economical price per pocket.

**grabatool**.CO.NZ  
\$3, \$5, \$7 inserts going fast!

**“Tomorrow belongs to the people who prepare for it today.”**



**FACEBOOK AND YOU**  
If you're not paying for it, you're not the customer. You're the product being sold.

## Charities we proudly support in 2014

