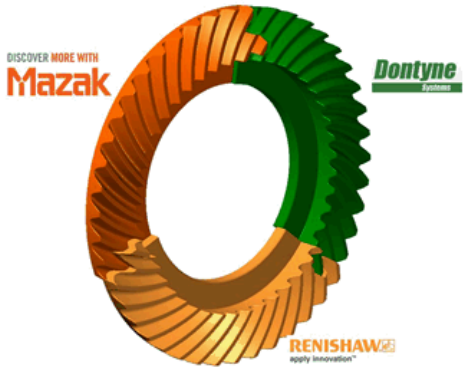
PRESS RELEASE 3/7/16: Dontyne – Mazak "Closed-Loop" Gear Machining Collaboration

Dontyne Systems and Mazak have agreed an exclusive collaboration to develop and market a flexible gear machining solution that combines the reputation of Mazak's precision multi-axis CNC machine tools with Dontyne Systems' gear production suite (GPS). The collaboration has been 2 + years in the making and has yielded proven "live-cut" gear part samples and sales to customers seeking a flexible solution.

How it Works and Key Advantages for the Customer:

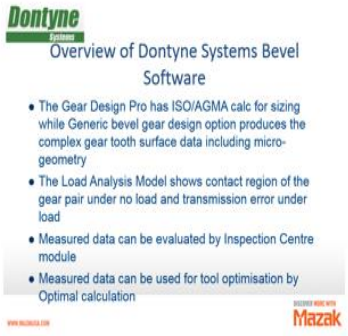
The **"Closed-Loop" Gear Machining solution (CLGM)** enables customers to utilize Mazak Integrex multi-axis CNC tools to accurately predict and control the gear manufacturing process from design-manufacture-measurement then "looped" back again to make a single iteration correction (if necessary). Mazak have been successfully cutting precision gears but were missing the necessary expert gear software knowledge now supported by Dontyne.



A particular "real-world" challenge has been how to control the design and manufacture process so that gear sets "conjugated" or matched correctly by achieving the desired marking pattern which is the ultimate proof that gears will effectively "roll together." Mazak can now confidently market the gear cutting capabilities offered by the Integrex CNC series to their customers (new and existing), then direct customers to Dontyne for the necessary offline gear software. Dontyne's software is conveniently situated on a PC or client network server independent of the CNC. Designs are created OR imported to the software by an experienced gear designer or engineer and analyzed to simulate the desired part for each specific application; next, the designed tooth surface is exported in IGES/DXF file format to any CAD/CAM system where the solid model is created; a G-Code (tool path code for the CNC) is generated and "posted" to the CNC where the part is made; a CMM measures the part for design comparison and the data is imported back to Dontyne's software for analysis; corrections (if deemed necessary) are made within the same software and without making any machine setting alterations, the process above is repeated once to make a corrected part – *Dontyne's co-Director and head of development Dr. David Palmer* along with Mazak are developing the process further ready for IMTS Chicago 2016 by posting G-Code direct from Dontyne to the CNC thus removing steps and speeding the process to further improve the customer experience. *Dontyne co-Director Dr. Mike Fish* also emphasized that machine operators are not required to be gear experts as this is taken care of by the gear designer using Dontyne's easy to use software suite for spur & helical, bevel, spline etc.

Historically, gear manufacture has typically required the use of numerous specialized or "dedicated" pieces of equipment and software along with the associated acquisition and ongoing maintenance costs. Gear-specific equipment also consumes large shop-floor footprints and requires a broad based workforce skills-set to operate the various machines. Gear-specific machines can prove efficient for

some applications, especially high volumes with low product mix – movement of parts between machines and processes adds cost, increases work in progress and raises part damage risk through frequent movement. Conversely, multi-axis CNCs using Dontyne's gear software controls requires a single machine footprint that can manufacture a complete part from blank material using standard tooling (or specialized hob tools) ideal for small batch, re-engineering, prototypes etc. The machine can currently handle material up to Rockwell 62.



- Single flexible CNC c/w many dedicated machines
- Rapid product mix change-over – responsive to demand fluctuations
- Lower overall machine and software costs
- Standard Tooling – reduced lead times (hob tools can also be used)
- Suitable for Spur & Helical, Bevel or Splines
- Cycle Time *may* be comparable to dedicated equipment – given part movement and finish required, heat treat etc.
- Ideal for small batch, prototype, large product mix, floor-space limitations
- Cutting with Confidence – a proven closed-loop solution supported by Mazak+Dontyne
- Compatible with any CMM and any CAD/CAM

EVENTS | Past and Future:
The "Closed-Loop" Gear Machining (CLGM) solution has already been displayed with live gear cutting demonstrations and break-out Q&A sessions at Gear Expo 2015 Detroit; Mazak DISCOVER in Florence, KY; Performance Racing Institute(PRI) Indianapolis.

Coming Next . . . Mazak DISCOVER, Schaumburg IL 19-21 April 2016 and IMTS Chicago Sep 12-17th 2016

FOR MORE INFORMATION
Request a no-obligation online demo, FREE software trial and to attend the above events. Please CONTACT: **David "Davey" Jones 859.803.1191 djones@dontynesystems.com**

Dr. Mike Fish (Dontyne co-Director)
Davey Jones – Dontyne North America Sales Manager

Mike Finn (Mazak Applications Development Engineer)
Closed-Loop Gear Machining (CLGM) specialist.

Left to Right:
Rich Easley (Dontyne Business Manager); Dr. Mike Fish (Dontyne co-Director); Mike Finn (Mazak Application Development Engineer); Jack Halenkamp (Mazak Manager Corporate Accounts); Davey Jones (Dontyne Sales Manager)

Finished Bevel Gear parts produced during Gear Expo 2015 - 21” tooth bevel with internal spline cut using Standard Sandvik cutters; cycle time 90 minutes from blank.

Davey Jones (Dontyne); Aimee Shandy (Mazak Manager Promotional Events).