

Gear Solution

# Gear Production<sup>+</sup>

by NMV 5000 DCG

5-axis machine with gear grinding unit  
for integrated milling, turning, gear roughing and grinding in one



# Process integration for gear processing

## DMG MORI Gear Machining Solution

### For various types of industrial gears

- + Module: m2 - m6
- + External gears: up to  $\phi 400$  mm ( $\phi 15.7$  in.)
- + Internal gears:  $\phi 120$  to  $\phi 430$  mm ( $\phi 4.7$  to  $\phi 16.9$  in.)



Also handles groove shapes like splines and keyways.

### Accuracy results

|                     | Rating     |
|---------------------|------------|
| Tooth profile error | ISO Rank 4 |
| Tooth trace error   | ISO Rank 4 |
| Pitch error         | ISO Rank 4 |
| Tooth groove runoff | ISO Rank 4 |

| Workpiece specifications |                       |
|--------------------------|-----------------------|
| Module                   | 2.5 (mm) <0.10 (in.)> |
| Number of teeth          | 84                    |
| Pressure angle           | 20 (deg)              |
| Material                 | S45C High frequency   |



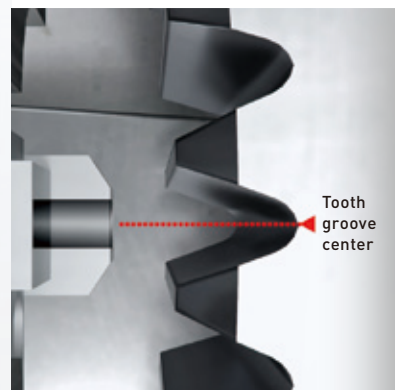
### Gear Grinding Unit

#### In-machine stocker



The gear grinding unit is stored in a dedicated in-machine stocker. Automatic tool change enables roughing and grinding in one machine.

#### Tooth alignment function



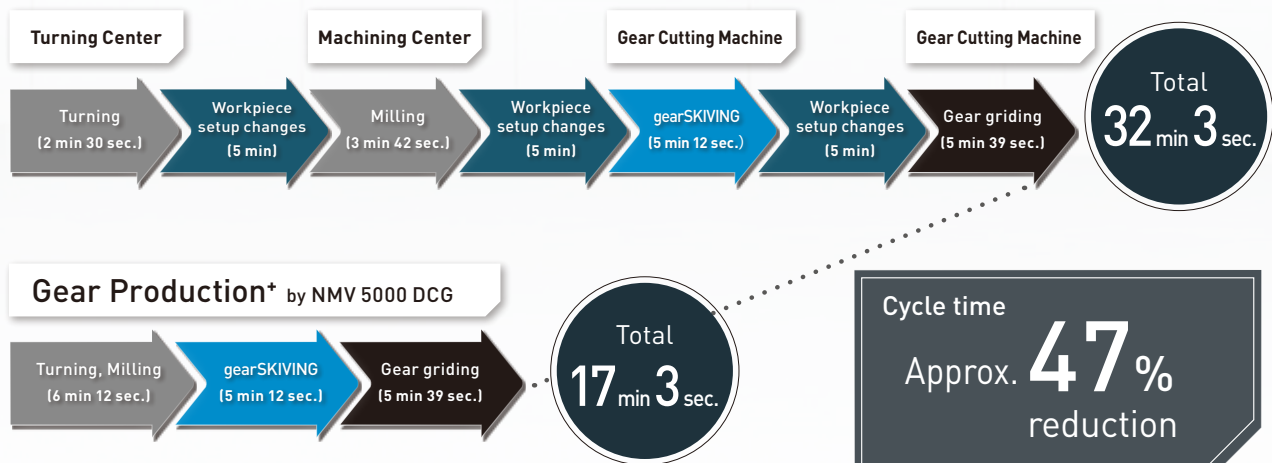
The tooth phase alignment function automatically detects the gear phase during roughing for stable grinding allowance and shorter processing time.

## Reduction of machining time through process integration

Internal spur gear



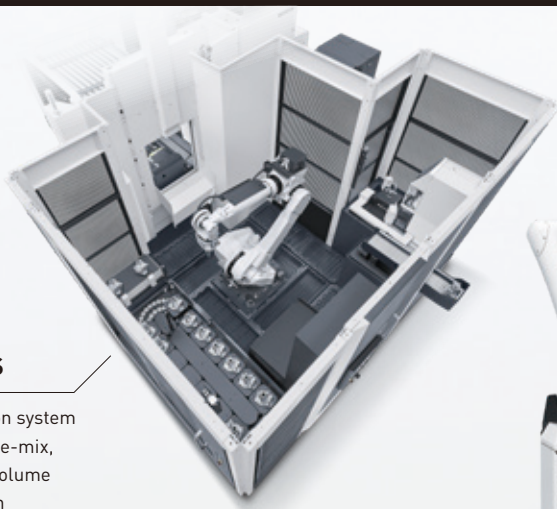
| Outer diameter    | Internal diameter P.C.D.         | Face width      | Hole            | Module          | Number of teeth | Material |
|-------------------|----------------------------------|-----------------|-----------------|-----------------|-----------------|----------|
| φ210 mm [8.3 in.] | 165 mm [6.4 in.] <Internal gear> | 30 mm [1.2 in.] | Taphole M10 × 6 | 3 mm [0.12 in.] | 55              | FCD400   |



## Automation Systems

### MATRIS

Automation system for variable-mix, variable-volume production



### WH-AMR 10

Self-driving robot for automated workpiece & tool handling on site



### MATRIS Light

Fenceless and compact cooperative robot system



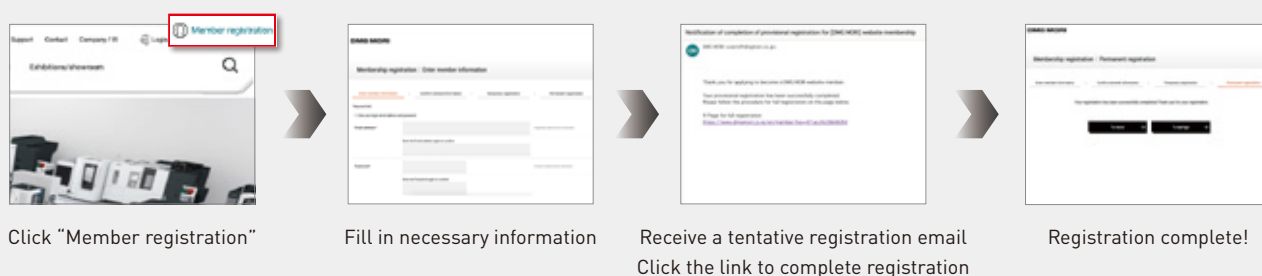
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+ DMG MORI is not responsible for differences between the information in the catalog and the actual machine.

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