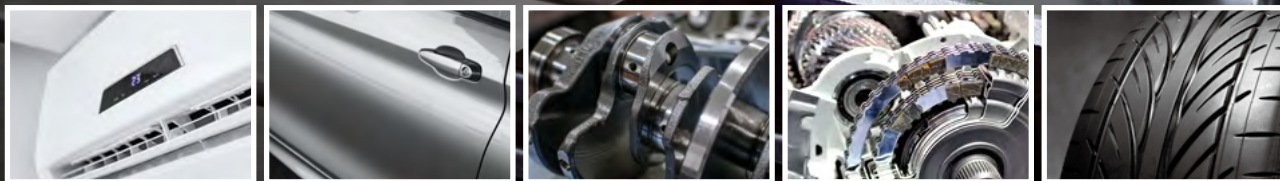
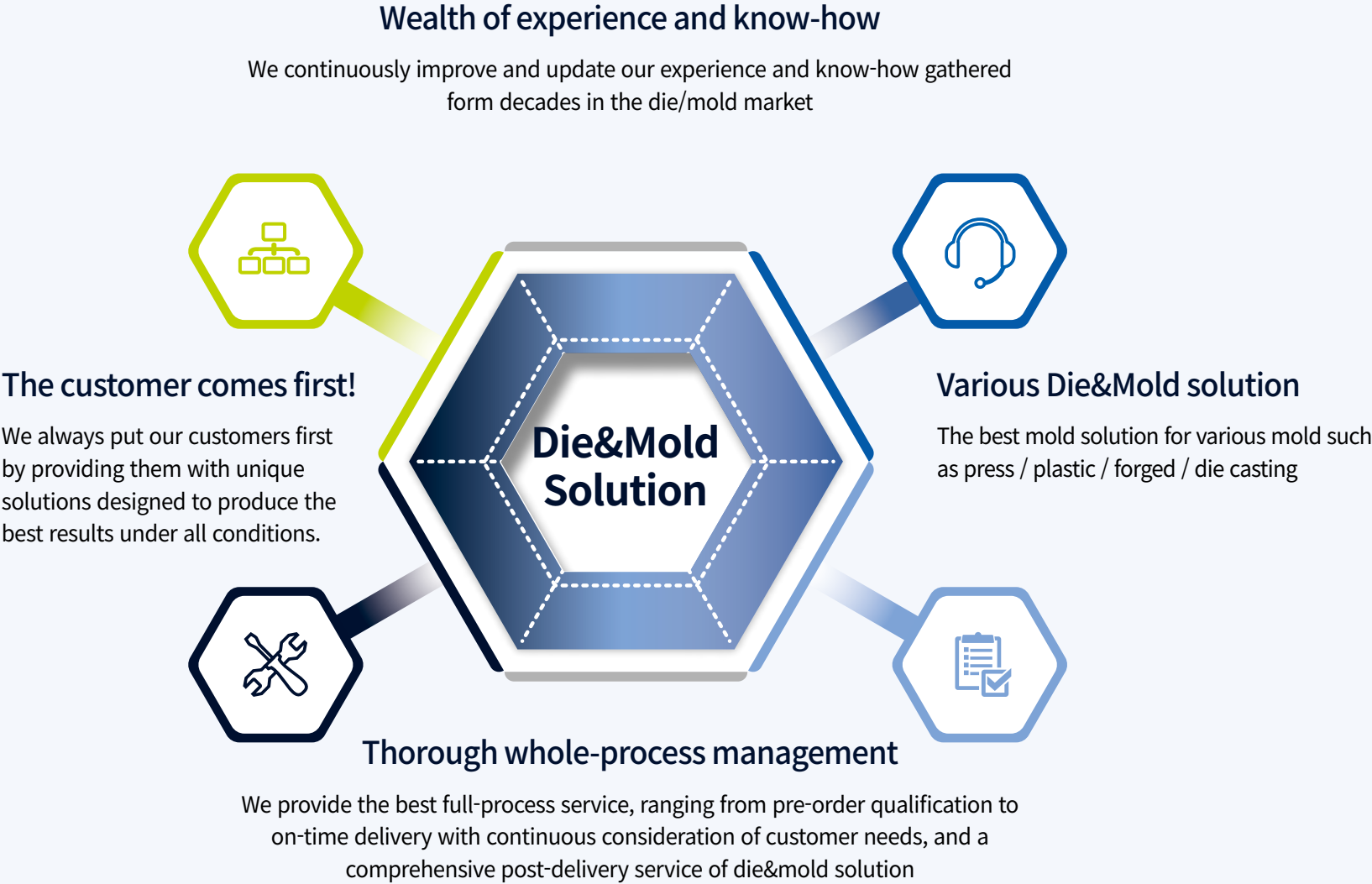


# ***DN Solutions*** ***Die & Mold Solution*** ***Reference***



ver. EN 220826 SU

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# DN Solutions Application Business

## About Die & Mold

Plastic

Press

Forging

Die casting

Specialist Molds

The molds are classified into various types. The most commonly used classification methods are classified into plastic mold, press mold, die casting mold, forged mold, and other specialist molds depending on the application and the material of the molded product.

### Forging mold

Crankshaft and other forging molds.

### Die casting mold

Engines are made using die casting molds.

### Plastic mold

Bumpers are made using plastic molds.

### Specialist Molds

Tires are made using other specialist molds.

### Press mold

Exterior of the cars body are made using Press die.



# Die & Mold Product line-up

## About Die & Mold

Plastic

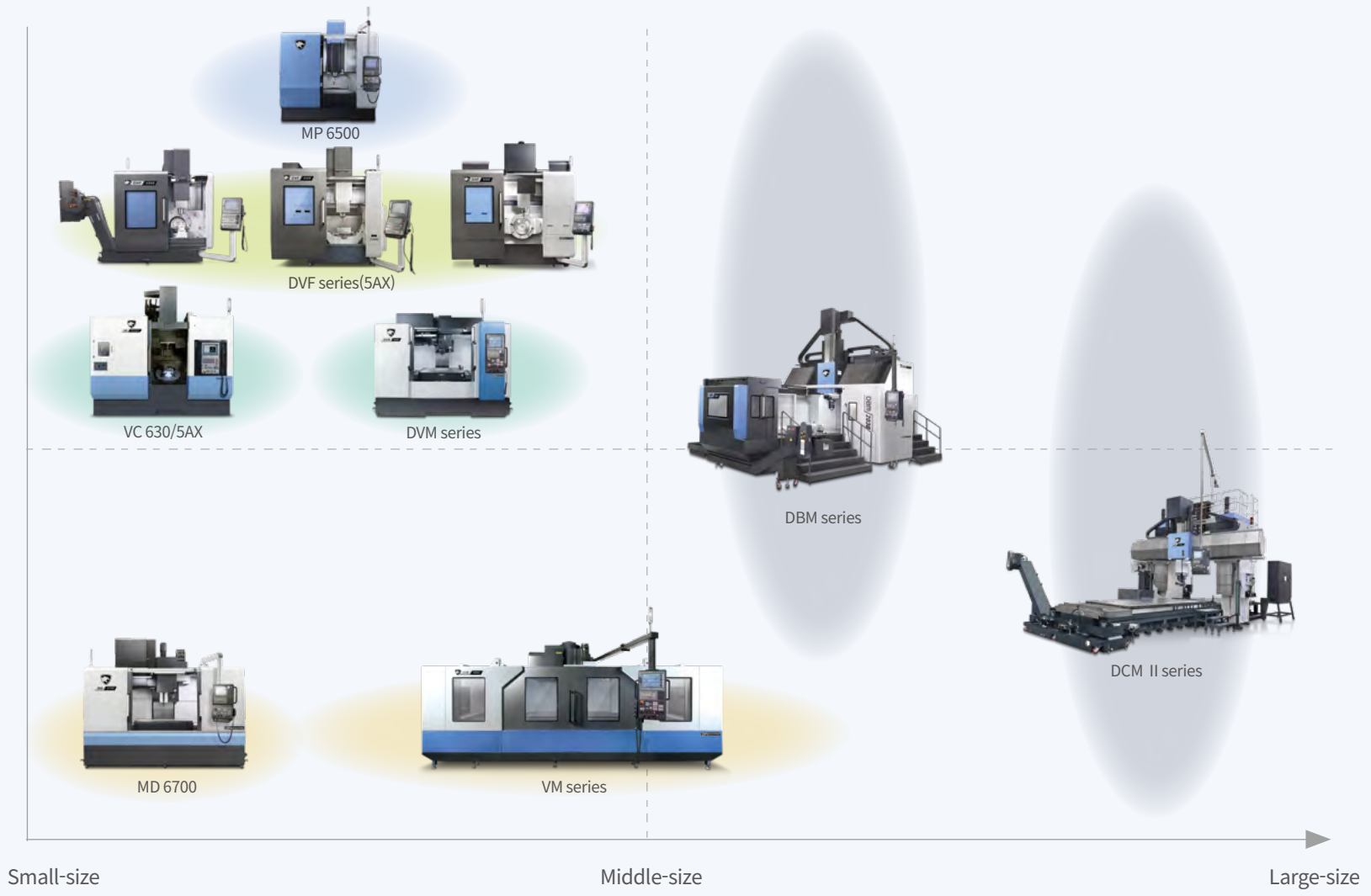
Press

Forging

Die casting

Specialist Molds

High Precision (ROLLER GUIDE)  
High rigidity (BOX GUIDE)





*Plastic*



# Customer A1

About Die & Mold

Plastic

Press

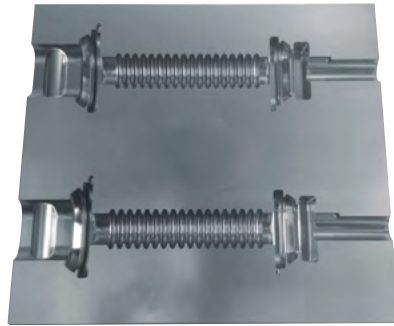
Forging

Die casting

Specialist Molds

## Workpiece

### Hose Connector



Size

**270 x 270 x 100 mm**  
(10.6 x 10.6 x 3.9 inch)

Material

**HP4M (HRC32)**

### Customer Request

Smooth surface

## Solution

### DVM 500 II, NX 6500 II

High speed & accuracy vertical machining center



\* DVM 500 II

\* NX 6500 II

### Machining Option

#### Tool length measurement

- TS27R

#### Mold Package

- DSQ3 ( Data server 1GB, Look ahead 600 blocks)

### Machining Process

#### Finish cutting with D3 Ball Endmill

Feedrate **1200 mm/min** (47.2 ipm)

Spindle speed **15000 r/min**

#### Machining time

**17 Hours**

About Die & Mold

Plastic

Press

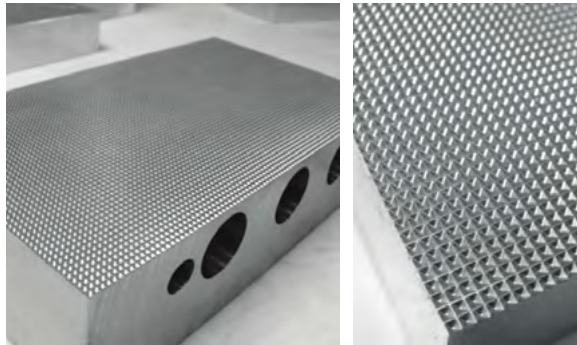
Forging

Die casting

Specialist Molds

## Workpiece

### Embossing Pattern



Size

**170 x 95 x 43 mm**  
(6.7 x 3.7 x 1.7 inch)

Material

**NAK80 (HRC40)**

### Customer Request

Smooth surface

Sharp edge

Rigidity for Z axis

## Solution

### FM 400

Super high speed & accuracy vertical machining center



### Machining Option

#### Tool length measurement

- TS27R

#### Mold Package

- DSQ3 ( Data server 1GB, Look ahead 600 blocks)

#### Special lubrication supply for Z axis

- Repetitive Z axis movement in short stroke

### Machining Process

Finish cutting with D0.8 Ball Endmill

Feedrate **600 mm/min** (23.6 ipm)

Spindle speed **32000 r/min**

Machining time

**49 Hours**



## Workpiece

### Automotive mold



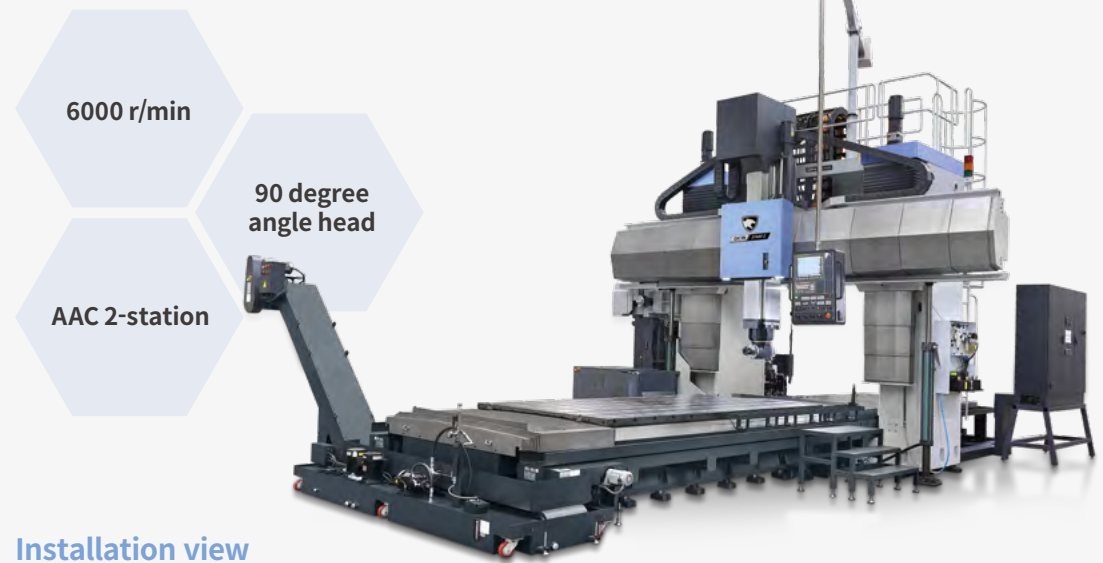
### Machining Option

Max. spindle speed	6000 r/min (22/18.5kW (29.5/24.8 Hp))
Table size (Width x Length)	2200 x 4100 mm (86.6 x 161.4 inch)
Effective size between columns (Width x Height)	2700 x 1650 mm (106.3 x 65.0 inch)
Table Load Capacity	18000 kg (39682.6 lb)
AAC	Linear shuttle 2-station
Head attachment	90 degree angle head
Semi-guard	applied

## Solution

### DCM 2740F II

High precision bridge type machining center



### Installation view



***Press***



About Die & Mold

Plastic

Press

Forging

Die casting

Specialist Molds

## Workpiece

### Roof punch



Size

**1650 x 1100 x 400 mm**  
(65.0 x 43.3 x 15.7 inch)

Material

**GC200**

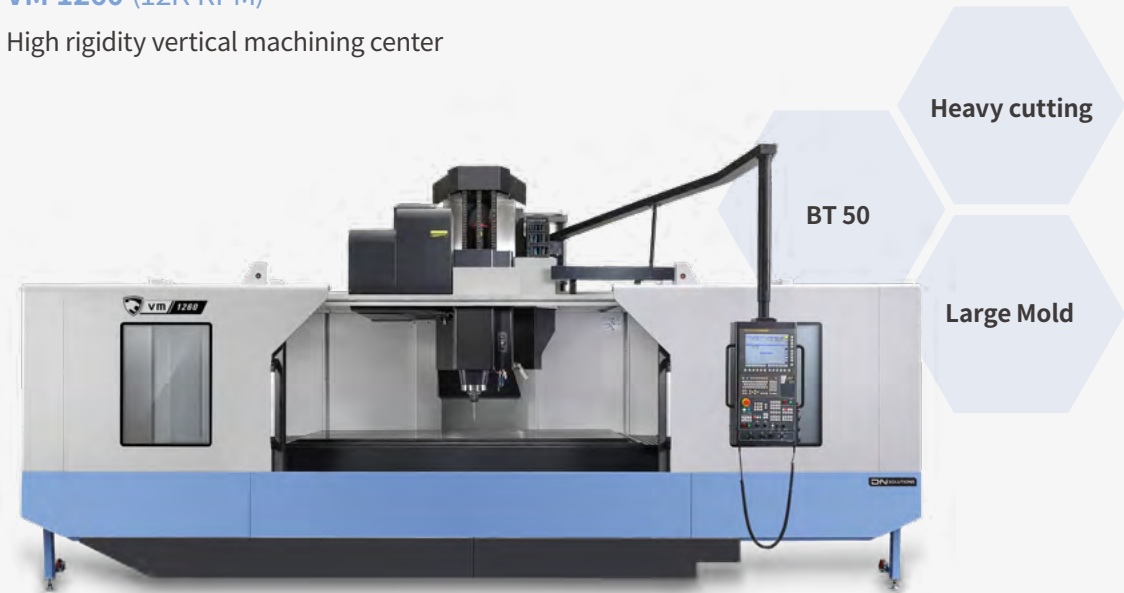
### Customer Request

Smooth surface

## Solution

### VM 1260 (12K RPM)

High rigidity vertical machining center



### Machining Option

#### Tool length measurement

- TS27R

#### Mold Package

- DSQ2 ( Data server 1GB,  
Look ahead 200 blocks)

### Machining Process

#### Finish cutting with D16 Ball Endmill

Spindle speed **5000 r/min**

Feedrate **1800 mm/min (70.9 ipm)**

#### Machining time

**53 Hours**

# Customer B2

About Die & Mold

Plastic

Press

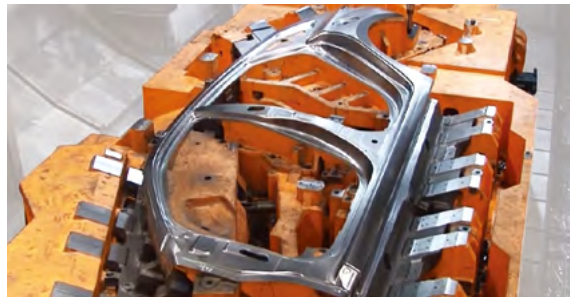
Forging

Die casting

Specialist Molds

## Workpiece

### Automotive press



### Machining Option

Max. spindle speed	6000 r/min (22/18.5kW (29.5/24.8 Hp))
Table size (Width x Length)	2700 x 5100 mm (106.3 x 200.8 inch)
Effective size between columns (Width x Height)	3200 x 2000 mm (126.0 x 78.7 inch)
Table Load Capacity	30000 kg (66137.7 lb)
AAC	Linear shuttle 4-station
Head attachment	90degree angle, Extension 6k, Universal 4k head

## Solution

### DCM 3250F II

High precision bridge type machining center

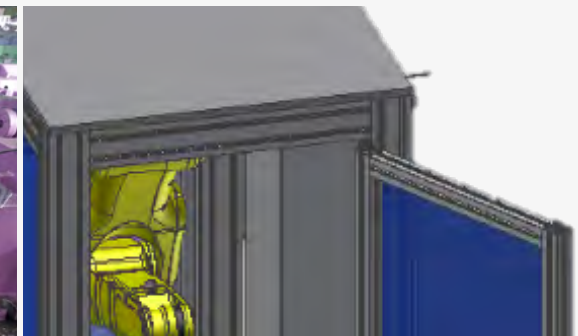
6000 r/min

90degree  
angle,  
Extension,  
Universal  
head

AAC 4-station



### Installation view



## Workpiece

### Automotive press



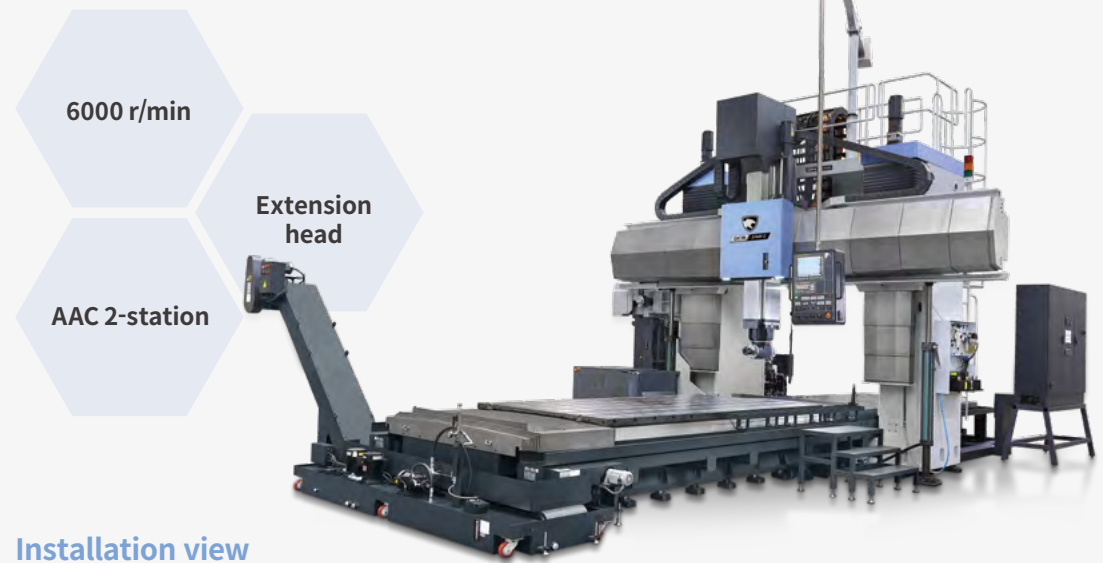
### Machining Option

Max. spindle speed	6000 r/min (22/18.5kW (29.5/24.8 Hp))
Table size (Width x Length)	2200 x 4100 mm (86.6 x 161.4 inch)
Effective size between columns (Width x Height)	2700 x 1650 mm (106.3 x 65.0 inch)
Table Load Capacity	18000 kg (39682.6 lb)
AAC	Linear shuttle 2-station
Head attachment	Extension head

## Solution

### DCM 2740F II

High precision bridge type machining center



### Installation view



# Customer B4

About Die & Mold

Plastic

Press

Forging

Die casting

Specialist Molds

## Workpiece

### Automotive press



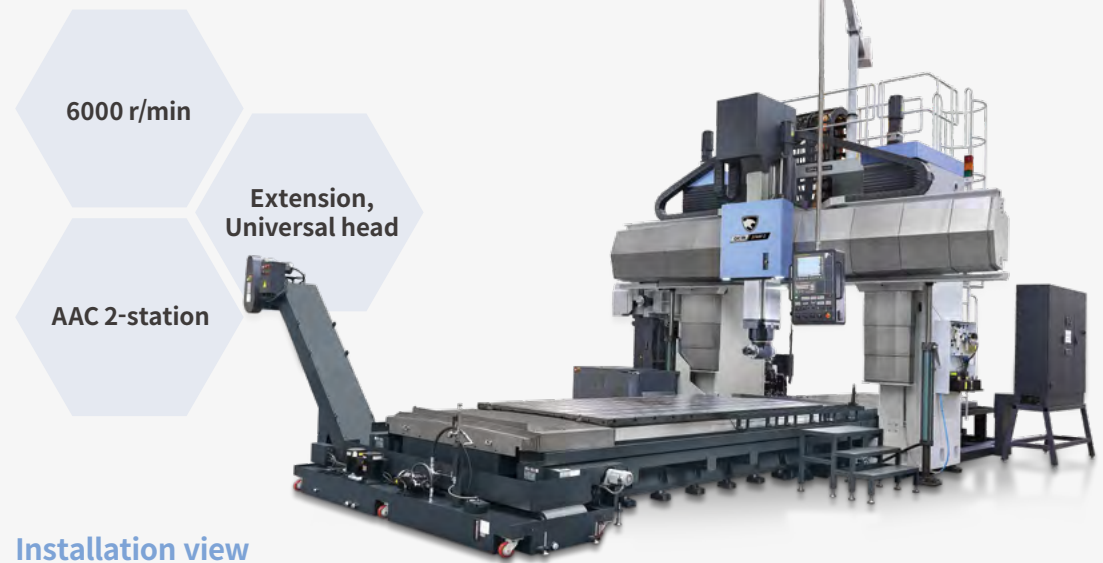
### Machining Option

Max. spindle speed	6000 r/min (22/18.5kW (29.5/24.8 Hp))
Table size (Width x Length)	2200 x 4100 mm (86.6 x 161.4 inch)
Effective size between columns (Width x Height)	2700 x 2000 mm (106.3 x 78.7 inch)
Table Load Capacity	18000 kg (39682.6 lb)
AAC	Linear shuttle 2-station
Head attachment	Extension 6k, Universal 4k head

## Solution

### DCM 2740F II

High precision bridge type machining center



### Installation view



About Die & Mold

Plastic

Press

Forging

Die casting

Specialist Molds

## Workpiece

### Automotive press



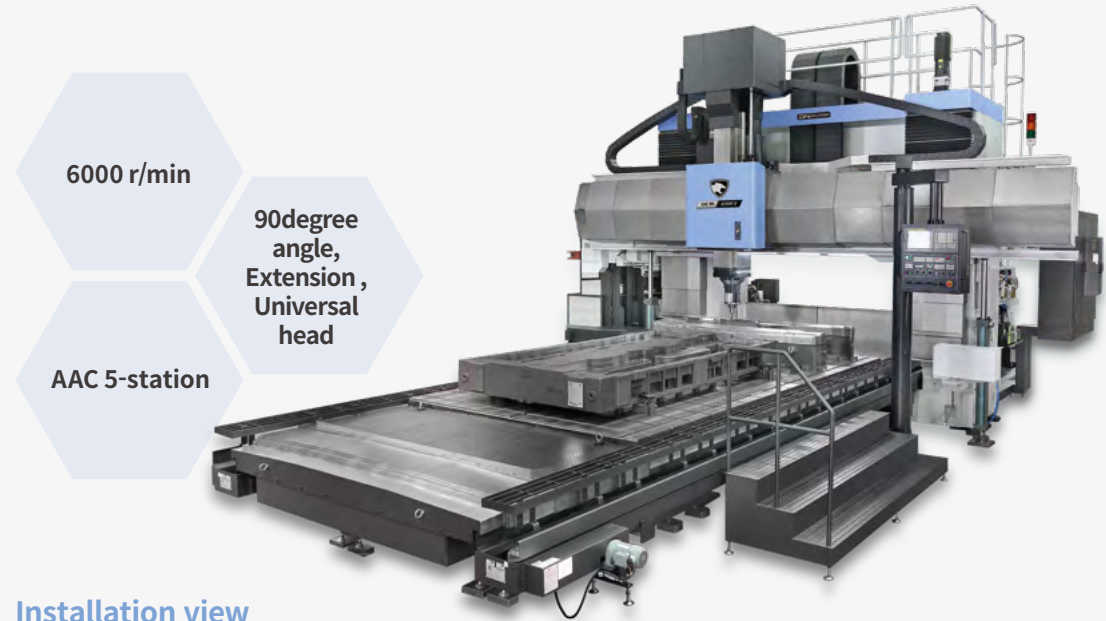
### Machining Option

Max. spindle speed	6000 r/min (25/22 kW (33.5/29.5 Hp))
Table size (Width x Length)	2700 x 6100 mm (106.3 x 240.2 inch)
Effective size between columns (Width x Height)	3200 x 2000 mm (126.0 x 78.7 inch)
Table Load Capacity	36000 kg (79365.2 lb)
AAC	Linear shuttle 5-station
Head attachment	90degree angle, Extension 6k/10k, Universal 4k head

## Solution

### DCM 3260F II

High precision bridge type machining center



### Installation view



About Die & Mold

Plastic

Press

Forging

Die casting

Specialist Molds

## Workpiece

### Automotive press



### Machining Option

Max. spindle speed	6000 r/min (25/22 kW (33.5/29.5 Hp))
Table size (Width x Length)	2700 x 6100 mm (106.3 x 240.2 inch)
Effective size between columns (Width x Height)	3200 x 2000 mm (126.0 x 78.7 inch)
Table Load Capacity	36000 kg (79365.2 lb)
AAC	Linear shuttle 5-station
Head attachment	90degree angle, Extension 6k/10k, Universal 4k head

## Solution

### DCM 3260F II

High precision bridge type machining center



### Installation view





About Die & Mold

Plastic

Press

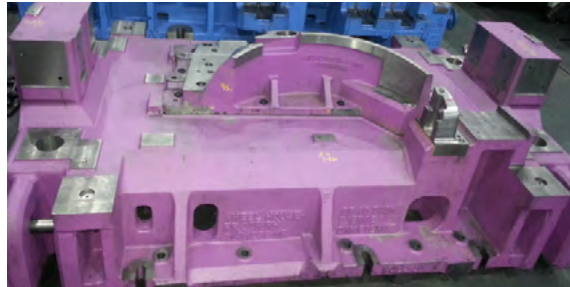
Forging

Die casting

Specialist Molds

## Workpiece

### Automotive press



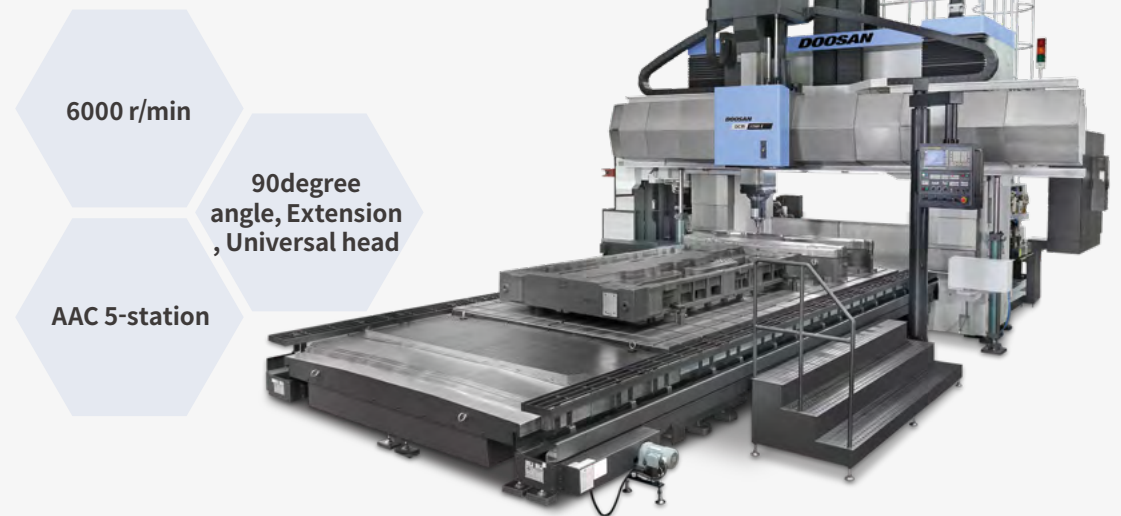
### Machining Option

Max. spindle speed	6000 r/min (25/22 kW (33.5/29.5 Hp))
Table size (Width x Length)	2700 x 5100 mm (106.3 x 200.8 inch)
Effective size between columns (Width x Height)	3200 x 2000 mm (126.0 x 78.7 inch)
Table Load Capacity	30000 kg (66137.7 lb)
AAC	Linear shuttle 5-station
Head attachment	90degree angle, Extension 6k/10k, Universal 4k head

## Solution

### DCM 3250F II

High precision bridge type machining center



### Installation view



# Customer B8

About Die & Mold

Plastic

Press

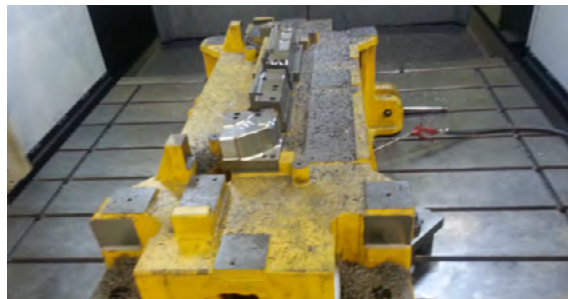
Forging

Die casting

Specialist Molds

## Workpiece

### Automotive press



### Machining Option

Max. spindle speed	6000 r/min (25/22 kW (33.5/29.5 Hp))
Table size (Width x Length)	2700 x 5100 mm (106.3 x 200.8 inch)
Effective size between columns (Width x Height)	3200 x 2000 mm (126.0 x 78.7 inch)
Table Load Capacity	30000 kg (66137.7 lb)
AAC	Linear shuttle 5-station
Head attachment	90degree angle, Extension 6k/10k, Universal 4k head

## Solution

### DCM 3250F II

High precision bridge type machining center



### Installation view



## Workpiece

### Automotive press



### Machining Option

Max. spindle speed	6000 r/min (25/22 kW (33.5/29.5 Hp))
Table size (Width x Length)	2700 x 6100 mm (106.3 x 240.2 inch)
Effective size between columns (Width x Height)	3200 x 2000 mm (126.0 x 78.7 inch)
Table Load Capacity	36000 kg (79365.2 lb)
AAC	Linear shuttle 5-station
Head attachment	90degree angle, Extension 6k/10k, Universal 4k indexing head

## Solution

### DCM 3260F II

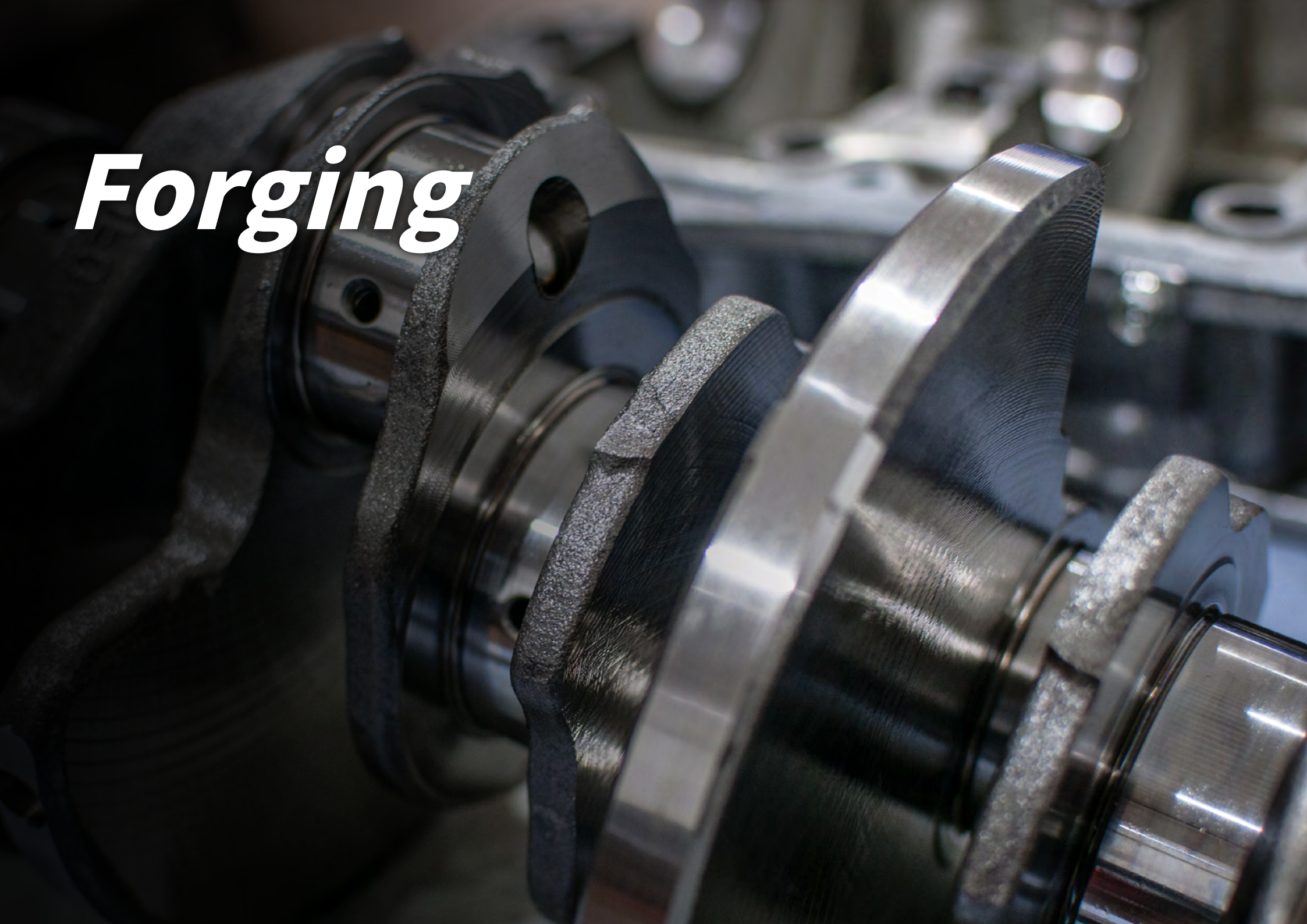
High precision bridge type machining center



### Installation view



# ***Forging***



About Die & Mold

Plastic

Press

Forging

Die casting

Specialist Molds

## Workpiece

Tableware (Fork, Spoon..)



Material  
**SKD11 (HRC 56)**

### Customer Request

Smooth surface

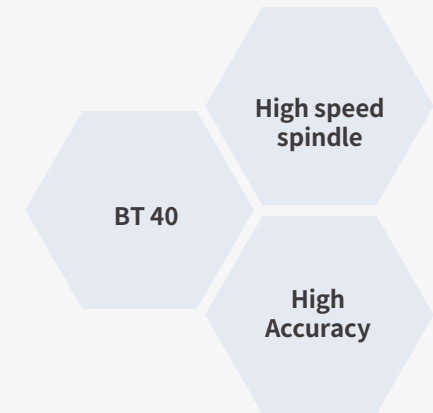
High accuracy

Profile Tolerance : 0.03

## Solution

**NX 5500 II**

High speed & accuracy vertical machining center



### Machining Option

#### Tool length measurement

- TS27R

#### Air dryer

#### Mold Package

- DSQ3 ( Data server 1GB, Look ahead 600 blocks)

#### Thermal displacement Compensation

- Spindle & Structure

### Machining Process

#### Finish cutting with D2 Ball Endmill

Spindle speed **18000 r/min**

Feedrate **600 mm/min (23.6 ipm)**

#### Machining time

**2 Hours**

# Customer C2

About Die & Mold

Plastic

Press

Forging

Die casting

Specialist Molds

## Workpiece

### Crank Shaft



Size

**1700 x 700 x 300 mm**  
(66.9 x 27.6 x 11.8 inch)

Material

**8NiCrMo (HRC58)**

### Customer Request

Surface < Ra1.6

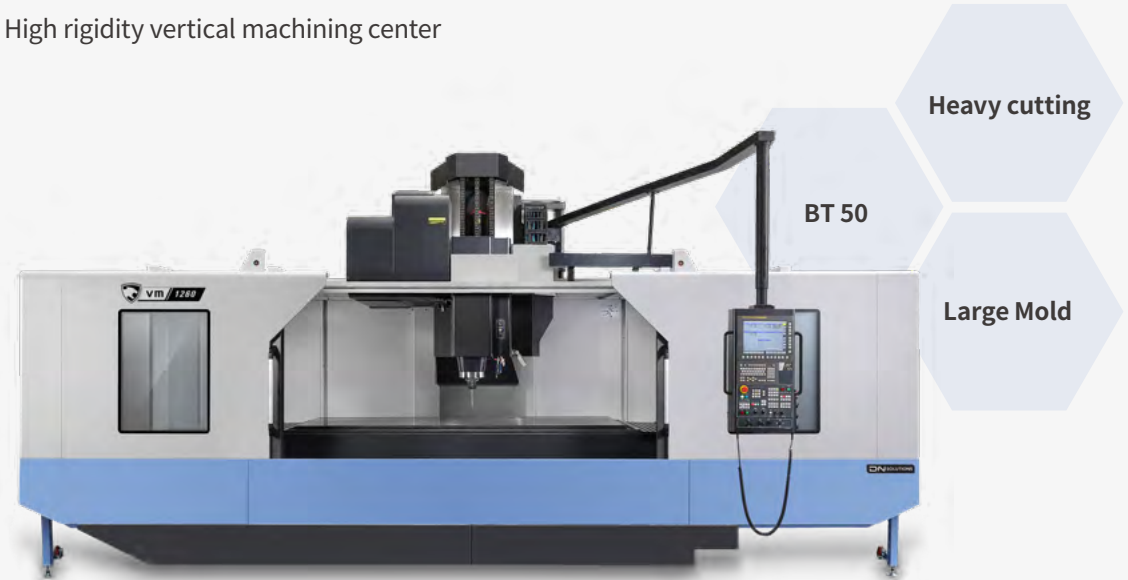
High accuracy

Profile Tolerance : 0.1mm

## Solution

### VM 1260 (8K RPM)

High rigidity vertical machining center



### Machining Option

#### Tool length measurement

- TS27R

#### M.Q.L Coolant unit

#### Mold Package

- DSQ3 ( Data server 1GB, Look ahead 600 blocks)

#### Shrink in Tooling System (MST)

### Machining Process

Finish cutting with D12 Ball Endmill

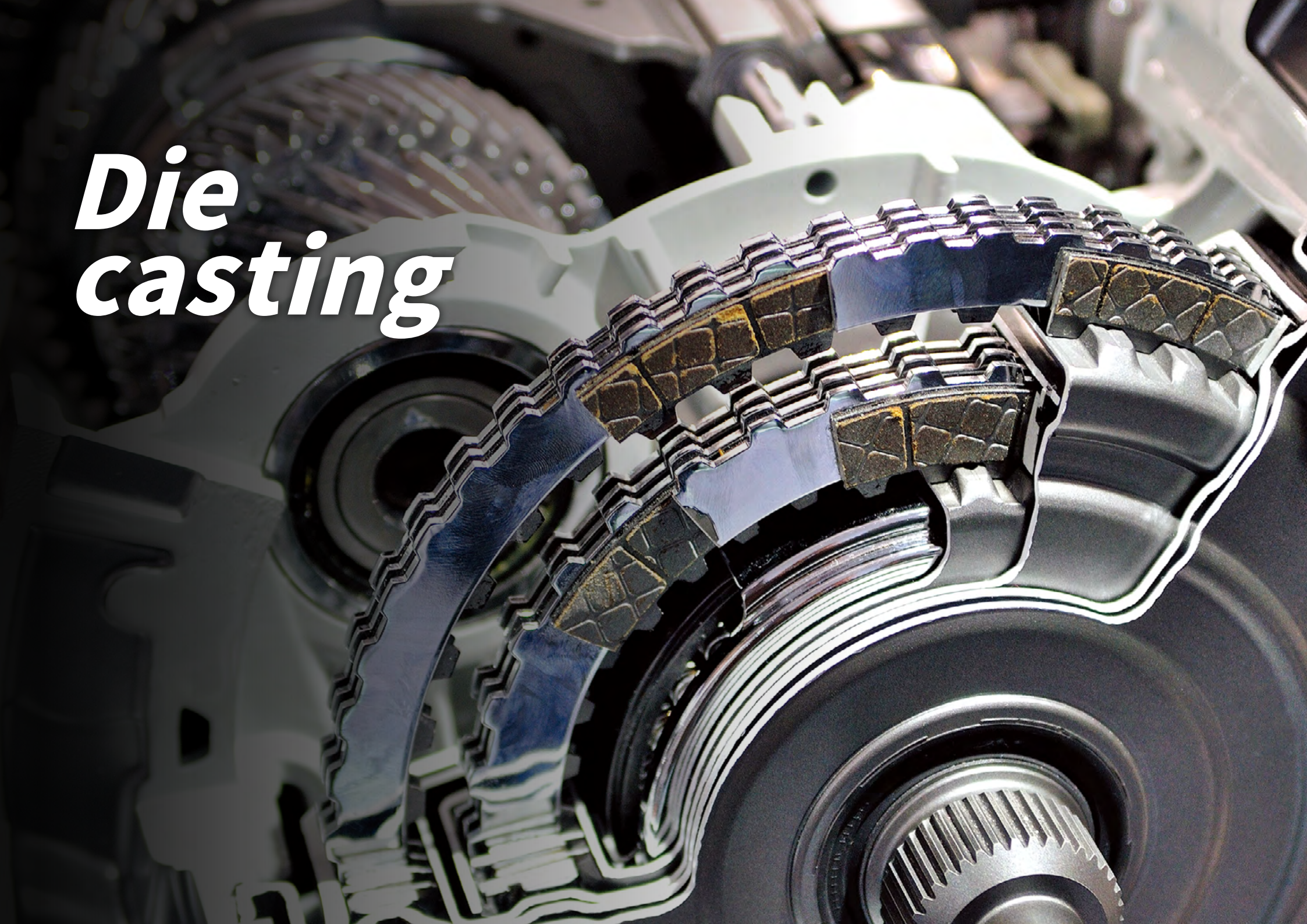
Feedrate **4200** mm/min (165.4 ipm)

Spindle speed **1500** r/min

Machining time

**80** Hours

# *Die casting*



About Die & Mold

Plastic

Press

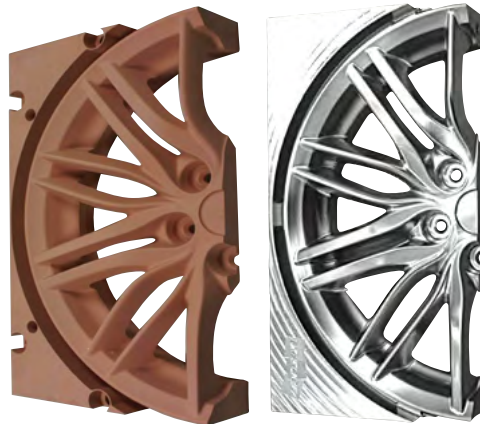
Forging

Die casting

Specialist Molds

## Workpiece

Wheel 17"



Material  
**NAK80 (HRC 40),  
Chemical wood**

## Customer Request

Smooth surface

## Solution

**DVM 500 II**

High speed & accuracy vertical machining center



BT 40

High speed  
spindle

High  
Accuracy

## Machining Option

### Tool length measurement

- TS27R

### Air blower

### Mold Package

- DSQ2 ( Data server 1GB, Look ahead 200 blocks)

## Machining Process

### Cutting condition For NAK80 (D6 Ball Endmill)

Feedrate	1200 mm/min (47.2 ipm)
Spindle speed	14000 r/min
Machining time	21 Hours

### Cutting condition For Chemi wood (D6 Ball Endmill)

Feedrate	2400 mm/min (94.5 ipm)
Spindle speed	1800 r/min
Machining time	13 Hours



# Customer D2

About Die & Mold

Plastic

Press

Forging

Die casting

Specialist Molds

## Workpiece

### Wheel Hub



Size

**D490 x 130 mm**  
(D19.3 x 5.1 inch)

Material

**SKD11**

### Customer Request

Smooth surface

## Solution

### DVM 500 II, NX 6500 II

High speed & accuracy vertical machining center



\* DVM 500 II

\* 6500 II

### Machining Option

#### Tool length measurement

- TS27R

#### M.Q.L Coolant unit

#### Mold Package

- DSQ3 ( Data server 1GB,  
Look ahead 600 blocks)

### Machining Process

Cutting condition For NAK80 (D6 Ball Endmill)

Feedrate **1200 mm/min** (47.2 ipm)

Spindle speed **12000 r/min**

Machining time

**29 Hours**

About Die & Mold

Plastic

Press

Forging

Die casting

Specialist Molds

## Workpiece

### Transmission Case



Material  
**SKD61 (HRC 56)**

### Customer Request

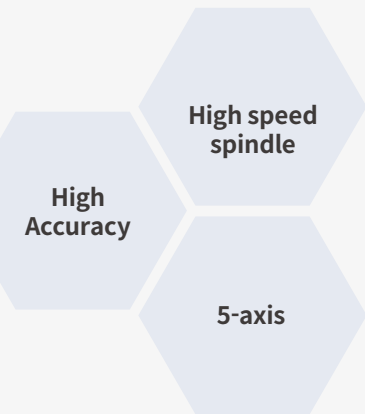
Smooth surface

Profile Tolerance : 0.03

## Solution

### VC 630-5AX

High speed & accuracy Simultaneous 5-axis machining center



### Machining Option

#### Tool length measurement

- TS27R

#### Touch probe (OMP60), Datum ball, Dcp-i

#### Mold Package

- DSQ3 ( Data server 1GB, Look ahead 600 blocks)

#### Thermal displacement Compensation

- Spindle & Structure

### Machining Process

#### Cutting condition For Finishing

Feedrate **1500** mm/min (59.1 ipm)

Spindle speed **10000** r/min

#### Machining time

**35** Hours

**Roughing is customer scope**

# Customer D4

About Die & Mold

Plastic

Press

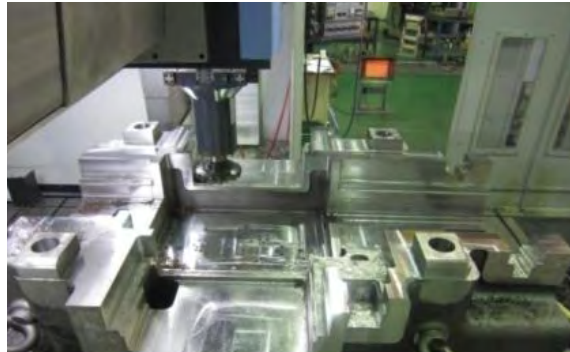
Forging

Die casting

Specialist Molds

## Workpiece

### Automotive die casting



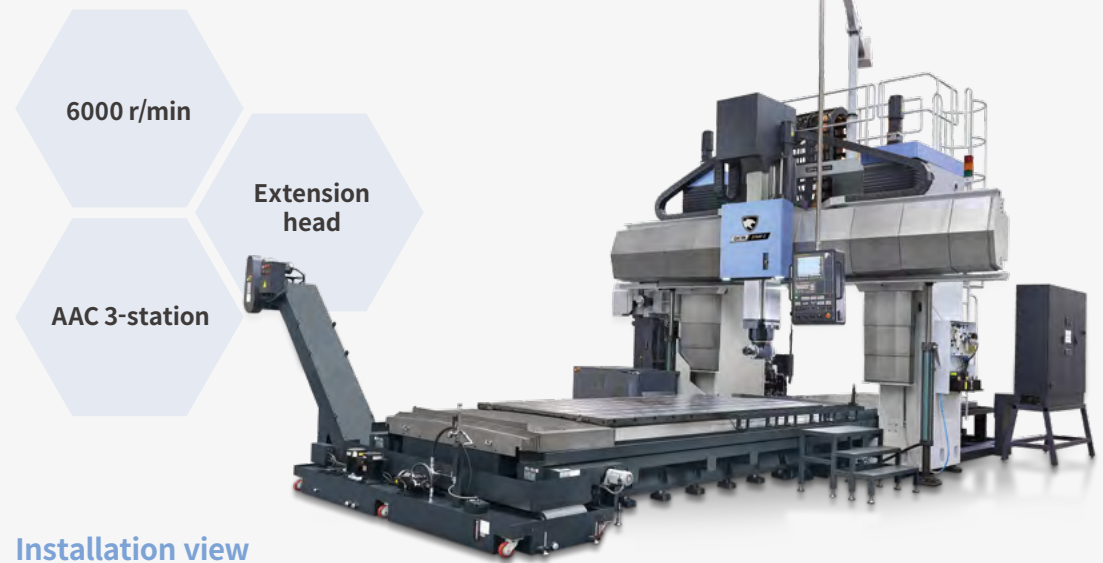
### Machining Option

Max. spindle speed	6000 r/min (22/18.5 kW (29.5/24.8 Hp))
Table size (Width x Length)	2200 x 4100 mm (86.6 x 161.4 inch)
Effective size between columns (Width x Height)	2700 x 1650 mm (106.3 x 65.0 inch)
Table Load Capacity	18000 kg (39682.6 lb)
AAC	Linear shuttle 3-station
Head attachment	Extension head
Semi-guard	applied

## Solution

### DCM 2740F II

High precision bridge type machining center



### Installation view



About Die & Mold

Plastic

Press

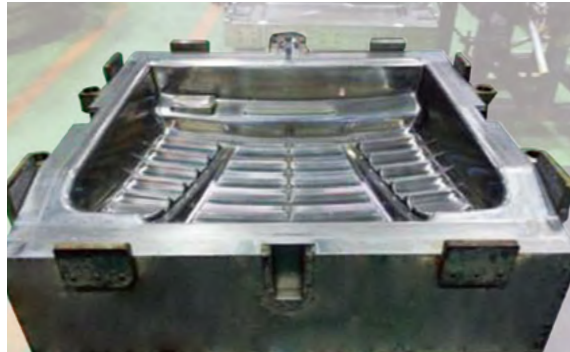
Forging

Die casting

Specialist Molds

## Workpiece

### Automotive die casting



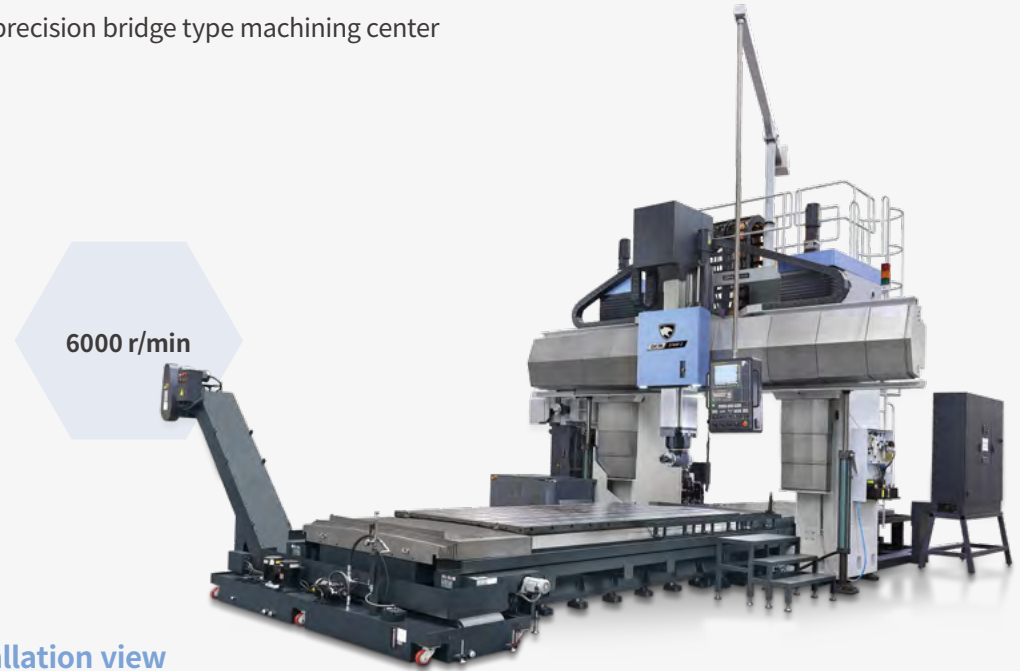
### Machining Option

Max. spindle speed	6000 r/min (25/22 kW (33.5/29.5 Hp))
Table size (Width x Length)	2200 x 4100 mm (86.6 x 161.4 inch)
Effective size between columns (Width x Height)	2700 x 1650 mm (106.3 x 65.0 inch)
Table Load Capacity	18000 kg (39682.6 lb)
Semi-guard	applied

## Solution

### DCM 2740F II

High precision bridge type machining center



Installation view



# Specialist Molds



# Customer E1

About Die & Mold

Plastic

Press

Forging

Die casting

Specialist Molds

## Workpiece

### Tire Mold



Material

**Steel, Chemical wood, Aluminum**

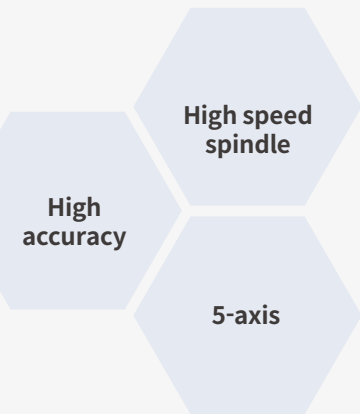
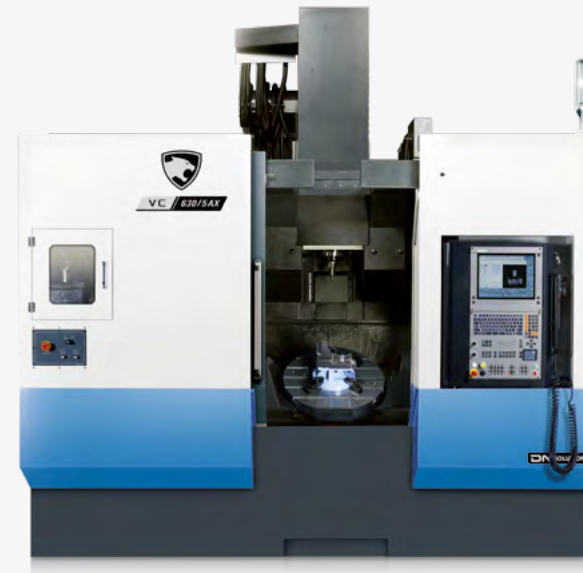
### Customer Request

Smooth surface

## Solution

### VC 630-5AX (20K)

High speed & accuracy Simultaneous 5-axis machining center



### Machining Option

#### Tool length measurement

- TS27R

#### Touch probe (OMP60), Datum ball, Dcp-i

#### Mold Package

- DSQ3 ( Data server 1GB, Look ahead 600 blocks)

### Machining Process

Finish cutting with D4xR0.5 Bull nose Endmill

Feedrate **2500** mm/min (98.4 ipm)

Spindle speed **14000** r/min

#### Machining time

**43** Hours

# DN Solutions in the World

In an effort to provide solutions that fit each partners' unique needs, we constantly innovate our thinking, processes, and the way we do business. These optimal solutions lay the foundation for the success of our partners, which adds value to our partners' businesses.

## Global Sales and Service Support Network

**4** Corporations

**155** Dealer Networks

**51** Technical Centers

**200** Service Post

**3** Factories

Technical Center: Sales Support, Service Support, Parts Support



## Supplying Parts

- Supplying parts without charges
- Supplying parts with charges
- Parts repair



## Field Services

- On-site services
- Installation and trials
- Scheduled maintenance/ Preventive maintenance
- Repairs with/without charges



## Technical Support

- Supporting machining technology
- Responding to technical inquiries
- Providing technical materials



## Training

- Programming / Machine operation
- Maintenance
- Application engineering

**DN SOLUTIONS**

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Fax +86-21-6405-1472



**Fire Safety Precautions**

There is a high risk of fire when using non-water-soluble cutting fluids, processing flammable materials, neglecting use coolants and modifying the machine without the consent of the manufacturer. Please check the SAFETY GUIDANCE carefully before using the machine.

\* For more details, please contact DN Solutions.

\* The specifications and information above-mentioned may be changed without prior notice.