



Doosan Machine Tools

# ***Doosan*** ***Automotive*** ***Solution*** ***Reference***

ver. EN 210416 SU

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## Automotive Industry

### Power Train

Engine  
Transmission &  
Drive system

### Chassis System

Steering  
Suspension  
Brake

### Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Wealth of experience and know-how

Our vast databases, which are based on the experience and know-how accumulated by our system engineers at home and overseas over several decades, enable us to continuously provide turn-key solutions to meet our customers' requirements.

## The customer comes first!

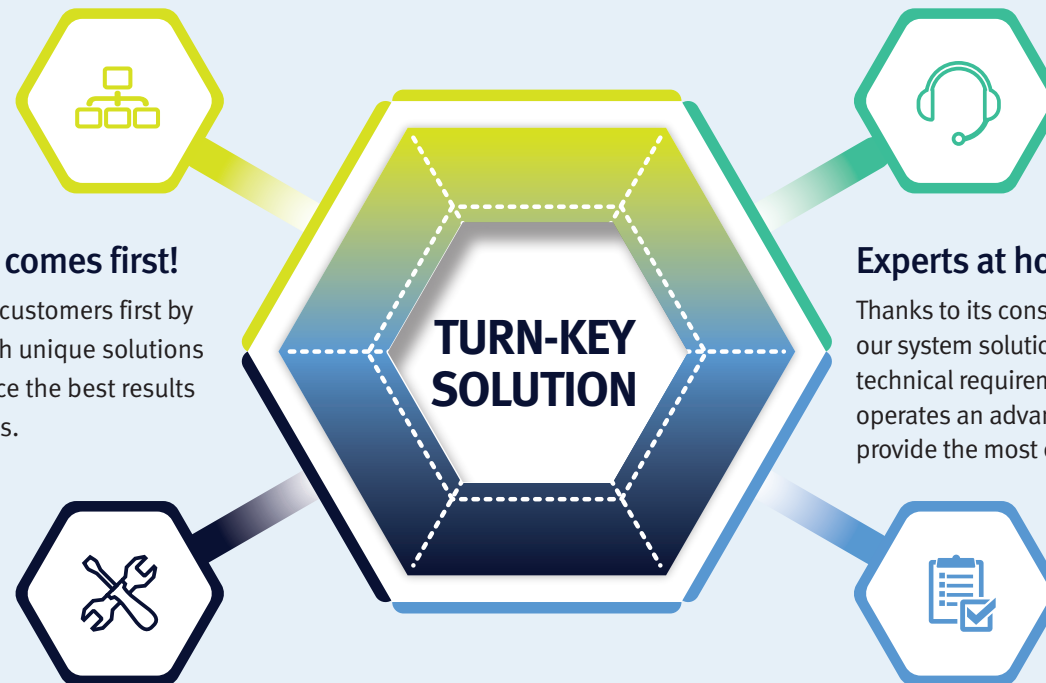
We always put our customers first by providing them with unique solutions designed to produce the best results under all conditions.

## Experts at home and abroad

Thanks to its consummate professionalism and teamwork, our system solutions team responds promptly to customers' technical requirements, executes diverse projects, and operates an advanced technical infrastructure in order to provide the most efficient solutions to all our customers.

## Thorough whole-process management

We provide the best full-process service, ranging from pre-order qualification to on-time delivery with continuous consideration of customer needs, and a comprehensive post-delivery service.





# Overview of the Automotive Parts Industry

## Automotive Industry

### Power Train

Engine  
Transmission &  
Drive system

### Chassis System

Steering  
Suspension  
Brake

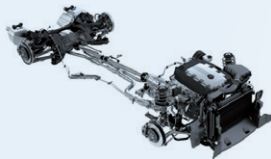
### Accessory & etc

Wheel  
Air Conditioning  
System  
etc

A vehicle consists of a power train, chassis system, body, accessories, and many other parts.  
One single car comprises on average between 20,000 and 30,000 separate parts.

## Power train\_Power Generation / Transmission

A device designed to generate the power needed to move a vehicle (engine), and a device that transmits power to the driving wheels (power train)  
Engine, clutch, transmission, propeller shaft, gear, axle, etc.



## Chassis System\_Steering

Travel direction control systems  
Steering wheel, steering shaft, steering gear, pitman arm, drag link, tie rod, steering knuckle arm, etc.



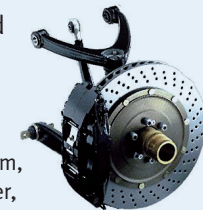
## Chassis System\_Suspension

A device designed to absorb shocks generated when a tire and wheel experiences rough road conditions  
Coil spring, shock absorber, suspension arm, etc.



## Chassis System\_Braking

A device designed to control and adjust the driving speed or to stop a vehicle's forward or backward movement.  
Brake pedal, brake booster, brake drum, brake disk, brake line, master cylinder, parking brake, etc.





## Automotive Industry

### Power Train

Engine  
Transmission &  
Drive system

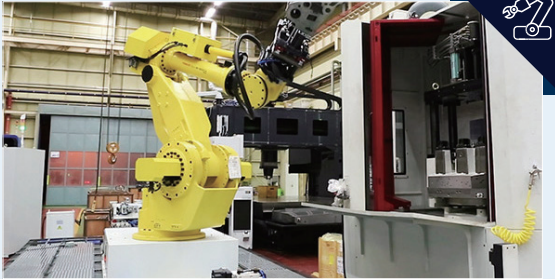
### Chassis System

Steering  
Suspension  
Brake

### Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Automation Solutions



Robot Automation



Gantry Loader



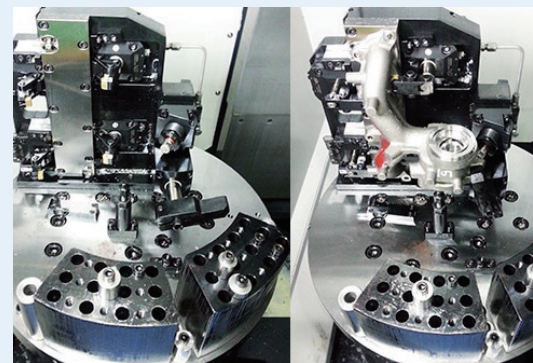
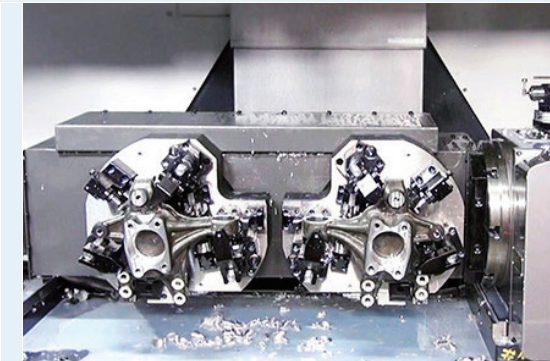
LPS (Linear Pallet System)

## Automation Peripherals

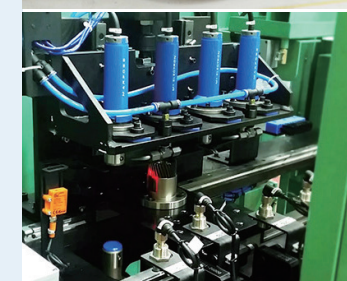
Bar Feeder & Stocker



Rotary Table



Special Chuck



Automatic Measurement System



# Our Automotive Industry Customers

## Automotive Industry

### Power Train

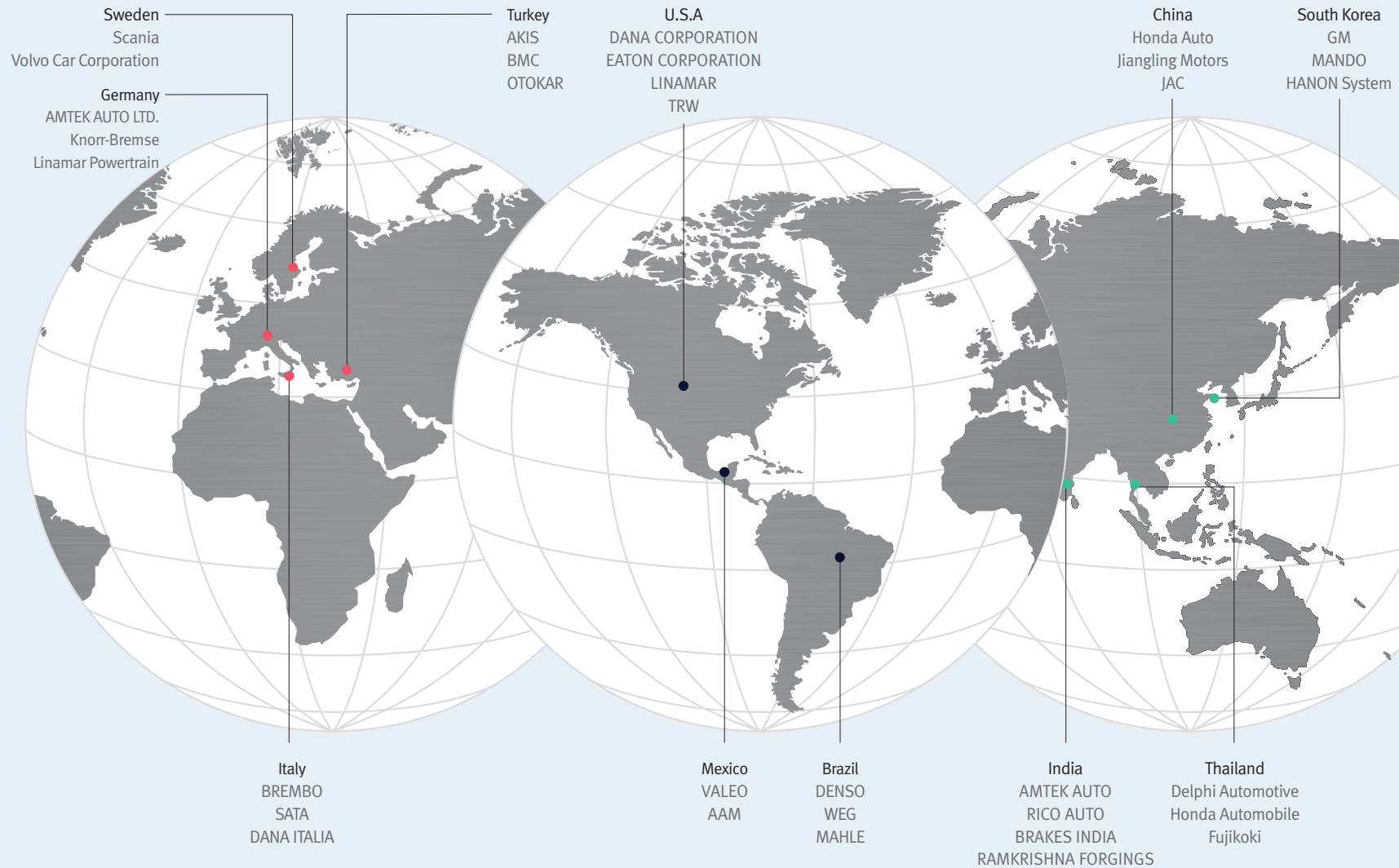
Engine  
Transmission &  
Drive system

### Chassis System

Steering  
Suspension  
Brake

### Accessory & etc

Wheel  
Air Conditioning  
System  
etc





# Customer Success Story

## Automotive Industry

### Power Train

Engine  
Transmission &  
Drive system

### Chassis System

Steering  
Suspension  
Brake

### Accessory & etc

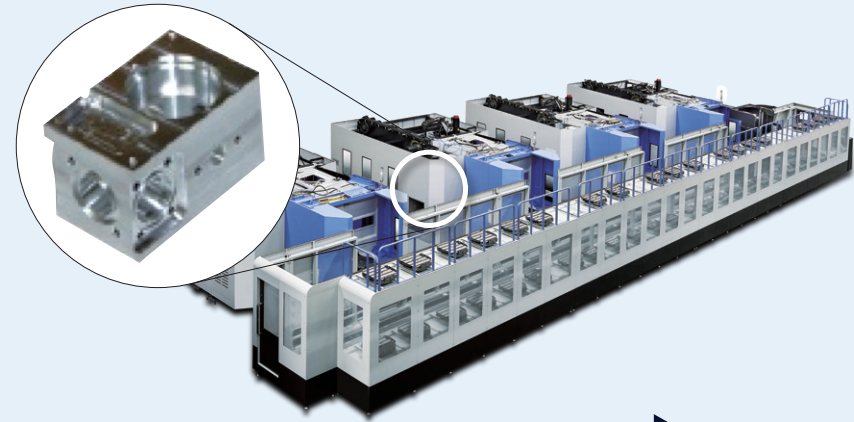
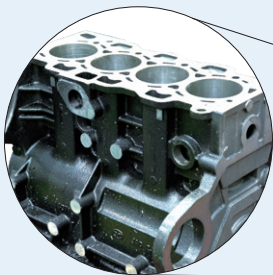
Wheel  
Air Conditioning  
System  
etc

China

## Reliable customer services

"We had confidence in Doosan's machines due to their stable operation rate and durability. This is already our fourth project with Doosan. While we were conducting the system line project, Doosan shared its technology with us unreservedly, and accepted all our requirements including any additional functions we needed in connection with various regulations."

B Company (China)



A Company (U.S.A)

## Maximum efficiency with minimum workforce

"Doosan's LPS system, introduced by HYPI, is a linear pallet system designed to maximize productivity and quality with a minimum workforce. The 12-pallet LPS is suitable not only for large factories but also for small and medium-sized firms. Another great advantage is the perfect service offered by Doosan after the design, establishment and installation of the automated system. We are currently using the HP 5100 primarily because it can respond very quickly to frequent changes of workpieces."

U.S.A



# Index

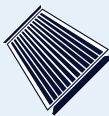
\* Click the part's name to jump to the specific page.



## Power Train



## Chassis System



## Accessory & etc

### Engine

Cylinder Block  
Cylinder Head  
Crank Shaft  
Cam Shaft  
Turbine Housing  
Compressor Housing  
Timing Chain Cover  
Pump Cover  
Pulley  
Piston Pin  
Oil Pump Cover

### Transmission & Drive system

Fly Wheel  
Transmission Case  
Clutch Hub  
Clutch Boss  
Axle Housing  
Outer Race  
Parking Gear  
Sun Gear  
Diffrencial Carrier  
Diffrencial Case  
Diffrencial Case Cup  
CV Joint  
Oil Pump Housing  
Oil Pump Body  
Torque Convert Housing  
Trunion  
Ouput Shaft  
Input Shaft  
Ring Gear  
Front Cover  
Pressure Plate  
Planetary Carrier  
Planet Carrier  
Rear Gear  
Sleeve  
Shaft  
7DCT Gear  
Gear  
Inner Race  
Bevel Gear  
Clutch  
Plate  
Ball ramp  
Bush Comp.  
Closing Ring  
Mid Sun Gear  
Supt Annulus Gear  
Motor Support  
Oil Pump Cover

### Steering

Rack Housing  
Control Arm  
Rack Bar  
Ball Stud  
Tie Rod  
Carrier  
Assist Housing  
Outer Ring

### Suspension

RR Carrier  
Knuckle  
Control Arm

### Brake

Hub bearing  
Hub  
Caliper Carrier  
Caliper Housing  
Brake Disc  
Master Cylinder  
ABS Block  
Brake Drum  
Valve Seat

### Wheel

Al Wheel  
Forged Wheel  
Scroll

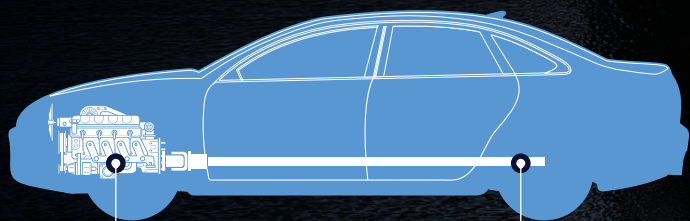
### Air Conditioning System

Rear Head  
Compressor Cylinder  
Pulley Clutch  
Swash Plate Comp  
Piston  
Pulley  
Pump Bracket  
Ring  
Rotor  
Shaft for Comp.

### etc

ICS Core Plate

# ***Solution Power Train Parts***



## **Engine**

*Customer E1~E10*

*Customer E11~E19*

*Customer E20~E22*

## **Transmission & Drive**

*Customer T1~T10*

*Customer T11~T20*

*Customer T21~T30*

*Customer T31~T40*

*Customer T41~T50*

*Customer T51~T54*



# Customer (E1)

Automotive Industry

## Power Train

Engine

Transmission &  
Drive system

## Chassis System

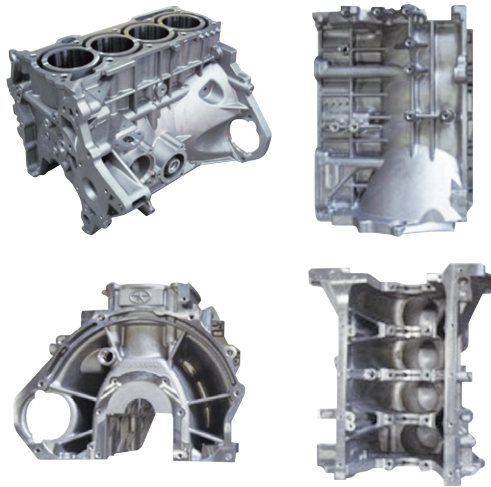
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Cylinder Block



### Customer Demand

0.97min. / unit (3.88 min. /line x 4 lines)

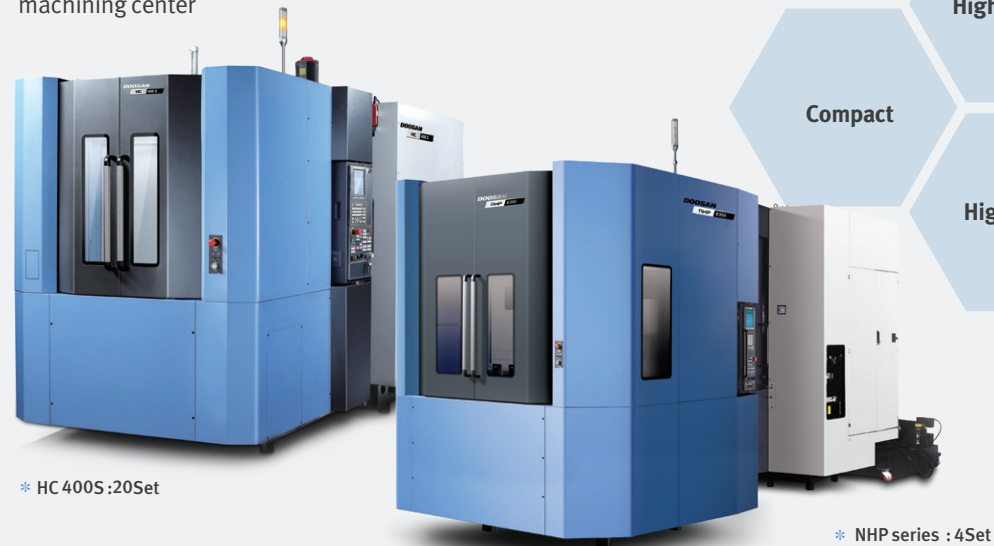
200,000 units / year (50,000 units / year x 4lines)

1 Pallet

## Solution

### HC 400S, NHP series

Compact horizontal machining center, high-speed high-performance horizontal machining center



\* HC 400S : 20Set

\* NHP series : 4Set

### Option

Linear Scale

70bar TSC

Disk type Oil Separator

### Machining Option Installation Line / Line View



# Customer (E2)

Automotive Industry

## Power Train

### Engine

Transmission &  
Drive system

## Chassis System

Steering

Suspension

Brake

## Accessory & etc

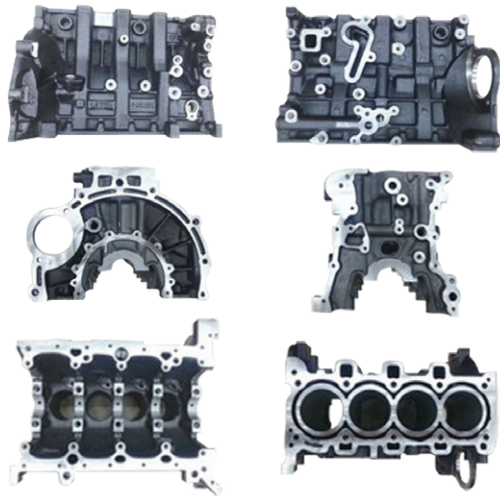
Wheel

Air Conditioning  
System

etc

## Workpiece

### Cylinder Block



### Customer Demand

200,000 units / year

58 sec. / unit

1 Pallet

## Solution

### NHP series

High-speed high-performance horizontal machining center



\* 44Set

### Process

**OP#10, 20** Milling, Drilling, Tapping, Reamer  
**OP#30~50** Drilling, Tapping, Long Drill, Reamer, Endmill  
**OP#60, 70** Measuring, Drill, Milling, Reamer, Tapping  
**OP#80~100** Drilling, Tapping, Reamer, Long Drill  
**OP#110** Measuring, Milling, Drill, Reamer, Notch

### Option

Pump back System

1 Pallet

TSC

### Machining option Installation line / Line view





# Customer (E3)

Automotive Industry

## Power Train

Engine

Transmission &  
Drive system

## Chassis System

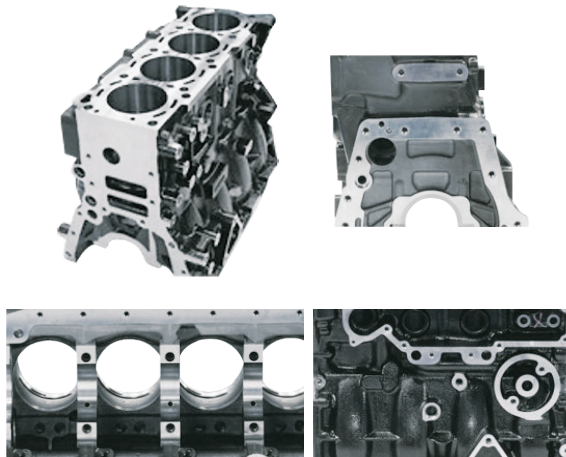
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Cylinder Block



### Customer Demand

200,000 units / year

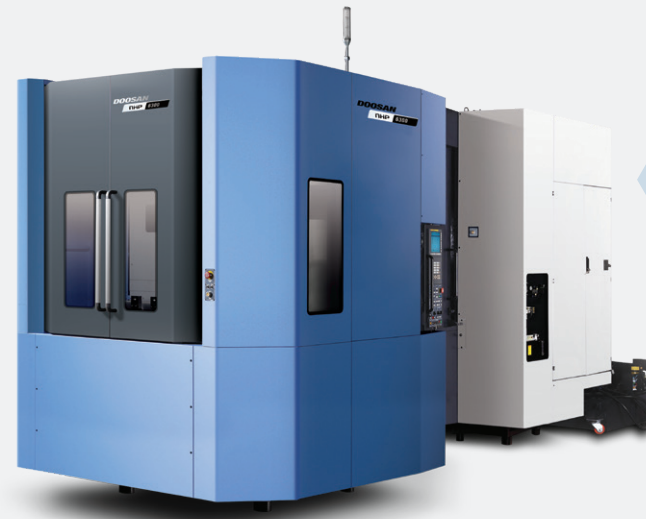
58 sec. / unit

1 Pallet

## Solution

### NHP 5500, NHP 8000

High-Speed, High-Productivity Horizontal Machining Center



High  
Productivity

High Accuracy

High-Rigidity  
Structure

\*NHP 5500 : 6set

\*NHP 8000 : 5set

### Process

- OP#10, 20** Top&Bottom, Intake&Exhaust - Face mill, Boring, Drill, Tap, Reamer
- OP#30** Front&Rear, Intake&Exhaust - Face mill, Drill, Tap
- OP#40** Intake&Exhaust, Bottom - Spot facing, Drill, Boring, Tap, Reamer
- OP#50, 60** Intake&Exhaust, Front&Rear - Drill, Boring, Tap

### Option

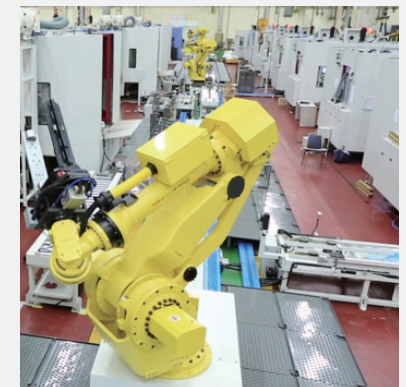
HSK-100, 6000r/min

1° Index Table

Hyd. Line for Fixture

Loading Station Air Ports (8set)

### Machining Option Installation Line / Line View



# Customer (E4)

Automotive Industry

## Power Train

Engine

Transmission &  
Drive system

## Chassis System

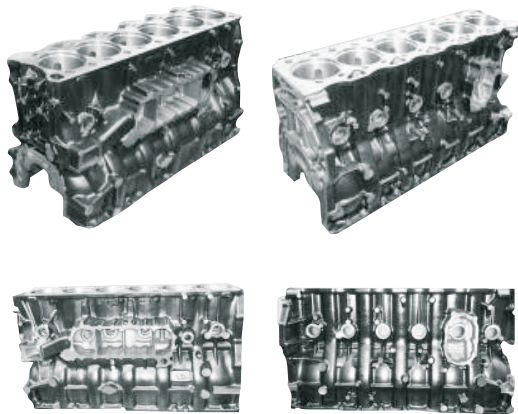
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Cylinder Block



### Customer Demand

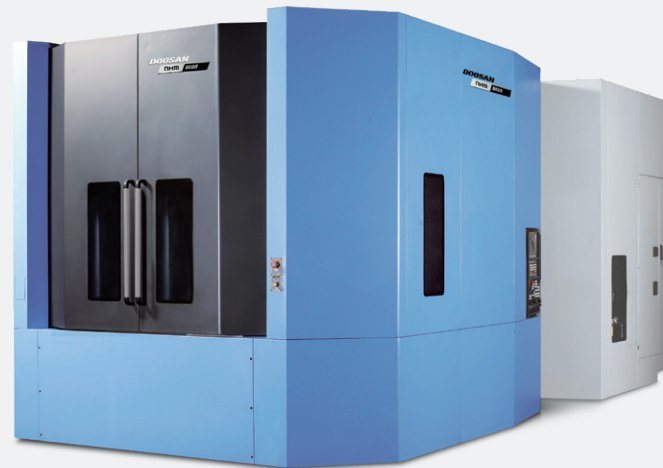
10,000 units / year

23 min. / unit

## Solution

### NHM 8000

High-performance medium-size horizontal machining center



\* 3Set

Powerful  
Cutting

High Torque  
1732 N·m

High-Rigidity  
Structure

### Process

- OP#10** Reference face, Intake face, Rear face, Front face, Exhaust face machining
- OP#20** Top face machining, Cylinder Bore machining
- OP#30** Top face, Head bolt hole (Top)

### Option

OMP60

Linear Scale

### Machining Option Installation Line / Line View





# Customer (E5)

Automotive Industry

## Power Train

### Engine

Transmission &  
Drive system

## Chassis System

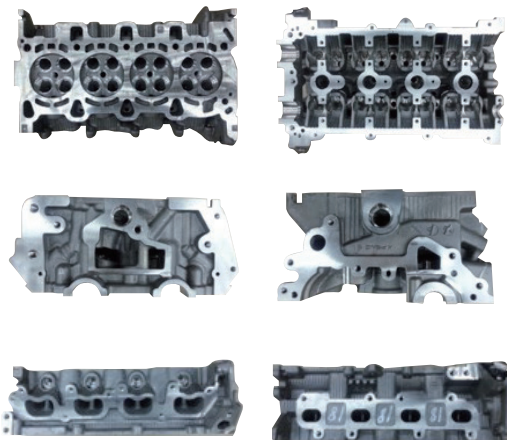
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Cylinder Head



### Customer Demand

200,000 units / year

58 min. / unit

1 Pallet

## Solution

### NHP series

High-speed high-performance horizontal machining center



### Process

OP#10	Measuring, Milling, Drill, Reamer, End Mill
OP#20	Milling, Drill, Reamer, Long Drill
OP#30~40	Milling, Drill, Reamer, Boring, Tapping
OP#50~70	Drilling, Tapping, Boring, Reamer
OP#80	Drilling, End mill, Reamer, Long Drill
OP#90	Boring, Form Tool, Milling

### Option

Pump back System

1 Pallet

TSC

### Machining Option Installation Line / Line View



# Customer (E6)

Automotive Industry

## Power Train

### Engine

Transmission &  
Drive system

## Chassis System

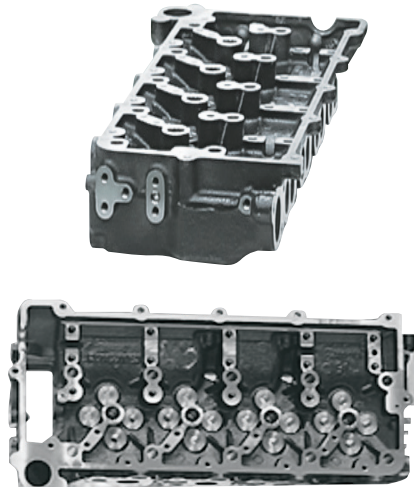
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Cylinder Head



### Customer Demand

250,000 units / year

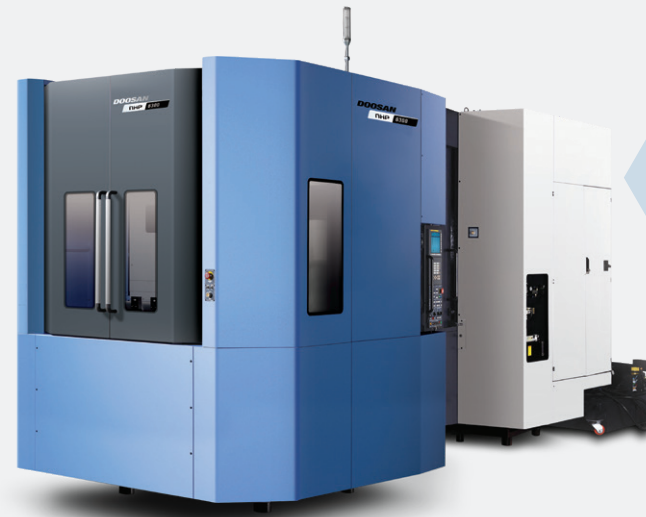
4.86 min. / unit

1 Pallet

## Solution

### NHP 5500S, NHP 5500

High-Speed, High-Productivity Horizontal Machining Center



High  
Productivity

High  
Accuracy

High-Rigidity  
Structure

\*NHP 5500S : 12set

\*NHP 5500 : 2set

### Process

- OP#10** Intake & Exhaust, Front&Rear - Drill, Boring, Tap
- OP#20, 30** Bottom - Face mill, Boring, Drill, Reamer, Exhaust & Intake - Face mill, Drill, Tap, Reamer
- OP#40, 50** Top - Face mill, Drill, Tap, Front & Rear - Face mill, Drill, Tap, Reamer
- OP#60** Valve seat guide rough&semi machining
- OP#100** Bottom - Face mill, Top - Finish machining, Drill, Reamer

### Option

Loading Station Air Ports (8set)

Air Gap Sensing (7lines)

APC Guard Modification (w/Coolant blow)

### Machining Option Installation Line / Line View





# Customer (E7)

Automotive Industry

## Power Train

Engine

Transmission &  
Drive system

## Chassis System

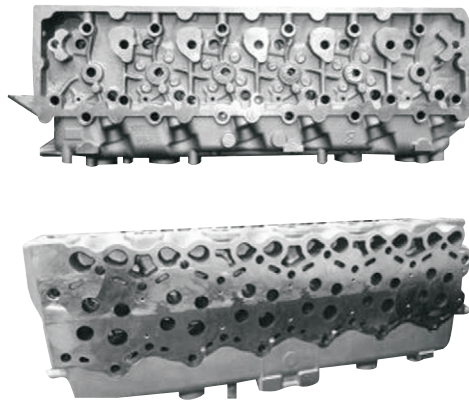
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Cylinder Head



### Customer Demand

10,000 units / year

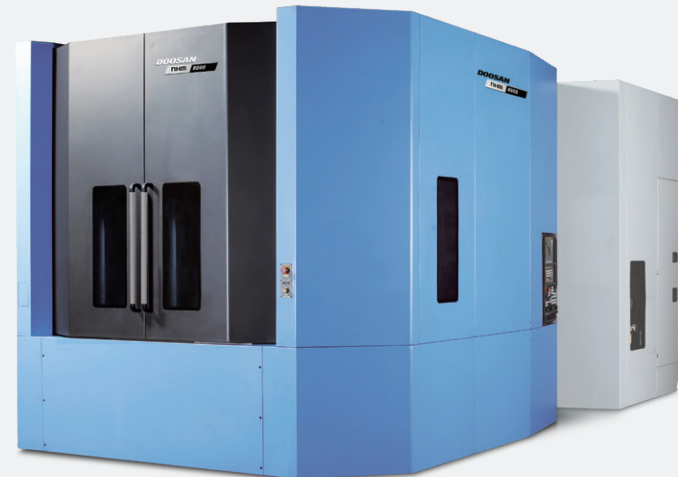
23 min. / unit

## Solution

### NHM 8000

High-performance medium-size horizontal machining center

\*3set



Powerful  
Cutting

High Torque  
1732 N·m

High-Rigidity  
Structure

### Process

- OP#10 Top face, Head bolt hole (Top)
- OP#20 Bottom face, Front and Rear face & Hole boring
- OP#30 Exhaust and Intake face & Hole boring

### Option

OMP 60

Linear Scale

### Machining Option Installation Line / Line View



# Customer (E8)

Automotive Industry

## Power Train

Engine

Transmission &  
Drive system

## Chassis System

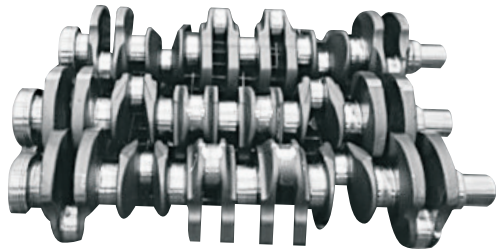
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Crank Shaft



### Customer Demand

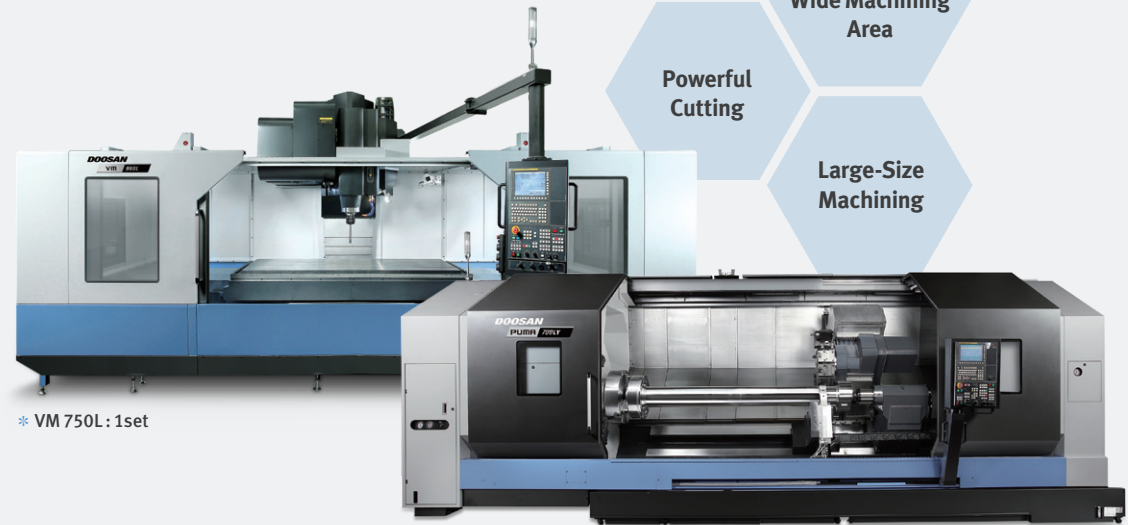
14,400 units / year

8 min. / unit

## Solution

### VM 750L, PUMA 600

Large, high-speed / High-precision mold machining center



\* VM 750L : 1set

\* PUMA 600 : 1set

Powerful  
Cutting

Wide Machining  
Area

Large-Size  
Machining

### Process

OP#50 Grooving, O/D Lathe Rough, Finish

OP#70 Facing, Drilling, Tapping

### Option

Twin Steady Rest

Rotary Table

Tool Breakage Detector

### Machining Option Installation Line / Line View





# Customer (E9)

Automotive Industry

Power Train

Engine

Transmission &  
Drive system

Chassis System

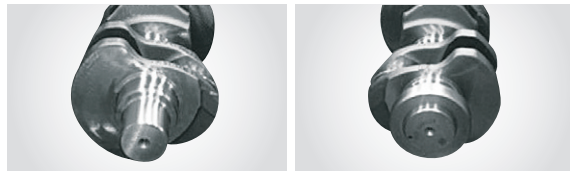
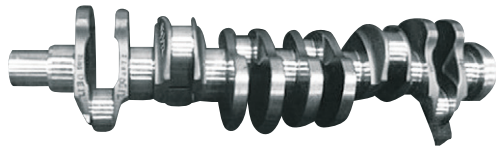
Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Crank Shaft



### Customer Demand

250,000 units / year

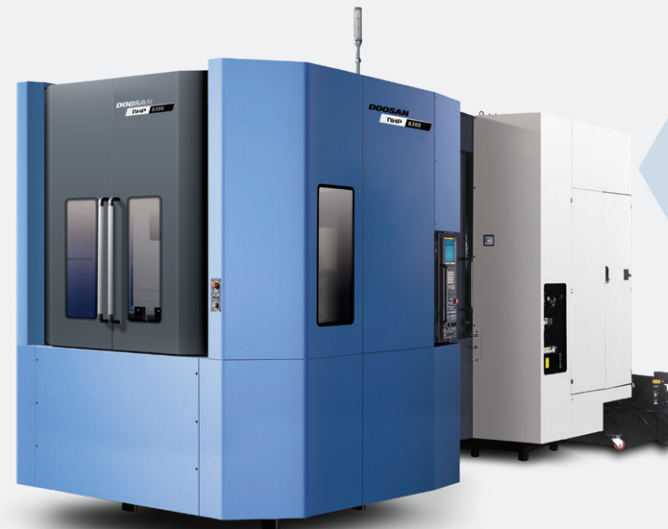
8 min. / unit

Gantry Loader

## Solution

### NHP 6300

High-Speed, High-Productivity Horizontal Machining Center



\* 1Set

High  
Productivity

High  
Accuracy

High-Rigidity  
Structure

### Process

#### OP#150

Flange, Stub-end area Drill, Tap,  
Reamer Machining

### Option

Gear Wheel Flowmeter

Prometec

Auto Workpiece Measurement

### Machining Option Installation Line / Line View



# Customer (E10)

Automotive Industry

## Power Train

Engine

Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Cam shaft



### Customer Demand

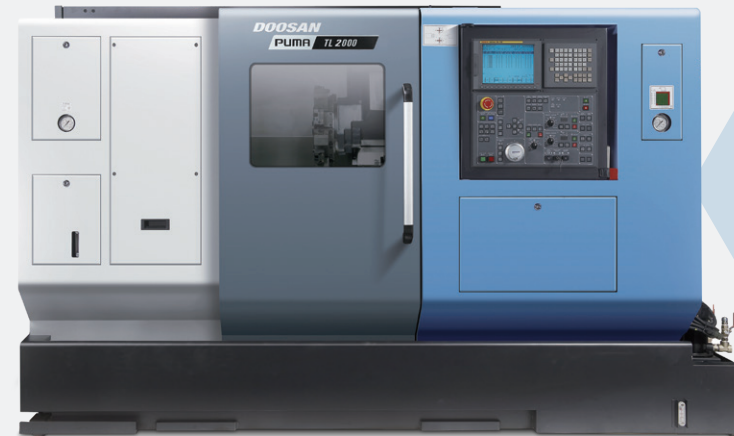
200,000 units / year

1min. 22 sec. / unit

## Solution

### PUMA TL2000M

High-productivity 2-turret turning center



High  
Productivity

Optimized  
for Shaft  
Machining

2 Turrets  
at Top and  
Bottom

\* 3Set

### Process

OP#20

O.D Turning,  
Grooving & Drilling

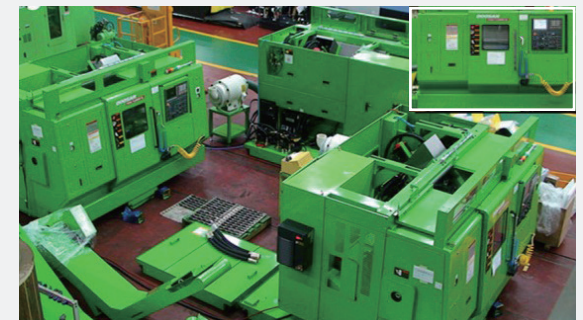
### Option

KITAGAWA Chuck

V-Stand

Special Coolant Tank

### Machining Option Installation Line / Line View





# Customer (E11)

Automotive Industry

## Power Train

Engine

Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Cam shaft



### Customer Demand

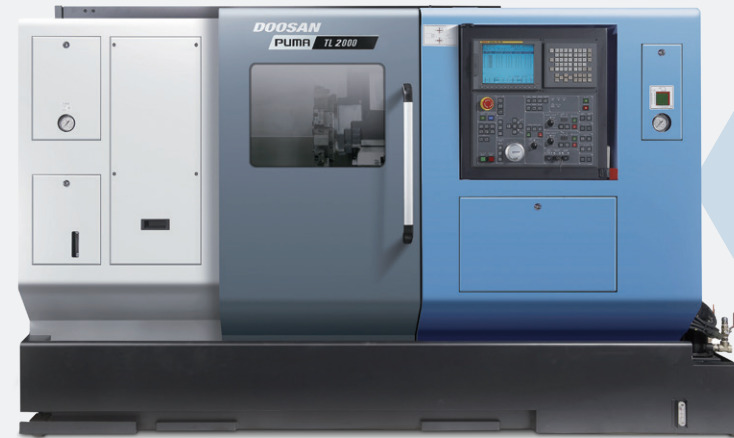
172,800 units / year

1min. 30 sec. / unit

## Solution

### PUMA TL2000M-GL

High-productivity 2-turret turning center



High  
Productivity

Optimized  
for Shaft  
Machining

2 Turrets at  
Top and  
Bottom

\*2Set

## Process

OP#40

Turning, Grooving, Drilling

## Option

Two Hands Cycle Start Button

Reduce Tail Stock Cylinder Size

V-Stand

## Machining Option Installation Line / Line View



# Customer (E12)

Automotive Industry

## Power Train

Engine

Transmission &  
Drive system

## Chassis System

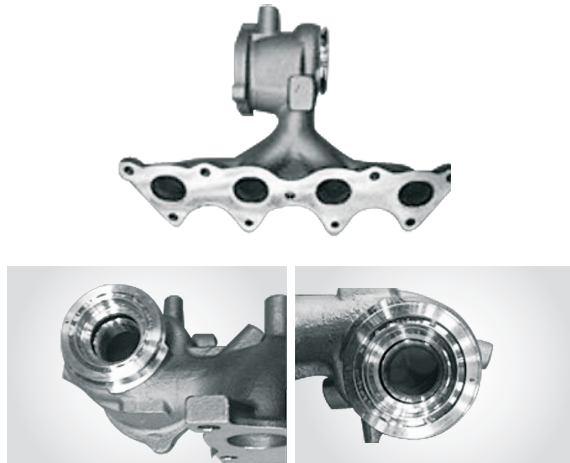
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Turbine Housing



### Customer Demand

60,000 units / year

5 min. / unit

## Solution

### PUMA V8300MR, PUMA V8300MR w/ATC

High-productivity vertical turning center, ATC + CAPTO C6



Machining  
Capacity  
830mm

High Torque  
2592 N·m

Powerful  
Cutting

\*1Set

### Process

OP#30

O.D Turning, I.D Turning,  
Face turning & Drilling

### Option

Special Tool Block (Length-Extension)

Special Chuck & Rotary Valve ASS'Y

Tool-Setter (Removable)

### Machining Option Installation Line / Line View





# Customer (E13)

Automotive Industry

## Power Train

### Engine

Transmission &  
Drive system

## Chassis System

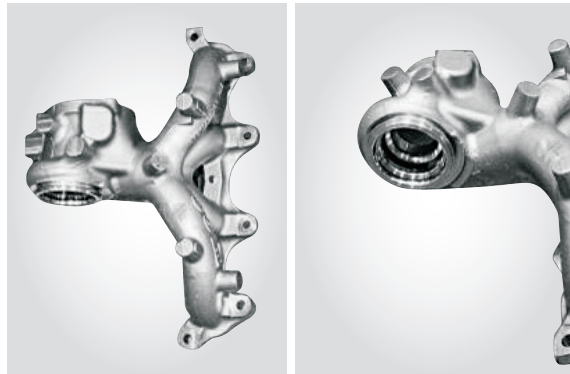
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Turbine Housing



### Customer Demand

20,000 units / year

7min. 10 sec. / unit

## Solution

### PUMA V8300MR

High-productivity vertical turning center



Machining  
Capacity  
830mm

High Torque  
2592 N·m

Powerful  
Cutting

### Process

#### OP#30

O.D R/F Turning, Grooving,  
I.D R/F Turning

### Option

Exclusive Special Chuck & Jaw

Special I.D Tool Holder

Special work piece Measuring System

### Machining Option Installation Line / Line View



# Customer (E14)

Automotive Industry

## Power Train

### Engine

Transmission &  
Drive system

## Chassis System

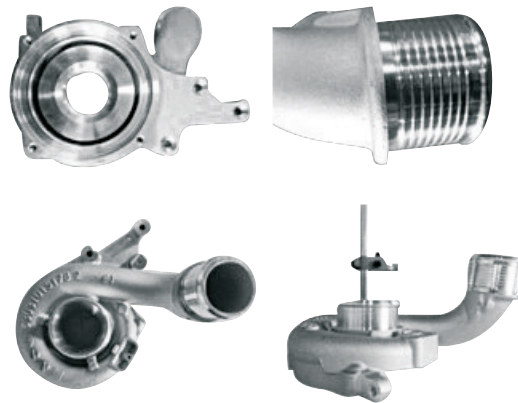
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Compressor Housing



### Customer Demand

100,000 units /year

3min. 14 sec. / unit

## Solution

### PUMA GT2100M, DNM 6700

Global standard turning center, Global standard vertical machining center, compact economical turning center

Powerful  
Cutting

High Speed

High  
Productivity



\*PUMA GT2100M : 1set

\*DNM 6700 :1set

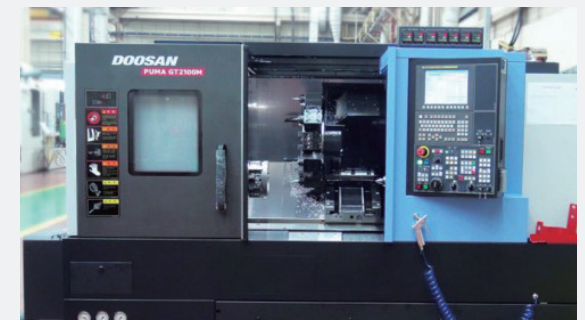
### Process

**OP#10** Face, I.D Turning, Drilling, Tapping  
**OP#20** Face Milling, Drilling, Tapping,  
Profile, Reamer

### Option

Work Ejectore  
TSA  
Part Catcher

### Machining Option Installation Line / Line View





# Customer (E15)

Automotive Industry

## Power Train

### Engine

Transmission &  
Drive system

## Chassis System

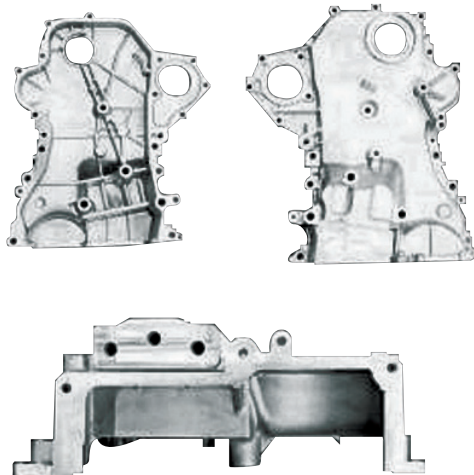
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Timing Chain Cover



### Customer Demand

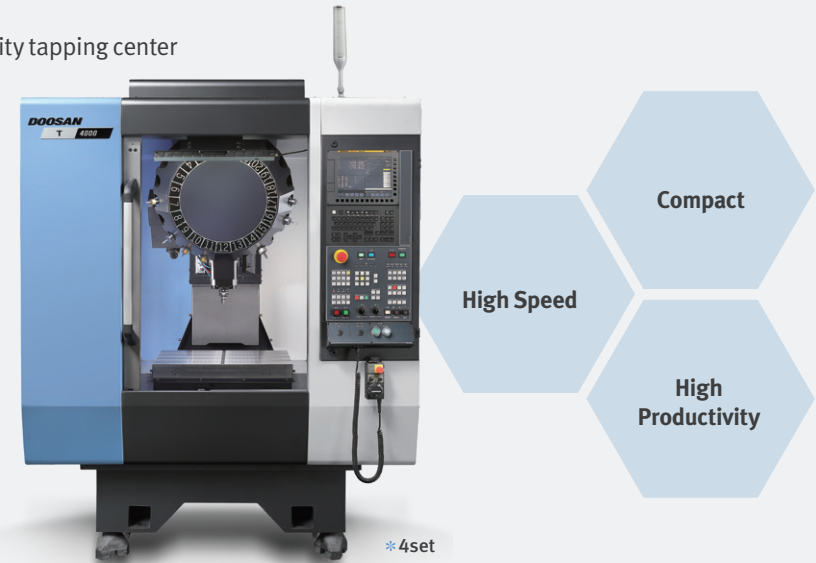
120,000 units / year

OP#10 3min. 40min. OP#20 3min. 31min.

## Solution

### T 4000

High-speed / High-productivity tapping center



### Process

- OP#10** Face Milling, Drilling, Tapping,  
Face Deburring
- OP#20** Face Milling, Drilling, Tapping

### Option

- D300 NC (Made by Doosan)
- Tool Broken Sensor (QWP)
- Hyd. Fixture (Rotary Table – 4 Axis)
- Tool & Work Count (NC option)

### Machining Option Installation Line / Line View



# Customer (E16)

Automotive Industry

## Power Train

### Engine

Transmission &  
Drive system

## Chassis System

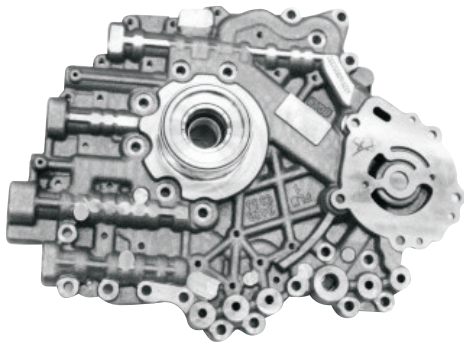
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Pump Cover



### Customer Demand

20,000 units / year

30 min. / unit

## Solution

### PUMA V400

Compact vertical turning center



\*1Set

Compact

Powerful  
Cutting

High  
Productivity

### Process

OP#10	OD Turning Finish
OP#20	ID Turning Finish
OP#30	ID Turning Finish

### Option

Coolant Chiller
TSC Pump (20 Bar)
Chuck Clamp Confirmation
Rotary Union (For Special Chuck)

### Machining Option Installation Line / Line View





# Customer (E17)

Automotive Industry

Power Train

Engine

Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Pulley



### Customer Demand

430,000 units / year

1min. 19 sec. / unit

Gantry Loader

## Solution

### PUMA TW2600-GL

High-productivity 2-spindle horizontal turning center



High Speed  
Gantry Loader

2 Spindles

High  
Productivity

### Process

OP#20 O.D Turning, Face Grooving

OP#30 I.D Turning, O.D Grooving

### Option

Mist Collector

Taco Air Sensing

Special Gripper Jaw & Pusher

### Machining Option Installation Line / Line View



# Customer (E18)

Automotive Industry

## Power Train

### Engine

Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Piston Pin



## Customer Demand

600,000 units / year

1min. 9 sec. / unit

## Solution

### Lynx 220LS

Compact economical turning center



\* 1Set

Powerful  
Cutting

Compact

## Process

OP#10 Turning, Drilling, Reaming

## Option

Work Ejectore

TSA

Part Catcher

## Machining Option Installation Line / Line View





# Customer (E19)

Automotive Industry

## Power Train

Engine

Transmission &  
Drive system

## Chassis System

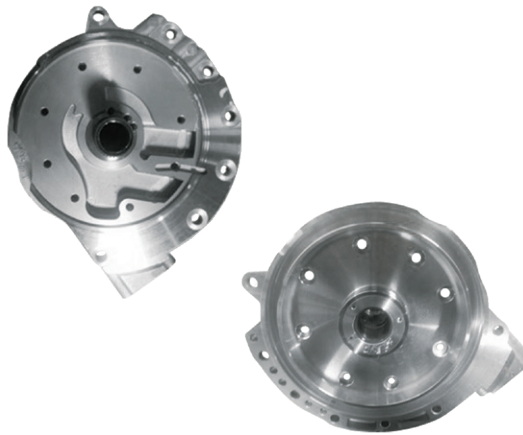
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Oil Pump Cover



### Customer Demand

220,000 units / year

1min. 11 sec. / unit

Gantry Loader

## Solution

### PUMA TW2600-GL, PUMA GT2100B

High-productivity 2-spindle horizontal turning center



\* PUMA GT2100B : 1Set

\* PUMATW2600-GL : 2Set

2 Spindles

High Speed  
Gantry Loader

High  
Productivity

### Process

OP#10, 20 Cut to O.D & I.D & Face

OP#70 Cut to O.D

OP#80, 90 Cut to O.D & I.D & Face

### Option

High Pressure Coolant Pump (15 bar)

Chip Conveyor (Side & Rear Scraper type)

High Speed SkipFunction

### Machining Option Installation Line / Line View



# Customer (E20)

Automotive Industry

## Power Train

### Engine

Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Compressor Housing



### Customer Demand

90,000ea/year

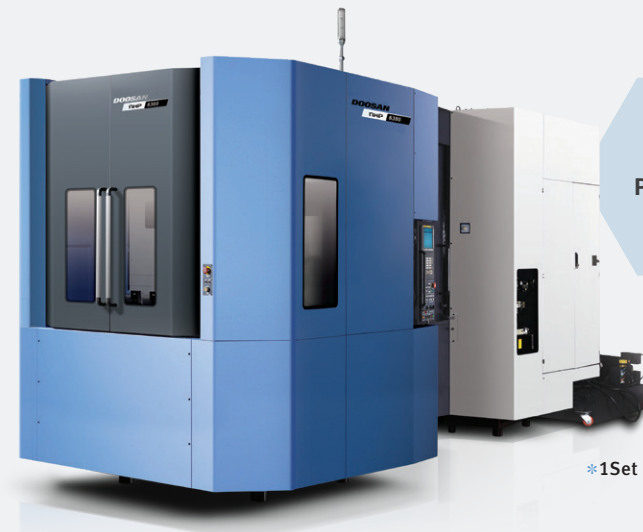
8min 36sec/ea

Productivity

## Solution

### NHP 5500

High-Speed, High-Productivity Horizontal Machining Center



High  
Productivity

High  
Accuracy

Compact

### Process

OP#10 TURNING MACHINING

OP#20 MILLING & DRILLING

### Option

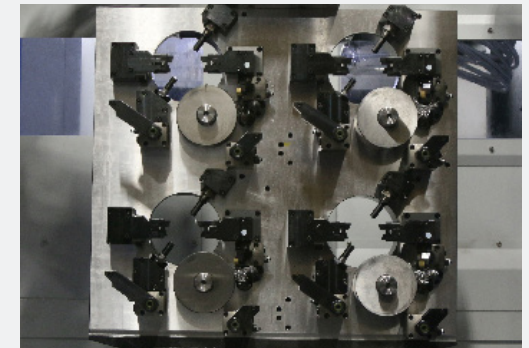
TSC (Through Spindle Coolant)

Work Locating Confirmation(Air Sensing)

Tool Broken Unit(BK9), OMP60

Rotary Table

### Machining Option Installation Line / Line View



# Customer (E21)

Automotive Industry

## Power Train

### Engine

Transmission &  
Drive system

## Chassis System

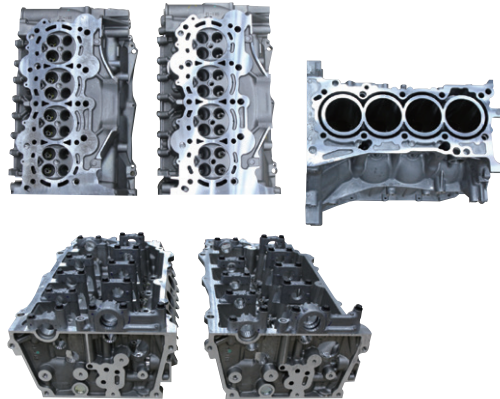
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Cylinder Head & Block



### Customer Demand

200,000ea/year

HEAD : 300sec/ea, BLOCK : 90sec/ea

Robot Gantry

## Solution

### NHP 5500S, DNM 650/50 II, DNM 500HS

High-Speed, High-Productivity Horizontal Machining Center Global  
standard vertical machining center



### Process

- 1) CYLINER HEAD #130(NHP5500S) :  
MILLING, PILOT BORING, FINE BORING
- 2) CYLINDER BLOCK #110(DNM650/50) :  
FINISH BORING, MILLING

### Option

TSC (Through Spindle Coolant)

Linear Scale(X,Y,Z AXIS)

Coolant Chiller

Oil Cooler for Hyd Fixture

### Machining Option Installation Line / Line View





# Customer (E22)

Automotive Industry

## Power Train

### Engine

Transmission &  
Drive system

## Chassis System

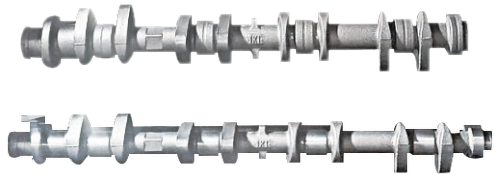
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Cam Shaft(6 models)



## Customer Demand

240,000ea/year

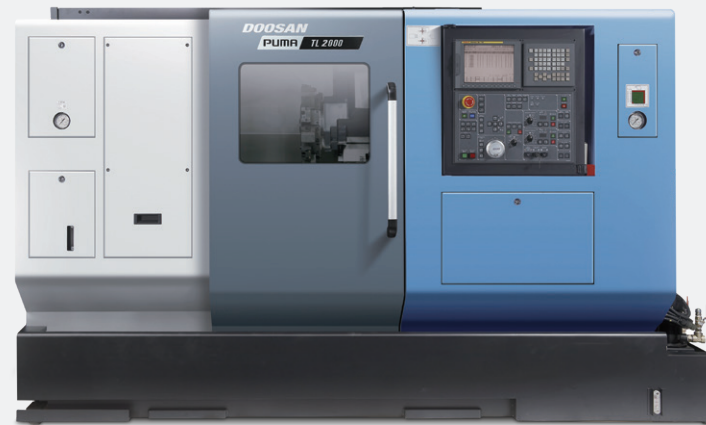
92sec/ea (machining 63 sec)

Gantry Loader

## Solution

### PUMA TL2500

High-productivity Turning Center with Upper/lower Turrets



\* 1Set

High  
Productivity

Multitasking  
Capability

Excellent  
Machining  
Capability

## Process

OP#20 OD TURNING

## Option

Work Locating Confirmation(Air Sensing)

Tool Setter

Dual Wiper

Tail Center & Tail Pokayoke(Model check)

## Machining Option Installation Line / Line View



# Customer (T1)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Fly Wheel



### Customer Demand

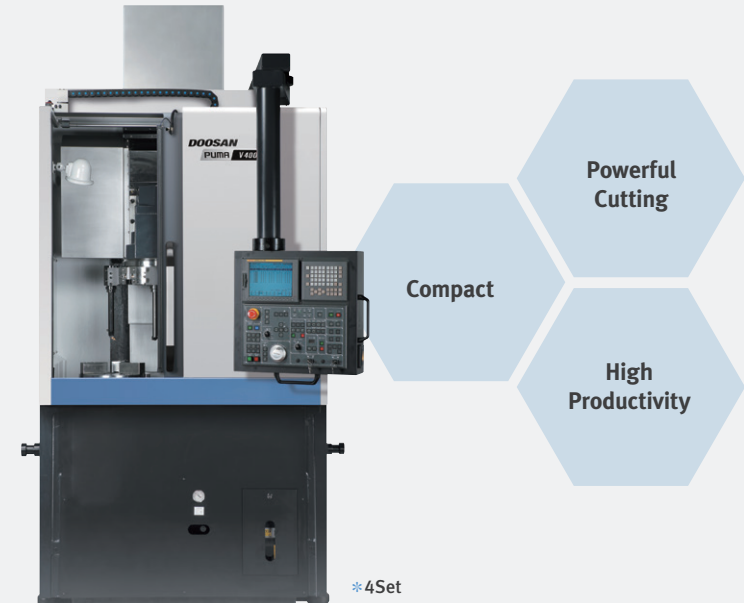
100,000 units / year

2min. 15 sec. / unit, 1min. 2 sec. / unit, 1min. 36 sec. / unit

## Solution

### PUMA V400R

Compact vertical turning center



### Process

- OP#10** Cutting Area: Reference Plane & Chucking Face of OP40  
**OP#40** Cutting Area : Reference Plane of OP50, Finished Back Face  
**OP#50** Finished Front Face

### Option

Locator Air Sensing

Wisker Switch

Buzzer Alarm

### Machining Option Installation Line / Line View



# Customer (T2)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

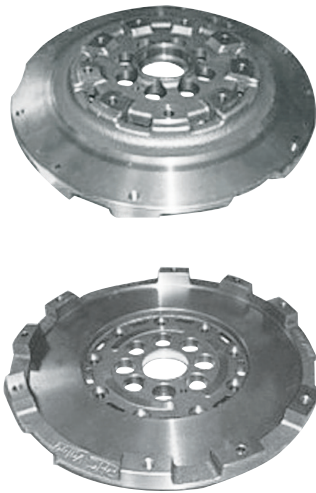
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Fly Wheel



### Customer Demand

276,500 units / year

45.9 sec. / unit

## Solution

### PUMA VT450-2SP, T 4000

Compact high-productivity vertical turning center, high-speed /  
high-productivity dual pallet tapping center



\* PUMAVT450-2SP : 2Set



\* T4000 : 4Set

High  
Productivity

Powerful  
Cutting

Compact

### Process

- OP#10 OD / ID / Face Turning, ID Grooving
- OP#20 ID / Fcae Turning, ID Grooving
- OP#30 Drilling, Tapping, Reaming

### Option

Air Gap Sensor

Tool Breakage Detector

Dust Collector

### Machining Option Installation Line / Line View





# Customer (T3)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

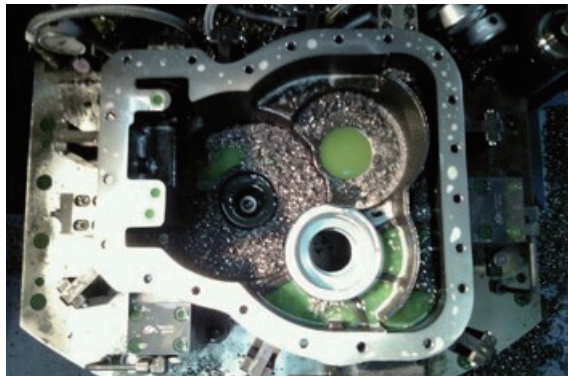
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Transmission Case



### Customer Demand

13,667 units / year

16.86 sec. / unit

APC

## Solution

### VC 510

High-productivity twin table vertical machining center



### Process

**OP#10** Drilling, Facing, Boring,  
Chamfering

### Option

Hyd. Fixture

Through Spindle Coolant

Mist Collector

### Machining Option Installation Line / Line View



# Customer (T4)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Clutch Hub



### Customer Demand

271,815 units / year

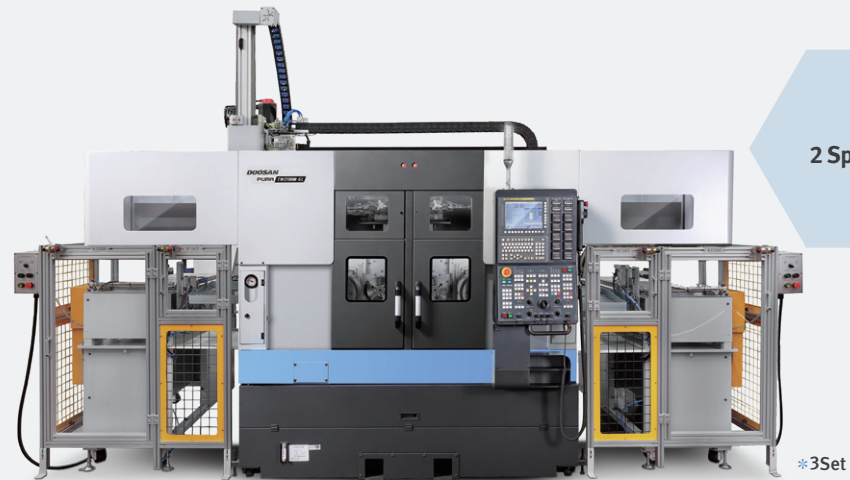
1min. 40 sec. / unit

Gantry Loader

## Solution

### PUMA TW2100-GL

High-productivity 2-spindle horizontal turning center



2 Spindles

High Speed  
Gantry Loader

High  
Productivity

\*3Set

### Process

OP#110 O.D & I.D Groove

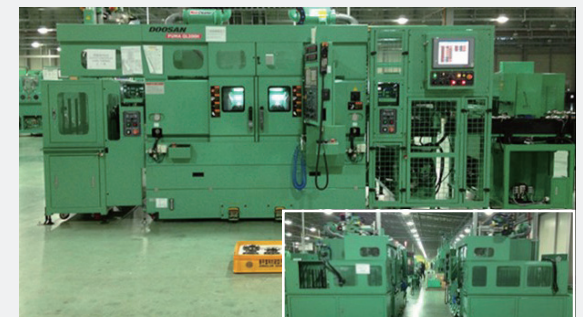
### Option

IN, OUT Stocker

Orientation

Auto Measuring

### Machining Option Installation Line / Line View



# Customer (T5)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Clutch Boss



### Customer Demand

400,000 units / year

1min. 57 sec. / unit

Gantry Loader

## Solution

### PUMA TW2100-GL

High-productivity 2-spindle horizontal turning center



### Process

- OP#30** O.D & I.D Rough, Finish,  
I.D Undercut
- OP#40** O.D Groove, I.D FACE & Finish

### Option

- In Stocker
- Auto Measuring System

### Machining Option Installation Line / Line View





# Customer (T6)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Axle Housing



### Customer Demand

3,500 units / year

1hour 3min. 17 sec. / unit

## Solution

### NHM 6300

High-performance medium-large horizontal machining center



### Process

OP#10, 20 Facing, Boring, Drilling,  
Tapping, Reaming

### Option

Hyd. Fixture

Linear Scale (X, Y, Z, Axis)

Through Spindle Coolant

### Machining Option Installation Line / Line View



# Customer (T7)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

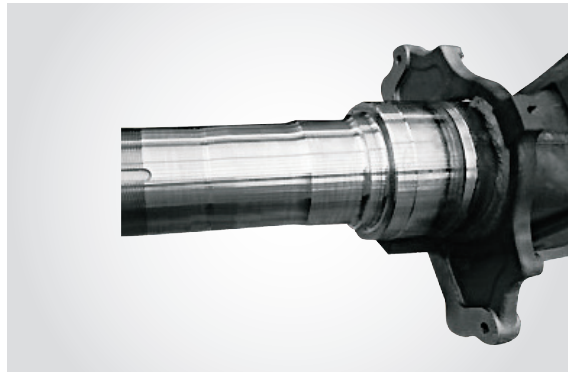
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Axle Housing



### Customer Demand

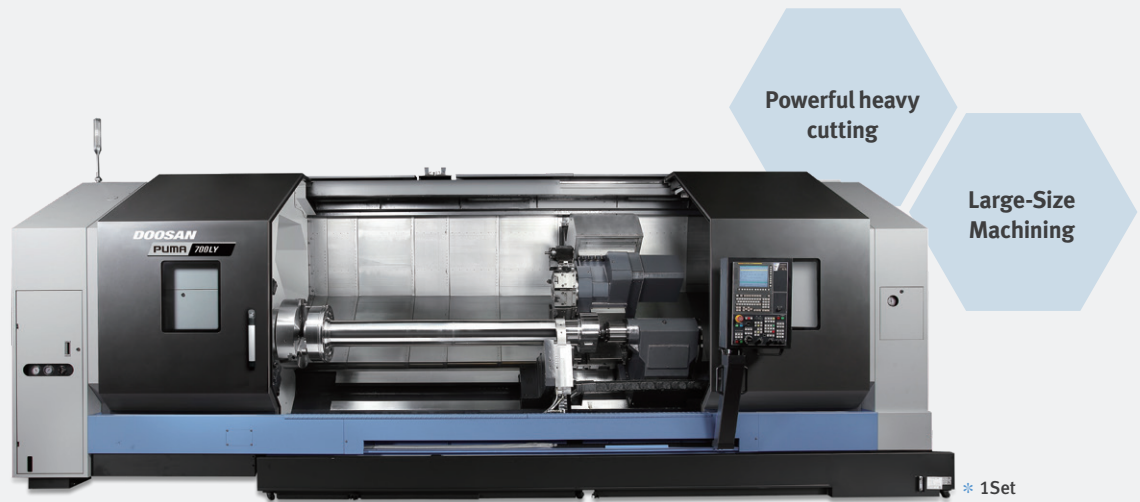
5,800 units / year

35.5 sec. / unit

## Solution

### PUMA 600L

Large powerful heavy-cutting turning center



### Process

OP#50 Both O.D & Face Turning

### Option

Hydraulic Pre-Locator

Auto Measuring System (OLP40)

Twin Steady Rest (SLU4)

### Machining Option Installation Line / Line View



# Customer (T8)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Outer Race



### Customer Demand

500,000 units / year

28 sec. / unit

## Solution

### Lynx 220LMC, T 3600D

Compact economical turning center, High-speed / High-productivity tapping center



\* Lynx 220LMC : 3Set

\* T 3600D : 1Set

### Process

OP#20 Cut to O.D & I.D & Face  
OP#30 Cut to Pin of Side

### Option

MQL	Manual Tail Stock
Gantry Loader & Marposs Interface	

### Machining Option Installation Line / Line View





# Customer (T9)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Outer Race



### Customer Demand

1,000,000 units / year

25 sec. / unit

Robot Automation

## Solution

### Lynx 220G super, PUMA GT2100M, DNM 4500

High-productivity, gang type turning center, Global standard vertical machining center, compact economical turning center, global standard vertical machining center



### Process

- OP#20,30** O.D R/F Cutting & I.D R/F Cutting & Groove  
**OP#40** Chamfering & Key Groove Cutting

### Option

Robot Interface System

2 Axis Rotary Table

Tail Stock

### Machining Option Installation Line / Line View



# Customer (T10)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

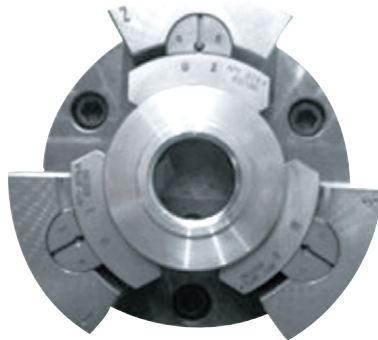
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Parking Gear



### Customer Demand

1min. 8 sec. / unit

Gantry Loader

## Solution

### PUMA TW2100-GL

High-productivity 2-spindle horizontal turning center



2 Spindles

High Speed  
Gantry Loader

High  
Productivity

\*2Set

### Process

**OP#10** O.D Rough, I.D Rough, Groove, O.D Finish, I.D Finish

**OP#20** O.D Rough, I.D Rough, O.D Finish, I.D Finish

### Option

I.D Measuring System

### Machining Option Installation Line / Line View



# Customer (T11)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

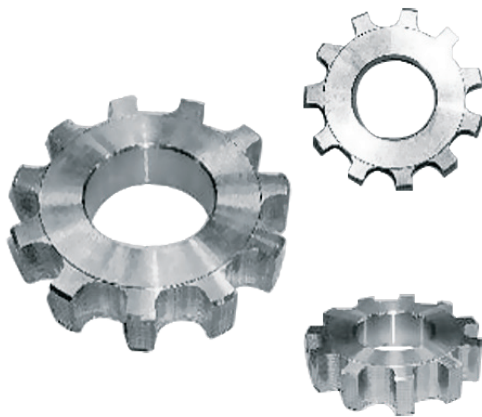
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Parking Gear



### Customer Demand

150,000 units / year

57.6 sec. / unit

Gantry Loader

## Solution

### Lynx 220-GL

Compact economical turning center

Automation  
High  
Productivity

Powerful  
Cutting

Compact



\* 1Set

### Process

OP#10 Item's Face Burr Removing

### Option

Auto Top Door

Mist Collector

Work & Tool Counter

### Machining Option Installation Line / Line View





# Customer (T12)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Sun Gear



### Customer Demand

600,000 units / year

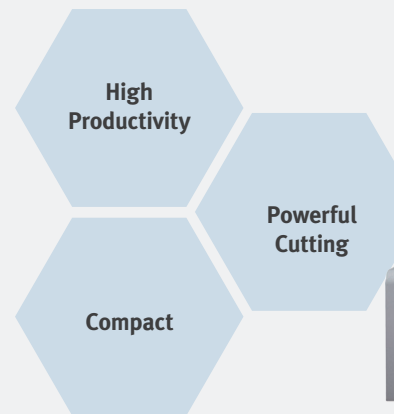
42 sec. / unit

Gantry Loader

## Solution

### Lynx 220C

Compact economical turning center



\* 2Set

### Process

OP#160 O.D R/FTurning & Facing

### Option

Work Inspection Chute

In stocker (10-station)

Gantry Loader (3-Axis)

### Machining Option Installation Line / Line View



# Customer (T13)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

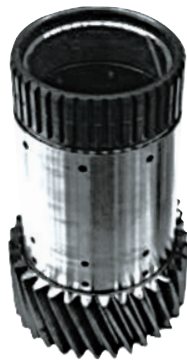
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Sun Gear



### Customer Demand

500,000 units / year

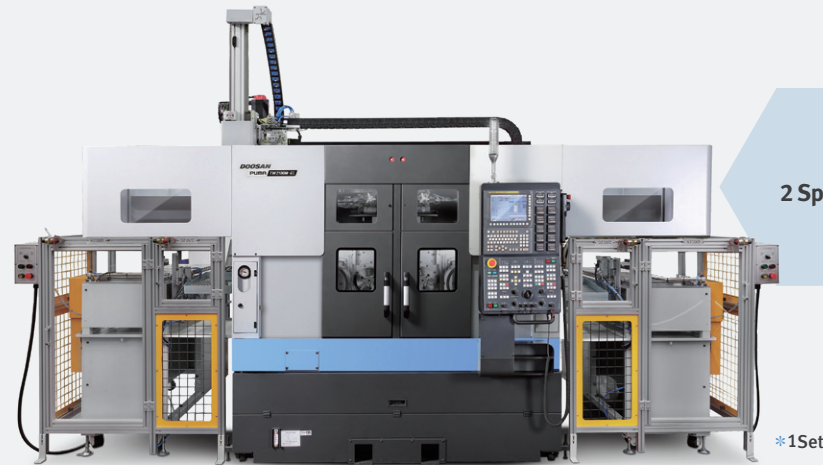
35 sec. / unit

Gantry Loader

## Solution

### PUMA TW2100-GL

High-productivity 2-spindle horizontal turning center



2 Spindles

High Speed  
Gantry Loader

High  
Productivity

\*1Set

## Process

OP#160 ID Turning

## Option

Special Fixture

Special Tools

Auto Gauge

Transfer Loader

## Machining Option Installation Line / Line View



# Customer (T14)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

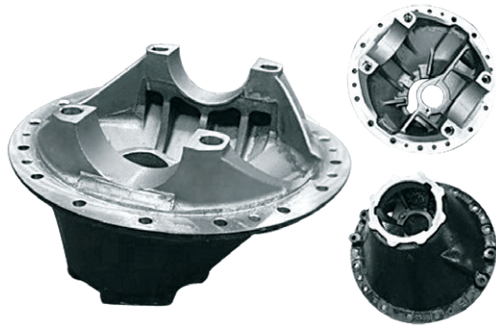
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Differential Carrier



### Customer Demand

330,000 units / year

30 min. / unit

## Solution

### Mynx 5400/50, Mynx 6500/50, NHP 6300

Powerful heavy-cutting vertical machining center



\* Mynx 5400/50 : 1Set

\* Mynx 6500/50 : 1Set

\* NHP 6300 : 1Set

Easy Machine  
Operation

Powerful  
Cutting

High  
Productivity

### Process

OP#10 R/Cutter, Drill, Reamer, Tap  
OP#20 R/Cutter, Boring, Spot Face  
OP#50 F/Cutter, Boring, Drill, Tap

### Option

Pokayoke System

Sub Operation Box

Fixture Dual Pressure

### Machining Option Installation Line / Line View





# Customer (T15)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

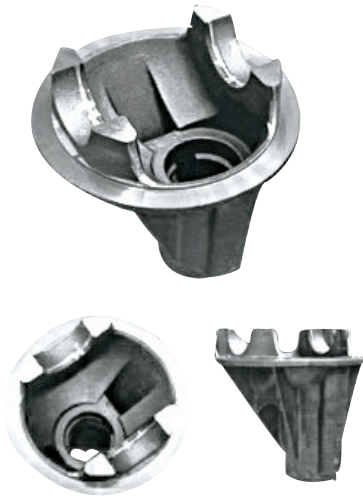
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Differential Carrier



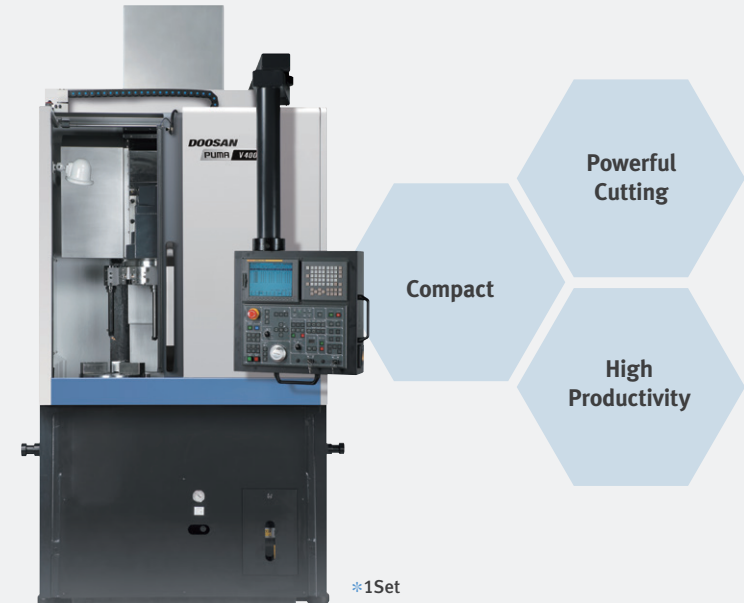
### Customer Demand

3min. 30 sec. / unit

## Solution

### PUMA V400R

Compact vertical turning center



### Process

OP#10 O.D Turning

### Option

Pokayoke System  
(Interlock Jig & Program)

Signal Tower

Level Plate (160mm)

### Machining Option Installation Line / Line View



# Customer (T16)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

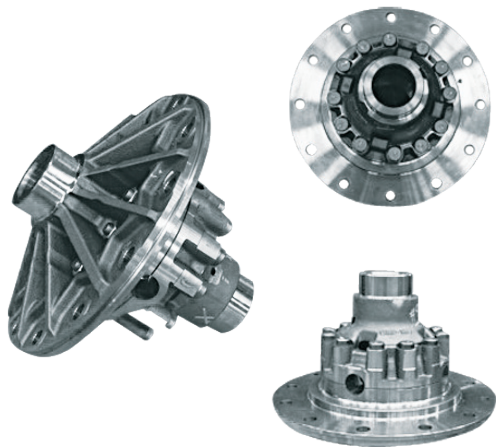
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Differential Case



### Customer Demand

51,648 units / year

1min. 2 sec. / unit

## Solution

### PUMA V400-2SP, PUMA V550-2SP, DNM 5700, PUMA 2600

Compact vertical turning center, global standard vertical machining center, high-performance horizontal turning center



### Process

OP#10, 20	O.D & I.D Turning
OP#30	Drill, Reamer, Boring
OP#40	Drill, Boring
OP#50	O.D Turning

### Option

20station turret
Sub Operation Box (Cycle Start, Clamp, Un clamp)
POKAYOKE System (Interlock Jig & Program)

### Machining Option Installation Line / Line View



# Customer (T17)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Differential Case Cup



### Customer Demand

120,000 units / year

10min. 44 sec. / unit

## Solution

### PUMA TW2100, Lynx 220C-NT, DNM 5700

High-productivity 2-spindle, horizontal turning center, compact economical turning center, global standard vertical machining center



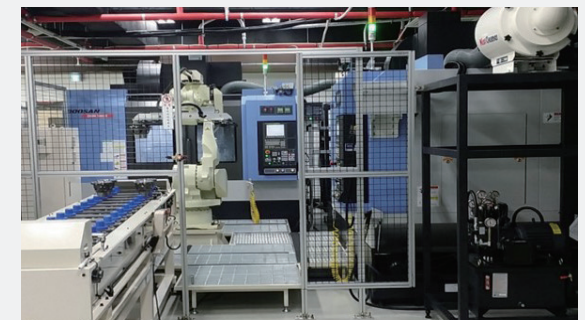
### Process

OP#10 O.D & I.D Face Cutting  
OP#20 O.D & I.D Face, Groove Cutting  
OP#30 Hole, Tap, Reamer

### Option

Auto door, Air Limit Sensor  
3 Head Rotary Tilting Table  
Raising Block (150mm)

### Machining Option Installation Line / Line View





# Customer (T18)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

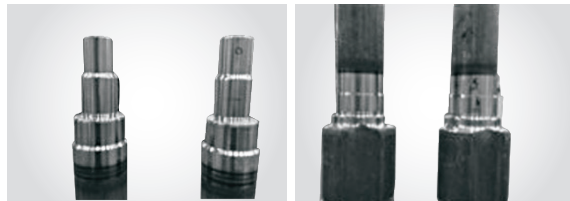
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### CV Joint



### Customer Demand

13,357 units / year

55 sec. / unit

## Solution

### PUMA 2100

High-performance horizontal turning center



\* 1Set

High  
Accuracy

Powerful  
Cutting

High  
Productivity

### Process

OP#10 O.D Turning, Facing

### Option

Steady Rest

V-Stand

### Machining Option Installation Line / Line View



# Customer (T19)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

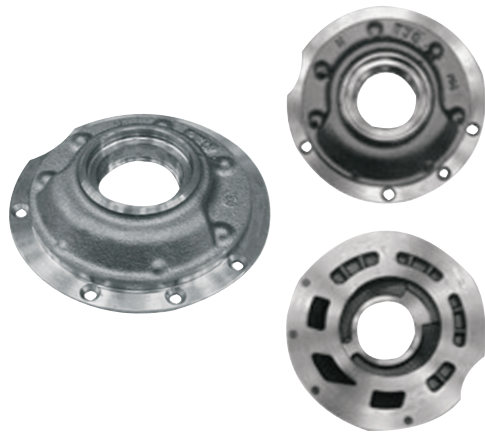
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Oil Pump Housing



### Customer Demand

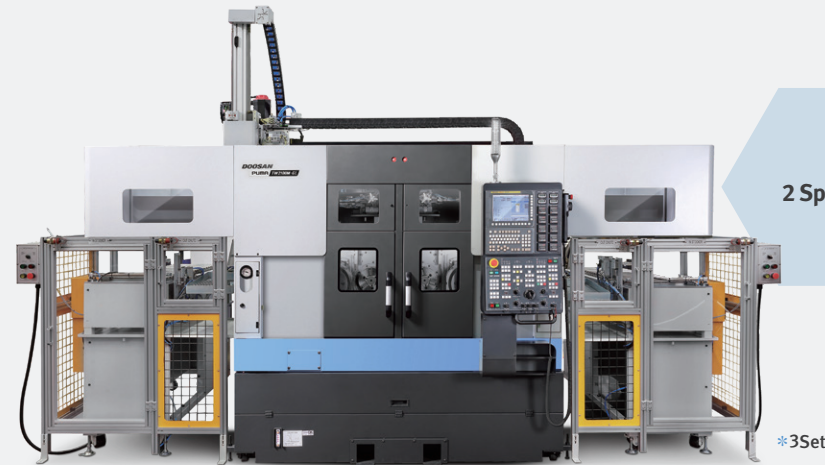
1min. 43 sec. / unit

Gantry Loader

## Solution

### PUMA TW2100-GL

High-productivity 2-spindle horizontal turning center



2 Spindles

High Speed  
Gantry Loader

High  
Productivity

\*3Set

### Process

OP#10 O.D & I.D Face Turning, Drill  
OP#20 O.D Face Turning,  
I.D Back Turning

### Option

Work Lifter	Orientation Unit
In-Stocker	Air Limit Sensor

### Machining Option Installation Line / Line View



# Customer (T20)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Oil Pump Housing



### Customer Demand

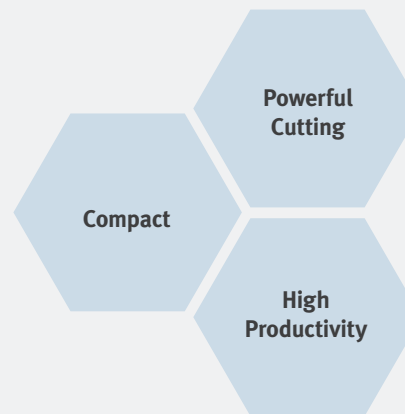
144,000 units / year

30 sec. / unit

## Solution

### PUMA VT450

Compact vertical turning center



\* 3Set

### Process

OP#20 Facing Turning

### Option

Sub Coolant Tank System

Robot Interface System

Special Level Block

### Machining Option Installation Line / Line View





# Customer (T21)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Oil Pump Body



### Customer Demand

200,000 units / year

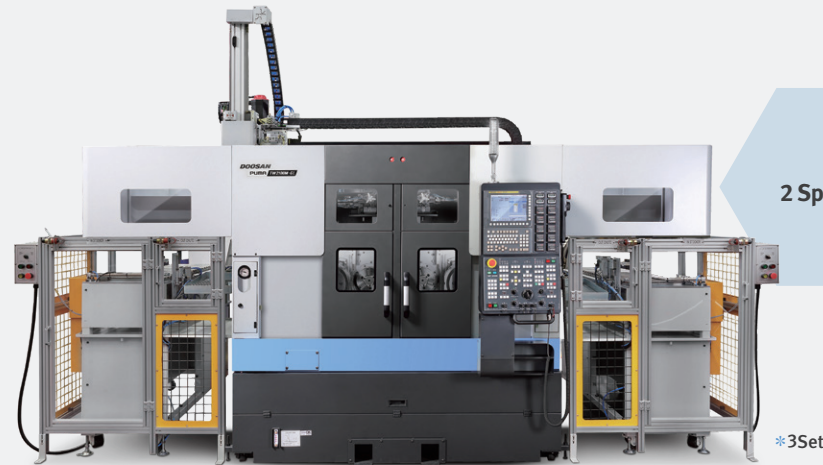
1min. 17 sec. / unit

Gantry Loader

## Solution

### PUMA TW2100-GL

High-productivity 2-spindle horizontal turning center



2 Spindles

High Speed  
Gantry Loader

High  
Productivity

\*3Set

### Process

OP#10 O.D Turning, I.D Turning, O.D Grooving

OP#20 O.D Turning, I.D Turning

### Option

IN-Stocker (W/Work Lift & Orientation Unit)

Spindle Through Coolant

Work & Tool Counter

### Machining Option Installation Line / Line View



# Customer (T22)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Torque Convert Housing



### Customer Demand

400,000 units / year

1min. 10 sec. / unit

Gantry Loader

## Solution

### PUMA TW2600-GL

High-productivity 2-spindle horizontal turning center



\* 1Set

2 Spindles

High Speed  
Gantry Loader

High  
Productivity

### Option

Add T.S.C & T.S.A

Swivel Unit of Gantry Loader  
(AF46 - 95 - BP - CP - F181)

Air Sensing unit - AOL112ST3 KIT

### Machining Option Installation Line / Line View



# Customer (T23)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Trunion



### Customer Demand

640,000 units / year

35 sec. / unit

Gantry Loader

## Solution

### DNM 4500, Lynx 220C

Global standard vertical machining center, compact economical turning center, Compact economical turning center



\* Lynx 220C : 1Set

\* DNM 4500 : 2Set

### Process

OP#10 Face, I.D Turning, Back Face  
OP#30 O.D Turning

### Option

Gantry Loader System (OP10~30)  
Turn - Over & Shuttle, Conveter System (OP10~30)  
Index Chuck (OP30)

### Machining Option Installation Line / Line View





# Customer (T24)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Output Shaft



### Customer Demand

1min. 30 sec. / unit

## Solution

### PUMA GT2100, T 3600D

Global standard turning center, High-speed / High-productivity tapping center



\* PUMA GT2100 : 3Set

\* T 3600D : 1Set

Dual Pallet  
High Productivity  
Powerful Cutting

### Process

- OP#10 Face / OD Rough, Center Drill, Face/OD Finish,
- OP#20 Face / OD Rough, Center Drill, Face /OD Finish
- OP#80 Grooving, Face / OD Finish, Back Turning Finish
- OP#90 Drill, Tap, End Mill

### Option

- Auto. Workpiece Measurement (OMP60)
- Work & Tool Counter
- Special Dead Center

### Machining Option Installation Line / Line View



# Customer (T25)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Input shaft



### Customer Demand

2min. 29 sec. / unit

## Solution

### Lynx 220G

High-productivity 2-spindle horizontal turning center



Compact

Powerful  
Cutting

High  
Productivity

\* 1Set

### Process

OP#30 Guide Drill, Drill,  
I.D Turning, Reamer

### Option

Coolant Chiller 3kW

4-Spindle Unit

### Machining Option Installation Line / Line View



# Customer (T26)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Ring Gear



### Customer Demand

300,000 units / year

49.8 sec. / unit

## Solution

### Lynx 220C, T 4000

Compact economical turning center, High-speed /  
High-productivity tapping center

High Speed

High  
Productivity

Compact



\* Lynx 220C : 1Set

\* T 4000 : 2Set

### Process

OP#10 O.D Face Turning  
OP#20 Drill, Tap, Back Chamfer

### Option

Air Blower for Chuck  
Bed Coolant  
Side Auto Door

### Machining Option Installation Line / Line View





# Customer (T27)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Front Cover



### Customer Demand

200,000 units / year

32 sec. / unit

Gantry Loader

## Solution

### PUMA TW2600-GL

High-productivity 2-spindle horizontal turning center



\* 1Set

High Speed  
Gantry Loader

2 Spindles

Automation  
High Productivity

### Process

OP#90 I.D Turning, Center End Mill

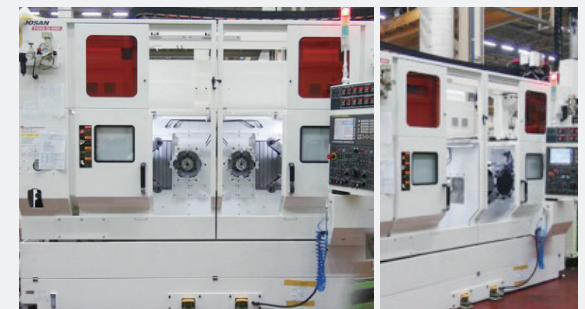
### Option

Gantry Loader Type A3 (Both sides)

Chip Conveyor Type  
(Hinged Belt\_Rear Side)

Special Tool & Holder

### Machining Option Installation Line / Line View



# Customer (T28)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Front Cover



### Customer Demand

535,000 units / year

30 sec. / unit

Gantry Loader

## Solution

### PUMA TW2600-GL

High-productivity 2-spindle horizontal turning center



\* 1Set

2 Spindles

High Speed  
Gantry Loader

High  
Productivity

### Process

OP#70 ID Finish & Face Semi Finish  
OP#80 Face Burnishing

### Option

Air Part (SMC)  
Name Plate (AL)  
Special Oil Mist Collector

# Customer (T29)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Pressure Plate



### Customer Demand

55 sec. / unit

## Solution

### PUMA VT450-2SP

Compact high-productivity vertical center



\* 1Set

Compact

Powerful  
Cutting

High  
Productivity

### Process

OP#10 Turning  
OP#20 Turning

### Option

Auto door  
Dual Pressure Chucking  
Air Limit Sensor

### Machining Option Installation Line / Line View





# Customer (T30)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Pressure Plate



### Customer Demand

OP#10 40 sec. / unit, OP#20 60 sec. / unit

## Solution

### PUMA V400R

Compact vertical turning center



Compact

Powerful  
Cutting

High  
Productivity

\*2Set

### Process

**OP#10** ID, OD Turning, Face Turning  
**OP#20** ID, OD Turning, Face Turning,  
Profiling

### Option

Work Support	Air Sensing Unit
Additional Hyd' Unit	Level Block

### Machining Option Installation Line / Line View



# Customer (T31)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Planetary Carrier



### Customer Demand

150,00 units / year

57.6 sec. / unit

Gantry Loader

## Solution

### PUMA V550, Mynx 6500/50

High-productivity vertical turning center



\* PUMA V550 : 3Set

\* Mynx 6500/50 : 2Set

### Process

OP#10	O.D Rough Cutting
OP#20	I.D Rough & Finish Cutting
OP#30	O.D Finish Cutting
OP#40	Drilling & Tapping

### Option

Special Chuck & Fixture
Air Sensing, In-process Measuring
Automation Ready

### Machining Option Installation Line / Line View



# Customer (T32)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Planet Carrier



### Customer Demand

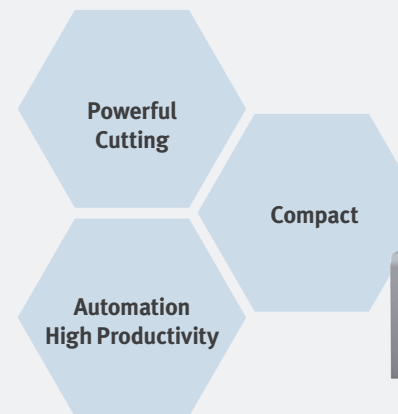
1,500,000 units / year

31 sec. / unit

## Solution

### Lynx 220C-GL

Compact economical turning center



\* 1Set

### Process

OP#160 O.D Turning & Facing

### Option

Special Chuck

In/out Stocker

Inspection Chute

### Machining Option Installation Line / Line View





# Customer (T33)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Rear Gear



### Customer Demand

60,000 units / year

1min. 4 sec. / unit

## Solution

### Lynx 220G

High-productivity 2-spindle horizontal turning center



Compact

Powerful  
Cutting

High  
Productivity

\* 2Set

### Process

OP#10 Front Face Operate

OP#20 Rear Face Operate

### Option

Work Locating Confirmation

Soft Jaw Remove

Chuck Clacmp Confirmation

### Machining Option Installation Line / Line View



# Customer (T34)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Sleeve



### Customer Demand

450,000 units / year

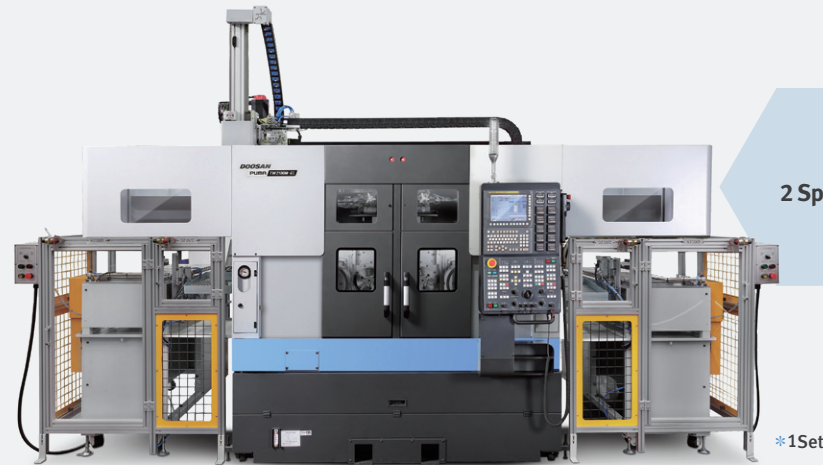
45 sec. / unit

Gantry Loader

## Solution

### PUMA TW2100-GL

High-productivity 2-spindle horizontal turning center



2 Spindles

High Speed  
Gantry Loader

High  
Productivity

\*1Set

### Process

OP#10 Front Face & Groove Operate  
OP#20 Rear Groove Operate

### Option

Gantry Loaderw/Turnover  
Work Locating Confirmation  
Chuck Clamp Confirmation

### Machining Option Installation Line / Line View



# Customer (T35)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Sleeve



### Customer Demand

360,000 units / year

43 sec. / unit

Gantry Loader

## Solution

### PUMA TW2600-GL

High-productivity 2-spindle horizontal turning center



2 Spindles

High Speed  
Gantry Loader

High  
Productivity

### Process

OP#10 Face Grooving

OP#20 Burr Remove

### Option

Air Blower for Chuck Add

Coolant Gun

Screw Type Chip Conveyor

### Machining Option Installation Line / Line View





# Customer (T36)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

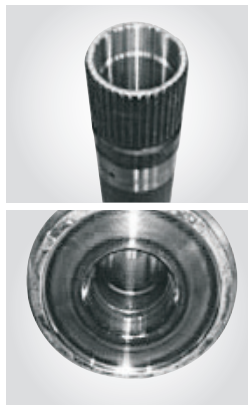
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Shaft



### Customer Demand

450,000 units / year

1min. 10 sec. / unit

Gantry Loader

## Solution

### PUMA 2100

High-performance horizontal turning center



High  
Accuracy

Powerful  
Cutting

High  
Productivity

\* 1Set

### Process

OP#30 O.D Hard Turning, I.D Turning

### Option

Gantry Loader w/Turnover

Servo Driven Tailstock

Steady Rest & TSC

Work Locating Confirmation

### Machining Option Installation Line / Line View



# Customer (T37)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Shaft



## Customer Demand

230,000 units / year

49 sec. / unit

## Solution

### PUMA 2100L

High-performance horizontal turning center



High  
Accuracy

Powerful  
Cutting

High  
Productivity

\* 1Set

## Process

OP#30 O.D Finish Turning

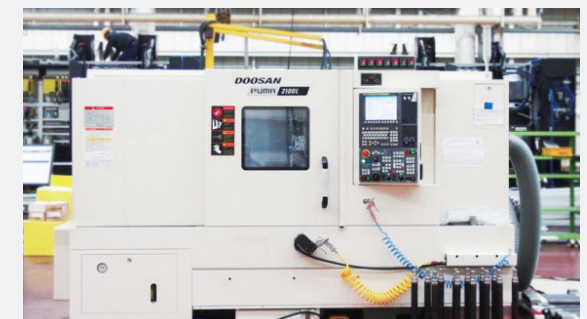
## Option

Servo Driven Tailstock

Steady Rest

Work Locating Confirmation

## Machining Option Installation Line / Line View



# Customer (T38)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### 7DCT Gear



### Customer Demand

1,500,000 units / year

40 sec. / unit

Gantry Loader

## Solution

### PUMA TW2600-GL

High-productivity 2-spindle horizontal turning center



### Process

OP#80 I.D Turning & Facing

### Option

Special In Stocker

Type Check unit

Inspection Chute

### Machining Option Installation Line / Line View





# Customer (T39)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Gear



### Customer Demand

100,000 units / year

1min. 8 sec. / unit

Gantry Loader

## Solution

### PUMA TW2600-GL

High-productivity 2-spindle horizontal turning center



2 Spindles

High Speed  
Gantry Loader

High  
Productivity

\*2Set

### Process

OP#70 I.D & Face Turning

### Option

TW2600GL- A1 Type (In, Out Stocker)

Inspection & NG Chute

Special Chuck

### Machining Option Installation Line / Line View



# Customer (T40)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Inner Race



### Customer Demand

400,000 units / year

46 sec. / unit

Gantry Loader

## Solution

### PUMA TW2600-GL

High-productivity 2-spindle horizontal turning center



2 Spindles

High Speed  
Gantry Loader

High  
Productivity

### Process

OP#10 Turning & Groove

OP#20 Turning & Groove

### Option

Fool Proof for Instocker Unit

Manual Q-Setter

Turn over Modification (AGREE)

### Machining Option Installation Line / Line View



# Customer (T41)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Bevel Gear



### Customer Demand

800,000 units / year

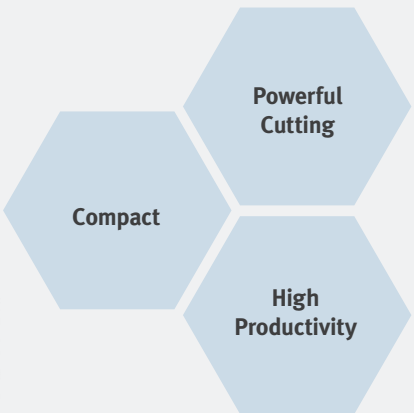
1min. 8 sec. / unit

Gantry Loader

## Solution

### Lynx 2100

Global compact turning center



\* 6Set

### Process

OP#10 O.D & I.D Turning

### Option

Gantry Loader Automation (Built in type)

Auto Top Door

High Productive Machine

### Machining Option Installation Line / Line View





# Customer (T42)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Clutch



### Customer Demand

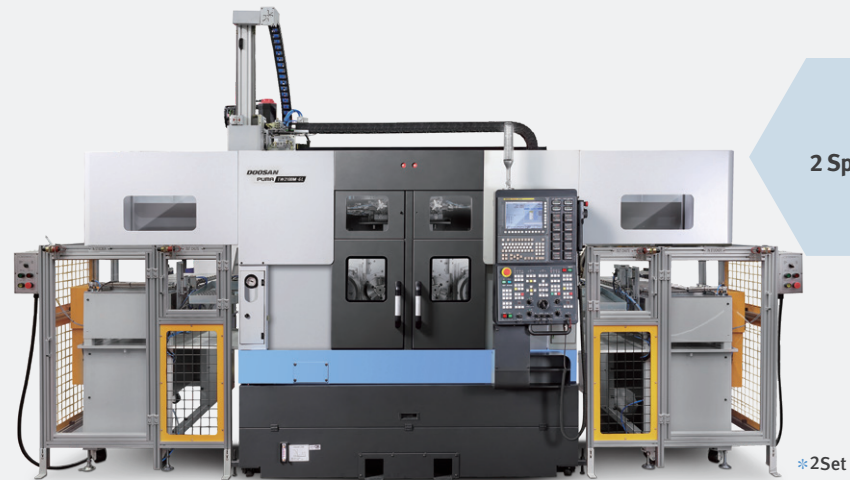
300000 pcs/year

1min. 57 sec./ unit

## Solution

### PUMA TW2100

High-productivity 2-spindle horizontal turning center



2 Spindles

High Speed  
Gantry Loader

High  
Productivity

\*2Set

### Option

Auto gaging
Air blow station
Model check station
1000mm Beam extension

### Machining Option Installation Line / Line View



# Customer (T43)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Plate



### Customer Demand

380000 pcs/year

1min. 27 sec./ unit

## Solution

### PUMA TW2600M-GL

High-productivity 2-spindle horizontal turning center



### Option

6-Jaws Level Chuck  
Auto Work piece Measurement  
Built-in Gantry Loader  
Mist collector

### Jig & Fixture



# Customer (T44)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Differential gear housing



### Customer Demand

250,000 units/year

145sec/pc

Robot Application

## Solution

### PUMA V400, PUMA GT2100, DNM4500

High productivity vertical turning center / Global standard turning center /  
High productivity global standard vertical machining center



\* PUMA V400 3sets

\* PUMA GT2100 2Sets

\* DNM4500 3Sets

Powerful Cutting

Compact

High Productivity

### Process

OP#10 O.D/I.D Rough Turning  
OP#20 O.D/I.D Rough Turning, I.D Fine Turning  
OP#40 O.D Fine Turning  
OP#60 Drilling  
OP#80 Spherical Rough/Fine Turning

### Option

Robot Automation

Programmable Tail Stock

Interface for Rotary Index Table

Coolant Level Gage

### Machining Option Installation Line / Line View





# Customer (T45)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

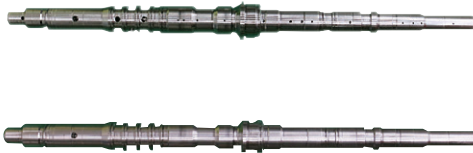
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Input Shaft



## Solution

### VC510, PUMA GT 2600

High-productivity twin table vertical machining center,  
8"/10"/12" Global Standard Turning Center



\*VC510 : 1Set

\*PUMA GT2600 : 1Set

Powerful  
Cutting

High  
Productivity

Dual Pallet

## Option

Rotary Table

OMP 60, OLP 40

Twin Steay Rest

## Machining Option Installation Line / Line View



# Customer (T46)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Ball ramp



## Customer Demand

60,000ea/year (2MODEL)

130 sec/ea

## Solution

### Lynx 220C , DNM4500

6"~10" High-performance Compact Turning Center,  
Global standard vertical machining center



\*Lynx 220C : 4Set



\*DNM 4500 : 2Set

Powerful  
Cutting

High  
Productivity

High-Rigidity  
Structure

## Process

- OP#20 FACE Cutting (Before heat treatment)
- OP#50 FACE, I.D Cutting(After heat treatment)
- OP#60 Ball Cutting(After heat treatment)

## Option

- Work Locating Confirmation(Air Sensing)
- TTC (Through Tool Coolant)
- TSC (Through Spindle Coolant)

## Machining Option Installation Line / Line View



# Customer (T47)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

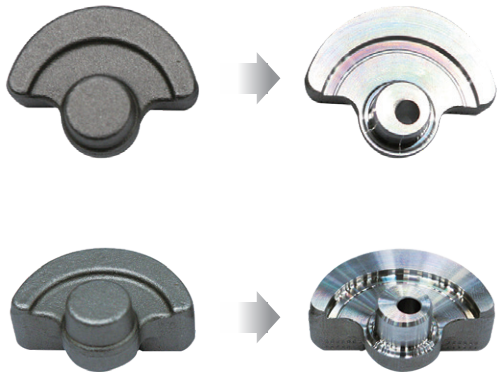
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Bush Comp.



### Customer Demand

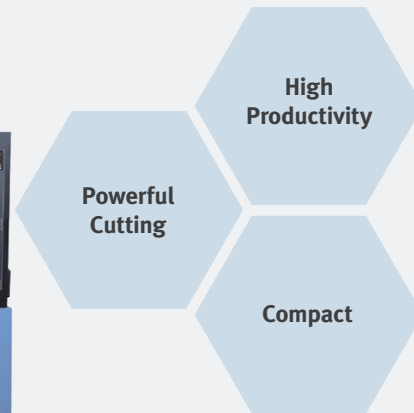
100,000ea/year

160sec/ea

## Solution

### Lynx 220M

6"~10" High-performance Compact Turning Center



\* 2Set

### Option

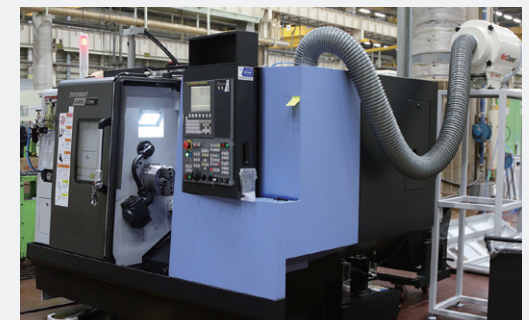
Work Locating Confirmation(Air Sensing)

Work & Tool Counte

Mist Collectoe(0.75Kw\_Water Soluble)

Ball Screw\_ Net Cooling

### Machining Option Installation Line / Line View





# Customer (T48)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Closing Ring



### Customer Demand

Productivity

OP1 : 40sec/ea

OP2 : 42sec/ea

## Solution

### Lynx2100B

6"~10" High-performance Compact Turning Center



\* 2set

Excellent  
Machining  
Capability

High  
Productivity

Easy to Operate  
Easy Maintenance

### Option

Work Locating Confirmation(Air Sensing)

Mist Collector

### Machining Option Installation Line / Line View



# Customer (T49)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

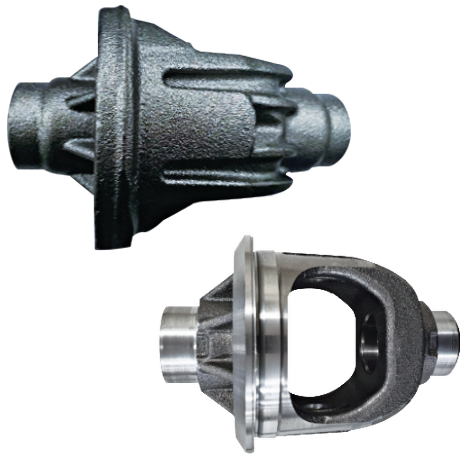
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### DiffCase



### Customer Demand

300,000ea/year

172sec /ea

Gantry Loader

## Solution

### PUMA GT2100 , PUMA GT2600, DNM4500

8"/10"/12" Global Standard Turning Center, Global standard vertical machining center



### Process

- OP#10 OD/ID ROUGH TURNING
- OP#20 OD/ID ROUGH TURNING & ID FINISH TURNING
- OP#40 OD FINISHING
- OP#60 ENDMILLING, DRILLING, CHAMFERING, REAMING

### Option

- TSC (Through Spindle Coolant)
- Work Locating Confirmation(Air Sensing)
- Rotary Table(4-axis)

### Machining Option Installation Line / Line View



# Customer (T50)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

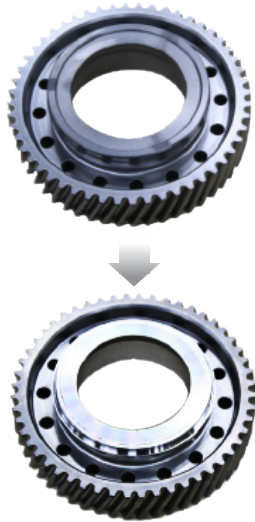
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Mid Sun Gear



### Customer Demand

600,000ea/year

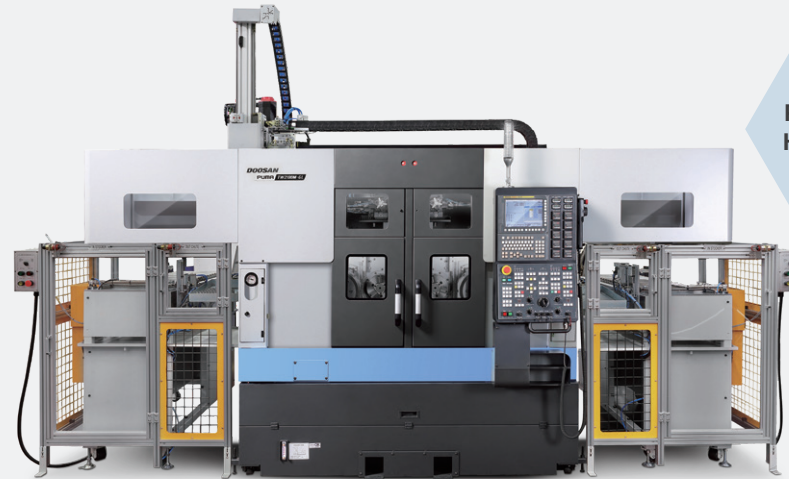
30sec/ea

Gantry Loader

## Solution

### PUMA TW2100GL

Twin-Turret, Twin-Spindle HTC with Forward-Facing Chucks



\* A3 1Set

High  
Productivity  
High Cutting  
Speed

Excellent  
Machining  
Capability

Easier  
Automation

### Process

OP#10 ID BACK TURNING, OD FACE TURNING

### Option

Work Locating Confirmation(Air Sensing)

TSC (Through Spindle Coolant)

Measuring unit

### Machining Option Installation Line / Line View





# Customer (T51)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Supt Annulus Gear



## Customer Demand

800,000ea/year

OP1 : 33sec/ea, OP2 : 28sec/ea

## Solution

### Lynx 2100G

High productivity Gang type Global compact Turning center



High Productivity

Excellent  
Machining  
Capability

Easy to Operate  
Easy Maintenance

\* 4Set (OP10 : 2 Sets / OP20 : 2Sets)

## Process

BEARING AUTOMATION SOLUTION

## Option

Auto Quick loader (BRG Solutions)

TSA for Work unloading

Work Locating Confirmation(air Sensing)

CBS (Chip Breaking Solution)

## Machining Option Installation Line / Line View



# Customer (T52)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

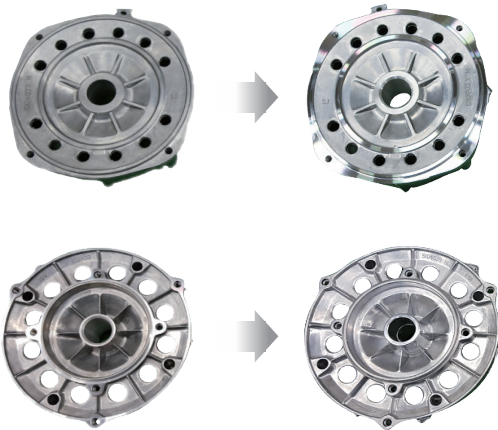
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Motor Support



### Customer Demand

CYL1 : 125 sec/ea, CYL2 : 128 sec /ea

## Solution

### Lynx2100MB

6"~10" High-performance Compact Turning Center



\*1set

Excellent  
Machining  
Capability

High Productivity

Easy to Operate  
Easy Maintenance

### Process

OP#10 Face turn, ID turn, OD Relief turn, Drill, tap

### Option

TTC (Through Tool Coolant)

TTC Filter

Coolant Chiller

### Machining Option Installation Line / Line View



# Customer (T53)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Oil Pump Cover



### Customer Demand

400,000ea/year

125sec/ea

## Solution

### PUMA GT2100

8"/10"/12" Global Standard Turning Center



\* 1Set

Excellent  
Machining  
Capability

Easy to Operate

Spatial efficiency

### Process

**OP#80** RMP, Face turn, OD turn,  
Groove turn, Relief turn

### Option

Special Coolant Tank Drum Filter (3Mpa)

X-Axis Ball Screw Nut\_Air Cooling

Work Offset Measuring (MARPOSS-T25)

Tail Stock Position Detection

### Machining Option Installation Line / Line View





# Customer (T54)

Automotive Industry

## Power Train

Engine  
Transmission &  
Drive system

## Chassis System

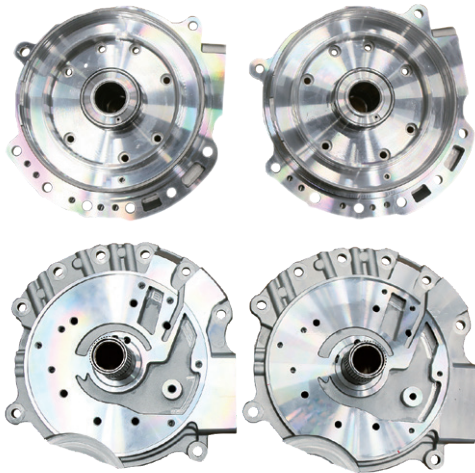
Steering  
Suspension  
Brake

## Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Oil Pump Cover



### Customer Demand

150,000ea/year

160sec/ea

## Solution

### PUMA GT2600B

8"/10"/12" Global Standard Turning Center



\*2Set

Excellent  
Machining  
Capability

Easy to Operate

Spatial efficiency

### Option

X-Axis Ball Screw Nut\_AirCooling

OP10 : Measuring TC54-10T (BLOOM)

OP20 : Work Confirmation,

TSC (Through Spindle Coolant)

Chuck CylinderDown\_SYH1246

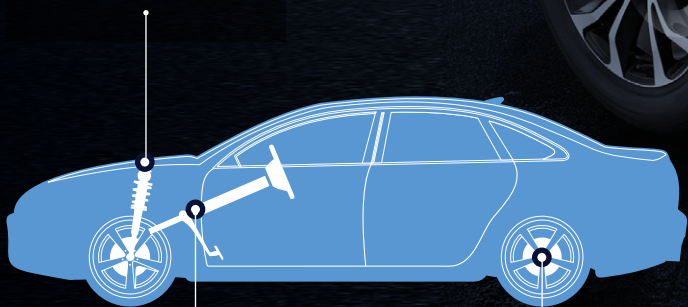
### Machining Option Installation Line / Line View



# ***Solution Chassis System Parts***

## **Suspension**

*Customer U1-U3*



## **Steering**

*Customer S1~5*

*Customer S6~10*

## **Brake**

*Customer B1~10*

*Customer B11~12*





# Customer (S1)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Rack Housing



### Customer Demand

16,700 units / year

7min. 29 sec. / unit

## Solution

### Lynx 220C, Mynx 5400, HC 400 II

Compact economical turning center, Powerful heavy-cutting vertical machining center, Compact horizontal machining center



### Option

Hyd. Fixture  
Through Spindle Coolant  
Shower Coolant

### Machining Option Installation Line / Line View





# Customer (S2)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Control Arm



### Customer Demand

290,000 units / year

4min. 50 sec. / unit

## Solution

### Mynx 6500

Powerful heavy-cutting vertical machining center



\*4Set



### Process

OP#10 Hole Cutting

### Option

Air Gap Sensor

Rotary Table

Top Door

### Machining Option Installation Line / Line View



# Customer (S3)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Rack Bar



### Customer Demand

300,000 units / year

1min. 20 sec. / unit

Bar Feeder Automation

## Solution

### PUMA TT1800S

High-productivity multi-function 2-turret turning center



\*1Set

High Productivity

High Accuracy

2 Turrets at Top and Bottom

### Process

OP#10 O.D Turning, Drilling, Tapping

### Option

Bar Feeder & Bar Puller

Special Chuck

Air Blower for Chuck

### Machining Option Installation Line / Line View



# Customer (S4)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

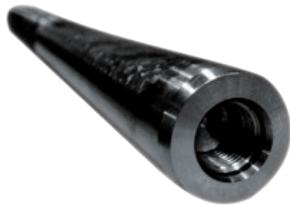
Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Rack Bar



### Customer Demand

300,000 units / year

1min. 20 sec. / unit

Bar Feeder Automation

## Solution

### PUMA TT1800S

High-productivity multi-function 2-turret turning center



\*1Set

High Accuracy

High Productivity

2 Turrets  
at Top and  
Bottom

### Process

OP#50 Both Ends of Drilling and Tapping

### Option

Auto Loader/unloader (Bar-Feeder System)

O.D Collet Chuck

### Machining Option Installation Line / Line View





# Customer (S5)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Ball Stud



### Customer Demand

200,000 units / year

32 sec. / unit

## Solution

### Lynx 220B

Compact economical turning center

Powerful Cutting

Compact

High Productivity



\* 2Set

### Process

OP#20 O.D Turning

OP#50 O.D Turning

### Option

Feed Back Cylinder for Work pusher

Special Live center

Air Cylinder for Work pusher

### Machining Option Installation Line / Line View



# Customer (S6)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Tie Rod



### Customer Demand

200,000 units / year

50, 19, 50 sec. / unit

## Solution

### Lynx 220B, T 4000

Compact economical turning center, High speed / High-productivity tapping center



\* Lynx 220B : 4Set

\*T 4000 : 2Set

### Process

OP#10 Drilling, O.D Turning, I.D Turning  
OP#20 O.D Facing  
OP#30 Facing, Drilling, Tapping

### Option

Air Sensing Unit

UBL Chuck

Hydraulic Fixture

### Machining Option Installation Line / Line View



# Customer (S7)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Carrier



### Customer Demand

256,000 units / year

1min. 5 sec. / unit

Gantry Loader Automation

## Solution

### Mynx 6500

Powerful heavy-cutting vertical machining center



Easy Machine  
Operation

High-Rigidity  
Structure

Powerful  
Cutting

### Process

OP#10 Hub Hole & LAM Cutting  
OP#20 ABS & S AM Cutting

### Option

Gantry Loader (2-Axis)

Rotary Table

Top Door

### Machining Option Installation Line / Line View





# Customer (S8)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

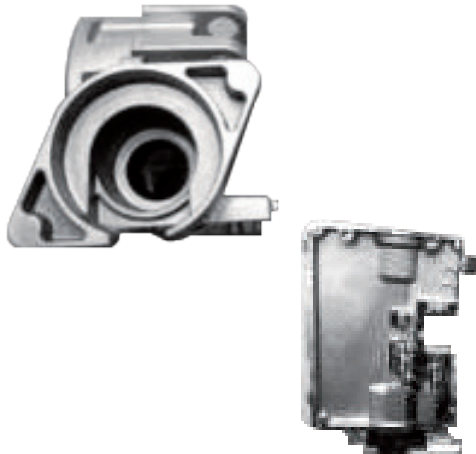
Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## **Workpiece**

### Assist Housing



### Customer Demand

55,000 units / year

6min. 8 sec. / unit

## **Solution**

### DNM 4500

High Productivity Global standard vertical machining center,  
compact economical turning center

High Productivity

High Speed

Easy Machine  
Operation



### Process

**OP#10** Spot Facing, Drilling, Tapping,  
Hole Grooving

### Option

Rotary Table (w/scale)

Auto unloading system

Special coolant system(drum)

Coolant chiller

### Machining Option Installation Line / Line View



# Customer (S9)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Outer Ring



### Customer Demand

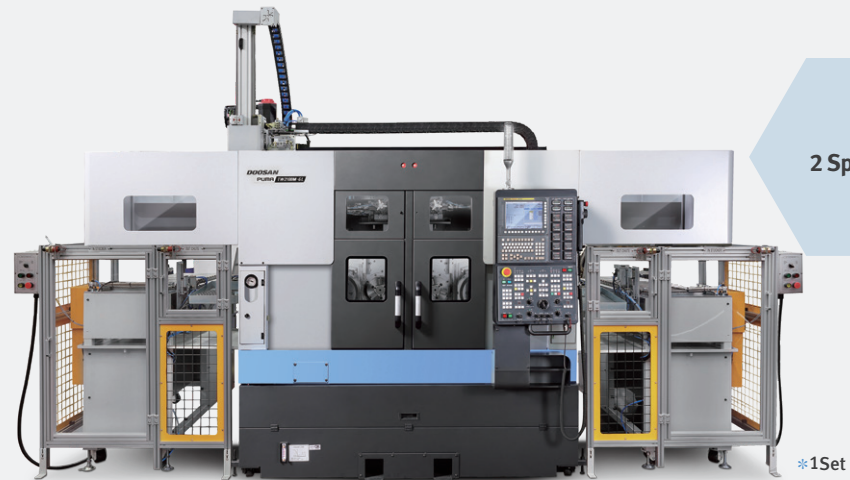
40 sec. / unit

46 sec. / unit

## Solution

### PUMA TW2100-GL

High-productivity 2-spindle horizontal turning center



2 Spindles

High Speed  
Gantry Loader

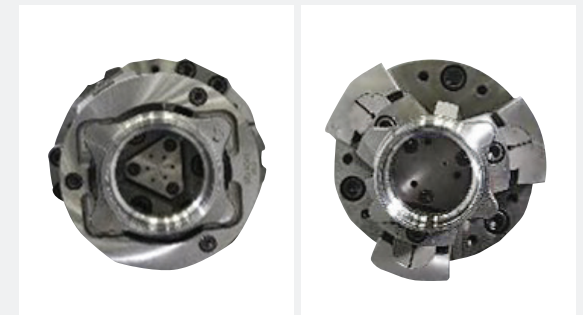
High  
Productivity

\*1Set

### Option

Air sensing  
Mist collector  
Rechucking unit  
Hinged chip conveyor

### Jig & Fixture



# Customer (S10)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Outer Ring



### Customer Demand

1min. 19 sec. / unit

## Solution

### PUMA TW2100-GL

High-productivity 2-spindle horizontal turning center



2 Spindles

High Speed  
Gantry Loader

High  
Productivity

\*1Set

### Option

Mist collector  
Rechucking unit  
Bed coolant separation (10bar)

### Machining Option Installation Line / Line View





# Customer (U1)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### RR Carrier



### Customer Demand

240,000 units / year

58 sec. / unit

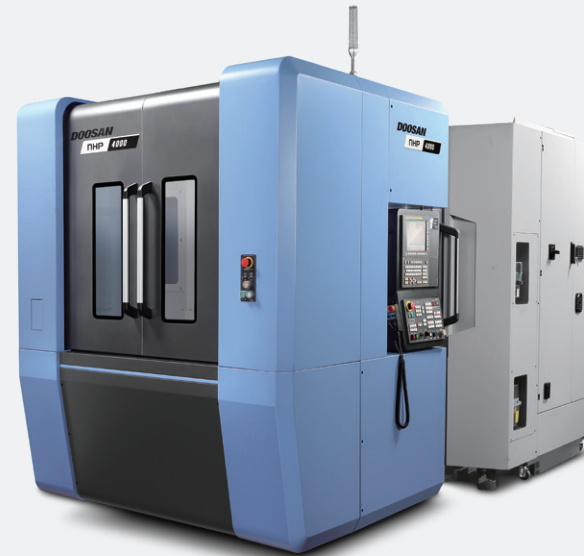
Gantry Loader

## Solution

### NHP 4000

High-speed high-performance horizontal machining center

\*5Set



Compact

High  
Productivity

High  
Accuracy

### Process

OP#10 Milling, Drilling, Reaming  
OP#20 Milling, Spot Facing, Drilling, Reaming  
OP#30 Milling, Drilling, Tapping, Reaming  
OP#40 Milling, Drilling, Spot Facing

### Option

Mist Collector

Gantry loader

In/out stocker

### Machining Option Installation Line / Line View



# Customer (U2)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Knuckle



### Customer Demand

450,000 units / year

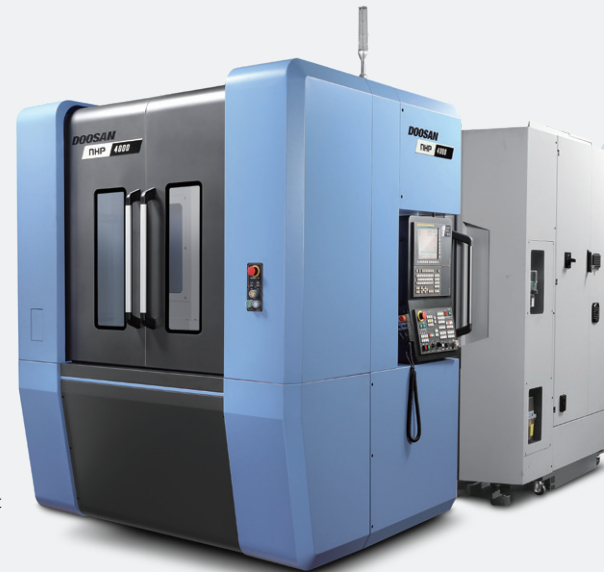
51.8 sec. / unit

## Solution

### NHP 5000

High-speed high-performance horizontal machining center

\*22Set



Compact

High  
Productivity

High  
Accuracy

### Process

**OP#10** Face, Bore, Caliper Ear, ABS  
**OP#20** Toe Link, LBJ Hole

### Option

Robot Interface, HSK A63

Linear Scale X, Y, Z

Pallet Rotate at Loading Station

Air Sensing, Full B Axis(0.001°)

# Customer (U3)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Control Arm



### Customer Demand

Tension Arm 119sec/ea

Handling Arm 119sec/ea

Gantry Loader

## Solution

### MYNX 6500

Powerful heavy-cutting vertical machining center



### Option

Work Locating Confirmation(Air Sensing)

Tool Broken Unit (BK9)

TSC (Through Spindle Coolant)

Rotary Table(2-axis)

### Machining Option Installation Line / Line View





# Customer (B1)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Hub Bearing



### Customer Demand

250,000 units / year

1min. 9 sec. / unit

Gantry Loader

## Solution

### PUMA TW2600-GL

High-productivity 2-spindle horizontal turning center



2 Spindles

High Speed Gantry  
Loader

High Productivity

\*2Set

### Process

OP#10 O.D Face Turning, I.D Face Turning

OP#20 O.D Face Turning, I.D Turning

### Option

Air Sen Sing (TACO)

Mist Collector

Rechucking Unit

Ng Chute & Inspection Chute

### Machining Option Installation Line / Line View



# Customer (B2)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

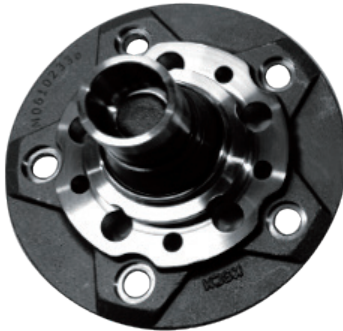
Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Hub



### Customer Demand

300,000 units / year

1 min. / unit

Gantry Loader

## Solution

### PUMA TW2600-GL, T 3600D

High-productivity 2-spindle horizontal turning center, High speed/  
High-productivity tapping center



\*PUMA TW2600-GL : 2Set

\*T 3600D : 3Set

High  
Productivity

2 Spindles

High Speed  
Gantry Loader

### Process

OP#10/20 Hard Turning  
OP#30 Spot Facing, Drilling, Boring,  
Chamfering  
OP#40 Spot Facing, Chamfering

### Option

Full Automation Line (Gantry Loader)  
Air Gap Sensing  
In Conveyor, Side Conveyor with Turn Over

### Machining Option Installation Line / Line View



# Customer (B3)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Hub



### Customer Demand

400,000 units /year

OP#10, 20 : 38 min., OP30 : 50 min.

Gantry Loader

## Solution

### PUMA TW2600-GL, Lynx 220C

High-productivity 2-spindle horizontal turning center, Compact economical turning center



### Process

OP#10 Shaft O.D / I.D Finish Turning\_Hard Turning

OP#20 Bearing I.D Finish Turning\_Hard Turning

### Option

Mist Collector

Twin Gantry loader

Screw Type Chip Conveyor

Work Check Unit, Instocker, Transfer

### Machining Option Installation Line / Line View





# Customer (B4)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Hub



### Customer Demand

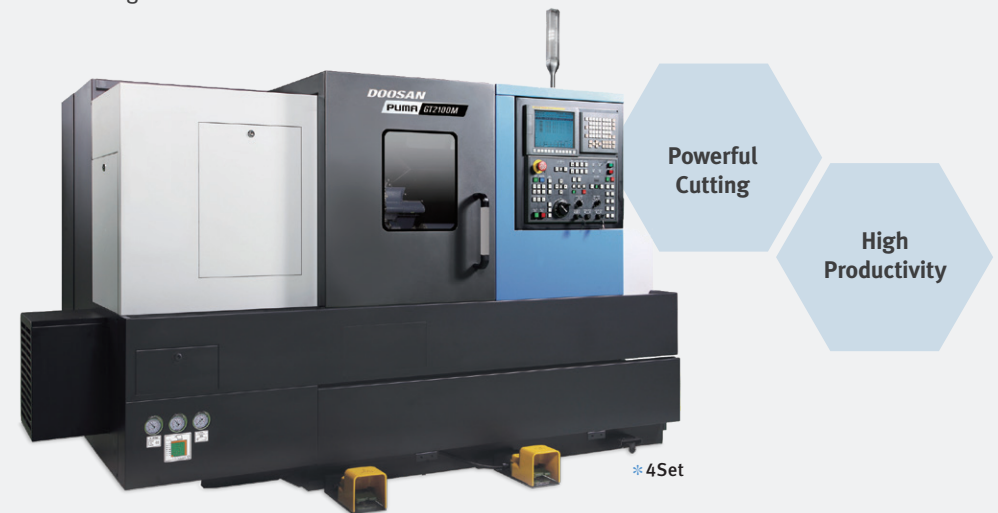
150,000 units / year

2min. 30 sec. / unit

## Solution

### PUMA GT2100B

Global standard turning center



### Process

- OP#10** O.D Rough Turning,  
I.D Rough Boring
- OP#20** O.D Finish Turning,  
I.D Finish Turning

### Option

Tailstock Delete

Mist Collector

Interface for Automation

### Machining Option Installation Line / Line View



# Customer (B5)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## **Workpiece**

### Caliper Carrier



### Customer Demand

500,000 units /year

20 sec. / unit

## **Solution**

### VC 430

High-productivity twin table vertical machining center

High Speed

High-Speed Pallet  
Replacement

High  
Productivity



### Process

OP#30 Face Milling

### Option

Special Coolant Tank

2 Step Tool Broken

Setup Shower Coolant

### Machining Option Installation Line / Line View



# Customer (B6)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

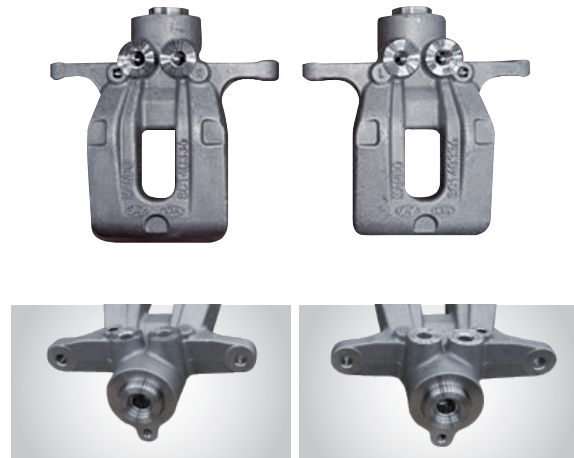
Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Caliper Housing



### Customer Demand

300,000 units / year

24 sec. / unit

## Solution

### VC 430

High-productivity twin table vertical machining center

High Speed

High-Speed Pallet  
Replacement

High  
Productivity



\*2Set

### Process

OP#40 Port Drill & Tap  
OP#50 Motor Guide Drill & Tap

### Option

Special chip Conveyor & Drum Filter Coolant Tank  
Machine Self Check System  
Special Hyd. Tank for Machine & Fixture

### Machining Option Installation Line / Line View





# Customer (B7)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

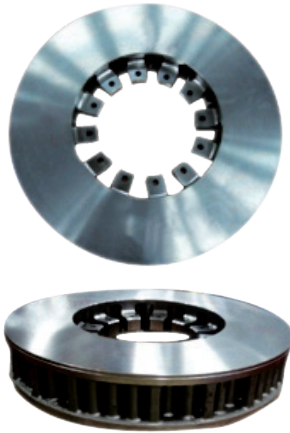
Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Brake Disc



### Customer Demand

69,000 units / year

6min. 15 sec. / unit

## Solution

### PUMA VT900M, DNM 6700

Medium-large powerful cutting vertical turning center, Global standard vertical machining center, compact economical turning center



\*PUMA VT900M : 2Set

\*DNM 6700 : 1Set

High Rigidity

Powerful  
Cutting

High  
Productivity

### Process

OP#10 OD, ID & Face Turning

OP#20 OD, ID & Face Turning

### Option

Rotary Table + Scroll Chuck

Tool Breakage Detection

TSC (Through Spindle Coolant)

### Machining Option Installation Line / Line View



# Customer (B8)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Master Cylinder



### Customer Demand

200,000 units / year

3 min. / unit

## Solution

### T 3600D

High speed / High-speed / high-productivity dual pallet tapping center



\*2Set

High Speed

Dual Pallet

High  
Productivity

### Process

OP#20 Drill, Tap, Deburring

### Option

Auto Door

Linear Scale (X- Axis)

Coolant Level Switch

### Machining Option Installation Line / Line View



# Customer (B9)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

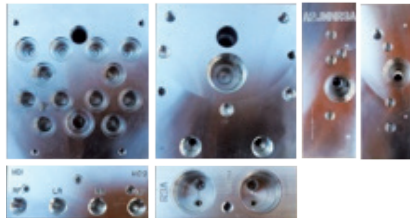
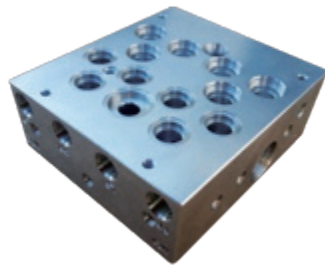
Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### ABS Block



### Customer Demand

1,500,000 units / year

6min. 35 sec. / unit

## Solution

### HP 4000 II

High-speed high-performance horizontal machining center



\*22Set

### Process

OP#20 Drill, Tap, Deburring

### Option

Hyd. Unit (150bar)

Tool Breakage Detector (External)

Lubrication System (Air Mixing Valve)

### Machining Option Installation Line / Line View





# Customer (B10)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Brake Drum



### Customer Demand

237,710 units /year

1min. 29 sec. / unit

## Solution

### PUMA VT450, T 3600D

Compact vertical turning center, High speed / High-productivity dual pallet tapping center



\*PUMA VT450 : 6Set

\* T 3600D : 1Set

High  
Productivity

High Speed

Dual Pallet

### Process

- OP#10 OD, ID & Face Turning
- OP#20 OD, ID & Face Turning
- OP#50 Drilling, Tapping, Chamfering

### Option

- Dual Chucking Pressure
- Hyd. Fixture
- Air Gap Sensor

### Machining Option Installation Line / Line View



# Customer (B11)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

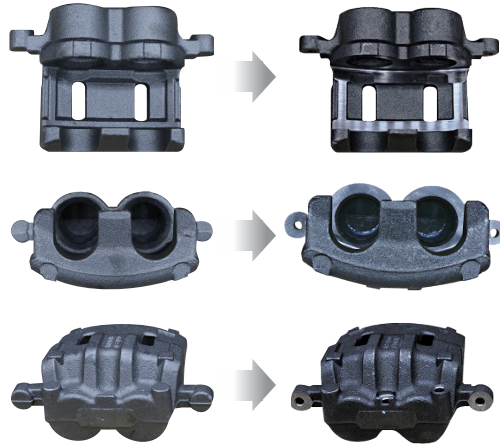
Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Caliper Housing



### Customer Demand

20,000ea/year

253sec/ea

## Solution

### Mynx6500/50

Powerful heavy-cutting vertical machining center



Powerful Cutting  
High-Rigidity  
Structure  
High Productivity

\*8Set

### Process

OP#10 MILLING & DRILLING  
OP#20 MILLING & DRILLING

### Option

Work Locating Confirmation(Air Sensing)  
Rotary Table  
TSC (Through Spindle Coolant)

### Machining Option Installation Line / Line View



# Customer (B12)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Valve Seat (ABS Block Part)



### Customer Demand

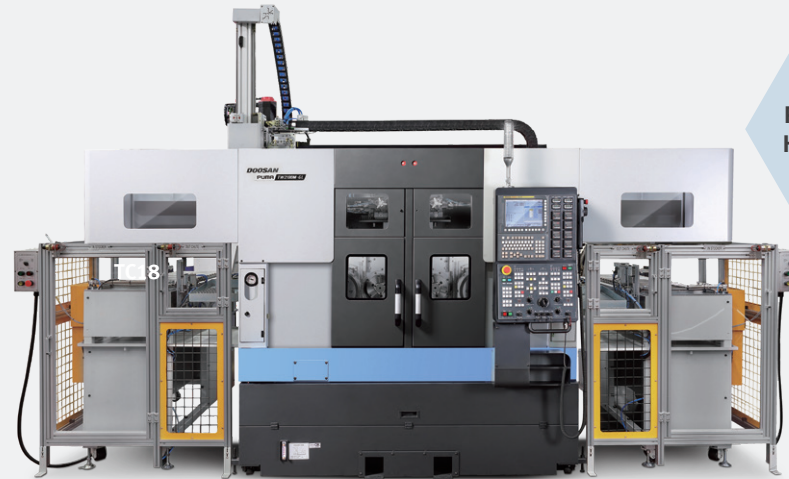
50sec/ea (Cutting 42"+ Load/unloading 8")

Productivity

## Solution

### PUMA TW2100\_GL

Twin-Turret, Twin-Spindle HTC with Forward-Facing Chucks



\* A2 1Set

High  
Productivity  
High Cutting  
Speed

Excellent  
Machining  
Capability

Easier  
Automation

### Option

In : Bowl + Linear Feeder

Out : Chute

Coolant Chiller

Work Locating Confirmation(Air Sensing)

### Machining Option Installation Line / Line View





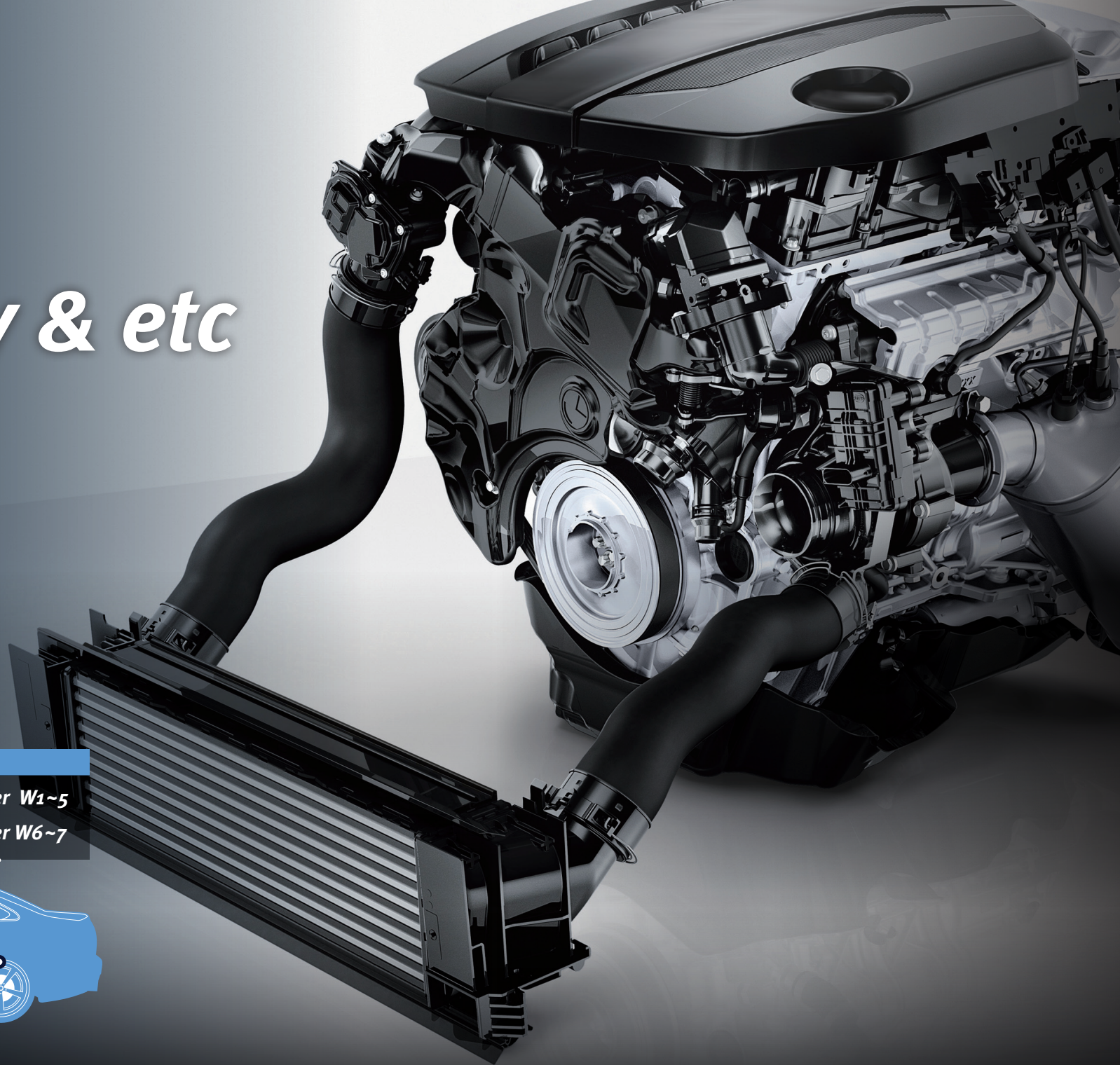
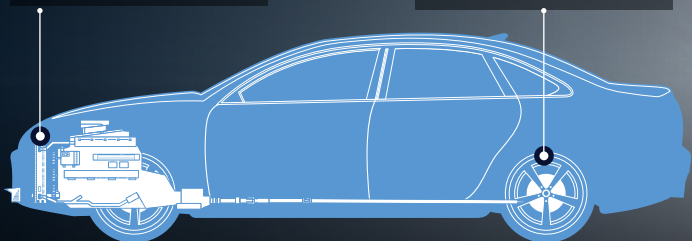
# *Solution Accessory & etc Parts*

## *Air Conditioning System*

*Customer C1~5  
Customer C6~11*

## *Wheel*

*Customer W1~5  
Customer W6~7*





# Customer (W1)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Al Wheel



### Customer Demand

1,500,000 units /year

2 min. / unit

Robot Automation

## Solution

### PUMA VAW800, PUMA AW560, Mynx 5400, Robot System(1)

High-productivity aluminum wheel processing vertical / Horizontal turning center / Powerful heavy-cutting vertical machining center



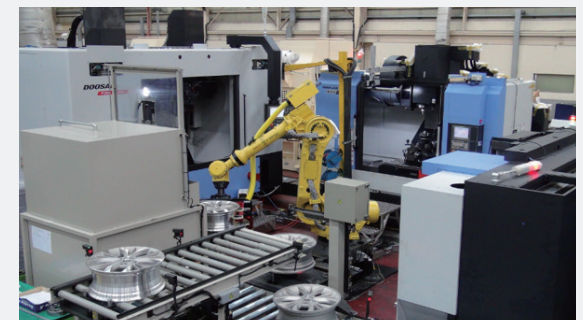
### Process

OP#10 Half out & In side  
OP#20 Half out side & Face  
OP#30 Bolt Hole

### Option

Measurement correction function  
Auto Measuring Unit (Marposs)  
Vision System for Air hole Positioning

### Machining Option Installation Line / Line View



# Customer (W2)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Forged Wheel



### Customer Demand

300,000 units /year

4min. 40 sec. / unit

Robot Automation

## Solution

### PUMA VAW800, Mynx 6500/50 + Loading/Unloading Robot System (2)

High-productivity aluminum wheel processing vertical turning center /  
Powerful heavy-cutting vertical machining center



### Process

OP#10, 20 Turning, AI Wheel Inside  
Turning, AI Wheel Outside  
OP#30, 40 Drilling, Bolt Hole & Air Hole  
Drilling, Hand Hole & Valve Hole

### Option

Torque Ship Function  
Air Gap Sensing  
Remote Machine Offset

### Machining Option Installation Line / Line View





## Workpiece

### Al wheel



### Customer Demand

118sec/pcs

Robot Interface

## Solution

### PUMA AW560MF

High-productivity aluminum wheel processing turning center



\*PUMA AW560MF 6Sets

High  
Productivity

Improved  
Chip  
Disposal

Powerful Cutting

### Process

OP#10 Wheel outside machining

### Option

Robot Interface\_I/O 16ea

Air Sensing Unit

High Pressure Coolant\_7 bar

### Machining Option Installation Line / Line View



# Customer (W4)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Al wheel



### Customer Demand

178sec/pcs

Robot Interface

## Solution

### PUMA VAW800, VC630/5AX

High-productivity aluminum wheel processing vertical turning center /  
Simultaneous 5-axis vertical machining center



\* PUMA VAW800 8Sets

\* VC630 5ax 6Sets

High  
Productivity

Complex  
Machining

Powerful Cutting

### Process

OP#10 O.D / I.D Rough Turning  
OP#20 O.D / I.D Rough Turning  
OP#30 O.D/I.D Fine Turning  
OP#40 (VAW800) O.D/I.D Fine Turning  
OP#50 (VC630/5AX) HOLT HOLE / AIR HOLE DRILL

### Option

Preparation for Central Coolant

Robot Interface by Profinet

Spindle Motor Power Up : 60/75kW (VAW800)

Through Spindle Coolant\_30bar (VC630)

### Machining Option Installation Line / Line View



## Workpiece

### AL Wheel



### Customer Demand

120,000ea/year

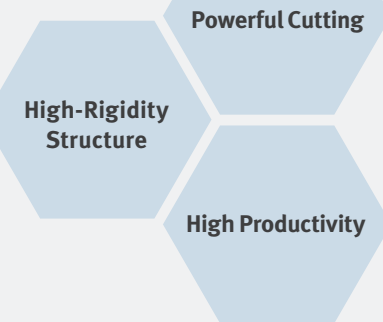
133sec/ea

Robot

## Solution

### MYNX 6500 II

Powerful heavy-cutting vertical machining center



\*1Set

### Process

OP#30 DRILLING, CHAFMERING, ENDMILLING

### Option

Work Locating Confirmation(Air Sensing)

Drum Filter Hinged Chip Conveyor

Rotary Table(2-axis)

MQL

### Machining Option Installation Line / Line View





# Customer (W6)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## **Workpiece**

### AL Wheel\_Face Finish(17~19")



### Customer Demand

60sec/ea

Compensation by Feedback measuring equipment

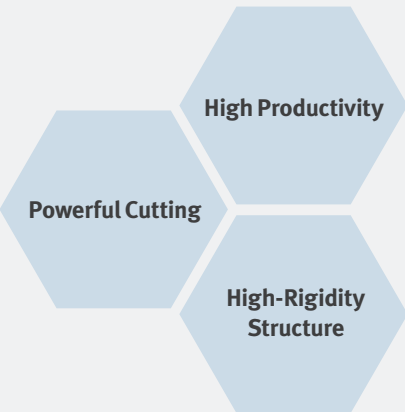
## **Solution**

### PUMA AW 560 II

The high-productivity turning center is optimized for turning aluminum wheels for automobiles and motorbikes



\*2Set



### Process

FACE FINISHING

### Option

Manual Measuring Unit (MARPOSS)

MQL (Mist Coolant)

### Machining Option Installation Line / Line View



# Customer (W7)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### AL Wheel\_Hollow(19x8.5J") 1/3



### Customer Demand

300,000ea/year

120sec/ea

Robot Automation

## Solution

### PUMA VAW800, PUMA AW550 II, MYNX6500 II

The high-productivity turning center is optimized for turning aluminum wheels for automobiles and motorbikes, Powerful heavy-cutting vertical machining center



\*PUMA VAW800 : 2Set

\*PUMA AW550II : 2Set

\*Mynx 6500II : 2Sets + Robot Sys. 2Cells

Powerful Cutting

High Productivity

High-Rigidity  
Structure

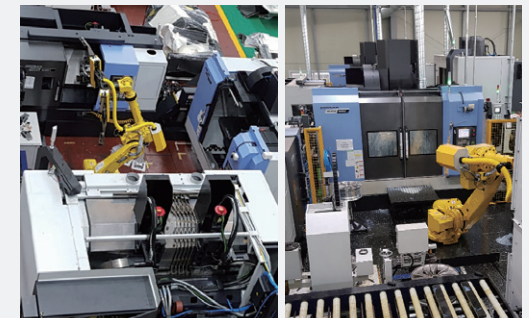
### Process

- OP#10 OD/ID & INNER FACE TURNING
- OP#20 OD & FRONT FACE TURNING
- OP#30 DRILLING, CHAFMERING, ENDMILLING

### Option

- Work Locating Confirmation(Air Sensing)
- Auto Measuring Unit (MARPOSS)
- Air hole Position Sensor

### Machining Option Installation Line / Line View



# Customer (C1)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Scroll



### Customer Demand

600,000 units /year

1min. 30 sec. / unit

Gantry Loader Automation

## Solution

### PUMA TW2600M-GL

High-productivity 2-spindle horizontal turning center



2 Spindles

High Speed  
Gantry Loader

High  
Productivity

\*4Set

### Process

OP#10 O.D & I.D Hole 가공

### Option

Mist Collector

Coolant Chiller

Drum Chip Conveyor

### Machining Option Installation Line / Line View





# Customer (C2)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Rear Head



### Customer Demand

600,000 units /year

OP#10. 1min. 33min. OP#20. 3min. 21min.

## Solution

### T 4000

High-speed / High-productivity tapping center



### Process

- OP#10** Face Milling, Drilling, Tapping,  
Profile Grooving, Boring
- OP#20** Spot Facing, Drilling, Tapping, Boring

### Option

Tapping Center	Gage Parts
Hyd. Fixture	
Rotary Tilting Table (5-AXIS)	

### Machining Option Installation Line / Line View



# Customer (C3)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Compressor Cylinder



### Customer Demand

300,000 units /year

56 sec. / unit

## Solution

### DNM 4500

Global standard vertical machining center, compact economical turning center



High Speed

Easy Machine  
Operation

High  
Productivity

\*2Set

### Process

OP#30 Comp. Cylinder Finish Boring

### Option

Mapal Tool

ATC not use (only one tool)

Air Sensing Unit

### Machining Option Installation Line / Line View



# Customer (C4)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

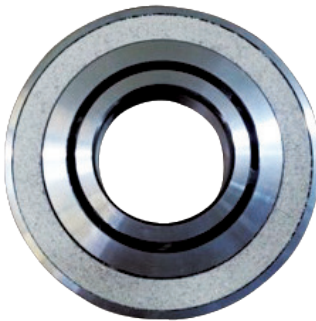
Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Pulley Clutch



### Customer Demand

600,000 units /year

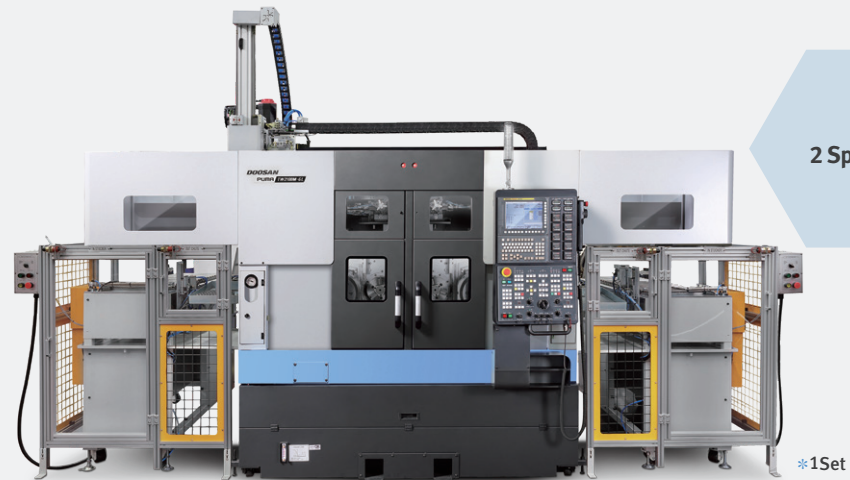
18 sec. / unit

Gantry Loader Automation

## Solution

### PUMA TW2100 + Loading / Unloading Robot System (1)

High-productivity 2-spindle horizontal turning center



2 Spindles

High Speed  
Gantry Loader

High  
Productivity

### Process

OP#10 I.D Face Cutting

### Option

Robot Interface

Inverter Hyd. Unit

MQL System

### Machining Option Installation Line / Line View





# Customer (C5)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

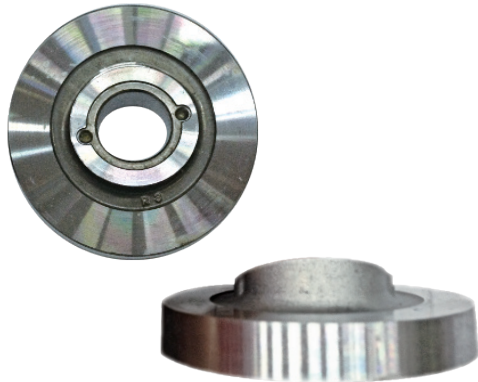
Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Swash Plate Comp



### Customer Demand

850,000ea/year

27sec/ea

## Solution

### T3600D

High-speed / High-productivity tapping center



\*1Set

Compact

High Productivity

High Speed

### Process

OP#50 D8 ROUGH END MILLING,  
D4 FINISH END MILLING

### Option

Tool life & Tool load monitoring

Coolant Chiller

Tool Washing Unit

Work Locating Confirmation(Air Sensing)

Tool Broken(Needle)

### Machining Option Installation Line / Line View



# Customer (C6)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

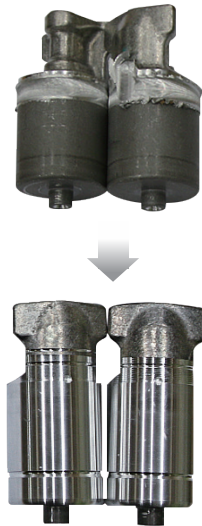
Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Piston



### Customer Demand

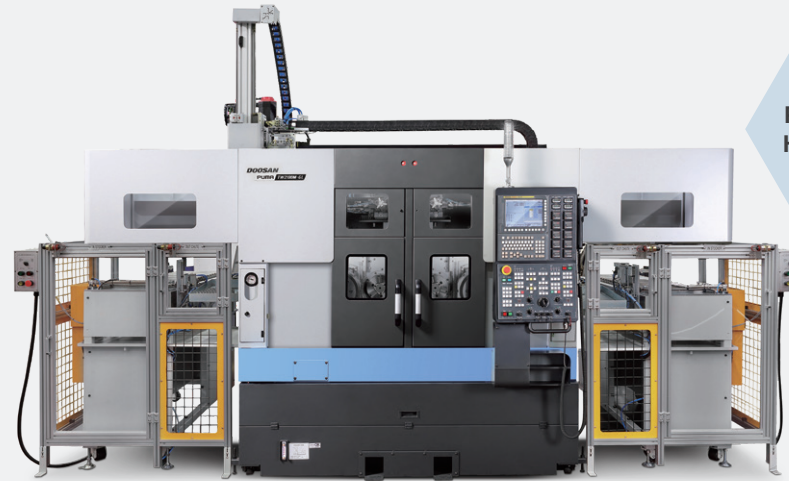
300,000ea/year

Gantry Loader

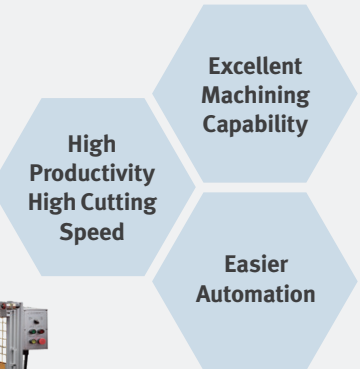
## Solution

### PUMA TW2100M\_GL

Twin-Turret, Twin-Spindle HTC with Forward-Facing Chucks



\* 2Set



### Option

Auto Measuring Unit

Hyd. Work Support-Tail stock, Live center

Air Booster Tank

Dual Pressure Chucking

### Machining Option Installation Line / Line View



# Customer (C7)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

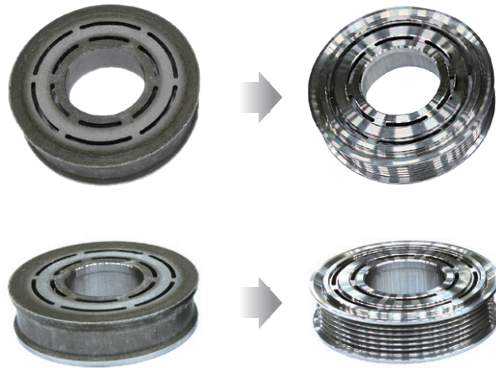
Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Pulley



## Customer Demand

50sec /ea

Gantry Loader

## Solution

### PUMA TW2600B\_GL

Twin-Turret, Twin-Spindle HTC with Forward-Facing Chucks



\*3Set

High Productivity  
High Cutting  
Speed

Easier Automation

Excellent  
Machining  
Capability

## Option

Spindle Nozzle A2-89 AP40Motor)

Work Locating Confirmation(Air Sensing)

Work& Tool Counter

## Machining Option Installation Line / Line View





# Customer (C8)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Pump Bracket



### Customer Demand

350,000ea/year

40sec/ea

## Solution

### PUMA V400

High Productivity Compact vertical  
turning center



\*1set

High Cutting  
Speed

Excellent  
Machining  
Capability

Safety  
Reliability

### Process

OP#20 I.D Rough Turning , Finish Turning

### Option

Work Locating Confirmation(Airsensing)

Coolant Cooling Chiller

Chuck Cylinder 1530RE-UN

### Machining Option Installation Line / Line View



# Customer (C9)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

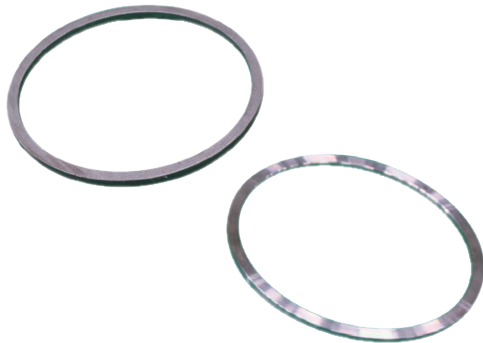
Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Ring (7Models)



### Customer Demand

942,000ea/year

33sec/ea

Gantry Loader

## Solution

### PUMA TW2600-GL320

Twin-Turret, Twin-Spindle HTC with Forward-Facing Chucks



\*2Set

High Productivity  
High Cutting  
Speed

Easier Automation

Excellent  
Machining  
Capability

### Option

Work Confirmation 6Port (Air Sensing)

A3 Type, Twin Gantry

### Machining Option Installation Line / Line View



# Customer (C10)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

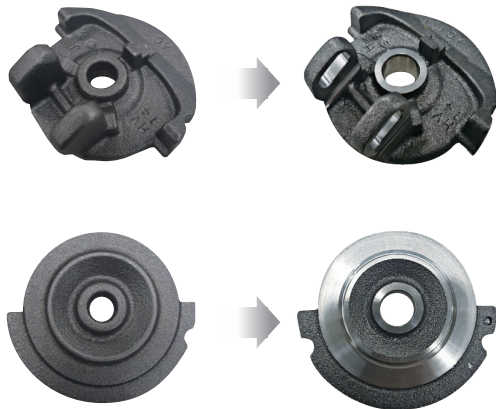
Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Rotor



### Customer Demand

300,000ea/year

OP1 : 79sec/ea, OP2 : 239sec/ea

## Solution

### PUMA TW2100M\_GL , DNM4500

Twin-Turret, Twin-Spindle HTC with Forward-Facing Chucks  
Global standard vertical machining center



\* TW2100M\_GL : 1Set

Excellent  
Machining  
Capability

High  
Productivity  
High Cutting  
Speed

Easier  
Automation

\* DNM 4500 : 3Set

### Option

Work Locating Confirmation(Air Sensing)

TSC (Through Spindle Coolant)

Liner Scale (X,Y Axis)

Coolant Chiller, 5Axis Rotary Table

### Machining Option Installation Line / Line View





# Customer (C11)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### Shaft for Comp.



### Customer Demand

300,000ea/year

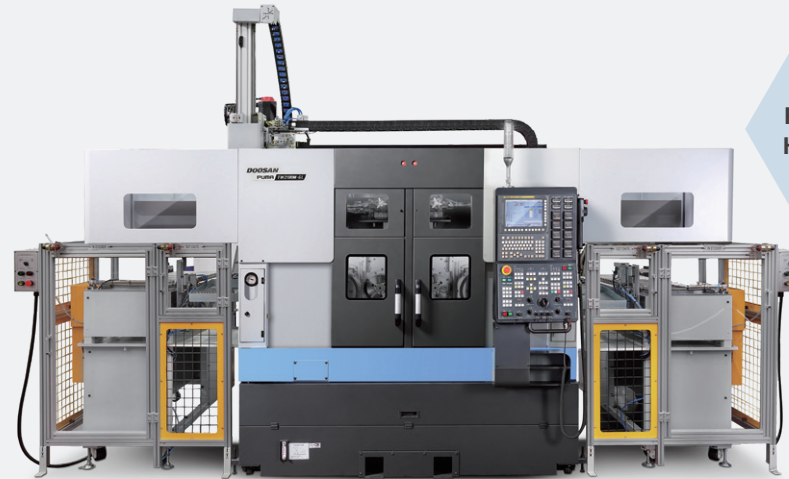
72sec/ea

Gantry Loader

## Solution

### PUMA TW2100M\_GL

Twin-Turret, Twin-Spindle HTC with Forward-Facing Chucks



\* A2 1Set

High  
Productivity  
High Cutting  
Speed

Excellent  
Machining  
Capability

Easier  
Automation

### Process

OP#10 OD TURNING

### Option

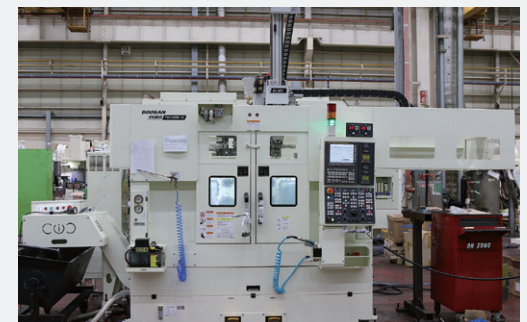
Work Locating Confirmation(air Sensing)

TTC (Through Tool Coolant)

Tool Life & Tool load monitoring

Coolant Chiller

### Machining Option Installation Line / Line View



# Customer (O1)

Automotive Industry

Power Train

Engine  
Transmission &  
Drive system

Chassis System

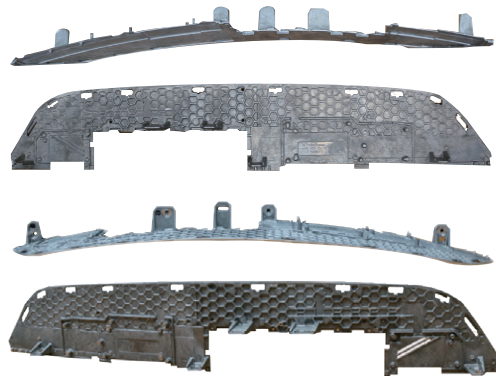
Steering  
Suspension  
Brake

Accessory & etc

Wheel  
Air Conditioning  
System  
etc

## Workpiece

### ICS Core Plate



### Customer Demand

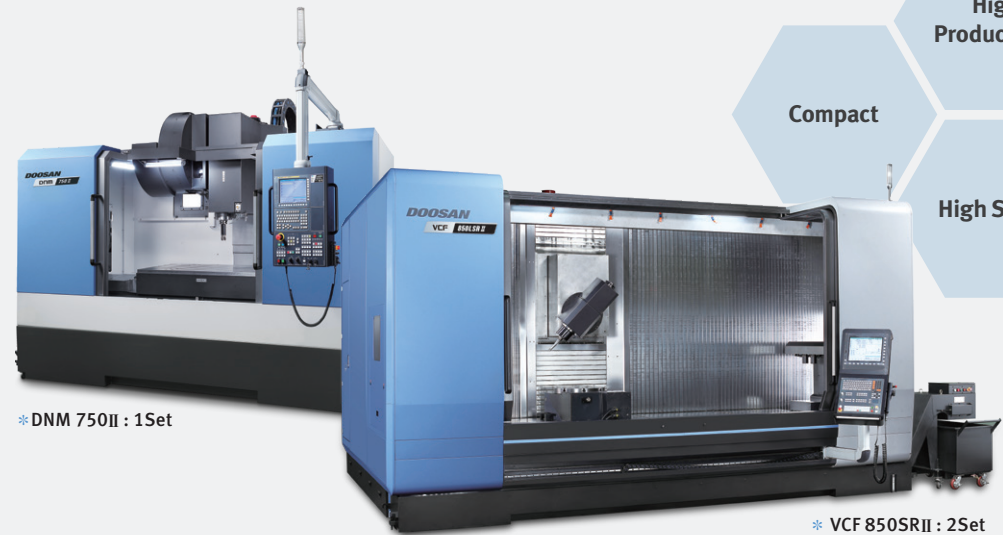
40,000ea/year

Productivity

## Solution

### DNM 750L II, VCF 850SR II

Global standard vertical machining center Traveling Column VMC with Multiple Work Zones



\* DNM 750L II : 1Set

\* VCF 850SR II : 2Set

### Process

- OP#10 Fixed position operate
- OP#20 5-axis operate

### Option

- Flood Coolant (1.8Kw)
- Work Locating Confirmation(Air Sensing)
- Tool Broken Unit(BK9)

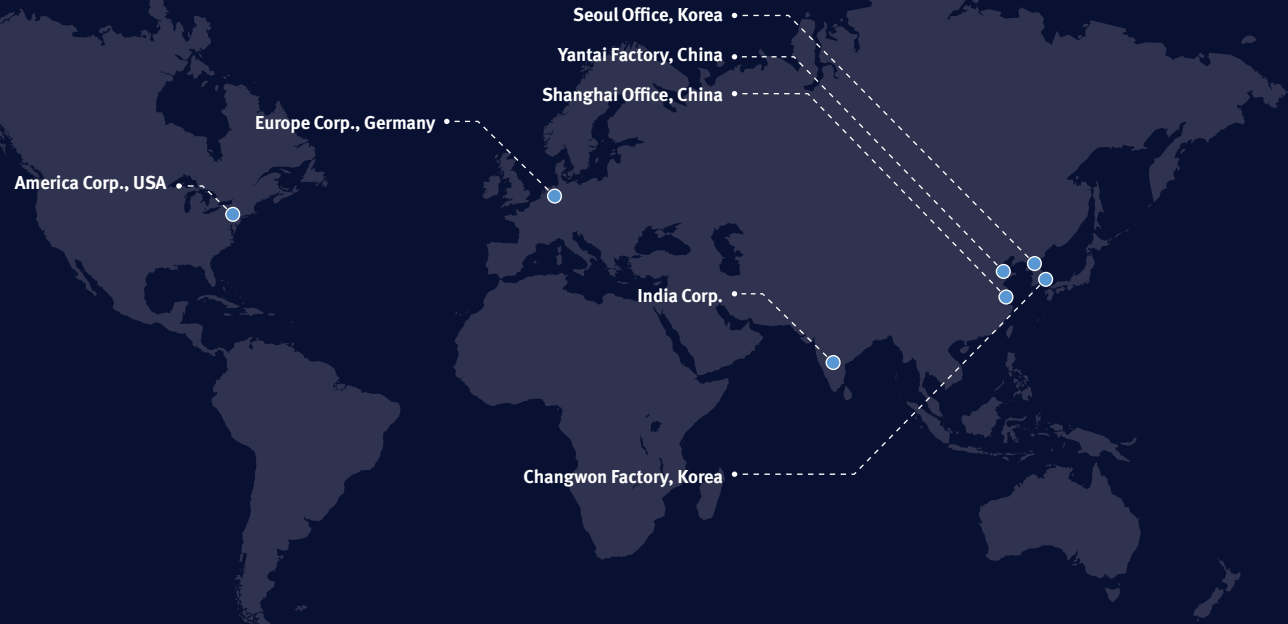
# Doosan Machine Tools in the World

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  
**167** 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
- Installment 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

## Doosan Machine Tools

[www.doosanmachinetools.com](http://www.doosanmachinetools.com)



### Head Office

22FT Tower, 30, Sowol-ro 2-gil, Jung-gu,  
Seoul, Korea, 04637  
Tel +82-2-6972-0370 / 0350  
Fax +82-2-6972-0400

### Doosan Machine Tools America

19A Chapin Rd., Pine Brook, NJ 07058,  
U.S.A.  
Tel +1-973-618-2500  
Fax +1-973-618-2501

### Doosan Machine Tools Europe

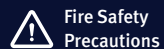
Emdener Strasse 24, D-41540 Dormagen,  
Germany  
Tel +49-2133-5067-100  
Fax +49-2133-5067-111

### Doosan Machine Tools India

No.82, Jakkuar Village, Yelahanka Hobli,  
Bangalore-560064

### Doosan Machine Tools China

Room 101,201,301, Building 39 Xinzhuang  
Highway No.258 Songjiang District,China  
Shanghai(201612)  
Tel +86-21-5445-1155  
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 Doosan Machine Tools.
- \* The specifications and information above-mentioned may be changed without prior notice.
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