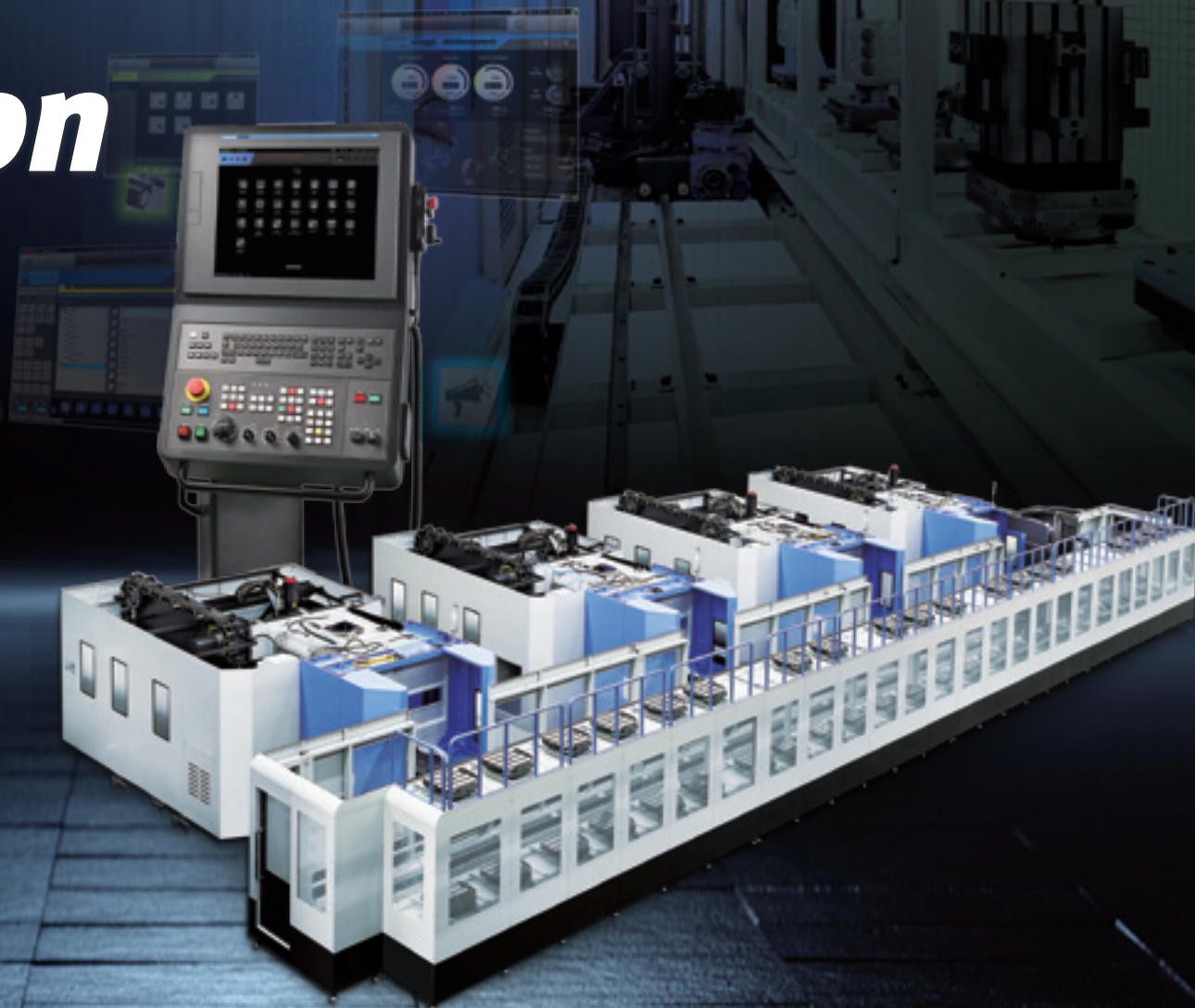


# ***Doosan Automation Solution Reference***



ver. EN 200702 SU

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## Workpiece Handling

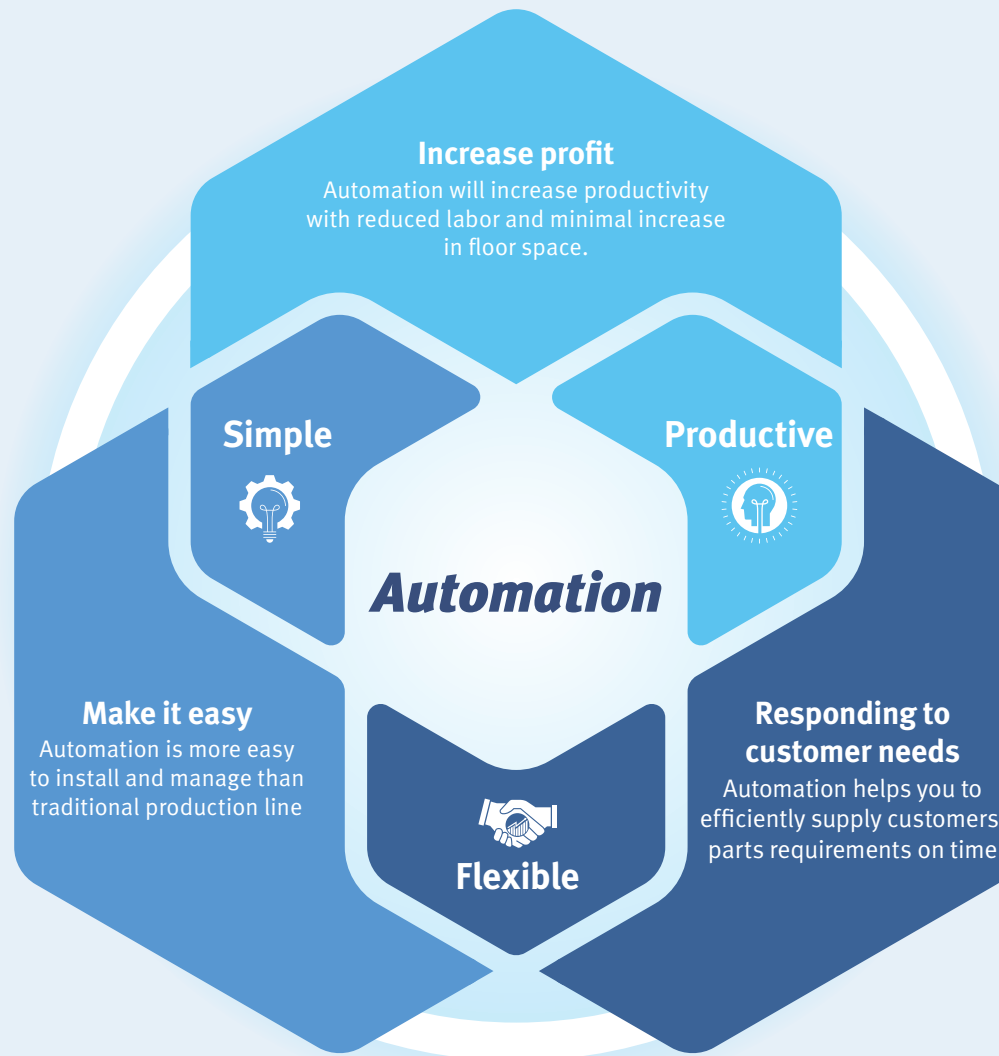
Gantry Loader  
Robot Solution

## Pallet Change

AWC  
LPS  
RPS

## Full Customized

Referential Cases



# What is the most optimized solution for our production requirements?

## Intro

### Workpiece Handling

Gantry Loader  
Robot Solution

### Pallet Change

AWC  
LPS  
RPS

### Full Customized

Referential Cases

## Workpiece Handling

### Bar feeder

Basic type of automation  
Most cost-effective for  
small batch production on  
turning centers



### Gantry

Fast installation and  
easy operation  
Apply to a variety of  
similar workpieces



### Robot

Flexible solution for  
multi-machine process  
and complex parts



## Pallet Change

### AWC system

Optimized for automatic  
handling of small parts  
in the minimum  
floorspace



### RPS

Efficient use of space  
by multi-pallets Highly  
flexible production  
management



### LPS

Optimized for volume  
production of a variety of  
parts over a long period  
of time Easy expansion  
of production system



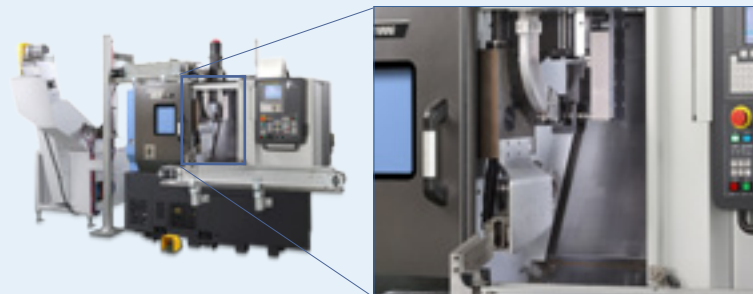
## All process

### Full-customized Automation

Through consulting,  
We offer optimal solution  
for customer's needs



### Bearing Solution



### Big line





# DOOSAN Robot System

## Intro

### Workpiece Handling

Gantry Loader  
Robot Solution

### Pallet Change

AWC  
LPS  
RPS

### Full Customized

Referential Cases

Robotic work-piece loading/unloading system and automated measurement and inspections process

## Features

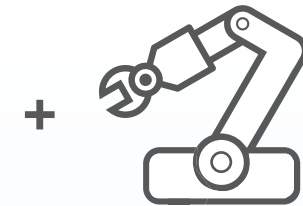


Higher Flexibility	Manufacturing from an individual item to mass production
24H Operation	Higher productivity without waste of time and labor cost
Higher Quality	The systemization of all setting-machining-inspection process
Doosan's Turn-key Solution Capability	A variety of machine tool models and professional system automation experiences

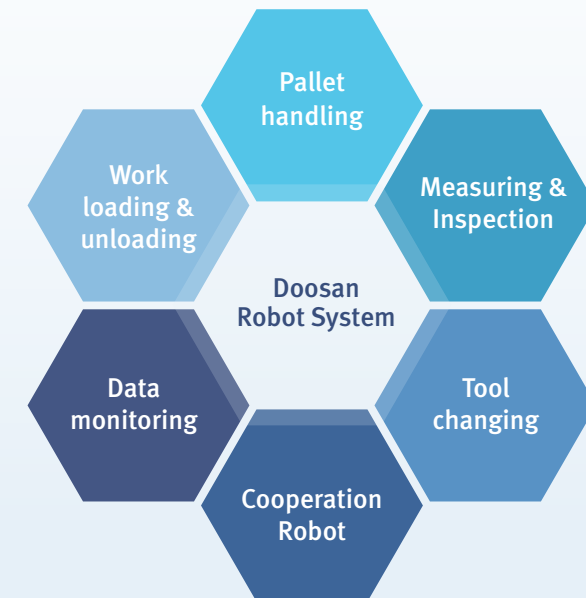
## Applications



Doosan Machines



Robot System





# Robot Automation Cases

## Intro

### Workpiece Handling

Gantry Loader  
Robot Solution

### Pallet Change

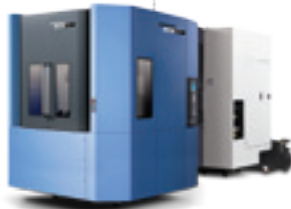
AWC  
LPS  
RPS

### Full Customized

Referential Cases

The newly-designed operation panel enhances operating convenience by common-design buttons and layout. Just like a PC, the QWERTY type keyboard has been adopted for easier and faster operation.

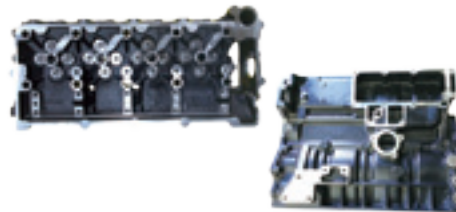
#### Machine



NHP 5500, NHP 8000

An automation turn-key system mounting on NHP 5500 and NHP 8000 horizontal machining centers to provide total processing capability from roughing and semi-finishing of cylinder blocks to finishing of cylinder heads for diesel engines.

#### Machining Component



Cylinder head & Cylinder block

#### Robot application

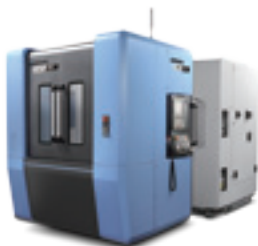


DNM series, PUMA VAW500

An automation of Aluminum wheel mass production line mounting on PUMA VAW7500 aluminum wheel turn and DNM series vertical machining center.

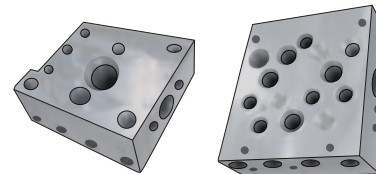


Aluminum Wheel



NHP 4000

The RGV robot & automation robot line mounting on NHP 4000 horizontal machining center



Manifold



# Full-Customized Automation

## Intro

### Workpiece Handling

Gantry Loader  
Robot Solution

### Pallet Change

AWC  
LPS  
RPS

### Full Customized

Referential Cases

In order to optimize the production of components with various shapes and materials, system engineering activities such as configuration of additional devices, process design and software are important based on high-performance machine tools. By using a wide range of Doosan's machine tools, we promise to provide optimized solutions that exceed the functions of machine tools itself through Full-Customized Automation.

#### Gantry Loader



#### Fixture



#### Robot



#### Chuck



#### LPS (Linear Pallet System)



#### Tool

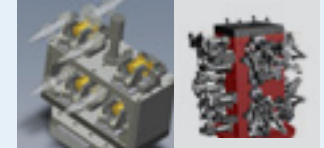


#### Technical Consultation



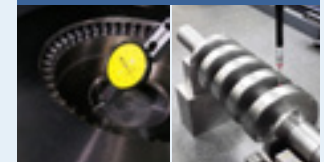
Advance Analysis of Investment Feasibility

#### Application



Basic engineering such as process design, manufacturing, and test

#### Technical Validation



Differentiated engineering such as productivity and process reliability

## Customer Support Process



# Bearing Automation Solution

## Intro

### Workpiece Handling

Gantry Loader  
Robot Solution

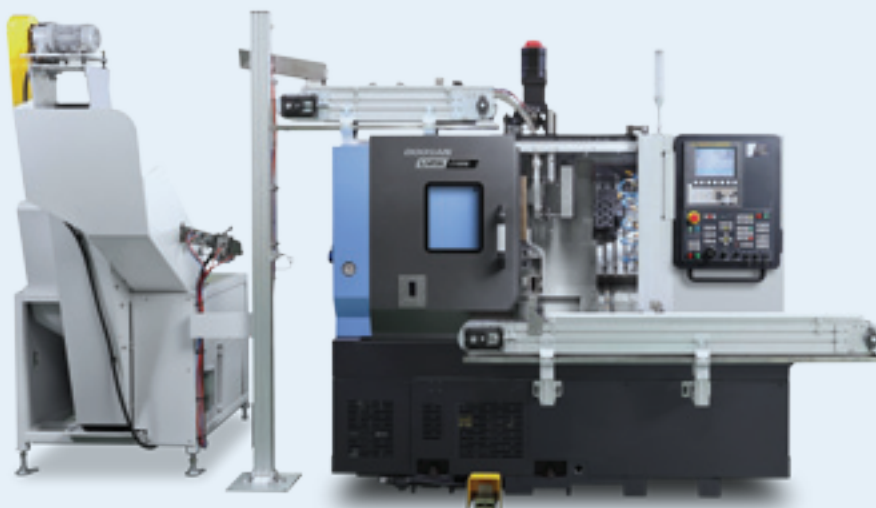
### Pallet Change

AWC  
LPS  
RPS

### Full Customized

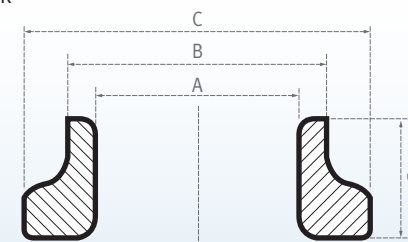
Referential Cases

Optimized solution for bearing parts machining. loading and unloading system are fully optimized for bearing parts makes powerful productivity than any other solution.



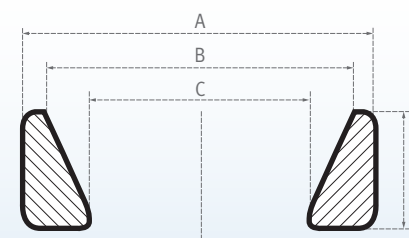
## Workpiece Range

INNER



Group	A (Ø)	B (Ø)	C (Ø)	D (mm)
A	25 ~ 49	15 ~ 41	10 ~ 34	10~25
B	49 ~ 70	41 ~ 53	34 ~ 44	10~35
C	70 ~ 90	63 ~ 72	53 ~ 62	25~50

OUTER



Group	A (Ø)	B (Ø)	C (Ø)	D (mm)
A	25 ~ 49	20 ~ 41	15 ~ 35	10~25
B	49 ~ 70	41 ~ 60	34 ~ 50	10~35
C	70 ~ 90	63 ~ 70	60 ~ 69	25~50



Ball Bearing



Taper Bearing



Thrust Bearing



Ball Bushing  
Bearing



Outer Race

Inner Race

Rolling Elements "Balls"  
Cage

## [Improvement] Bearing loading unloading time

Previous model

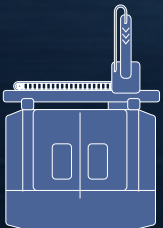
4 ~ 5 sec

Lynx 2100G 2.99 sec

**50% Improved**



# *Gantry Loader*



# Gantry Loader Reference 1

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change



AWC  
LPS  
RPS

Full Customized

Referential Cases

## Solution

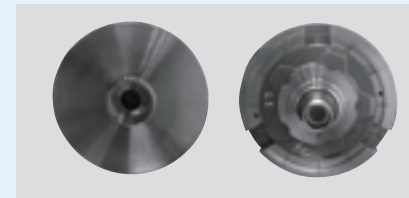


Machine	PUMA TW2600-GL, DT 360D (T 4000D)	
Capacity	300,000 ea/year	
Cycle Time	60 sec	
Main Option	<ul style="list-style-type: none"> <li>• Full Automation</li> <li>• Air Gap Sensing</li> </ul>	<ul style="list-style-type: none"> <li>• In Conveyor</li> <li>• Side Conveyor with Turn Over</li> </ul>
Equipment Description	<b>PUMA TW series</b> High-productivity 2-spindle horizontal turning center 	<b>T series</b> High-productivity dual pallet tapping center 

## Machining Process

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

## Jig & Fixture



OP#10, 20



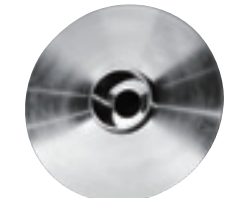
OP#30



OP#40

## Workpiece

### Hub





# Gantry Loader Reference 2

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change


AWC  
LPS  
RPS

Full Customized

Referential Cases

## Solution



Machine	PUMA TW2600-GL 2Sets	
Capacity	400,000 ea/year	
Cycle Time	46 sec	
Main Option	<ul style="list-style-type: none"> <li>• Fool Proof for Instocker Unit</li> <li>• Manual Q-setter</li> <li>• Turn over Modification (agree)</li> </ul>	
Equipment Description	<p><b>PUMA TW series</b> High-productivity 2-spindle horizontal turning center</p> 	

## Jig & Fixture

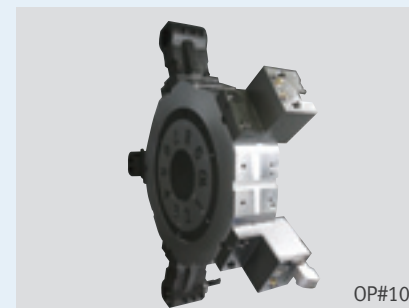


OP#10

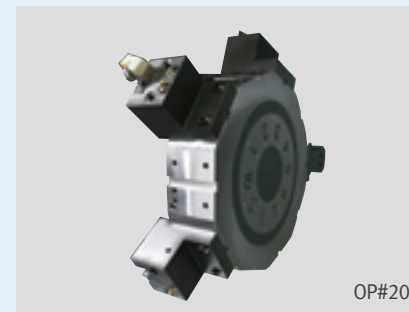


OP#20

## Tooling



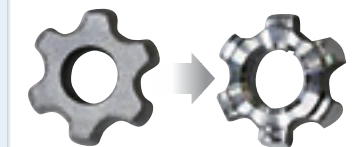
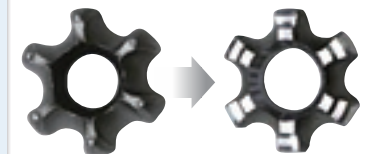
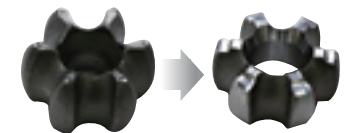
OP#10



OP#20

## Workpiece

### Inner Race





# Gantry Loader Reference 3

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change


AWC  
LPS  
RPS

Full Customized

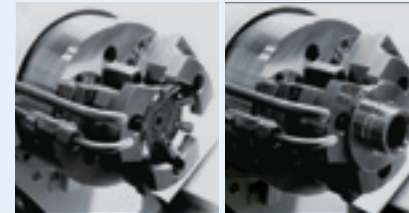
Referential Cases

## Solution

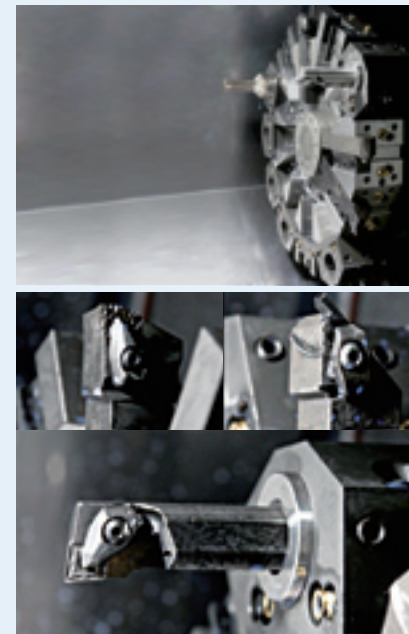


Machine	Lynx 2100 6Sets
Capacity	800,000 ea/year
Cycle Time	68 sec
Main Option	<ul style="list-style-type: none"> <li>• Auto Top Door</li> <li>• High Productive Machine</li> <li>• Gantry Loader Automation (Built in type)</li> </ul>
Equipment Description	<p><b>Lynx series</b> Compact economical turning center</p> 

## Jig & Fixture

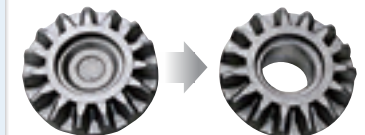
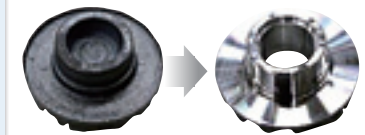


## Tooling



## Workpiece

### Bevel Gear



# Gantry Loader Reference 4

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change

AWC  
LPS  
RPS

Full Customized

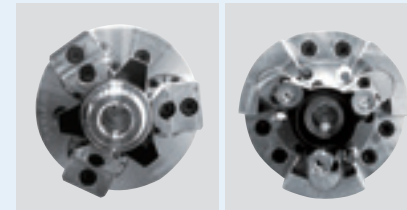
Referential Cases

## Solution



Machine	PUMA TW2600-GL 2Sets, PUMA TW2600M-GL 4Sets	
Capacity	400,000 ea/year	
Cycle Time	160 sec	
Main Option	<ul style="list-style-type: none"> <li>• A3 Gantry Loader</li> <li>• Mist Collector</li> <li>• Hinged Chip Conveyor</li> </ul>	
Equipment Description	<p><b>PUMA TW series</b> High-productivity 2-spindle horizontal turning center</p> 	

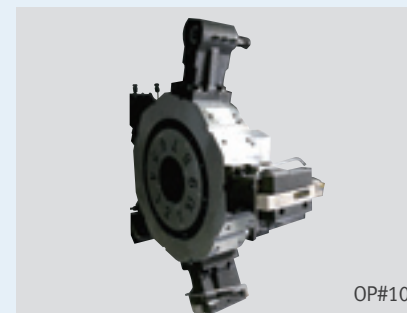
## Jig & Fixture



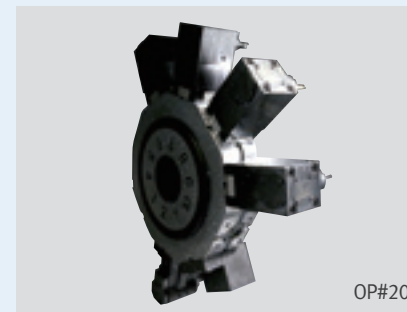
OP#10

OP#20

## Tooling



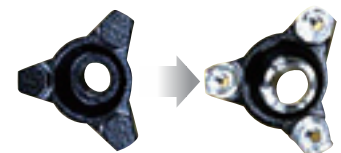
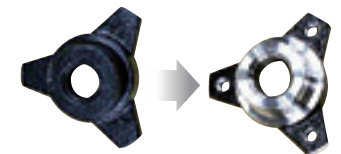
OP#10



OP#20

## Workpiece

### Pinion Flange



# Gantry Loader Reference 5

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change


AWC  
LPS  
RPS

Full Customized

Referential Cases

## Solution

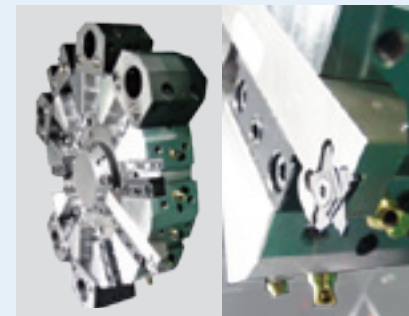


Machine	Lynx 220C-GL 1Set	
Capacity	1,500,000ea/year	
Cycle Time	31 sec	
Main Option	<ul style="list-style-type: none"> <li>• Special chuck</li> <li>• In/out Stocker</li> <li>• Inspection chute</li> </ul>	
Equipment Description	<p><b>Lynx series</b> Compact economical turning center</p> 	

## Jig & Fixture

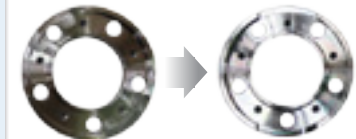


## Tooling



## Workpiece

### Plate carrier





# Gantry Loader Reference 6

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change


AWC  
LPS  
RPS

Full Customized

Referential Cases

## Solution



Machine	PUMA TW2600GL 2Sets	
Capacity	1,500,000 ea/year	
Cycle Time	40 sec	
Main Option	<ul style="list-style-type: none"> <li>• Special In stocker</li> <li>• Inspection chute</li> <li>• Type Check unit</li> </ul>	
Equipment Description	<p><b>PUMA TW series</b> High-productivity 2-spindle horizontal turning center</p> 	

## Jig & Fixture

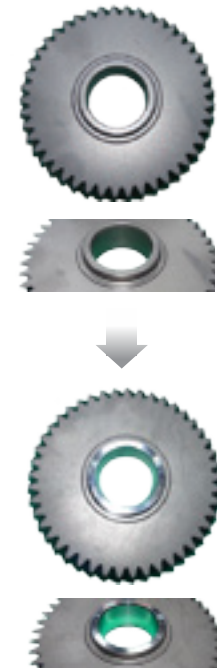


## Tooling



## Workpiece

### Pinion Flange



# Gantry Loader Reference 7

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change


AWC  
LPS  
RPS

Full Customized

Referential Cases

## Solution

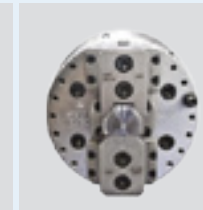


Machine	PUMA TW2600GL 2Sets
Capacity	500,000ea/year
Cycle Time	60 sec
Main Option	<ul style="list-style-type: none"> <li>• 2-Jaw Special chuck</li> <li>• Auto Parts Feeder</li> <li>• MAll-In-One Measuring System and Output Stocker</li> </ul>
Equipment Description	<p><b>PUMA TW series</b> High-productivity 2-spindle horizontal turning center</p> 

## Jig & Fixture

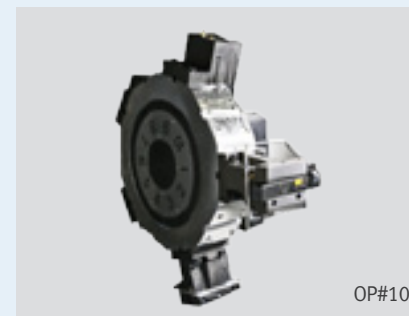


OP#10

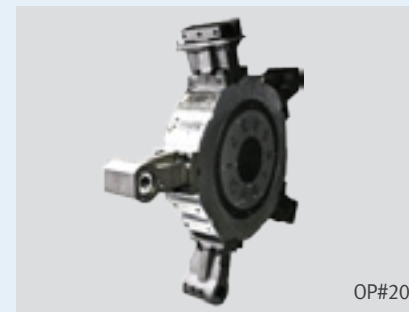


OP#20

## Tooling



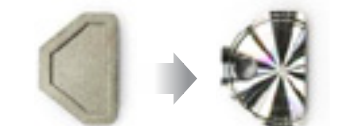
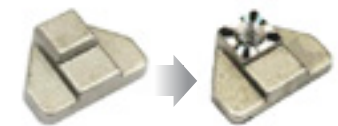
OP#10



OP#20

## Workpiece

### Lug



# Gantry Loader Reference 8

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change


AWC  
LPS  
RPS

Full Customized

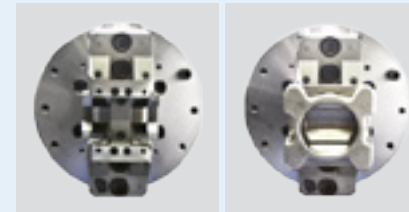
Referential Cases

## Solution



Machine	PUMA TW2600M-GL 1Set
Capacity	400,000ea/year
Cycle Time	160 sec
Requirement	Satisfaction of circularity regulation for 5 micron inner diameter
Main Option	Removal of back face burr by two point angle drill
Equipment Description	<p><b>PUMA TW series</b> High-productivity 2-spindle horizontal turning center</p> 

## Jig & Fixture



## Tooling



## Workpiece

### Yoke





# Gantry Loader Reference 9

Intro

## Workpiece Handling

Gantry Loader  
Robot Solution

## Pallet Change

AWC  
LPS  
RPS

## Full Customized

Referential Cases

## Solution



<b>Machine</b>	PUMA TW2600GL 2Sets
<b>Capacity</b>	500,000ea/year
<b>Cycle Time</b>	Diff Gear : 70 sec / Driven Gear : 50 sec
<b>Main Option</b>	<ul style="list-style-type: none"> <li>• TWIN GANTRY LOADER</li> <li>• MIST COLLECTOR</li> <li>• SCREW TYPE CHIP CONVEYOR</li> </ul>
<b>Equipment Description</b>	<p><b>PUMA TW series</b> High-productivity 2-spindle horizontal turning center</p> 

## Jig & Fixture



## Tooling



## Workpiece

### Gears



Driven Gear : 50 sec



Driven Gear : 70 sec

# Gantry Loader Reference 10

Intro

## Workpiece Handling

Gantry Loader  
Robot Solution

## Pallet Change



AWC  
LPS  
RPS

## Full Customized

Referential Cases

## Solution



<b>Machine</b>	PUMA TW2600GL 2Sets, Lynx220C 1Set	
<b>Capacity</b>	400,000ea/year	
<b>Cycle Time</b>	OP#10,20 : 38 sec / OP30 : 50 sec	
<b>Main Option</b>	<ul style="list-style-type: none"> <li>• SCREW TYPE CHIP CONVEYOR</li> <li>• MIST COLLECTOR</li> <li>• WORK CHECK UNIT, INSTOCKER, TRANS FER</li> </ul>	
<b>Equipment Description</b>	<b>PUMA TW series</b> High-productivity 2-spindle horizontal turning center 	<b>Lynx series</b> Compact economical turning center 

## Jig & Fixture



OP#10



OP#20

## Tooling



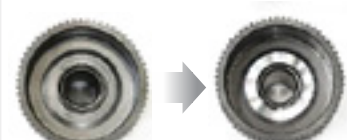
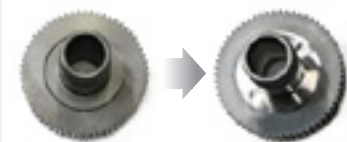
OP#10



OP#20

## Workpiece

### Lug



# Gantry Loader Reference 11

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change


AWC  
LPS  
RPS

Full Customized

Referential Cases

## Solution



Machine	PUMA TW2600GL 3Sets
Capacity	360,000ea/year
Cycle Time	OP10 : 130 sec / OP20 : 128 sec
Main Option	<ul style="list-style-type: none"> <li>• IN/OUT STOCKER</li> <li>• WORK CHECK UNIT</li> <li>• MEASURING UNIT</li> <li>• EXTENDED BEAM_500MM</li> </ul>
Equipment Description	<p><b>PUMA TW series</b> High-productivity 2-spindle horizontal turning center</p> 

## Jig & Fixture



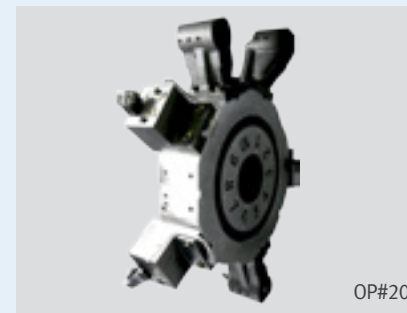
OP#10

OP#20

## Tooling



OP#10



OP#20

## Workpiece

### Pinion Shaft





# Gantry Loader Reference 12

Intro

## Workpiece Handling

Gantry Loader  
Robot Solution

## Pallet Change


AWC  
LPS  
RPS

## Full Customized

Referential Cases

## Solution



Machine	PUMA TW2600GL 1Set
Capacity	360,000ea/year
Cycle Time	43 sec
Main Option	<ul style="list-style-type: none"><li>• AIR BLOWER FOR CHUCK ADD</li><li>• COOLANT GUN</li><li>• SCREW TYPE CHIP CONVEYOR</li></ul>
Equipment Description	<p><b>PUMA TW series</b> High-productivity 2-spindle horizontal turning center</p> 

## Jig & Fixture

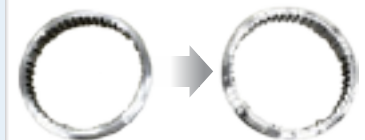
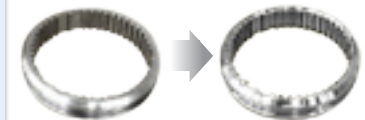


## Tooling



## Workpiece

### Sleeve



# Gantry Loader Reference 13

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change


AWC  
LPS  
RPS

Full Customized

Referential Cases

## Solution



Machine	PUMA TW2100M GL 1Set
Capacity	10,000ea/year
Cycle Time	OP10 : 3 min, OP20 : 5 min
Main Option	<ul style="list-style-type: none"> <li>• 30 BAR COOLANT</li> <li>• SCREW TYPE CHIP CONVEYOR</li> <li>• SPECIAL IN-CONVEYOR &amp; OUT CHUTE</li> </ul>
Equipment Description	<p><b>PUMA TW series</b> High-productivity 2-spindle horizontal turning center</p> 

## Options



## Workpiece

### Fitting



# Gantry Loader Reference 14

Intro

## Workpiece Handling

Gantry Loader  
Robot Solution

## Pallet Change


AWC  
LPS  
RPS

## Full Customized

Referential Cases

## Solution



Machine	PUMA TW2100GL 1 SET
Cycle Time	40 sec / 46 sec
Main Option	<ul style="list-style-type: none"><li>• AIR SENSING (SMC)</li><li>• MIST COLLECTOR</li><li>• RECHUCKING UNIT</li><li>• HINGED CHIP CONVEYOR</li></ul>
Equipment Description	<p><b>PUMA TW series</b> High-productivity 2-spindle horizontal turning center</p> 

## Jig & Fixture



OP#10



OP#20

## Workpiece

### Outer Ring





# Gantry Loader Reference 15

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change


AWC  
LPS  
RPS

Full Customized

Referential Cases

## Solution



Machine	PUMA TW2100GL 2Sets
Capacity	200,000ea/year
Cycle Time	'A' ITEM :76 sec / 'B' ITEM : 180 sec
Main Option	<ul style="list-style-type: none"> <li>• AIR GAP SENSING</li> <li>• MANUAL Q-SETTER</li> <li>• IN/OUT STOCKER (8 STA. ROTARY)</li> <li>• COOLANT PUMP POWER UP (1.1kw)</li> </ul>
Equipment Description	<p><b>PUMA TW series</b></p> <p>High-productivity 2-spindle horizontal turning center</p> 

## Jig & Fixture



OP#10



OP#20

## Tooling



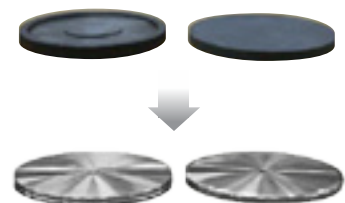
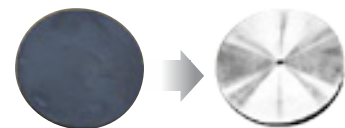
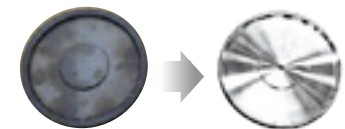
OP#10



OP#20

## Workpiece

### Flange



# Gantry Loader Reference 16

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change


AWC  
LPS  
RPS

Full Customized

Referential Cases

## Solution



Machine	PUMA TW2600-GL 2Sets, PUMA TW2600M-GL 4Sets
Capacity	300,000ea/year
Cycle Time	117 sec
Main Option	<ul style="list-style-type: none"> <li>• AUTO GAGING (OFFSET FEEDBACK)</li> <li>• IN &amp; OUT STOCKER</li> <li>• 1,000mm BEAM EXTENSION</li> <li>• AIR BLOW STA./MODEL CHECK STA.</li> </ul>
Equipment Description	<p><b>PUMA TW series</b></p> <p>High-productivity 2-spindle horizontal turning center</p> 

## Jig & Fixture



OP#10



OP#20

## Tooling



OP#10



OP#20

## Workpiece

### Clutch



# Gantry Loader Reference 17

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change


AWC  
LPS  
RPS

Full Customized

Referential Cases

## Solution



Machine	PUMA TW2100GL 1Sets
Cycle Time	79 sec
Main Option	<ul style="list-style-type: none"> <li>• RECHUCKING UNIT</li> <li>• MIST COLLECTOR</li> <li>• TUTTER&amp;BED COOLANT SEPARATION – 10 BAR</li> </ul>
Equipment Description	<p><b>PUMA TW series</b> High-productivity 2-spindle horizontal turning center</p> 

## Jig & Fixture



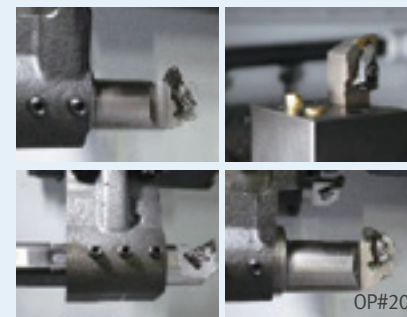
OP#10

OP#20

## Tooling



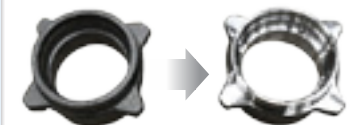
OP#10



OP#20

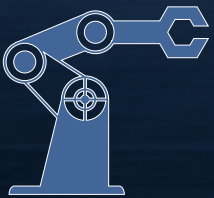
## Workpiece

### Pinion Flange





# ***Robot Solution***



# Robot Solution Reference 1

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change



AWC  
LPS  
RPS

Full Customized

Referential Cases

## Solution

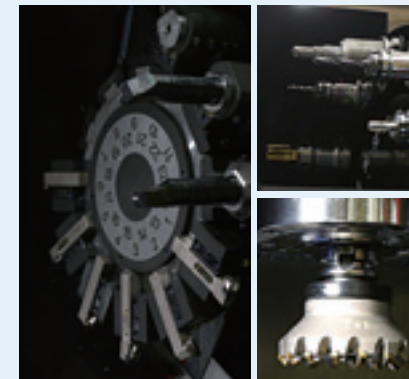


<b>Machine</b>	PUMA GT3100M 1Set, DNM 4500 1Set	
<b>Capacity</b>	42,000 ea/year	
<b>Cycle Time</b>	494 sec	
<b>Main Option</b>	<ul style="list-style-type: none"> <li>• CNC Rotary Table</li> <li>• Model Select S/W</li> <li>• PTS</li> </ul>	
<b>Equipment Description</b>	<b>PUMA GT series</b> Global standard turning center 	<b>DNM series</b> High productivity global standard vertical machining 

## Jig & Fixture

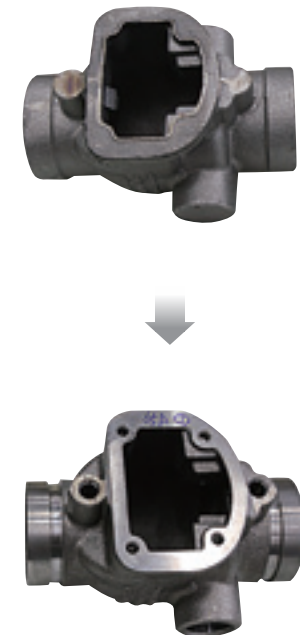


## Tooling



## Workpiece

### Inner Race





# Robot Solution Reference 2

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change

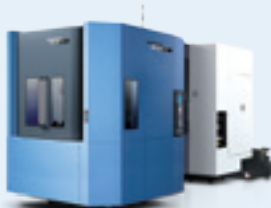
AWC  
LPS  
RPS

Full Customized

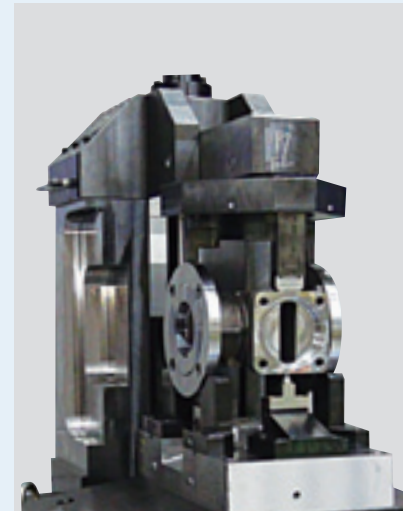
Referential Cases

## Solution



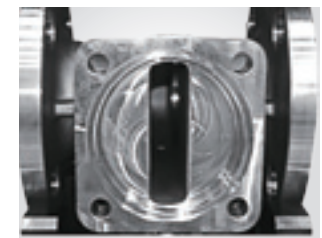
Machine	NHM 6300 2Sets	
Capacity	20,000 ea/year	
Cycle Time	30 min	
Main Option	<ul style="list-style-type: none"><li>• TA-Center</li><li>• Fanuc Robot</li><li>• HYD. Fixture</li><li>• Auto Workpiece Measurement</li></ul>	
Equipment Description	<p><b>NHM series</b> High-performance medium-size horizontal machining center</p> 	

## Jig & Fixture



## Workpiece

### Valve





# Robot Solution Reference 3

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change



AWC  
LPS  
RPS

Full Customized

Referential Cases

## Solution



<b>Machine</b>	PUMA V550 3Sets, Mynx 6500/50 2Sets	
<b>Capacity</b>	46,500 ea/year	
<b>Cycle Time</b>	6 min	
<b>Main Option</b>	<ul style="list-style-type: none"> <li>• Special Chuck &amp; Fixture</li> <li>• In/Out Conveyor (w/Robot)</li> </ul>	<ul style="list-style-type: none"> <li>• Air Sensing, In-process Measuring</li> </ul>
<b>Equipment Description</b>	<b>PUMA V series</b> Compact high-productivity vertical turning center 	<b>Mynx series</b> Powerful heavy-cutting vertical machining center 

## Machining Process

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

## Jig & Fixture



OP#10, 20



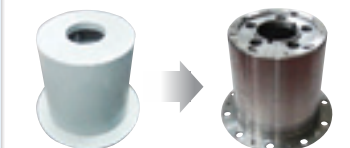
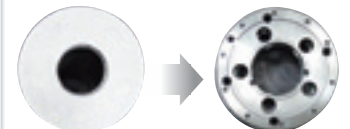
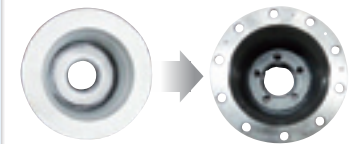
OP#30



OP#40

## Workpiece

### Planetary Carrier



# Robot Solution Reference 4

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change



AWC  
LPS  
RPS

Full Customized

Referential Cases

## Solution



<b>Machine</b>	PUMA VAW800 1Set, PUMA AW560 1Set, Mynx 5400 1Set	
<b>Capacity</b>	1,500,000 ea/year	
<b>Cycle Time</b>	120 sec	
<b>Main Option</b>	<ul style="list-style-type: none"> <li>• Auto Measuring Unit</li> <li>• Measurement Correction Function</li> </ul>	<ul style="list-style-type: none"> <li>• Vision System for Air hole Positioning</li> </ul>
<b>Equipment Description</b>	<b>PUMA VAW series</b> High-productivity aluminum wheel processing vertical turning center 	<b>PUMA AW series</b> High-productivity aluminum wheel processing Horizontal turning center 

## Machining Process

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

## Jig & Fixture



OP#10, 20



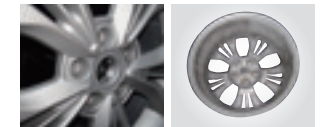
OP#30



OP#40

## Workpiece

### Aluminum Wheel



# ROBOSOL Introduction

## Intro

### Workpiece Handling

Gantry Loader  
Robot Solution

### Pallet Change

AWC  
LPS  
RPS

### Full Customized

Referential Cases

## Solution



ROBOSOL\_T4000HP



ROBOSOL\_PUMA V400

## Workpiece

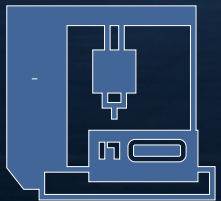
Robot cell interface  
for various machine  
types

Cycle time  
reduction through  
optimizing loading/  
unloading  
**38%**

Easy Touch  
Operation



# ***Automatic Workpiece Changer***



# AWC Introduction

## Intro

### Workpiece Handling

Gantry Loader  
Robot Solution

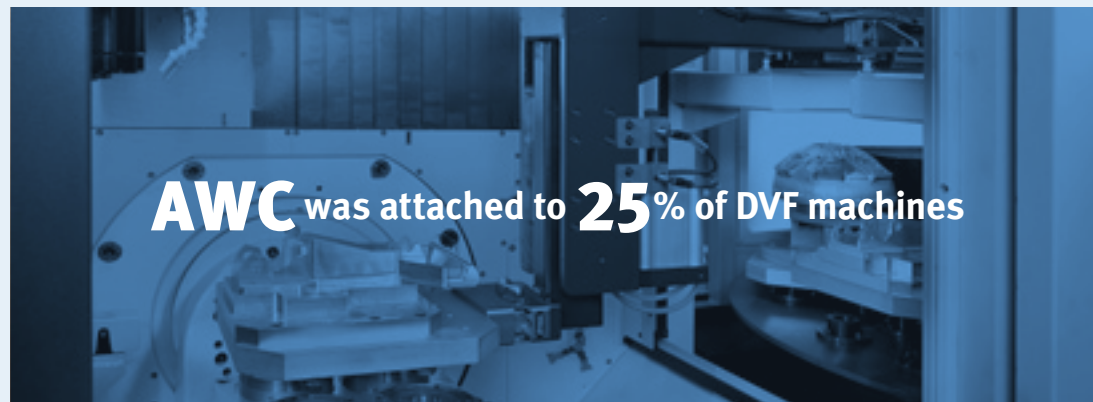
### Pallet Change

AWC  
LPS  
RPS

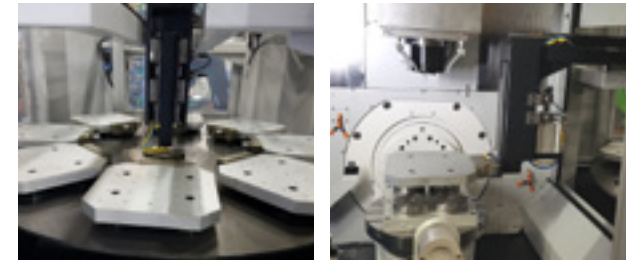
### Full Customized

Referential Cases

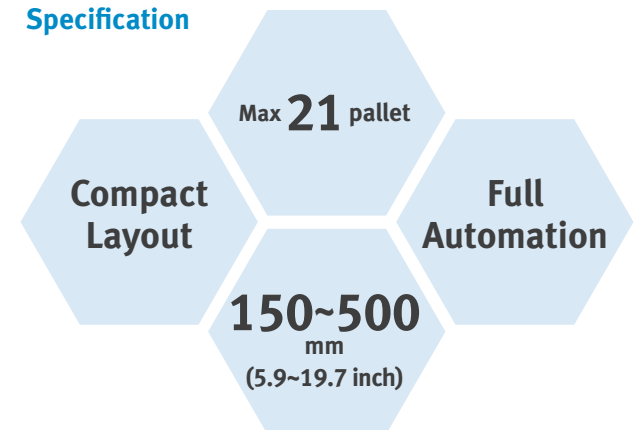
## Solution



## System



## Specification





# *Round Pallet System*





# RPS Introduction

## Intro

### Workpiece Handling

Gantry Loader  
Robot Solution

### Pallet Change

AWC  
LPS  
RPS

### Full Customized

Referential Cases

## Solution

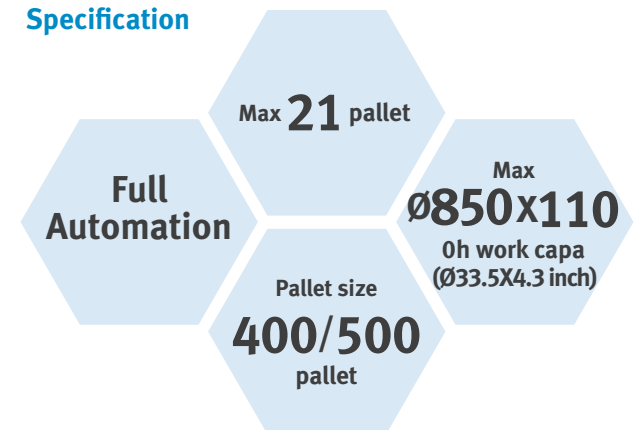


## System

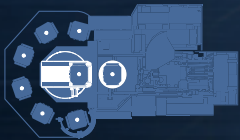


Sperated Special Operation Panel for RPS

## Specification



# *Linear Pallet System*

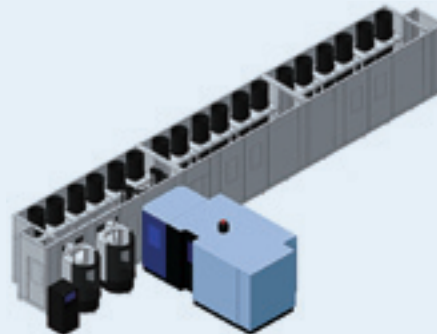


## Solution



Hydraulic

### Layout



Length  
**18870 mm**  
(742.9 inch)

Width  
**8332 mm**  
(328.0 inch)

Height  
**3300 mm**  
(129.9 inch)

## System

### Machine

HP 5100 1Set, LPS 500

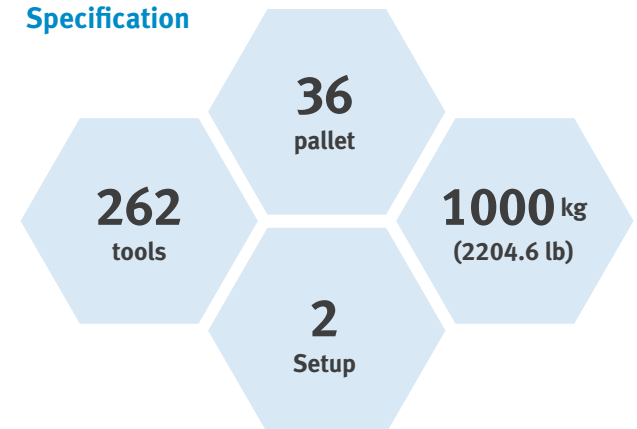


HP 5100



LPS 500

### Specification





# LPS Reference 2

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change

AWC  
LPS  
RPS

Full Customized

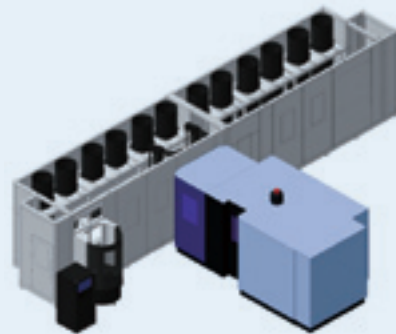
Referential Cases

## Solution



General  
Machinery

### Layout



Length  
**15220** mm  
(599.2 inch)

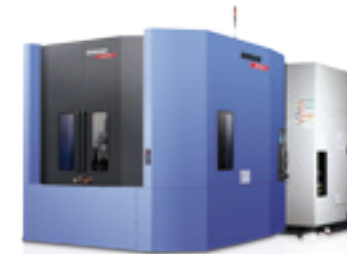
Width  
**12770** mm  
(502.8 inch)

Height  
**4040** mm  
(159.1 inch)

## System

### Machine

NHM 8000 1Set, LPS 800



NHM 8000



LPS 800

### Specification

**256**  
tools

**16**  
pallet

**2500** kg  
(5511.5 lb)

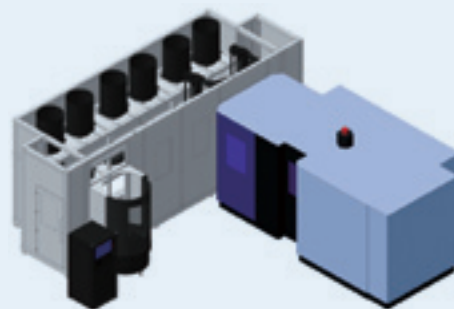
**1**  
Setup

## Solution



Automotive

### Layout



Length

**8460 mm**  
(333.1 inch)

Width

**10970 mm**  
(431.9 inch)

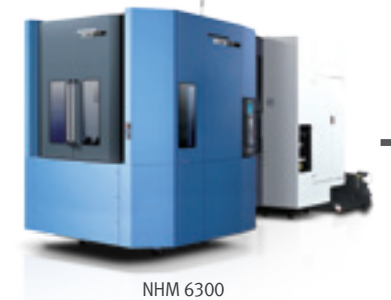
Height

**3620 mm**  
(142.5 inch)

### System

#### Machine

NHM 6300 1Set, LPS 630



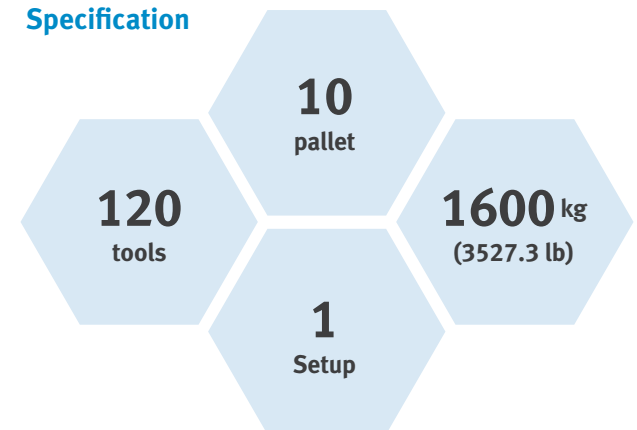
+



NHM 6300

LPS 630

### Specification



# LPS Reference 4

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change

AWC  
LPS  
RPS

Full Customized

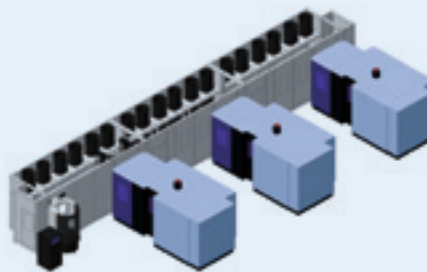
Referential Cases

## Solution



Machine tool  
(Doosan)

### Layout



Length  
**42880** mm  
(600.0 inch)

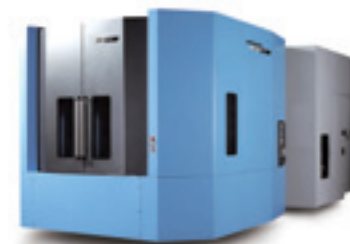
Width  
**10400** mm  
(409.4 inch)

Height  
**5820** mm  
(229.1 inch)

## System

### Machine

NHP 8000 3Set, LPS 800

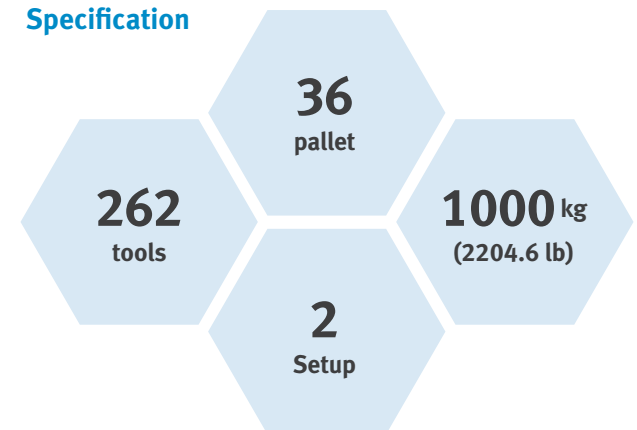


NHP 8000



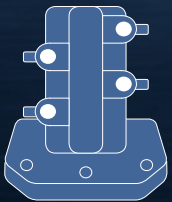
LPS 800

### Specification





# *Full Customized Solution*



# Full Customized Solution Reference 1

Intro

Workpiece Handling

Gantry Loader  
Robot Solution

Pallet Change

AWC  
LPS  
RPS

Full Customized

Referential Cases

## Solution



<b>Machine</b>	Lynx 220G super 2set	
<b>Capacity</b>	200,000 ea/year	
<b>Cycle Time</b>	10 sec	
<b>Main Option</b>	<ul style="list-style-type: none"> <li>• Auto Loader</li> <li>• Air Gap Sensing</li> </ul>	<ul style="list-style-type: none"> <li>• Special Tool</li> </ul>
<b>Equipment Description</b>	<p><b>Lynx 220G super</b> Compact economical turning center</p> 	

## Jig & Fixture



## Workpiece

### Inner Bearing





# Full Customized Solution Reference 2

## Intro

## Workpiece Handling

Gantry Loader  
Robot Solution


## Pallet Change

AWC  
LPS  
RPS

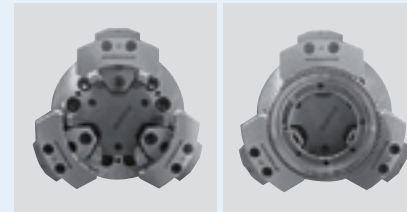
## Full Customized

Referential Cases

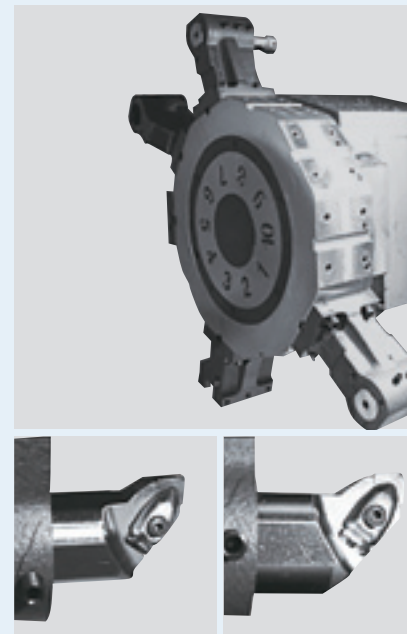


Machine	PUMA TW2600-GL 2Sets	
Capacity	100,000 ea/year	
Cycle Time	68 sec	
Main Option	<ul style="list-style-type: none"><li>• In, Out Stocker</li><li>• Special Chuck</li><li>• Inspection &amp; NG Chute</li></ul>	
Equipment Description	<p><b>PUMA TW series</b> High-productivity 2-spindle horizontal turning center</p> 	

## Jig & Fixture



## Tooling



## Workpiece

### Gear





# Valuable Supports / Success Story

## Intro

## Workpiece Handling

Gantry Loader  
Robot Solution

## Pallet Change

LPS

## Full Customized

Referential Cases

## Automotive

ANHUI JIANGHUAI AUTOMOBILE · China  
FAW-VOLKSWAGEN · China  
HONDA AUTOMOBILE · Thailand  
LINAMAR AUTOMOTIVE SYSTEMS · USA  
SCANIA · Sweden  
THYSSENKRUPP · Brazil  
TRW · Brazil, Canada, China, Malaysia,  
Mexico, Thailand, USA  
VOLVO · Sweden

## Medical

BIOMET · USA  
MEDTRONIC SOFAMOR DANEK · USA  
SANDVIK MEDICAL · USA  
SMITH & NEPHEW · USA, China

## Energy

BOSCH REXROTH OIL CONTROL SPA · Italy  
DRILLQUIP · UK  
FMC · UK  
GE OIL AND GAS · USA, Saudi Arabia  
NOV · USA, Singapore  
OMS OILFIELD SERVICES · Malaysia  
WEATHERFORD · China, India, USA,  
Argentina, France, UAE  
WOOD GROUP · USA, Saudi Arabia

## Aerospace

AEROSPACE HIWING (HARBIN) TITANIUM  
INDUSTRY · China  
Bombardier · UK  
CHINA AVIATION INDUSTRY CHENGDU  
ENGINE · China  
GENERAL ELECTRIC · USA, China  
HONEYWELL AEROS · USA, Mexico  
M.S. AEROSPACE, INC. · USA  
Rolls Royce · UK, Germany

## IT

APPLE · USA  
BALDOR ELECTRIC CO. · USA  
HITACHI ELEVATOR MOTOR (GUANGZHOU)  
Co., Ltd. · China  
LG · China  
SAMSUNG · China, Malaysia  
WESTINGHOUSE ELECTRIC · USA

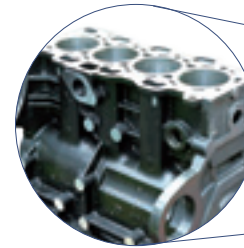
## General Machinery

CATERPILLAR · Italy  
FOTON LOVOL INTERNATIONAL HEAVY INDUSTRY ·  
China  
BOBCAT · USA  
BOSCH REXROTH BEIJING HYDRAULIC Co., Ltd. · China  
PARKER HANNIFIN LTD. · USA  
SIEMENS MECHANICAL DRIVE SYSTEM (Tianjin)  
Co., Ltd. · China  
SANY HEAVY INDUSTRIAL · China  
TEREX · UK

## 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."

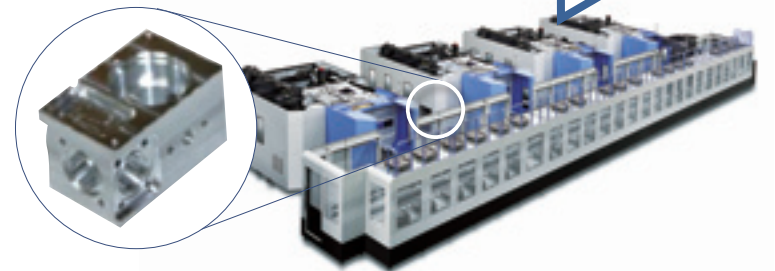
B Company (China)



## 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."

A Company (U.S.A)



# 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.



## 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

<http://www.doosanmachinetools.com>

[www.instagram.com/doosan\\_machinetools](https://www.instagram.com/doosan_machinetools)

[www.facebook.com/doosanmachinetools](https://www.facebook.com/doosanmachinetools)

[www.youtube.com/c/DoosanMachineToolsCorporation](https://www.youtube.com/c/DoosanMachineToolsCorporation)

### 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

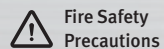
No.82, Jakkuar Village, Yelahanka Hobli,  
Bangalore-560064

### 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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