

TOYO

INSTRUCTION MANUAL
FOR

CNC INTERNAL GRINDING MACHINE

MODEL T-11JAG

Name of Customer : HYUNDAI MOTOR MANUFACTURING
CZECH S.R.O LD

Ser.No. : 51571

Date of Manufacture : FEB. 2009

Manufacturer : Toyo Advanced Technologies Co., Ltd.

Address : 5-3-38 Ujina-higashi, Minami-ku,
Hiroshima Japan 734-8501

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Toyo Advanced Technologies Co., Ltd.

1.0 SPECIFICATIONS

1.1 Specifications of CNC Internal Grinding Machine

(T-11JAS)

Item		Standard Specifications	Special Specifications
Grinding method		NC Oscillation & Plunge	
Sizing method		Auto size	Rear fork gauge
Support method		Chuck	Diaphragm chuck
Loading method		Manual	Un-loading auto
Dress method		Rigid type single point dresser	Fixed type rotary dress
Grindable work width		~ 125 mm	mm
Grindable work I.D.		ϕ 1.5 ~ 170(200) mm	mm
Height between the floor and the center of work		995 mm	mm
Swing over table		ϕ 600 mm	
Swing inside chuck guard		ϕ 350 mm	ϕ mm
Work spindle speed		100 ~ 800(1200) r/min	220 ~ 1300 r/min
Work spindle swivel angle		-1 ~ 15 °	°
Table(Z-axis) Stroke		500 mm	mm
Table(Z-axis) speed		0.2 ~ 250,000 μ m/s	μ m/s
Feed (X-axis) travel	Advance	110 mm	mm
	Retract	60 mm	mm
Feed(X-axis) travel speed		ϕ 0.4 ~ ϕ 333,000 μ m/s	ϕ μ m/s
Motor	Infeed (X-axis)	1.0 kW AC-servo	
	Work spindle	1.5 kW 6 P (Inverter)	3.7 kW 6 P (Inverter)
	Wheelhead	2.2 kW 2 P	3.7 kW 2 P
	Table (Z-axis)	1.0 kW AC-servo	kW AC-servo
	Lubrication pump	0.025 kW 4 P	
	Hydraulic pump		2.2 kW 4 P
	Coolant pump	0.1 kW + 0.025 kW	0.4 kW+0.025kW+1.1kW
Lubricating oil tank capacity		3.4 L	L
Coolant tank capacity		75 L	360 L
Hydraulic tank capacity			20 L
Floor dimension (Width×Depth ×Height)		2,040 × 1,550 × 1,800 mm	2,540 × 2,750 × 1,820 mm
Weight		About 2,000 kg	About 2,300 kg

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1.1 Specifications of CNC Internal Grinding Machine

(T-11JAG)

Item		Standard Specifications	Special Specifications
Grinding method		NC Oscillation & Plunge	
Sizing method		Auto size	Front Fork Gauge
Support method		Chuck	Diaphragm Chuck
Loading method		Manual	Gantry Loader & Stocker
Dress method		Rigid type single point Dresser	Fixed type Rotary Dresser
Grindable work width		~ 125 mm	
Grindable work I.D.		ϕ 1.5 ~ 170(200)mm	
Height between the floor and the center of work		995 mm	
Swing over table		ϕ 600 mm	
Swing inside chuck guard		ϕ 350 mm	
Work spindle speed		100 ~ 800(1200) r/min	
Work spindle swivel angle		-1 ~ 15 °	
Table(Z-axis) Stroke		500 mm	
Table(Z-axis) speed		0.2 ~ 250,000 μ m/s	
Feed (X-axis) travel	Advance	110 mm	
	Retract	60 mm	
Feed(X-axis) travel speed		ϕ 0.4 ~ ϕ 333,000 μ m/s	
Motor	Infeed (X-axis)	1.0 kW AC-servo	
	Work spindle	1.5 kW 6 P (Inverter)	
	Wheelhead	3.7 kW 2 P	3.7 kW 4 P(Inverter)
	Table (Z-axis)	1.0 kW AC-servo	
	Lubrication pump	0.025 kW 4 P	
	Coolant pump	0.1kW + 0.025kW	
	Hydraulic pump		0.7 kW 4P
Lubricating oil tank capacity		3.4 L	
Coolant tank capacity		75 L	540 L
Floor dimension (Width $\times$ Depth $\times$ Height)		2,050 $\times$ 1,550 $\times$ 1,800 mm (excluding the coolant tank)	3,350 $\times$ 4,820 $\times$ 3,020 mm
Weight		About 2,000 kg	

1.0 SPECIFICATIONS

1.1 Specifications of CNC Internal Grinding Machine

(T-11L19)

Item		Standard Specifications	Special Specifications
Grinding method		NC Oscillation & Plunge	
Sizing method		Auto size	Front folk gauge
Support method		Chuck	Diaphragm chuck
Loading method		Manual	
Dress method		Rigid type Single Point dresser	Rigid type rotary dresser
Chucking work O.D.		$\phi 12 \sim \phi 200$ mm	mm
Chucking work width		~ 150 mm	mm
Grindable work I.D.		$\phi \sim 100$ mm	mm
Height between the floor and the center of work		952 + 150 mm	mm
Swing over table		$\phi 410$ mm	mm
Swing inside chuck guard		$\phi 310$ mm	mm
Work spindle speed		220 $\sim$ 1,300 r/min	r/min
Work spindle swivel angle		0 $\sim$ 20 °	
Table(Z-axis) Stroke		400 mm	mm
Table(Z-axis) speed		0.2 $\sim$ 333,000 μ m/s	μ m/s
Table oscillate frequency		15 $\sim$ 520 r/min	r/min
Table oscillate amplitude		0 $\sim$ 100 mm	mm
Feed(X-axis) travel	Advance	122 mm	mm
	Retract	10 mm	mm
Feed(X-axis) travel speed		$\phi 0.4 \sim \phi 333,000$ μ m/s	$\phi \sim \mu$ m/s
Motor	Infeed(X-axis)	1.0 kW AC-servo	
	Work spindle	3.7 kW 6 P (Inverter)	
	Wheelhead	3.7 kW 2 P	High-frequency
	Hydraulic pump	1.5 kW 4 P	kW P
	Table(Z-axis)	1.5 kW AC-servo	kW AC-servo
	Rotary dress	——	0.1 kW 2 P
Hydraulic tank capacity		40 L	L
Lubricating oil tank capacity		—— L	L
Floor dimension (Width $\times$ Depth $\times$ Height)		2,500 $\times$ 2,130 $\times$ 2,100 mm	2,990 $\times$ 2,810 $\times$ 2,230 mm
Weight		4,500 kg	4,500 kg

1.0 SPECIFICATIONS

1.1 Specifications of CNC Internal Grinding Machine

(T-11L59)

Item		Standard Specifications	Special Specifications
Grinding method		NC Oscillation & Plange	
Sizing method		Auto size	Rear Fork Gauge
Support method		Chuck	Diaphragm Chuck
Loading method		High Speed 2- Arm roader	
Dress method		Rigid type rotary dresser	Rigid type Rotary Ddresser
Chuckable work O.D.		$\phi \sim \phi 140$ mm	$\phi \sim \phi$ mm
Chuckable work width		~ 60 mm	$\sim$ mm
Grindable work I.D.		$\phi \sim 100$ mm	$\phi \sim \phi$ mm
Height between the floor and the center of work		952 + 150 mm	mm
Swing over table		$\phi 410$ mm	
Swing inside chuck guard		$\phi 310$ mm	
Work spindle speed		125 $\sim$ 1,200 r/min	330 $\sim$ 2,000 r/min
Work spindle swivel angle		$\pm 0.5^\circ$	$^\circ$
Table(Z-axis) Stroke		400 mm	mm
Table(Z-axis) speed		0.2 $\sim$ 333,000 μ m/s	μ m/s
Table oscillate frequency		15 $\sim$ 350 r/min	r/min
Table oscillate amplitude		0 $\sim$ 16 mm	mm
Feed(X-axis) travel	Advance	62 mm	mm
	Retract	63 mm	mm
Feed(X-axis) travel speed		$\phi 0.4 \sim \phi 333,000 \mu$ m/s	$\phi \sim \mu$ m/s
Motor	Infeed(X-axis)	1.0 kW AC-servo	
	Work spindle	2.2 kW 6 P (Inverter)	5.5 kW 4 P (Inverter)
	Wheelhead	3.7 kW 2 P	High-frequency Type
	Table(Z-axis)	1.5 kW AC-servo	kW AC-servo
	Hydraulic pump	1.5 kW 4P	
	Loader	1.0 kW (Advance & retract) 1.0 kW (Turning)	
	Rotary dress	kW P	0.48 kW High-frequency Type
Hydraulic tank capacity		40 L	L
Lubricating oil tank capacity		----- L	L
Floor dimension (Width×Depth ×Height)		2,420 ×2,960 ×1,960 mm	4,560 ×3,230 × 2,260 mm
Weight		5,500 kg	kg

1.0 SPECIFICATIONS

1.1 Specifications of CNC Internal Grinding Machine

(T-11L57)

Item		Standard Specifications	Special Specifications
Grinding method		NC Oscillation & Plunge	
Sizing method		Auto size	
Support method		Chuck	Collet Chuck
Loading method		High Speed 2- Arm loader	
Dress method		Rigid type single point dresser	Formed Rotary Dresser
Chuckable work O.D.		$\phi \sim \phi 200$ mm	$\phi \sim \phi$ mm
Chuckable work width		~ 60 mm	$\sim$ mm
Grindable work I.D.		$\phi \sim 100$ mm	$\phi \sim \phi$ mm
Height between the floor and the center of work		952 + 150 mm	mm
Swing over table		$\phi 410$ mm	
Swing inside chuck guard		$\phi 310$ mm	
Work spindle speed		220 $\sim$ 1,300 r/min	r/min
Work spindle swivel angle		$\pm 0.5^\circ$	°
Table(Z-axis) Stroke		400 mm	mm
Table(Z-axis) speed		0.2 $\sim$ 333,000 μ m/s	μ m/s
Table oscillate frequency		15 $\sim$ 520 r/min	r/min
Table oscillate amplitude		0 $\sim$ 100 mm	mm
Feed(X-axis) travel	Advance	112 mm	mm
	Retract	13 mm	mm
Feed(X-axis) travel speed		$\phi 0.4 \sim \phi 333,000$ μ m/s	$\phi \sim$ μ m/s
Motor	Infeed(X-axis)	1.0 kW AC-servo	
	Work spindle	3.7 kW 6 P (Inverter)	5.5 kW 4 P (Inverter)
	Wheelhead	3.7 kW 2 P	High-frequency type
	Table(Z-axis)	1.5 kW AC-servo	
	Hydraulic pump	1.5 kW 4 P	kW P
	Loader	1.0 kW (Advance & retract) 2.0 kW (Turning)	
	Rotary dress	kW P	0.4 kW 4 P
Hydraulic tank capacity		40 L	L
Floor dimension (Width $\times$ Depth $\times$ Height)		2,700 $\times$ 2,235 $\times$ 2,100 mm	4,330 $\times$ 3,540 $\times$ 2,200 mm
Weight		5,000 kg	kg

1.0 SPECIFICATIONS

1.1 Specifications of CNC Internal Grinding Machine

(T-11LA88)

Item		Standard Specifications	Special Specifications
Grinding method		NC Oscillation & Plunge	
Sizing method		Auto size	Auto gauge (Front fork gauge)
Support method		Magnetic & 2-shoe	
Loading method		Cassette type	C&E
Dress method		Drop type radius dress	Formed rotary dress
Grindable work O.D.		$\phi 12 \sim \phi 62$ mm	$\phi 50 \sim 90$ mm
Grindable work width		5 ~ 25 mm	5 ~ 25 mm (When Pressure-cylinder is used 5~20) mm
Grindable work I.D.		$\phi 6 \sim$ mm	(When Pressure-cylinder is used MAX $\phi 66$) mm
Height between the floor and the center of work		952 + 150 mm	
Work spindle speed		220~850, 500~3000 ;2 stage pulley r/min	
Work spindle swivel angle		$\pm 0.5^\circ$	
Table stroke		270 mm	
Table speed		0.2 ~ 333,000 μ m/s	
Feed travel	Advance	112 mm	
	Retract	13 mm	
Feed travel speed		$\phi 0.4 \sim \phi 333,000$ μ m/s	
Motor	For Infeed	1.0 kW AC-Servo	
	For Work spindle	1.5 kW 4 P (Inverter)	
	For Wheelhead	High-frequency type	
	For Hydraulic pump	1.5 kW 4 P	
	For Table	1.5 kW AC-servo	
	For Dress		0.15 kW 2P (Inverter)
Hydraulic tank capacity		15 L	
Floor dimension (Width $\times$ Depth $\times$ Height)		1,700 $\times$ 1,700 $\times$ 2,100 mm	2,865 $\times$ 2,085 $\times$ 2,228 mm
Weight		About 3,700 kg	

1.0 SPECIFICATIONS

1.1 Specifications of CNC Internal Grinding Machine

(T-11LA78)

Item		Standard Specifications	Special Specifications
Grinding method		NC Oscillation & Plange	
Sizing method		Auto size	Auto gauge(Front Fork Gauge)
Support method		1-shoe & 2-roller	
Loading method		1-shoe & 2-roller	
Dress method		Rigid type single point dresser	Fixed type rotary dresser
Setting work O.D.		ϕ 6 ~ ϕ 40 mm	ϕ 10 ~ ϕ 20 mm
Grindable work width		5 ~ 25 mm	10 ~ 30 (35) mm
Grindable work I.D.		ϕ 6 ~ mm	ϕ ~ ϕ mm
Height between the floor and the center of work		985 + 150 mm	mm
Work spindle speed		200 ~ 1,150 r/min	
Work spindle swivel angle		$\pm$ 0.5 °	°
Table(Z-axis) Stroke		270 mm	mm
Table(Z-axis) speed		0.2 ~ 333,000 μ m/s	μ m/s
Table oscillate frequency		15 ~ 520 r/min	r/min
Table oscillate amplitude		0 ~ 25 mm	mm
Feed(X-axis) travel	Advance	112 mm	mm
	Retract	13 mm	mm
Feed(X-axis) travel speed		ϕ 0.4 ~ ϕ 333,000 μ m/s	ϕ ~ μ m/s
Motor	Infeed(X-axis)	1.0 kW AC-servo	
	Work spindle	0.75 kW 4 P (Inverter)	kW P (Inverter)
	Wheelhead	High-frequency type	3.7kW (High-frequency type)
	Table(Z-axis)	1.5 kW AC-servo	
	Hydraulic pump	1.5 kW 4 P	
	Rotary dress		0.48kW (High-frequency type)
Hydraulic tank capacity		15 L	L
Floor dimension (Width $\times$ Depth $\times$ Height)		1,700 $\times$ 1,700 $\times$ 1,600 mm	3,150 $\times$ 3,560 $\times$ 2,236 mm
Weight		3,700 kg	kg

Competent Body
TÜV Rheinland
Product Safety GmbH



Am Grauen Stein
D-51105 Köln

accredited by the

Regulierungsbehörde für Telekommunikation und Post
herewith grants a

Certificate of a Competent Body

within the meaning of Paragr. 4 (2) EMC Act respectively Art. 10 (2) of the
EMC Council Directive on compliance with the EMC protection requirements

Certificate Holder:

Toyo Advanced Technologies Co.,Ltd.
5-3-38 Ujina-Higashi, Minami-ku
Hiroshima-shi, Hiroshima 734-8501
Japan

Product:

Schleifmaschine
Internal Grinding Machine

Identification:

T-11JAS

as described in the Technical Construction File
"61QGR-7032", as of June 09, 2005

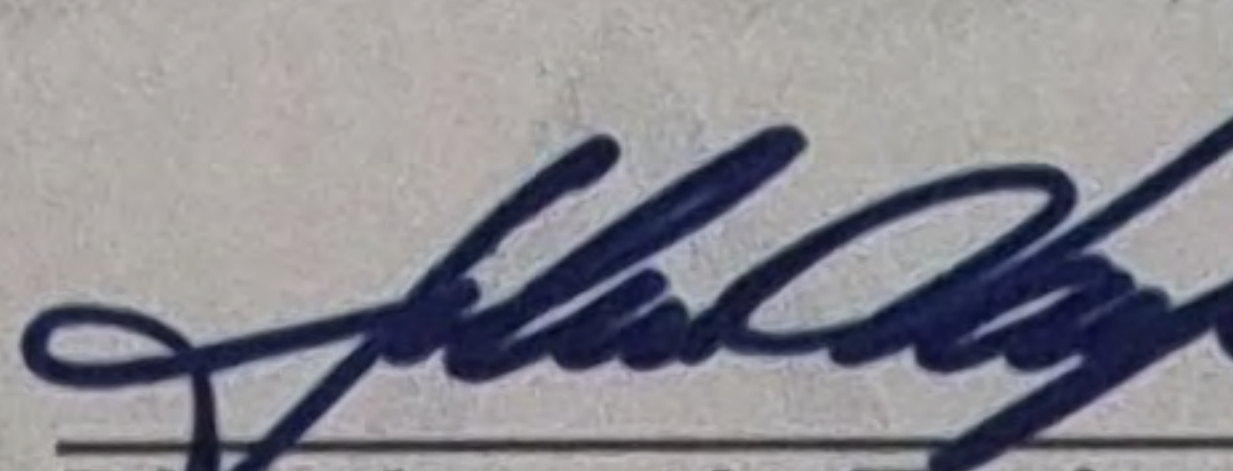
This certificate was issued in accordance with Article 10 (2) of the Council Directive 89/336/EEC in its latest amended version on the approximation of the laws of the Member States relating to electromagnetic compatibility, implemented in Germany by the "Electromagnetic Compatibility Act of September 18th, 1998 (EMVG, Paragr. 4(2))". This certificate does not testify to compliance with the EMC protection requirements of other laws implementing Directives of the European Community other than Council Directive 89/336/EEC. This certificate relates to the sample submitted for testing or to the technical report.

Registration No.: AV 50065996 0001

Reference No.: 12700517 002 of:06.07.2005

Cologne, 06.07.2005

Competent Body


Dipl.-Ing. J. Taylor



Notified Body
TÜV Rheinland
Product Safety GmbH



Am Grauen Stein
D-51105 Köln

recognized by the

**Bundesnetzagentur für Elektrizität, Gas,
Telekommunikation, Post und Eisenbahnen**
herewith grants a

Statement of a Notified Body

within the meaning of Annex III of the EMC Council

Directive 2004/108/EC on compliance with the EMC protection requirements

Statement Holder:

Toyo Advanced Technologies Co.,Ltd.
5-3-38 Ujina-Higashi, Minami-ku
Hiroshima-shi, Hiroshima
734-8501 JAPAN

Product:

Grinder
Internal Grinding Machine

Identification:

T-11JAG, T-11L19, T-11L47,
T-11LA78, T-11LA88, T-11JAS

as described in the Technical Construction File
"61QGR-7032", Rev.No.: 1, as of November 29, 2007

This statement was issued in accordance with Annex III of the Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility. This statement does not testify to compliance with the EMC protection requirements of other laws implementing Directives of the European Community other than Council Directive 2004/108/EC. This statement relates to the sample submitted for testing or to the technical report.

Registration No.: AV 50065996 0002

Notified Body

Reference No.: 12700517 004 of: 06.12.2007

Cologne, 06.12.2007

Dipl.-Ing. J. Taylor



TÜV Rheinland Japan Ltd.**Member of TÜV Rheinland / Berlin-Brandenburg Group**

Toyo Advanced Technologies Co., Ltd.
Mr. K. Kawaguchi, Staff Manager
Machinery Control Dept.
5-3-38 Ujina-Higashi, Minami-ku
Hiroshima-shi, Hiroshima 734-8501
Japan

Date : 06.07.2005
Our ref. : PA ZK
Your ref.: T.M.

Ref : EC Certificate of Conformity (EMC)

Type of Equipment : Internal Grinding Machine
Model Designation : See Certificate
Certificate No. : AV 50065996 0001
Report No. : 12700517 002

Dear Mr. K. Kawaguchi,

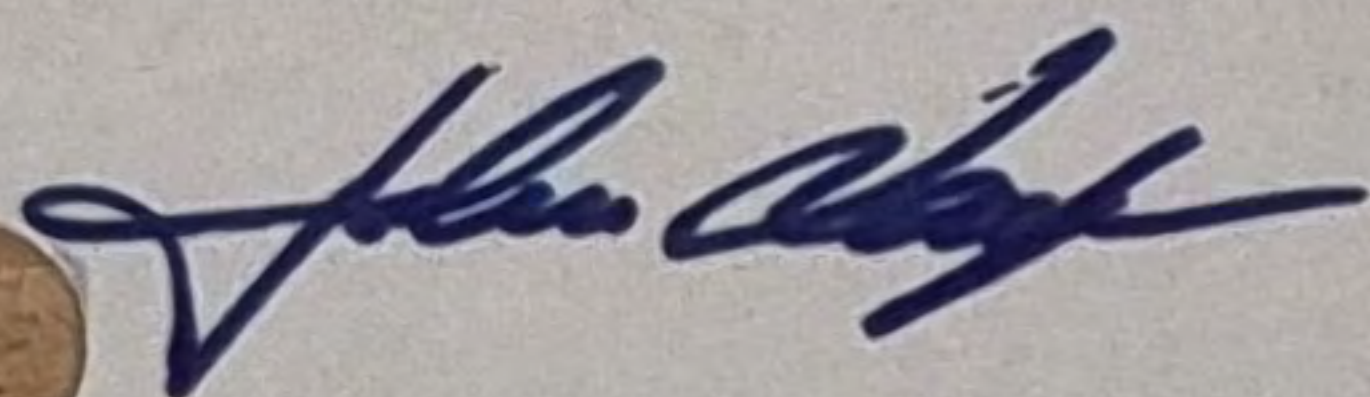
Thank you very much for your interest in our services.

Please find enclosed your certification documents.

We appreciate your support and would like to offer our assistance in the approval of your future products through our extensive range of technical services. Please feel free to contact us whatever your requirements may be.

With kind regards,

Certification Body



Dipl.-Ing. J. Taylor

Enclosure

Kyushu Office

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3-19-5, Shin Yokohama Fax : (045) 473-5221
Kohoku-ku, Yokohama 222-0033, Japan e-mail: info@jpn.tuv.com

EC DECLARATION OF CONFORMITY

Toyo Advanced Technologies Co.,Ltd.

(Name of the company)

5-3-38 Ujina-Higashi Minami-ku, Hiroshima 734-8501 Japan

(Address)

declares, in sole responsibility, that the following equipment

Internal Grinding Machine Model : T-11JAS, T-11JAG, T-11L19, T-11L47,
T-11LA78, T-11LA88, T-11L59, T-11L57,

Made in Japan

(Type or model, designation, country of origin)

This product comply with following European directives.

Machinery Directive : 89/392/EEC

Low Voltage Directive : 73/23/EEC

The company named above will keep on file for review the following technical documentation:

- operating and maintenance instructions
- technical drawings
- risk assessment
- description of measures designed to ensure conformity
- other technical documentation, e.g. quality assurance measures for design and production

Note: This declaration becomes invalid if technical or operational modifications are introduced without the manufacturer's consent.

Hiroshima Japan

(Place and date issued)

Kozo Yoneda
Kozo Yoneda
Managing Director, Machine Tool Operation

(Name and signature as well as position of declarant)

EC DECLARATION OF CONFORMITY

according to EMC Directive 89/336/EEC
and latest amendments 92/31/EEC and 93/68/EEC

Toyo Advanced Technologies Co.,Ltd.

(Name of the company)

5-3-38 Ujina-Higashi Minami-ku, Hiroshima 734-8501 Japan

(Address)

declares, in sole responsibility, that the following equipment

Internal Grinding Machine Model : T-11JAS, T-11JAG, T-11L19, T-11L59,

T-11L57, T-11L47, T-11LA78, T-11LA88 Made in Japan

(Type or model, designation, country of origin)

referred to in this declaration conforms with the following directive(s):

EMC Directive 89/336/EEC and latest amendments 92/31/EEC and 93/68/EEC

(Title or number and issue date of normative documents)

The company named above will keep on file for review the following technical documentation:

- operating and maintenance instructions
- technical drawings
- description of measures designed to ensure conformity
- other technical documentation, e.g. quality assurance measures for design and production

This declaration is based on the conformity assessment of following Competent Body:

TÜV Rheinland
Product Safety GmbH
Am Grauen Stein
D-51101 Köln

AV 50065996 0002

(Certificate registration number)

Importer/Distributor in EU:

HYUNDAI MOTOR MANUFACTURING Czech

(Name and address, only if non-EU declarant)

OSTRAVA, HARABOVA, AXIS OFFICE PARK OSTRAVA-BUDOVA Czech Republic

Note: This declaration becomes invalid if technical or operational modifications are introduced without the manufacturer's consent.

Hiroshima Japan

2007.12.7
(Place and date issued)

Kozo Yoneda
Kozo Yoneda
Managing Director, Machine Tool Operation

(Name and signature as well as position of declarant)

EC DECLARATION OF CONFORMITY

Toyo Advanced Technologies Co.,Ltd.

(Name of the company)

5-3-38 Ujina-Higashi Minami-ku, Hiroshima 734-8501 Japan

(Address)

declares, in sole responsibility, that the following equipment

Internal Grinding Machine Model : T-11JAS Made in Japan

(Type or model, designation, country of origin)

This product comply with following European directives.

Machinery Directive : 89/392/EEC

Low Voltage Directive : 73/23/EEC

The company named above will keep on file for review the following technical documentation:

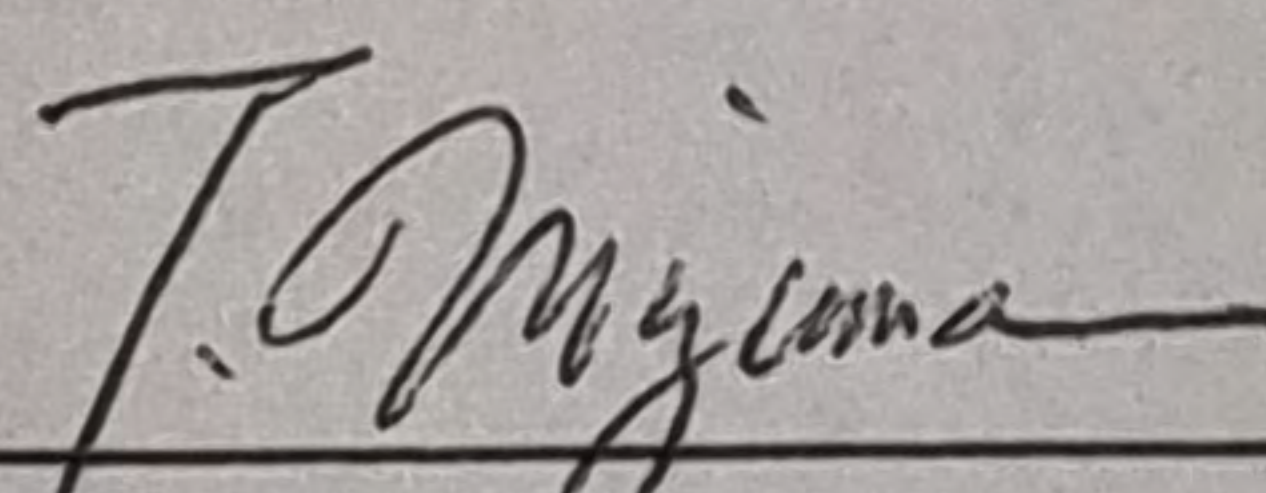
- operating and maintenance instructions
- technical drawings
- risk assessment
- description of measures designed to ensure conformity
- other technical documentation, e.g. quality assurance measures for design and production

Note: This declaration becomes invalid if technical or operational modifications are introduced without the manufacturer's consent.

Hiroshima Japan

2005. 7. 13

(Place and date issued)



Tatsutoshi Mizuma
Senior Managing Director, Machine Tool Operation

(Name and signature as well as position of declarant)

EC DECLARATION OF CONFORMITY

according to EMC Directive 89/336/EEC
and latest amendments 92/31/EEC and 93/68/EEC

Toyo Advanced Technologies Co., Ltd.

(Name of the company)

5-3-38 Ujina-Higashi Minami-ku, Hiroshima 734-8501 Japan

(Address)

declares, in sole responsibility, that the following equipment

Internal Grinding Machine Model : T-11JAS Made in Japan

(Type or model, designation, country of origin)

referred to in this declaration conforms with the following directive(s):

EMC Directive 89/336/EEC and latest amendments 92/31/EEC and 93/68/EEC

(Title or number and issue date of normative documents)

The company named above will keep on file for review the following technical documentation:

- operating and maintenance instructions
- technical drawings
- description of measures designed to ensure conformity
- other technical documentation, e.g. quality assurance measures for design and production

This declaration is based on the conformity assessment of following Competent Body:

TÜV Rheinland
Product Safety GmbH
Am Grauen Stein
D-51101 Köln

AV 50065996 0001

(Certificate registration number)

Importer/Distributor in EU:

Ohmori Technos Czech S.R.O.

(Name and address, only if non-EU declarant)

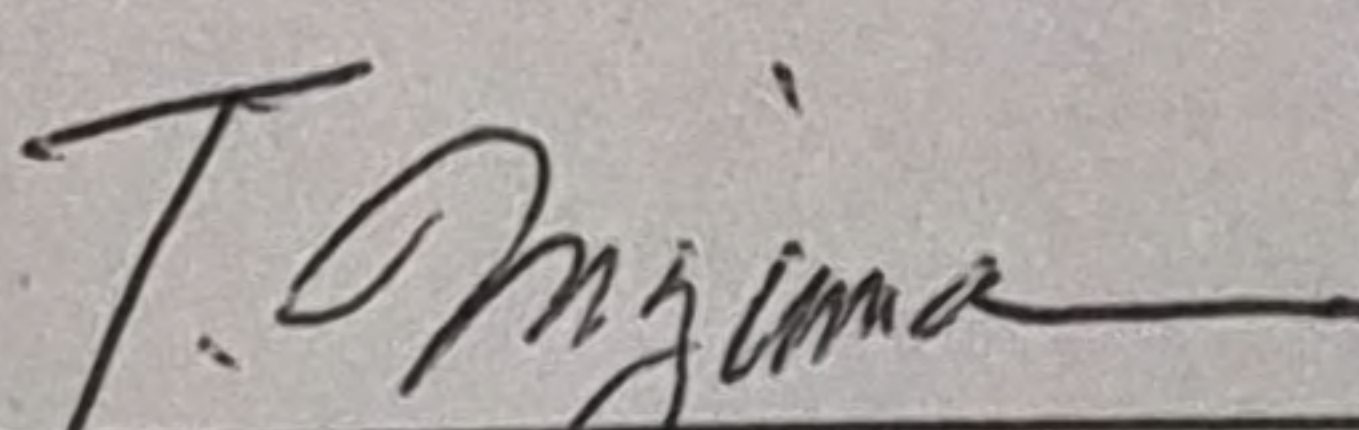
Turanka 627 00 Brno Slatina Czech Republic

Note: This declaration becomes invalid if technical or operational modifications are introduced without the manufacturer's consent.

Hiroshima Japan

6, 28, 2005

(Place and date issued)


Tatsutoshi Mizuma
Senior Managing Director, Machine Tool Operation

(Name and signature as well as position of declarant)