

NEW PRODUCT NEWS

mgt
MEGA TECH
METALWORK

Tungaloy Report No. 529-G

Multifunctional tool for drilling and turning

TUNGALOY **B**ORE MINI

**Expansion of DMIN = 8 mm holder for
TinyMini-Turn sleeve**





TUNG^BORE^{ORE} MINI



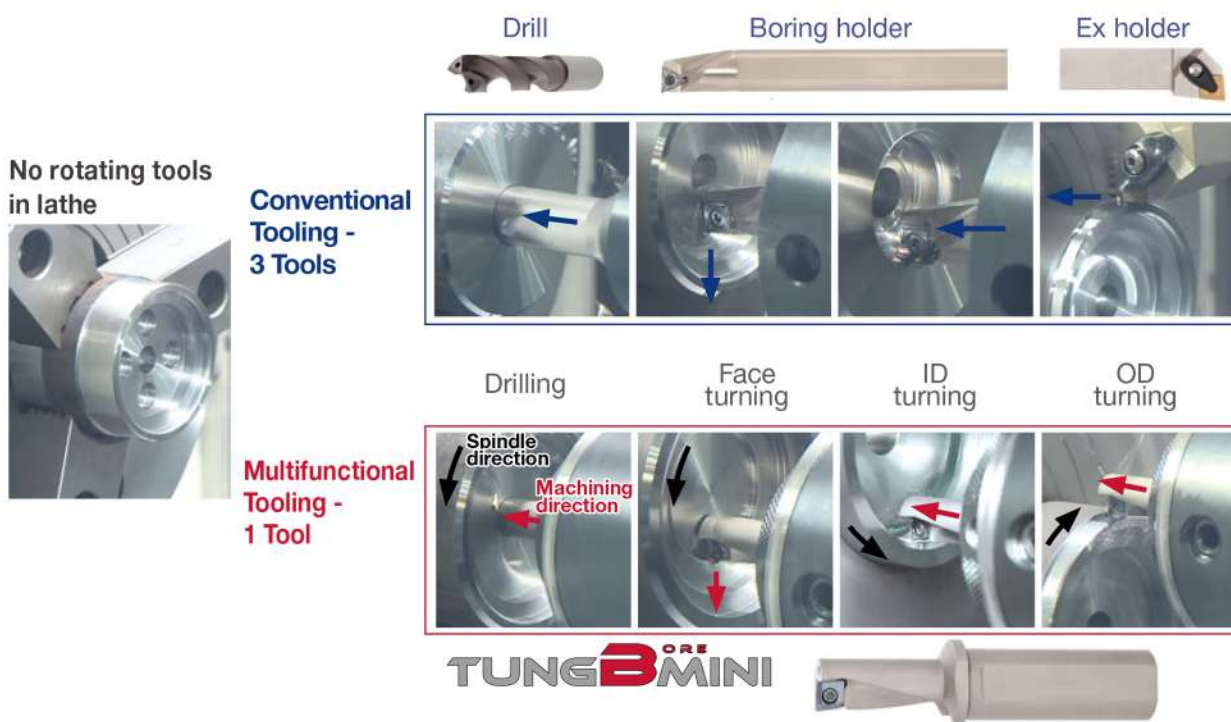
Reduced machine downtime thanks to eliminating
the need for tool changes.
Multifunctional Tool for Drilling and Turning.

TUNGB^{ORE}MINI

Multifunctional tool for improved productivity!

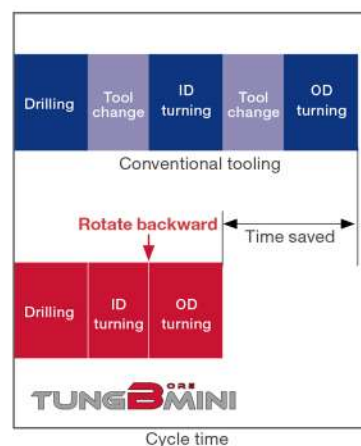
■ Minimum number of tools for maximum productivity

- A single TungBoreMini tool can handle multiple operations such as ID turning after drilling without exchanging the tools
- Allows drilling and hole enlargement on various materials, instead of using a drill and turning tool
- Can be used just like a standard ISO turning tool for ID, OD, and/or face turning applications



■ Reduced machine downtime

Multifunctional TungBoreMini eliminates tool changeover time, resulting in significantly reduced cycle time - this is especially effective in applications where individual processing time is short and quick, resulting in tremendous improvement in cycle time.



Line ups

TBM

Holder for Drilling and Turning
DMIN = 8 - 32 mm



New

A-TBM

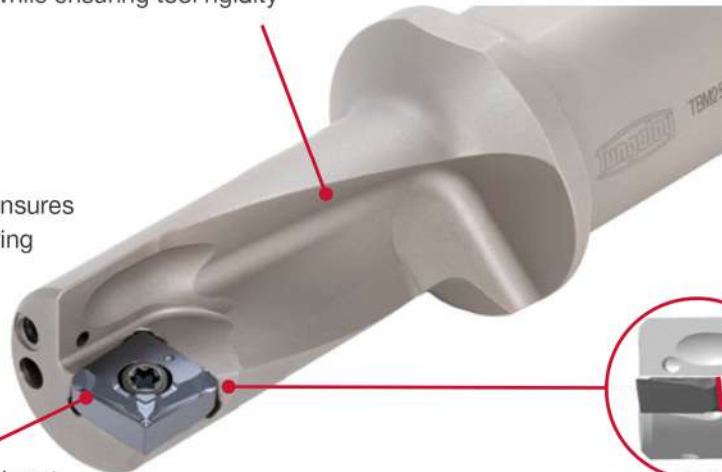
Holder for Drilling and Turning
with TinyMiniTurn sleeves
DMIN = 8 mm



Holder for Drilling and Turning

The flute is designed to promote smooth chip flow,
while ensuring tool rigidity

Optimized through-coolant ensures
effective chip evacuation during
machining

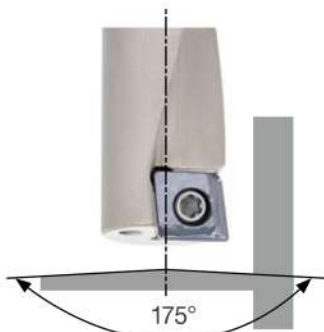
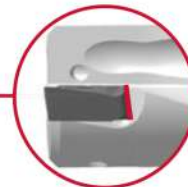


Double-sided insert
with 2 corners
XOMU-PS
For toolholders for
DMIN = 10 - 32 mm

TBM



Dovetail interlocking ensures
rigid insert clamping



Creates a near-flat hole bottom

New

A-TBM

Single-sided insert
with 2 corners
XCMT-PS
For toolholders for
DMIN = 8 mm



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Line ups

Internal boring bars for XOMU inserts

For Internal boring

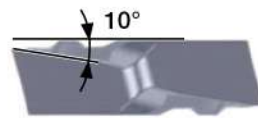
High chip evacuation

Large pocket clearance

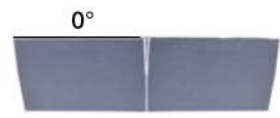


1. Low cutting force

Large inclination angle of XOMU insert



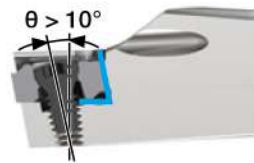
XOMU insert



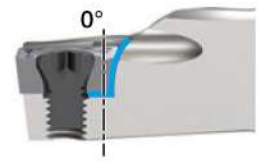
Conventional
(CCMT060204...)

2. High reliability & high rigidity clamping

Dovetail clamping and slanted insert clamping screw



TUNG^BORE^{ORE} MINI



Conventional
(CCMT060204...for boring bar)

GRADES

PVD grade: AH725

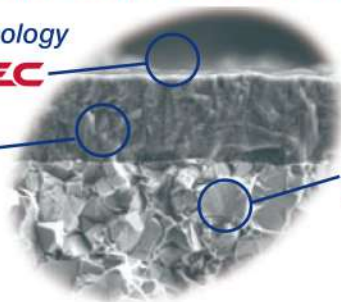
AH725 features a super tough substrate with a new PVD coating layer.

Special surface technology

PREMIUMTEC

Coating layer with
excellent adhesion
strength

PVD coating

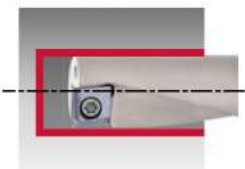


Remarkable toughness
Fine grain carbide

CUTTING PERFORMANCE

Drilling

P	Holder	: TBM25RF32-2.25
	Insert	: XOMU120404-PS AH725
	Workpiece material	: S45C / C45
	Application	: Drilling
	Coolant	: Internal



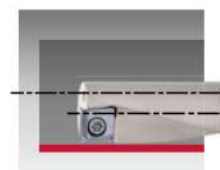
Drilling

0.05	0.07	0.09	0.11	0.13
Feed: f (mm/rev)				

Stable machining and excellent chip control during the hole making process.

Internal turning

P	Holder	: TBM25RF32-2.25
	Insert	: XOMU120404-PS AH725
	Workpiece material	: S45C / C45
	Application	: Internal turning
	Coolant	: Internal



Turning

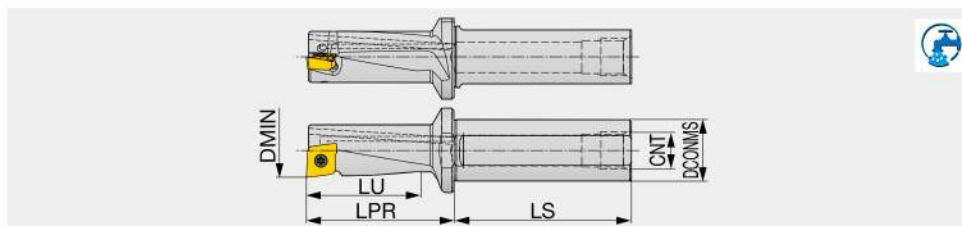
Depth of cut: a_p (mm)	2					
	1					
	0.5					
		0.1	0.15	0.2	0.25	0.3
Feed: f (mm/rev)						

Excellent chip control during I.D. finishing operation.

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TBM

Maximum hole depth for L/D = 2.25



Designation	DMIN	DCONMS	LU	LS	LPR	CNT	Insert	Torque*
TBM08RF12-2.25	8	12	18	41.5	22.5	-	XCMT040102R-PS	0.7
TBM10R/LF12-2.25	10	12	22.5	41.5	28.45	UNF 5/16-24	XOMU05X204-PS	0.7
TBM12R/LF16-2.25	12	16	27	43.9	33.53	G 1/8	XOMU06H204-PS	1
TBM14R/LF16-2.25	14	16	31.5	46.4	38.57	G 1/8	XOMU07H304-PS	1.3
TBM16R/LF20-2.25	16	20	36	57.1	42.9	G 1/8	XOMU08T304-PS	2.3
TBM18RF25-2.25	18	25	40.5	54	53.96	G 1/8	XOMU09T304-PS	2.3
TBM20RF25-2.25	20	25	45	54	54.94	G 1/8	XOMU100404-PS	3.5
TBM25RF32-2.25	25	32	56.5	59	69	G 1/8	XOMU120404-PS	3.5
TBM32RF40-2.25	32	40	72	69	87.95	G 1/8	XOMU160508-PS	3.5

Torque*: Recommended clamping torque (N·m)

SPARE PARTS

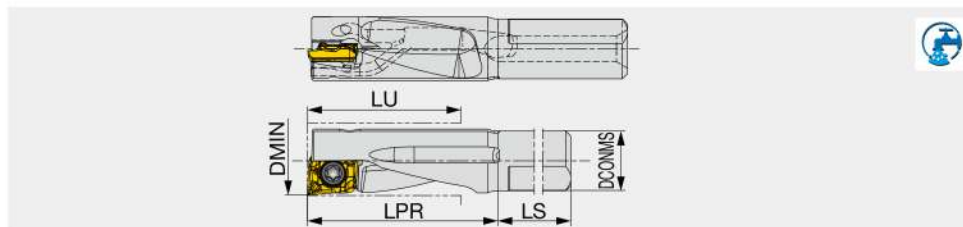


Designation	Clamping screw	Wrench
TBM08R...	CSTD-1.8	T-6D
TBM10R...	CSTB-2L040	T-6D
TBM12R...	CSPB-2.2	IP-7D
TBM14R...	CSPB-2.5	IP-8D
TBM16R..., TBM18RF...	CSTB-3	T-9D
TBM20RF...	CSPB-3.5	IP-15D
TBM25RF...	CSTB-4	T-15D
TBM32RF...	CSTB-4.5L110P	T-15D

New

A-TBM

Maximum hole depth for L/D = 2.25



Designation	DMIN	DCONMS	LU	LS	LPR	CNT	Insert	Torque*
A07080-TBMRF-2.25	8	7	18	15	22.5	-	XCMT040102R-PS	0.7

Torque*: Recommended clamping torque (N-m)

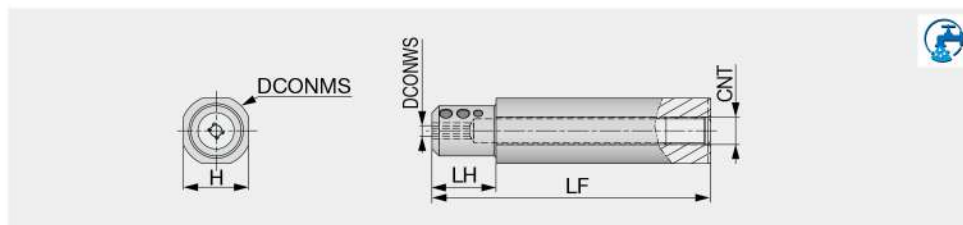
SPARE PARTS



Designation	Clamping screw	Wrench
A07080-TBMR..	CSTD-1.8	T-6D

JBBS-4N

Sleeve for internal coolant supply with 4 coolant holes



Designation	DCONMS	DCONWS	LF	LH	H	CNT
JBBS159-7-L100C-4N	15.875	7	100	10	14.58	Rc1/8
JBBS16-7-L100C-4N	16	7	100	10	15	Rc1/8
JBBS19-7-L100C-4N	19.05	7	100	20	17.2	Rc1/8
JBBS20-7-L100C-4N	20	7	100	20	18	Rc1/8
JBBS22-7-L100C-4N	22	7	100	20	20	Rc1/8
JBBS25-7-L100C-4N	25	7	100	23	23	Rc1/8
JBBS254-7-L100C-4N	25.4	7	100	23	23.4	Rc1/8

SPARE PARTS

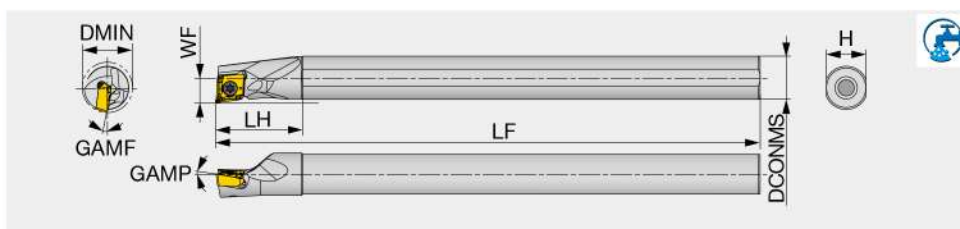


Designation	Clamping screw	Wrench
JBBS**-7-L**C-4N	SSHM5-4PF-S	P-2.5

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A/E-SXUOR/L

Screw-on boring bar, for XOMU rhombic inserts



Designation	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	Insert
A08H-SXUOR/L05-D100	10	8	5	100	16	7.5	-7°	-0.8°	XOMU05X204-PS
A12M-SXUOR/L07-D140	14	12	7	150	24	11	-7.2°	3.2°	XOMU07H304-PS
E08K-SXUOR/L05-D100	10	8	5	125	22	7.5	-7°	-0.8°	XOMU05X204-PS
E12Q-SXUOR/L07-D140	14	12	7	180	27	11	-7.2°	3.2°	XOMU07H304-PS

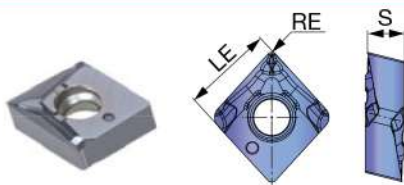
SPARE PARTS



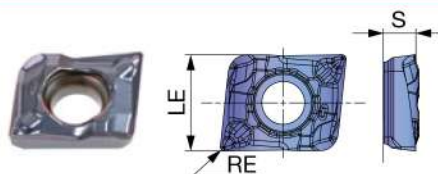
Designation	Clamping screw	Wrench
A08H-SXUOR/L05-D100	CSTB-2L040	T-6F
A12M-SXUOR/L07-D140	CSPB-2.5	IP-8D
E08K-SXUOR/L05-D100	CSTB-2L040	T-6F
E12Q-SXUOR/L07-D140	CSPB-2.5	IP-8D

■ INSERT

XOMU-PS



XCMT-PS



P	Steel	★			
M	Stainless	★			
K	Cast iron	★			
N	Non-ferrous	★			
S	Superalloys				
H	Hard materials				

★ : First choice

[illegible]

● : Line up

STANDARD CUTTING CONDITIONS

Drilling

ISO	Workpiece materials	Cutting speed Vc (m/min)	Minimum bore diameter: DMIN (mm)								
			ø8	ø10	ø12	ø14	ø16	ø18	ø20	ø25	ø32
	Low carbon steel Carbon steel	50 - 180	0.02 - 0.05	0.02 - 0.05	0.02 - 0.07	0.01 - 0.075	0.01 - 0.08	0.05 - 0.13	0.05 - 0.13	0.05 - 0.14	0.05 - 0.14
	Stainless steel	50 - 160	0.02 - 0.05	0.02 - 0.05	0.02 - 0.07	0.01 - 0.075	0.01 - 0.08	0.05 - 0.13	0.05 - 0.13	0.05 - 0.14	0.05 - 0.14
	Cast iron	50 - 180	0.02 - 0.05	0.02 - 0.05	0.02 - 0.07	0.01 - 0.075	0.01 - 0.08	0.05 - 0.13	0.05 - 0.13	0.05 - 0.14	0.05 - 0.14
	Aluminium alloys	100 - 300	0.02 - 0.05	0.02 - 0.05	0.02 - 0.07	0.01 - 0.075	0.01 - 0.08	0.05 - 0.13	0.05 - 0.13	0.05 - 0.14	0.05 - 0.14

Internal turning

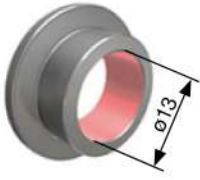
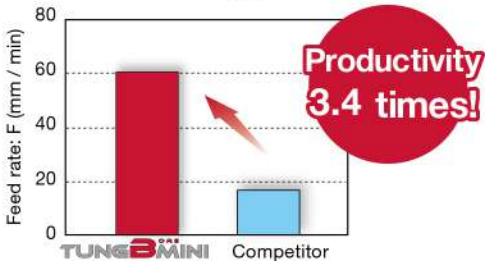
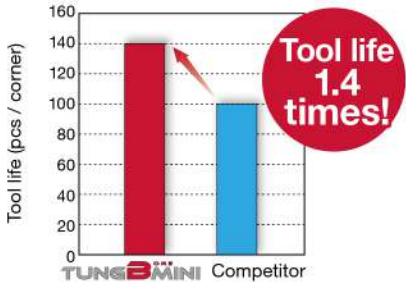
ISO	Workpiece materials	Cutting speed Vc (m/min)	Minimum bore diameter: DMIN (mm)								
			ø8	ø10	ø12	ø14	ø16	ø18	ø20	ø25	ø32
	Low carbon steel Carbon steel	50 - 180	Depth of cut: ap (mm)								
			0.2 - 2.5	0.5 - 3	0.5 - 3.5	0.5 - 4.5	0.5 - 5	0.5 - 5.5	0.5 - 6	0.5 - 6.5	0.5 - 7
			Feed: f (mm/rev)								
			0.02 - 0.12	0.05 - 0.2	0.05 - 0.2	0.05 - 0.2	0.05 - 0.2	0.1 - 0.3	0.1 - 0.3	0.1 - 0.3	0.1 - 0.4

ISO	Workpiece materials	Cutting speed Vc (m/min)	Minimum bore diameter: DMIN (mm)								
			ø8	ø10	ø12	ø14	ø16	ø18	ø20	ø25	ø32
M	Stainless steel	50 - 160	Depth of cut: ap (mm)								
			0.2 - 2.5	0.5 - 3	0.5 - 3.5	0.5 - 4.5	0.5 - 5	0.5 - 5.5	0.5 - 6	0.5 - 6.5	0.5 - 7
			Feed: f (mm/rev)								
			0.02 - 0.12	0.05 - 0.2	0.05 - 0.2	0.05 - 0.2	0.05 - 0.2	0.1 - 0.3	0.1 - 0.3	0.1 - 0.3	0.1 - 0.4

ISO	Workpiece materials	Cutting speed Vc (m/min)	Minimum bore diameter: DMIN (mm)								
			ø8	ø10	ø12	ø14	ø16	ø18	ø20	ø25	ø32
	Cast iron	50 - 180	Depth of cut: ap (mm)								
			0.2 - 2.5	0.5 - 3	0.5 - 3.5	0.5 - 4.5	0.5 - 5	0.5 - 5.5	0.5 - 6	0.5 - 6.5	0.5 - 7
			Feed: f (mm/rev)								
			0.02 - 0.12	0.05 - 0.2	0.05 - 0.2	0.05 - 0.2	0.05 - 0.2	0.1 - 0.3	0.1 - 0.3	0.1 - 0.3	0.1 - 0.4

ISO	Workpiece materials	Cutting speed Vc (m/min)	Minimum bore diameter: DMIN (mm)								
			ø8	ø10	ø12	ø14	ø16	ø18	ø20	ø25	ø32
N	Aluminium alloys	100 - 300	Depth of cut: ap (mm)								
			0.2 - 2.5	0.5 - 3	0.5 - 3.5	0.5 - 4.5	0.5 - 5	0.5 - 5.5	0.5 - 6	0.5 - 6.5	0.5 - 7
			Feed: f (mm/rev)								
			0.02 - 0.12	0.05 - 0.2	0.05 - 0.2	0.05 - 0.2	0.05 - 0.2	0.1 - 0.3	0.1 - 0.3	0.1 - 0.3	0.1 - 0.4

PRACTICAL EXAMPLES

Workpiece type		Machine parts	Machine parts
Toolholder		TBM12RF16-2.25	A07080-TBMRP-2.25
Insert		XOMU06H204-PS	XCMT040102R-PS
Grade		AH725	AH725
		SUS440 / X68Cr17	S45C / C45
Workpiece material			
Cutting conditions	Cutting speed: V_c (m/min)	80	Drilling: 50, Internal turning: 120
	Feed : f (mm/rev)	0.15	Drilling: 0.03, Internal turning: 0.05
	Depth of cut : a_p (mm)	2.5	0.5 - 2
	Coolant	Wet	Wet
Results		 TungBoreMini has improved feed rate by 3.4 times for drilling and 1.7 times for ID turning over the competitor's multifunction tool. Tool life has been improved by as much as 1.2 times.	 TungBoreMini can reduce the number of tools from 3 to 1.
Workpiece type		Knob part	Bearing part
Toolholder		TBM18RF25-2.25	TBM25RF32-2.25
Insert		XOMU09T304-PS	XOMU120404-PS
Grade		AH725	AH725
		S45C / C45	FCD450 / GGG45
Workpiece material			
Cutting conditions	Cutting speed: V_c (m/min)	Drilling: 70, Internal turning: 70	Internal turning: 60, Face turning: 100
	Feed : f (mm/rev)	Drilling: 0.09, Internal turning: 0.25	Internal turning: 0.2, Face turning: 0.15
	Depth of cut : a_p (mm)	0.5 - 1	0.5 - 2
	Coolant	Wet	Wet
Results		 A single TungBoreMini performed three different operations, allowing significant productivity improvement.	 TungBoreMini provided 1.4x tool life increase over the competitor tool.

CONTACT US

mgt

MEGA TECH
METALWORK



MEGA TECH METALWORK CO.,LTD (Headquarter)



Tel : 02-943-1591



Fax : 02-943-1592



Line ID : @mgt_metalwork



Email : sales.m@mgtg.co.th



Web : <https://www.mgtg.co.th/>



17/4 Soi Ramintra 89
Ramintra Khannayao
Bangkok 10230



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