WE CREATE YOUR TOMORROW!

The best solution for the machining various kinds of materials

PC5300 / PC5400

Series of Universal Grades

- Superior and universal grade for machining various kinds of materials
- The new PVD coating layer ensures excellent performance and stability in machining

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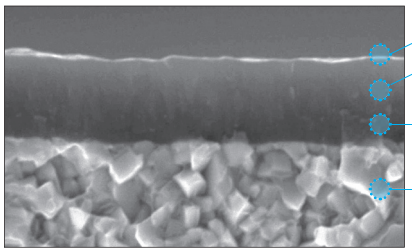
PC5300 / PC5400

Universal Grade Series

PVD PC 5300

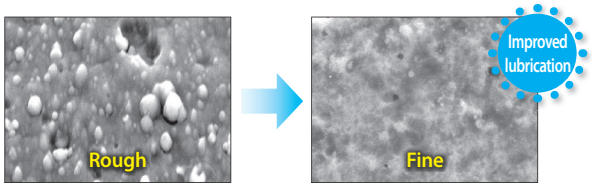
- PVD coating layer with high hardness and oxidation resistance during machining at high temperature
  → Superior oxidation resistance during machining of steel, cast iron, stainless steel, and heat-resistant alloys
- Ultra fine grain substrate with high toughness and special treatment on the surface
  → Improved welding resistance and chipping resistance

Features



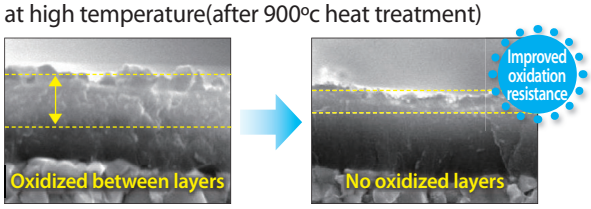
① Coating layer with high surface finish → Superior welding resistance
② Coating layer with high hardness and oxidation resistance during machining at high tempe → Superb wear resistance during machining at high speeds
③ Coating layer with high toughness and high adhesive strength
→ Excellent chipping resistance
④ Ultra fine grain substrate with high toughness
→ Great fracture resistance and stability in machining

- Special treatment on the surface



[Existing coating layer] [PC5300]

- Coating layer with oxidation resistance during machining at high temperature(after 900ºc heat treatment)

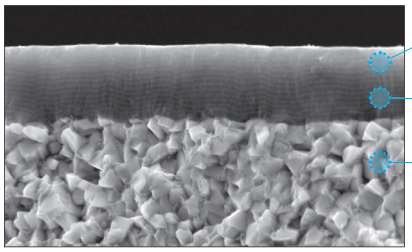


[Competitor's layer] [PC5300]

PVD PC 5400

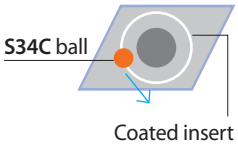
- Coating layer with excellent lubrication → Improved wear resistance and surface roughness at low speed machining or machining of deposited materials and mild steel
- Ultra fine grain substrate with high toughness and special treatment on the surface
  → chipping resistance and fracture resistance ensures stability in machining

Features

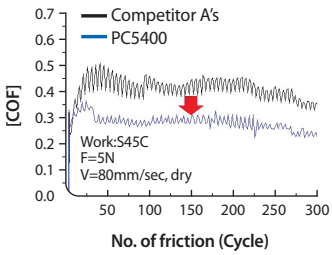


① Coating layer with superior lubrication → Welding resistance ensures excellent machining of carbon steel and mild steel
② Coating layer with high toughness and high adhesive strength
→ Superior chipping resistance
③ Ultra fine grain substrate with high toughness
→ Fracture resistance and high stability at machining

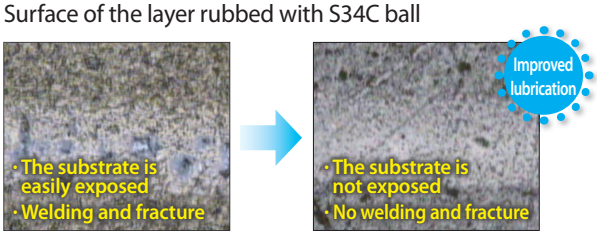
- Evaluation of measuring Coefficient of Friction



- Layer with high lubrication
  (Evaluation of measuring Coefficient of Friction)



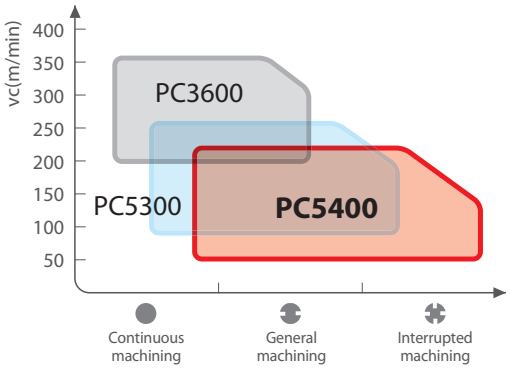
- Surface of the layer rubbed with S34C ball



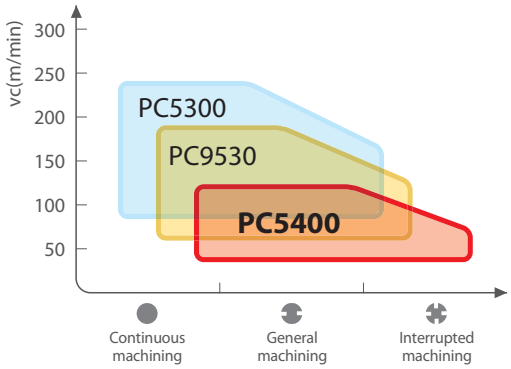
[Competitor A] [PC5400]

Milling Grades Line-up

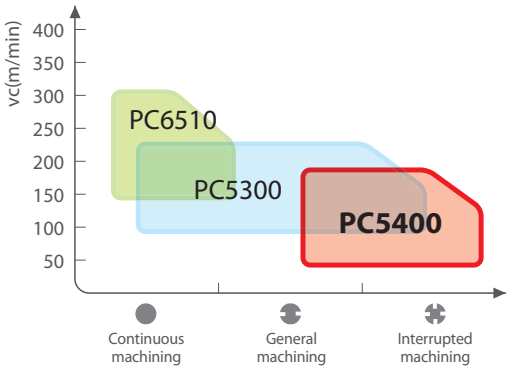
P Steel



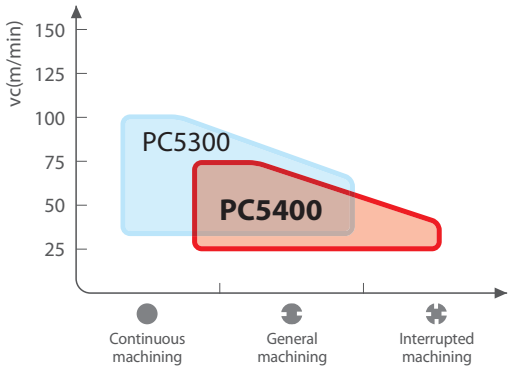
M Stainless steel



K Cast iron



S Heat-resistant alloy



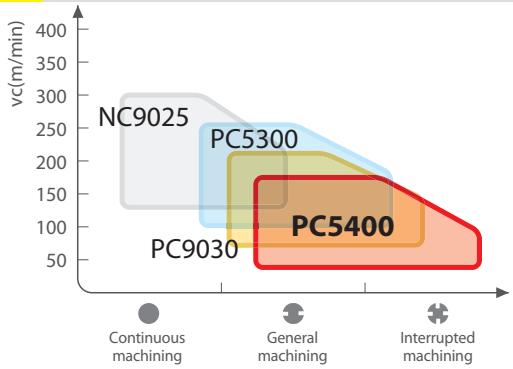
Milling Insert

Chip breaker	Cutting edge	Applications	Features
MA		Aluminum	Optimally buffed cutting edge for machining of aluminum ensures excellent performance
ML		Hard-to-cut materials	Chip breaker designed for low cutting load ensures superb performance in machining of hard-to-cut materials
MF		For finishing	Chip breaker having stronger cutting edge than ML is optimal for finishing with low cutting load
MM		Universal	Optimal for universal milling

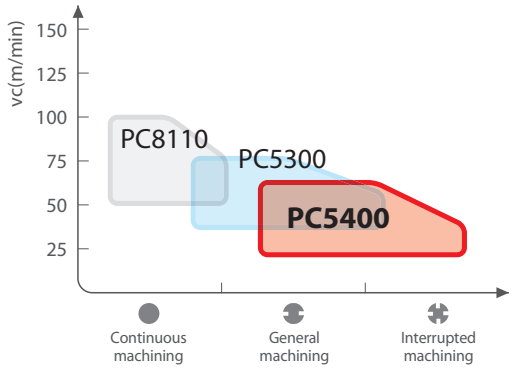
PC5300 / PC5400

Turning grades Line-up

M Stainless steel



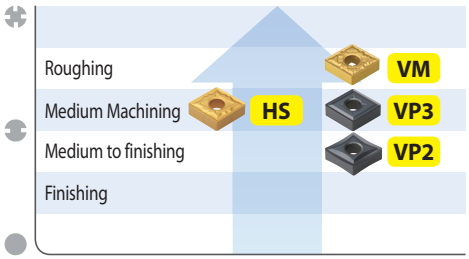
S Heat-resistant alloy



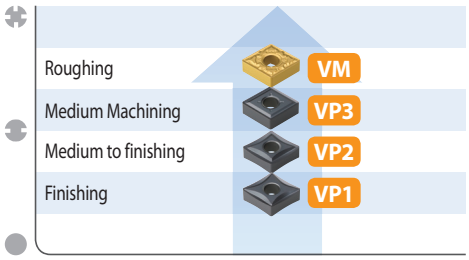
Chip breakers for turning inserts

- **Negative insert**

M Stainless steel

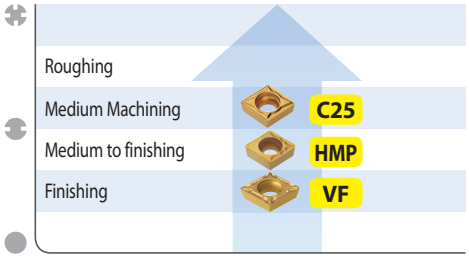


S Heat-resistant alloy

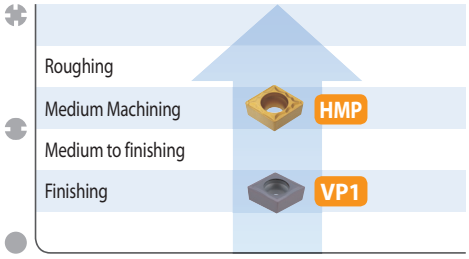


- **Positive insert**

M Stainless steel



S Heat-resistant alloy



Comparison for universal grades

Grade	Korloy	MMC	Sandvik	Iscar	Kyocera	KTT	Seco
S15-25 M20-35	**PC5300**	VP15TF	GC1025 GC1030	IC908	PR1125 PR1225 PR630	TT9030 TT9080	CP500
S25-35 M35-45	**PC5400**	VP30RT	GC1040 GC2040	IC328	PR660	TT8020 TT8080	F40M

Recommended Cutting Conditions

Workpiece					vc(m/min)			
ISO	KS	Workpiece	HB	HRC	Turning		Milling	
					PC5300	**PC5400**	PC5300	**PC5400**
P Carbon steel	SM15C SM25C SM35C	Low carbon steel	80~180	10below	100~170	**80~150**	140~270	**100~250**
	SM45C SM58C SCMn1 SMn438(H) SUM22 SNC236	High carbon steel	180~280	10~30	80~160	**70~140**	90~220	**80~220**
P Alloy steel	SCM4105 SCM440 SCMnH1	Low alloy steel	140~260	27below	80~150	**70~130**	100~200	**80~200**
	SCr440 SNCM220 SNCM240	Low alloy pre-hardened steel	220~450	20~50	60~130	**50~110**	70~140	**60~120**
	STD1 STD61 STS43	High alloy steel	50~260	27below	80~130	**70~110**	70~150	**60~150**
	SKH55 SKH3 SKH51	High alloy pre-hardened steel	220~450	20~48	50~100	**40~100**	40~110	**30~90**
M Stainless steel	STS304 STR31 STR316	Austenite Series	135~275 Ni>8%	29below	120~220	**100~200**	100~230	**80~180**
	STS316 B11SSC16 STS321 STS12	Cast steel Austenite	150~250	25below	100~200	**80~180**	90~190	**50~170**
	STS403 STS410 STS420 STS430 STR446 STR36	Ferrite series Martensite series	135~275	29below	120~280	**100~250**	110~240	**80~200**
S Heat-resistant alloy	Incoloy800	Fe base	200~280	29below	50~80	**40~60**	40~65	**30~60**
	Hastelloy C Inconel718 Nimonic901	Ni base	250~320	34below	20~55	**20~50**	35~60	**30~60**
	Stellite	Co base	200~320	34below			10~25	**10~25**
	TA14/17	Ti alloy steel	400	43below	110~160	**80~140**	100~120	**80~100**
		Ti High hardness alloy steel	4000이상	43above	40~65	**30~60**	45~65	**30~60**
K Cast iron	GC100 GC150 GC200	Low tensile strength	180	18below	110~180	**80~150**	200~210	**150~180**
	GC250 GC350	High tensile strength	220	23below	95~140	**80~110**	150~230	**120~200**
	GCD400 GCD500	Ferrite series	160	10below	95~135	**80~110**	110~180	**80~150**
	GCD600	Ferrite series	250	24below	90~130	**70~110**	100~160	**70~130**
	GCD700	Martensite series	380	41below	65~100	**50~90**	60~120	**50~100**
N Aluminum Copper alloy	Aluminum	Aluminum alloy	30~150	-	40~400	**40~400**	250~400	**250~400**
	Copper, copper alloy		150~160	-	20~250	**20~250**	300~500	**300~500**

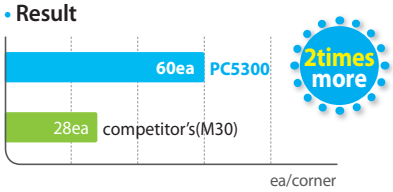
Application Examples(PC5300)

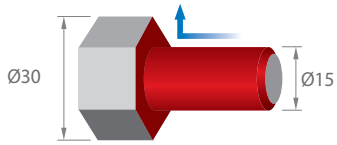
• Turning

M Stainless steel (STS304)

- **Cutting conditions** vc(m/min) = 282
  fn(mm/rev) = 0.2
  ap(mm) = 3.0
  wet
- **Tool** Insert CNMG120408-HS
  Holder DCLNL2525-M12

• **Result**

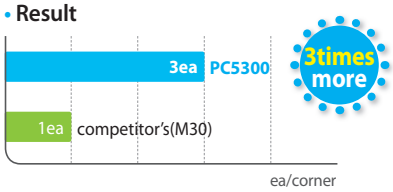


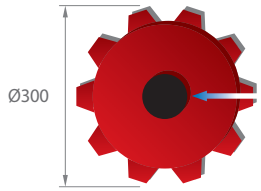


M Stainless steel (STS316)

- **Cutting conditions** vc(m/min) = 120
  fn(mm/rev) = 0.2
  ap(mm) = 0.5~1.5
  wet
- **Tool** Insert SNMG120408-GS
  Holder DSBNL2525-M12

• **Result**



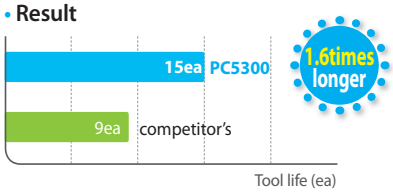


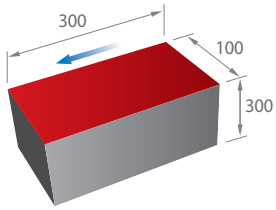
• Milling

P Carbon Steel (SM45C)

- **Cutting conditions** vc(m/min) = 250
  fz(mm/t) = 0.3
  ap(mm) = 2.0
  dry
- **Tool** Insert SPKN1504EDSR-SU
  Cutter EPN5160R

• **Result**

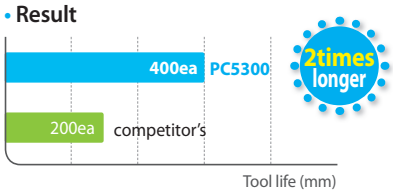


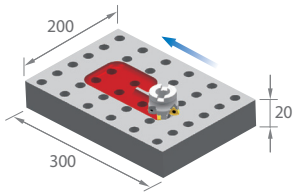


P Alloy steel (KP4M)

- **Cutting conditions** vc(m/min) = 250
  fz(mm/t) = 1.0
  ap(mm) = 1.0
  dry
- **Tool** Insert WNMX130520ZNN-MM
  Cutter HRMDCM13050HR-3

• **Result**

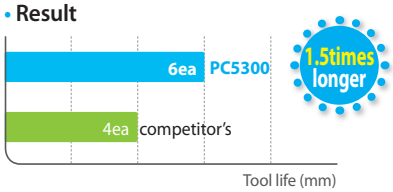


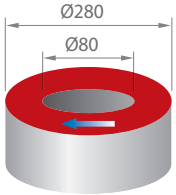


M Stainless steel (STS316)

- **Cutting conditions** vc(m/min) = 65
  fz(mm/t) = 0.14
  ap(mm) = 3.0
  wet
- **Tool** Insert SEET14M4AGSN-MM
  Cutter FMACM4100HR

• **Result**





Application Examples(PC5400)

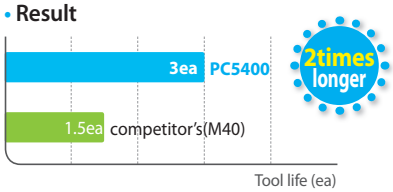
• Turning

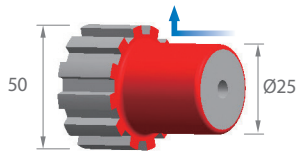
M Stainless steel (STS304)

• **Cutting conditions** vc(m/min) = 110
fn(mm/rev) = 0.25
ap(mm) = 1.0~2.0
wet

• **Tool** Insert CNMG120408-VP3
Holder DCLNL2525-M12

• **Result**





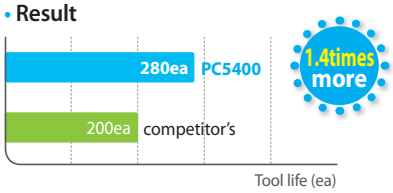
• Milling

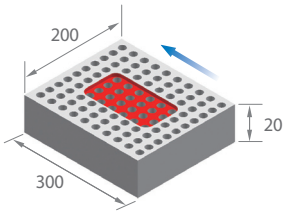
P Carbon steel (SM45C)

• **Cutting conditions** vc(m/min) = 250
fz(mm/t) = 1.2
ap(mm) = 1.0
dry

• **Tool** Insert WNMX130520ZNN-MM
Cutter HRMDCM13050HR-4

• **Result**



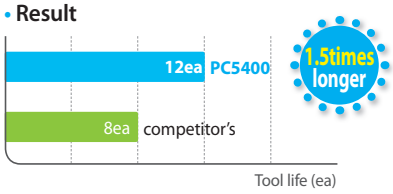


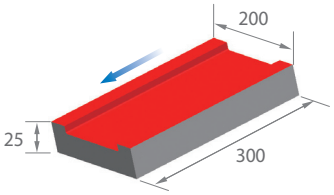
P Alloy steel (SCR440)

• **Cutting conditions** vc(m/min) = 180
fz(mm/t) = 0.2
ap(mm) = 2.0
dry

• **Tool** Insert RDKT1605M0-MM
Cutter FMRC5063HRD-H

• **Result**



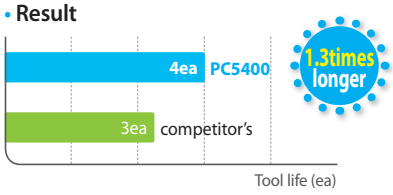


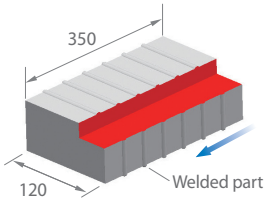
M Stainless steel (STS316)

• **Cutting conditions** vc(m/min) = 50
fz(mm/t) = 0.1
ap(mm) = 4.0
ae(mm) = 15.0
dry

• **Tool** Insert APMT1604PDSR-MM
Cutter AMC3063HS

• **Result**



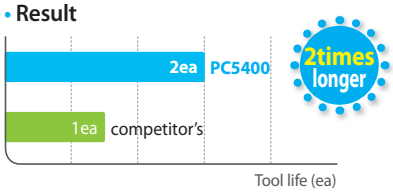


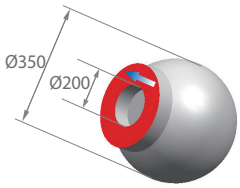
S Heat-resisting alloy (INCONEL718)

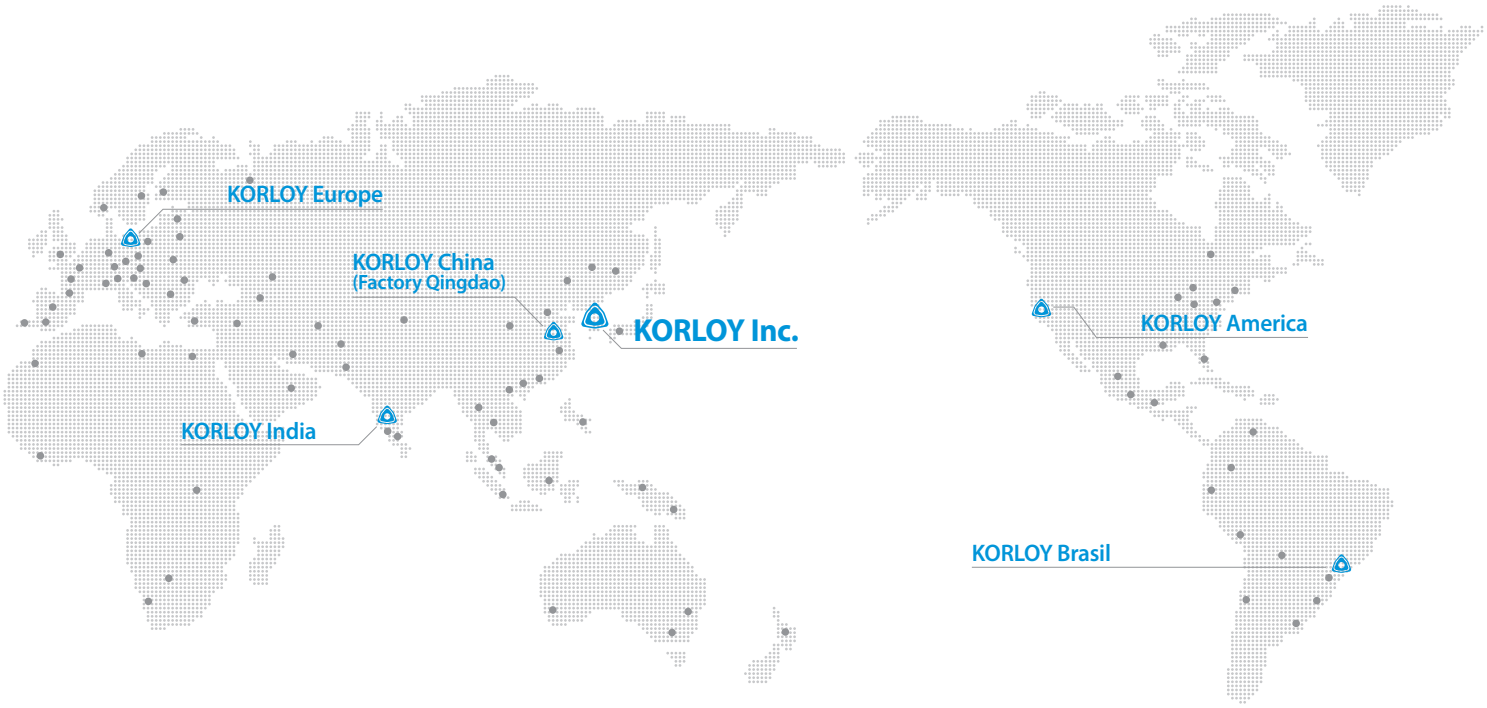
• **Cutting conditions** vc(m/min) = 60
fz(mm/t) = 0.1
ap(mm) = 2.5
wet

• **Tool** Insert SNMX1206ANN-MM
Cutter RM8AC4080HR

• **Result**







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• Please refer to stock management of cutters and detail dimensions in the 2014 catalogue

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