

1. 시편 종류

- 주조용 알루미늄 (Cast Aluminum Alloy)



Al 3 20% Si 50X BF

2. 시편 절단 및 성형 공정

Table 1. Cutting Parameters

NEW TechCut 5x™	
Coolant	Lubri-Cut Cutting Fluid
Wheel Type	Silicon Carbide
Wheel Bond	Resin
Size	8"
Wheel RPM	3500
Feed Rate	12.7 mm/min

Table 2. Hot Mounting Parameters

TechPress3™	
Mold Size	1.25" (32 mm)
Powder	Black glass-filled epoxy powder
Pre-Heat	Off
Heat Temp/Time	160°C / 9 min
Cool Time	6 min
Pressure	4.5 bar

3. 연삭 및 연마 공정

Table 3. MetPrep3™/PH-3™ Gridding/Polishing Procedure

Step	1	2	3	4	5	6	
Consumables	Abrasive Size (P-Grading)	180 Grit (P-180)	320 Grit (P-400)	600 Grit (P-1200)	6 μm	1 μm	0.04 μm
	Type	Silicon Carbide	Silicon Carbide	Silicon Carbide	Polycrystalline Diamond	Polycrystalline Diamond	Colloidal Silica
	Carrier	Abrasive Disc	Abrasive Disc	Abrasive Disc	Glycol Suspension	Glycol Suspension	Suspension
	Polishing Cloth	-	-	-	Gold Label	DiaMat	Final A
	Coolant	Water	Water	Water	GreenLube	GreenLube	Water**
Settings	Platen Speed(RPM) / Direction	300 Comp	300 Comp	300 Comp	150 Comp	150 Comp	150 Comp
	Sample Speed (RPM)	150	150	150	150	150	150
	Force (lbf/N) +	4/18	4/18	4/18	5/22	5/22	4/18
	Time (min)	1*	1	1	3	2	1

* 시편이 평탄 할 때까지 작업

+ 1.25" (32mm) 몰드 사용 시: 만일 총 표면면적이 변하는 경우는, 적용하는 압력을 일정하게 유지하기 위해 Force를 조절해 주어야 함.

** 물은 연마포를 적시어 세척하는 용도임

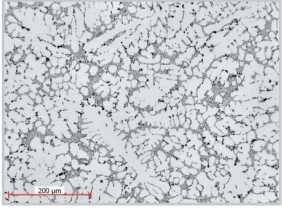
Comp 플레이트, 시편홀더 동일회전 방향

Contra 플레이트, 시편홀더 반대회전 방향

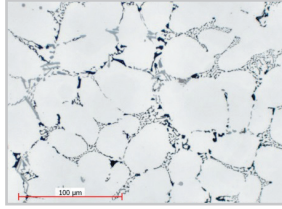
Table 4. AD-5™ Dispensing Parameters

Step	4&5	6
Type	Diamond Suspension & GreenLube	Colloidal Silica Suspension
Pulses/Min	6	10
Pulse Length	0.5 sec	2.0 sec
Water Flush	Off	On

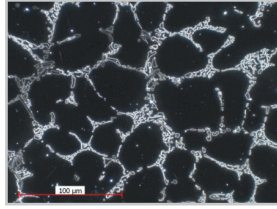
4. 결과 사진



Cast aluminum, 200x,
Brightfield



Cast aluminum, 500x,
Brightfield



Cast aluminum, 500x,
Darkfield

5. 사용 소모품 소개

- #80-11610 8" Resin Bonded Silicon Carbide Blade
- #80-10130 Lubri-Cut
- #150-10105 Black Glass-Filled Epoxy Powder
- #135-10010 Green Phenolic Hot Mounting Powder
- #200-10006 PTFE Spray Mold Release
- #50-10055 180 Grit Silicon Carbide Abrasive Disc
- #50-10065 320 Grit Silicon Carbide Abrasive Disc
- #50-10075 600 Grit Silicon Carbide Abrasive Disc
- #90-30025 6 μm Polycrystalline Diamond Suspension
- #90-30015 1 μm Polycrystalline Diamond Suspension
- #180-25000 0.04 μm Non-Stick/Rinsable Colloidal Silica
- #90-209000 GreenLube™ Polishing Lubricant
- #90-700-210 Gold Label Rigid Back Disc
- #90-700-500 White Label Rigid Back Disc
- #180-10705 Final A Rigid Back Disc
- #148-10000 Micro Organic Soap
- #200-20000 Aero-Duster Compressed Air
- #95-10230 GP Cleaning Solution

** 소모품 샘플은 무료로 제공해 드리고 있습니다

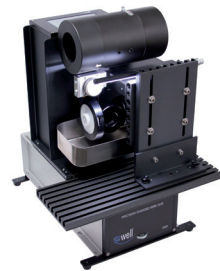
6. 참조자료

분류 목록 명 : 비철 재료

- | | |
|------------------------------|---|
| 1 ~ 30 : 알루미늄 및 합금 | 6. 코팅된 알루미늄 시편 |
| 1. 알루미늄 가공 및 주물시편 연마 (자동폴리싱) | 7. 354 알루미늄 주물 |
| 2. 알루미늄 주물 (자동폴리싱) | 8. Al-Si & 6000계 알루미늄 합금 |
| 3. 알루미늄 주물 (수동폴리싱) | 9. 5000 Series Al Over Press-Hardened Steel |
| 4. 알루미늄 합금 EBSD 시편 | 10. Al Foils, Al-Fe Can Weld |
| 5. 코팅된 알루미늄 시편 | 11. Experimental Aluminum Alloys |



NEW TechCut 5x™ Precision High Speed Saw



WELL 3500 Premium Diamond
Wire Cutting System



TechPress3™ Hydraulic-Pneumatic Mounting
Press / 1 1/4" Mold Assembly

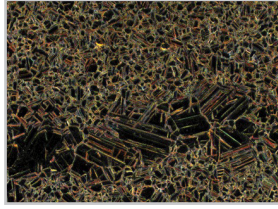


MetPrep3™ / PH-3™ Grinding/ Polishing
System, AD-5™ Automatic Fluid Dispenser

상세 기술자료, 소모품 샘플 및 기술상담이 필요하시면,
(주)진우테크 시편전처리 센터로 연락 주시기 바랍니다
email: info@chinwoo.co.kr 전화: 031-777-1277

1. 시편 종류

- 구리, 청동, 황동 (Copper and Copper Alloys)



Bronze 500x DF

2. 시편 절단 및 성형 공정

Table 1. Cutting Parameters

PowerCut 10x™	
Coolant	Lubri-Cut Cutting Fluid
Wheel Type	Silicon Carbide
Wheel Bond	Resin
Size	10"

Table 2. Hot Mounting Parameters

TechPress3™	
Mold Size	1.5" (38 mm)
Powder	Black glass-filled epoxy powder
Pre-Heat	Off
Heat Temp/Time	165°C / 10 min
Cool Time	7 min
Pressure	5.0 bar

3. 연삭 및 연마 공정

Table 3. MetPrep3™/PH-3™ Gridding/Polishing Procedure

Step	1	2	3	4	5	6	
Consumables	Abrasive Size (P-Grading)	180 Grit (P-180)	320 Grit (P-400)	600 Grit (P-1200)	6 μm	1 μm	0.04 μm
	Type	Silicon Carbide	Silicon Carbide	Silicon Carbide	Polycrystalline Diamond	Polycrystalline Diamond	Colloidal Silica
	Carrier	Abrasive Disc	Abrasive Disc	Abrasive Disc	Glycol Suspension	Glycol Suspension	Suspension
	Polishing Cloth	-	-	-	Gold Label	Vel-Cloth	Final A
	Coolant	Water	Water	Water	RedLube	RedLube	Water**
Settings	Platen Speed(RPM) / Direction	300 Comp	300 Comp	300 Comp	150 Comp	150 Comp	150 Comp
	Sample Speed (RPM)	150	150	150	150	150	150
	Force (lbf/N) +	4/18	4/18	4/18	6/27	4/18	4/18
	Time (min)	1*	1	1	2	2	2

* 시편이 평탄할 때까지 작업

+ 1.25" (32mm) 플레이트 사용 시: 만일 총 표면적이 변하는 경우는, 적용하는 압력을 일정하게 유지하기 위해 Force를 조절해 주어야 함.

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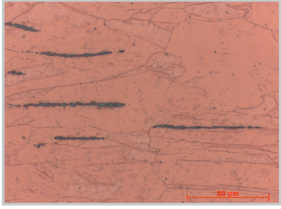
Comp 플레이트, 시편홀더 동일회전 방향

Contra 플레이트, 시편홀더 반대회전 방향

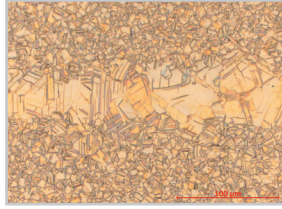
Table 4. AD-5™ Dispensing Parameters

Step	4&5	6
Type	Diamond Suspension & RedLube	Colloidal Silica Suspension
Pulses/Min	6	10
Pulse Length	0.5 sec	2.0 sec
Water Flush	Off	On

4. 결과 사진



Copper rod, etched, 500x



Bronze 642, etched, 500x,
Brightfield



Brass 260, etched, 200x,
Brightfield

5. 사용 소모품 소개

- #80-40054 10" Resin Bonded Silicon Carbide Blade
- #80-10130 Lubri-Cut
- #150-10105 Black Glass-Filled Epoxy Powder
- #200-10006 PTFE Spray Mold Release
- #50-10055 180 Grit Silicon Carbide Abrasive Disc
- #50-10065 320 Grit Silicon Carbide Abrasive Disc
- #50-10075 600 Grit Silicon Carbide Abrasive Disc
- #90-30025 6 μm Polycrystalline Diamond Suspension
- #90-30015 1 μm Polycrystalline Diamond Suspension
- #180-25000 0.04 μm Non-Stick/Rinsable Colloidal Silica
- #90-207000 RedLube Polishing Lubricant
- #90-205000 PurpleLube Polishing Lubricant
- #90-700-210 Gold Label Rigid Back Disc
- #90-700-500 White Label Rigid Back Disc
- #90-500-412 Vel-Cloth Polishing Cloth
- #180-10705 Final A Rigid Back Disc
- #180-10750 Chem-Pol Polishing Cloth
- #148-10000 Micro Organic Soap
- #200-20000 Aero-Duster Compressed Air
- #95-10230 GP Cleaning Solution

** 소모품 샘플은 무료로 제공해 드리고 있습니다

6. 참조자료

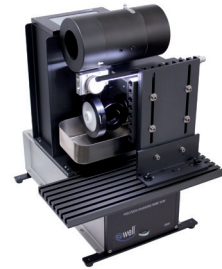
분류 목록 명 : 비철 재료

31 ~ 60 : 동 및 합금

- | | |
|---|------------------------|
| 31. 동 합금 (동, 청동 및 황동) | 37. Brass 893 Fittings |
| 32. 동 튜브 | 38. 동와이어 조직 |
| 33. 청동 (수동 폴리싱) | 39. 동 분말 조직 |
| 34. 청동 조직 | 40. 고력 청동 조직 |
| 35. 압출 동 조직 | 41. 고순도 동 Thinning |
| 36. Be-Cu Stamping Coated with Cu & Sn-Pb | |



PowerCut 10x™ Abrasive Cut-Off Saw



WELL 3500 Premium Diamond
Wire Cutting System



TechPress3™ Hydraulic-Pneumatic Mounting
Press / 1 1/4" Mold Assembly

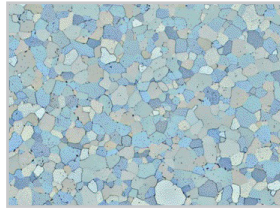


MetPrep3™ / PH-3™ Grinding/ Polishing
System, AD-5™ Automatic Fluid Dispenser

상세 기술자료, 소모품 샘플 및 기술상담이 필요하시면,
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email: info@chinwoo.co.kr 전화: 031-777-1277

1. 시편 종류

- 티타늄 (Titanium Alloys)



Titanium 100x pol

2. 시편 절단 및 성형 공정

Table 1. Cutting Parameters

PowerCut 10x™	
Coolant	Lubri-Cut Cutting Fluid
Wheel Type	Silicon Carbide
Wheel Bond	Resin
Size	8"
Wheel RPM	3800
Feed Rate	12.7 mm/min

Table 2. Hot Mounting Parameters

TechPress3™	
Mold Size	1.25" (32 mm)
Powder	Black glass-filled epoxy powder
Pre-Heat	Off
Heat Temp/Time	160°C / 9 min
Cool Time	6 min
Pressure	4.5 bar

3. 연삭 및 연마 공정

Table 3. MetPrep4™ / PH-6™ Grinding/Polishing Procedure

Step	1	2	3	4	5	
Consumables	Abrasive Size (P-Grading)	180 Grit (P-180)	320 Grit (P-400)	9 μm	3 μm	0.04 μm
	Type	Silicon Carbide	Silicon Carbide	Polycrystalline Diamond	Polycrystalline Diamond	Colloidal Silica
	Carrier	Abrasive Disc	Abrasive Disc	Glycol Suspension	Glycol Suspension	Suspension
	Polishing Cloth	-	-	PLAN-B	DiaMat	Final A
	Coolant	Water	Water	GreenLube	GreenLube	Water**
Settings	Platen Speed(RPM) / Direction	300 Comp	300 Comp	150 Comp	150 Comp	150 Comp
	Sample Speed (RPM)	150	150	150	150	150
	Force (lbf/N) +	4/18	4/18	5/22	5/22	4/18
	Time (min)	1*	1	3	3	1

* 시편이 평탄 할 때까지 작업

+ 1.25" (32미리몰드) 사용 시: 만일 총 표면면적이 변하는 경우는, 적용하는 압력을 일정하게 유지하기 위해 Force를 조절해 주어야 함.

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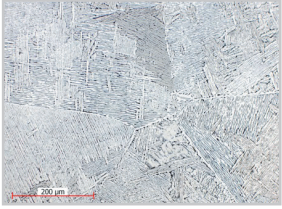
Comp 플레튼, 시편홀더 동일회전 방향

Contra 플레튼, 시편홀더 반대회전 방향

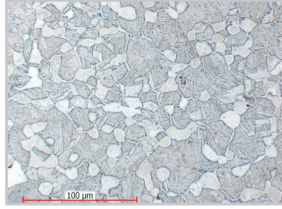
Table 4. AD-5™ Dispensing Parameters

Step	3&4	5
Type	Diamond Suspension & GreenLube	Colloidal Silica Suspension
Pulses/Min	6	10
Pulse Length	0.5 sec	2.0 sec
Water Flush	Off	On

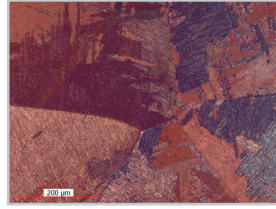
4. 결과 사진



8 Ti-6Al-4V, etched, 200x, Brightfield



Alpha-Beta Titanium, etched, 500x, Brightfield



Ti-6Al-4V, etched, 200x, Polarized Light

5. 사용 소모품 소개

- #80-11810 8" Resin Bonded Silicon Carbide Blade
- #80-10130 Lubri-Cut
- #150-10105 Black Glass-Filled Epoxy Powder
- #200-10006 PTFE Spray Mold Release
- #50-11055 180 Grit Silicon Carbide Abrasive Disc
- #50-11065 320 Grit Silicon Carbide Abrasive Disc
- #90-30030 9 μm Polycrystalline Diamond Suspension
- #90-30020 3 μm Polycrystalline Diamond Suspension
- #180-25000 0.04 μm Non-Stick/Rinsable Colloidal Silica
- #90-209000 GreenLube™ Polishing Lubricant
- #90-700-585 PLAN-B Polishing Cloth
- #90-700-555 DiaMat Rigid Back Disc
- #180-10710 Final A Rigid Back Disc
- #148-10000 Micro Organic Soap
- #200-20000 Aero-Duster Compressed Air
- #95-10230 GP Cleaning Solution

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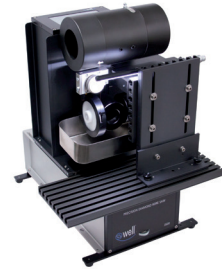
6. 참조자료

분류 목록 명 : 비철 재료
31 ~ 60 : 동 및 합금

- | | |
|---|--|
| 31. 동 합금 (동, 청동 및 황동) | 37. Brass 893 Fittings |
| 32. 동 튜브 | 66. Ti & Steel Fastener 조직 |
| 33. 청동 (수동 폴리싱) | 67. Alpha-Beta Ti 단면조직 |
| 34. 청동 조직 | 68. Ti 용접부 단면조직 |
| 35. 압출 동 조직 | 69. IrO ₂ -Tu ₂ O ₅ 코팅된 Ti 조직 |
| 36. Be-Cu Stamping Coated with Cu & Sn-Pb | |



NEW TechCut 5x™ Precision High Speed Saw



WELL 3500 Premium Diamond Wire Cutting System



TechPress3™ Hydraulic-Pneumatic Mounting Press / 1 1/4" Mold Assembly

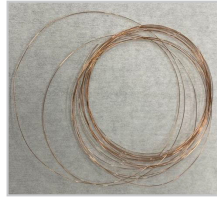


MepPrep4™ / PH-3™ Grinding/ Polishing System, AD-5™ Automatic Fluid Dispenser

상세 기술자료, 소모품 샘플 및 기술상담이 필요하시면,
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email: info@chinwoo.co.kr 전화: 031-777-1277

1. 시편 종류

- Cu로 코팅된 금속 와이어



Cu로 코팅된 금속 와이어

2. 시편 준비 과정

Table 1. How to EpoxyBond 110

Mixed	Part A : Part B = 10 : 1 (By Volume)
Curing Schedule	5 minutes at 150°C 10 minutes at 120°C 30 minutes at 100°C

Table 2. Cold Mounting Parameters

EpoxySet	
Mold Size	1.25" (32 mm)
Mix Ratio (weight) Resin : Hardener	100:12
Cure Time	8Hours (25°C)

3. 연삭 및 연마 공정

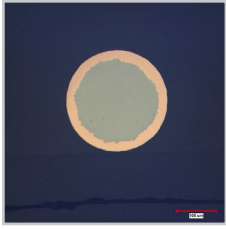
Table 3. MetPrep4™ / PH-6™ Grinding/Polishing Procedure

Step	Grinding				Polishing	
	1	2	3	4	5	6
Abrasive	320Grit (P-400)	600Grit (P-1200)	800Grit (P-2400)	1200Grit (P-4000)	3 μm	0.04 μm
Type	SiC	SiC	SiC	SiC	Diamond	Colloidal Silica
Carrier	Abrasive Disc	Abrasive Disc	Abrasive Disc	Abrasive Disc	Suspension	Suspension
Polishing Cloth	-	-	-	-	DiaMat	Chem-POL
Coolant	Water	Water	Water	Water	GreenLube	-
Platen Speed(RPM) / Direction	100/Comp	100/Comp	100/Comp	100/Comp	100/Contra	100/Contra
Sample Speed (RPM)	90	90	90	90	90	90
Force (lbf)	3	3	4	4	4	4
Time (min)	Until Target	Until Target	2'00"	2'30"	2'00"	2'00"

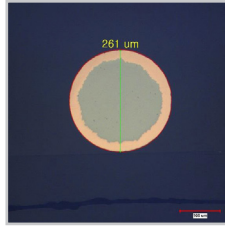
Table 4. AD-5™ Dispensing Parameters

Step	5	6
Type	Diamond Suspension & GreenLube	Colloidal Silica Suspension
Pulses/Min	6	6
Pulse Length	0.5 sec	1 sec
Water Flush	Off	On

4. 결과 사진



200x



200x -두께 측정

5. 사용 소모품 소개

- #60-20104 Diamond Metal Bond Low Concentration Blade
- #60-20105 Dressing Stick, Silicon Carbide
- #60-20110 Deli-Cut
- #71-10000 EpoxyBond 110
- #72-20000 Glass Cover Slip
- #145-20000 EpoxySet Kit
- #197-10005 1.25" 2-Part Mounting Cups
- #55-52002 PTFE Ferromagnetic Support Disc
- #50-11065 320 Grit Silicon Carbide Abrasive Disc
- #50-11075 600 Grit Silicon Carbide Abrasive Disc
- #50-11076 800 Grit Silicon Carbide Abrasive Disc
- #50-11077 1200 Grit Silicon Carbide Abrasive Disc
- #90-30020 3 μm Polycrystalline Diamond Suspension
- #180-25000 0.04 μm Non-Stick/Rinsable Colloidal Silica Suspension
- #90-209000 GreenLube Polishing Lubricant
- #90-700-555 DiaMat Rigid Back Cloth
- #180-10758 Chem-Pol Rigid Back Cloth
- #148-10000 Micro Organic Soap

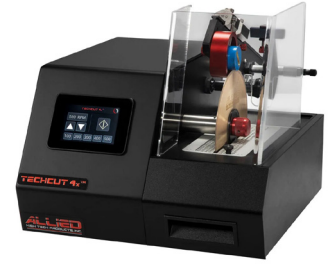
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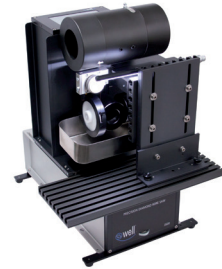
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31 ~ 60 : 동 및 합금

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| 32. 동 튜브 | 38. 동와이어 조직 |
| 33. 청동 (수동 폴리싱) | 39. 동 분말 조직 |
| 34. 청동 조직 | 40. 고력 청동 조직 |
| 35. 압출 동 조직 | 41. 고순도 동 Thinning |
| 36. Be-Cu Stamping Coated with Cu & Sn-Pb | |



NEW TechCut 4x™ Precision Low Speed Saw



WELL 3500 Premium Diamond Wire Cutting System



VacuPrep™ Epoxy Impregnation System



DualPrep3™/PH-4™ Grinding/Polishing System, AD-5™ Automatic Fluid Dispenser

상세 기술자료, 소모품 샘플 및 기술상담이 필요하시면,
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