

Supertec LC415Z

Einfachere Bearbeitung von schwer zerspanbaren, hochwarmfesten Legierungen
Easier machining of difficult high-temperature alloys



in alliance with



Supertec LC415Z

Für die einfachere Bearbeitung von Superlegierungen wie Inconel, Hastelloy usw.

Die Sorte LC415Z ist ein Feinkornsubstrat mit extrem glatter Supernitrid Beschichtung, die sehr gut für unterbrochene und glatte Schnitte geeignet ist.

Höhere Schnittgeschwindigkeiten und Standzeiten können damit gewährleistet werden.

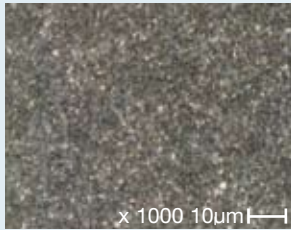
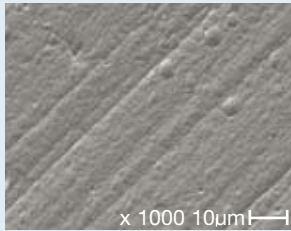
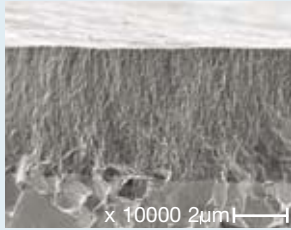

Supertec LC415Z

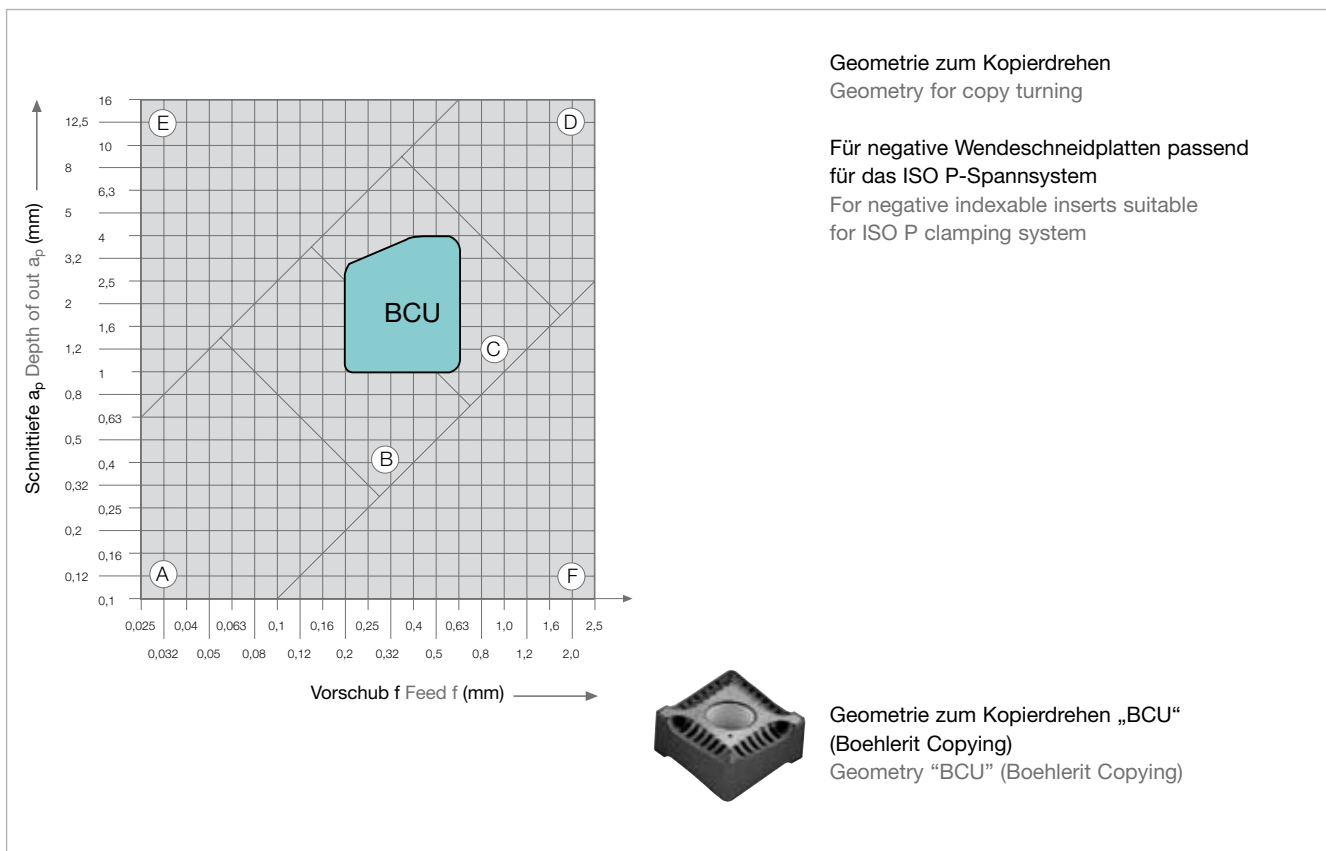
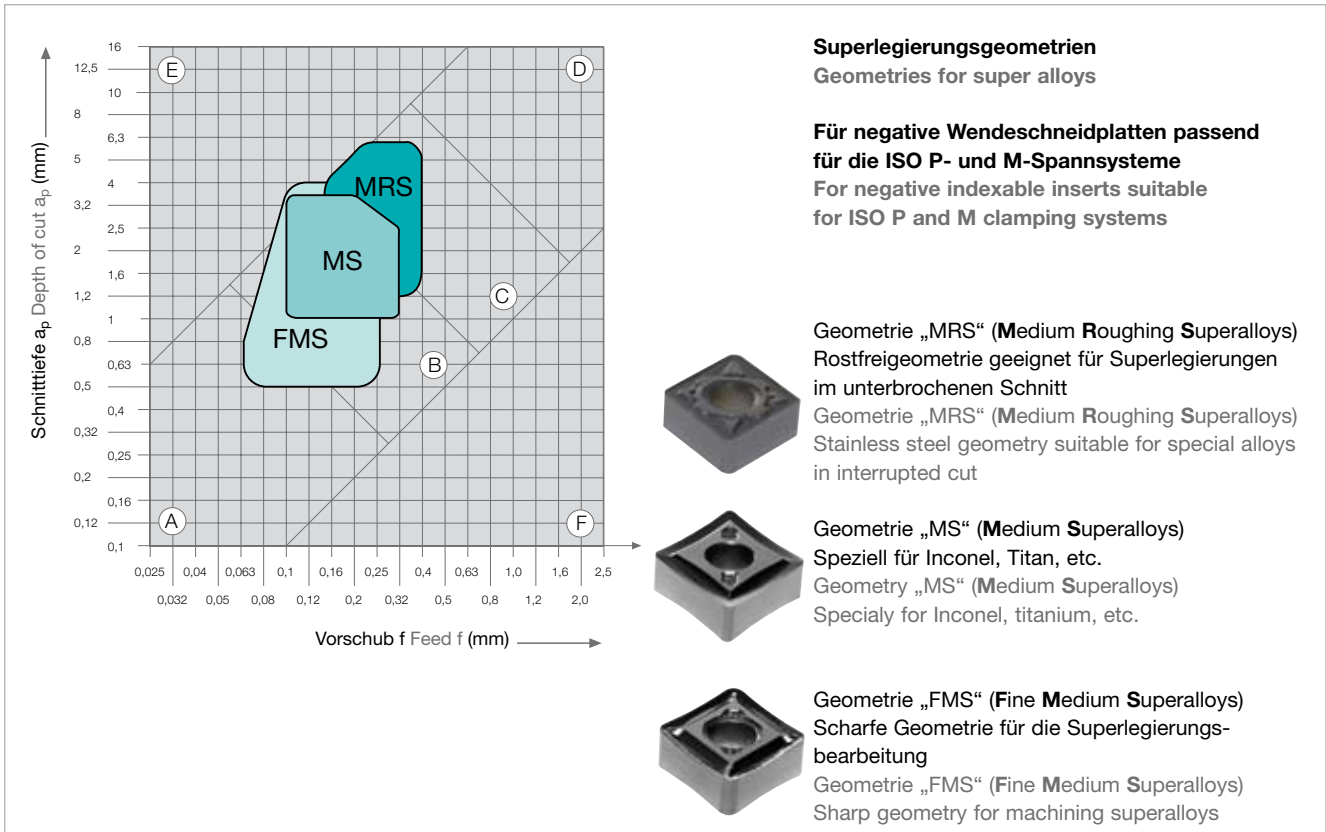
For easier machining of super alloys like Inconel, Hastelloy, etc.

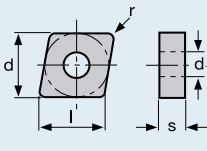
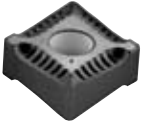
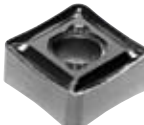
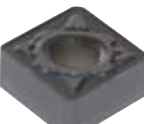
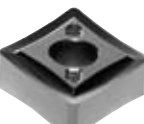
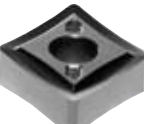
The Supertec turning grade LC415Z is a micro-grain substrate with an extremely smooth super nitride coating which is particularly suitable for interrupted and flat cutting. This means that high cutting speeds and tool life are guaranteed.

Technologievorteile
Technological advantage

Kundennutzen
Customer benefits

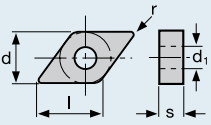


| | | |
|--|--|---|
| <p>Feinstkornsubstrat für mehr Kantenstabilität Submicrongrain substrate for better edge stability</p> |  <p>x 1000 10µm</p> | <p>Höhere Bearbeitungssicherheit auf Superlegierungen Higher machining safety on superalloys</p> |
| <p>Spezielle hochwarmfeste Supernitrid Beschichtung Special high-temperature resistant supernitride coating</p> |  <p>x 1000 10µm</p> | <p>Höhere Schnittgeschwindigkeit durch größere thermische Belastbarkeit der Beschichtung Higher cutting speed due to greater thermal stability of the coating</p> |
| <p>Hoher Aluminiumgehalt und feine Kristallstruktur High aluminium content and fine crystal structure</p> |  <p>x 10000 2µm</p> | <p>Höhere Standzeiten und geringere Stückkosten Longer tool life and lower piece costs</p> |
| <p>Positive Makrogeometrie und scharfe Mikrogeometrie Positive macrogeometry and sharp microgeometry</p> |  | <p>Guter Spanbruch auf schwererspannbaren Werkstoffen (Superlegierungen) Good chip breaking characteristics on materials that are notoriously difficult to machine (superalloys)</p> |



|  | Bestellbezeichnung Ordering code | l | d | s | d ₁ | r | Sorte Grade |
|---|--|-------|-------|------|----------------|-----|----------------|
| | | | | | | | LC415Z |
| CNGG...-BCU  | CNGG 120408-BCU | 12,90 | 12,70 | 4,76 | 5,16 | 0,8 | ● |
| | | | | | | | |
| CNGG...-FMS  | CNGG 120404-FMS | 12,90 | 12,70 | 4,76 | 5,16 | 0,4 | ● |
| | CNGG 120408-FMS | 12,90 | 12,70 | 4,76 | 5,16 | 0,8 | ● |
| | CNGG 120412-FMS | 12,90 | 12,70 | 4,76 | 5,16 | 1,2 | ● |
| | | | | | | | |
| CNGG...-MRS  | CNGG 120408-MRS | 12,90 | 12,70 | 4,76 | 5,16 | 0,8 | ● |
| | CNGG 120412-MRS | 12,90 | 12,70 | 4,76 | 5,16 | 1,2 | ● |
| | | | | | | | |
| CNGG...-MS  | CNGG 120404-MS | 12,90 | 12,70 | 4,76 | 5,16 | 0,4 | ● |
| | CNGG 120408-MS | 12,90 | 12,70 | 4,76 | 5,16 | 0,8 | ● |
| | CNGG 120412-MS | 12,90 | 12,70 | 4,76 | 5,16 | 1,2 | ● |
| | | | | | | | |
| CNMG...-MS  | CNMG 120404-MS | 12,90 | 12,70 | 4,76 | 5,16 | 0,4 | ● |
| | CNMG 120408-MS | 12,90 | 12,70 | 4,76 | 5,16 | 0,8 | ● |
| | CNMG 120412-MS | 12,90 | 12,70 | 4,76 | 5,16 | 1,2 | ● |
| | | | | | | | |

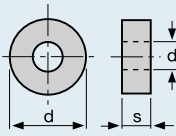

Bestellbeispiel Order example: 10 Stück pieces CNGG 120404-BCU LC415Z

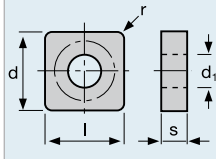
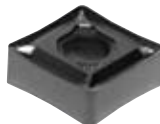
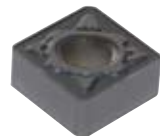
●: Verfügbar ab Lager Available from stock

|  | Bestellbezeichnung Ordering code | l | d | s | d ₁ | r | Sorte Grade |
|--|--|-------|-------|------|----------------|-----|----------------|
| | | | | | | | LC415Z |
| DNGG...-FMS  | DNGG 150404-FMS | 15,50 | 12,70 | 4,76 | 5,16 | 0,4 | ● |
| | DNGG 150408-FMS | 15,50 | 12,70 | 4,76 | 5,16 | 0,8 | ● |
| | DNGG 150412-FMS | 15,50 | 12,70 | 4,76 | 5,16 | 1,2 | ● |
| | DNGG 150604-FMS | 15,50 | 12,70 | 6,35 | 5,16 | 0,4 | ● |
| | DNGG 150608-FMS | 15,50 | 12,70 | 6,35 | 5,16 | 0,8 | ● |
| | DNGG 150612-FMS | 15,50 | 12,70 | 6,35 | 5,16 | 1,2 | ● |
| DNMG...-MS  | DNMG 150404-MS | 15,50 | 12,70 | 4,76 | 5,16 | 0,4 | ● |
| | DNMG 150408-MS | 15,50 | 12,70 | 4,76 | 5,16 | 0,8 | ● |
| | DNMG 150412-MS | 15,50 | 12,70 | 4,76 | 5,16 | 1,2 | ● |
| | DNMG 150604-MS | 15,50 | 12,70 | 6,35 | 5,16 | 0,4 | ● |
| | DNMG 150608-MS | 15,50 | 12,70 | 6,35 | 5,16 | 0,8 | ● |
| | DNMG 150612-MS | 15,50 | 12,70 | 6,35 | 5,16 | 1,2 | ● |

Bestellbeispiel Order example: 10 Stück pieces DNGG 150404-FMS LC415Z

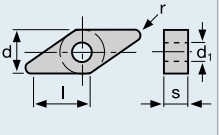

●: Verfügbar ab Lager Available from stock

|  | Bestellbezeichnung Ordering code | | | | | | Sorte Grade |
|---|---|---|-------|------|----------------|---|----------------|
| | | l | d | s | d ₁ | r | LC415Z |
| RCMX... | RCMX 1204MO | - | 12,00 | 4,76 | 4,2 | - | ● |
|  | | | | | | | |
| | | | | | | | |
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|  | Bestellbezeichnung Ordering code | | | | | | Sorte Grade |
|---|---|-------|-------|------|----------------|-----|----------------|
| | | l | d | s | d ₁ | r | LC415Z |
| SNMG...-FMS | SNMG 120408-FMS | 12,70 | 12,70 | 4,76 | 5,50 | 0,8 | ● |
| | SNMG 120412-FMS | 12,70 | 12,70 | 4,76 | 5,50 | 1,2 | ● |
|  | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| SNMG...-MRS | SNMG 120408-MRS | 12,70 | 12,70 | 4,76 | 5,50 | 0,8 | ● |
| | SNMG 120412-MRS | 12,70 | 12,70 | 4,76 | 5,50 | 1,2 | ● |
|  | | | | | | | |
| | | | | | | | |
| | | | | | | | |
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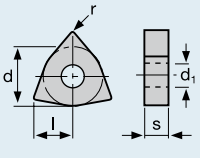
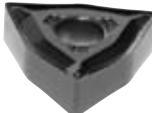


Bestellbeispiel Order example: 10 Stück pieces RCMX 1204MO LC415Z

●: Verfügbar ab Lager Available from stock

|  | Bestellbezeichnung Ordering code | | | | | | Sorte Grade |
|--|--|-------|------|------|----------------|-----|----------------|
| | | l | d | s | d ₁ | r | LC415Z |
| VNMG...-FMS  | VNMG 160404-FMS | 16,60 | 9,52 | 4,76 | 4,40 | 0,4 | ● |
| | VNMG 160408-FMS | 16,60 | 9,52 | 4,76 | 4,40 | 0,8 | ● |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Bestellbeispiel Order example: 10 Stück pieces VNMG 160404-FMS LC415Z

●: Verfügbar ab Lager Available from stock

|  | Bestellbezeichnung Ordering code | l | d | s | d ₁ | r | Sorte Grade |
|--|--|------|-------|------|----------------|-----|----------------|
| | | | | | | | LC415Z |
| WNGG...-FMS  | WNGG 060408-FMS | 6,50 | 9,52 | 4,76 | 5,16 | 0,8 | ● |
| | WNGG 080404-FMS | 8,60 | 12,70 | 4,76 | 5,16 | 0,4 | ● |
| | WNGG 080408-FMS | 8,60 | 12,70 | 4,76 | 5,16 | 0,8 | ● |
| | WNGG 080412-FMS | 8,60 | 12,70 | 4,76 | 5,16 | 1,2 | ● |
| WNGG...-MS  | WNGG 080404-MS | 8,60 | 12,70 | 4,76 | 5,16 | 0,4 | ● |
| | WNGG 080408-MS | 8,60 | 12,70 | 4,76 | 5,16 | 0,8 | ● |
| | WNGG 080412-MS | 8,60 | 12,70 | 4,76 | 5,16 | 1,2 | ● |
| WNMG...-MS  | WNMG 080404-MS | 8,60 | 12,70 | 4,76 | 5,16 | 0,4 | ● |
| | WNMG 080408-MS | 8,60 | 12,70 | 4,76 | 5,16 | 0,8 | ● |
| | WNMG 080412-MS | 8,60 | 12,70 | 4,76 | 5,16 | 1,2 | ● |

Bestellbeispiel Order example: 10 Stück pieces WNGG 060408-FMS LC415Z

●: Verfügbar ab Lager Available from stock

| Nickellegierungen Nickel-based alloys | | |
|---|------------------------------------|--------------|
| Astroloy | IN 100 | Nimonic 75 |
| Hastelloy B-2 | Inconel 600 (alle Arten all types) | Nimonic 80 A |
| Hastelloy C | Inconel 601 | Nimonic 81 |
| Hastelloy C-22 | Inconel 617 | Nimonic 86 |
| Hastelloy C-276 | Inconel 625 | Nimonic 90 |
| Hastelloy G | Inconel 706 | Nimonic 91 |
| Hastelloy G-3 | Inconel 708 | Nimonic 101 |
| Hastelloy N | Inconel 713 | Nimonic 105 |
| Hastelloy S (alle Arten all types) | Inconel 718 | Nimonic 115 |
| Hastelloy W | Inconel 901 | Nimonic 263 |
| Hastelloy X (alle Arten all types) | Inconel X750 | Nimonic 901 |

| Titanlegierungen Titanium alloys | | |
|--|---------------------------------|--|
| Ti | Ti 6Al-5V | |
| Ti 17 | Ti 6Al-4V | |
| Ti 2Cu | Ti 6Al-5Zr-0.5Mo-Si | |
| Ti 3Al-2.5V | Ti 6Al-6V-2Sn | |
| Ti Al-Mo-2Sn-Si | Ti 8-1-1 (alle Arten all types) | |
| Ti 5Al-2.5 Sn | Ti Ni-Mo | |
| Ti 6-2-4-2 | | |
| Ti 6-2-4-6 | | |

| Sorte Grade | ISO | Anwendungsbereich Range of applications | Werkstoffgruppe Group of materials | | | | | | Bearbeitungsverfahren Application | | | | | |
|---|--------|--|---|-----------------------|-------------------------------|---|--|--|--------------------------------------|-------------------|--------------------|--------------------------------------|------------------------|----------------------|
| | | | P | M | K | N | S | H | T | M | D | S | G | P |
| LC415Z | HC-S15 | | Stahl Steel | Rostfrei Stainless | Grauguss Grey cast iron | NE-Metalle (Al, etc.) Non-ferrous metals | Hochwarmfest High temper- ature mate- rials | Harde Werkstoffe Hard mate- rials | Drehen Turning | Fräsen Milling | Bohren Drilling | Gewinde- bearbeitung Threading | Einstechen Grooving | Abstechen Parting |
| Anwendungsschwerpunkt Application peak | | | ■ Hauptanwendung Main application □ Weitere Anwendung Further applications | | | | | | ● Standardsorte Standard grade | | | | | |
| Gesamtbereich nach ISO 513 Full range to ISO 513 | | | | | | | | | | | | | | |

Technische Hinweise

Schnittdatenrichtwerte: Supertec LC415Z

| Werkstoff- Gruppe | Gliederung der Werkstoff-Hauptgruppen und Kennbuchstaben | | Brinell Härte HB | Drehen v _C m/min LC415Z | |
|----------------------|--|---|------------------------|--|--------|
| | Werkstückstoff | | | | |
| M | Nichtrostender Stahl | austenitisch ¹⁾ , abgeschreckt | 180 | 130-200 | |
| S | Warmfeste Legierungen | Fe-Basis | geglüht | 200 | 40-100 |
| | | | ausgehärtet | 280 | 30-70 |
| | | Ni- oder Co-Basis | geglüht | 250 | 50-85 |
| | | | ausgehärtet | 350 | 20-50 |
| | | gegossen | 320 | 30-50 | |
| | Titanlegierungen | Reintitan | Rm ²⁾ 400 | 50-100 | |
| | | Alpha + Beta- Legierungen, ausgehärtet | Rm ²⁾ 1050 | 40-80 | |

- 1) und austenitische / ferritische
2) Rm = Zugfestigkeit in N/mm²

Technical hints

Cutting data standard values: Supertec LC415Z

| Material group | Main workpiece material groups and their characteristic letters | | Brinell hardness HB | Turning v _C m/min LC415Z | |
|-------------------|---|-------------------------------------|---------------------------|---|--------|
| | Workpiece material | | | | |
| M | Stainless steel | austenitic ¹⁾ , quenched | 180 | 130-250 | |
| S | Heat resistant alloys | Fe-based | annealed | 200 | 40-100 |
| | | | hardened | 280 | 30-70 |
| | | Ni- or Co- based | annealed | 250 | 50-85 |
| | | | hardened | 350 | 20-50 |
| | | cast | 320 | 30-50 | |
| | Titanium alloys | Pure titanium | Rm ²⁾ 400 | 50-100 | |
| | | Alpha + Beta- alloys hardened | Rm ³⁾ 1050 | 40-80 | |

- 1) and austenitic / ferritic
2) Rm = tensile strength in N/mm²

| | | | |
|---------------------------|---|-----------------------------------|--|
| Ergebnis Result | <p>2 Stück 2 pieces</p> <p>1 Stück 1 piece</p> <p>Supertec LC415Z</p> <p>Mitbewerber Competitor</p> | Anwendung: Application: | Drehen Turning |
| | | Werkstück: Work piece: | Radnabe Wheel hub |
| | | Werkstoff: Material: | TiAl6V4 |
| | | Wendeplatte: Insert: | CNGG 120412-FMS LC415Z |
| | | Schnittparameter: | v_c 45 m/min a_p 25,5 mm f 0,25 mm/U mm/rev. |
| | | Kühlung: Coolant: | Emulsion Emulsion |

| | | | |
|---------------------------|--|-----------------------------------|---|
| Ergebnis Result | <p>15 Stück 15 pieces</p> <p>11 Stück 11 pieces</p> <p>Supertec LC415Z</p> <p>Mitbewerber Competitor</p> | Anwendung: Application: | Drehen Turning |
| | | Werkstück: Work piece: | Turbinenscheibe Turbine disc |
| | | Werkstoff: Material: | Titan Titanium |
| | | Wendeplatte: Insert: | CNGG 120412-FMS LC415Z |
| | | Schnittparameter: | v_c 60 m/min a_p 2,5 mm f 0,25 mm/U mm/rev. |
| | | Kühlung: Coolant: | Emulsion Emulsion |

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in alliance with

