# Diamond Tipped Indenting Tool

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## Agenda

- **To introduce and explain the benefits of the patented technology developed by Pratt & Whitney.**
- **To find out interest of the prospects in acquiring the technology on a licensed basis from Pratt & Whitney.**

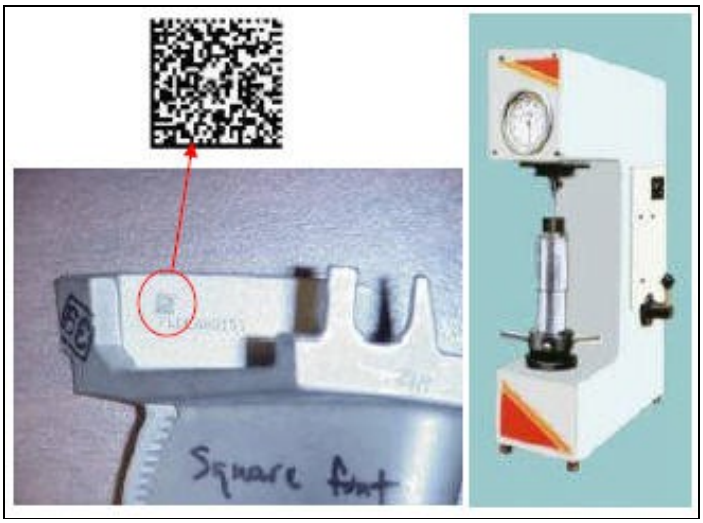
## About Dolcera

- Dolcera is an international services firm specializing in intellectual property and market research services. Our clientele includes several fortune 500 companies and global 100 companies. For more information please visit: www.dolcera.com
- We at Dolcera are partnering with Pratt & whitney to out-license their highly durable diamond indenting tool technology.

## About Pratt & Whitney

- Pratt & Whitney is one of the largest aircraft engine manufacturers in the world with a sales revenue of more than $12 Bn and spends more than $250 Mn in research & development.
- Cutting edge R&D with over a 1000 patents.
- Has always been at the forefront of technologies for turbine, rocket, reciprocating engines, power systems, etc.

## Utility



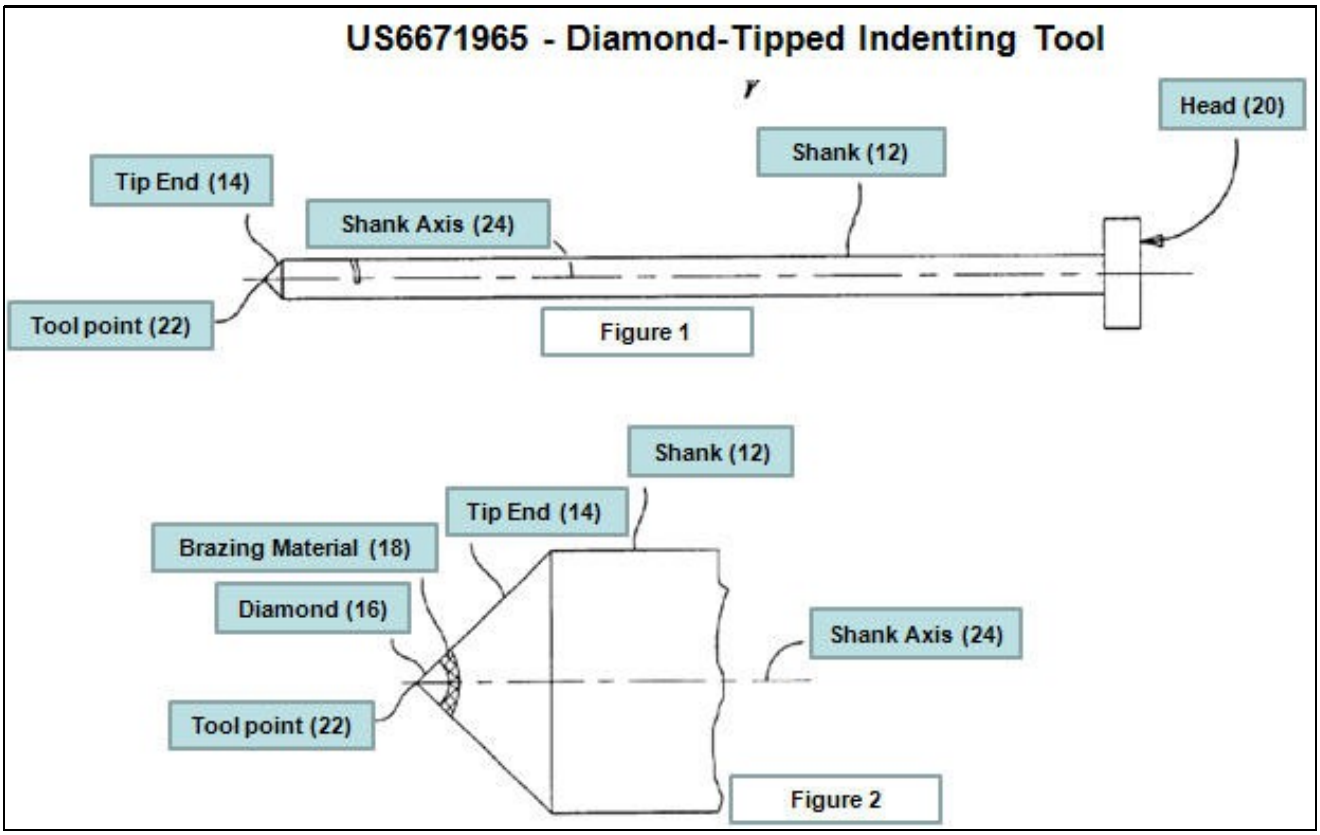



Indenting tool

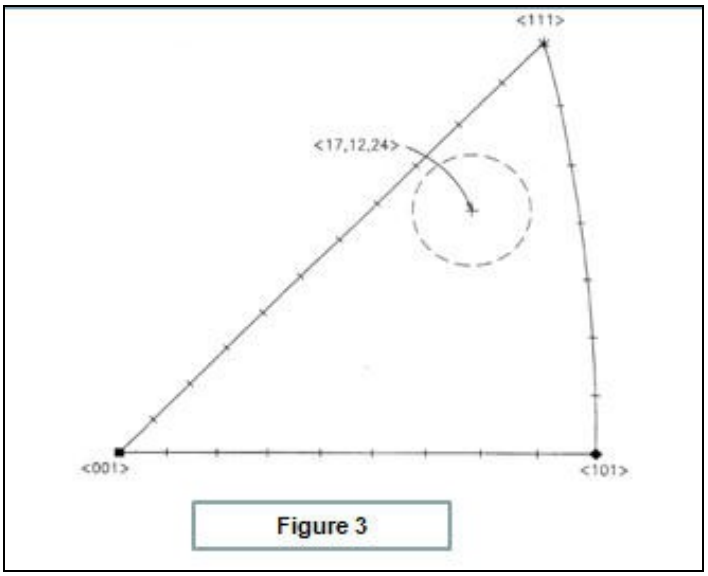
- A Tool using this technology has a diamond at a specified precise orientation affixed to the tip of the shank of the machine Enabling markings on various metal surfaces for

- Identification purposes
- Surface treatment
- Surface condition
- The point of the tool strikes the surface of metal and on impact creates a cold-formed indentation or mark.

## Schematic Representation - Indenting Tool




## Graphical Representation - Tool tip




- **Stereographic projection triangle for the diamond crystal**

Represents a 3D orientation spread out on a 2D plane. Figure depicts the orientation of the diamond tip. It Shows the axis of orientation of the diamond crystal w.r.t three standard orientations of the crystal marked by the 3 vertices.The pole of the crystal should lie within the dotted circle to achieve the

## Importance of the orientation

- Diamond crystals are anisotropic
- Their mechanical and physical properties vary with their crystallographic orientation
- The orientation of the crystal governs its strength and wear resistance
- This particular **super wear-resistant orientation** has been discovered and patented by Pratt and Whitney.

## Limitations of other technologies

- Carbide and non-oriented diamond indenters have problems such as

1. Wear and tear of tool head
2. Replacement costs

## Advantages of this tool

- **Economical**

1. Low replacement costs because of increased tool life (up too 100 times that of carbide tools)
2. Reduced cost per mark

- **Quality**

1. Better reading of 2D markings
2. Improved marking reliability and quality

- **Physical**

1. Improved wear resistance
2. Less force required to obtain indention depth

## Applications

- Aero & Industrial Gas Turbines
- Railway
- Machineries
- Weapon markings
- Punches and Dies
- Cables and Wires
- Weapon markings
- Any metal equipment

## Legal Status

| Patent/Pub No | US6671965 |
|---|---|
| Country wise patent filings | Brazil (BR) |
| | Canada (CA) |
| | Europe (EP) |
| | Japan (JP) |
| | Singapore (SG) |
| | United States of America (USA) |