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This program contains eight work sheets and can be directly accessed from this Table of contents or from selecting a specific tab at the bottom

Cylindrical Plunge Move mouse over "**Cylindrical Plunge**" & left click to access sheet

Cylindrical Plunge:

- **O.D. and I.D. plunge grinding only – Not TRAVERSE**
- Input for both Metric (mm) and Inch
- Input for Abrasive (A.N.S.I.) grit sizes
- You must input all **orange cells** and dropdown boxes (grey colored cells)
- Suggested Wheel rpm
- Suggested Wheel to work ratio
- Calculations include:
 - Wheel and Work velocity in S.F.P.M. (Inch) and M/sec. (mm)
 - Q Prime based on input
 - Recommended Q' and infeed rates per minute
 - Conventional Al₂O₃, SiC
 - Ceramics
 - Vitrified CBN High Concentration
 - Vitrified CBN Low Concentration
 - Cycle Times per abrasive recommendations as well as present input
 - % of abrasive diameter per revolution of work
 - Various warnings for input data that is exceeding recommended parameters

Surface Reciprocating Move mouse over "**Surface Reciprocating**"& left click to access sheet

Surface Reciprocating:

- **Reciprocating surface grinding only**
- Input in both Metric (mm) and Inch
- Input for Abrasive (A.N.S.I) grit sizes
- Input for grinding Steel and non-ferrous material
- Input for Creep Feed or Conventional (pendulum) grinding
- You must input all **orange cells** and dropdown boxes (grey colored cells)
- Suggested Wheel rpm
- Suggested Wheel to work ratio
- Calculation include:
 - Wheel and Work velocity in S.F.P.M. (Inch) and M/sec. (mm)
 - Q Prime based on input
 - Recommended Q' and infeed rates per minute
 - Ferrous materials
 - Non-Ferrous materials
 - Cycle Times for material recommendations as well as present input
 - % of abrasive diameter per depth of cut (Pendulum only)
 - Various warnings for input data that is exceeding recommended parameters

Cylindrical Traverse Move mouse over "**Cylindrical Traverse**" & left click to access sheet

Cylindrical Traverse:

- **O.D., I.D. and Peel Grinding (no recommendation for Peel) – Not PLUNGE**
- Input for both Metric (mm) and Inch
- Input for Abrasive (A.N.S.I.) grit sizes
- You must input all **orange cells** and dropdown boxes (grey colored)
- Suggested Wheel rpm
- Suggested Wheel to work ratio
- Calculation include:
 - Wheel and Work velocity in S.F.P.M. (Inch) and M/sec. (mm)
 - Q Prime based on input
 - Recommended Q' and infeed rates per minute
 - Conventional Al₂O₃, SiC
 - Ceramics
 - Vitrified CBN Vittrified CBN
 - Cycle Times per abrasive recommendations as well as present input
 - % of abrasive diameter per revolution of work
 - Various warnings for input data that is exceeding recommended parameters
- Note: Q Prime is calculate in two different calculations
 - Q' per revolution of the work
 - Q' – in-feed and traverse only

Q Plunge Move mouse over "**Q Plunge**" & left click to access sheet

Q Plunge:

- **Cylindrical plunge Only - Not TRAVERSE**
- Input in both Metric (mm) and Inch
- Input only Three pieces of data
 - Part Diameter
 - In-Feed/min.
 - Q Prime(Q')
 - If you input only the first two the Q' will be calculated
 - If you input just Q' plus part diameter, In-feed data will be calculated

Q Traverse per rev of work

Move mouse over "Cylindrical Traverse" & left click to access sheet

Traverse per rev. of work:

- **Cylindrical Traverse Only – Not Plunge**
- Input in both Metric (mm) and Inch
- Input only four pieces of data – All but Q Prime must be completed
 - Part Diameter
 - Work rpm
 - Depth / pass
 - Q Prime (Q')

Q Traverse & Depth Only

Move mouse over "Q Traverse & Depth Only" & left click to access sheet

Traverse & Depth Only:

- **Cylindrical Traverse Only – Not Plunge**
- Input in both Metric (mm) and Inch
- Input only three pieces of data
 - Depth / pass
 - Traverse Rate
 - Q Prime (Q')
- To get recommendation you can just fill in Q' and one other piece of data
- You can also input Depth / Pass and Traverse Rate and calculate Q'
- The program also gives:
 - Traverse for Inch gives rate in "in Inches / min." and "Feet / min."
 - Traverse for mm gives rate in "mm/min.", "mm/ sec." and "Meters/min."

Q Surface

Move mouse over "Q Surface" & left click to access sheet

Q Surface:

- **Surface Grinding (Reciprocating or Creep Feed) only**
- Input in both Metric (mm) and Inch
- Input only three pieces of data
 - In-Feed (or Depth) / pass
 - Traverse Rate
 - Q Prime (Q')
- To get recommendation you can just fill in Q' and one other piece of data
- You can also input "In-Feed / Pass" and "Traverse Rate" and calculate Q'
- The program also gives:
 - Traverse for Inch gives rate in "in Inches / min." and "Feet / min."
 - Traverse for mm gives rate in "mm/min.", "mm/ sec." and "Meters/min."

Q' Input calculator Plunge

Move mouse over "Q' Input calculator Plunge" & left click to access sheet

Q' Input calculator Plunge:

- **Cylindrical O.D or I.D. – Plunge Grinding Only**
- This program was designed to calculate "In-Feed rates" and "Cycle Times" based on:
 - Choosing from a dropdown box for specific choices of Q Prime (Q')
 - One dropdown box is for Metric (mm^3/mm)
 - One dropdown box is for Inch ($\text{in}^3/\text{in}\cdot\text{min.}$)each dropdown has 9 ea. Choices Q'
 - When the dropdown box requesting "mm" or "Inch" is chosen only the appropriate box is applicable
- The program is designed for up to 3 different part numbers in either O.D. and/or I.D. and the user must:
 - Input part diameter
 - Machine time (all other time but calculated grinding time)
 - Total Stock on diameter (not radial)
- The calculations are:
 - Converting to inch or mm depending on dropdown input and diameter input
 - In-Feed rates for; Rough, Medium and Finish grinding process
 - Dwell times
 - Total cycle time in seconds and Minutes
- **Note:** This program is a very good tool for companies:
 - Needing time data for new and various parts relative to Cylindrical grinding
 - Calculating process numbers and cycle times for Quotations for various bids
 - If you want to input a specific Q Prime (Q') then use "Q Plunge" - Above

IMPORTANT! - ALL DROP DOWN BOXES AND ORANGE CELLS (OPEN CELLS) MUST BE COMPLETED ON EACH SPECIFIC SHEET