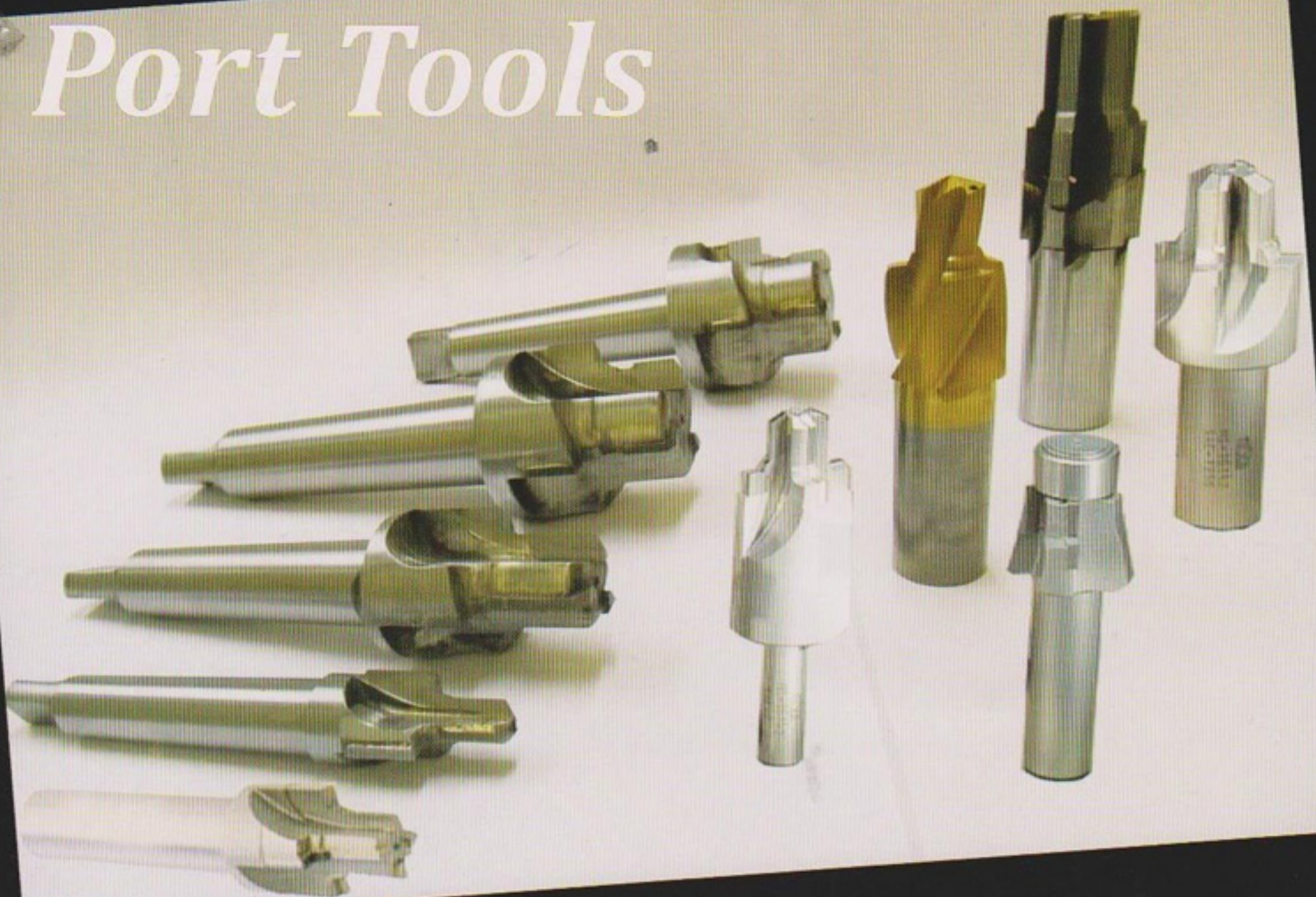


**UNIVERSAL Tools Inc.**

**Innovative Cutting Tools & Concepts**

# Port Tools



Universal tools (India) Produce very Precision Port counter bore tools for the Port counter bore holes to ISO, SAE, ROSAN & other international standards as well custom built tools

Port counter bore tools are offered in Solid carbide, Carbide Brazed tipped & Lugged version with straight shank or taper shank also tools with internal thro coolant or without internal thro coolant as desired. giving you precision & quality port hole.

Universal tool also offers drill cum port forming counter bore tool to perform operation in one go without any pre drill to save up time and cost.

Port counter bore tools are manufactured with high degree of precision for accurate seat for seals on the component.

Tool are normally available with counter bores but also can be offered without counter bores.

Universal too offers various kind of Port counter bore tools:-

- A) Port counter bore tools with Guided Type and Non Guided Type. The Guided Type Port Counter Bore Tools has Ground outer Diameter body to be used with Guided Bushes
- B) ROSN Cavities Port counter bore tools These Special ROSN Cavities Are Guides for Broaches Which later Is Used for Threading
- C) PORT Counter Bore Tools With Interchangeable Pilots These Pilots Can Be either Pilot Reamer or Pilot Guide Giving More flexibility and Interchangeability.
- D) SAE SHORT Port Tool To Produced Complete Form In One Settings I.E. Minor Diameter Up To Spot Face These Tools Are Mainly Used On CNC Machine Without Any Guide Bush.
- E) SAE LONG Port counter bore Tool To Produced Complete Form In One Settings I.E. Minor Diameter Up To Spot Face These Tools Can Be Used Thro' Guide Bush For Conventional Machines As Well As CNC Machine.
- F) PORT Counter Bore Tools FIXED PILOT TYPE Are Very Special Types Of Tools These Are Different Than The Regular Tools Having Larger Diameter Of Spot Face To Produce Over Size Counter Bore These Tools Are With Guided Pilots These Tools are Used As Prototype Jobs And Small Batch Production (R & D) These Special Tools Are Used By Defense.

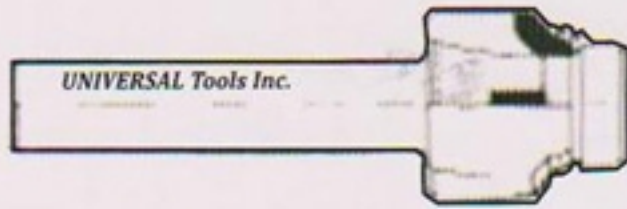
**UNIVERSAL TOOL PRODUCES TOOLS FOR DEFENSE AERO SPACE AUTOMOBILE AND HYDRAULIC INDUSTRY**

F-2 BLOCK SHD 8, MIDC, PIMPRI, PUNE 411 018 (INDIA)

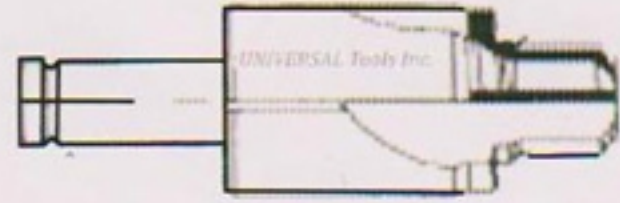
TEL. : 91-020-46765151 / 52 / 53, 27474188 / 89 FAX : 91-020-46765150, 27470248

E-mail : universaltoolinc@yahoo.com, djpv@vsnl.com Web : [www.universaltool.co.in](http://www.universaltool.co.in)

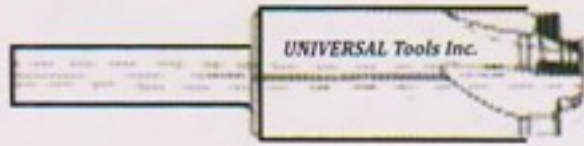
**Piloted Port 'c' Bores**  
MS-33649 & SAE AS5202 / 10050



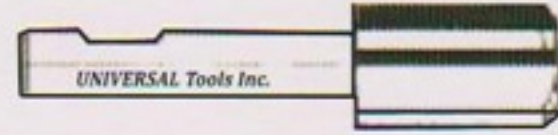
**Port c' Bores (Guided & Non Guided type)**  
MS33649, SAE AS5202 & AND10050



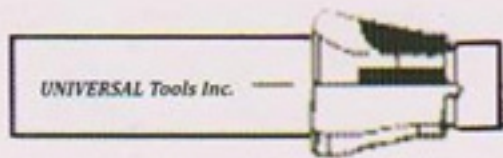
**Port c' Bores (Replacable Pilot)**  
MS33649, SAE AS5202 & AND10050



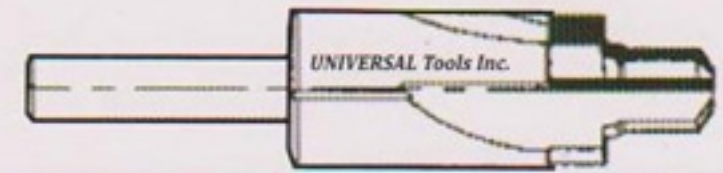
**Pilots**  
Ms33649 & SAE As5202 / AND10050



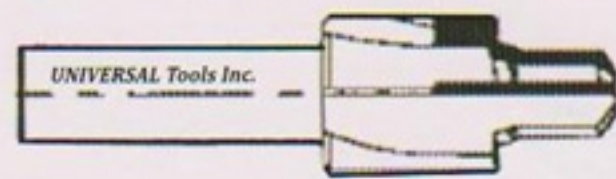
**Port c' Bores**  
MS33514, MS33515, AS33514,  
AS33515 & AS4375



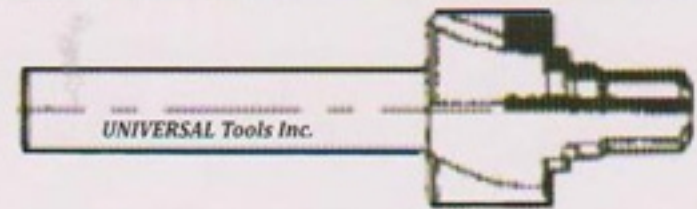
**SAE Long Series Port c' Bores**  
MS16142, SAE J514 & SAE J1926/1, ISO 11926-1



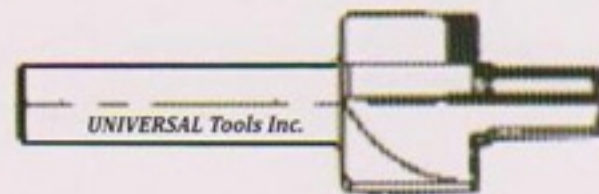
**SAE Short Series Port c' Bores**  
MS16142, SAE J514 & SAE J1926/1, ISO 11926-1



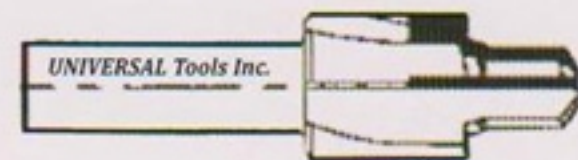
**Port c' Bores**  
ROSAN Ps10035, SAE AS1300 & AS4201, 6M152



**Port c' Bores**  
MS-33651 & AND-10071



**Port c' Bores (Metric)**  
ISO 6149-1 (1933), SAE J-2244/1



**Port c' Bores**  
MS-33649, NASA MC 240



**Port c' Bores**  
BSSP/ BSPF ( RP ) Bs1 BS21

