



starcraft®

PROFESSIONAL TOOLS



ROTARY BURRS

>> CUTTING STYLE SELECTION GUIDE <<

The choice of flute cut style is dependant on the type of material being machined, the amount of stock removal, and the finish required. In general, the harder the material being machined, the finer the cut should be.



**STANDARD
CUT**



**DOUBLE
CUT**



**ALUMINUM
CUT**



STANDARD CUT

- General purpose tool designed for cast iron, steel, some copper and brass, and other ferrous materials. It will give good material removal and good workpiece finishes.
- Available in carbide or steel shank.

DOUBLE CUT

- Allows for rapid stock removal in harder materials. Reduced pulling action designs to improve operator control. Chip sizes are reduced and can be used at slower than normal speeds.
- Available in carbide or steel shank.

ALUMINUM CUT

- For use in non-ferrous and non-metallic materials. Designed for rapid stock removal, with minimum chip loading.
- Available in carbide or steel shank.

GENERAL APPLICATIONS

MATERIALS	DOUBLE CUT	STANDARD CUT	ALUMINUM CUT
aluminum	•	•	★
brass, bronze, copper	★	★	•
fiberglass	•	•	•
cast iron	★	★	•
plastics	•	•	★
steel, 40-55rc	★	★	•
steel, 55-60rc	★	★	•
steel, carbon	★	★	•
steel nickel, chrome	★	★	•
steel stainless	★	★	•
steel weldments	★	★	•
titanium	★	★	•
zinc	•	•	★

★ = okay to use

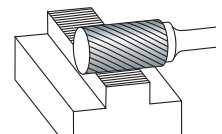
IMPORTANT NOTE ON SELECTION AND OPERATING SPEEDS

- Carbide burrs are available in a wide range of shapes, sizes and cut types.
- Selecting the proper carbide burr for a specific job depends on several factors: workpiece material, grinding speed, required contour and surface finish.
- Solid carbide burrs are precision ground on fully automatic grinders with diamond wheels, delivering tools with excellent concentricity, sharp and uniform cutting teeth.
- This widely used type of carbide burr features high stock removal efficiency and performs exceptionally well at high RPM.
- Always check the maximum recommended speed chart before using any carbide burr, as recommended speeds differ based on burr style, burr diameter and workpiece material.
- Workplace safety is a top priority. Always wear eye protection.

NOTE:

- Carbide burrs must be mounted concentrically, with the shank fully inserted into and secured by the collet.

4100 / CYLINDRICAL NON - END CUTTING BURRS (STYLE A)

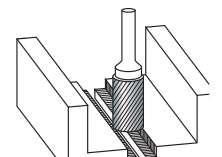


- Deburring of edges and plane surfaces.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Standard cut, much longer life than HSS cutters.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41000001	2	10	38	3
41000002	2	10	55	6
41000003	3	13	38	3
41000004	3	13	55	6
41000005	4	13	55	6
41000006	6	16	65	6
41000007	8	20	65	6
41000008	10	20	65	6
41000009	12	25	65	6
41000010	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41009001	1/8	1/2	1/4
41009002	1/8	5/8	1/4
41009003	5/32	5/8	1/4
41009004	3/16	5/8	1/4
41009005	1/4	5/8	1/4
41009006	1/4	1	1/4
41009007	5/16	3/4	1/4
41009008	3/8	3/4	1/4
41009009	3/8	1	1/4
41009010	3/8	1-1/2	1/4
41009011	7/16	1	1/4
41009012	1/2	1	1/4
41009013	5/8	1	1/4
41009014	3/4	1/2	1/4
41009015	3/4	3/4	1/4
41009016	3/4	1	1/4
41009017	1	1	1/4

4101 / CYLINDRICAL END CUTTING BURRS (STYLE B)

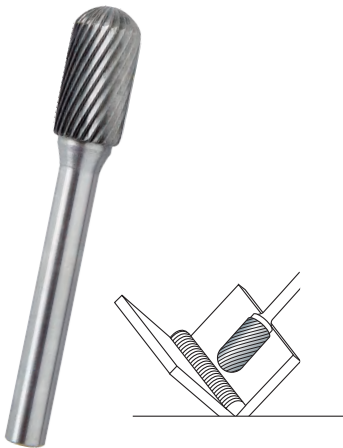


- Deburring of edges and plane surfaces.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Standard cut, much longer life than HSS cutters.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41010001	2	10	38	3
41010002	2	10	55	6
41010003	3	13	38	3
41010004	3	13	55	6
41010005	4	13	55	6
41010006	6	16	65	6
41010007	8	20	65	6
41010008	10	20	65	6
41010009	12	25	65	6
41010010	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41019001	1/8	1/2	1/4
41019002	1/8	5/8	1/4
41019003	5/32	5/8	1/4
41019004	3/16	5/8	1/4
41019005	1/4	5/8	1/4
41019006	1/4	1	1/4
41019007	5/16	3/4	1/4
41019008	3/8	3/4	1/4
41019009	3/8	1	1/4
41019010	3/8	1-1/2	1/4
41019011	7/16	1	1/4
41019012	1/2	1	1/4
41019013	5/8	1	1/4
41019014	3/4	1/2	1/4
41019015	3/4	3/4	1/4
41019016	3/4	1	1/4
41019017	1	1	1/4

4102 / CYLINDRICAL BALL NOSE BURRS (STYLE C)



- Deburring of surfaces with round connections.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Standard cut, much longer life than HSS cutters.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41020001	2	10	38	3
41020002	2	10	55	6
41020003	3	13	38	3
41020004	3	13	55	6
41020005	4	13	55	6
41020006	6	16	65	6
41020007	8	20	65	6
41020008	10	20	65	6
41020009	12	25	65	6
41020010	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41029001	1/8	1/2	1/4
41029002	1/8	5/8	1/4
41029003	5/32	5/8	1/4
41029004	3/16	5/8	1/4
41029005	1/4	5/8	1/4
41029006	1/4	1	1/4
41029007	5/16	3/4	1/4
41029008	3/8	3/4	1/4
41029009	3/8	1	1/4
41029010	3/8	1-1/2	1/4
41029011	7/16	1	1/4
41029012	1/2	1	1/4
41029013	5/8	1	1/4
41029014	3/4	1/2	1/4
41029015	3/4	3/4	1/4
41029016	3/4	1	1/4
41029017	1	1	1/4

4103 / CYLINDRICAL BALL - SHAPED BURRS (STYLE D)

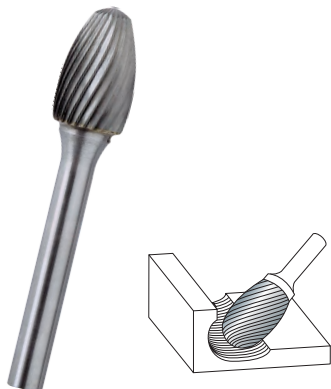


- Deburring of welds and holes. To make oil canals in narrow places.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Standard cut, much longer life than HSS cutters.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41030001	2	1.8	38	3
41030002	2	1.8	55	6
41030003	3	2.7	38	3
41030004	3	2.7	55	6
41030005	4	3	55	6
41030006	6	5	65	6
41030007	8	7	65	6
41030008	10	9	65	6
41030009	12	10	65	6
41030010	16	14	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41039001	1/8	3/32	1/4
41039002	3/16	1/8	1/4
41039003	1/4	7/32	1/4
41039004	5/16	1/4	1/4
41039005	3/8	5/16	1/4
41039006	7/16	3/8	1/4
41039007	1/2	7/16	1/4
41039008	5/8	9/16	1/4
41039009	3/4	11/16	1/4
41039010	1	15/16	1/4

4104 / OVAL - SHAPED BURRS (STYLE E)

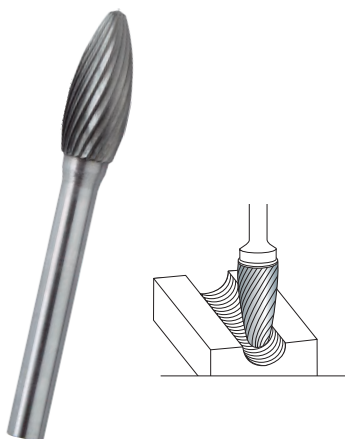


- Deburring of edges and plane surfaces.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Standard cut, much longer life than HSS cutters.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41040001	3	7	38	3
41040002	3	7	55	6
41040003	6	10	65	6
41040004	8	13	65	6
41040005	10	16	65	6
41040006	12	20	65	6
41040007	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41049001	3/16	5/16	1/4
41049002	1/4	3/8	1/4
41049003	3/8	5/8	1/4
41049004	1/2	7/8	1/4
41049005	5/8	1	1/4
41049006	3/4	1	1/4

4105 / ROUND NOSE TREE BURRS (STYLE F)

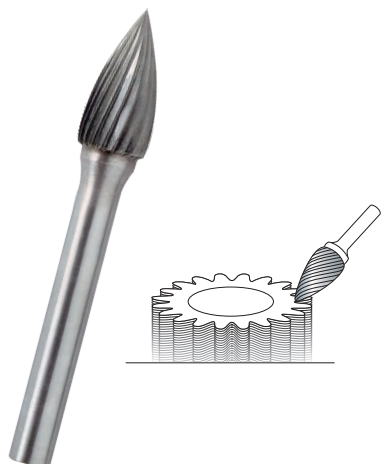


- Deburring and form machining for all applications due to the universal form.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Standard cut, much longer life than HSS cutters.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41050001	3	13	38	3
41050002	3	13	55	6
41050003	6	18	65	6
41050004	8	20	65	6
41050005	10	20	65	6
41050006	12	25	65	6
41050007	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41059001	1/8	1/2	1/4
41059002	1/4	5/8	1/4
41059003	3/8	3/4	1/4
41059004	7/16	1	1/4
41059005	1/2	3/4	1/4
41059006	1/2	1	1/4
41059007	5/8	1	1/4
41059008	3/4	1	1/4
41059009	3/4	1-1/4	1/4
41059010	3/4	1-1/2	1/4

4106 / POINTED TREE BURRS (STYLE G)



- Useful in confined spaces due to the pointed nose.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Standard cut, much longer life than HSS cutters.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41060001	3	13	38	3
41060002	3	13	55	6
41060003	6	18	65	6
41060004	8	20	65	6
41060005	10	20	65	6
41060006	12	25	65	6
41060007	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41069001	1/4	5/16	1/4
41069002	5/16	3/4	1/4
41069003	3/8	3/4	1/4
41069004	1/2	3/4	1/4
41069005	1/2	1	1/4
41069006	5/8	1	1/4
41060007	3/4	1	1/4
41060008	3/4	1-1/2	1/4

4107 / FLAME - SHAPED BURRS (STYLE H)



- Deburring of large curved surfaces and inside tubes.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Standard cut, much longer life than HSS cutters.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41070001	3	7	38	3
41070002	3	7	55	6
41070003	6	18	65	6
41070004	8	20	65	6
41070005	10	25	65	6
41070006	12	32	65	6
41070007	16	36	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41079001	1/4	5/8	1/4
41079002	5/16	3/4	1/4
41079003	1/2	1-1/4	1/4
41079004	5/8	1-7/16	1/4
41079005	3/4	1-5/8	1/4

4108 / ANGLE BURRS 60 DEGREE (STYLE J)

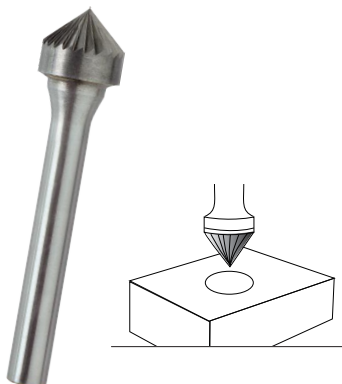


- For smoothing edges in 30 degree.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Standard cut, much longer life than HSS cutters.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41080001	3	2.6	38	3
41080002	3	2.6	55	6
41080003	6	5.2	65	6
41080004	8	6.9	65	6
41080005	10	8.7	65	6
41080006	12	10.4	65	6
41080007	16	13.8	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41089001	1/4	3/16	1/4
41089002	5/16	1/4	1/4
41089003	3/8	1/4	1/4
41089004	1/2	7/16	1/4
41089005	5/8	1/2	1/4
41089006	3/4	5/8	1/4
41080007	1	3/4	1/4

4109 / ANGLE BURRS 90 DEGREE (STYLE K)

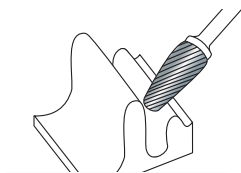


- For smoothing edges in 45 degree.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Standard cut, much longer life than HSS cutters.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41090001	3	1.5	38	3
41090002	3	1.5	55	6
41090003	6	3	65	6
41090004	8	4	65	6
41090005	10	5	65	6
41090006	12	6	65	6
41090007	16	8	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41099001	1/4	1/8	1/4
41099002	5/16	5/32	1/4
41099003	3/8	3/16	1/4
41099004	1/2	1/4	1/4
41099005	5/8	5/16	1/4
41099006	3/4	3/8	1/4
41099007	7/8	7/16	1/4
41099008	1	1/2	1/4

4110 / CONE RADIUS END 14 DEGREE BURRS (STYLE L)

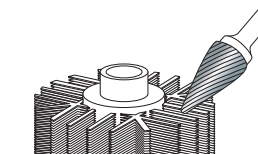


- Long burr head for work in confined spaces with round corners.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Standard cut, much longer life than HSS cutters.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41100001	3	9	38	3
41100002	6	16	65	6
41100003	8	22	65	6
41100004	10	25	65	6
41100005	12	28	65	6
41100006	16	33	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41109001	1/4	5/8	1/4
41109002	5/16	7/8	1/4
41109003	3/8	1-1/16	1/4
41109004	1/2	1-1/8	1/4
41109005	5/8	1-3/16	1/4
41109006	5/8	1-5/16	1/4
41109007	3/4	1-1/2	1/4

4111 / POINTED CONE BURRS (STYLE M)

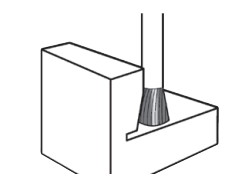


- For deburring hole and in confined spaces.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Standard cut, much longer life than HSS cutters.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41110001	3	10	38	3
41110002	3	10	55	6
41110003	6	18	65	6
41110004	8	20	65	6
41110005	10	20	65	6
41110006	12	25	65	6
41110007	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)	INCLUDED ANGLE
41119001	1/4	1/2	1/4	22
41119002	1/4	3/4	1/4	14
41119003	1/4	1	1/4	10
41119004	3/8	5/8	1/4	28
41119005	1/2	7/8	1/4	28
41119006	5/8	1	1/4	31

4112 / INVERTED TAPER BURRS (STYLE N)

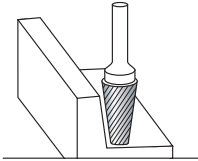


- For deburring holes and in confined spaces.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Standard cut, much longer life than HSS cutters.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)	INCLUDED ANGLE
41120001	3	4	38	3	10
41120002	3	4	55	6	10
41120003	6	7	65	6	10
41120004	8	10	65	6	10
41120005	10	10	65	6	20
41120006	12	13	65	6	20
41120007	16	16	65	6	20

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)	INCLUDED ANGLE
41129001	1/4	5/16	1/4	10
41129002	3/8	3/8	1/4	13
41129003	1/2	1/2	1/4	16
41129004	1/2	1/2	1/4	28
41129005	5/8	5/8	1/4	19
41129006	5/8	5/8	1/4	18
41129007	3/4	3/4	1/4	30

4113 / FLAT END TAPER BURRS (STYLE S)

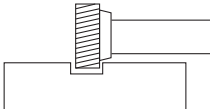


- Deburring and Fettingling.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Standard cut, designed for rapid stock removal and good work piece finish.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41130001	3	13	38	3
41130002	6	14	59	6
41130003	8	17	62	6
41130004	10	20	65	6
41130005	12	20	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41139001	1/8	1/2	1/8
41139002	1/4	9/16	1/4
41139003	5/16	11/16	1/4
41139004	3/8	13/16	1/4
41139005	1/2	13/16	1/4

4114 / CARBIDE THIN DISC (STYLE X)

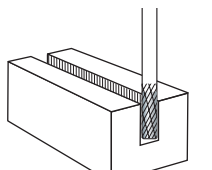


- Deburring and Fettingling.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Standard cut, designed for rapid stock removal and good work piece finish.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41140001	6	4	49	3
41140002	8	4	49	6
41140003	10	5	50	6
41140004	12	5	50	6
41140005	16	5	50	6
41140006	22	5	50	6
41140007	25	5	50	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41149001	1/4	3/32	1/4
41149002	5/16	3/32	1/4
41149003	3/8	1/8	1/4
41149004	1/2	1/8	1/4
41149005	5/8	1/8	1/4
41149006	3/4	5/32	1/4
41149007	7/8	5/32	1/4

3046 / FIBREGLASS CUTTING BURRS



- For trimming and contour milling of all glass and carbon fiber reinforced plastics.
- Plain end routers do not have teeth on the end of the router.
- Used for edge routing or where the end of the router is not in contact with the work piece.

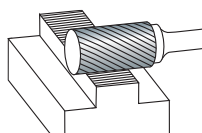
ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
30460001	3	25	51	3
30460002	6	30	60	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	OVERALL LENGTH (INCH)	SHANK DIA. (INCH)
30469001	1/8	1	2	1/8
30469002	1/4	1-3/16	2-3/8	1/4

CARBIDE BURRS LONG (6") SHANK

starcraft®

4170 / LONG (6") SHANK CYLINDRICAL - SHAPED BURRS (STYLE A)



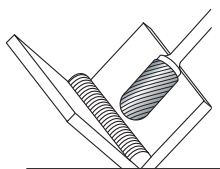
- Deburring and fettling.
- For use on aluminum, non-ferrous metals, soft steel, reinforced plastics and other soft materials.
- All burrs listed are provided with 6" long steel shanks.
- Designed for tough and hard-to-reach deburring areas.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	SHANK DIA. (MM)	DOUBLE CUT ITEM NO.
41700001	6	18	6	41860001
41700002	10	20	6	41860002
41700003	12	25	6	41860003

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)	DOUBLE CUT ITEM NO.
41709001	1/4	1/2	1/4	41869001
41709002	3/8	3/4	1/4	41869002
41709003	1/2	1	1/4	41869003

DOUBLE CUT AVAILABLE.

4171 / LONG (6") SHANK CYLINDRICAL BALL NOSE BURRS (STYLE C)



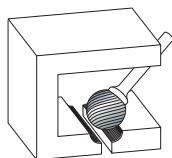
- Deburring and fettling.
- For use on aluminum, non-ferrous metals, soft steel, reinforced plastics and other soft materials.
- All burrs listed are provided with 6" long steel shanks.
- Designed for tough and hard-to-reach deburring areas.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	SHANK DIA. (MM)	DOUBLE CUT ITEM NO.
41710001	6	18	6	41870001
41710002	10	20	6	41870002
41710003	12	25	6	41870003

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)	DOUBLE CUT ITEM NO.
41719001	1/4	1/2	1/4	41879001
41719002	3/8	3/4	1/4	41879002
41719003	1/2	1	1/4	41879003

DOUBLE CUT AVAILABLE.

4172 / LONG (6") SHANK BALL - SHAPED BURRS (STYLE D)



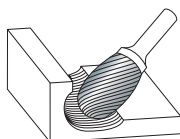
- Deburring and fettling.
- For use on aluminum, non-ferrous metals, soft steel, reinforced plastics and other soft materials.
- All burrs listed are provided with 6" long steel shanks.
- Designed for tough and hard-to-reach deburring areas.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	SHANK DIA. (MM)	DOUBLE CUT ITEM NO.
41720001	6	5.5	6	41880001
41720002	10	8	6	41880002
41720003	12	11	6	41880003

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)	DOUBLE CUT ITEM NO.
41729001	1/4	7/32	1/4	41889001
41729002	3/8	5/16	1/4	41889002
41729003	1/2	7/16	1/4	41889003

DOUBLE CUT AVAILABLE.

4173 / LONG (6") SHANK EGG - SHAPED BURRS (STYLE E)



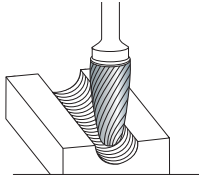
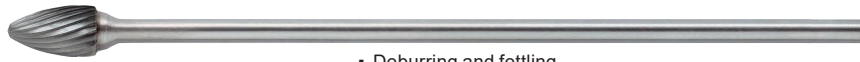
- Deburring and fettling.
- For use on aluminum, non-ferrous metals, soft steel, reinforced plastics and other soft materials.
- All burrs listed are provided with 6" long steel shanks.
- Designed for tough and hard-to-reach deburring areas.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	SHANK DIA. (MM)	DOUBLE CUT ITEM NO.
41730001	6	10	6	41890001
41730002	10	16	6	41890002
41730003	12	22	6	41890003

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)	DOUBLE CUT ITEM NO.
41739001	1/4	3/8	1/4	41899001
41739002	3/8	5/8	1/4	41899002
41739003	1/2	7/8	1/4	41899003

DOUBLE CUT AVAILABLE.

4174 / LONG (6") SHANK ROUND NOSE TREE BURRS (STYLE F)



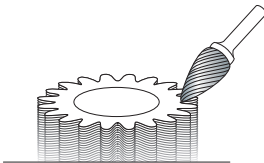
- Deburring and fettling.
- For use on aluminum, non-ferrous metals, soft steel, reinforced plastics and other soft materials.
- All burrs listed are provided with 6" long steel shanks.
- Designed for tough and hard-to-reach deburring areas.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	SHANK DIA. (MM)	DOUBLE CUT ITEM NO.
41740001	6	13	6	41900001
41740002	10	19	6	41900002
41740003	12	25	6	41900003

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)	DOUBLE CUT ITEM NO.
41749001	1/4	1/2	1/4	41909001
41749002	3/8	3/4	1/4	41909002
41749003	1/2	1	1/4	41909003

DOUBLE CUT AVAILABLE.

4175 / LONG (6") SHANK POINT TREE BURRS (STYLE G)



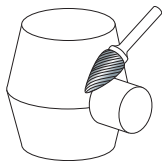
- Deburring and fettling.
- For use on aluminum, non-ferrous metals, soft steel, reinforced plastics and other soft materials.
- All burrs listed are provided with 6" long steel shanks.
- Designed for tough and hard-to-reach deburring areas.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	SHANK DIA. (MM)	DOUBLE CUT ITEM NO.
41750001	6	13	6	41910001
41750002	10	19	6	41910002
41750003	12	25	6	41910003

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)	DOUBLE CUT ITEM NO.
41759001	1/4	1/2	1/4	41919001
41759002	3/8	3/4	1/4	41919002
41759003	1/2	1	1/4	41919003

DOUBLE CUT AVAILABLE.

4176 / LONG (6") SHANK FLAME - SHAPED BURRS (STYLE H)



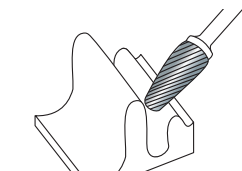
- Deburring and fettling.
- For use on aluminum, non-ferrous metals, soft steel, reinforced plastics and other soft materials.
- All burrs listed are provided with 6" long steel shanks.
- Designed for tough and hard-to-reach deburring areas.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	SHANK DIA. (MM)	DOUBLE CUT ITEM NO.
41769001	5/16	3/4	1/4	41929001
41769002	1/2	1-1/4	1/4	41929002

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)	DOUBLE CUT ITEM NO.
41760001	8	19	6	41920001
41760002	12	32	6	41920002

DOUBLE CUT AVAILABLE.

4177 / LONG (6") SHANK CONE RADIUS END 14 DEGREE BURRS (STYLE L)



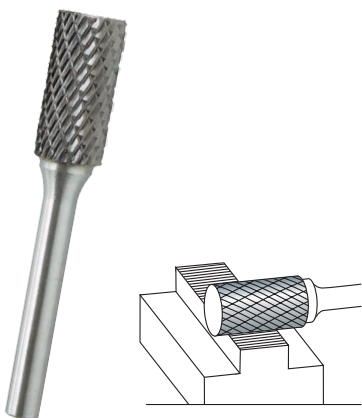
- Deburring and fettling.
- For use on aluminum, non-ferrous metals, soft steel, reinforced plastics and other soft materials.
- All burrs listed are provided with 6" long steel shanks.
- Designed for tough and hard-to-reach deburring areas.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	SHANK DIA. (MM)	DOUBLE CUT ITEM NO.
41779001	1/4	5/8	1/4	41939001
41779002	3/8	1-1/16	1/4	41939002
41779003	1/2	1-1/8	1/4	41939003

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)	DOUBLE CUT ITEM NO.
41770001	6	16	6	41930001
41770002	10	26	6	41930002
41770003	12	28	6	41930003

DOUBLE CUT AVAILABLE.

4130 / CYLINDRICAL NON - END CUTTING BURRS (STYLE A)

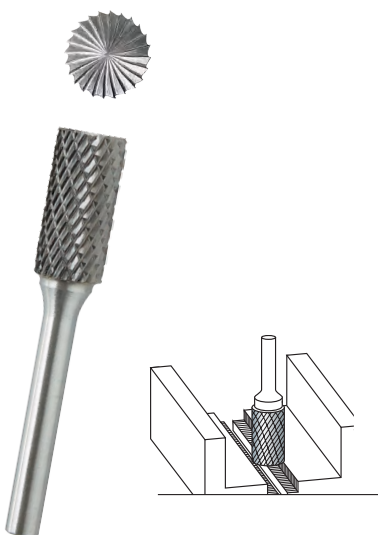


- Deburring of edges and plane surfaces.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Double cut. Great for rapid stock removal with improved operator control.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41300001	2	10	38	3
41300002	2	10	55	6
41300003	3	14	38	3
41300004	3	14	55	6
41300005	4	14	55	6
41300006	6	16	65	6
41300007	8	20	65	6
41300008	10	20	65	6
41300009	12	25	65	6
41300010	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41309001	1/8	1/2	1/4
41309002	1/8	5/8	1/4
41309003	5/32	5/8	1/4
41309004	3/16	5/8	1/4
41309005	1/4	5/8	1/4
41309006	1/4	1	1/4
41309007	5/16	3/4	1/4
41309008	3/8	3/4	1/4
41309009	3/8	1	1/4
41309010	3/8	1-1/2	1/4
41309011	7/16	1	1/4
41309012	1/2	1	1/4
41309013	5/8	1	1/4
41309014	3/4	1/2	1/4
41309015	3/4	3/4	1/4
41309016	3/4	1	1/4
41309017	1	1	1/4

4131 / CYLINDRICAL END CUTTING BURRS (STYLE B)



- Deburring of edges and plane surfaces.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Double cut. Great for rapid stock removal with improved operator control.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41310001	2	10	38	3
41310002	2	10	55	6
41310003	3	14	38	3
41310004	3	14	55	6
41310005	4	14	55	6
41310006	6	16	65	6
41310007	8	20	65	6
41310008	10	20	65	6
41310009	12	25	65	6
41310010	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41319001	1/8	1/2	1/4
41319002	1/8	5/8	1/4
41319003	5/32	5/8	1/4
41319004	3/16	5/8	1/4
41319005	1/4	5/8	1/4
41319006	1/4	1	1/4
41319007	5/16	3/4	1/4
41319008	3/8	3/4	1/4
41319009	3/8	1	1/4
41319010	3/8	1-1/2	1/4
41319011	7/16	1	1/4
41319012	1/2	1	1/4
41319013	5/8	1	1/4
41319014	3/4	1/2	1/4
41319015	3/4	3/4	1/4
41319016	3/4	1	1/4
41319017	1	1	1/4

4132 / CYLINDRICAL BALL NOSE BURRS (STYLE C)

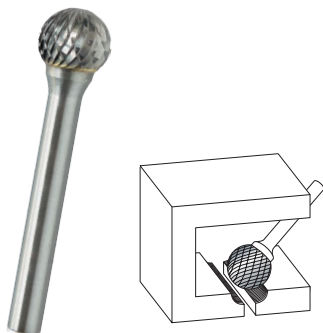


- Deburring of surfaces with round connections.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Double cut. Great for rapid stock removal with improved operator control.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41320001	2	10	38	3
41320002	2	10	55	6
41320003	3	13	38	3
41320004	3	13	55	6
41320005	4	13	55	6
41320006	6	16	65	6
41320007	8	20	65	6
41320008	10	20	65	6
41320009	12	25	65	6
41320010	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41329001	1/8	1/2	1/4
41329002	1/8	5/8	1/4
41329003	5/32	5/8	1/4
41329004	3/16	5/8	1/4
41329005	1/4	5/8	1/4
41329006	1/4	1	1/4
41329007	5/16	3/4	1/4
41329008	3/8	3/4	1/4
41329009	3/8	1	1/4
41329010	3/8	1-1/2	1/4
41329011	7/16	1	1/4
41329012	1/2	1	1/4
41329013	5/8	1	1/4
41329014	3/4	1/2	1/4
41329015	3/4	3/4	1/4
41329016	3/4	1	1/4
41329017	1	1	1/4

4133 / CYLINDRICAL BALL - SHAPED BURRS (STYLE D)



- Deburring of welds and holes.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Double cut. Great for rapid stock removal with improved operator control.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41330001	2	1.8	38	3
41330002	2	1.8	55	6
41330003	3	2.7	38	3
41330004	3	2.7	55	6
41330005	4	3	55	6
41330006	6	5	65	6
41330007	8	7	65	6
41330008	10	9	65	6
41330009	12	10	65	6
41330010	16	14	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41339001	1/8	3/32	1/4
41339002	3/16	1/8	1/4
41339003	1/4	7/32	1/4
41339004	5/16	1/4	1/4
41339005	3/8	5/16	1/4
41339006	7/16	3/8	1/4
41339007	1/2	7/16	1/4
41339008	5/8	9/16	1/4
41339009	3/4	11/16	1/4
41339010	1	15/16	1/4

4134 / OVAL - SHAPED BURRS (STYLE E)

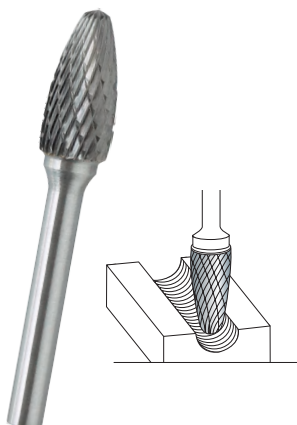


- For shaping and deburring in, for example, cylinder blocks and tools with complicated forms.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Double cut. Great for rapid stock removal with improved operator control.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41340001	3	7	38	3
41340002	3	7	55	6
41340003	6	10	65	6
41340004	8	13	65	6
41340005	10	16	65	6
41340006	12	20	65	6
41340007	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41349001	3/16	5/16	1/4
41349002	1/4	3/8	1/4
41349003	3/8	5/8	1/4
41349004	1/2	7/8	1/4
41349005	5/8	1	1/4
41349006	3/4	1	1/4

4135 / ROUND NOSE TREE BURRS (STYLE F)

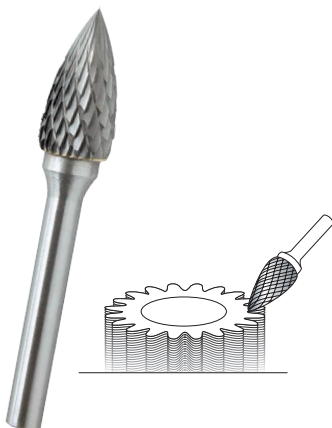


- Deburring and form machining for all applications.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Double cut. Great for rapid stock removal with improved operator control.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41350001	3	10	38	3
41350002	3	10	55	6
41350003	6	18	65	6
41350004	8	20	65	6
41350005	10	20	65	6
41350006	12	25	65	6
41350007	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41359001	1/8	1/2	1/4
41359002	1/4	5/8	1/4
41359003	3/8	3/4	1/4
41359004	7/16	1	1/4
41359005	1/2	3/4	1/4
41359006	1/2	1	1/4
41359007	5/8	1	1/4
41359008	3/4	1	1/4
41359009	3/4	1-1/4	1/4
41359010	3/4	1-1/2	1/4

4136 / POINTED TREE BURRS (STYLE G)

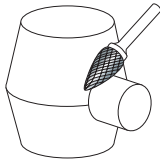


- Useful in confined spaces due to the pointed nose.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Double cut. Great for rapid stock removal with improved operator control.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41360001	3	10	38	3
41360002	3	10	55	6
41360003	6	18	65	6
41360004	8	20	65	6
41360005	10	20	65	6
41360006	12	25	65	6
41360007	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41369001	1/4	5/16	1/4
41369002	5/16	3/4	1/4
41369003	3/8	3/4	1/4
41369004	1/2	3/4	1/4
41369005	1/2	1	1/4
41369006	5/8	1	1/4
41360007	3/4	1	1/4
41360008	3/4	1-1/2	1/4

4137 / FLAME - SHAPED BURRS (STYLE H)

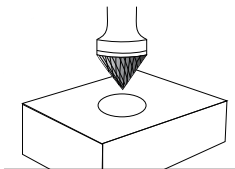


- Deburring of large curved surfaces and inside tubes.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Double cut. Great for rapid stock removal with improved operator control.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41370001	3	7	38	3
41370002	3	7	55	6
41370003	6	18	65	6
41370004	8	20	65	6
41370005	10	25	65	6
41370006	12	32	65	6
41370007	16	36	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41379001	1/4	5/8	1/4
41379002	5/16	3/4	1/4
41379003	1/2	1-1/4	1/4
41379004	5/8	1-7/16	1/4
41379005	3/4	1-5/8	1/4

4138 / ANGLE BURRS 60 DEGREE (STYLE J)

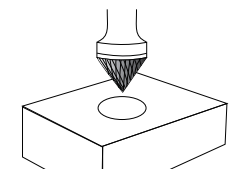


- Smoothing edges in 30 degree.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Double cut. Great for rapid stock removal with improved operator control.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41380001	3	2.6	38	3
41380002	3	2.6	55	6
41380003	6	5.2	65	6
41380004	8	6.9	65	6
41380005	10	8.7	65	6
41380006	12	10.4	65	6
41380007	16	13.8	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41389001	1/4	3/16	1/4
41389002	5/16	1/4	1/4
41389003	3/8	1/4	1/4
41389004	1/2	7/16	1/4
41389005	5/8	1/2	1/4
41389006	3/4	5/8	1/4
41380007	1	3/4	1/4

4139 / ANGLE BURRS 90 DEGREE (STYLE K)

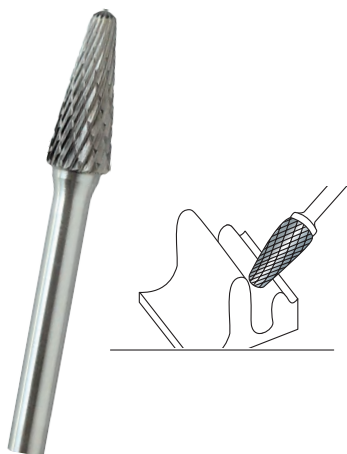


- Smoothing edges in 45 degree.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Double cut. Great for rapid stock removal with improved operator control.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41390001	3	1.5	38	3
41390002	3	1.5	55	6
41390003	6	3	65	6
41390004	8	4	65	6
41390005	10	5	65	6
41390006	12	6	65	6
41390007	16	8	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41399001	1/4	1/8	1/4
41399002	5/16	5/32	1/4
41399003	3/8	3/16	1/4
41399004	1/2	1/4	1/4
41399005	5/8	5/16	1/4
41399006	3/4	3/8	1/4
41399007	7/8	7/16	1/4
41399008	1	1/2	1/4

4140 / CONE RADIUS END 14 DEGREE BURRS (STYLE L)

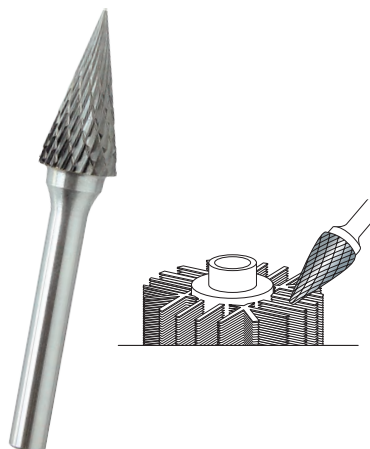


- Long burr head for work in confined spaces with round corners.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Double cut. Great for rapid stock removal with improved operator control.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41400001	3	9	38	3
41400002	6	16	65	6
41400003	8	22	65	6
41400004	10	25	65	6
41400005	12	28	65	6
41400006	16	33	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41409001	1/4	5/8	1/4
41409002	5/16	7/8	1/4
41409003	3/8	1-1/16	1/4
41409004	1/2	1-1/8	1/4
41409005	5/8	1-3/16	1/4
41409006	5/8	1-5/16	1/4
41400007	3/4	1-1/2	1/4

4141 / POINTED CONE BURRS (STYLE M)

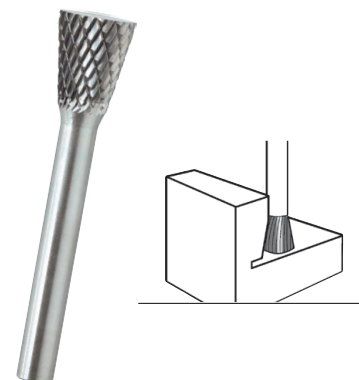


- Deburring hole and in confined spaces.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Double cut. Great for rapid stock removal with improved operator control.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41410001	3	10	38	3
41410002	3	10	55	6
41410003	6	18	65	6
41410004	8	20	65	6
41410005	10	20	65	6
41410006	12	25	65	6
41410007	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)	INCLUDED ANGLE
41419001	1/4	1/2	1/4	22
41419002	1/4	3/4	1/4	14
41419003	1/4	1	1/4	10
41419004	3/8	5/8	1/4	28
41419005	1/2	7/8	1/4	28
41419006	5/8	1	1/4	31

4142 / INVERTED TAPER BURRS (STYLE N)

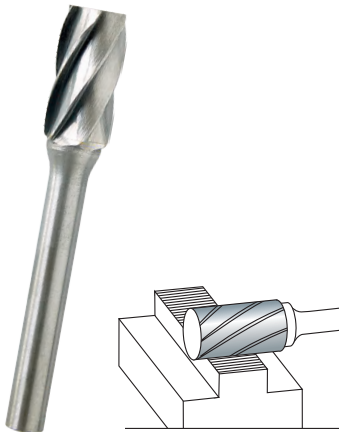


- Deburring holes and in confined spaces.
- Use on steel, hardened steel, stainless steel, cast iron, non-ferrous metals, ceramics, plastics, hardwood, etc.
- Double cut. Great for rapid stock removal with improved operator control.
- For longer life, use with a cooling agent such as bursaver, water, or oil.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)	INCLUDED ANGLE
41420001	3	4	38	3	10
41420002	3	4	55	6	10
41420003	6	7	65	6	10
41420004	8	10	65	6	10
41420005	10	10	65	6	20
41420006	12	13	65	6	20
41420007	16	16	65	6	20

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)	INCLUDED ANGLE
41429001	1/4	5/16	1/4	10
41429002	3/8	3/8	1/4	13
41429003	1/2	1/2	1/4	16
41429004	1/2	1/2	1/4	28
41429005	5/8	5/8	1/4	19
41429006	5/8	5/8	1/4	18
41420007	3/4	3/4	1/4	30

4160 / CYLINDRICAL NON - END CUTTING BURRS (STYLE A)



- Deburring of surface with round connections.
- Use on aluminum, non-ferrous metals, soft steel, reinforced plastics and other soft materials.
- High flute finish for easy chip flow and fast stock removal.
- Also provides excellent work finish with minimum loading when cutting soft, sticky metal.
- Fewer, wider flutes to reduce clogging.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41600001	2	10	38	3
41600002	2	10	55	6
41600003	3	13	38	3
41600004	3	13	55	6
41600005	4	13	55	6
41600006	6	16	65	6
41600007	8	20	65	6
41600008	10	20	65	6
41600009	12	25	65	6
41600010	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41609001	1/8	1/2	1/4
41609002	1/8	5/8	1/4
41609003	5/32	5/8	1/4
41609004	3/16	5/8	1/4
41609005	1/4	5/8	1/4
41609006	1/4	1	1/4
41609007	5/16	3/4	1/4
41609008	3/8	3/4	1/4
41609009	3/8	1	1/4
41609010	3/8	1-1/2	1/4
41609011	7/16	1	1/4
41609012	1/2	1	1/4
41609013	5/8	1	1/4
41609014	3/4	1/2	1/4
41609015	3/4	3/4	1/4
41609016	3/4	1	1/4
41609017	1	1	1/4

4161 / CYLINDRICAL BALL NOSE BURRS (STYLE C)

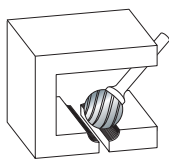


- Deburring of surface with round connections.
- Use on aluminum, non-ferrous metals, soft steel, reinforced plastics and other soft materials.
- High flute finish for easy chip flow and fast stock removal.
- Also provides excellent work finish with minimum loading when cutting soft, sticky metal.
- Fewer, wider flutes to reduce clogging.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41610001	2	10	38	3
41610002	2	10	55	6
41610003	3	13	38	3
41610004	3	13	55	6
41610005	4	13	55	6
41610006	6	16	65	6
41610007	8	20	65	6
41610008	10	20	65	6
41610009	12	25	65	6
41610010	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41619001	1/8	1/2	1/4
41619002	1/8	5/8	1/4
41619003	5/32	5/8	1/4
41619004	3/16	5/8	1/4
41619005	1/4	5/8	1/4
41619006	1/4	1	1/4
41619007	5/16	3/4	1/4
41619008	3/8	3/4	1/4
41619009	3/8	1	1/4
41619010	3/8	1-1/2	1/4
41619011	7/16	1	1/4
41619012	1/2	1	1/4
41619013	5/8	1	1/4
41619014	3/4	1/2	1/4
41619015	3/4	3/4	1/4
41619016	3/4	1	1/4
41619017	1	1	1/4

4162 / CYLINDRICAL BALL - SHAPED BURRS (STYLE D)

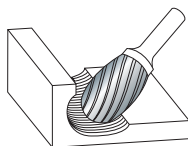


- Deburring of welds and holes.
- Use on aluminum, non-ferrous metals, soft steel, reinforced plastics and other soft materials.
- High flute finish for easy chip flow and fast stock removal.
- Also provides excellent work finish with minimum loading when cutting soft, sticky metal.
- Fewer, wider flutes to reduce clogging.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41620001	2	1.8	38	3
41620002	2	1.8	55	6
41620003	3	2.7	38	3
41620004	3	2.7	55	6
41620005	4	3	55	6
41620006	6	5	65	6
41620007	8	7	65	6
41620008	10	9	65	6
41620009	12	10	65	6
41620010	16	14	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41629001	1/8	3/32	1/4
41629002	3/16	1/8	1/4
41629003	1/4	7/32	1/4
41629004	5/16	1/4	1/4
41629005	3/8	5/16	1/4
41629006	7/16	3/8	1/4
41629007	1/2	7/16	1/4
41629008	5/8	9/16	1/4
41629009	3/4	11/16	1/4
41629010	1	15/16	1/4

4163 / OVAL - SHAPED BURRS (STYLE E)

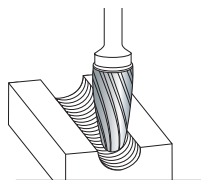


- Shaping and deburring in cylinder blocks and tools with complicated forms.
- Use on aluminum, non-ferrous metals, soft steel, reinforced plastics and other soft materials.
- High flute finish for easy chip flow and fast stock removal.
- Also provides excellent work finish with minimum loading when cutting soft, sticky metal.
- Fewer, wider flutes to reduce clogging.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41630001	3	7	38	3
41630002	3	7	55	6
41630003	6	10	65	6
41630004	8	13	65	6
41630005	10	16	65	6
41630006	12	20	65	6
41630007	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41639001	3/16	5/16	1/4
41639002	1/4	3/8	1/4
41639003	3/8	5/8	1/4
41639004	1/2	7/8	1/4
41639005	5/8	1	1/4
41639006	3/4	1	1/4

4164 / ROUND NOSE TREE BURRS (STYLE F)

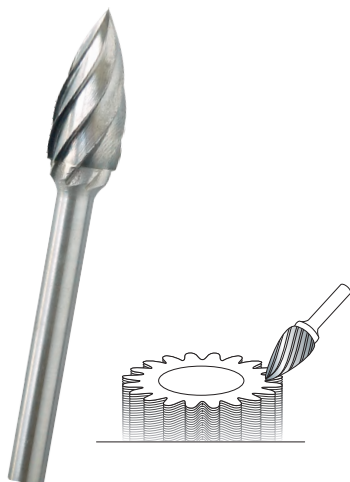


- Deburring and form machining for all applications.
- Use on aluminum, non-ferrous metals, soft steel, reinforced plastics and other soft materials.
- High flute finish for easy chip flow and fast stock removal.
- Also provides excellent work finish with minimum loading when cutting soft, sticky metal.
- Fewer, wider flutes to reduce clogging.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41640001	3	13	38	3
41640002	3	13	55	6
41640003	6	18	65	6
41640004	8	20	65	6
41640005	10	20	65	6
41640006	12	25	65	6
41640007	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41649001	1/8	1/2	1/4
41649002	1/4	5/8	1/4
41649003	3/8	3/4	1/4
41649004	7/16	1	1/4
41649005	1/2	3/4	1/4
41649006	1/2	1	1/4
41649007	5/8	1	1/4
41649008	3/4	1	1/4
41649009	3/4	1-1/4	1/4
41649010	3/4	1-1/2	1/4

4165 / POINTED TREE BURRS (STYLE G)



- Deburring and fettling in confined spaces due to the pointed nose.
- Use on aluminum, non-ferrous metals, soft steel, reinforced plastics and other soft materials.
- High flute finish for easy chip flow and fast stock removal.
- Also provides excellent work finish with minimum loading when cutting soft, sticky metal.
- Fewer, wider flutes to reduce clogging.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41650001	3	13	38	3
41650002	3	13	55	6
41650003	6	18	65	6
41650004	8	20	65	6
41650005	10	20	65	6
41650006	12	25	65	6
41650007	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41659001	1/4	5/8	1/4
41659002	5/16	3/4	1/4
41659003	3/8	3/4	1/4
41659004	1/2	3/4	1/4
41659005	1/2	1	1/4
41659006	5/8	1	1/4
41650007	3/4	1	1/4
41650008	3/4	1-1/2	1/4

4166 / FLAME - SHAPED BURRS (STYLE H)

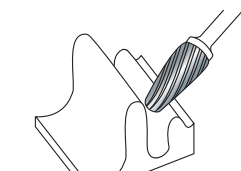


- Deburring of large curved surfaces and inside tubes.
- Use on aluminum, non-ferrous metals, soft steel, reinforced plastics and other soft materials.
- High flute finish for easy chip flow and fast stock removal.
- Also provides excellent work finish with minimum loading when cutting soft, sticky metal.
- Fewer, wider flutes to reduce clogging.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41660001	3	7	38	3
41660002	3	7	55	6
41660003	6	18	65	6
41660004	8	20	65	6
41660005	10	25	65	6
41660006	12	32	65	6
41660007	16	36	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41669001	1/4	5/8	1/4
41669002	5/16	3/4	1/4
41669003	1/2	1-1/4	1/4
41669004	5/8	1-7/16	1/4
41669005	3/4	1-5/8	1/4

4167 / CONE RADIUS END 14 DEGREE BURRS (STYLE L)

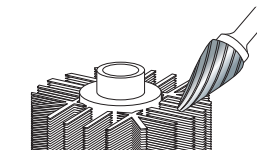


- Deburring and fettling in confined spaces with round corners.
- Use on aluminum, non-ferrous metals, soft steel, reinforced plastics and other soft materials.
- High flute finish for easy chip flow and fast stock removal.
- Also provides excellent work finish with minimum loading when cutting soft, sticky metal.
- Fewer, wider flutes to reduce clogging.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41670001	3	13	38	3
41670002	6	16	65	6
41670003	8	22	65	6
41670004	10	25	65	6
41670005	12	28	65	6
41670006	16	33	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)
41679001	1/4	5/8	1/4
41679002	5/16	7/8	1/4
41679003	3/8	1-1/16	1/4
41679004	1/2	1-1/8	1/4
41679005	5/8	1-3/16	1/4
41679006	5/8	1-5/16	1/4
41670007	3/4	1-1/2	1/4

4168 / POINTED CONE BURRS (STYLE M)

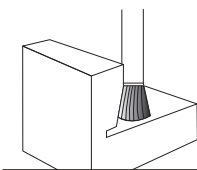


- Deburring holes and in confined spaces.
- Use on aluminum, non-ferrous metals, soft steel, reinforced plastics and other soft materials.
- High flute finish for easy chip flow and fast stock removal.
- Also provides excellent work finish with minimum loading when cutting soft, sticky metal.
- Fewer, wider flutes to reduce clogging.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
41680001	3	11	38	3
41680002	3	11	55	6
41680003	6	18	65	6
41680004	8	20	65	6
41680005	10	20	65	6
41680006	12	25	65	6
41680007	16	25	65	6

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)	INCLUDED ANGLE
41689001	1/4	1/2	1/4	22
41689002	1/4	3/4	1/4	14
41689003	1/4	1	1/4	10
41689004	3/8	5/8	1/4	28
41689005	1/2	7/8	1/4	28
41689006	5/8	1	1/4	31

4169 / INVERTED TAPER BURRS (STYLE N)



- Deburring holes and in confined spaces.
- Use on aluminum, non-ferrous metals, soft steel, reinforced plastics and other soft materials.
- High flute finish for easy chip flow and fast stock removal.
- Also provides excellent work finish with minimum loading when cutting soft, sticky metal.
- Fewer, wider flutes to reduce clogging.

ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)	INCLUDED ANGLE
41690001	3	4	38	3	10
41690002	3	4	55	6	10
41690003	6	7	65	6	10
41690004	8	10	65	6	10
41690005	10	10	65	6	20
41690006	12	13	65	6	20
41690007	16	16	65	6	20

ITEM NO.	CUTTING DIA. (INCH)	FLUTE LENGTH (INCH)	SHANK DIA. (INCH)	INCLUDED ANGLE
41699001	1/4	5/16	1/4	10
41699002	3/8	3/8	1/4	13
41699003	1/2	1/2	1/4	16
41699004	1/2	1/2	1/4	28
41699005	5/8	5/8	1/4	19
41699006	5/8	5/8	1/4	18
41690007	3/4	3/4	1/4	30

>> TITANIUM NITRIDE COATED BURRS <<



APPLICATIONS:

- Like HSS or diamond coated burrs, but have a protective coating that makes the cutting edge harder, run cooler, and last longer.
- For longer life, use with a cooling agent such as bursaver, water, or oil.
- Available in standard cut or double cut.

SUGGESTED RPM FOR USING CARBIDE BURRS

BURRS DIA.	STANDARD CUT Stainless steel Inconel, titanium	STANDARD CUT All other materials In chart above	DOUBLE CUT Stainless steel Inconel, titanium	DOUBLE CUT All other materials In chart above
1/16"	75,000	50,000	37,500	25,000
1/8"	53,000	35,000	26,500	17,500
3/16"	38,000	26,000	19,000	13,000
1/4"	33,000	22,000	16,500	11,000
5/16"	30,000	20,000	15,000	10,000
3/8"	27,000	18,000	13,500	9,000
7/16"	26,000	17,500	13,000	8,750
1/2"	24,000	16,000	12,000	8,000
5/8"	23,000	15,300	11,500	7,650
3/4"	21,000	14,000	10,500	7,000
7/8"	20,000	13,000	10,000	6,500
1"	18,000	12,000	9,000	6,000

NOTE:

- The above chart is a general and approximate recommendation.
- Variations to achieve desired results may be necessary.
- Long shank burrs should be used at reduced speeds.
- Other metals include malleable iron, cast iron, carbon steel, aluminum, bronze, brass, etc.

FOR OPTIMUM PERFORMANCE AND EXTEND LIFE

- Ensure tools are firmly gripped by collects.
- Use grinding heads with adequate power, which run concentrically without vibration.
- Use the recommended spindle rpm.
- Apply controlled light cutting pressure with steady hand movement.
- Replace cutters before they become excessively worn.
- Keep tools in their protective containers before and after use.

>> ASSORTED CARBIDE BURRS SETS <<



Item No.413004

8PCS ASSORTED CARBIDE BURRS SET
FEATURES: 3MM SHANK, DOUBLE CUT
CONTENTS:
 4mm Ball
 6mm Ball
 6x13mm Cylindrical ball nose
 4x13mm Cylindrical ball nose
 4x13mm Cylindrical
 6x13mm Cylindrical
 6x18mm Round tree
 6x18mm Round tree



Item No.413005

8PCS ASSORTED CARBIDE BURRS SET
FEATURES: 1/4-IN. SHANK, DOUBLE CUT
CONTENTS:
 3/16x3/4-in. Cylindrical end cut
 1/2x1-in. Cylindrical end cut
 1/4x5/8-in. Cylindrical ball nose
 3/8x3/4-in. Cylindrical ball nose
 1/4-in. Ball
 5/16-in. Ball
 3/8x3/4-in. Round tree
 1/2x7/16-in. 60 degree angle



Item No.410001

15PCS ASSORTED SOLID CARBIDE BURRS SET
FEATURES: 1/8-IN. SHANK
CONTENTS:
 1/8x1/4-in. 10 degree inverted taper
 1/8x1/2-in. Pointed cone
 1/8x1/2, 1/8x3/8-in. Cone radius end 14 degree
 1/8x1/4, 1/8x1/2-in. Pointed tree
 1/8x1/2-in. Round tree
 1/8x 1/2, 1/8x5/8-in. Cylindrical ball nose
 1/8x1/16-in. Angle 90 degree
 1/8x5/16-in. Angle 60 degree
 1/8x1-in. Cylindrical
 1/8x3/32-in. Cylindrical ball
 1/8x1/4-in. Flame
 1/8x1/4-in. Oval



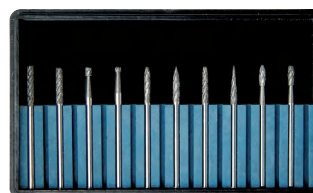
Item No.413002

15PCS TIN-COATED ASSORTED CARBIDE BURRS SET
FEATURES: 1/8 - IN. Shank
CONTENTS:
 1/8x7/16-in. Pointed cone
 1/4x3/4-in. Pointed cone
 1/8x3/16, 1/4x5/16-in. 10 degree inverted taper
 1/8x1/2-in. Cylindrical ball nose
 1/4x7/32-in. Cylindrical ball
 1/8x3/8, 1/4x1/2, 1/8x7/16-in. Cone radius end 14 degree
 1/4x5/8, 1/8x1/2-in. Cylindrical
 1/8x1/4, 1/4x3/4-in. Flame
 1/4x3/8-in. Oval
 1/8x3/8-in. Pointed tree



Item No.410004

10PCS ASSORTED SOLID CARBIDE BURRS SET
FEATURES: 1/8-IN. SHANK, DOUBLE CUT
CONTENTS:
 1/4x5/8-in. Cylindrical
 1/4x5/8-in. Cylindrical ball nose
 1/4x3/16-in. Cylindrical ball
 1/4x5/16-in. 10 degree inverted taper
 1/4x5/8-in. Round nose tree
 1/4x3/4-in. Pointed tree
 1/4x3/8-in. Oval
 1/4x3/4-in. Pointed cone
 1/4x5/8-in. Cone radius end 14 degree
 1/4x3/16-in. Angle 60 degree



Item No.413001

10PCS ASSORTED SOLID CARBIDE BURRS SET
FEATURES: 3/32-IN. SHANK, DOUBLE CUT
CONTENTS:
 3/32x3/8-in. Cylindrical
 3/32x3/8-in. Cylindrical ball nose
 3/32x1/8-in. 10 degree inverted taper
 3/32x1/16-in. Cylindrical ball
 3/32x7/16-in. Round nose tree
 3/32x7/16-in. Pointed tree
 3/32x1/4-in. Oval
 3/32x7/16-in. Pointed cone
 3/32x1/2-in. Cone radius end 14 degree
 3/32x1/4-in. Flame

>> ASSORTED CARBIDE BURRS SETS <<



Item No.410006

5PCS ASSORTED CARBIDE BURRS SET
FEATURES: 1/4-IN. SHANK, ALU-CUT
CONTENTS:
 1/2x1-in. Cylindrical ball nose
 1/2x1-in. Pointed Tree
 1/2x1-1/8-in. Cone radius end 14 degree
 1/2x1-in. Pointed cone
 1/2x1/2-in. Inverted taper



Item No.413007

5PCS ASSORTED CARBIDE BURRS SET
FEATURES: 1/4-IN. SHANK, DOUBLE CUT
CONTENTS:
 1/2x1-in. Cylindrical ball nose
 1/2x1-in. Pointed Tree
 1/2x1-1/8-in. Cone radius end 14 degree
 1/2x1-in. Pointed cone
 1/2x1/2-in. Inverted taper



Item No.413008

20PCS ASSORTED CARBIDE BURRS SET
FEATURES: 6MM SHANK, DOUBLE CUT
CONTENTS:
 10x20mm Cylindrical
 12x25mm Cylindrical end cut
 10x20 mm, 12x25 mm Cylindrical ball nose
 14x12 mm Cylindrical ball
 10x20mm, 12x25mm Oval
 8x20mm, 10x25mm Flame
 12x10mm Angle burr 60 degree
 12x6mm Angle burr 90 degree
 10x20mm Round nose tree
 12x25mm, 10x20mm Pointed Tree
 8x22mm, 10x25mm Cone radius end 14 degree
 10x20mm, 12x25mm Pointed cone
 12x20mm Flat end taper
 12x13mm Inverted taper



Item No.992210

5PCS ASSORTED CARBIDE BURRS SET
FEATURES: 6MM SHANK, ALU-CUT
CONTENTS:
 10x20mm Cylindrical A
 10x20mm Cylindrical ball nose C
 10x9mm Cylindrical ball D
 10x16mm Oval shape E
 10x20mm Round nose tree F



Item No.992211

5PCS ASSORTED CARBIDE BURRS SET
FEATURES: 6MM SHANK, STANDARD CUT
CONTENTS:
 10x20mm Cylindrical A
 10x20mm Cylindrical ball nose C
 10x9mm Cylindrical ball D
 10x20mm Oval shape E
 10x25mm Round nose tree F



Item No.413009

9PCS ASSORTED CARBIDE BURRS SET
FEATURES: 6MM SHANK, DOUBLE CUT
CONTENTS:
 8x20mm Cylindrical
 8x20mm Cylindrical ball nose
 6x16mm Cylindrical ball nose
 10x16mm Oval shape
 8x20mm Round nose tree
 10x20mm Round nose tree
 10x20mm Pointed Tree
 8x22mm Cone radius end 14 degree
 6x7mm Inverted taper



Item No.992212

5PCS ASSORTED CARBIDE BURRS SET
FEATURES: 6MM SHANK, DOUBLE-CUT
CONTENTS:
 10x20mm Cylindrical A
 10x20mm Cylindrical ball nose C
 10x20mm Round nose tree F
 10x20mm Pointed tree G
 10x25mm Cone radius end L



Item No.992213

5PCS ASSORTED CARBIDE BURRS SET
FEATURES: 6MM SHANK, DOUBLE-CUT
CONTENTS:
 10x20mm Cylindrical A
 10x20mm Cylindrical ball nose C
 10x9mm Cylindrical ball D
 10x16mm Oval shape E
 10x20mm Round nose tree F
 10x20mm Pointed tree G
 10x13mm Angle burrs 60° J
 10x9mm Flame H
 10x16mm Cone radius end 14 degree L
 10x20mm Pointed cone M



Item No.992214

5PCS ASSORTED CARBIDE BURRS SET
FEATURES: 1/4" SHANK, DOUBLE-CUT
CONTENTS:
 3/8"x3/4" Cylindrical A
 3/8"x3/4" Cylindrical ball nose C
 3/8"x5/16" Cylindrical ball D
 3/8"x5/8" Oval shape E
 3/8"x3/4" Round nose tree F
 3/8"x3/4" Pointed tree G
 5/16"x3/4" Flame H
 3/8"x1-1/16" Cone radius end 14 degree L
 1/2"x1/4" Angle burrs 90° K
 1/2"x1/2" Inverted taper burrs

HSS BURRS

HSS ROTARY BURRS

starcraft®

HSS ROTARY BURRS

1. Made of high speed steel for longer wear and exceptional cutting efficiency.
2. Long lasting and relatively aggressive cutting action.
3. For shaping, slotting and cutting in non-ferrous metals.



Item No.410007

10pcs High Speed Steel Cutters
Set in plastic box with blister card
shank diameter: 2.35, Overall length: 40mm



Item No.405701

10pcs High Speed Steel Rotary file
Set in plastic box with blister card

1720 / CYLINDRICAL (SHAPE A)



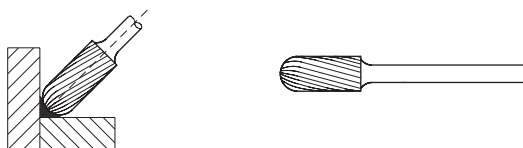
ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
17200001	6	16	56	6
17200002	8	20	60	6
17200003	10	20	60	6
17200004	12	25	65	6

1721 / CYLINDER WITH END-CUT (SHAPE B)



ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
17210001	6	16	56	6
17210002	8	20	60	6
17210003	10	20	60	6
17210004	12	25	65	6

1722 / ROUND NOSE (SHAPE C)



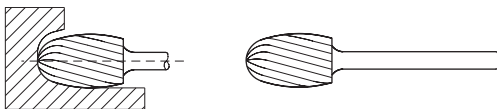
ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
17220001	6	16	56	6
17220002	8	20	60	6
17220003	10	20	60	6
17220004	12	25	65	6

1723 / SPHERICAL (SHAPE D)



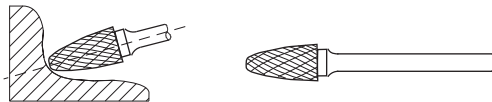
ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
17230001	6	5.4	45.4	6
17230002	8	7.2	47.2	6
17230003	10	9.0	49	6
17230004	12	10.8	50.8	6

1724 / OVAL (SHAPE E)



ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)	RADIUS
17240001	6	10	50	6	2
17240002	8	13	53	6	3
17240003	10	16	56	6	3.5
17240004	12	20	60	6	4.2

1725 / ROUND NOSE TREE (SHAPE F)



ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)	RADIUS
17250001	6	18	58	6	1.2
17250002	10	20	60	6	2.5
17250003	12	25	65	6	3

1726 / ARCH POINTED NOSE (SHAPE G)



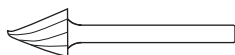
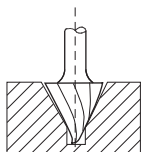
ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
17260001	6	18	58	6
17260002	10	20	60	6
17260003	12	25	65	6

1727 / FLAME (SHAPE H)



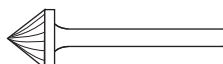
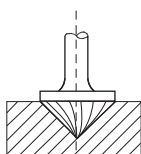
ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
17270001	6	18	58	6
17270002	8	20	60	6
17270003	10	25	65	6
17270004	12	32	72	6

1728 / ANGLE BURRS 60 (SHAPE J)



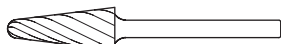
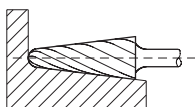
ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
17280001	6	5.2	49	6
17280002	10	8.7	53	6
17280003	12	10.4	55	6

1729 / ANGLE BURRS 90 (SHAPE K)



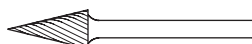
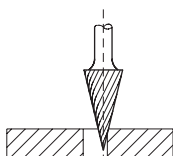
ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)
17290001	6	3	50	6
17290002	10	5	50	6
17290003	12	6	51	6

1730 / ROUND NOSE (SHAPE L)



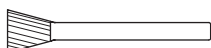
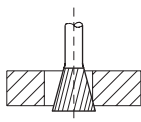
ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)	RADIUS
17300001	6	16	56	6	1.2
17300002	8	22	62	6	1.4
17300003	10	25	65	6	2.2
17300004	12	28	68	6	3

1731 / POINTED NOSE (SHAPE M)

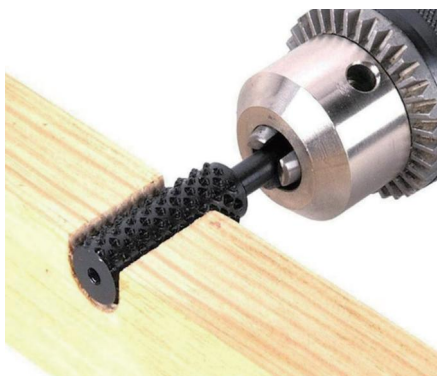


ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)	ANGLE
17310001	6	18	58	6	14°
17310002	10	20	60	6	25°
17310003	12	25	65	6	25°

1732 / INVERTED CONE (SHAPE N)



ITEM NO.	CUTTING DIA. (MM)	FLUTE LENGTH (MM)	OVERALL LENGTH (MM)	SHANK DIA. (MM)	ANGLE
17320001	6	7	47	6	10°
17320002	12	13	53	6	20°
17320003	12	13	53	6	20°



1745 / ROTARY RASPS

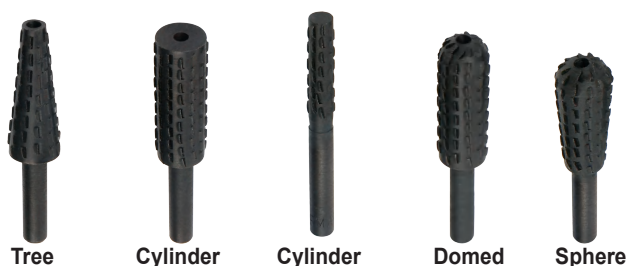
- Made of hardened tempered steel.
- Sculpture, shape and deburr wood, plastics and soft metals.
- 1/4" shank fits all electric drills and drill presses.
- Styles available: ball, cylinder, domed, sphere and tree.



ITEM NO.	SHAPE	CUTTING DIA. (INCH)	RASP LENGTH (INCH)	SHANK DIA. (INCH)	SAFE MAX. RPM SPEED
17450001	Ball	5/8"	5/8"	1/4"	5,000
17450002	Cylinder	5/8"	1-3/8"	1/4"	5,000
17450003	Domed	5/8"	1-3/8"	1/4"	5,000
17450004	Sphere	5/8"	1-1/4"	1/4"	5,000
17450005	Tree	5/8"	1-3/8"	1/4"	5,000

1746 / ROTARY FILES

- Made of hardened tempered steel.
- Shape, cut and file metal, wood and plastic.
- 1/4" shank fits all electric drills and drill presses.
- Styles available: tree, cylinder, domed and sphere.



ITEM NO.	SHAPE	CUTTING DIA. (INCH)	RASP LENGTH (INCH)	SHANK DIA. (INCH)	SAFE MAX. RPM SPEED
17460001	Tree	1/2"	1-3/8"	1/4"	5,000
17460002	Cylinder	1/2"	1-3/8"	1/4"	5,000
17460003	Cylinder	1/4"	1-1/4"	1/4"	5,000
17460004	Domed	1/2"	1-3/8"	1/4"	5,000
17460005	Sphere	5/8"	1-1/8"	1/4"	5,000



INDIVIDUAL PACKAGE DISPLAY
PACKED IN TRAPPED BLISTER CARD



174801
2PCS Conical & Cylindrical
File in Blister Skin Card



990520
4PCS Rasps & Countersink Set
in Blister Skin Card



- Made of vitrified aluminum oxide grain.
- 1/4"(6mm) shank fits all electric drills and high speed grinders.
- Different shapes and sizes available
- For deburring tool sharpening and internal grinding, finishing cavities, removing mold marks, and parting lines on ferrous and non-ferrous metals.

2698 VITRIFIED BOND MOUNTED POINTS



INDIVIDUAL PACKAGE DISPLAY
PACKED IN CLAMSHELL

Cylinder deburs and finishes flat bottomed slots and holes and removes material on contoured and flat surfaces.

ITEM NO.	DIMENSION-MM(INCH) DIA. X THICK (DXT)	MANDREL DIA. MM(INCH)
26980358C	16×25(5/8"x1")	6 (1/4")
26980359C	20×25(13/16"x1")	6 (1/4")
26980338C	25×25(1"x1")	6 (1/4")
26980360C	30×25(1-3/16"x1")	6 (1/4")
26980362C	40×25(1-9/16"x1")	6 (1/4")
26980367C	50×25(2"x1")	6 (1/4")



INDIVIDUAL PACKAGE DISPLAY
PACKED IN CLAMSHELL

Cylinder with concave end deburs and finishes flat bottomed slots and holes and removes material on contoured and flat surfaces.

ITEM NO.	DIMENSION-MM(INCH) DIA. X THICK (DXT)	MANDREL DIA. MM(INCH)
26980368C	6×13 (1/4"x1/2")	6 (1/4")
26980370C	10×13 (3/8"x1/2")	6 (1/4")
26980371C	13×13 (1/2"x1/2")	6 (1/4")
26980372C	20×30(13/16"x1-3/16")	6 (1/4")
26980373C	25×25(1"x1")	6 (1/4")

2698 / VITRIFIED BOND MOUNTED POINTS



INDIVIDUAL PACKAGE DISPLAY
PACKED IN CLAMSHELL

Cylindrical with Radius End

Ideal for blending and smooth-ing contoured surfaces.

ITEM NO.	DIMENSION-MM(INCH) DIA. X THICK (DXT)	MANDREL DIA. MM(INCH)
26980374C	6×20 (1/4"x13/16")	6 (1/4")
26980375C	10×10 (3/8"x3/8")	6 (1/4")
26980376C	16×25 (5/8"x1")	6 (1/4")
26980377C	20×25(13/16"x1")	6 (1/4")
26980321C	25×25(1"x1")	6 (1/4")
26980378C	30×40(1-3/16"x1-9/16")	6 (1/4")



INDIVIDUAL PACKAGE DISPLAY
PACKED IN CLAMSHELL

Large Cone smooths material around countersunk and counterbored holes as well as beveled and chamfered surfaces.

ITEM NO.	DIMENSION-MM(INCH) DIA. X THICK (DXT)	MANDREL DIA. MM(INCH)
26980379C	6×10(1/4"x3/8")	6 (1/4")
26980380C	20×22(13/16"x7/8")	6 (1/4")
26980381C	28×28(1-1/8"x1-1/8")	6 (1/4")
26980382C	30×50(1-3/16"x2")	6 (1/4")
26980383C	30×28(1-3/16"x1-1/8")	6 (1/4")



INDIVIDUAL PACKAGE DISPLAY
PACKED IN CLAMSHELL

Cone smooths material around countersunk and counterbored holes as well as beveled and chamfered surfaces.

ITEM NO.	DIMENSION-MM(INCH) DIA. X THICK (DXT)	MANDREL DIA. MM(INCH)
26980384C	10×15 (3/8"x5/8")	6 (1/4")
26980385C	12×20 (1/2"x13/16")	6 (1/4")
26980386C	16×16 (5/8"x5/8")	6 (1/4")
26980387C	20×30(13/16"x1-3/16")	6 (1/4")



INDIVIDUAL PACKAGE DISPLAY
PACKED IN CLAMSHELL

Tapered Cylinder finishes countersunk holes and removes material on a wide variety of contoured and flat surfaces.

ITEM NO.	DIMENSION-MM(INCH) DIA. X THICK (DXT)	MANDREL DIA. MM(INCH)
26980388C	3×6(1/8"x1/4")	6 (1/4")
26980389C	6×6(1/4"x1/4")	6 (1/4")
26980390C	13×16 (1/2"x5/8")	6 (1/4")
26980391C	20×30(13/16"x1-3/16")	6 (1/4")
26980392C	25×35(1"x1-3/8")	6 (1/4")

2698 / VITRIFIED BOND MOUNTED POINTS



INDIVIDUAL PACKAGE DISPLAY
PACKED IN CLAMSHELL

Pointed cylinder excellent for accessing tight spaces and intricate detailing.

ITEM NO.	DIMENSION-MM(INCH) DIA. X THICK (DXT)	MANDREL DIA. MM(INCH)
26980340C	16×35(5/8"×1-3/8")	6 (1/4")
26980341C	20×40(13/16"×1-9/16")	6 (1/4")
26980342C	22×50(7/8"×2")	6 (1/4")
26980343C	30×40(1-3/16"×1-9/16")	6 (1/4")

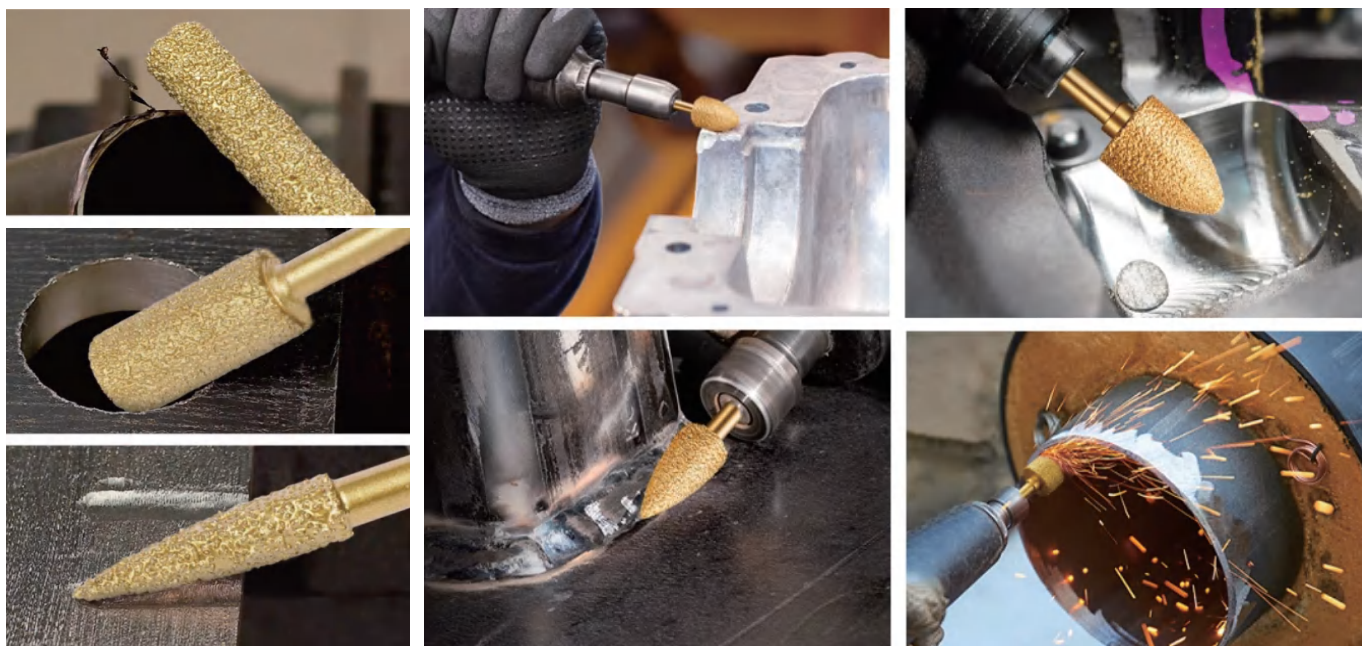


INDIVIDUAL PACKAGE DISPLAY
PACKED IN CLAMSHELL

Ball debur and finishes contoured surfaces and round openings, enlarges holes, and shapes bevels and other concave surfaces.

ITEM NO.	DIMENSION-MM(INCH) DIA. X THICK (DXT)	MANDREL DIA. MM(INCH)
26980344C	13×6(1/2"×1/4")	6 (1/4")
26980345C	16×6(5/8"×1/4")	6 (1/4")
26980346C	20(13/16")	6 (1/4")
26980347C	25(1")	6 (1/4")
26980348C	30(1-3/16")	6 (1/4")
26980349C	40×6(1-9/16"×1/4")	6 (1/4")
26980350C	50×6(2"×1/4")	6 (1/4")





2321 / BRAZED DIAMOND MOUNTED POINTS

- Designed for engraving and grinding stone, glass, ceramics, porcelain and metals.
- It is recommended to use water as a cooling when using these products.
- 6mm (1/4 Inch) shank bit fits most of the electronic grinder, engraving machines, hanging mill, and hand electric drill.

6.7×6×60mm



23210301N

10.5×6×60mm



23210302N

10.6×6×60mm



23210303N

10.2×6×60mm



23210304N

6.3×6×60mm



23210305N

8.8×6×60mm



23210306N

6.6×6×60mm



23210307N

10.7×6×60mm



23210308N

10.6×6×60mm



23210309N



TRAPPED BLISTER CARD

2321 / VACUUM BRAZED DIAMOND MOUNTED POINTS



Features:

- New technology vacuum brazed diamond tools offer sharper and longer life.
- For sculpturing and smooth grinding marble, granite, ceramic, and tiles.
- Diamond grit size ranges from #25 to #200.
- Customized products available.

Item No.232101

20 pcs Diamond Mounted Assorted Points set in wooden box
shank diameter: 6mm/6.35mm



2322 / CARBIDE GRIT ROTARY BURRS



ITEM NO.	SHAPE	WORKING LENGTH	OVERALL LENGTH	SHANK
23220001	pointed con	26mm	61mm	6mm/1/4"
23220002	cylindrical ball nose	26mm	61mm	6mm/1/4"
23220003	cylindrical	26mm	61mm	6mm/1/4"

* Other sizes and arbors available upon request

- Carbide Grit Rotary Burrs feature a fast, free-cutting action that works equally well
- cutting with or against the grain, and even on knots.
- Grit available: Coarse (1.5~2.0mm), medium (1.2-1.6mm), fine (#40).

APPLICATION

- Cut holes, slots & irregular shapes in wood, wallboard, wall tile, etc.
- Dimple, carve, mould and grind using this rounded tip and the long shank, gritted shank cut channels & slots in wood, fiberglass, etc.
- Use gritted tip to cut slots, grooves and irregular shapes in wood, wallboards, wall tile, etc.
- Use side of shank to shape, bevel and grind.

2511 ELECTROPLATED DIAMOND MOUNTED POINTS

FEATURES:

- Diamond grit coated points outperform and outlast other steel burs.
- Great for fine detail work on wood, glass, plastic and stone.
- Used for jigs, internal grinding, and precision grinding of small holes in carbide, ceramics, sapphires, glass and extra hard alloys.
- For use with drills, flexible shaft machines or hand-held rotary tools, such as Dremel, Foredom, Pfingst and Gesswein.
- Shank diameters: 2.3mm(3/32"), 3mm, 3.17mm(1/8"), 6mm (1/4")
- Length: 45mm (2-3/4")
- Grit size: 60, 80 & 100(rough), 120 & 150 (medium), 200 (fine)



Item No.251132
10 pcs Diamond Mounted Points set
in plastic box with clamshell
shank diameter: 2.35x45mm



Item No.251133
20 pcs Diamond Mounted Points set
in plastic box with clamshell
shank diameter: 2.35x45mm



Item No.251144
50 pcs Diamond Mounted Points set
in plastic box
shank diameter: 3.17x45mm



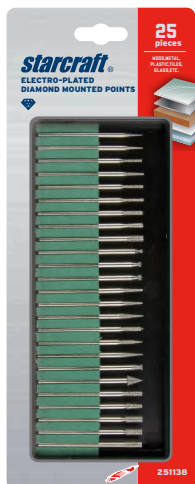
Item No.251140
8 pcs Diamond Mounted Points set
in plastic box
shank diameter: 3.17x45mm



Item No.251141
10 pcs Diamond Mounted Points set
in plastic box
shank diameter: 6.35x45mm



Item No.251155
20 pcs Diamond Mounted Assorted
Points set in wooden box
shank diameter: 6mm/6.35mm



**25 pcs Diamond Mounted Points Set
in plastic box**
Item No.251138 Dia.2.35x45mm
Item No.251152 Dia.3x45mm
Item No.251153 Dia.3.17x45mm



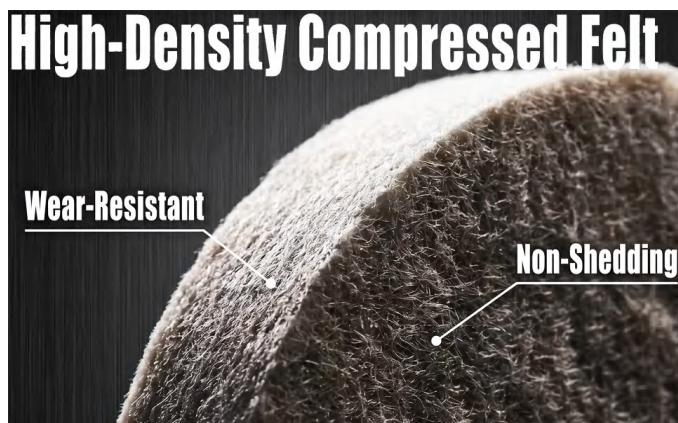
**30 pcs Diamond Mounted Points Set
in plastic box**
Item No.251145 Dia.2.35x45mm
Item No.251146 Dia.3x45mm
Item No.251147 Dia.3.17x45mm

2626 / FELT DISCS WITH PINHOLE

- Felt wheels are normally used for polishing with the peripheral surface.



DENSITY: SOFT	ITEM NO. MEDIUM	HARD	DIA. X (MM)	DIMENSION FACE X (INCH)	MANDREL (INCH)
26260001	26260101	26260201	12 x 3		1/2 x 1/8
26260002	26260102	26260202	12 x 6		1/2 x 1/4
26260003	26260103	26260203	19 x 3		3/4 x 1/8
26260004	26260104	26260204	19 x 6		3/4 x 1/4
26260005	26260105	26260205	25 x 3		1 x 1/8
26260006	26260106	26260206	25 x 6		1 x 1/4
26260007	26260107	26260207	25 x 8		1 x 5/16
26260008	26260108	26260208	32 x 6		1-1/4 x 1/4
26260009	26260109	26260209	32 x 12		1-1/4 x 1/2
26260010	26260110	26260210	38 x 6		1-1/2 x 1/4
26260011	26260111	26260211	38 x 12		1-1/2 x 1/2
26260012	26260112	26260212	50 x 6		2 x 1/4
26260013	26260113	26260213	50 x 12		2 x 1/2
26260014	26260114	26260214	50 x 19		2 x 3/4
26260015	26260115	26260215	50 x 25		2 x 1
26260016	26260116	26260216	60 x 6		2-3/8 x 1/4
26260017	26260117	26260217	60 x 12		2-3/8 x 1/2
26260018	26260118	26260218	60 x 19		2-3/8 x 3/4
26260019	26260119	26260219	60 x 25		2-3/8 x 1
26260020	26260120	26260220	76 x 6		3 x 1/4
26260021	26260121	26260221	76 x 12		3 x 1/2
26260022	26260122	26260222	76 x 19		3 x 3/4
26260023	26260123	26260223	76 x 25		3 x 1



Home Polishing Expert
Easily Restores Old
Furniture Surface
Restores Metal Shine



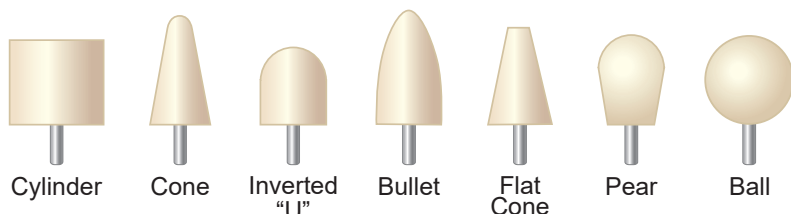
Industrial-Grade Polishing Effect
Suitable for Various Polishing
Parts Surface Treatment
Improves Product Quality



Ideal Choice for Wood Polishing
Gentle Polishing Without Damaging
Wood Structure
Presents Natural Luster

2627 / MOUNTED FELT POINTS

- Felt points are made from 100% high quality wool.
- Ideal for precision deburring, polishing and finishing.
- They are designed for superior finishing with various rouges, lapping, or diamond compounds to produce the high finishes required in the precision deburring and mold polishing industries.
- For polishing metal, plastics, glass or crystal.
- Specifically designed for use with flex-shafts and similar tools.
- Available in a range of densities: Soft, Medium, and Hard .
- The harder the density, the more resilient and aggressive the wheel. Softer densities will produce finer luster finishes and conform more readily to part contours.
- Medium density is most commonly preferred.

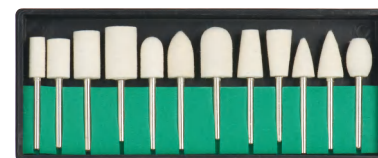


DENSITY: SOFT	ITEM NO. MEDIUM	HARD	SHAPE	DIMENSION DIA. X FACE X MANDREL (MM)	
26270001	26270101	26270201	CYLINDER	3 x 6 x 3	1/8 x 1/4 x 1/8
26270002	26270102	26270202	CYLINDER	4 x 8 x 3	5/32 x 5/16 x 1/8
26270003	26270103	26270203	CYLINDER	5 x 10 x 3	3/16 x 3/8 x 1/8
26270004	26270104	26270204	CYLINDER	6 x 6 x 3	1/4 x 1/4 x 1/8
26270005	26270105	26270205	CYLINDER	6 x 10 x 3	1/4 x 3/8 x 1/8
26270006	26270106	26270206	CYLINDER	6 x 12 x 3	1/4 x 7/16 x 1/8
26270007	26270107	26270207	CYLINDER	8 x 8 x 3	5/16 x 5/16 x 1/8
26270008	26270108	26270208	CYLINDER	8 x 10 x 3	5/16 x 3/8 x 1/8
26270009	26270109	26270209	CYLINDER	8 x 12 x 3	5/16 x 7/16 x 1/8
26270010	26270110	26270210	CYLINDER	8 x 16 x 3	5/16 x 5/8 x 1/8
26270011	26270111	26270211	CYLINDER	10 x 10 x 3	3/8 x 3/8 x 1/8
26270012	26270112	26270212	CYLINDER	13 x 13 x 3	1/2 x 1/2 x 1/8
26270013	26270113	26270213	CYLINDER	13 x 19 x 3	1/2 x 3/4 x 1/8
26270014	26270114	26270214	CYLINDER	13 x 25 x 3	1/2 x 1 x 1/8
26270015	26270115	26270215	CYLINDER	19 x 19 x 3	3/4 x 3/4 x 1/8
26270016	26270116	26270216	CYLINDER	19 x 25 x 3	3/4 x 1 x 1/8
26270017	26270117	26270217	CYLINDER	19 x 38 x 6	3/4 x 1-1/2 x 1/4
26270018	26270118	26270218	CYLINDER	25 x 25 x 6	1 x 1 x 1/4
26270019	26270119	26270219	CYLINDER	25 x 32 x 6	1 x 1-1/4 x 1/4
26270020	26270120	26270220	CYLINDER	25 x 48 x 6	1 x 1-7/8 x 1/4
26270021	26270121	26270221	CYLINDER	25 x 50 x 6	1 x 2 x 1/4
26270022	26270122	26270222	CYLINDER	32 x 32 x 6	1-1/4 x 1-1/4 x 1/4
26270023	26270123	26270223	CYLINDER	38 x 25 x 6	1-1/2 x 1 x 1/4
26270024	26270124	26270224	CYLINDER	38 x 38 x 6	1-1/2 x 1-1/2 x 1/4
26270025	26270125	26270225	CYLINDER	50 x 25 x 6	2 x 1 x 1/4
26270026	26270126	26270226	CYLINDER	50 x 38 x 6	2 x 1-1/2 x 1/4
26270027	26270127	26270227	CYLINDER	50 x 50 x 6	2 x 2 x 1/4
26270030	26270130	26270230	CONE	10 x 13 x 3	3/8 x 1/2 x 1/8
26270031	26270131	26270231	CONE	13 x 25 x 3	1/2 x 1 x 1/8
26270032	26270132	26270232	CONE	19 x 38 x 3	3/4 x 1-1/2 x 1/8
26270033	26270133	26270233	CONE	25 x 50 x 6	1 x 2 x 1/6
26270040	26270140	26270240	INVERTED U	10 x 13 x 3	3/8 x 1/2 x 1/8
26270041	26270141	26270241	INVERTED U	13 x 13 x 3	1/2 x 1/2 x 1/8
26270042	26270142	26270242	INVERTED U	19 x 19 x 3	3/4 x 3/4 x 1/8
26270043	26270143	26270243	INVERTED U	25 x 25 x 6	1 x 1 x 1/4
26270050	26270150	26270250	BULLET	10 x 13 x 3	3/8 x 1/2 x 1/8
26270051	26270151	26270251	BULLET	13 x 25 x 3	1/2 x 1 x 1/8
26270052	26270152	26270252	BULLET	19 x 38 x 3	3/4 x 1-1/2 x 1/8
26270053	26270153	26270253	BULLET	25 x 50 x 6	1 x 2 x 1/4
26270060	26270160	26270260	FLAT TOP CONE	13 x 19 x 3	1/2 x 3/4 x 1/8
26270061	26270161	26270261	FLAT TOP CONE	19 x 25 x 3	3/4 x 1 x 1/8
26270062	26270162	26270262	FLAT TOP CONE	25 x 32 x 6	1 x 1-1/4 x 1/4
26270070	26270170	26270270	PEAR	13 x 19 x 3	1/2 x 3/4 x 1/8
26270071	26270171	26270271	PEAR	19 x 25 x 3	3/4 x 1 x 1/8
26270072	26270172	26270272	PEAR	25 x 32 x 6	1 x 1-1/4 x 1/4
26270080	26270180	26270280	BALL	13 x 13 x 3	1/2 x 1/2 x 1/8
26270081	26270181	26270281	BALL	19 x 19 x 3	3/4 x 3/4 x 1/8
26270082	26270182	26270282	BALL	25 x 25 x 6	1 x 1 x 1/4

* Unmounted Felt points also available from us.



Item No.262799
12pcs Mounted Felt Points
set in plastic box with blister card
shank diameter: 3.17mm
Overall length:45mm



Item No.262705
12pcs Mounted Felt Points
set in plastic box
shank diameter: 3.17mm
Overall length:45mm



Enjoy Work! Enjoy Life!

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