

Electronica Tungsten Carbide Grade Specifications and Applications

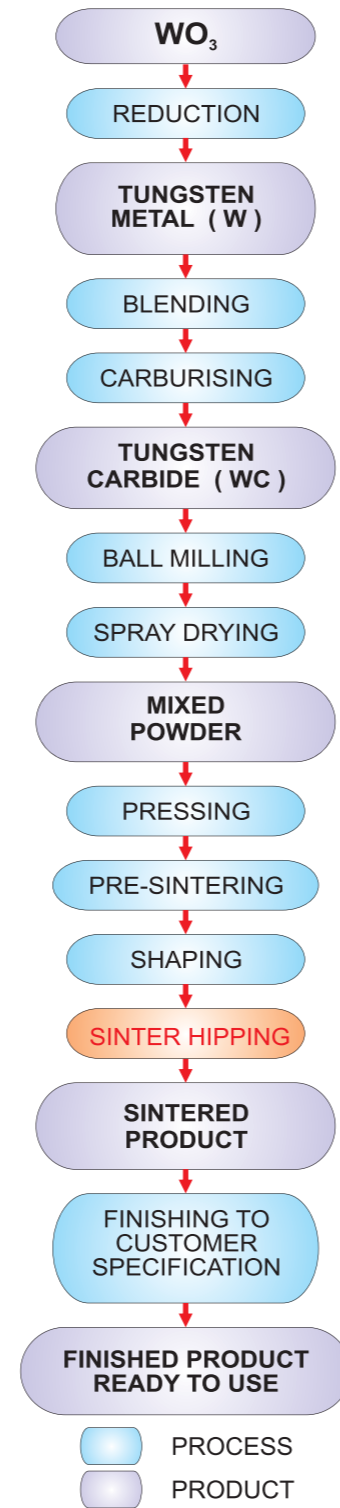
| | Grade | Specific weight (gm/cm ³) | Hardness (Hv) | Min TRS (N/mm ²) | Chemical Composition | | | | Application |
|----------------------------|------------|---------------------------------------|---------------|------------------------------|----------------------|--------|--------|------------|---|
| | | | | | (WC %) | (Co %) | (Ni %) | (Others %) | |
| WEAR GRADE | TCW 10 | 14.84 -- 15.00 | 1450 -- 1570 | 2900 | 94 | 6 | Nil | Nil | Wear pads for various machines & machine parts. Wire drawing Nibs, Slip gauges, Shot Blasting nozzles, Mechanical seal rings, Core rods, Scraper blades, Cable & rope making machine guides, Spray nozzles, Valve seats, Work rest blades, Wiggler Pin in shaving blade industry, Choke beans, Trims, Flow Cages, Valve seats in petroleum industries |
| | TCW 10 (S) | 14.84 -- 15.00 | 1500 -- 1620 | 2900 | 93.8 | 6 | Nil | 0.2 | High wear resistance application, Stone crushing blades, Road Breaking, Flow Cages for high Wear Abrasive resistance for petroleum industries |
| | TCW 20 | 14.49 -- 14.65 | 1270 -- 1400 | 2900 | 90.5 | 9.5 | Nil | Nil | Bucket excavators in mining applications, Special wear product for oil & gas application |
| | TCW 30 | 14.34 -- 14.50 | 1200 -- 1320 | 3000 | 89 | 11 | Nil | Nil | Punches, Core Rods for Powder Compacting, Tube Drawing Dies |
| METAL FORMING | TCW 40 | 13.94 -- 14.10 | 1060 -- 1180 | 3000 | 85 | 15 | Nil | Nil | Coining and sizing dies, Cutting & Cupping dies, Straightening rolls for steel mills, Bowls for mineral application, Tube Drawing dies for cold drawing of bigger size of tube |
| | TCW 65 | 13.05 -- 13.25 | 740 -- 860 | 3100 | 75 | 25 | Nil | Nil | Can extrusion dies, Heading dies, Nut forming dies, Swaging Dies, Sheet metal toolings, Punches, Impact extrusion toolings, Nail heading dies, Dies for taper roller bearings for bearing industries |
| | TCW 65 M | 13.05 -- 13.25 | 780 -- 900 | 3100 | 75 | 25 | Nil | Nil | Special Heading application, Nut forming dies |
| NICKEL BINDER NON-MAGNETIC | TCN 06 | 14.88 -- 15.04 | 1300 -- 1420 | 2400 | 94 | Nil | 6 | Nil | Seal rings used in corrosive fluid pumps and food processing pumps, Construction application (Machine part) for chemical fertilizer, Wear application for Oil & Gas industries |
| | TCN 10 F | 14.40 -- 14.60 | 1370 -- 1490 | 2600 | 89.5 | Nil | 10 | 0.5 | Wear parts used under corrosive atmosphere and food industries Blades for Plastic granule cutting. |
| | TCN 27 | 13.05 -- 13.25 | 750 -- 850 | 3100 | 72.5 | Nil | 27 | 0.5 | Special requirement for Oil & Gas industries for wear application |
| MICRO CHIPPING RESISTANCE | TCF 06 | 14.76 -- 14.92 | 1700 -- 1820 | 2400 | 93.5 | 6 | Nil | 0.5 | Metal cutting applications, Wire Drawing, shot blasting nozzles |
| | TCF 10 | 14.34 -- 14.50 | 1580 -- 1700 | 3000 | 89.5 | 10 | Nil | 0.5 | Metal cutting tips, Flats, Rods, Blades for Plastic granule cutting. |
| | TCF 15 | 13.88 -- 14.04 | 1300 -- 1420 | 3300 | 84.66 | 15 | Nil | 0.34 | High impact / wear for coining dies, Special application in Oil & Gas industries |
| METAL CUTTING | TCK 15 | 14.72 -- 14.88 | 1500 -- 1620 | 2400 | 92.2 | 6 | Nil | 1.8 | Asbestos sheet cutting Knives. |
| | TCK 20 | 14.72 -- 14.88 | 1470 -- 1590 | 2400 | 92.2 | 6 | Nil | 1.8 | Cast iron general purpose machining tips, Flats, Rods, Broach Cutter for bimetal bearing industries, Burr Blanks, Bottle cap, Shaving Cutters, Metal Saws |

● TRS Value of Sinter HIP products

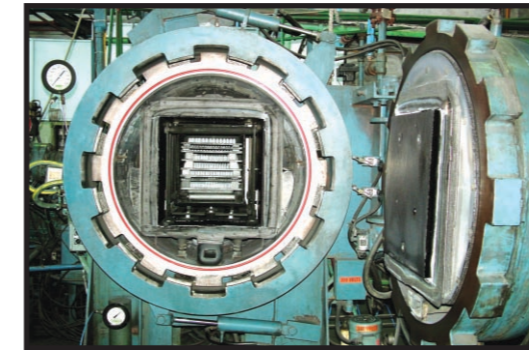
NOTE :- As a part of continuous improvement the above specifications may alter. We also make grades for Mining applications viz. TCR 11, 20, 30.

For specific applications new grades can be developed.

PROCESS SEQUENCE



COLD ISOSTATIC PRESS



SINTER-HIP FURNACE



YOUNG'S MODULUS



THERMAL CONDUCTIVITY



SINKER EDM MACHINE



WIRE CUT MACHINE



VERTICAL MILLING CENTER

Masters in tungsten carbide solutions...



Electronica Tungsten Ltd.
Plant - I



Tungsten Carbide Products For
Oil & Gas Industries

A range of Tungsten Carbide Products from Electronica.....

WORKS :

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PLEASE CONTACT

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An ISO 9001:2015, ISO 14001:2015 & OHSAS 18001:2007 Company

ABOUT US

Electronica Tungsten Ltd. (formerly known as Electronica Tough Carb LTD) was established in 1994 at Malegaon MIDC, Sinnar (Dist: Nasik), 200 km from Mumbai on a plot of about 17000 sq.mtr. with an Investment of USD 1,627,000.

The company is a part of SRP Electronica Group. SRP Electronica has variety of companies under its fold, namely, Electronica Finance, Electronica Hitech, and Electronica Industries.

Electronica Tungsten Ltd has end-to-end facilities for processing Tungsten Carbide products from the powder stage. It has state of art manufacturing and testing facilities. Company has Tungsten scrap recycling facility. This is done in a ultra modern plant employing sophisticated and green technology called Solvent Extraction.

Special Products for Oil & Gas Industries

Tungsten Carbide Valve Seats & Balls

We are offering valve seats & Balls for the application of wear in assembly of Gas Lift Valves, Wire Line Retrievable (WLR) Injection pressure operated (IPO) gas lift valves in Oil & Gas Ind. These are made to perfect sizes in controlled tolerances in order to fit during assembly.



Tungsten Carbide Choke Sleeves

These are made with various sizes from 4/64" to 128/64" and further. TC Liners are manufactured through Cold Isostatic pressing (CIP) route in order to have perfect and same densification on sintered product without any deviation in geometry. The carbide grade TCW10 is very much suitable for the application of wear and abrasion resistance during use. Choke beans are often used in the positive choke valve for controlling the flow.

Tungsten Carbide Flow Cages

Flow cage used in a choke valves with solid plug assembly mainly for low control.

TO fulfill application requirement ETCL offers Tailor made Tungsten Carbide cages & plugs in 6 & Cobalt wear resistance grade, with precise machining. Location of hole is maintained within close tolerances, o facilitate precise flow control. Highly polished mating areas offers tight shut off at high temperature & pressure.



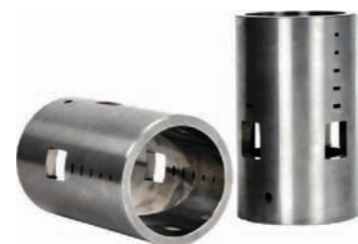
Tungsten Carbide Stabilizer Disks

One of the Special product for Petroleum industries, manufactured in special grade having 27% Nickel binder, These Disks are manufactured in four different sizes.

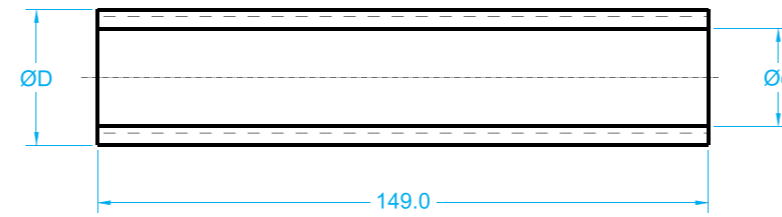
Tungsten Carbide Flow Trims

Flow trims provided by us are accurately designed and manufactured with very close tolerances in order to suite the applications. The holes and pockets are very much controlled with all references.

These are manufactured in very special grade in order to get maximum life during application in Oil and Gas Industries.



Tungsten Carbide Sleeves for Choke beans

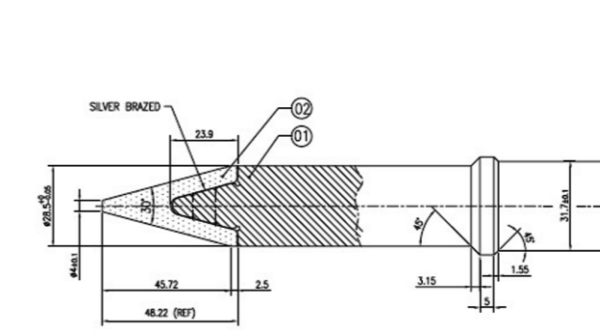


| SIZE (Inch) | DIA 'd' (mm) | DIA 'D' (mm) |
|-------------|--------------|--------------|
| 4/64" | 1.59 | 10.60 |
| 6/64" | 2.38 | 11.40 |
| 8/64" | 3.18 | 12.20 |
| 10/64" | 3.97 | 13.00 |
| 12/64" | 4.76 | 13.80 |
| 14/64" | 5.56 | 14.60 |
| 16/64" | 6.35 | 15.40 |
| 18/64" | 7.14 | 16.20 |
| 20/64" | 7.94 | 17.00 |
| 22/64" | 8.73 | 17.80 |
| 24/64" | 9.53 | 18.60 |
| 26/64" | 10.32 | 19.40 |
| 28/64" | 11.11 | 20.20 |
| 30/64" | 11.91 | 21.00 |
| 32/64" | 12.70 | 21.70 |
| 34/64" | 13.49 | 22.50 |
| 36/64" | 14.29 | 23.30 |
| 38/64" | 15.08 | 24.10 |
| 40/64" | 15.88 | 24.90 |
| 42/64" | 16.67 | 25.70 |
| 44/64" | 17.46 | 26.50 |
| 46/64" | 18.26 | 27.30 |
| 48/64" | 19.05 | 28.10 |
| 50/64" | 19.84 | 28.90 |
| 52/64" | 20.64 | 29.70 |
| 54/64" | 21.43 | 30.50 |
| 56/64" | 22.23 | 31.30 |
| 58/64" | 23.02 | 32.10 |
| 60/64" | 23.81 | 32.90 |
| 62/64" | 24.61 | 33.70 |
| 64/64" | 25.40 | 34.40 |
| 66/64" | 26.19 | 35.20 |

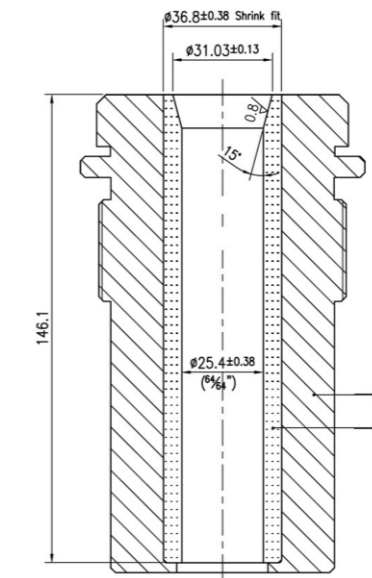
| SIZE (Inch) | DIA 'd' (mm) | DIA 'D' (mm) |
|-------------|--------------|--------------|
| 68/64" | 26.99 | 36.00 |
| 70/64" | 27.78 | 36.80 |
| 72/64" | 28.58 | 37.60 |
| 74/64" | 29.37 | 38.40 |
| 76/64" | 30.16 | 39.20 |
| 78/64" | 30.96 | 40.00 |
| 80/64" | 31.75 | 40.80 |
| 82/64" | 32.54 | 41.60 |
| 84/64" | 33.34 | 42.40 |
| 86/64" | 34.13 | 43.20 |
| 88/64" | 34.93 | 44.00 |
| 90/64" | 35.72 | 44.80 |
| 92/64" | 36.51 | 45.60 |
| 94/64" | 37.31 | 46.40 |
| 96/64" | 38.10 | 47.10 |
| 98/64" | 38.89 | 47.90 |
| 100/64" | 39.69 | 48.70 |
| 102/64" | 40.48 | 49.50 |
| 104/64" | 41.28 | 50.30 |
| 106/64" | 42.07 | 51.10 |
| 108/64" | 42.86 | 51.90 |
| 110/64" | 43.66 | 52.70 |
| 112/64" | 44.45 | 53.50 |
| 114/64" | 45.24 | 54.30 |
| 116/64" | 46.04 | 55.10 |
| 118/64" | 46.83 | 55.90 |
| 120/64" | 47.63 | 56.70 |
| 122/64" | 48.42 | 57.50 |
| 124/64" | 49.21 | 58.30 |
| 126/64" | 50.01 | 59.10 |
| 128/64" | 50.80 | 59.80 |
| 130/64" | 51.59 | 60.60 |

| SIZE (Inch) | DIA 'd' (mm) | DIA 'D' (mm) |
|-------------|--------------|--------------|
| 132/64" | 52.39 | 61.40 |
| 134/64" | 53.18 | 62.20 |
| 136/64" | 53.98 | 63.00 |
| 138/64" | 54.77 | 63.80 |
| 140/64" | 55.56 | 64.60 |
| 142/64" | 56.36 | 65.40 |
| 144/64" | 57.15 | 66.20 |
| 146/64" | 57.94 | 67.00 |
| 148/64" | 58.74 | 67.80 |
| 150/64" | 59.53 | 68.60 |
| 152/64" | 60.33 | 69.40 |
| 154/64" | 61.12 | 70.20 |
| 156/64" | 61.91 | 71.00 |
| 158/64" | 62.71 | 71.80 |
| 160/64" | 63.50 | 72.50 |
| 162/64" | 64.29 | 73.30 |
| 164/64" | 65.09 | 74.10 |
| 166/64" | 65.88 | 74.90 |
| 168/64" | 66.68 | 75.70 |
| 170/64" | 67.47 | 76.50 |
| 172/64" | 68.26 | 77.30 |
| 174/64" | 69.06 | 78.10 |
| 176/64" | 69.85 | 78.90 |
| 178/64" | 70.64 | 79.70 |
| 180/64" | 71.44 | 80.50 |
| 182/64" | 72.23 | 81.30 |
| 184/64" | 73.03 | 82.10 |
| 186/64" | 73.82 | 82.90 |
| 188/64" | 74.61 | 83.70 |
| 190/64" | 75.41 | 84.50 |
| 192/64" | 76.20 | 85.20 |

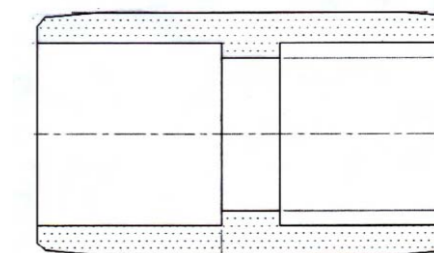
Tungsten Carbide Stem and Seat



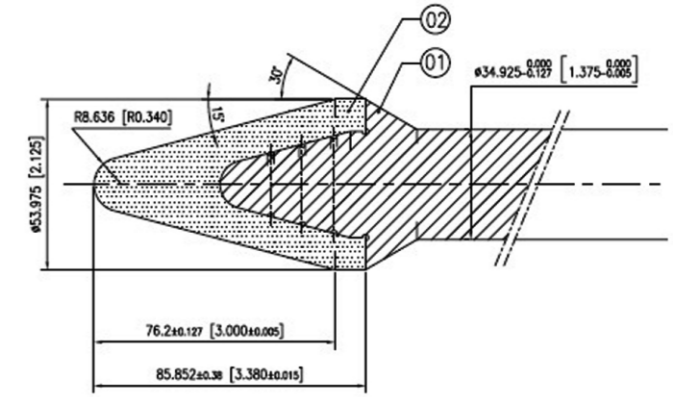
1" Orifice Stem



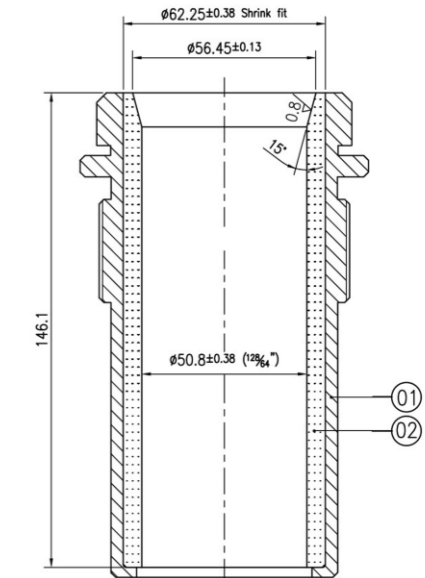
1" Orifice Seat



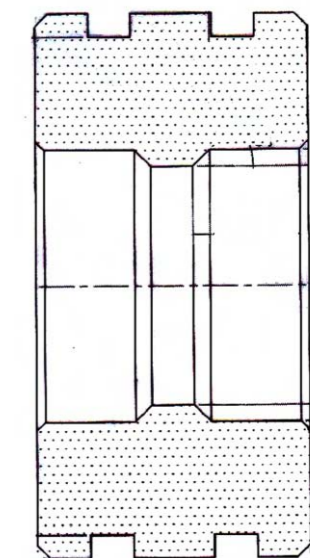
Tungsten Carbide Gate



2" Orifice Stem



2" Orifice Seat



Tungsten Carbide Seat