

Royal 117-T

Oxyfuel Gas Welding
(OFW)

Gas Tungsten Arc Welding
(GTAW) TIG Alloy

Hard-Facing Alloy



"The Royal Line"

CROWN ALLOYS COMPANY

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30/40 Mesh Size Tungsten Carbide Alloy for Torch or TIG

Typical Applications

Royal 117-T is often referred to as "**Tube Borium**". Its abrasion resistance surpasses that of any other hard-facing material. The weld deposit contains relatively "small" (when compared to **Royal 118-T**) undissolved tungsten carbide particles. Excellent for water and oil drill bits, plow shares, cultivator shoes, pulverizers, tillage tools, cane knives, mixing paddles, shredding hammers, slurry pumps, ore chutes and screws.

Equipment hard faced with **Royal 117-T** will outwear unprotected areas by at least 10 to 1. **Royal 117-T** cuts granite and quartz easily thus making it the perfect choice to armor the cutting teeth and gage holding surfaces of rock drill bits. **Royal 117-T** is also ideal for the wearing surfaces of mining, quarrying, digging and earth moving equipment. **Royal 117-T** is self-fluxing. The tungsten carbide particles are held in place by an iron based matrix.

Specifications

RWC – 30/40

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| • Tungsten Carbide Size | 30 to 40 mesh size |
| • Hardness of tungsten-carbide particles | Rockwell "A" 90 – 95 or 9.9 on Moh's Scale |
| • Abrasion Resistance | Excellent |
| • Impact Resistance | Low |
| • Non-skid Capability | Outstanding |
| • Hot Wear Applications | up to 900°F |
| • Machinability | Can only be finished using silicon-carbide or diamond grinding wheels |

Procedure

Clean base metal. Use oxy-acetylene torch with a carburizing flame. A 3X (three-times) feather-to-cone reducing flame is recommended. Use a torch tip size (typically size 4) that is larger than is normally used to weld the same diameter mild steel rod. While it is recommended that the **Royal 117-T** be applied using an oxy-acetylene torch, it can be applied with a TIG torch as well. It is critical to control the heat so the tungsten carbide does not dissolve. The electric arc utilized in TIG welding is hot enough to melt tungsten carbide so care must be taken to add the **Royal 117-T** to the leading edge of the weld pool only.

Deposits can be applied directly to the parent metal or to a buffer layer of **Royal 120FC**. A thin layer of **Royal 120FC** facilitates better wetting of the **Royal 117-T** and a more permanent bond. After the deposit is made it should be washed with the torch to flow out the iron matrix and expose the tungsten particles. Limit the amount of passes to one layer.

Size and Part Numbers

Diameter	Part Numbers	
	1# Package	5# Package
1/8 x 28"	RT117T/TO-BP	RT117T/TO



!!!! WARNING !!!!



WELDING FUMES AND GASES CAN BE DANGEROUS TO YOUR HEALTH.

BEFORE USING THIS PRODUCT THE WELDER (END-USER) MUST READ AND UNDERSTAND THE COMPLETE PRODUCT WARNING LABEL AND THE NEW 16 SECTION SAFETY DATA SHEET (SDS).

THE SAFETY DATA SHEET (SDS) WHICH OUTLINES THE POTENTIAL HEALTH HAZARDS AND SAFETY INFORMATION RELATED TO THIS PRODUCT CAN BE DOWNLOADED FROM THE SDS PORTION OF THIS WEBSITE. IT IS ALSO AVAILABLE FROM YOUR EMPLOYER AND WELDING SUPPLY DISTRIBUTOR.

DO NOT PROCEED WITH USE OF THIS PRODUCT UNTIL YOU READ AND UNDERSTAND THE SAFETY DATA SHEET (SDS) AND PRODUCT WARNING STATEMENT.

BE SURE TO CONSULT THE LATEST VERSION OF THE SDS.

SEE THE PRODUCT WARNING LABEL AND SDS FOR COMPLETE WARNING INFORMATION.

