



Rev. 01/2017



Dedacciai K-19 titanium tubing constitute a large family of high performance products.

They are manufactured in Ti-3Al-2.5V titanium grade, commonly named GR.9, Ti-6Al-4V, commonly named Gr.5, and Gr.2 titanium grade, in accordance with ASTM B338 rules.

Grade 9 is preferred for the most structural stressed tubing of the frame, meanwhile grade 2 grade is used where ductility and workability are the more important aspect.

All the tubing are seamless, cold drawn and stress relieved (CWSR).

To obtain the best results from the use of this class of products, please look carefully at the drawings, and read the advices at the end of this catalogue.

# Titanium top tubing







cod : MT	O317T10	1
Grade	Weight	Use
Ti Gr.9	245 g	Road

cod: MTO349T103

Grade	Weight	Use
Ti Gr.9	240 g	Road - Cyclocross - MTB

**Sedacciai** TITANIUM

## Titanium down tubing



















cod : MT	cod : MTQ381T101		
Grade	Weight	Use	
Ti Gr.9	330 g	Road - Cyclocross	

cod : MT	cod : MTQ415T105		
Grade	Weight	Use	
Ti Gr.9	320 g	Road - Cyclocross	

#### cod : MTQ415T101

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Grade	Weight	Use
Ti Gr.9	320 g	Road

### cod : MTQ440T101

Grade	Weight	Use
Ti Gr.9	430 g	Road - Cyclocross - MTB

### cod : MTQ440T102

Grade	Weight	Use
Ti Gr.9	430g	Road - Cyclocross - MTB

cod : MTQ480T101		
Grade	Weight	Use
Ti Gr.9	440 g	Road - Cyclocross - MTB

### cod : MTQ480T102

Grade	Weight	Use
Ti Gr.9	440 g	Road - Cyclocross - MTB

#### cod : MTQ480T103

Grade	Weight	Use
Ti Gr.9	440 g	Road - Cyclocross - MTB

# Titanium seat tubing



Aluminium sleeve to be glued







620

cod : MTV317T101

	Grade	Weight	Use
Ti Gr.9 245 g Road	Ti Gr.9	245 g	Road

### cod: MTV350T102

Grade	Weight	Use
Ti Gr.9	285 g	Road - Cyclocross - MTB

Aluminium sleeve to be glued



cod	: MTV350T103	
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Grade	Weight	Use
Ti Gr.9	285 g	MTB

### **Dedacciai** TITANIUM

## Titanium chain stay





SIDE VIEW



450.0

18.5

170.0

Ø16



SIDE VIEW

SIDE VIEW



Grade	Weight	Use
Ti Gr.9	125 g	Road

cod : MPO240T101			
Grade	Weight	Use	
Ti Gr.2	120 g	Road	

### cod : MPO240T105

Grade	Weight	Use
Ti Gr.2	145 g	Road

#### cod : MPO240T106

Grade	Weight	Use
Ti Gr.2	145 g	Cyclocross



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TOP VIEW

cod	:	MPO240T104	

Grade	Weight	Use
Ti Gr.2	145 g	MTB 29"



cod : MPO240T103

Grade	Weight	Use
Ti Gr.2	145 g	MTB 29"

## Titanium seat stay













cod : MP	V160T10	1
Grade	Weight	Use
Ti Gr.2	95 g	Road

DOUBLE BUTTED TI3AL 2.5V TITANUM

ALLOY

cod : MPV160T102	
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Grade	Weight	Use
Ti Gr.2	95 g	Road

### cod : MPV160T106

Grade	Weight	Use
Ti Gr.2	95 g	Cyclocross

#### cod : MPV160T105

Grad	e We	eight	Use
Ti Gr.	2 95	ġ	Gravel - MTB 29"

cod : MP	V160T10	4
Crada	Waight	

Grade	Weight	Use
Ti Gr.2	95 g	MTB 29"

### cod : MPV160T103

Grade	Weight	Use
Ti Gr.9	105 g	Road

# Titanium seat stay









cod	:	MPV190T106
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Grade	Weight	Use
Ti Gr.2	110 g	Cyclocross



#### cod : MPV190T103

Grade	Weight	Use
Ti Gr.2	110 g	Gravel - MTB 29"

## Titanium spare parts





cod : MTSK19T56WOC

Grade	Weight	Use
Ti Gr.2	245 g	Road - Cyclocross - MTB

Alloy cup remove anodization before gluing



Alloy cup remove anodization before gluing

> Ø47 Ø52 Ø56

A5

- 7.3 9.8

Grade	Weight	Use
Ti Gr.2	260 g	Road - Cyclocross - MTB



cod: MBS4008KZ

Grade	Weight	Use
Ti Gr.9	95 g	Road - Cyclocross - MTB

SIDE VIEW

FRONT VIEW







#### cod : FCRIBDTIT

Grade	Weight	Use
Ti Gr.5	70 g	Road - Cyclocross - MTB

#### cod : PONTFRTIT

Grade	Weight	Use
Ti Gr.5	14 g	Road

### **Sedacciai** TITANIUM



### **Chemical composition of Gr.9** (Ti-3Al-2.5V) titanium grade %

- Ti Balance
- AI 2.5-3.5
- V 2.0-3.0
- N < 0.02
- C < 0.05
- H < 0.015
- Fe < 0.03
- O < 0.12
- All others < 0.4 (total) / < 0.1 (each)

### **Typical Mechanical properties** of Gr.9 tubing:

Butted tubing:

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- Ultimate strength > 850 Mpa (Best value 930 Mpa)
- Yield strength
- 790 Mpa Elongation % > 35 %

Plain gauge tubing:

- Ultimate strength 680 Mpa •
- Yield strength 620 Mpa .
- Elongation % > 35 %

Structural analysis data:

- 4.51 g/cm3 Density
- Modulus of Elasticity 103 GPa
- Yield strength 620 MPa



# Chemical composition of Gr.5 (Ti-6AI-4V) titanium grade %

- Ti Balance
- AI 5.5-6.75
- V 3.5-4.5
- N < 0.05
- C < 0.10
- H < 0.0125</li>Fe < 0.30</li>
- O < 0.20</li>
- 0 < 0.20
- All others < 0.4 (total) / < 0.1 (each)

# Typical Mechanical properties of Gr.5 tubing:

Plain gauge tubing / plates:

- Ultimate strength 900 Mpa
- Yield strength 830 Mpa
- Elongation % > 19 %

Structural analysis data:

- Density 4.43 g/cm3
- Modulus of Elasticity 120 GPa
- Yield strength 830 MPa

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### **Chemical composition of Gr.2** (Ti) titanium grade%

- Ti Balance
- N < 0.03
- C < 0.10
- H < 0.015
- Fe < 0.30
- O < 0.25
- All others < 0.4 (total) / < 0.1 (each)

### **Typical mechanical properties** of Gr.2 tubing:

Butted tubing:

- Ultimate strength > 620 Mpa (Best value 710 Mpa)
- Yield strength > 490 Mpa
- > 30 Elongation %

Plain gauge tubing:

- Ultimate strength > 500 Mpa
  - Yield strength 375 min / 400 Max Mpa

> 35

Elongation %

Structural analysis data:

- Density
- 4.43 g/cm3 Modulus of Elasticity 103 GPa
- Yield strength 375 MPa



# Assembling of the tubing Geometrical features

All the Dedacciai tubes and tube sets are designed for assembling frames based on current UCI geometry.

In the choice of tubing for manufacturing a frames, please keep into account the following safety rules :

- Verify that for the selected geometry you will save a butt length longer than the thermal affected zone, and in any case longer that the tube diameter.
- If the butt length of down and top tubing butts are not symmetrical, pay attention in the tube orientation : at the head tube joint the tube must be only mitred, and not cutted.
- Depending on geometry, it is always better to keep top and down tubing spaced on head tube. Over imposed tubing geometries are less safe.
- Road recommended tubing can't be used for offroad frames.
- Fixing point and welding cordons closure points can give origin to fatigue cracks, realize them in the less stressed areas of the joints.
- It is recommended to completely weld the seat tube on bottom bracket, and then all other tubing.
- Top tube and seat stays must be approximately aligned at the seat tube joint. If you want to weld the seat stays below the top tube center line, please use the "low geometry (LG)" seat tubing (not available in the titanium set)
- Do not grind and/or polish the welding cordons. The risk of reducing the tube wall thickness is too high!



**Dedacciai** TITANIUM



# Welding and post-welding advices

Before welding the tubing, carefully clean them and remove dirty and grease inside and outside of the tube in the area to be jointed. The surfaces must be smooth and without notches. After mechanical cleaning, use acetone or MEK. Do not use chlorinated solvents.

The suggested welding wire is Gr.5, (AWS classification ERti-5)

Also the welding wire surface state is very important: stock it in clean areas, clean it before use and handle tubing and welding wire with gloves.

During the welding process any area that will exceed 400 °C must be shield from atmosphere contamination. Localized inert gas shielding or vacuum chamber is needed.



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