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## 1. GENERAL SPECIFICATIONS

THERMO JP2® is a new EDM wire made by Thermocompact optimized for Japanese machines without changing the original parameters of brass wire.

This wire is an evolution of THERMO JP®, the latest generation of EDM wire

## 2. DETAILED CHARACTERISTICS

CORE:	Brass 60/40
COATING:	Bêta CuZn and Gamma CuZn
DIAMETER TOLERANCE:	0/ - 0.002 mm
OVALISATION:	0.0015 mm (maxi)
TENSILE STRENGTH:	900 N/mm <sup>2</sup>
YIELD STRENGTH:	700 N/mm <sup>2</sup>
ELONGATION:	2%
CONDUCTIBILITY:	24% IACS

## 3. USAGE RECOMMENDED

**USE ON MACHINE:** Japanese machines.

**USAGE RECOMMENDED:** General mechanics, dies and tools.

**MATERIAL:** Steel, copper, tungsten carbide, aluminium, nickel, titanium, PCD

## 4. PATENTS

EP 1 009 574	CA 2 302 202	US 5 945 010	EP 1 846 189
TW i391197	CN ZL2006 80004564,6	US 8 378 247	IN 262 000
JP 5 069 134	KR 10-1 653 551		

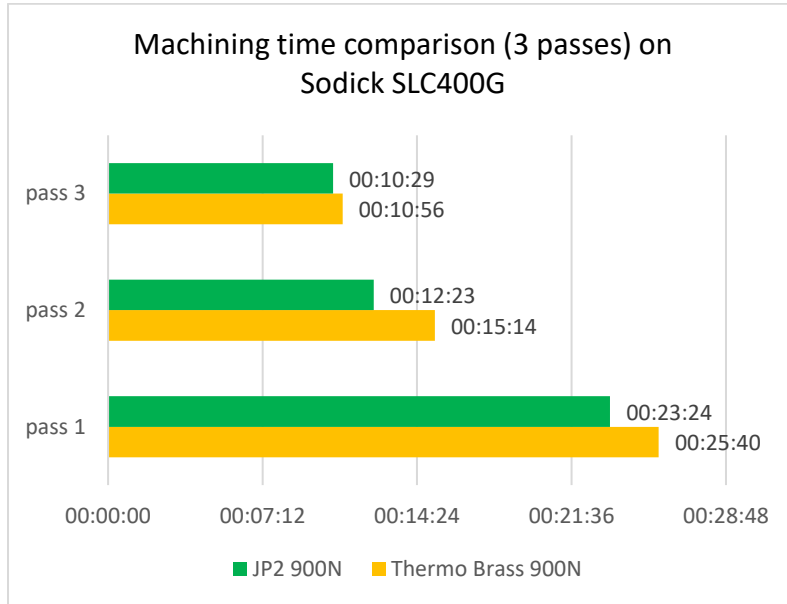
Manufactured in Europe by Thermocompact.

Manufactured in Asia by HWA.

5. TESTS AND COMPARISON PERFORMANCES – made by Thermocompact R&D Department.

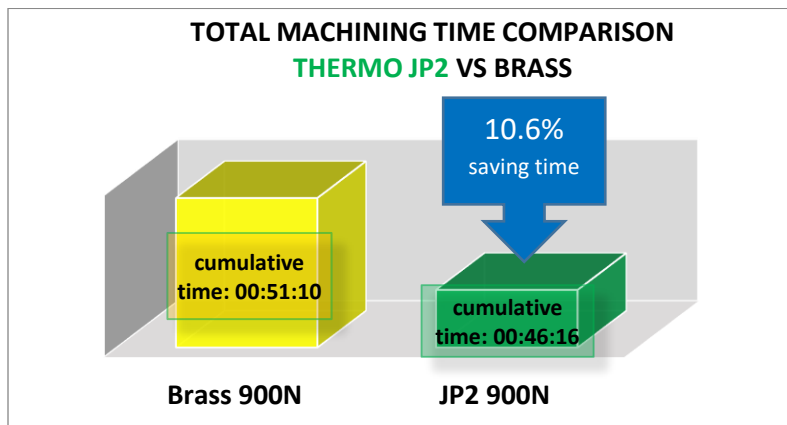
Good performance tests on EDM machines for **Thermo JP2** compared to Brass:

➔ **MACHINING TIME** (on SODICK SLC400G and SODICK AG600LN2W) :



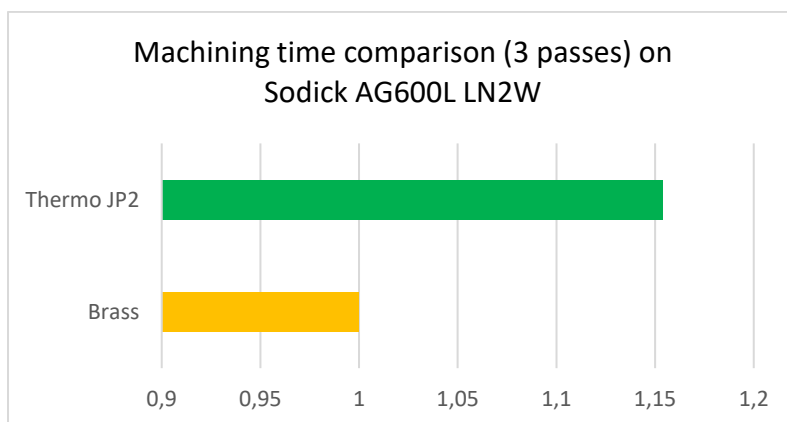
**Testing conditions :**

- Wire diameter: 0,25mm
- Steel material. h= 50mm
- 1 main cut & 2 finish cuts
- **Sodick SLC400G machine**
- Nozzles position : plated



**Thermo JP2 performances:**

- Significant cumulative saving time versus Brass at each pass.
- **Total saving time Thermo JP2 900 N compared to brass = 10.6%**



**Testing conditions :**

- Wire diameter : 0,25mm
- Steel material h= 50mm
- 1 main cut & 2 finish cuts
- **Sodick AG600L LN2W machine**
- Nozzles position : plated

- **Total saving time Thermo JP2 900 N compared to brass = 15%**

➔ **ACCURACY TEST: measurement of the machined block positioning by the wire - electric test :**

The smaller the standard deviation is, the better the repeatability is:

wire type	Thermo BRASS	Thermo JP2
Position ( $\mu/10$ )	61	15
	60	20
	63	20
	61	18
	59	25
	66	30
	56	29
	55	23
	56	25
	58	20
	52	28
	52	21
	51	17
	47	19
	54	19
	54	19
	50	18
	49	20
48	21	
53	22	
Standard deviation ( $\mu m$ )	<b>0,52</b>	<b>0,41</b>

- **Good electrical touch** for Thermo JP2 wire due to the structure of the external layer.
- **Standard deviation** on Thermo JP2 is **better** than brass wire.

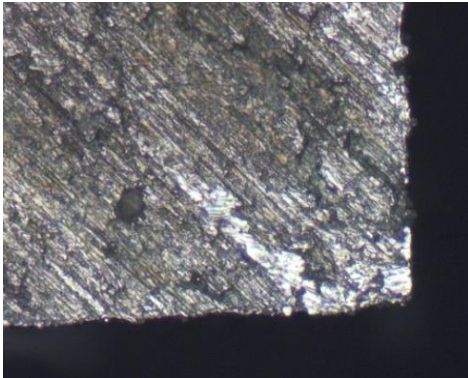
➔ **SURFACE FINISH (Ra):**

Machine	Technology	Number of cuts	Contact between nozzles and work piece	Contour	Ra	
					Thermo JP2	Thermo Brass
Sodick AG600L LN2W	Brass technology	3	Yes	closed	<b>1,14</b>	<b>1.14</b>
Sodick SLC400 G	Brass technology	3	yes	closed	<b>0,53</b>	<b>0.52</b>

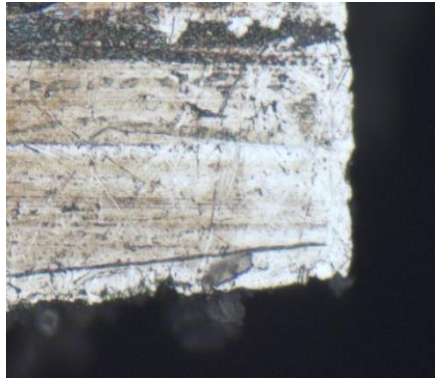
- **Surface roughness** with Thermo JP2 is as good as brass with standard technology

➔ **GEOMETRY OF ANGLES :**

**Thermo JP2**



**Thermo Brass 900N**



○ **Thermo JP2 obtains more defined and precise angles than Brass**



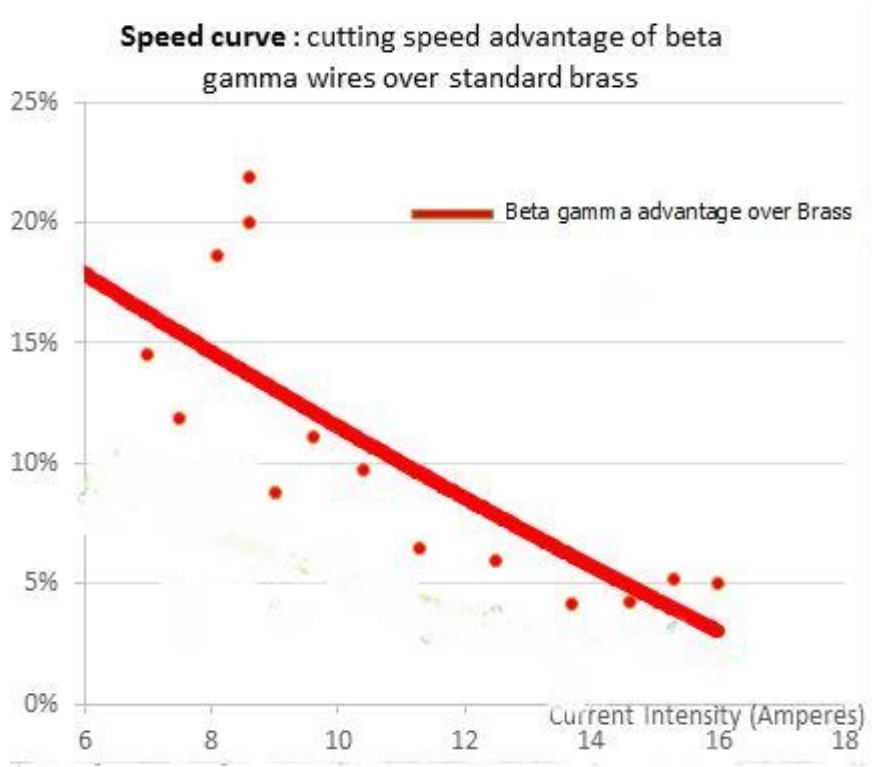
➔ **UPTIME:**

**Thermo JP2 performances - 3 passes machining**

Wire type	Thermo Brass	Thermo JP2 900 N
<b>Main cut time</b>	00:49:42	00:41:14
<b>Trim 1 time</b>	00:07:09	00:06:03
<b>Trim 2 time</b>	00:05:53	00:05:48
<b>Total processing time (cumulative time)</b>	01:02:44	<b>00:53:05</b>
Roughness (µm) Ra // fil Lt=17,5mm Lc=2,5*5	1,18	1,14

**Testing conditions :**

- Wire diameter : 0,25mm
- Steel material h= 50mm
- 1 main cut & 2 finish cuts
- **Sodick SLC400G machine**
- Nozzles position : plated



○ Using brass technology (I ≈ 10A) **time saving** compared to brass is **two times greater with Thermo JP2**

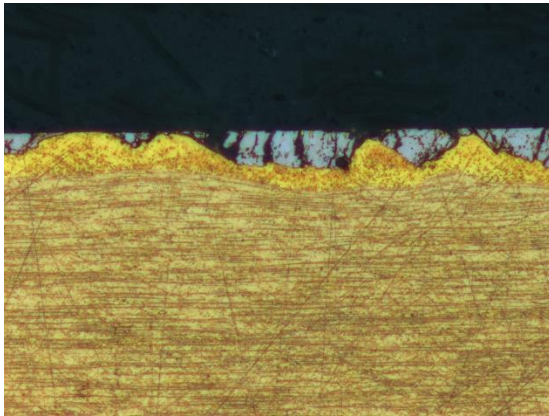
6. BENEFITS RESUME / AVAILABILITY

Thermo JP2 proven benefits :

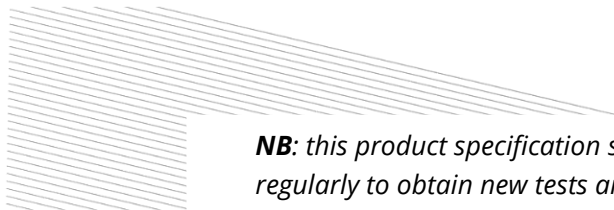
- ⇒ Technology of coated wire :
  - without changing the original parameters of brass wire
  - Good electrical touch due to its external layer
- ⇒ Optimized for Japanese machines :
  - Very speed wire with a surface finish as good as a brass
  - Very clean wire,
  - improved uptime
  - good surface finish and geometry : very precise angles
- ⇒ Competitive advantage secured by patents

**AVAILABILITY**

Thermo JP2		K100	T125	T160	T200	K250	K355	JP5	JP10	JP15
0,20 mm 0,008"	JP2		■	■	■			■	■	■
0,25 mm 0,010"	JP2		■	■	■	■	■	■	■	■
0,30 mm 0,012"	JP2		■	■	■	■	■	■	■	■



Picture: longitudinal section of *Thermo JP2*



**NB:** this product specification sheet is upgraded on a regular basis, please check it regularly to obtain new tests and comparison performances.