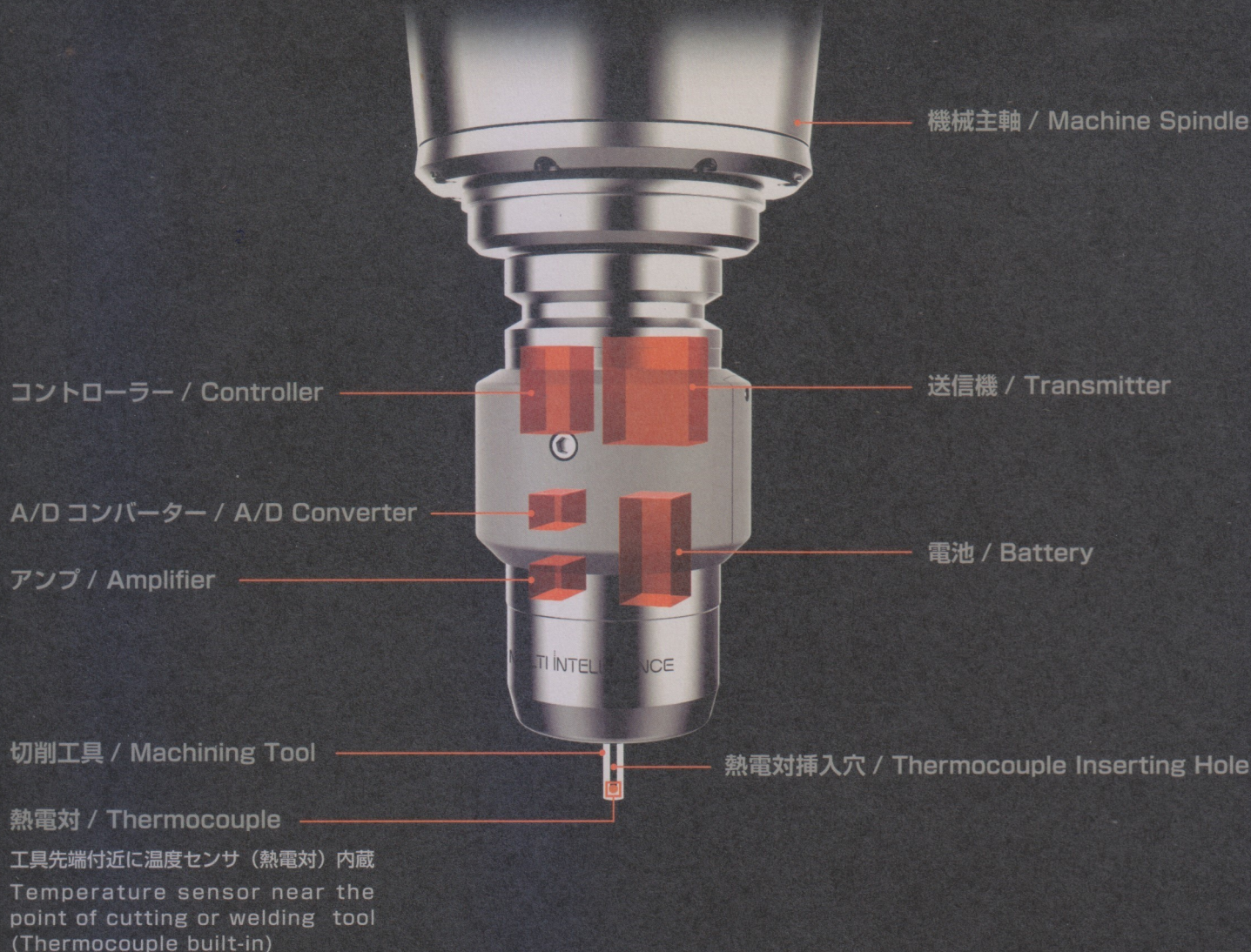




MULTI INTELLIGENCE[®]

加工中の**温度**を測定し最適条件選定のサポート

Support for selection of the best machining condition by measuring temperature



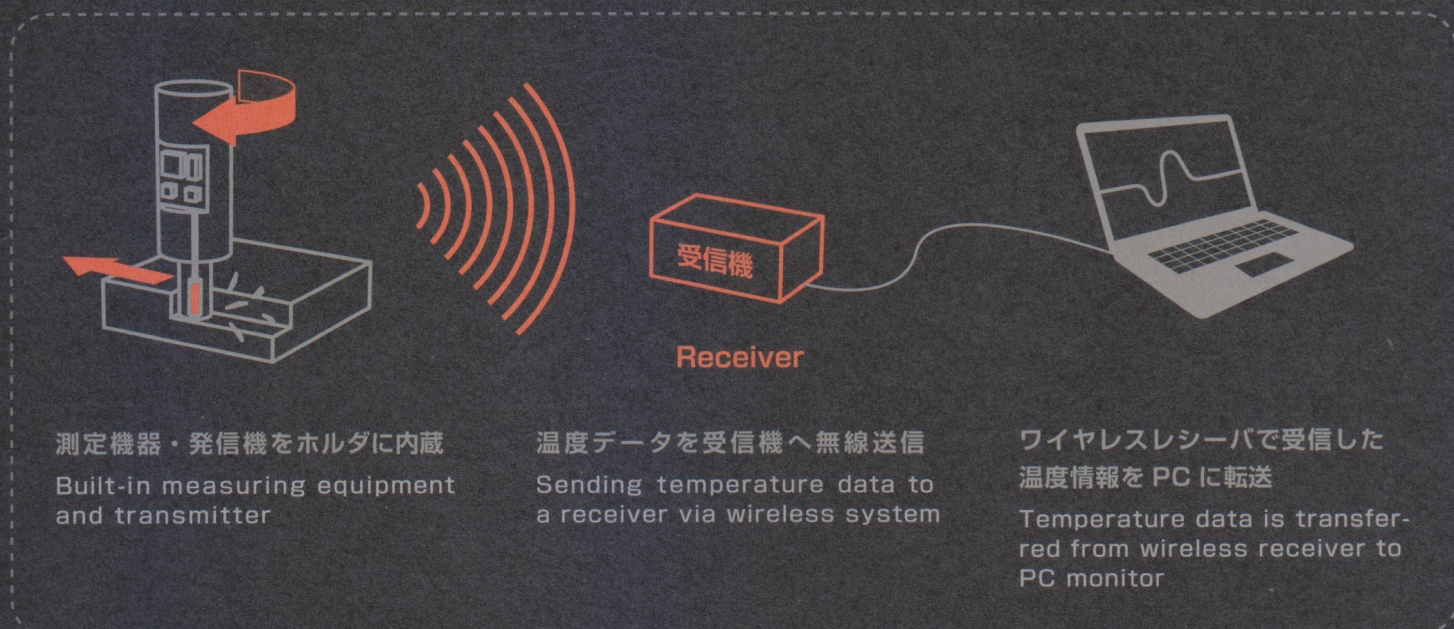
ワイヤレス測定システムを開発 / Wireless measurement system has been developed

温度データをリアルタイムに表示し、記録

Tool temperature measurement results are displayed and recorded in a PC in real-time.

熱電対を工具中心に組込み、アンプ、A/D コンバーター、コントローラー、送信機もツールホルダに内蔵

Thermocouple is inserted in a holder along with a tool center axis, and amplifier, A/D converter, micro-controller, and transmitter are all built-in the tool holder.



PCに転送しリアルタイムモニタリング / Real-time monitoring on a PC monitor

直観的に理解できる温度表示・記録ソフトウェア

※ソフトウェアをインストール頂き、Windowsで使用可。

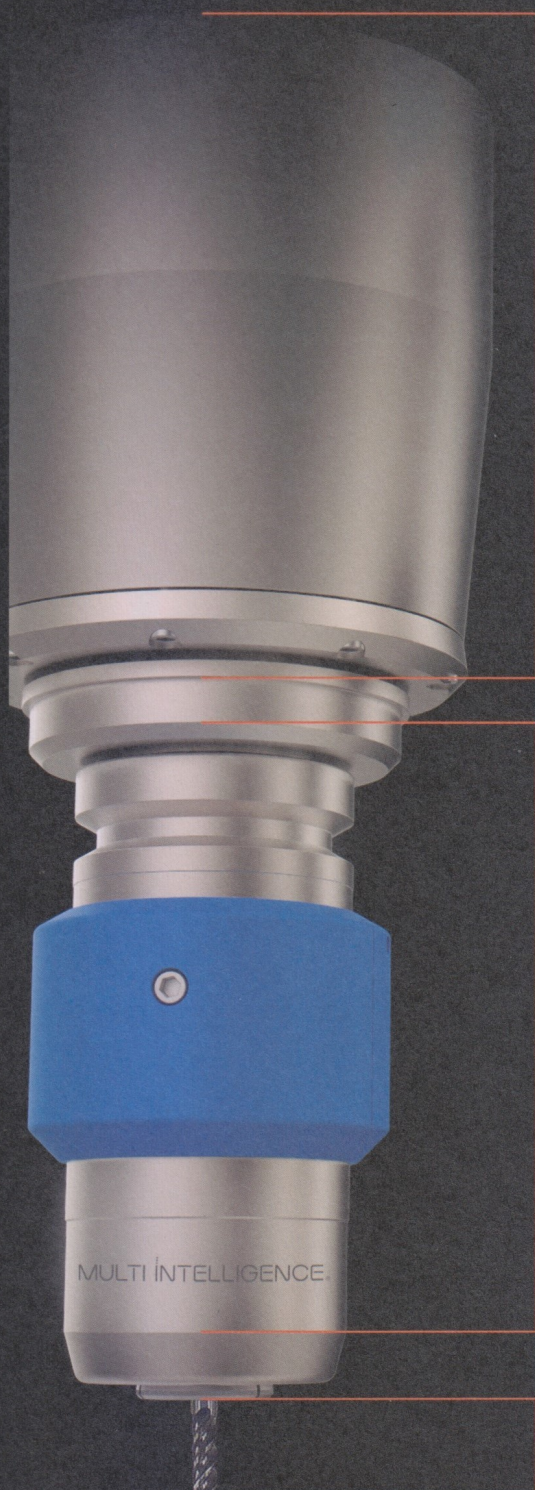
Visually clear PC display indication and recording software is adopted.

*Software can be installed for Windows.



Receiver

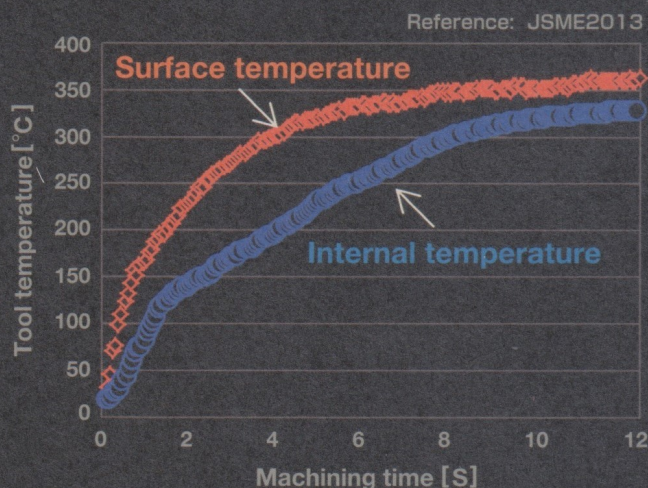
Cutting Version



SPINDLE

TOOL HOLDER

END-MILL TOOL



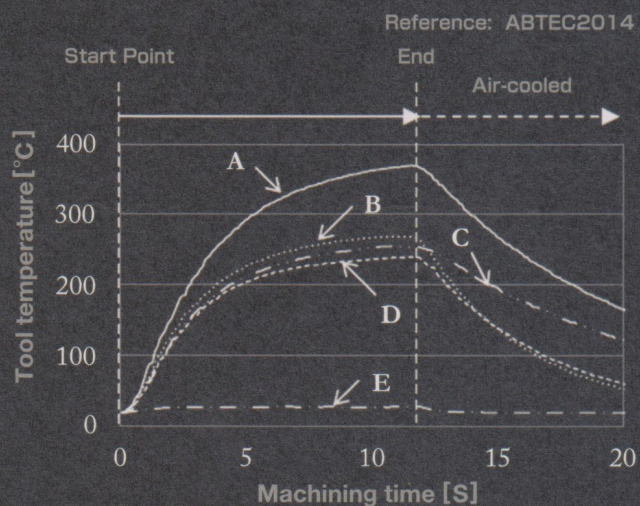
Workpiece: JIS SUS310S

Cutting tool: OSG WXL-EMS D = 6 mm, 4 flute

Machining conditions:

$V_c = 45$ m/min, $f_z = 0.05$ mm/tooth,

$A_d = 12$ mm, $R_d = 0.6$ mm, dry air



Workpiece: JIS SUS310S

Cutting tool: OSG WXL-EMS D = 6 mm, 4 flute

Machining conditions:

$V_c = 45$ m/min, $f_z = 0.05$ mm/tooth,

$A_d = 12$ mm, $R_d = 0.6$ mm, dry air

Oiling method:

A dry

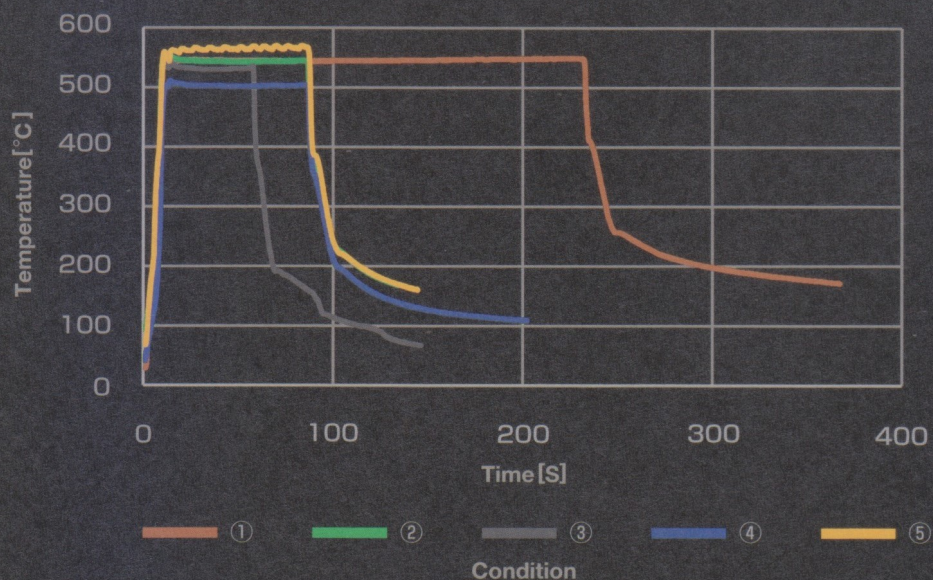
B dry air

C water-insoluble oil coated on workpiece

D water-insoluble oil coated on workpiece + dry air

E water-soluble oil (10 times diluted with water) jetted from a nozzle

温度測定例 / Example of temperature measurement

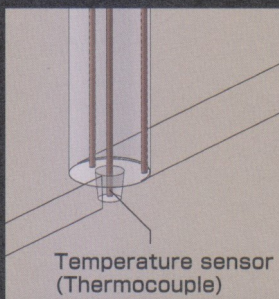


Temperature measuring data is indicated when FSW is performed in 5 different conditions changing spindle rotational speed and feed rate.

Workpiece : A6063 thickness 6mm / welding distance: 400mm
 Tool pin diameter : 4-5mm / pin length 4.2mm / shoulder diameter: 14mm
 S: spindle rotational speed [rpm]
 F: feed rate [mm/min.]

It found the high temperature at the probe gets, when the more a number of revolution gets, and it is little effected by velocity.

プローブ先端の温度測定 / Temperature measurement at the probe



プローブ先端の温度がリアルタイムに測定できます。
 Real-time measurement of the probe is possible.

YAMAMOTO

株式会社 山本金属製作所

YAMAMOTO METAL TECHNOS CO., LTD.

〒547-0034 大阪市平野区背戸口 2-4-7 TEL (06) 6704-1800 FAX (06) 6704-6582
 4-7, Setoguchi 2-chome, Hirano-ku, 547-0034 Osaka Japan TEL : 81-6-6704-1800 FAX : 81-6-6704-6582

www.yama-kin.co.jp