# PUK U3

fine welding devices

Design by focusPOOL.com

# The first name in precision welding

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LAMPERT

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## The first name in precision welding

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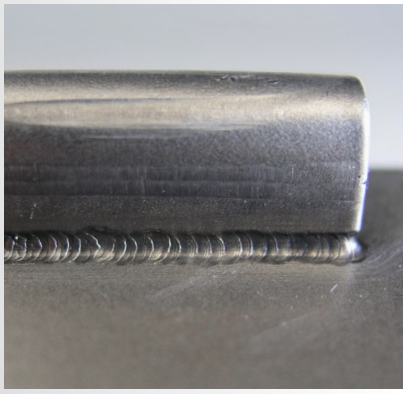
- Precise and user friendly
- Flexible and versatile
- Compact and space saving
- Made to the highest standards
- maintenance free

MADE IN GERMANY

# The innovation - naturally from Lampert PUK U3



The PUK U3 - TIG impulse micro welding device, has been developed as an all-purpose machine for use in workshops and manufacturing, research and development labs, and in the design studio.

The innovative and proven welding technique that the PUK U3 employs, enables the user to place precise welds and apply fine amounts of metal on all weldable metals and alloys.

Welding energy is only applied very locally and affects the work piece only briefly, this makes the PUK U3 especially well suited for applications which could, in the past, only be successfully welded using a laser welder.

# Advantages of the PUK U3

**Arc welding with impulse modelling**

To maximise the benefits of TIG impulse welding, the PUK U3‘s welding impulses, in the standard mode, have been specially modified and modelled to produce optimum results on most alloys and special metals.

**HF - pulse welding**

The high frequency pulse welding combines several useful attributes. With this process, welding impulses that have already been modelled, are overlaid with a high frequency oscillation of 5 kHz.

Thus, on the one hand, the arc is „constricted“ so that the arc force is increased, on the other hand, the quality of the oscillation is improved measurably; this is especially noticeable on metals which have a high heat conductivity.

**Micro welding mode**

The precise matching of welding impulse and impulse duration allow micro welds right down to 0,10mm with sheet metal and 0,25mm with wires.

**Gap - Mode**

Here, high frequency pulse welding is also used to positively influence the form of the arc and the arc force.

The “Gap” mode uses a particularly rigid arc to optimise performance when faced with acute angles and deep-lying welding areas.

**Resistance welding**

With the aid of resistance or contact welding, wires and fixings or jointing elements can be simply welded or attached there where they meet.

**Programmable memory**

Individual welding parameters that the operator has beforehand set to suit his needs can, with this feature, be saved into the memory to be recalled again at any time.

**Operating speed management**

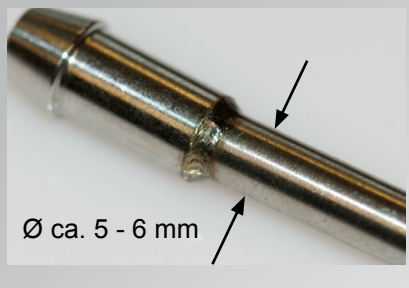
The rate that the PUK U3 welds, adjusts itself to the welding tempo of the operator by automatically regulating the gas preflow time.

**Recall function**

The machine automatically saves the settings of the preceding three welds. These can then be simply retrieved at the touch of a button.

**Foot switch**

As an alternative to automatically starting the welding process, this can also be done manually with the aid of the foot switch.



# The PUK U3 Principle

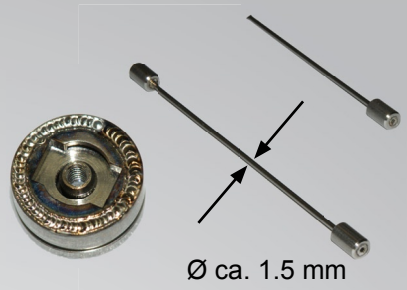
The PUK U3 precision welding devices are compact and versatile TIG impulse welders with which fine and minute welds can be carried out under a welding microscope.

The operating principles and spectrum of possible applications is very close to those of laser welding. This similarity means that the exact positioning of small, stable weldings or welds in hard-to-get-to or deep lying positions poses no problem.

In contrast to soldering, the area of the work piece that is affected by heat is very small when working with the “PUK U3”. So small in fact, that problem free welds adjacent to heat-sensitive parts can be handled with ease.

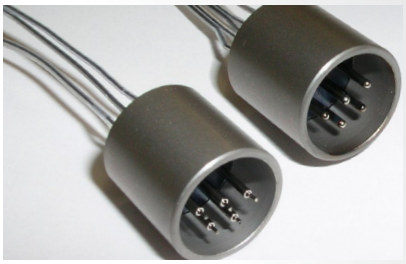
By allowing an individual adjustment of power and impulse time to suit the users needs, an exact control of the size and depth of the weld, is made possible.

Whether the hand piece is used “freehand”, in its stand, or in the microscope mounting arm, the PUK U3 needs no welding box. All models therefore offer users uninhibited comfort of handling, flexibility and freedom of movement.




The micro mode makes possible even the finest of welds. Utilising our welding microscope, the problem free handling of pieces of work right down to 0,1 mm now becomes a reality.

The PUK U3 precision welding equipment puts a whole host of possible applications at your fingertips. The machine is just as at home with welding model casting parts as it is with welding constructions made from sheet metal, tubing or wire. Just a few of the other possible applications include welding projects on dental appliances for patients, from the area of medical technology or for orthodontic purposes.



PUK U3 allows the problem free applying of metal with the aid of welding wire, this way material can be simply added and built up.

All metals or alloys which can be TIG or Laser welded, are suitable for use with the PUK U3. Apart from precious metal alloys, these include many types of steel, as well as special or nonstandard alloys such as titanium, cobalt or nickel.

**Welding microscope „USM“**

By using the „USM“ welding microscope, high-quality welds can be readily produced, hence outstanding results and highest precision made possible.

LED lighting, hand rests and the possibility to adjust working height and angle, all assure optimum convenience and comfort in the work place.

The eye-protecting filter integrated into the „USM“ is especially designed for welding applications. It gives the user‘s eyes a highly dependable safeguard whilst welding.

By switching automatically from its clear setting (Luminescence DIN3) to its dark setting (Obscurity DIN11), glare from the electric arc is thus prevented.

# The most important key to welding success

**Pivoting Arm**
**for optimus workflow**
**(optional available)**

The Pivoting Arm which is available as an optional accessory, is the ideal add-on for the „USM“ welding microscope. With its ergonomic design, the Pivoting Arm gives a high level of flexibility, freedom, and easier welding.

**Article-No. 200 250**

**Flowmeter Regulator**

The finely adjustable Argon - flowmeter is optimised for use with PUK U3. With this device the user can exactly set the gas-flow of 1 - 2 L/min necessary to achieve optimum results.

# The PUK U3 Advantages

**Bio - Compatible**
Work can be carried out with matching alloys, with or without welding wire of the same alloy. This way an unnecessary mixing of metals is avoided, allowing corrosion resistant joins to be produced.

**Save time on repairs**
The possibility to weld directly adjacent to heat sensitive parts, represents a large saving of time compared with soldering.

Cleaning up is only necessary directly on the welding spot. Outside of the welding area, the surface texture, polish, or the surface of plated work-pieces, remains unaffected by the welding process.

**Low initial costs**
Compare the performance and cost of the PUK U3, with alternatives.

**Maintenance free**
No additional servicing charges or costs; needs only Argon-gas and electrodes. Designed for continuous operation around the clock.

**Low heat generation**
The object which is to be welded only heats up in the immediate area of the weld. This allows welds to be carried out in sensitive areas. The work piece can also be held in the hand, allowing a constant monitoring of the inflow of heat.

**„Clean“ welds with minimum gas consumption**
The „flooding“ of the welding area with protective gas is automatically controlled and monitored. Coupled with the gas-flow-optimised argon nozzle, this feature helps to minimise gas consumption.

**Easy to use, easy to learn**
Simple and intuitive adjustment of the parameters

**Low running costs**
The life span of an electrode is circa 2000 welding spots. The Argon consumption is very low.

**Quality Made in Germany**
All our machines carry the CE - mark and have the “GS” safety standards certification.

| PUK U3 - precision welding system | *Technical Specifications* |
|---|---|
| Article-No. | U3 330 100 |
| Min. / max. power output | 6 - 760 A |
| Number of power settings | 12 |
| Min. / max. impulse length in milliseconds | 4 - 30 ms |
| Number of impulse time settings | 9 |
| Impulse modelling | + |
| HF pulse | + |
| Soft spot | + |
| Micro mode | + |
| Welding speed / Interval | 0.8 s |
| Automatic gas-pre-flow time | + |
| Gas consumption | ca. 2 l/min. |
| Shielding Gas | Argon > 99.9 % |
| "Stand by" (Energy saving mode) | + |
| Current consumption "Stand by" | 0.3 W |
| Recall of the last three settings | + |
| Program memory | + |
| Microscope "USM" | + |
| Magnification | 10 x |
| Field of vision - diameter | 20 mm |
| Operating distance | variabel |
| Integrated-Automatic-LCD Welding Shield | + |
| Degree of luminescence / obscurity | DIN 3 / DIN 11 |
| UV Protection / IR Protection | > UV 15 / > IR 14 |
| LED lighting | 3 W |
| PUK Flowmeter Regulator | Argon 4.6 / 200 bar / 0-12 l/min |

| | |
|---|---|
| Pivoting Arm for microscope | optional available |
| Article-No. | 200 250 |

# PUK U3

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# The award winning technology - naturally from Lampert

Lampert's products have been the receivers of awards on several occasions in the course of the companies history. Here the companies efforts to have the products design mirror their own high demand on quality, has not only been sucessfull but also recognised and rewarded.

This is, at the same time, a motivation to further develop the technology behind our products. Lampert has strived relentlessly to tailor its machines to the needs of a variety of different fields of application, whether for industrial purposes, scientific work, or designated for the world of artisanry and craft.

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