

טכנולוגית ערבוב גז חדשה חוסכת בעלויות ריתוך.

ישנה דרך קלה ופשוטה אם מעוניינים לחסוך בעלויות חיתוך וריתוך: חברת Wittgasetechnik וויטגז, מציעה מערבול נייד. פתרון חסכוני וגמיש כתחליף לרכישה של תערובות גזים או התקנה של מערכת ערבול גז מרכזית. חברות בעולם כמו חברת Belenergomash Engineering מהיער Belgorod שברוסיה מעידות שיש להן כ-30 מערבלי גז BM2M ניידים מתוצרת Wittgasetechnik מגרמניה. מערבלי הגז נועדו לערבול דו תחמוצת הפחמן וארגון לסוגים שונים של תהליכי ריתוך. חברת Belenergomash Engineering מיצרת דוודים ומערכות צנרת למפעלי אנרגיה. בחלק מהמוצרים של החברה משתמשים בתחנות כח גרעיניות. "רמת בקרת האיכות של הייצור גבוהה ביותר" מעיד מהנדס החברה Walerij Kwaschenkow. "הדרך בה הגז מסופק למערכות הבערה יש השלכה על איכות המוצר הסופי וגם על עלות המוצר הסופי. המפעל שלנו גדול ונפרש על שטח גדול, כך שבחלק מהאיזורים של המפעל לא ניתן לחבר צנרת גז מרכזית. לכן, אנו משתמשים במיכלי גז לחיתוך וריתוך לאיזורים מרוחקים במפעל".

קל להבין את החיסכון באסטרטגית עבודה זו של החברה הרוסית. המערכת הניידת והגמישה אידיאלית לצרכים לא סטנדרטים של תהליכים. איחסון תערובות גז, יקר וקשה. חברת Belenergomash Engineering חוסכת איחסון של תערובות רבות ושונות של גזים. החברה משתמשת בתערובות שונות התלויות במוצר, בתהליך, בחומר הגלם. הפתרון מפשט את הדרישות להכנה של מערכת החיתוך או הריתוך במפעל.

מערבל הגז BM2M שוקל כ-3.2 ק"ג ונחשב למערבל קל משקל. עם זאת המערבל הינו עמיד וחסכוני במקום. המערבל מוצב בין שני מיכלי הגז וכך גם מוגן מפני פגיעה מכנית. המחברים המשמשים את המערבל הינם מחברים סטנדרטים. כאשר רוצים להשתמש במערבל, פותחים את הברזים שעל מיכלי הגז. מנומטר צמוד למערבל מראה את לחץ העבודה. זה פתרון חסכוני של חברת וויטגז. אין צורך בווסתים חיצוניים נוספים כיון שבמערבל הגז יש וסת לחץ פנימי וברזי בטיחות. ניתן להסיר בקלות את המערבל ולחברו למיכלים אחרים. אין צורך בכל מקור אנרגיה חיצוני להפעלת המערבל כך שהמערכת ניידת לחלוטין. כל תערובות הגז של בריכוז משתנה מ-אפס ל-25% של דו תחמוצת הפחמן בארגון, ניתנות להכנה באמצעות המערבל הזה. לחץ הכניסה של הגז למערבל נע בין 4.5 ל-230 באר. דיוק התערובת כ-1%. המערבל תואם בעיקר לצרכים של חברות קטנות ובינוניות.

New gas mixing technology reduces welding costs

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Witt offers a mobile gas mixer as a cost-effective and flexible alternative to buying pre-mixed argon/CO2 gas mixtures or installing a centralised gas supply system

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There's a quick and easy answer if you want to reduce production costs for welding and cutting: Witt offers a mobile mixer as a cost-effective and flexible alternative to buying pre-mixed gas or installing a centralised gas supply system. Companies abroad have been aware of this option for some time: 'We already use 30 of the Witt mobile gas mixers to mix argon and CO2 for various welding processes' says Walerij Kwaschenkow.

A skilled engineer, Kwaschenkow is the head of the welding department at the Belenergomash engineering works in Belgorod, Russia.

The company products include [boilers](#) and pipeline systems for power plants.

Quality is of the utmost importance, since some of their systems are used in nuclear power stations.

'Our products are manufactured to Western standards,' the welding expert states proudly.

The way in which gas is supplied to burner systems has an impact on the cost of the end product .

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Two Leak-Master MAPmax micro-leak leak detection systems for rigid and flexible MAP have successfully completed production trials at two of the UK's leading food producers

Food/pharmaceutical pack gas flow control system

Witt Gas introduces an electronic gas flow control system for MAP on automatic packing machines in the food and pharmaceutical industry, and for atmosphere control in fruit and vegetable storage

'Our plant is large and spread out, which means that, in some areas, it's simply not possible to connect up to a gas main.

Because of this, we use gas cylinders to supply gas to the welding and cutting areas' says Kwaschenkow, explaining the infrastructure of the works.

It's easy to see the cost advantages of this strategy: for the Russian company, it would be too difficult and expensive to supply fuel gas to all work areas of the plant by means of a centralised gas supply.

Additionally, the Witt system offers the increased flexibility of a mobile solution, making it ideal for non-standard procedures.

However, this system does not merely supply pre-mixed gas.

Pre-mixed gas is easy to obtain in Russia, but the disadvantages of using it are the same as anywhere: buying pre-mixed gas is normally significantly more costly than buying the individual gases that you need.

Kwaschenkow points out another issue: 'Pre-mixed gas simply isn't a viable option for cost-effective, productive companies.

Storing the gas is difficult and expensive, since you need to keep stocks of various mixed gases with different compositions at the same time'.

As is the case everywhere, at Belenergomash they often need to vary the content of argon and CO₂ in their gas mixes.

The required composition depends on the product, material, and the joint welding or build-up welding procedure being carried out.

However, Kwaschenkow doesn't need to worry about such issues.

He's been using mobile gas mixers, which are also known as mini mixers, for years.

It's clear that he is a great fan of the BM2M devices supplied by the German firm Witt-Gasetechnik, a specialist in the field.

As he says, 'the simple solutions are always the best'.

An on-the-spot demonstration of the solution offered by the Witten-based company quickly shows the success of the mini mixer.

The light (about 3.2 kg) but robust mixers are attached between the cylinders being used, meaning that they take up very little space and are protected from being damaged.

Standard connectors and tools are used to connect the nuts on the mixer to the gas cylinder valves.

Standard tubing carries the inert gas to the welding outlet.

When you want to use the gas mixer, you simply open the valves on the gas cylinder.

An integrated manometer displays the operating pressure.

It's a clever solution from Witt: no additional pressure regulators are required, since the gas mixer has an integrated pressure regulator and safety valves.

The system is operated by means of two knobs on the coated aluminium case.

One of the knobs is used for adjusting the CO₂ content in the argon, and the other is used for the stage-less variation of the mixed gas flow between 8 and 25 l/min, or even higher if required.

The mixer can be easily removed and attached to other cylinders.

The whole process has been extremely well thought out, as you'd expect with a Witt product.

A big advantage of this gas mixer, is that it can be transported to anywhere in the plant along with the cylinders.

It can be taken to wherever the work is being carried out - and it doesn't even need an electric power supply.

When using this mini mixer, only two types of cylinder gas need to be kept in stock.

All required gas mixtures, with a composition of 0 to 25% CO₂ in argon, can be mixed from a single argon and a CO₂ cylinder.

This reduces the cost of buying gas, since we can buy in bulk for greater cost-efficiency' explains Kwaschenkow.

The Witt BM2M can also be delivered to be used for other gases.

The data specification sheet states the possible gas inlet pressure as between 4.5 and 230 bar.

The mixing accuracy of the solution is an impressive +/-1%.

The growing sales figures for German customers show that attitudes are changing here, too.

The cost benefits and flexibility of the mini mixer are particularly advantageous for medium-sized companies.