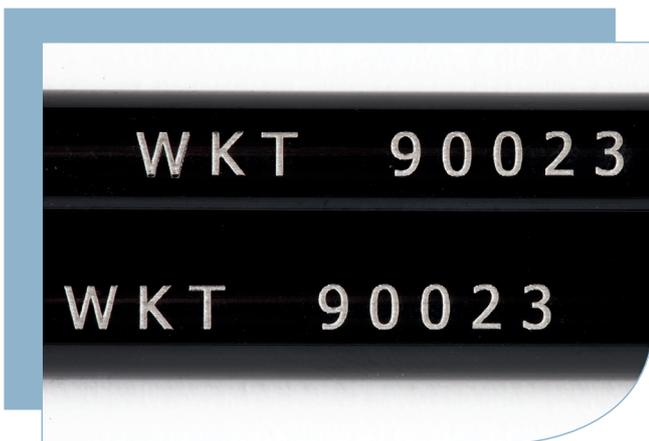


Gas runs through these veins: *Nylon Fuel Pipes* by Hebei Chinaust Automotive Plastic Corp., Ltd.

Automobile fuel lines have to last a car's lifetime. The same goes for their marks. **ALLTEC laser marking systems apply these resistant and long-lasting signs**

Inside cars it is almighty hot: High temperatures, extreme pressures, corrosion and wear as well as oils, fats, lubricants and fuels interact. Also diesel and gas tubes do their work here and ensure that the engine is not in low water. To guarantee this, these fuel lines have to be robust and resistant, elastic and flexible and must not weaken even if they are under pressure. Much like the fuel lines of the Chinese market leader Chinaust from Zhuozhou city in the Hebei province.



Chinaust Nylon (Polyamid) fuel pipes. These tubes need to take a lot and have to apply to the quality standards of the worldwide automobile industry. Such they have to be completely traceable, reliable and both production and installation safe. That is why the only possible identification technology for Chinaust is laser marking. Laser marked codes are not only permanent and resistant but also forgery-proof and thanks to their first-class marking quality anytime readable and traceable.

The Polyamide tubes from China are used in the automobiles of renowned European, Asian and American car manufacturers, and meet both quality and safety standards of these Chinaust customers. That requires that the tubes themselves are sturdy and robust as well as easy to distinguish and allocate and traceable without any problems – over their total lifetime. At Chinaust, laser marking systems from Germany campaign for such traceability and installation safety. Since June 2004, they have been marking both Chinaust diesel and gas pipes but also automotive water and compressed air tubes with part numbers and logo types. These high contrast codes are applied contactless and permanently and are easily readable for man and machine. All other performance characteristics such as the tube's bending strength and pressure resistance are not affected by the laser marking process.



Two that last an automobile lifetime:

The nylon fuel lines of Chinaust with the laser marks applied by the ALLPRINT LN100A.

ALLTEC & Chinaust: Laser Marker Meets Fuel Pipe

To mark the Chinaust fuel pipes laser marking systems need to be capable of more than just setting signs. The automobile supplier from Middle Kingdom looked for a production safe identification solution that codes black colored Polyamides with high contrast. This contrast had to be approved by Chinaust's end customers and classified as high-quality contrast for tracing products and parts. Together with a material manufacturer ALLTEC found the best solution employing specific

plastic additives that make the tubes laser sensitive. As adequate laser marker the solid state system ALLPRINT LN100A was chosen. Not only because of the high speeds the coder provides in moving production lines but also because of the permanent, first-class marks it applies, and the reliability and economy it ensures. Should there be a need for spare parts once, Chinaust is happy that ALLTEC guarantees to supply these parts within 24 hours.

Round the clock, ALLTEC's laser coders mark Chinaust nylon tubes for the automotive industry

- reliably, fast (at line speeds up to 42 meters per minute) and
- in first-class marking quality (good contrast due to black/ white color change).

The codes are applied on diesel and gas tubes

- „on the fly“, during the running production process
- contact-less and
- wear-free.
- They are permanent and last not less than a whole lifetime of a car.

Global presence. Worldwide support. ALLTEC numbers among the world's leading companies in the field of marking and coding with lasers. Out of the entire experienced R&D, service and sales engineers' know-how laser marking and coding solutions arise that seamlessly integrate into our customers' production lines, increase their efficiency and create decisive added value.

ALLTEC offers the full range of laser marking and coding solutions – from CO₂ to TEA CO₂ to Nd:YAG to continuous wave and pulsed fiber laser marking systems. Thus ALLTEC offers the latest superior marking and coding technologies that enable nearly all marking applications. Across all industries. And across the world.

Since 2004, ALLTEC has been part of Danaher Corporation, a Fortune 500, New York Stock Exchange listed company.



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