Inspection Camera Borescope

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Borescope is an optical device consisting of a tube (rigid or flexible) with an eyepiece on one end and the lens on the other end, connected by the optical system. Borescope has a very high image quality and is affordable at a good price. It consists of the visual and lighting systems. The visual system is usually a gradient, rod or lens optics, which is enclosed in the inner metal tube. The lighting system consists of an optical fiber for illuminating the inside of the area. The optical fiber is located between outer and inner metal tubes. The image of the illuminated object is transmitted through the optical system so the viewer's eye could see it.

Borescopes can be equipped with a video camera to transmit the images on a display or computer. They are characterized by four main parameters: the diameter of the operating part, the length of the operating part, the angle of the observation direction and the angle of view. You should take into consideration that increasing of the field of view leads to reducing detalization. It means that you can see a lot but in small sizes or a little but in big sizes and in detail. The main advantage of borescopes is a high resolution of up to 25 lines per millimeter.

Borescopes are designed to control the work where the inspection area is not easy to reach. They are usually used for visual inspection of aircraft engines, industrial gas turbines, steam turbines, internal combustion engines and the engines of cars and trucks during maintenance and performance evaluation. Borescopes are common in forensic examinations in law enforcement, in the building inspection to check the ceilings and walls of the buildings, in the weapon industry for the inspection of the fire weapon barrel and so on.

Borescopes can be flexible, rigid or video borescopes. Flexible borescopes are used to inspect bended tubes and cavities. They transmit images of areas inaccessible to the naked eye. The main features of these devices are convenience, focus, the eyepiece, a bright illumination, which allows you to clearly view dark places. Video borescopes differ from the previous type of borescopes by having a miniature camera at the end of the flexible tube. They also have an illumination for capturing images or videos in dark places. Camera and flexible tube in many models can be immersed in the water. Their main features are high quality, clear digital images and videos.

With the help of this instrument you can get and save images and videos for further transmission in a computer. Rigid borescopes are used to inspect areas or cavities in a straight line. That is why their usage is limited. There are certain objects and places where it is better to use rigid borescopes, for example, cylinders, fuel injectors and so on. They are affordable at a lower cost and provide high quality images.

The status check with the help of borescopes can significantly save maintenance costs. In many cases it allows to understand whether it is necessary to disassemble the turbine for further diagnostics.

While choosing the inspection camera you have to take into consideration a type and size of the inspected object, the distance of the object from the access point, access point diameter and image clarity. PCEs borescopes are exceptionally durable, reliable and easy to use. They have water and dust protection along with producing maximum illumination and resolution. The device can be operated with one hand. Buttons are ergonomically designed to offer one-handed easy control to view targets from the ideal angle.