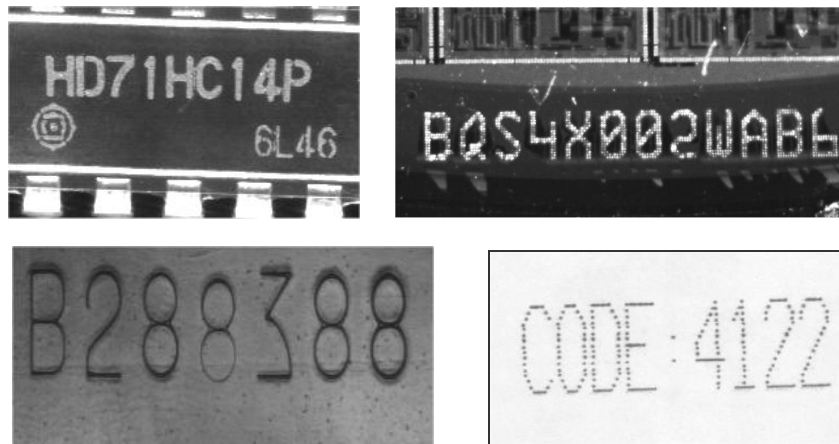


# mvIMPACT OCR

Human readable text is the preferred way to label items for such purposes as part tracking with serial numbers, expiry date notification, type, lot number and/or nominal value description. Optical character recognition turns a marking in a digital image into a string of characters, for reading or contents checking.

Industrial printing devices come use wild variety of technologies, resulting in innumerable appearances and renderings. A robust reader must be able to faithfully process any kind of marking. If needed, the recognition process can be eased by training it with representative samples of the targeted typefaces.



Typical industrial markings



Part tracking

## *Main features*

### Font learning

When the character set in use is non-standard or is printed in an unusual way, it is possible to train the reader on text samples. A complete training workbench is provided to allow storing reference samples of the targeted characters and easy font management.

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
ABCDEFGHIJKLMNOPQRSTUVWXYZ  
ABCDEFGHIJKLMNOPQRSTUVWXYZ

Pre-trained OCR-A, OCR-B and dot-printed databases

### **Character segmentation**

Characters need to be isolated before the recognition process. The OCR module has been designed in such a way that any custom pre-processing steps can be applied. Usually, anyway, straight blob analysis suffices. Given that the positions of characters need not be known in advance, text shifting or arbitrary font spacing is dealt with.

### **Rotation and size invariance**

Two recognition methods are supported, for enhanced versatility. One uses size normalization along with gray-level normalization. It fully exploits gray-level information. The other relies on shape representation by means of the so-called "Fourier descriptors". In addition to size invariance, it is also rotation invariant, allowing to read text of an arbitrary orientation.

### **Print Quality verification**

As a complement to the reading capability, the OCR module also allows a readability check: for a given character, a quality score can be computed, telling how closely it matches with the trained sample(s). This way, Optical Character Verification can be carried out.