

COGNEX

PRODUCT GUIDE 2008

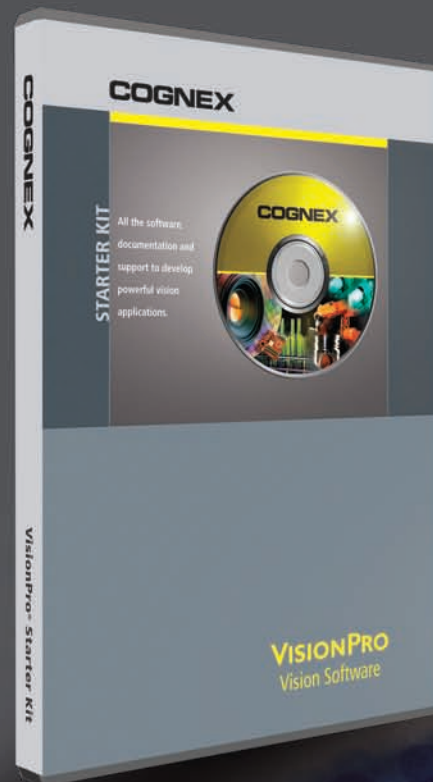
Vision software from
the world leader.



VISIONPRO
Vision Software

**Powerful and flexible
vision software.**

**There's really no need to
think outside this box.**

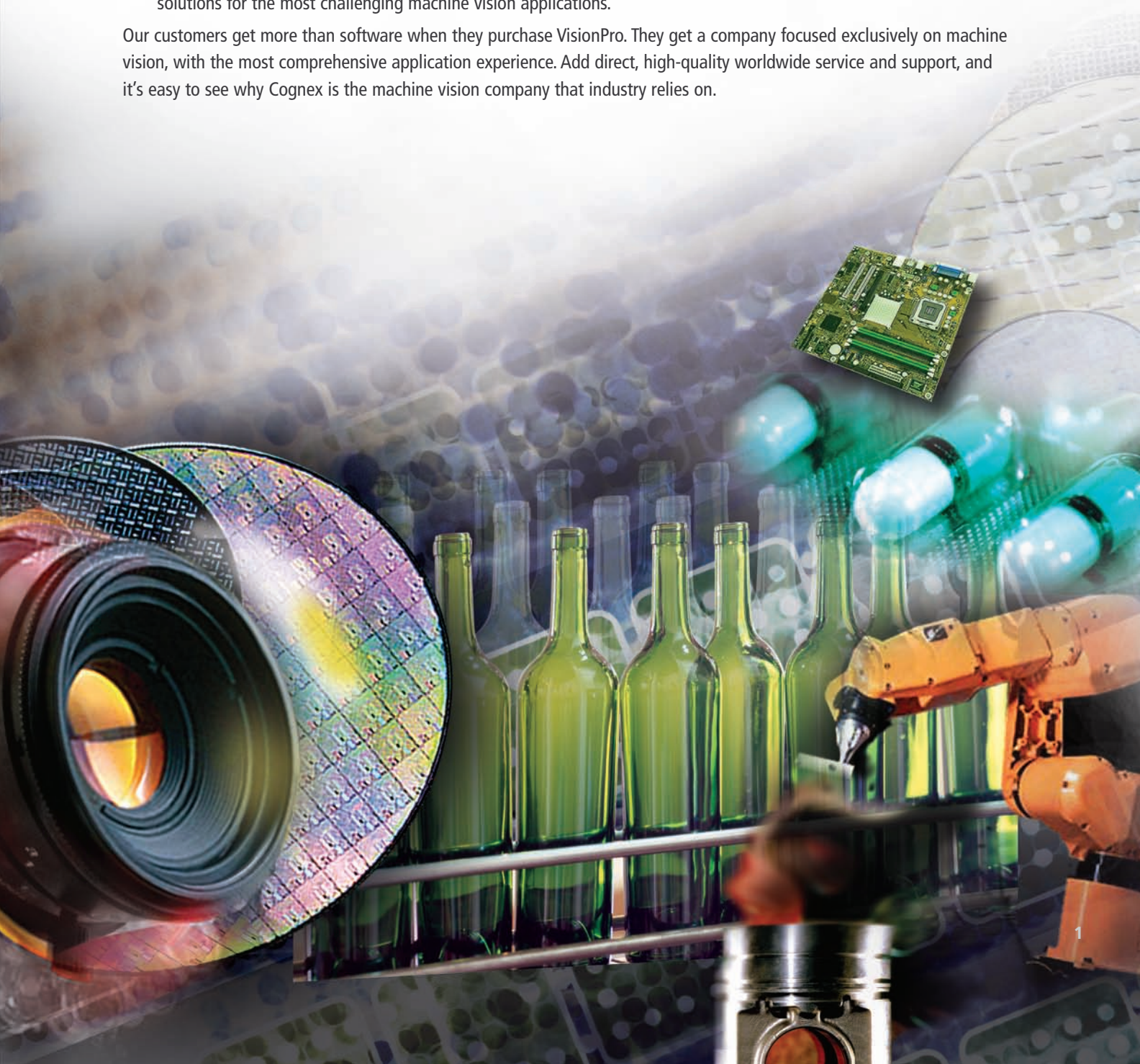


Vision Software from the World Leader

VisionPro® has been set free. Now you can get the world's top vision software with its robust tool library — no matter what camera or frame grabber you use. That means all applications benefit from this broad-based, industrial-grade tool set from Cognex®.

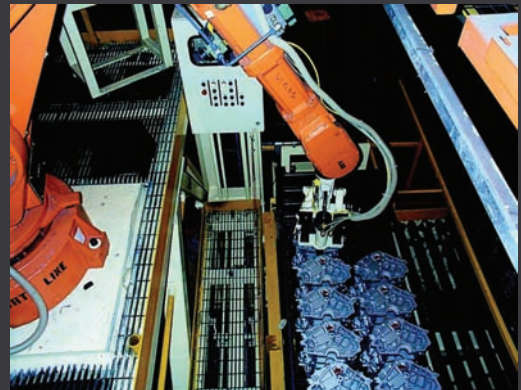
- Proven in more than 400,000 installations worldwide, the VisionPro tool library spans all vision needs ... from geometric object location and inspection to identification and measurement.
- Combined with flexible and powerful PC-based development, VisionPro makes it faster than ever to create and deploy solutions for the most challenging machine vision applications.

Our customers get more than software when they purchase VisionPro. They get a company focused exclusively on machine vision, with the most comprehensive application experience. Add direct, high-quality worldwide service and support, and it's easy to see why Cognex is the machine vision company that industry relies on.



Solutions for All Applications

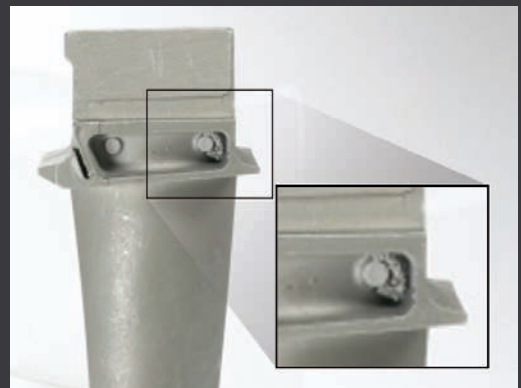
The power and versatility of VisionPro software extends to applications in all industries



Part Location & Robot Guidance



Part Identification

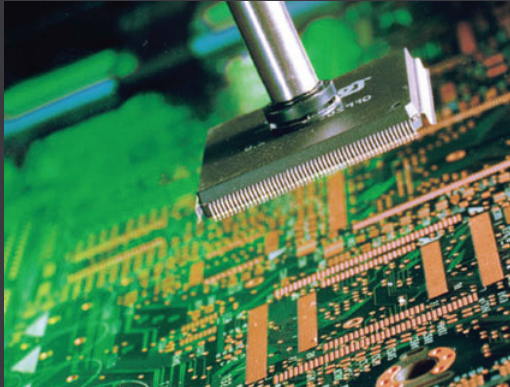


Inspection



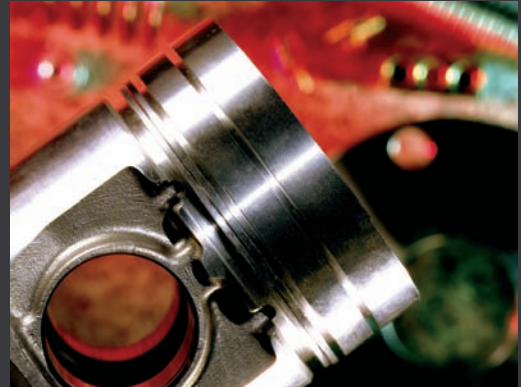
Gauging & Dimensional Measurement

Reliable Vision for All Industries



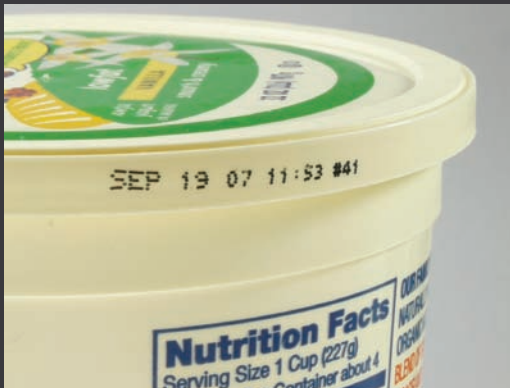
Semiconductor and Electronics

- High precision alignment
- Board, wafer, and die inspection
- Metrology
- Lead frame inspection
- LED and LCD functional testing
- Solar wafer, cell, and panel inspection



Automotive

- Robot guidance
- Part traceability
- Gauging critical dimensions
- Presence of weld nuts, springs, and fasteners
- Bead tracking for sealants
- Racking and de-racking



Pharmaceutical, Food and Beverage

- Verify date and lot codes
- Picking and packaging
- Label inspection
- Presence of caps, labels, and tamper seals
- Whole package inspection
- Verifying bag closure



Consumer products

- Cosmetic defect inspection
- Dimensional measurement
- Presence of critical features
- Label inspection
- Control of continuous processes
- Packaging verification

The Industry Benchmark for Vision Performance

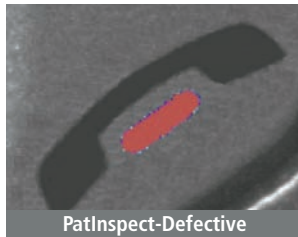
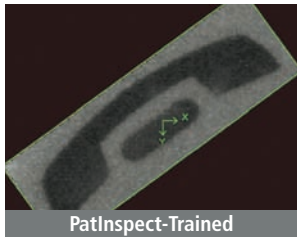
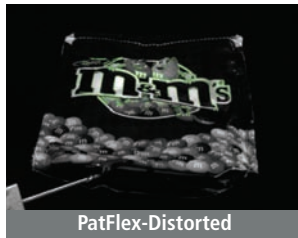
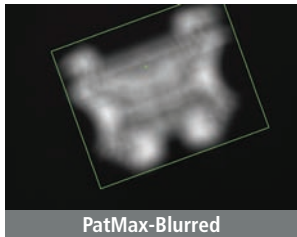
VisionPro Power Tools have the intelligence to ignore non-critical variations in appearance while focusing on the critical features that determine a product's acceptability. Power Tools don't require extensive image pre-processing to achieve the final solution, adding faster application development for the vision engineer and lower lifecycle costs for the company.

VisionPro's capabilities set it apart

- Drag-and-drop linking between tools enables quick communication of values, results, and images
- Intelligent software fixtures position tools dynamically, simplifying tool setup
- Re-usable tool groups and user-definable tools shorten development time

Geometric Pattern Matching and Inspection

Provides high-accuracy object location and inspection



PatMax®

The industry's gold standard for part and feature location, providing accuracy and repeatability under the most challenging conditions

PatFlex®

Locates objects despite surface perspective or distortion, enabling the use of tools on complex surfaces

PatMax Synthetic

Automates model training using CAD data or our unique Model Maker

PatInspect® Area

Provides high-accuracy inspection, statistical training and normalization techniques to compensate for lighting variations

PatMax XLC

Finds barely visible patterns in images, reducing the need for expensive lighting and optical systems

PatMax SA

Provides accurate results for partial-match alignment when the entire pattern is not present in the image, reducing false rejects

Vision Power Tools

Color Tools

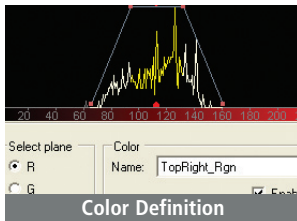
Sort, match, identify, and monitor color images



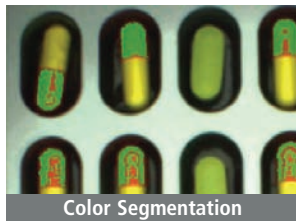
Color Match



Composite Color Match



Color Definition

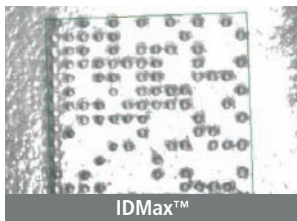


Color Segmentation

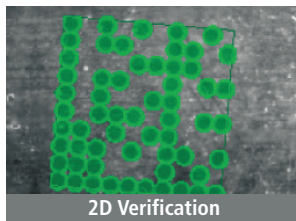
Composite Color Match Accurately discriminates between subtle color variations

Color Match High-speed identification and sorting of colored parts

Color Segmentation Creates a greyscale image from selected colors, enabling other tools to be applied



IDMax™



2D Verification

Identification and Verification

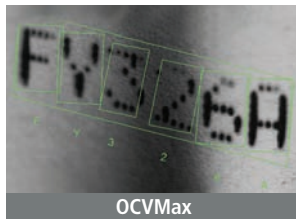
Achieve optimum ID reading and character verification

IDMax™ Reads even the most degraded data matrix codes, delivering consistently high read rates needed for part traceability

Industrial Code Reading Reads multiple symbologies — without being told how many or which standard — even when codes are randomly positioned and rotated



Code Reading



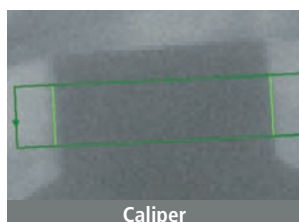
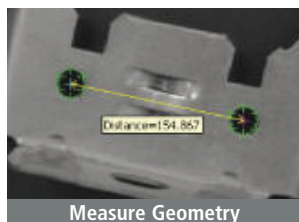
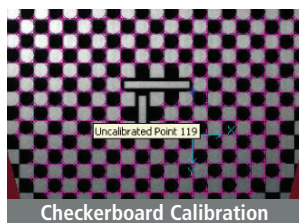
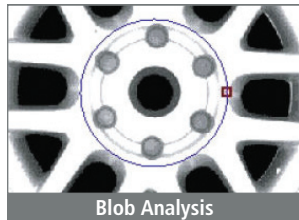
OCVMMax

2D Symbol Verification Verifies the quality of 2D symbols using both AIM DPM Quality Guidelines and AS 9132

OCVMMax™ High-speed character verification, even when the print is extremely distorted, using both image-based and printer font-based training

Essential Vision Tools

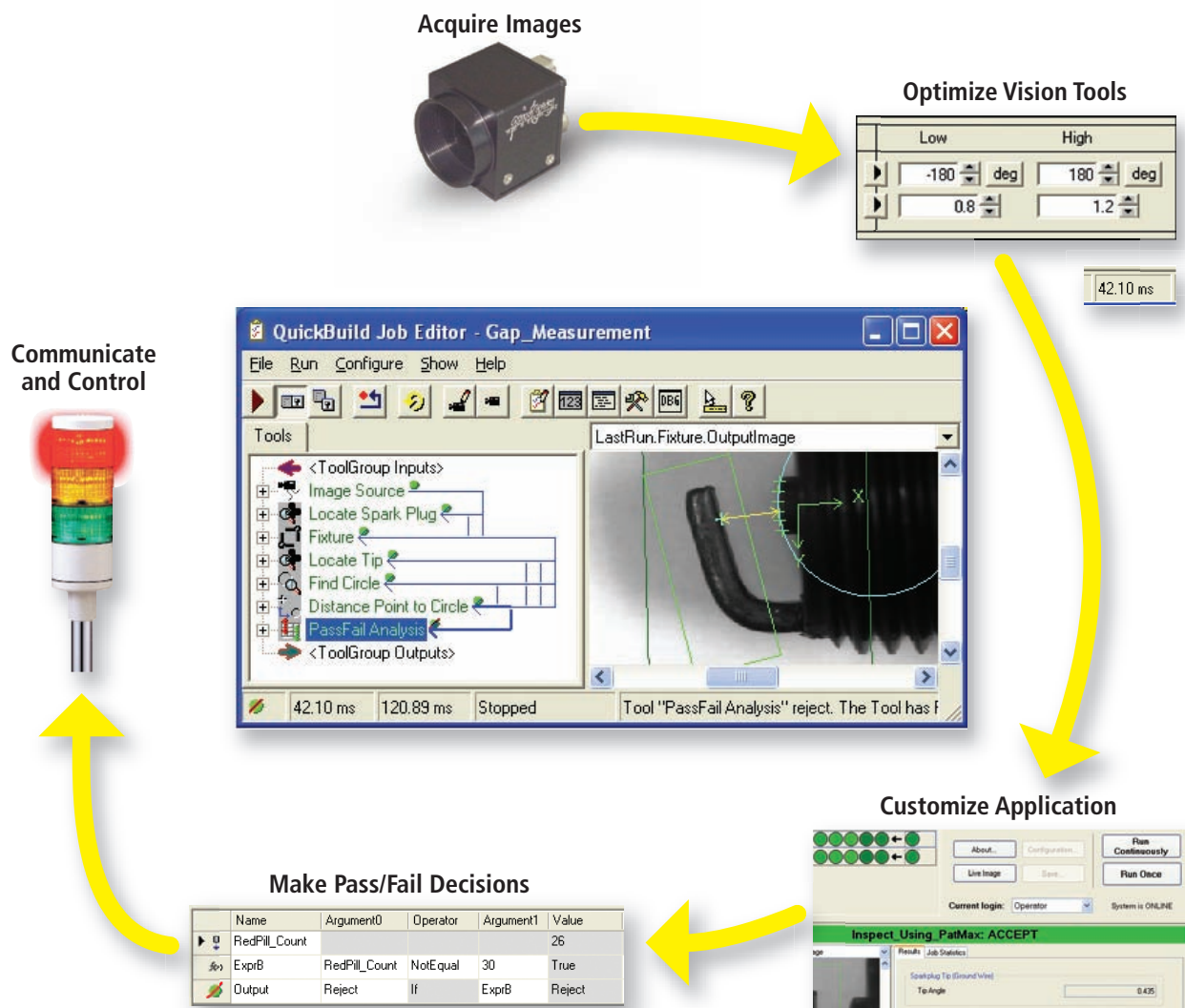
Essential Tools combined with Power Tools provide the most complete set of industrial-grade vision tools, optimized to deliver high-speed performance in all applications.



| | |
|--------------------------|---|
| Find Geometry | Find lines and circles |
| Best Fit Geometry | Create best fit lines and circles |
| Measure Geometry | Measure distances, angles, and intersections |
| Create Geometry | Construct reference geometry |
| Blob Analysis | Measure area, size, shape, other geometric properties |
| Checkerboard Calibration | Correct for non-linear, optical, and perspective distortion |
| Calibration | Calibrate camera pixels to real-world units |
| Caliper | Measure sub-pixel location of edges |
| CNLSearch | Locate an object using normalized correlation |
| Fixturing | Position tools dynamically, based on location tool results |
| Sobel Edge Detection | Detect edge location, intensity and direction |
| Polar Unwrap | "Unwrap" an annular region into a rectangular image |
| Image Averaging | Create images based on the average of previous images |
| Grayscale Morphology | Erode, dilate, open, and close |
| Gaussian Filter | Smooth or sample images |
| Image Add/Subtract | Add or subtract pixels in two images |
| Histogram Analysis | Count pixels by gray value |
| Copy Region | Copy multiple images into a single image |
| Affine Transform | Rotate, scale, or translate an image |
| Pixel Mapping | Re-assign the gray value of pixels based on a lookup table |
| 3x3 Convolution | Produce an output image by applying a 3x3 kernel |
| Multiply/Divide | Multiply pixel gray values by a constant |
| Image Sharpness | Measure the minimum feature size |
| Image Convert | Transform color images for analysis with other tools |

Fast and Flexible Application Development

Something for everyone — drag and drop, scripting, or programming — VisionPro seamlessly supports all modes of development. VisionPro QuickBuild™ lets you configure acquisition, select and optimize vision tools, and make pass/fail decisions ... all without programming.



Total Hardware Independence

Now you can get the world's top vision software — no matter which camera, frame grabber, or direct-connect digital standard you use.

Support for all image capture needs

Broad Camera Support

VisionPro captures images from hundreds of industrial cameras, covering the complete range of video formats and acquisition requirements. Strategic Cognex relationships with major camera suppliers enable early support of new cameras and technology.

VisionPro provides open camera support, as well as configuration and diagnostic tools. This enables customers to configure, analyze, and modify cameras for numerous acquisition platforms.



Acquisition Independence

VisionPro software provides pre-configured, tightly integrated acquisition from both Cognex hardware and direct-connect digital cameras. For images from any other source, such as microscopes or 3rd-party frame grabbers, VisionPro provides a flexible acquisition architecture. This allows customers and vision partners to develop custom interfaces for any programmable image source.

Direct-Connect Technology

FireWire and GigE Vision acquisition provide a broad range of digital cameras with attractive features and high performance. Direct-connect technology takes advantage of the latest PC architectures to provide reliable image acquisition without a traditional frame grabber.

Frame Grabber

Both Camera Link and analog frame grabbers can be used with VisionPro. This provides fail-safe image capture with image buffers, advanced error detection, and dedicated multi-channel hardware.

Try it...then Buy it

Try VisionPro ... Download the Free VisionPro 30-day Trial Software

Vision software is what made Cognex the world leader in machine vision. But don't take our word for it. Download the free trial software at www.cognex.com/software, and see for yourself how powerful vision tools can be!

Get Started with VisionPro

Once you've seen what VisionPro has to offer, get started with our low-cost VisionPro Starter Kit which includes:

- VisionPro software CD
- Two VisionPro development licenses, enabled with all VisionPro tools
- Quick Reference documentation
- One year of telephone support
- One year of new VisionPro software releases



Go to Production

When you're ready to deploy VisionPro on the factory floor, we offer production licenses at a range of price/performance levels. Then, simply select the software package that best suits the application. All packages include the QuickBuild interactive development environment, along with the .NET programming toolkit.

- **VisionPro Base** provides fundamental machine vision tools
- **VisionPro Plus** adds PatQuick geometric pattern matching, OCV, and ID tools
- **VisionPro Max** completes the suite, including PatMax and all VisionPro tools for ultimate flexibility

For complete pricing and accessory information, please contact your local Cognex Sales Engineer or go to www.cognex.com/contactus

Direct Support and Training from the World Leader

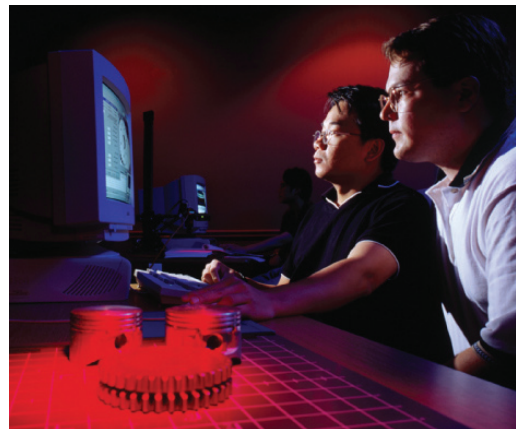
Machine vision is critical to your company's success ... rely on the experts.

Cognex is a global company with over 70 offices worldwide, providing local support and product training from our own team of highly-trained engineers.

Our experienced team of engineers provides first-class support. With a direct line to the VisionPro engineering team, Cognex Support Engineers investigate and resolve issues faster and more accurately than distribution channels.

A comprehensive online Support Center includes a Download Area for software releases and related material, a searchable Knowledge Database, and Case Submissions for customers to send issues directly to Cognex.

A range of educational courses, both classroom and online, are available to meet your specific needs. Please visit www.cognex.com/training for additional information.



COGNEX

Companies around the world rely on Cognex vision to optimize quality and drive down costs.

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