



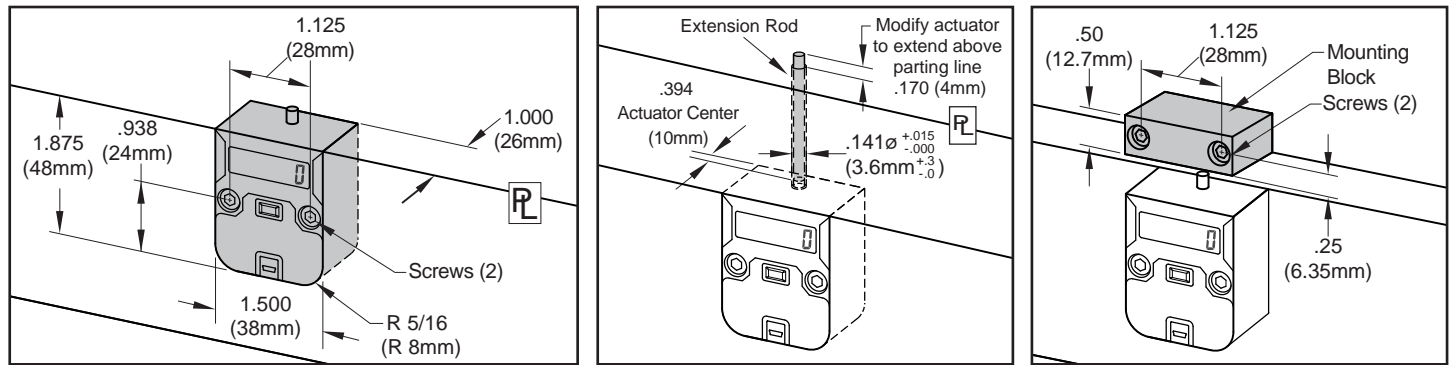
CVe MONITOR®

Progressive's new CVe Monitor v3 tracks tool activity, allowing users to view data on the display or from comprehensive reports using OnDemand or the new CVe Live System. Features include:

- 7-digit LCD display with a push button to move through the display modes.
- 16GB flash drive for file storage.
- Replaceable battery.
- Water resistant with an ingress protection rating of IP58.
- Maximum temperature: 190° F (90° C). For high temp tools, contact tech@procomps.com.
- Recommended mounting is on the stationary half of the mold.
- Dimensional compatibility with Progressive's mechanical CounterViews.
- Mini USB connectivity for data retrieval with cables sold separately.



MOUNTING OPTIONS



CATALOG NUMBER	DESCRIPTION
CVE-M	CVe Monitor v3 Mold Maker/Molder version including #8-32 x 1" SHCS (2) and M4 x 25mm SHCS (2)
CVE-O	CVe Monitor v3 OEM version including #8-32 x 1" SHCS (2) and M4 x 25mm SHCS (2)

CATALOG NUMBER	DESCRIPTION
CVE-INT	Internal Extension Rod (8"/200mm) including a hex key for CVe Monitor set screw removal.
CVE-EXT	External Mounting Block including #8-32 x 1" SHCS (2) and M4 x 25mm SHCS (2)

OEM-specific CVe Monitors are available. Contact Progressive for more information.

How to Order:

- For installation below parting line (ie. rails as shown in the center graphic above), order (1) CVE-M and (1) CVE-INT.
- For installation outside of the mold (right graphic), order (1) CVE-M and (1) CVE-EXT.

ON-MOLD DISPLAY MODES

Each device is provided at -25 cycles to allow for mold set up and initialization of the CVe Monitor. Once it reaches zero (0), all timers and data will reset on the monitor. During production, users can press the button on the front of the monitor and review the following information on the display:

Cycle Count

Total cycles for the life of the mold is presented on the main screen.



Efficiency Percentage

The percentage of time that the mold has been actively cycling vs being idle.



Cycle Time

Since the first production cycle, cycle time for the life of the mold.



Efficiency Percentage-Recent

The percentage of time the mold has been active in the past 500 cycles.



Cycle Time-Recent

Cycle time for the past 500 cycles is shown in seconds.



Cycle Count Reset

Press and hold button to reset separate counter to 0 for interim monitoring of cycles.



Mold Temperature

View current temperature experienced by the monitor (°C) by pressing button twice.



Flash Drive

Utilize the 16GB flash drive by connecting the CVe to a PC/Tablet with an industry-standard mini USB cable, sold on the next page.



CVe MONITOR®

ON DEMAND ALERT MODES

Once data is initialized using the complimentary OnDemand software (from www.CVeMonitor.com) users can choose to be alerted to the following sets of conditions for the CVe Monitor.

Preventive Maintenance

During initialization, Preventive Maintenance (PM) checkpoints are entered and saved onto the CVe Monitor. If a PM checkpoint is exceeded, the CVe Monitor enters the PM alert mode and displays both a wrench icon and PM Due as shown at right.



When a PM is performed and entered via OnDemand or by the in-mold actuation/button push combination, the next checkpoint for the PM will be written. If no PM is performed, the CVe Monitor will remain in PM alert mode until the user performs all PMs whose thresholds have been exceeded.

Cycle Time

During initialization, the target cycle time can be written to the monitor using OnDemand. Any variation greater than 2% from the target will enter the alert mode and display the clock icon as shown at right. When the cycle time returns to within 2% of the target, the alert is removed.



Efficiency

During initialization, the target efficiency can be written to the monitor using OnDemand. Any variation greater than 2% from the target will enter the alert mode and display the percentage (%) icon as shown at right. When the efficiency returns to within 2% of the target, the alert is removed.



Low Battery

The CVe Monitor has a battery life of approximately 4 years in typical molding environments where temperatures are controlled. When the battery reaches a specified level, the display will show a battery icon as shown at right. This is the indication to replace the battery, which can be ordered by contacting Customer Service.



RETROFITTING

Users can view additional data by double-clicking the button on the monitor:

Retrofit CVe for CounterView Tools

During initialization, molders can start the cycle count with the tool's actual cycle count from an existing CounterView or known cycles from maintenance records. Once entered, the user can see the total cycles for the tool, which includes the count of the cycles from the counter and those run with the CVe Monitor.



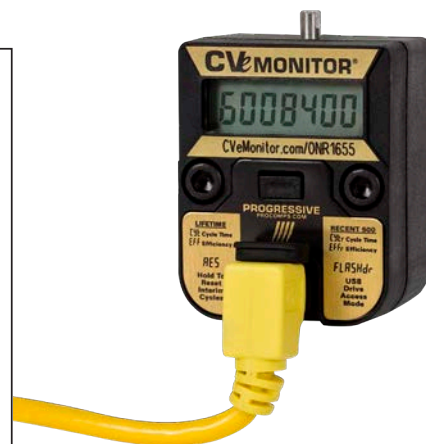
In the graphic at right, the tool had 1,000,000 cycles on it originally, but ran 507,288 after the CVe Monitor was installed.



CABLES AND CONNECTIVITY

OnDemand Activity Log [Software Version 3.1.0/2.6.1/3.1.9]												
CVe Initialize Date	November 23, 2017	December 17, 2017										
Device ID	MXK1234	MXK1234										
Tool ID	8565B	8565B										
Part ID	Blower Housing	Blower Housing										
Program Name	ABTS7	ABTS7										
Customer	Mocha	Mocha										
Target Efficiency %	N/A	94%										
Target Cycle Time	N/A	7.5										
Initial PM Point	50000	50000										
Target PM Interval	100000	100000										
Cycles Prior to CVe Installation*	1000000	1000000										
DEM ID	N/A	ABT1										
ASSET ID	N/A	0356-5686										
Reason for connecting CVe Monitor												
Date/Time	Battery	Cycles	OD User	Conn. By	Company	Destination	REV	PM	REP	CHG	RE	Notes
October 4, 2018	OK	507,288	INJECT1	Blake Fitz	Injection Tech	Crimsion@crimsion.com	N	N	Y	N	N/A	Replaced damaged core pin in cavity 4
October 4, 2018	OK	506,524	INJECT1	Blake Fitz	Injection Tech	Crimsion@crimsion.com	N	N	Y	N/A	Data Full	
September 19, 2018	OK	491,274	INJECT1	Blake Fitz	Injection Tech	Crimsion@crimsion.com	N	N	Y	N/A		Pulled from production for mold operational issues. It is being sent for evaluation and rework
September 15, 2018	OK	482,567	MOLDH01	Chuck Louise	Mold House	Crimsion@crimsion.com	N	Y	N	N/A	Full PM	Cavity #2 was shutoff
June 28, 2018	OK	364,001	MOLDH01	Chuck Louise	Mold House	Crimsion@crimsion.com	N	Y	N	N/A	Full PM	
May 31, 2018	OK	314,856	MOLDH01	Chuck Louise	Mold House	Crimsion@crimsion.com	N	Y	N	N/A	Full PM	
April 28, 2018	OK	260,002	MOLDH01	Chuck Louise	Mold House	Crimsion@crimsion.com	N	Y	N	N/A	Full PM	Cavity #2 was shutoff
April 4, 2018	OK	211,563	MOLDH01	Chuck Louise	Mold House	Crimsion@crimsion.com	N	Y	N	N/A	Full PM	
March 22, 2018	OK	193,268	INJECT1	Blake Fitz	Injection Tech	Crimsion@crimsion.com	N	Y	N	N/A		3 cavities are shutdown. Pulled for evaluation and repair
February 7, 2018	OK	106,235	MOLDH01	Chuck Louise	Mold House	Crimsion@crimsion.com	N	Y	N	N/A	Full PM	
January 10, 2018	OK	58,725	MOLDH01	Chuck Louise	Mold House	Crimsion@crimsion.com	N	Y	N	N/A	Full PM	
December 17, 2017	OK	9,265	MOLDH01	Chuck Louise	Mold House	Crimsion@crimsion.com	N	Y	N	N/A		Initial mold inspection. There is no wear or damage to mold following initial run. Targets are set. Mold is released for production
November 23, 2017	OK	0	MOLDH01	Chuck Louise	Mold House	Crimsion@crimsion.com	N	N	Y	N/A		Mold is completed and released for sampling

Above: OnDemand allows users to view data and keep a record of reports run, outlining the reason for the report generation including PM, General Queries, Revision Changes, and Repairs. Notes can be included and OnDemand records the person generating the document for accurate history.



CATALOG NUMBER	DESCRIPTION
CVEL-DATA9	USB 2.0 to Type B Mini 9 Foot Long, Right-Angle Cable
CVe-REPLKIT	Battery Replacement Kit for the CVe Monitor.



CVE ONDEMAND®

Drive comprehensive reporting using data from the CVE Monitor when running OnDemand software, available at no charge from CVEMonitor.com. OnDemand software enables the user to generate Adobe Acrobat (.pdf), Excel (.xls), and encrypted (.enc) reports to share with customers and other colleagues with these metrics:

- A: When the CVE is initialized, users can identify their tool and align with the device serial number which is tracked on reports utilizing different field options.
- B: The target cycle times and efficiency percentages can be entered. OnDemand also supports ten languages: English, German, Mandarin, Spanish, French, Italian, Japanese, Korean, Portuguese and Thai. Reports, generated in the chosen language, compare actual values to targets, providing a quick view of any variances.
- C: Statistics are provided to show quantity of total cycles and inactivity for the life of the tool.
- D: Weekly sessions are presented graphically to show production efficiency levels.
- E: Weekly cycle time and maximum mold temperature tracking identifies tools with variances over the past year.
- F: The productivity portion of the report takes the target preventive maintenance (PM) points set by the molder and compares them to actual maintenance pulls.
- G: The Maintenance Tab has nine user-definable PM points. In addition, customers can perform maintenance without having their laptop or computer near the CVE Monitor. By holding down the button, cycling the monitor once, and releasing the button, an event will be recorded. This is then added to the OnDemand reports when run.

Screenshot 1: Tool Configuration

Customer: Crimson Fan, OEM ID: ABT1
 Program Name: Mango, Part ID: Blower Housing ABT5
 Asset ID: 235-5659-LN, Tool ID: 8565B

Screenshot 2: Target Data

Target Efficiency (%): 94
 Target Cycle Time: 7.5
 Initial PM Point: 10000
 Target PM Interval: 50000

Screenshot 3: Maintenance Targets

Title	Interval	Last Performed	Next Due
In-Press Maintenance	50,000	3,998,055	3,948,055
B-Side Tear-down	200,000	4,047,082	4,247,082
A-Side Tear-down	400,000	4,047,082	4,447,082
Cooling System Maintenance	500,000	4,003,950	4,503,950
Tool Refurbishment	10,000,000	NA	10,000,000
Initial New Tool Maintenance	5,000	4,873	NA

Device ID: MKX1234 | Program: Green | OEM ID: ABT1 | Asset ID: 354-1856 | Part ID: Blower Housing ABT57

94% Target Efficiency (%) | 7.5 Target Cycle Time | 100% Since Last Report Efficiency % | 94% Last Full Week Efficiency % | 92% Life-To-Date Efficiency %

7.5 Target Cycle Time | 7.2 Since Last Report Cycle Time | 7.4 Last Full Week Cycle Time | 8.5 Life-To-Date Cycle Time

Legend: Within Target (2%), Between (29.0%), Outside Target (9%)

Life-To-Date Cycles: 507,288 | Cycles since last: PM 24,721 | Repair 0 | Part Revision Never | General Query 764 | Report 764

Efficiency (Hours): Line graph showing Active Time, Idle Time, and Sleep Time over a period of 13 weeks.

Cycle Time (Seconds): Line graph showing Cycle Time (Active and Total) over a period of 13 weeks.

Productivity (Cycles): Bar chart showing Cycles-Target vs Cycles-Actual over a period of 13 weeks.

Device ID: MQM4767 | Program Name: Mocha | OEM ID: ABT1 | Asset ID: 354-1856 | Part ID: Blower Housing ABT59

Current Cycle Count: 63,467 | Cycles until In-Press Maintenance: 1,000 | Last In-Press Maintenance: 63,467 | Date of last In-Press Maintenance: 9/13/2019 9:44

Previous 100 In-Press Maintenance Events: Bar chart showing Maintenance On Time vs Date and Time Of Maintenance.

Historical In-Press Maintenance Summary

Trailing 5 Weeks	Trailing 5 weeks Overdue Maintenance	Life To Date	Life to Date Overdue Maintenance
On-Time PM: 68 (90.7%)	On-Time Maintenance: 68 (90.7%)	On-Time PM: 68 (90.7%)	On-Time Maintenance: 68 (90.7%)
Overdue PM (<10%): 2 (2.7%)	Overdue Maintenance (<10%): 2 (2.7%)	Overdue PM (<10%): 2 (2.7%)	Overdue Maintenance (<10%): 2 (2.7%)
Overdue PM (10-20%): 5 (7.6%)	Overdue Maintenance (10-20%): 5 (7.6%)	Overdue PM (10-20%): 5 (7.6%)	Overdue Maintenance (10-20%): 5 (7.6%)
Total Maintenance: 75 (100.0%)	Total Maintenance: 75 (100.0%)	Total Maintenance: 75 (100.0%)	Total Maintenance: 75 (100.0%)

CVe LIVE®

For real-time monitoring of tools, AST provides hardware and website access for OEMs and molders utilizing the CVe Monitors.

Features:

- Utilizes FCC and CE certified internal components.
- Press Modules act as a node on a network, reducing the distance required in the plant for data submission to the Gateway.
- Radio Frequency (RF) antennas are interference-free in typical molding environments.
- Designated website for data collection, reporting, and file storage.

CVe Live is developed and supported by AST Technology, sister company of Progressive Components.



HARDWARE



Press Module

- 1 per press connects to the CVe Monitor via cables
- Power supply (US/International) included
- Sends data to the Gateway continuously
- Serves as a node on the network for tools running with a CVe Monitor
- Includes (1) CVEL-DATA9 Cable

Gateway

- 1 per facility collects data from all press modules installed via RF transmissions
- Accesses the internet via cellular technology
- Sends data to the customer's web portal every 15 minutes



REMOTE VALIDATION

Using the CVe Live website interface, the Remote Validation Kit eliminates the need to travel to mold trials and qualifications to gather information. Real-time data is available by connecting the portable system to the CVe Monitor on the mold.

- Can be easily moved between sites as qualifications dictate.
- Reduces or eliminates travel to mold qualifications.
- Users can upload and share files or documents including mold validation data, part drawings, process sheets, and quality inspection reports with global access.
- Monitor critical KPIs without being onsite.
- Generate real-time graphs and reports.
- Includes all hardware, antennas, and cables in a sturdy case. CVe Monitors and Tablets are sold separately.

Contact Customer Service for a CVe Live or Remote Validation Kit quotation.





CVe Live Website Features:

- Secure access for OEMs and molders.
- The Tool Dashboard gives users information at either the enterprise or plant level and allows for drill down into specifics on each tool.
- A Press Dashboard provides an overview of the status of every press and the tools that are running within them.
- Users can mark favorites and also save searches for monitoring specific programs or suppliers.
- Graphs include cycle times, efficiencies, cavitation, production loss, and preventive maintenance.
- Plant exceptions screen shows any out-of-tolerance conditions.
- PM Function allows for user-defined PM intervals. Users can create or customize PM forms and checklists for a specific maintenance program.
- Work Order function allows users to create work orders for molds, machines, or other assets.
- GPS tracking allows for users to view the location of all tools by scanning a QR code using a GPS-enabled device. This feature is ideal for managers that are tracking multiple facilities or global operations. (Asset Tags sold separately on page F-7.)
- Administration and security levels are controlled by the user, and access can be customized for various roles.
- The file cabinet system is designed to store reports, tool and part drawings, and set-up sheets and can be utilized by customers with the CVe Live access.
- Automated Data Exporter allows users to schedule data exports. Data will automatically download to a specified location, in Excel or JSON format, where it can then be imported to other in use systems.
- OEE is calculated for the both the press and the tool. This allows tooling and manufacturing operations to have separate OEE calculations to distinguish between equipment and tooling issues.
- User-defined fields make customizing data simple for Tools, Presses, and Assets.

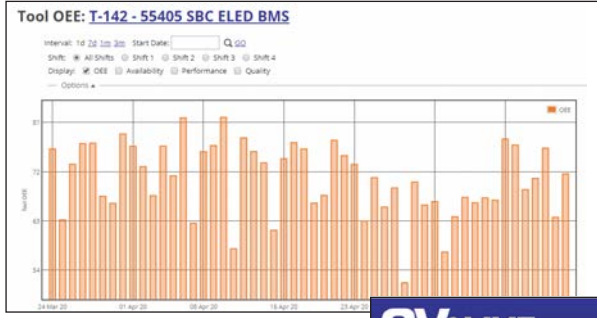
The screenshot shows the CVe LIVE dashboard for PPX Manufacturing - Tools. It features several key sections:

- Alerts:** A list of recent alerts with details such as tool ID, date, and description (e.g., "Efficiency lower than Target by 10% or more").
- Tool Overview:** A pie chart showing the status of tools: Idle (green), Running (red), and Down (yellow).
- Preventive Maintenance Status:** A pie chart showing maintenance status: Upcoming PM (yellow), Overdue PM (red), and On Schedule (green).
- Cycle Time Status:** A pie chart showing cycle time performance: Outside U.L1/L1 (yellow), Outside U.L2/L2 (red), and Within Tolerance (green).
- OEE Status:** A pie chart showing Overall Equipment Effectiveness (OEE) performance: Outside U.L1/L1 (yellow), Outside U.L2/L2 (red), and Within Tolerance (green).
- Favorite Tools:** A table listing favorite tools with columns for Tool ID, Part ID, Program, Customer, Press, Running, Cycle Time, Efficiency, OEE, and PM Status.
- Activity:** A log of recent activities with timestamps and descriptions.

The screenshot displays the detailed view for tool ID #OPQ7500. It includes a navigation bar with buttons for Reject, Downtime, Work Order, Parts Consumed, Maintenance, and Cavitation. The main content area is divided into two sections:

- Tool Information:** Fields for Tool Owner (Sontoya Mfg), OEM ID (SONT1), Asset ID (A-7890-Y675), Tool Builder (Mold House), Location (PPX Manufacturing), and Last Connect (2019-09-16 14:06:23).
- Operational Parameters:** Fields for Engine (Carol Knowles), Process (Hot Runner), Temperature (66°C), Firmware (3.4.0.0), Rejects Today (0), Downtime Today (00:00), Target Efficiency (90.0), Target Cycle Time (7.2), Idle Threshold (201s), and Sleep Threshold (360m).

Below the parameters is a world map with red location pins indicating the tool's current location in the United States and other global locations.



This section shows the 'Reports' and 'File Cabinet' areas of the CVe LIVE interface. The Reports section includes links for Tool Summary, Tool Connection History, and Historical PM. The File Cabinet section shows a storage usage indicator: 9.97 GB free of 10 GB.

The screenshot shows the 'Tools' table in the CVe LIVE interface. The table lists various tools with columns for Tool ID, Device ID, Current Count, Target Count, and various efficiency and cycle time metrics over different time periods (1 Week, 24 HR, 1 HR, 1 Week, 24 HR, 1 HR, Production, Production, Cycles, Next PM Name, Last PM, Last PM Date, Lifetime, Max Temp, Max Temp).

TOOL ID	DEVICE ID	CURRENT COUNT	TARGET COUNT	1 WEEK EFFICIENCY	24 HR EFFICIENCY	1 HR EFFICIENCY	1 WEEK CYCLE AVG	24 HR CYCLE AVG	1 HR CYCLE AVG	PRODUCTION BY SHIFT 1	PRODUCTION BY SHIFT 2	CYCLES PER MIN	NEXT PM NAME	LAST PM DATE	LIFETIME	MAX TEMP	MAX TEMP
T-142*	OPQ2500	1,151,808	90.0	95.0	95.0	100.0	16.2	16.2	16.8	72,464	82,928	95.087	Preventive Maintenance	23-SEP-19	26.00	26.00	
T-142*	OPQ5500	57,281	90.0	91.0	86.0	100.0	10.3	9.8	7.4	258	856	856	Level 1 Tool Maintenance	26-AUG-19	86.00	77.00	
T-328*	OPQ2500	42,910	90.0	99.0	99.0	100.0	166.3	165.8	165.4	262	258	8,016	Level 1 Tool Maintenance	19-SEP-19	41.00	27.00	
T-325*	OPQ2500	76,512	90.0	66.0	64.0	53.0	7.2	7.2	7.2	1,548	1,538	4,032	Level 1 Tool Maintenance	19-SEP-19	66.00	60.00	
T-326*	OPQ3500	138,991	90.0	98.0	98.0	100.0	54.5	54.9	53.8	29,552	29,192	18,418	Level 1 Tool Maintenance	19-SEP-19	86.00	86.00	