

# Visi-Trak<sup>®</sup>

SENSE, MONITOR, CONTROL

ЗЕНЗЕ, МОНИТОР, КОНТРОЛ

Defect prevention not just defect detection

# **AFFORDABLE PLANT WIDE MONITORING**

# Visi-Trak<sup>®</sup> 360<sup>°</sup>

Plant-Wide Process Management Network™

A single view of your entire operation.  
 Realtime and historical data from every  
 machine in your plant!



## REALTIME MONITORING & VISUALIZATION TERMINAL

Process, Production & Maintenance  
 Personnel get instant access to process  
 information from each machine

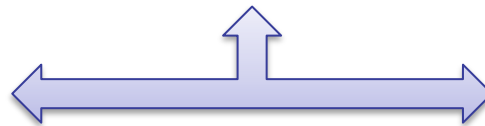
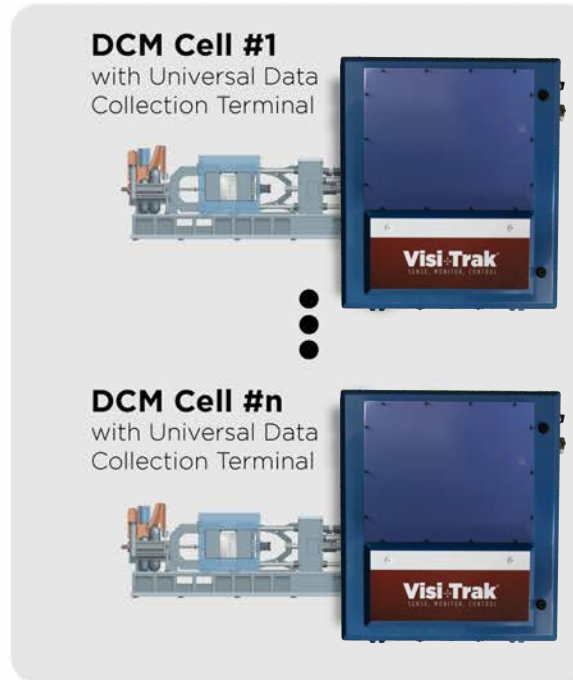


## PART TRACEABILITY

Automated Marking Systems



Unique ID  
 2D Data Matrix  
 or Pin Stamp



## NETWORK

From DCM to  
 Shop office,  
 Back Office or  
 Remote Locations



## QUALITY CONTROL DATA BACK-UPS

Automatic Quality Control  
 Backup of data on shift, day,  
 week, month and yearly basis



## PART INFO AND QUALITY CONTROL WORKSTATION

Q.A. and Plant Management



## REALTIME REMOTE WORKSTATIONS

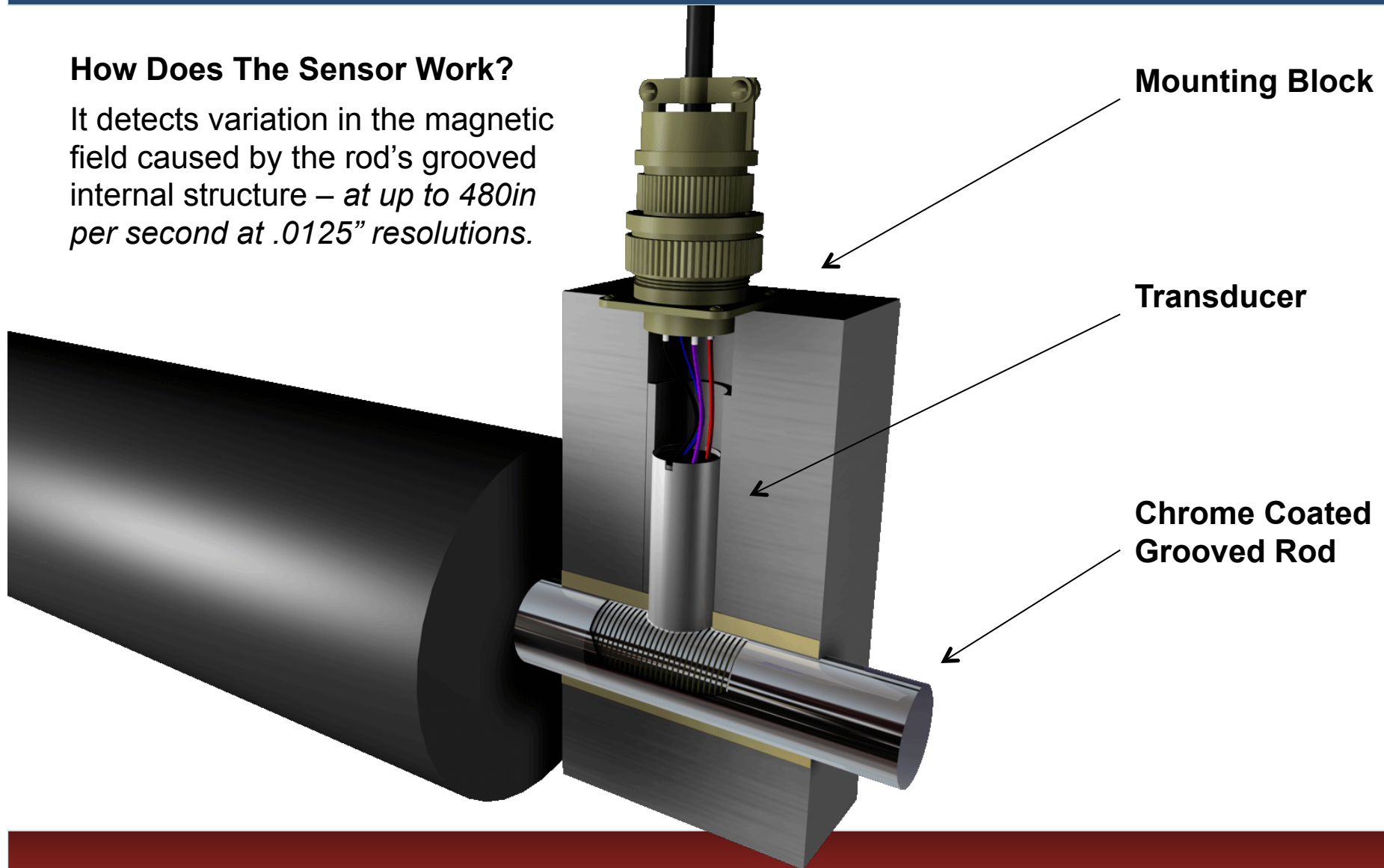
Plant Engineering and Management -  
 Complete Process Insight from the other  
 side of the plant or across the globe.

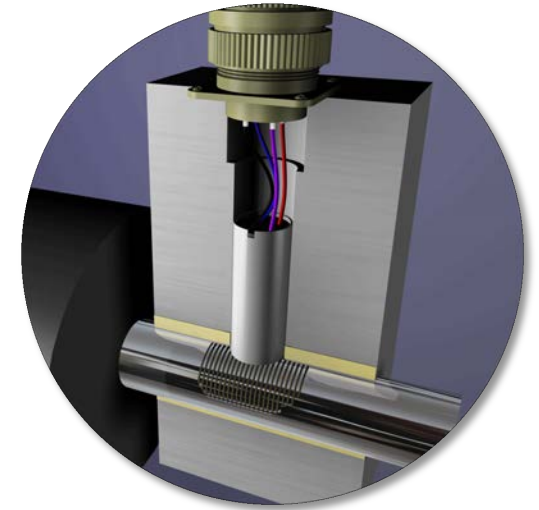
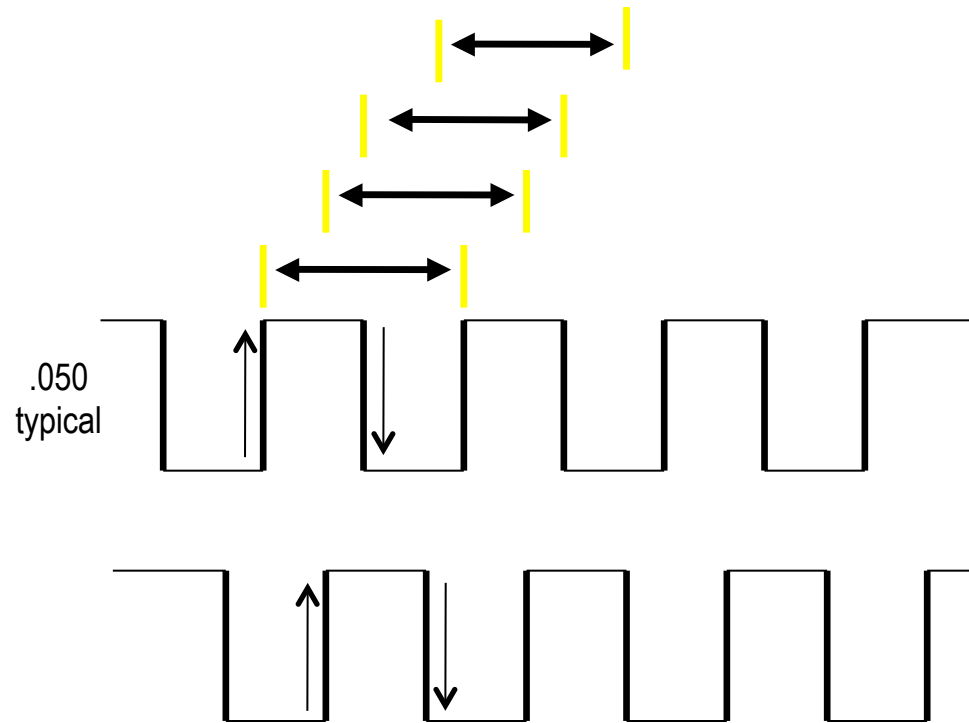
One management solution for all your die casting machines BÜHLER, FRECH, IDRA, ITALPRESSE, PRINCE, TOSHIBA, UBE and more...  
 Access uniform analytical tools for diagnosing problems and managing plantwide operations

# SENSORS

## How Does The Sensor Work?

It detects variation in the magnetic field caused by the rod's grooved internal structure – *at up to 480in per second at .0125" resolutions.*





**33 MHz Timer measures time interval of pulse**

$$\text{Velocity} = \frac{\text{Distance}}{\text{Time}} = \frac{.0125''}{X} = \text{Velocity}$$



## **TOUGH + RELIABLE**

**Design Simplicity**  
for inherent reliability.

**Extreme Accuracy**  
up to 480IPS/12MPS.

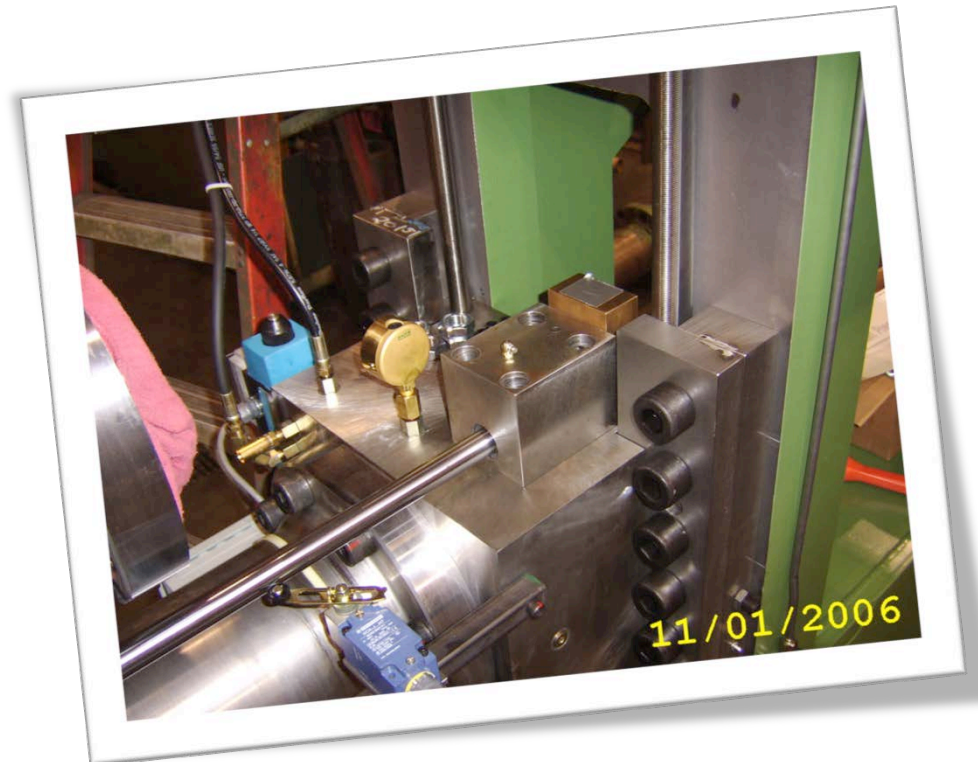
**Non-contact sensor**  
minimizes equipment wear.

**No calibration or alignment**  
means no set-up problems.

**Proven Performance**  
for over 25 years.

**Easy to install & operate**  
nearly maintenance free.







## Other Supported Encoders

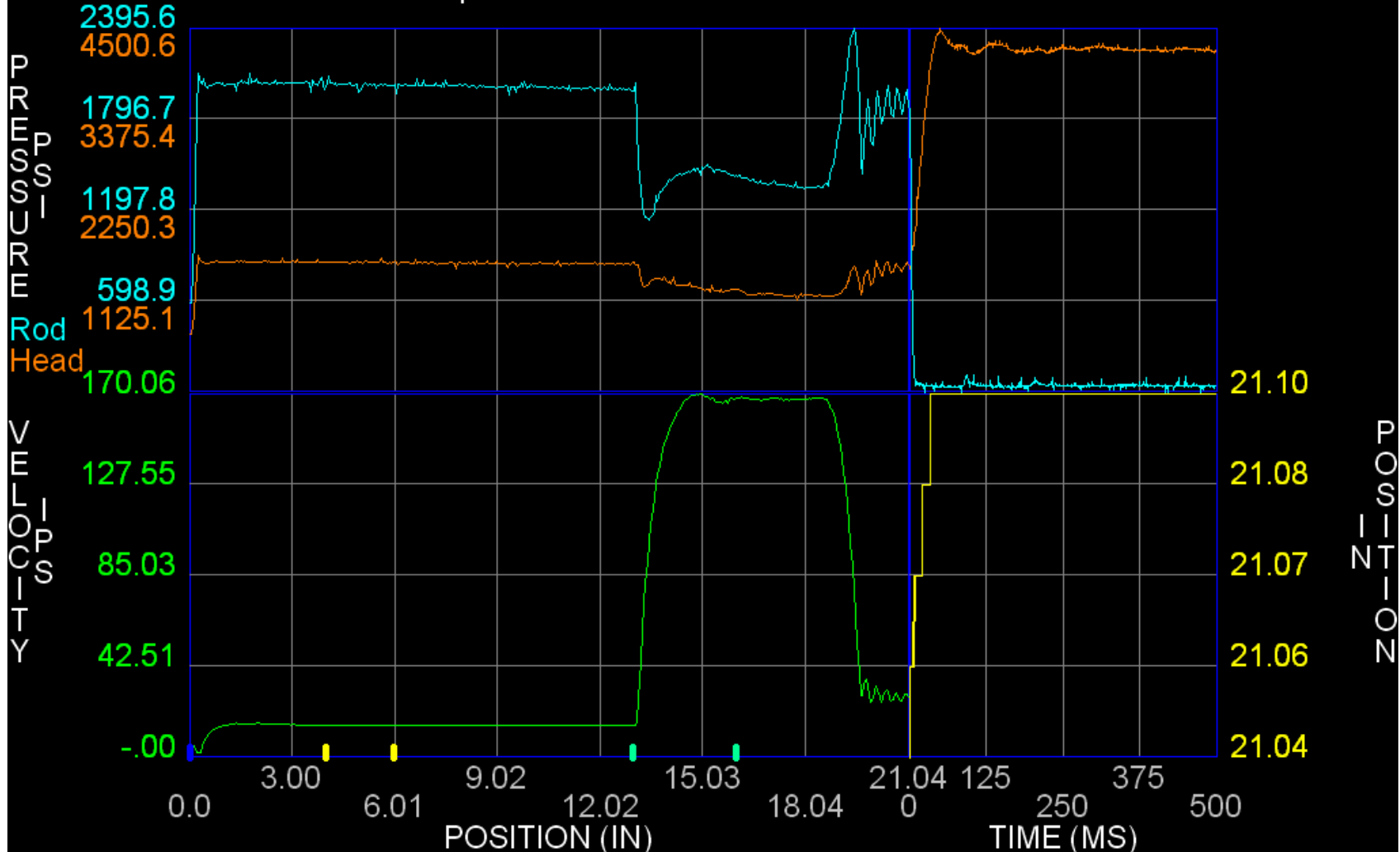
- **Bühler** – Linear Encoder
- **Prince** – Rotary Encoder
- **Frech** – Rotary Encoder & Linear Encoder
- **IDRA** – Magnetic Strip Encoder
- **ItalPresse** – Magnetic Strip Encoder
- **Toshiba** – Linear Encoder
- **UBE** – DDV Sensor & Linear Encoder
- ...more

Optimize the analysis of the dynamic shot event

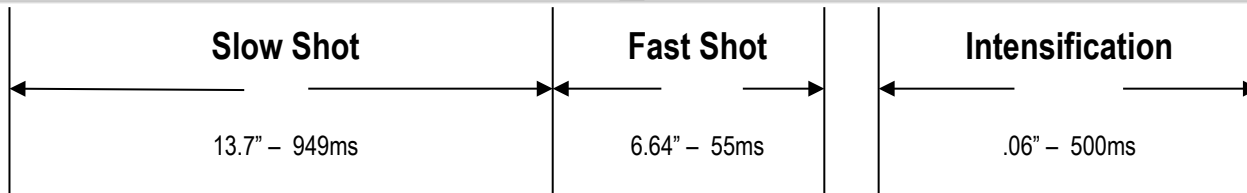
# **POSITION-BASED DATA COLLECTION**

Selected Shot

E20 : Testpart : SHOT 2022 : Thr 04/25/2002 13:37:08

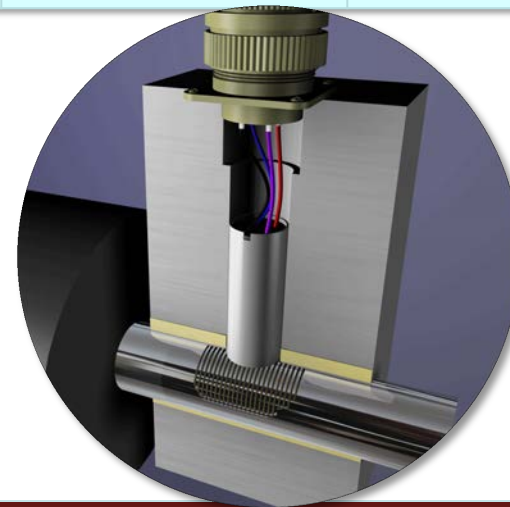
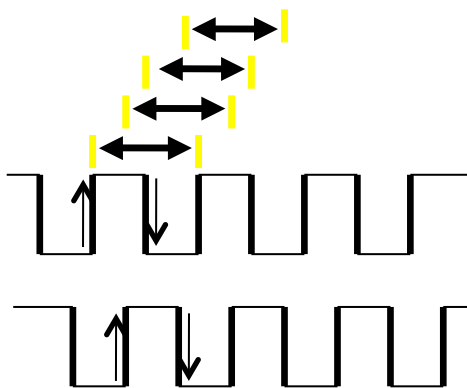


Parameter	Low Limit	High Limit	Value	Parameter	Low Limit	High Limit	Value
Cycle Time	0.0	0.0	33.816 SEC	Avg Fill Velocity	0.0	0.0	44.479 IPS
Calc Start Fast Shot	0.0	0.0	6.05 IN	Fill Time	0.0	0.0	221.45 MS
Sleeve Full Velocity	0.0	0.0	15.236 IPS	User Time Int Three	0.0	0.0	0.0 MS
Runner Full Velocity	0.0	0.0	15.198 IPS	Biscuit Size	0.0	0.0	819.17 IN



## Time, Position, Intensification Data Resolutions

	Displacement	Time (milliseconds)	Time Based Samples (3ms)	Position Based Samples
Slow Shot (Fill)	13.00"	949	316	1040
Fast Shot	6.64"	55	18	532
Intensification	.06"	500	167	500
<b>Total</b>	<b>19.70"</b>	<b>1504</b>	<b>501</b>	<b>2072</b>



## Positions Based vs. Time Based

**Visi-Trak**<sup>®</sup>  
SENSE, MONITOR, CONTROL

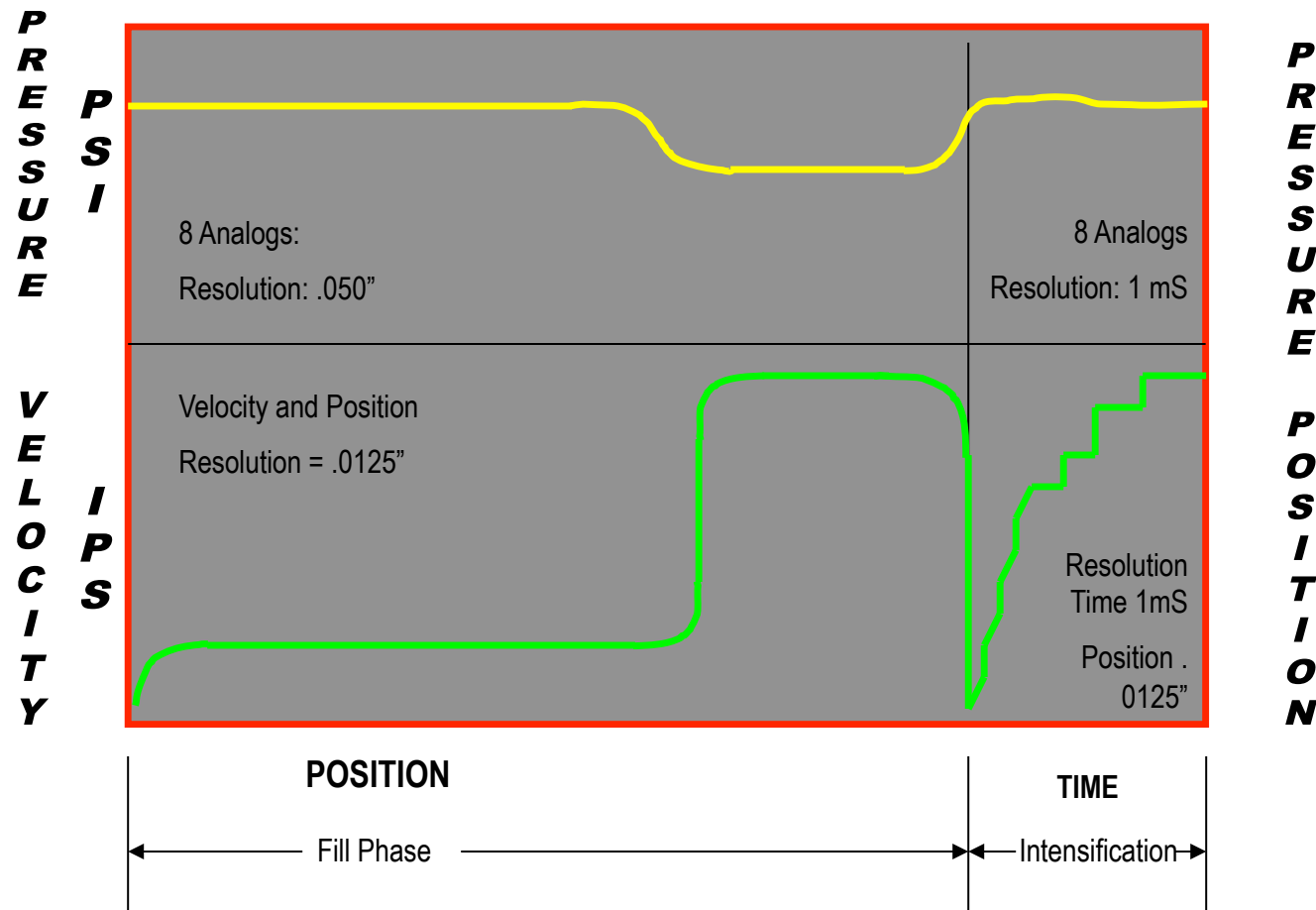
**Position Based Sampling:**  
The faster you move the faster we sample



**Time Based Sampling:**  
The faster you move the the more you miss

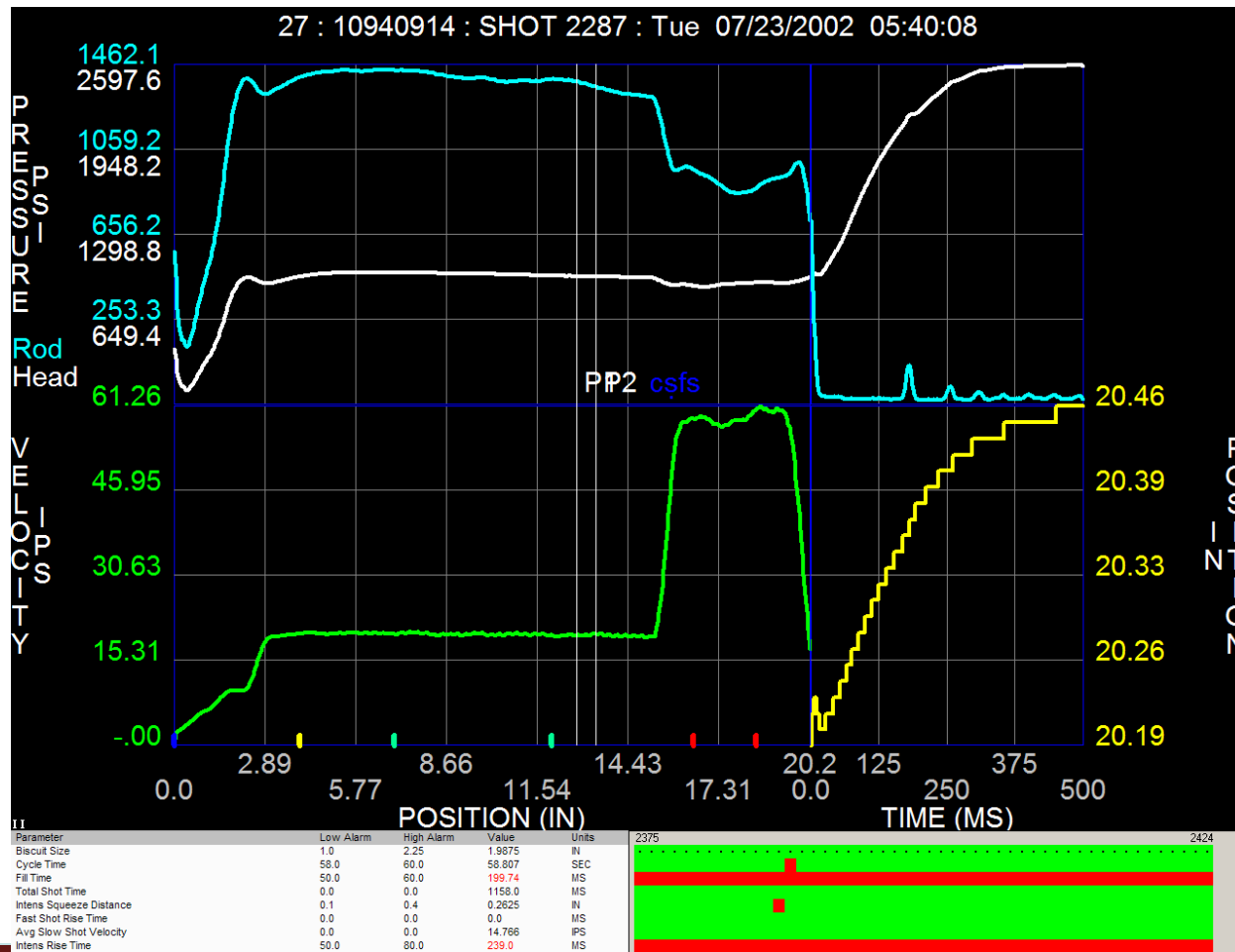
**Use the right method at the right time!**

## Graphical Shot Profile Resolution

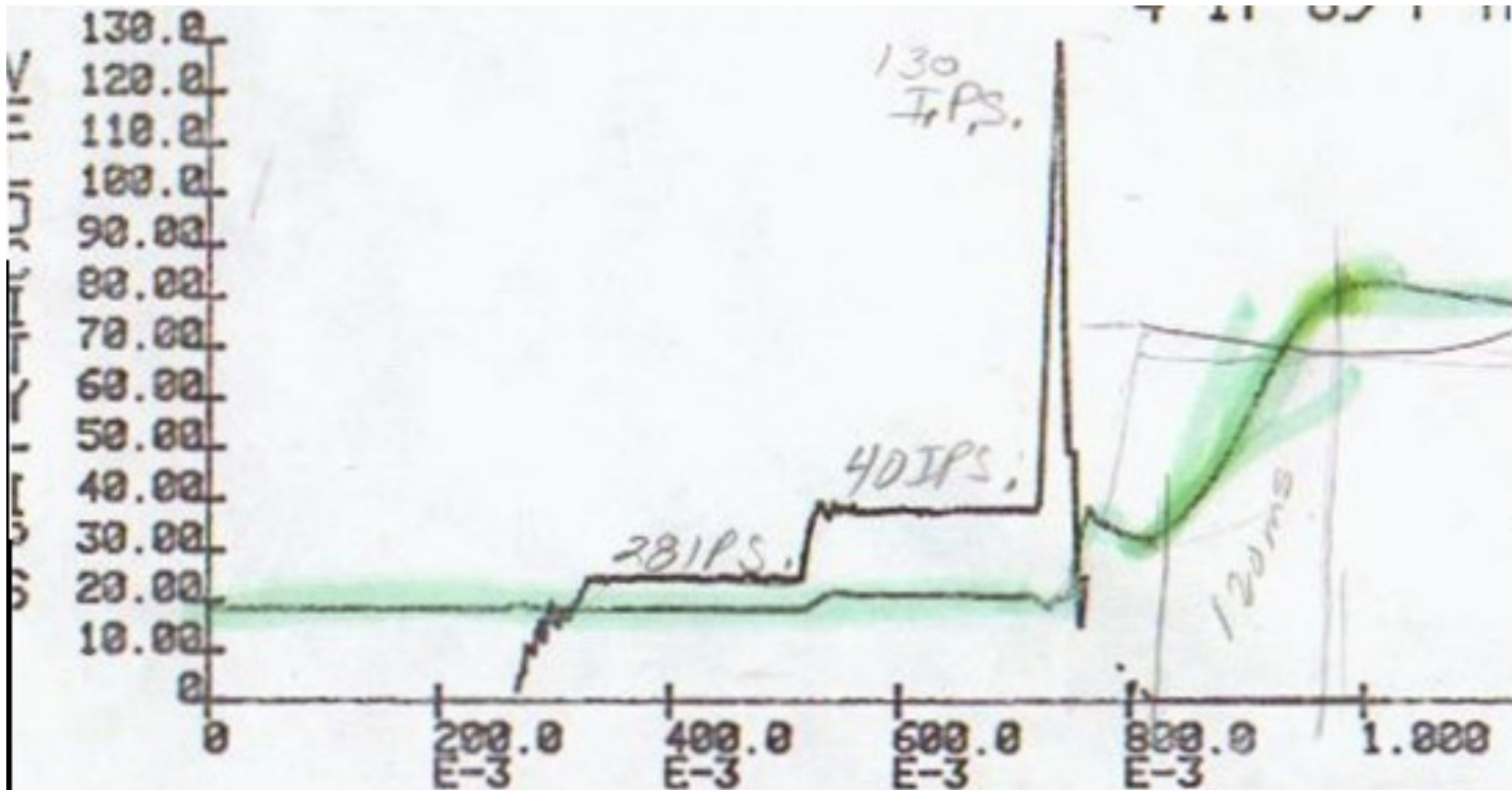




## Position Based Plot



## Time Based Plot



## Positions Based vs. Time Based

**Visi-Trak**<sup>®</sup>  
SENSE, MONITOR, CONTROL

**Position Based Sampling:**  
The faster you move the faster we sample



**Time Based Sampling:**  
The faster you move the the more you miss

**If you use the wrong method,  
what are you missing?**

**Visi-Trak**<sup>®</sup>  
SENSE, MONITOR, CONTROL

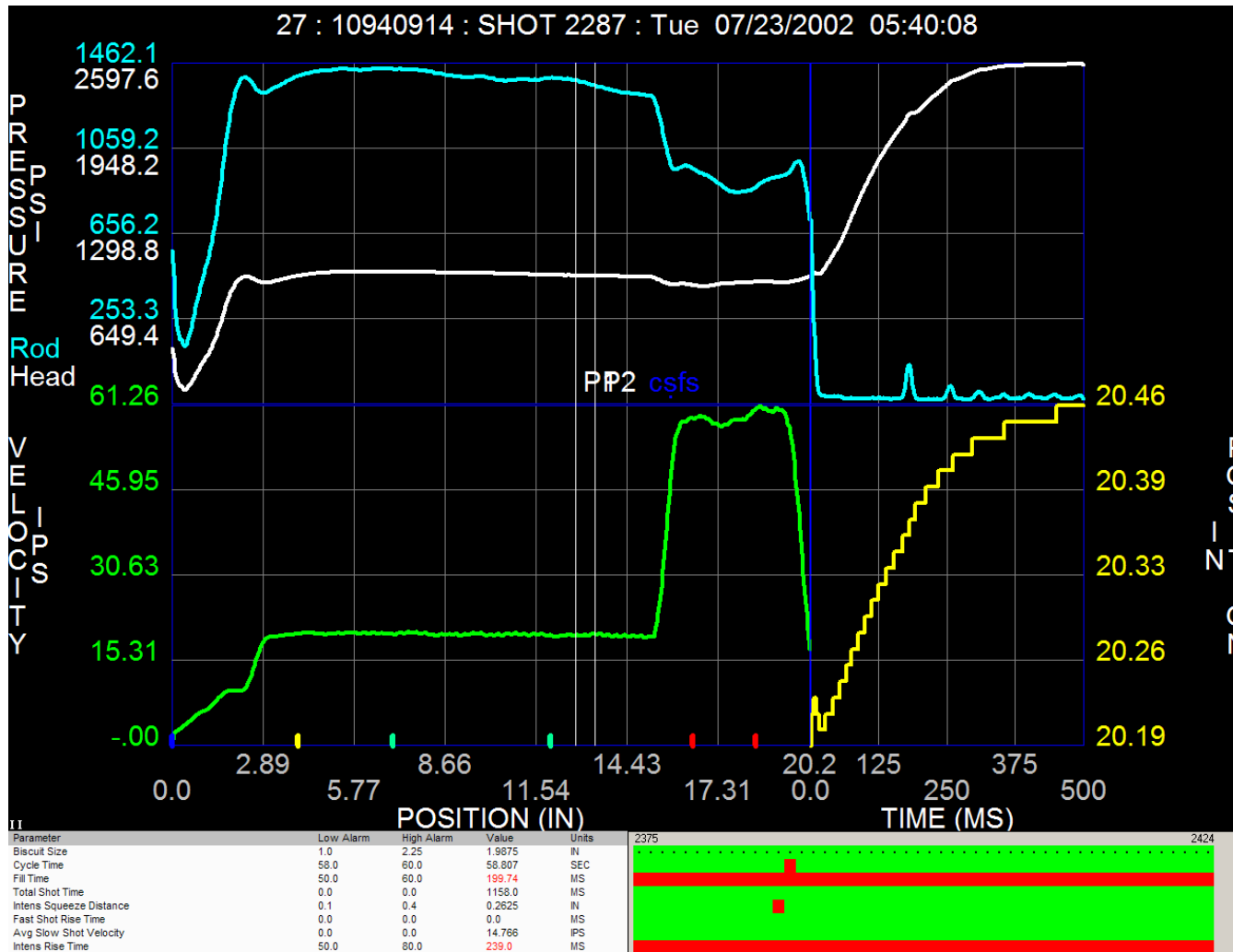
**True-Trak** 20/20<sup>™</sup>  
DIE CASTING PROCESS MONITORING

“Our quality assurance philosophy is based on **defect prevention, not detection**... the True-Trak20/20 process monitoring system is the cornerstone of this process control system.”

**JOE COMSTOCK**

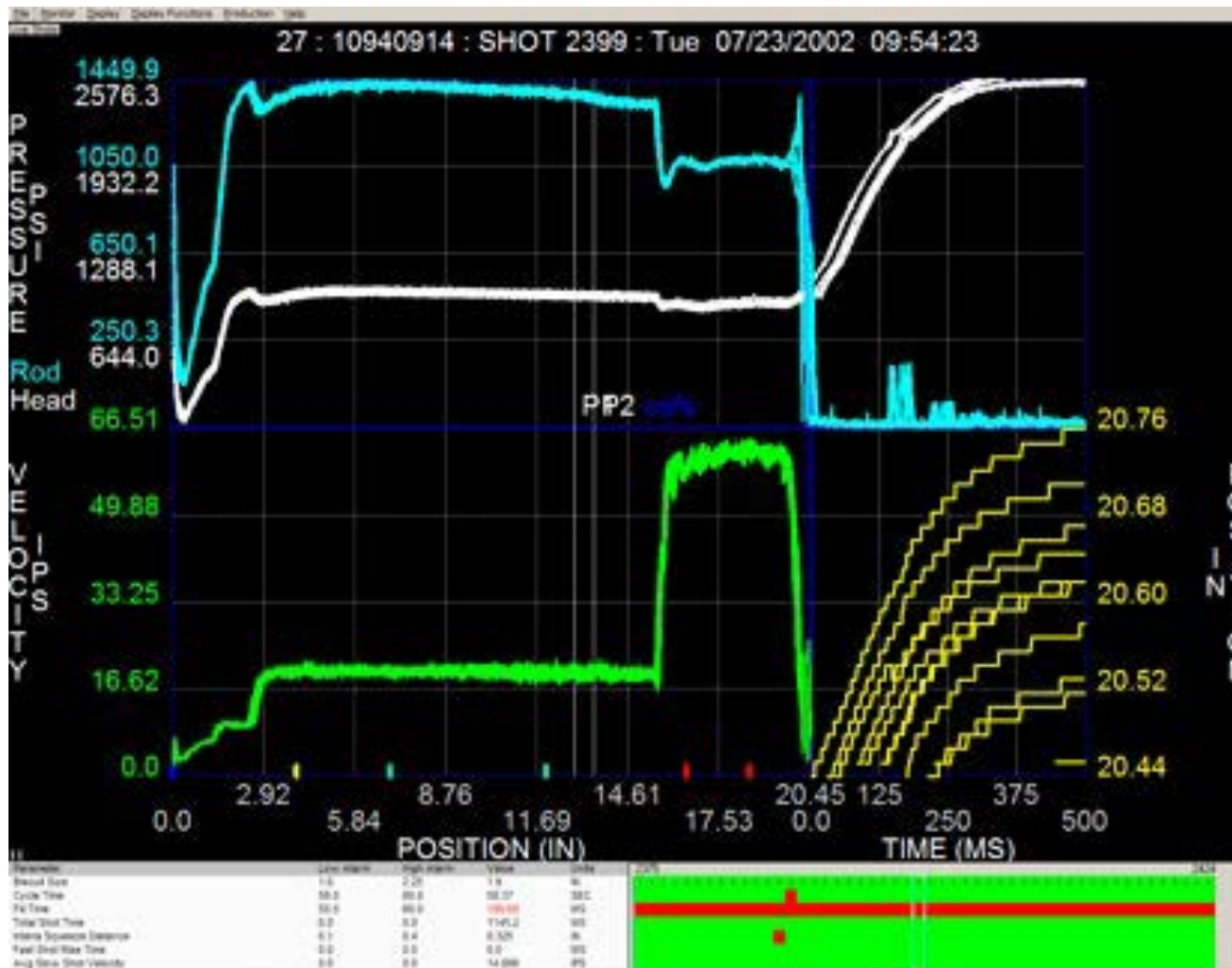
*Process Control Manager  
PHB Die Casting, Fairview, Pa.*

# Position/Time Based Plot with Online Trend Chart

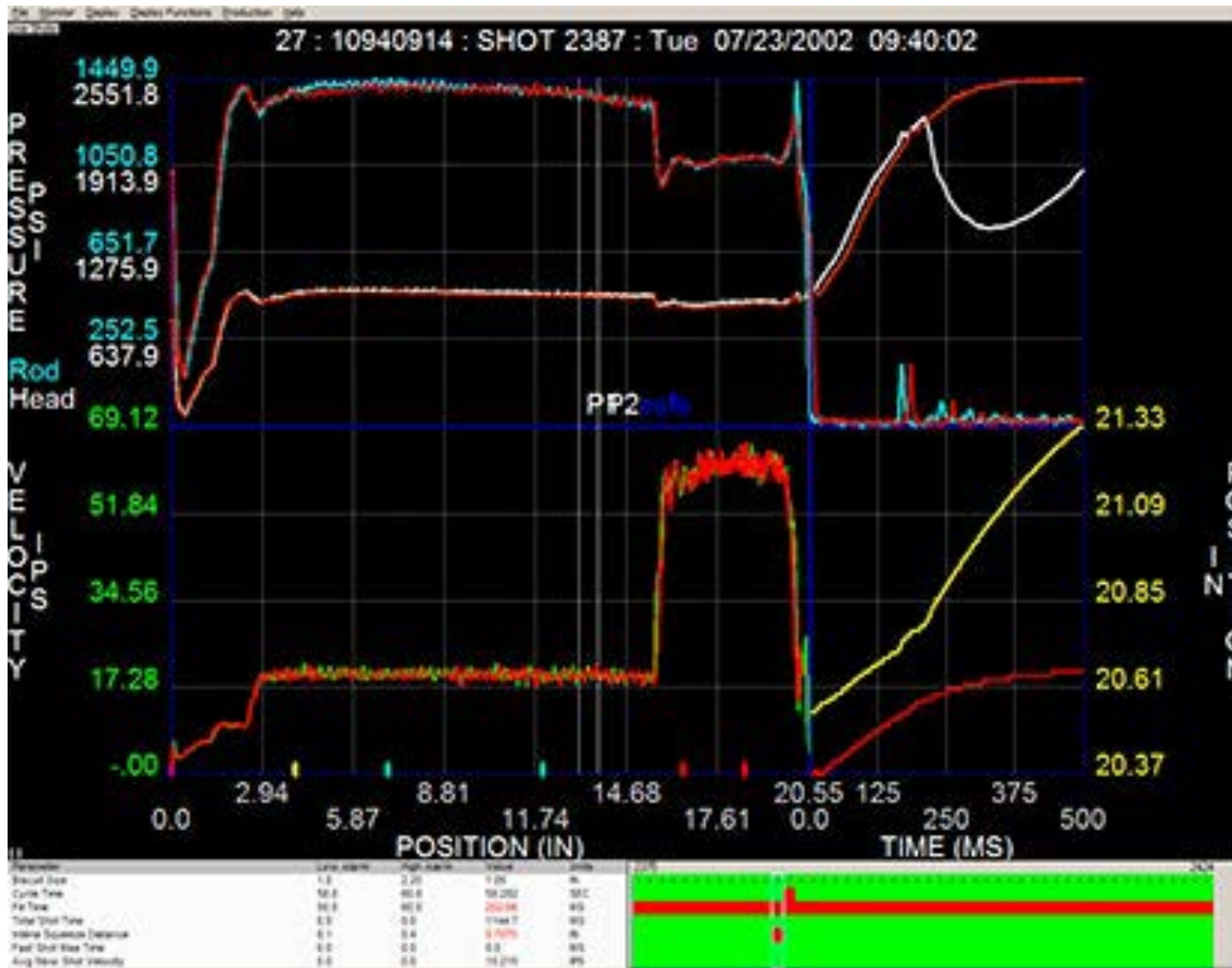




# Continuous Overlay



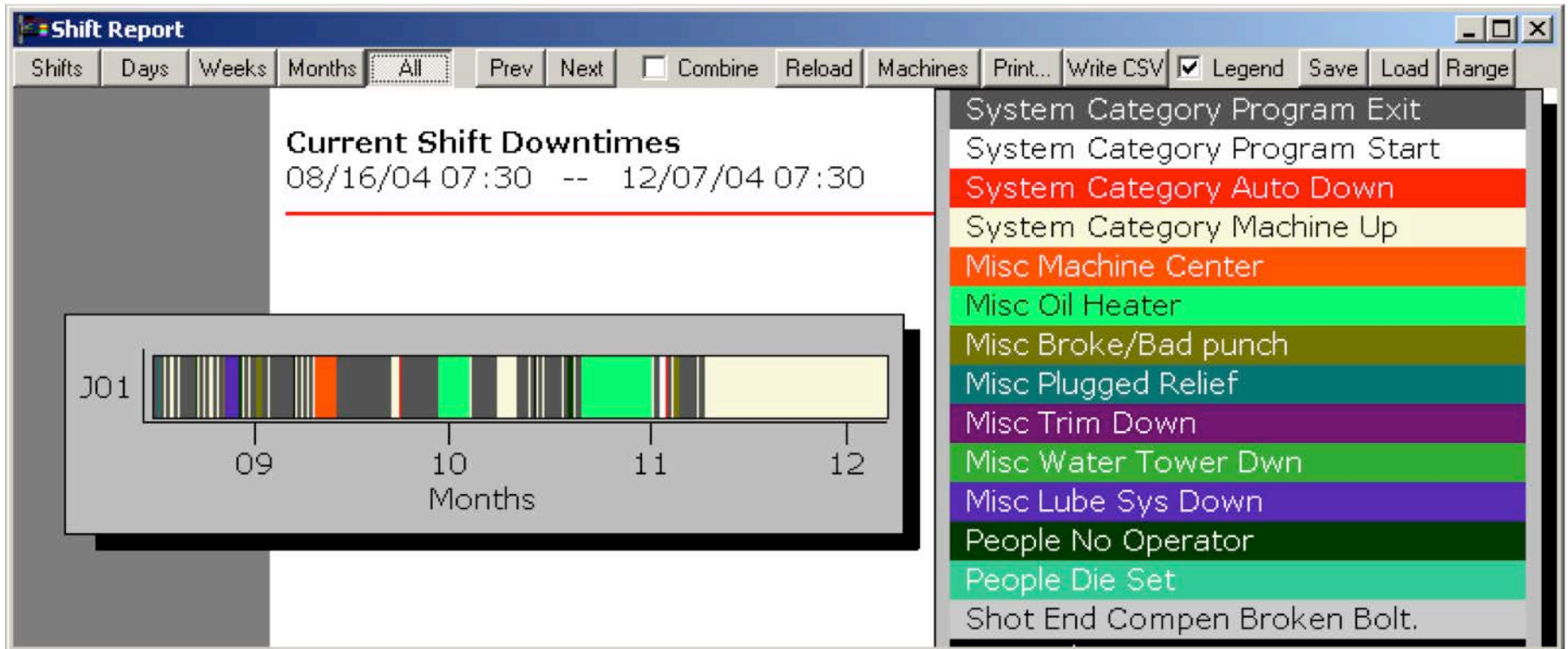
# Master Shot Profile Overlay



# Continuous Trend Charts



# Monitor Downtime

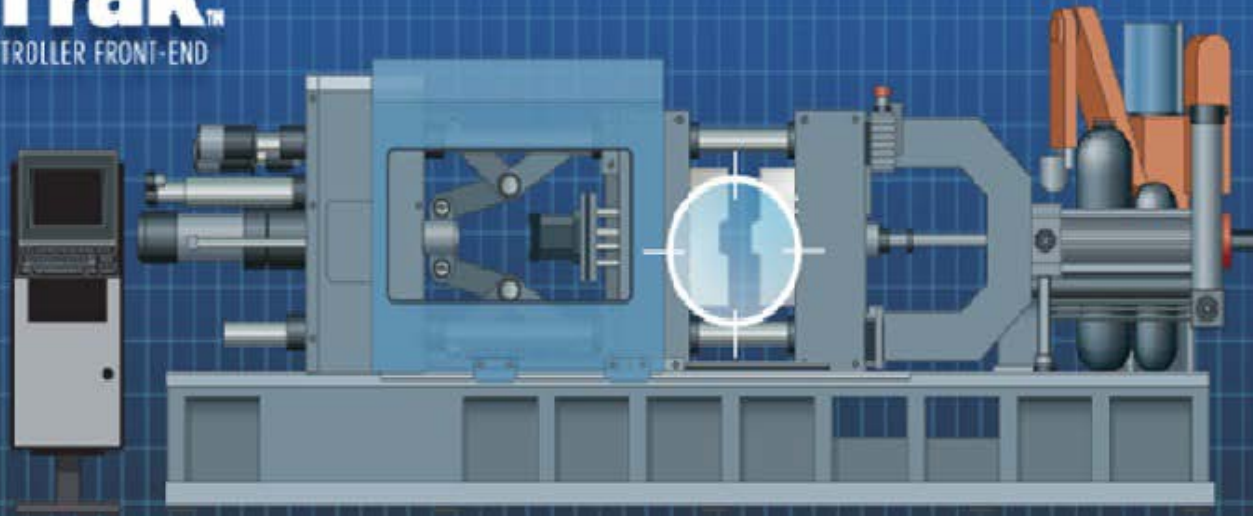




# DIECASTING MACHINE HMI

## Total-Trak™

PROGRAMMABLE LOGIC CONTROLLER FRONT-END



DIE

009X / MOTOR SUPPORT 9x

DGK900

USER

009 / Jack

A



RUN

PLC OFFLINE

CYCLES

0

CYCLE

0.0

CYCLES/H

0.0

**STEP 20:CHARGE ACCUMULATOR**


22 / 03 / 2012

11:11:00



# Main Menu

**Total-Trak™**  
PROGRAMMABLE LOGIC CONTROLLER FRONT-END

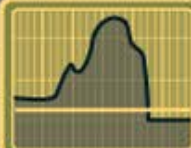
**LOG IN Ctrl-F1** 

USER

STAMPO



**CLOSING OPENING**  
Sh-F1



**SURE-TRAK INTERFACE**  
Sh-F5



**AUXILIARY EQUIPMENT**  
Sh-F9



**AUXILIARY EQUIPMENT**  
Ctrl-I



**CORES**  
Sh-F2



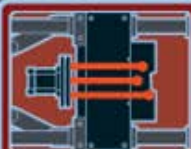
**PROD. DATA**  
Sh-F6



**PROCESS VALUES**  
Sh-F10



**PROCESS VALUES**  
Ctrl-O



**CENTRAL EJECTION**  
Sh-F3



**MACHINE PARAMS.**  
Sh-F3



**CLAMP**  
Sh-F11



**ANALOG**  
Ctrl-A



**SAFETY GUARDS**  
Sh-F4



**RECIPES**  
Sh-F8



**TEMPS.**  
Sh-F12



**SYNOPT.**  
Ctrl-S

F1   
**HELP**

F2   
**ALARMS**

F3   
**LOGFILES**

F4   
**LOG OFF**

F5   
**CONFIGURE**

F6   
**LANGUAGE**

F7   
**MAINT.**

F8   
**DOWNTIME**

Ctrl-F5   
**EXIT**

ESC   
**RETURN**

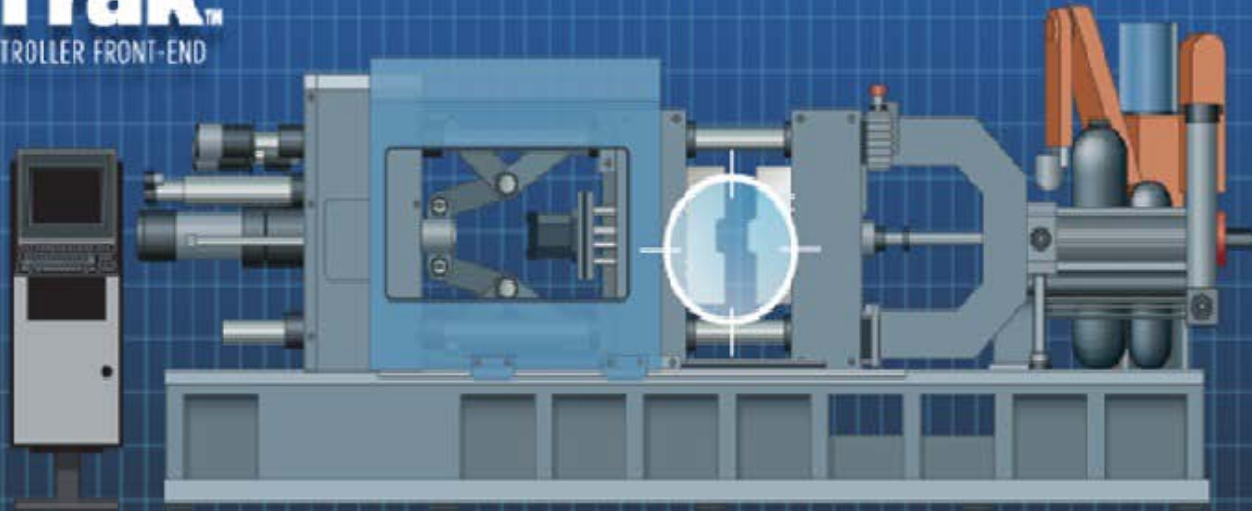




# QUALITY & PRODUCTION

# Total-Trak™

PROGRAMMABLE LOGIC CONTROLLER FRONT-END



## PIECECOUNTERS/TIMERS

TOTAL SHOTS	<b>38400</b>	TOTAL SHOTS	<b>1800</b>	TOTAL SHOTS	<b>360</b>
GOOD SHOTS	<b>32400</b>	GOOD SHOTS	<b>5%</b>	GOOD SHOTS	<b>45.3 sec.</b>



COUNTER/TIMER

F1



SHIFTS

F2



DOWNTIME

F3



QUALITY

F4



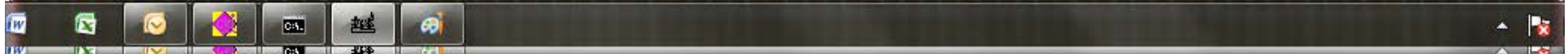
PRODUCTION

F6



RETURN

ESC



# QUALITY & PRODUCTION

# Total-Trak™

PROGRAMMABLE LOGIC CONTROLLER FRONT-END



## COUNTERS

### PRODUCTION

DIE

**PIECES TO DO**

CAVITIES

SHOTS TO DO

PRODUCTION #

PRODUCTION

MAX CYCLE TIME

### PIECE COUNTER

	TOTAL	BAD PIECES	GOOD	TO DO	DIE SHOTS
SHOTS	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
PIECES	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

**RESET** F10



## QUALITY & PRODUCTION

**Total-Trak.**  
PROGRAMMABLE LOGIC CONTROLLER FRONT-END



## PRODUCTION

DATE/HH	USER	DIE	SHOTS	BAD PARTS	%
04/11/03-10:09:51	2 UserNr000	999	16082	266	1.7
20/11/03-14:49:28	1 UserNr002	001	0	0	0.0
11/05/04-10:41:51	2 Operator2	001	2	1024	51200.0
14/10/04-14:39:58	2 Operator2	001	25	0	0.0
14/10/04-14:48:20	1 Operator1	001	0	0	0.0
17/11/04-10:27:25	2 Operator2	001	25	0	0.0
17/11/04-15:43:53	1 Operator1	001	4461	76	1.7
18/11/04-10:47:00	2 Operator2	001	16862	285	1.7
18/11/04-16:23:05	1 Operator1	001	290	5	1.7
19/11/04-09:19:16	2 Operator2	001	16862	285	1.7
10/02/05-10:43:36	2 Operator2	001	2	1024	51200.0
18/02/05-14:55:00	1 Operator1	001	1563	40	2.6
25/02/05-10:08:03	2 Operator2	001	40258	0	0.0
23/06/05-11:07:18	2 Operator2	001	25	0	0.0
28/06/05-15:37:46	1 Operator1	001	0	0	0.0
27/10/05-15:35:28	1 Operator1	001	0	0	0.0
28/10/05-09:49:01	2 Operator2	001	0	0	0.0
05/04/06-16:13:03	1 Operator1	001	27	0	0.0
05/05/06-14:45:05	1 Operator1	001	0	0	0.0
06/05/06-08:08:29	2 Operator2	001	0	0	0.0
08/05/06-14:45:03	1 Operator1	001	218	9	4.1
09/05/06-08:34:51	2 Operator2	001	0	3	0.0
09/05/06-14:45:17	1 Operator1	001	171	5	2.9
12/05/06-15:15:15	1 Operator1	001	2	0	0.0
15/05/06-08:02:57	2 Operator2	001	0	13	0.0
15/05/06-14:51:14	1 Operator1	001	2	0	0.0
16/05/06-07:46:14	2 Operator2	000	0	13	0.0
26/05/06-09:22:14	2 Operator2	001	0	0	0.0
31/05/06-16:12:00	1 Operator1	001	0	0	0.0
05/06/06-08:52:22	2 Operator2	001	0	0	0.0
06/06/06-14:48:40	1 Operator1	001	0	0	0.0

## SHIFT RECORD EDIT

**SHIFT** 2

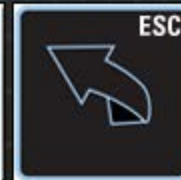
**USER** UserNr000

**DIE** 999

**SHOTS** 16082

**BAD PARTS** 266

**%** 1.7



## DATA EXPORT

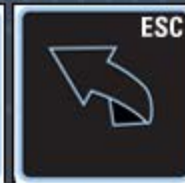
DESTINATION UNIT

A



## DATE INTERVAL SELECTION

da	01	01	2008
a	22	03	2012





# PRODUCTION QUERY

DIE	SHIFT	FROM	TO	SHOTS	BADS	%	WORK Hr.	STOP Hr.	%	%	%
001	1	17/06/08	14:00:07	0	0	0.0%	0.0h	-0.0h	0	0.0%	0.0%
001	2	20/06/08	10:40:31	0	0	0.0%	0.0h	-0.0h	0	0.0%	0.0%
001	1	20/06/08	14:02:21	0	0	0.0%	0.0h	-0.0h	0	0.0%	0.0%
001	1	25/06/08	15:36:58	0	0	0.0%	0.0h	-0.0h	0	0.0%	0.0%
001	1	17/09/08	17:56:30	0	0	0.0%	0.0h	-0.0h	0	0.0%	0.0%
001	2	18/09/08	09:25:19	0	0	0.0%	0.0h	-0.0h	0	0.0%	0.0%
001	1	18/09/08	15:28:03	0	0	0.0%	0.0h	-0.0h	0	0.0%	0.0%
001	1	03/11/08	14:37:57	0	0	0.0%	0.0h	-0.0h	0	0.0%	0.0%
001	2	15/12/09	10:10:59	0	0	0.0%	0.0h	-0.0h	0	0.0%	0.0%
001	1	15/12/09	14:00:25	0	0	0.0%	0.0h	-0.0h	0	0.0%	0.0%
001	2	16/12/09	10:08:34	0	0	0.0%	0.0h	-0.0h	0	0.0%	0.0%
001	1	16/12/09	15:38:17	0	0	0.0%	0.0h	-0.0h	0	0.0%	0.0%
001	2	17/12/09	10:08:50	0	0	0.0%	0.0h	-0.0h	0	0.0%	0.0%
001	1	17/12/09	14:00:22	40	0	0.0%	0.0h	-0.0h	0	0.0%	0.0%
001	2	18/12/09	10:05:17	192	0	0.0%	0.0h	-0.0h	0	0.0%	0.0%
001	1	18/12/09	14:00:07	19	0	0.0%	0.0h	-0.0h	0	0.0%	0.0%
001	2	21/12/09	10:37:51	190	0	0.0%	0.0h	-0.0h	0	0.0%	0.0%

QUERY INTERVAL FROM 17/06/08 14:00:07 TO 21/12/09 10:37:51



# QUALITY CONTROL PAGE

DIE

009X / MOTOR SUPPORT 9x

User

009 / Jack

----- PIECECOUNTER -----

----- CYCLE TIME -----

0	0.0	0	0.0	0
DONE	% BADS	TO DO	CYCLES/HOUR	PIECECOUNTER

0.0
LAST

## PIECES REJECTED

REJECTED AT START

0

QUALITY CONTROL TAKE UP

0

PART INTEGRITY

0

DOUBLE LUBRICATION

0

CURVES OUT OF TOLERANCE

0

REJECTED FOR VACUM FAIL

0

REJECTED BY OPERATOR

0

TOTAL REJECTED

0





# PRODUCTION / EFFICIENCY



CYCLE TIME



SHOTS/HR

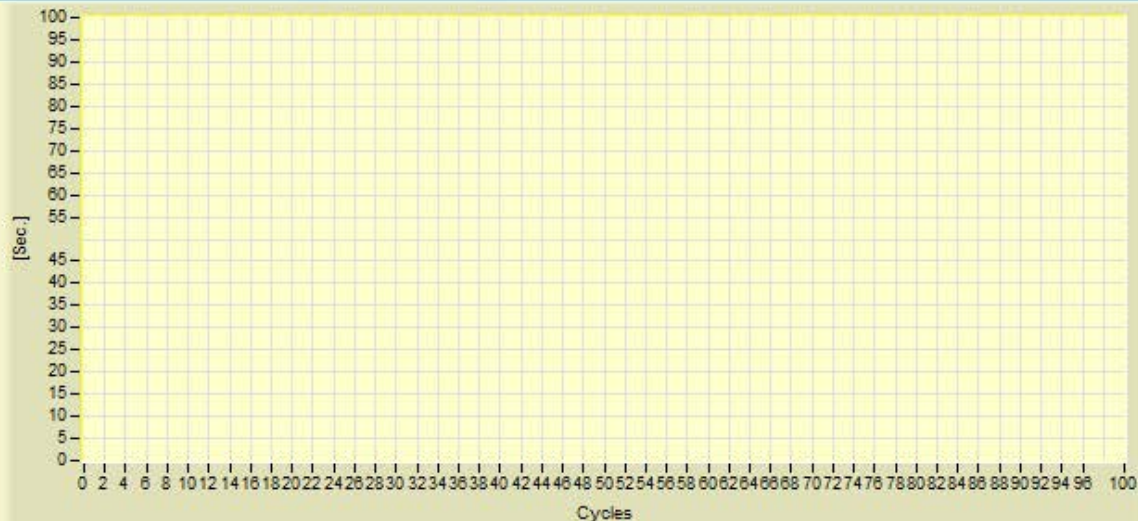
IDEAL CYCLE TIME

38

IDEAL SHOTS/HR

94.0

MIN	0.0	SEC	0.00	SH/H
MED	0.0	SEC	0.00	SH/H
MAX	0.0	SEC	0.00	SH/H



GRAPH

100.0

MAX

0.0

MIN

## ACTUAL PRODUCTION

GOODS



50.0

%

0

BADS



50.0

%

0

GOODS

BADS

PRODUCTION



50.0

%

0.0

H

DOWNTIME



50.0

%

0.0

H

PRODUCTION

DOWNTIME





# **Total-Trak<sup>™</sup>**

PROGRAMMABLE LOGIC CONTROLLER FRONT-END



## HMI – Automated Cell Integration

- **Monitor & control**, your entire automated machine cell.
- **Easy set-up** - restore saved jobs in seconds.
- **Complete I/O Diagnostics** for a comprehensive view.
- **Integrated with Monitor & Control.**
- **Ladder logic display** options available.
- **Cost-effectively replace your obsolete systems.**



DIE 001 / Stampo di prova

DGK900

**Visi-Trak**  
SENSE, MONITOR, CONTROL

Maintenance preventative

USER 009 / Jack

A 1 / 02 / 2012

**RUN**

WARNING

ALARM

23:07:18

PLC offline

0

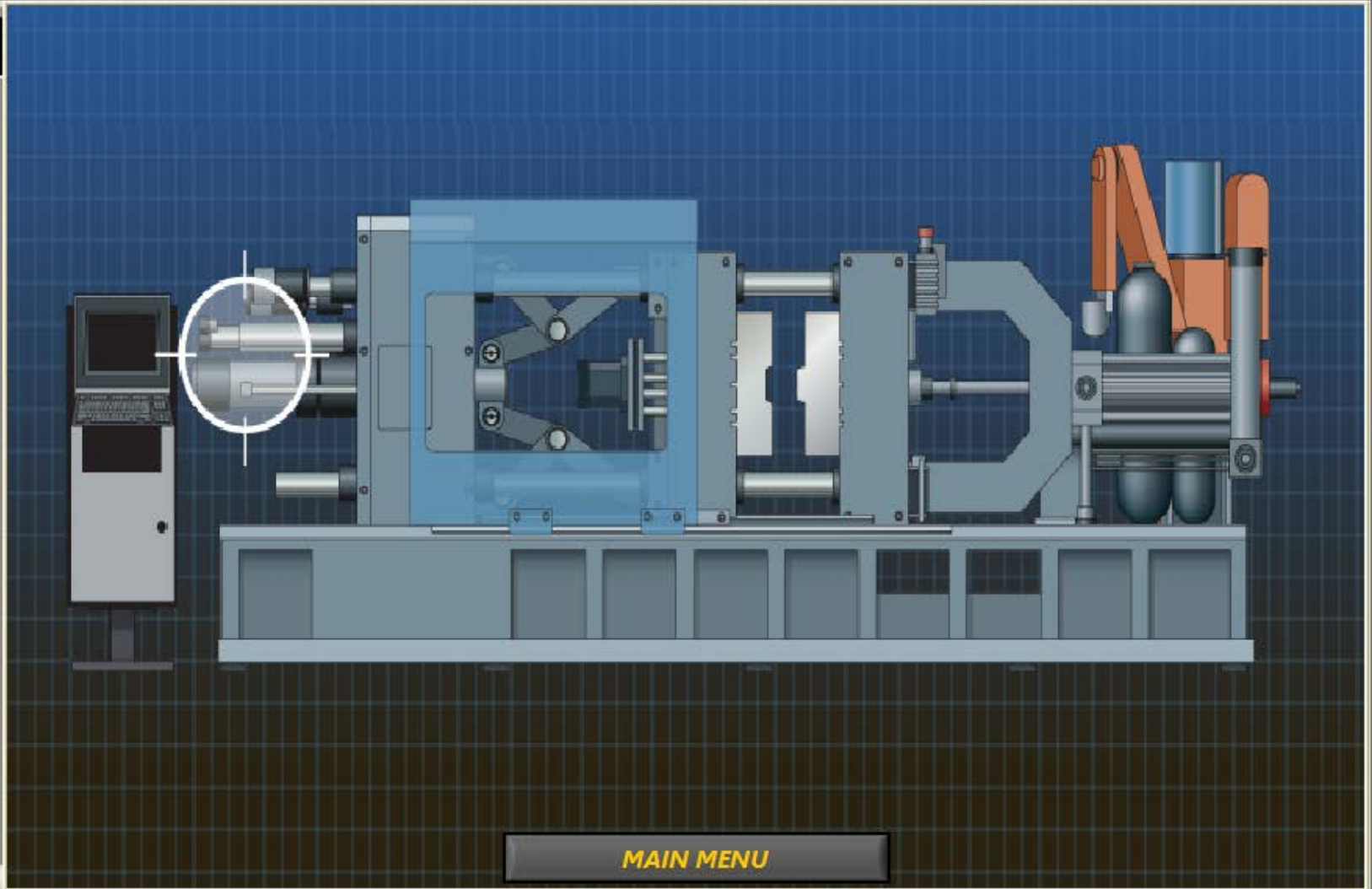
CYCLES

0.0

CYCLE TIME

0.0

CYCLES/H



MAIN MENU

**STEP 16: Core puller 2 moving platen backward**





## Main Menu

LOG IN (F1)



USER EURO User  
Part No. XXX 2000 /2010

CLOSING  
OPENING  
Sh-F8

SURETRAK  
INTERFACE  
Ctrl-F2

AUXILIARY  
EQUIPMENT  
Sh-F3

INPUTS  
Ctrl-I

CORES  
Sh-F7

PRODUCTION  
DATA  
F1

PROCESS  
VALUES  
F7

OUTPUTS  
Ctrl-O

CENTRAL  
EJECTION  
Sh-F6

MACHINE  
PARAM.S  
Sh-F9

CLAMPING  
Ctrl-F8

ANALOG  
Ctrl-A

SAFETY  
GUARDS  
Sh-F5

RECIPES  
F2

TEMPER.S  
Ctrl-C

SYNOPTICS  
F5

Ctrl-H  
HELP

F9  
ALARMS

F12  
LOGFILES

Ctrl-A  
LOG OFF

F4  
CONFIGURE

Ctrl-F10  
LANGUAGE

Ctrl-D  
MAINTENANCE

Ctrl-F6  
STOPS

(ESC)  
RETURN

Search bar with magnifying glass icon



# Total-Trak™

1-2-3

## CYCLE COUNTERS

CYCLE	SET PT.	ACTUAL
SHOT COUNT		824484
SHIFT COUNT	32767	225 <b>RESET</b>
PART COUNT	4	24347 <b>RESET</b>
OIL TEMP.	110	0
OIL TEMP. LOW	50	
DIE TEMP.		0



## CYCLE TIMERS

CYCLE	ACTUAL	CYCLE 1	CYCLE 2	CYCLE 3	CYCLE 4
SHOT COUNT	6.78	50.0	50.0	51.0	50.0
SHIFT COUNT	3276.7	4.0	3.0	4.0	3.0
PART COUNT	3276.7	7.0	6.0	7.0	7.0
OIL TEMP.	3276.7	2.0	2.0	2.0	2.0
OIL TEMP. LOW	81.92	3276.7	3276.7	3276.7	3276.7
DIE TEMP.	3276.7	5.0	6.0	5.0	6.0



## TONNAGE

CYCLE	ALARM	ACTUAL	CYCLE 1	CYCLE 2	CYCLE 3
UPPER OPERATORS TIE BAR	230	225	225	225	225
LOWER OPERATORS TIE BAR	230	225	225	225	226
UPPER HELPERS TIE BAR	230	225	225	225	225
LOWER HELPERS TIE BAR	230	227	227	227	227
UNBALANCE ALARM	15				
<b>TOTAL TONNAGE</b>	<b>920</b>	<b>903</b>	<b>903</b>	<b>903</b>	<b>903</b>



## CYCLE TIMERS

CYCLE	ACTUAL	CYCLE 1	CYCLE 2	CYCLE 3	CYCLE 4
PART CURING	3276.7	13.0	13.0	13.0	13.0
DIE OPEN CUSHION	3276.7	3.0	3.0	3.0	3.0
DIE OPEN FAST	3276.7	5.0	5.0	5.0	5.0
DIE OPEN SLOW	3276.7	2.0	2.0	2.0	2.0
PART REMOVAL	3276.7	9.0	10.0	9.0	10.0
SPRAYER CYCLE	81.92	3276.7	3276.7	3276.7	3276.7

6/13/2008 03:30:18 PM Die Full Open Maximum Set Point

HELP

ALARMS

LOGS

DIE SET PTS

CORES

EJECTOR SET PTS

DIE SET PTS

AUXILIARY EQUIP

TONNAGE

INPUTS

PROCESS VALUES

MAIN MENU

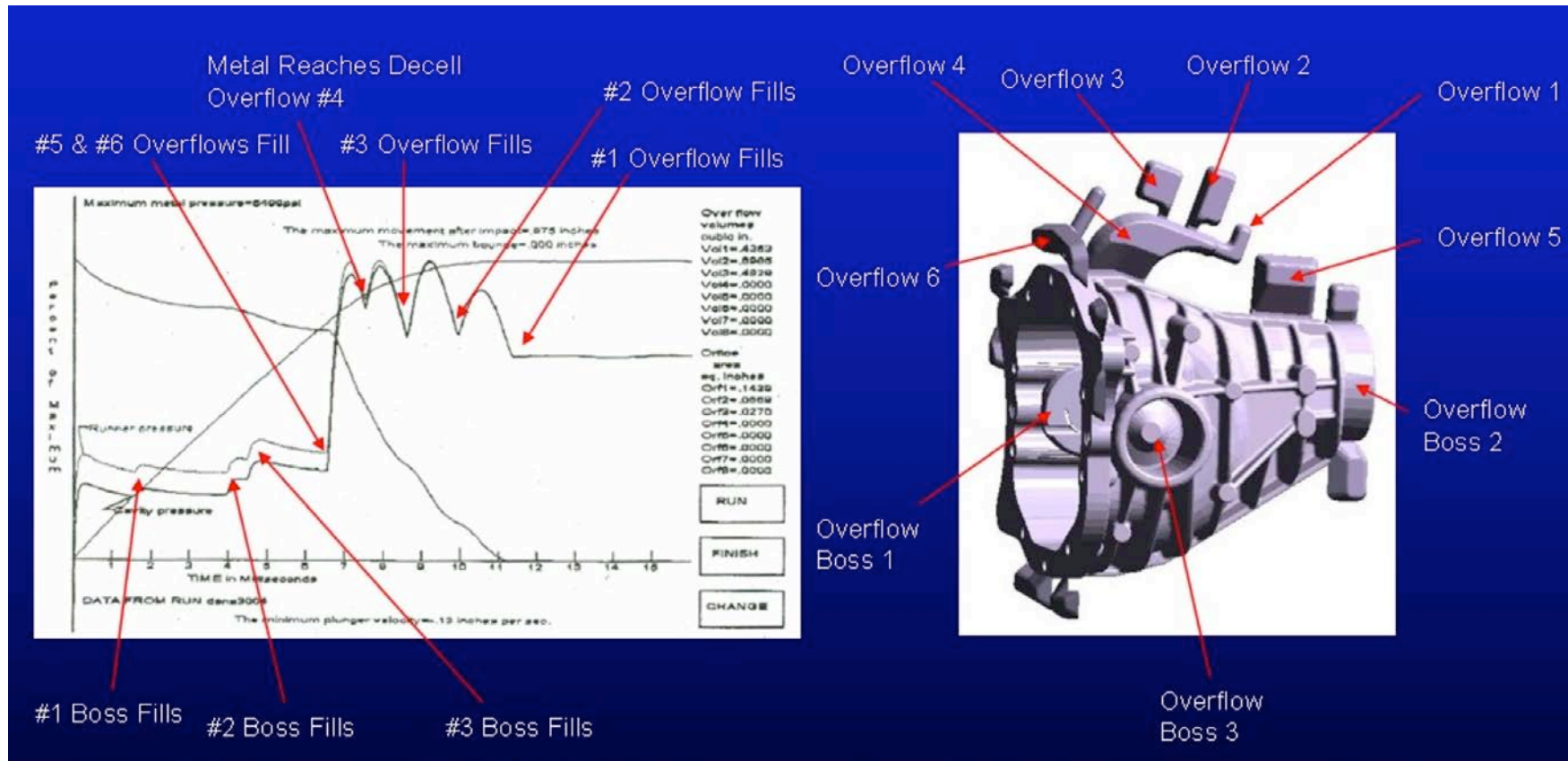
USER: mpowers

PART: FPN605542

# **SOFTSHOT – FLASH REDUCTION TECHNOLOGY**

# SoftShot Port City Die Casting Group

**Visi-Trak**<sup>®</sup>  
SENSE, MONITOR, CONTROL



- SoftShot overflows limited cavity pressure in this new die designed to 5,499 p.s.i,
- A reduction of 72% from the original design
- Almost entirely eliminating flashing which greatly extended die life.

**Visi-Trak<sup>®</sup>**  
SENSE, MONITOR, CONTROL

# Sure-Trak<sup>2</sup>

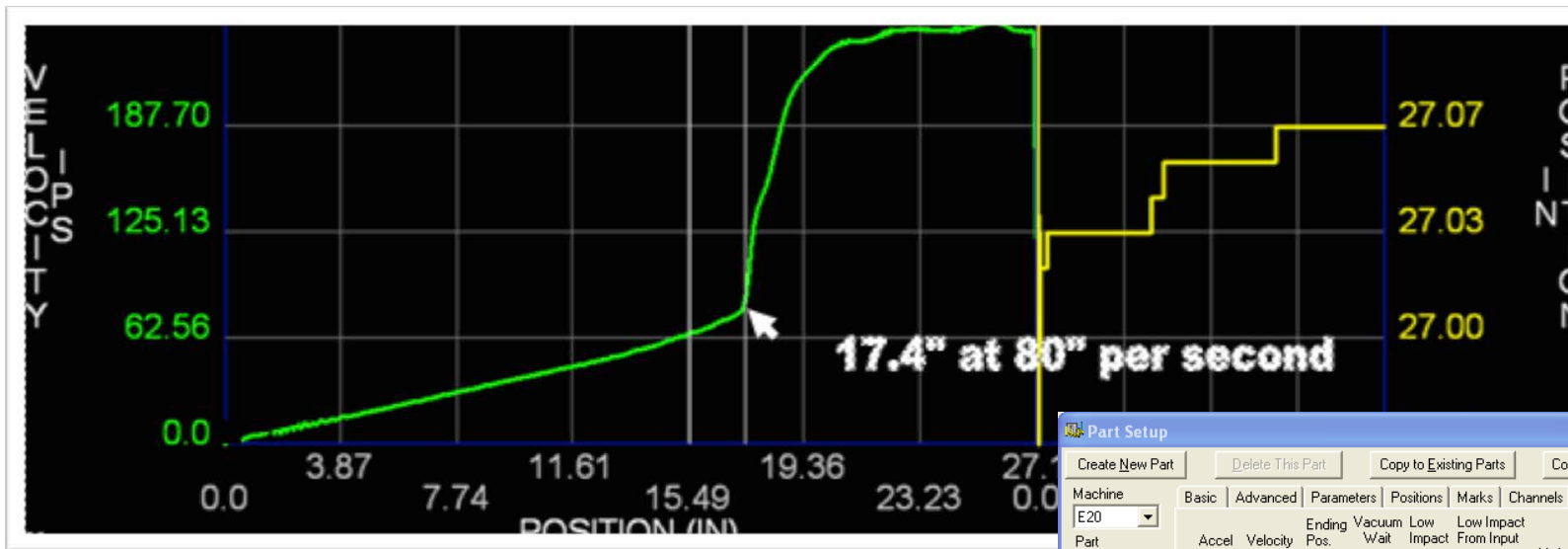
DIE CASTING SHOT CONTROL SYSTEM <sup>TM</sup>



## **Sure-Trak2™ Control Benefits:**

- **Reduce Air Entrapment** during Slow Phase
- **Smooth Metal Flow & Flexibility** of adjustments during Fast Shot/ Fill Phase
- **Repeatability** regardless of changes
- **Deceleration** for Low Impact
- **Programmability** in engineering units for fast and repeatable Set-ups
- **Store, Recall and Download** Set-ups
- **Easily Retrofitted** to Existing Machines or Specify on New Machines

# Programmable Velocity



**Part Setup**

Create New Part | Delete This Part | Copy to Existing Parts | Copy to Other Machines | Calculator

Machine: E20

Part: 150cl, 250IPS, 6step, 81205, NEWPART, ramp, VISITRAK

Accel	Velocity	Ending Pos.	Vacuum Wait	Low Impact	Low Impact From Input
1. 16	80	17	<input type="checkbox"/>	<input type="checkbox"/>	
2.	250	25.5	<input type="checkbox"/>	5%	<input type="checkbox"/>
3.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Velocity Loop Gain: 375.0

Limit Switch Positions: Wire

Wire	Break Settings
22	POUR HOLE COVER
29	CLOSE VACUUM
30	CHECK VACUUM
31	1 300.0 1.0
32	2 300.0 1.0
33	3 300.0 1.0

FollowThru Stop Pos: 100.0

Warmup Shot:  Enable  if Wire is  Off

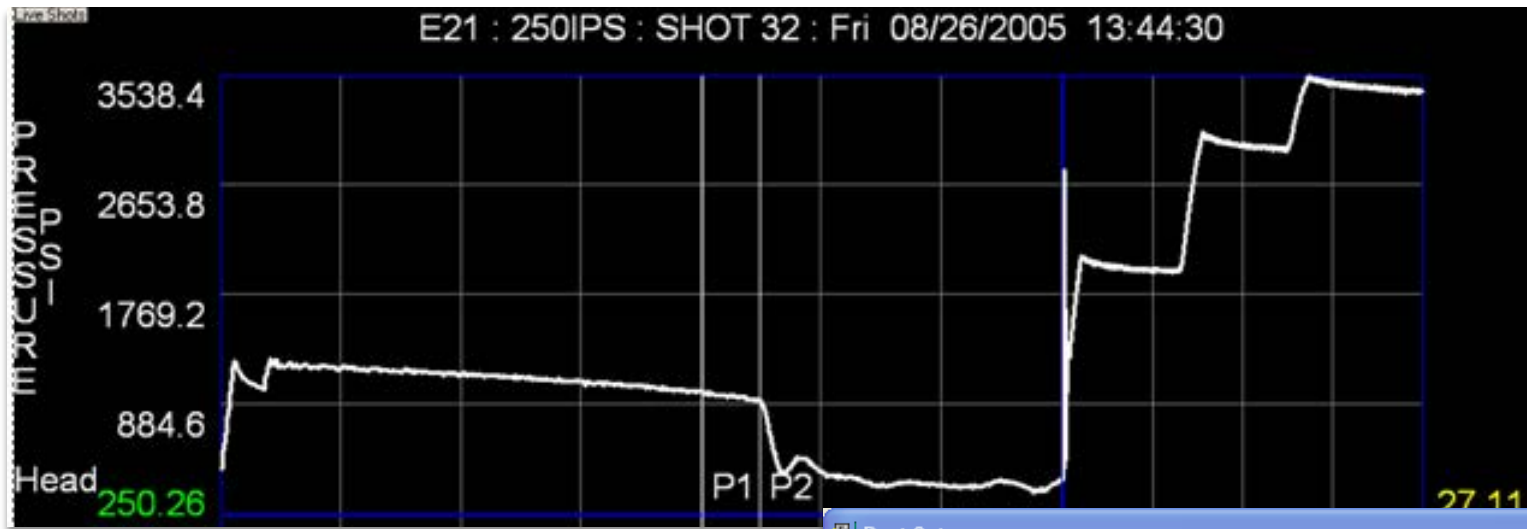
F10: Change Focus | This is the Current Part | Save Changes | Reload Saved Setup | Print

The graph in the Part Setup window shows velocity vs position. The y-axis is labeled 'Velocity' and ranges from 0.0 to 250.0. The x-axis is labeled 'Position IN' and ranges from 0.00 to 30.00. The profile starts at (0,0), increases linearly to approximately 75 at 17 inches, then jumps to 250 at 17.5 inches, stays constant until 25 inches, drops to 0 at 25.5 inches, and then jumps to 27 at 27 inches, staying constant until 30 inches.



# Programmable Pressure

**Visi-Trak**<sup>®</sup>  
SENSE, MONITOR, CONTROL



**Part Setup**

Create New Part   Delete This Part   Copy to Existing Parts   Copy to Other Machines   Calculator

Machine: E20

Part: 150cl, 250IPS, 6step, 81205, NEWPART, ramp, VISITRAK

Pressure Control Profile Setup

Enable Pressure Control   Pressure Sensor: Pres. 0-5v = 0-10000 PSI

Positive Commands Only   Output Voltage Range:  +2.5V    +5V    +10V

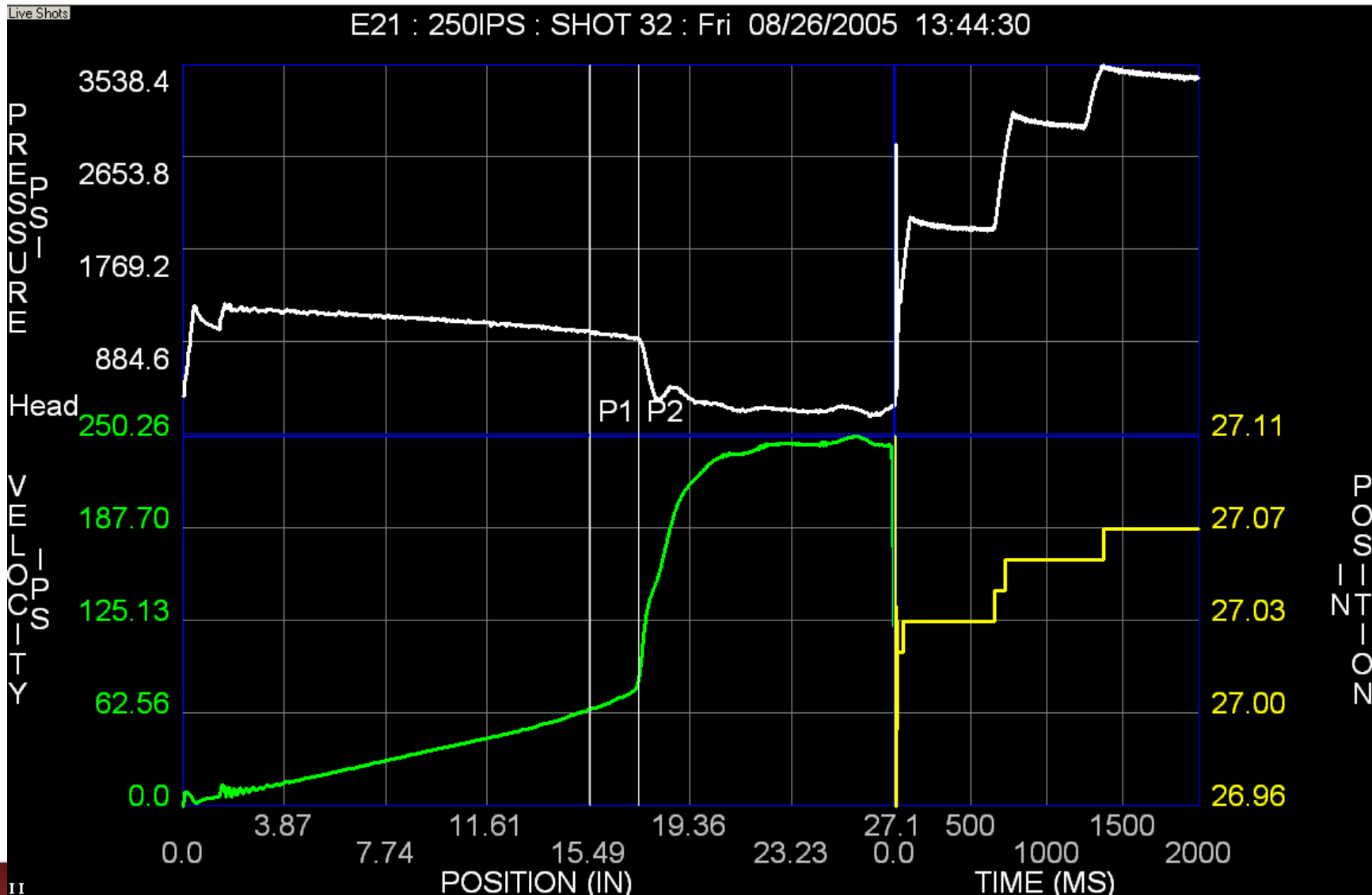
	Ramp	Pressure	Open Loop	Hold Time	
1	3500 PSI	2000	<input type="checkbox"/>	600 MS	Pressure Loop Gain
2	5500 PSI	3000	<input type="checkbox"/>	600 MS	Arm Volts
3	6000 PSI	3500	<input type="checkbox"/>	700 MS	Initial Pressure

Retract Volts: 0  
Valve Park Volts: 0

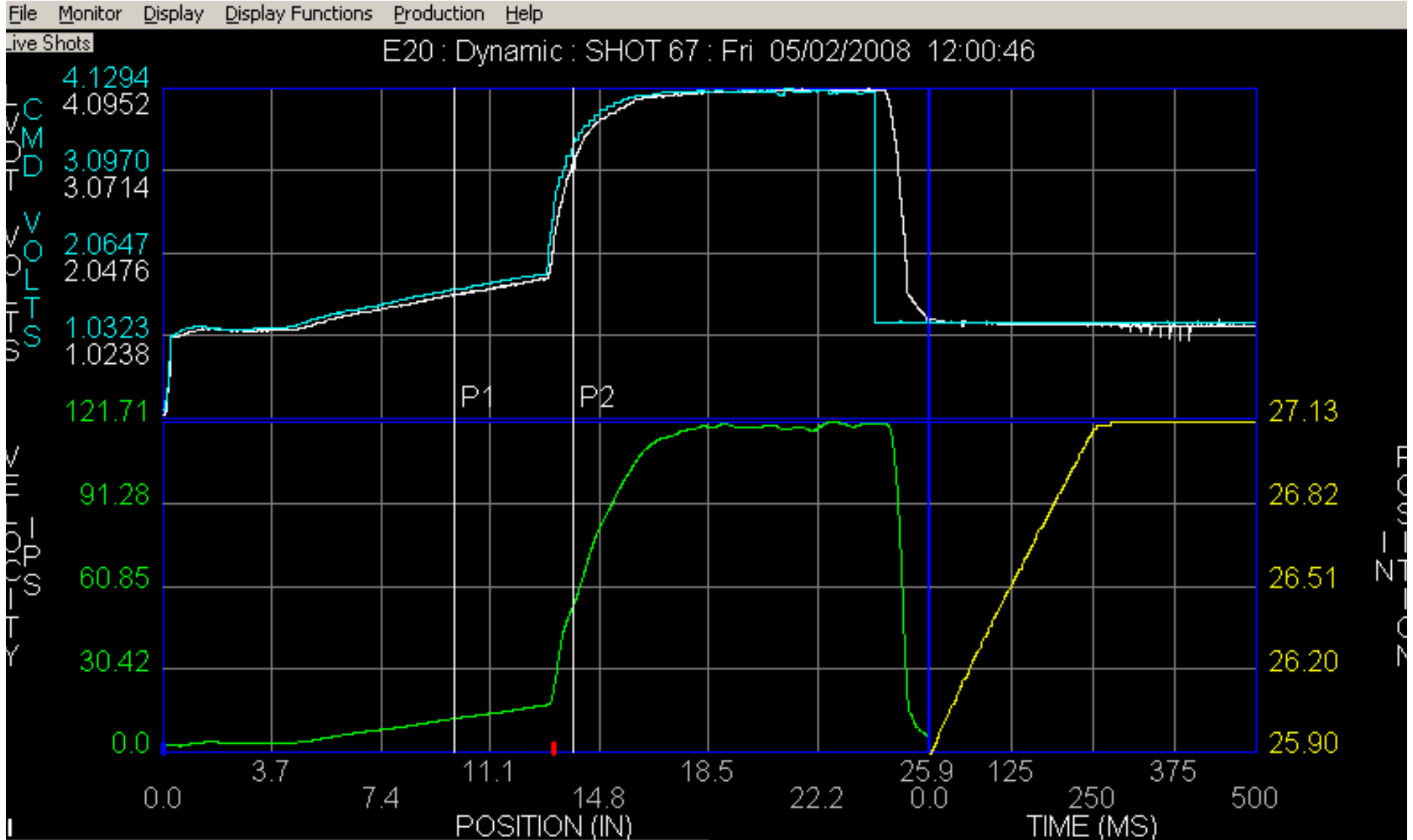
F10: Change Focus   This is the Current Part   Save Changes   Reload Saved Setup   Print

# Programmable Pressure & Velocity Control

**Visi-Trak**<sup>®</sup>  
SENSE, MONITOR, CONTROL

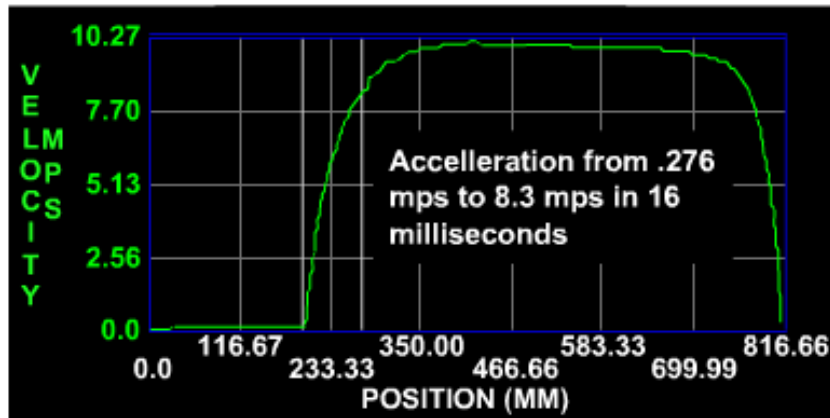


# Dynamically Adjustable

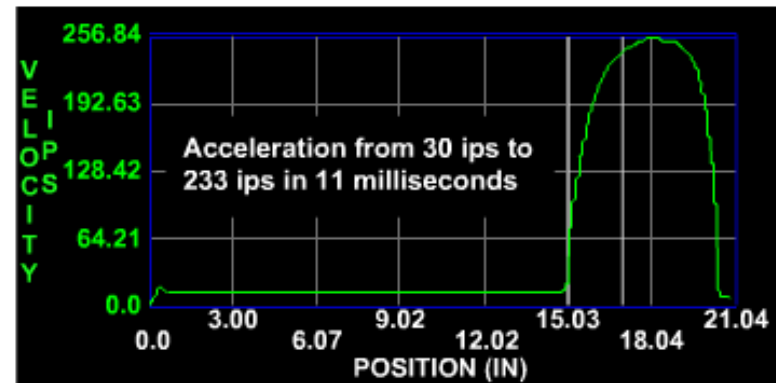
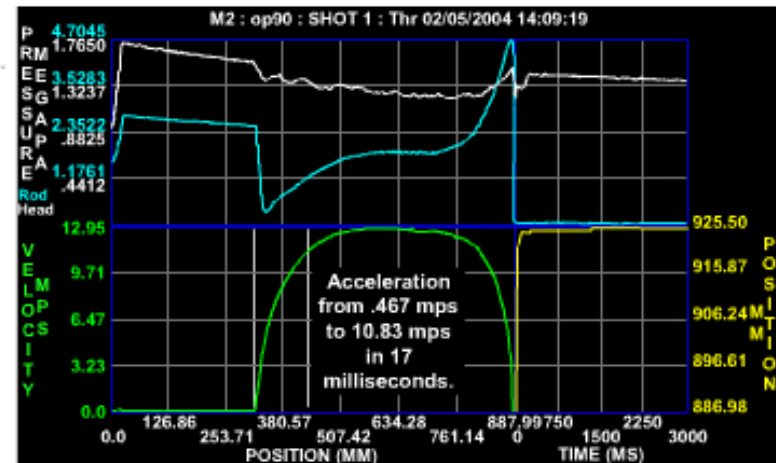


## Responsive

If your die casting requirements demand extremely fast acceleration to fast shot with quick cavity fill... Sure-Trak<sup>™</sup> can deliver.



This shot from a 2500 ton Idra equipped with 100mm. SV Series Valve, and Sure-Trak<sup>™</sup> Control provides acceleration from .276 mps to 8.3 mps. in 16 milliseconds(10.9 inches per second to 326.8 ips.)



**REPEATABLE**

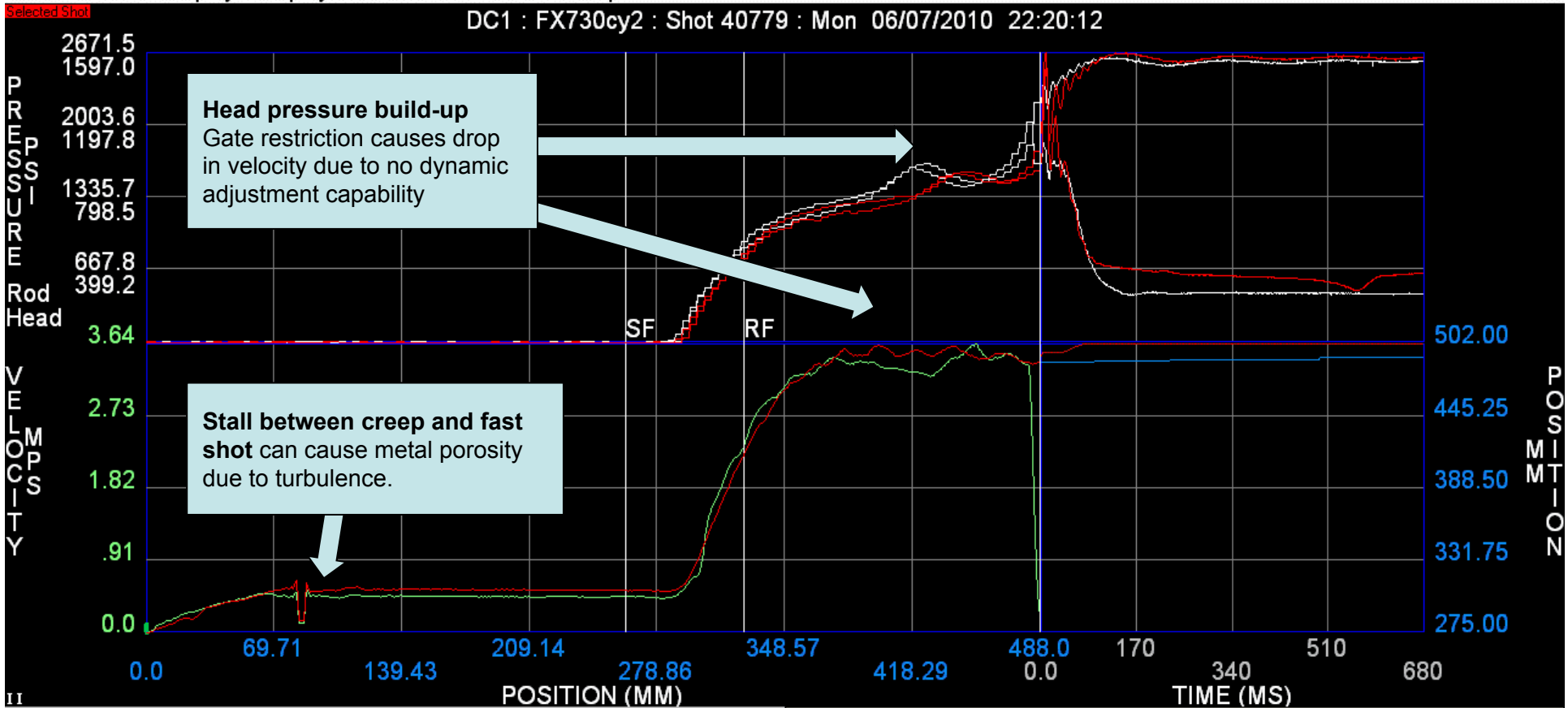
# BEFORE

UBE Shot-end and  
Conventional UBE controls  
on 800-ton machine at Major global vehicle  
producer U.S. based die-casting operation

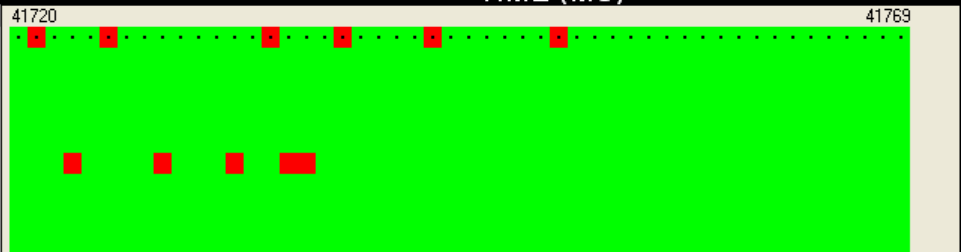


# UBE Shot-end + Conventional Control - Single Shot

File Monitor Display Display Functions Production Help

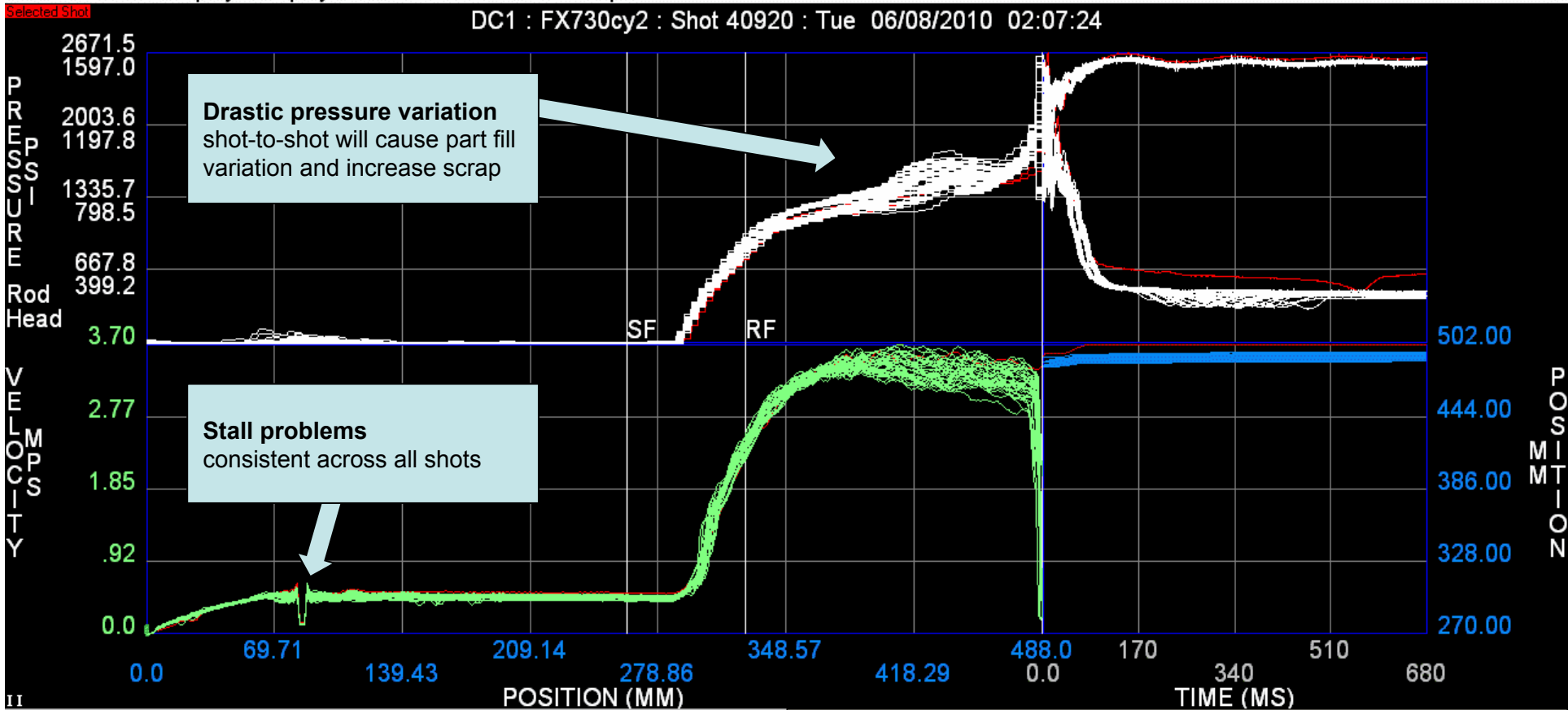


Parameter	Low Alarm	High Alarm	Value	Units
Biscuit Size	20.0	30.0	31.0	MM
Cycle Time	0.0	0.0	84.102	SEC
Calc Start Fast Shot	0.0	0.0	9.1	MM
Sleeve Full Velocity	0.0	0.0	0.455	MPS
Runner Full Velocity	0.0	0.0	2.337	MPS
Avg Fill Velocity	0.0	0.0	2.8545	MPS
Intens Pressure	750.0	820.0	12.482	KG/CM <sup>2</sup>
Fill time	0.0	140.0	56.561	MS
User Velocity Pos One	0.0	0.0	0.0	MPS
User Velocity Pos Two	0.0	0.0	0.0	MPS



# UBE Shot-end + Conventional Control – Multi-Shot Overlay

File Monitor Display Display Functions Production Help



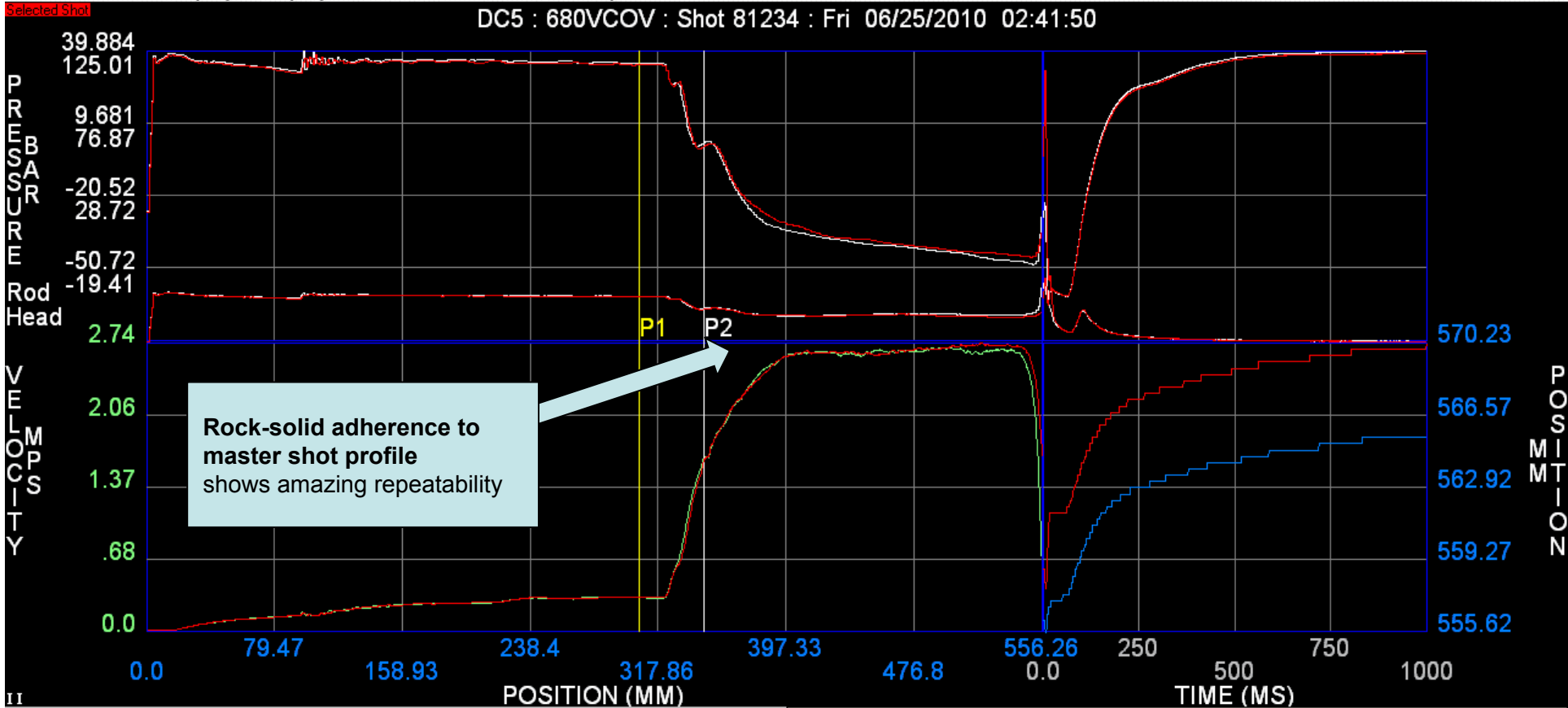
Parameter	Low Alarm	High Alarm	Value	Units	41720	41769
Biscuit Size	20.0	30.0	35.0	MM		
Cycle Time	0.0	0.0	84.014	SEC		
Calc Start Fast Shot	0.0	0.0	9.583	MM		
Sleeve Full Velocity	0.0	0.0	0.509	MPS		
Runner Full Velocity	0.0	0.0	2.134	MPS		
Avg Fill Velocity	0.0	0.0	3.1626	MPS		
Intens Pressure	750.0	820.0	12.936	KG/CM*2		
Fill time	0.0	140.0	50.733	MS		
User Velocity Pos One	0.0	0.0	0.0	MPS		
User Velocity Pos Two	0.0	0.0	0.0	MPS		

# AFTER

New Retrofit shot-end  
and integrated controls  
on same model 800-ton machine

# DCP Shot-end + Sure-Trak2 - Single Shot

File Monitor Display Display Functions Production Help



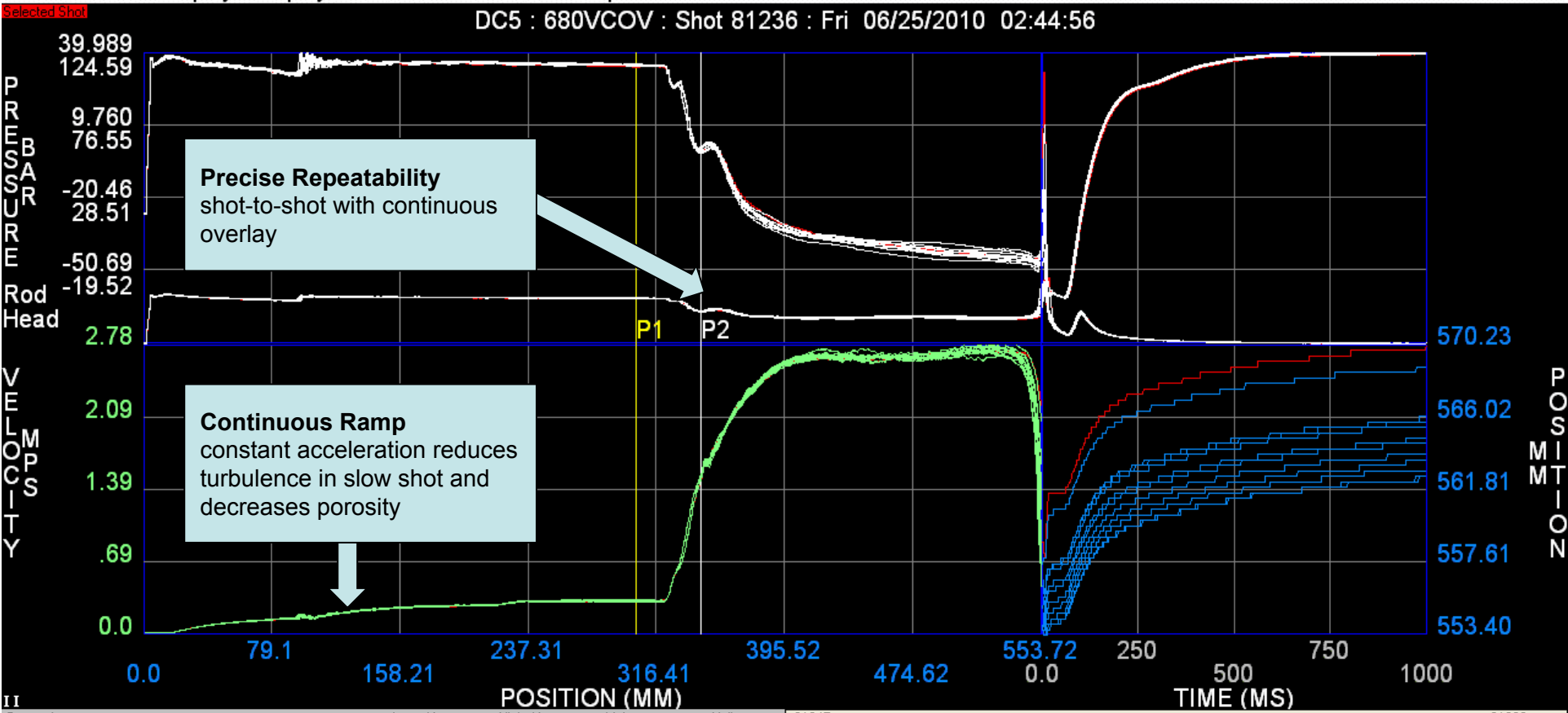
Rock-solid adherence to master shot profile shows amazing repeatability

Parameter	Low Alarm	High Alarm	Value	Units
Biscuit Size	20.0	32.0	27.531	MM
Cycle Time	0.0	0.0	93.202	SEC
Calc Start Fast Shot	0.0	0.0	327.79	MM
Sleeve Full Velocity	0.0	0.0	0.33433	MPS
Runner Full Velocity	0.0	0.0	1.6685	MPS
Avg Fill Velocity	0.0	0.0	2.4686	MPS
Intens Pressure	590.0	690.0	0.00192	BAR
Fill Time	40.0	150.0	85.068	MS
User Velocity Pos One	0.0	0.0	0.0	MPS
User Velocity Pos Two	0.0	0.0	0.0	MPS



# DCP Shot-end + Sure-Trak2 Multi-Shot Overlay

File Monitor Display Display Functions Production Help



Parameter	Low Alarm	High Alarm	Value	Units
Biscuit Size	20.0	32.0	24.039	MM
Cycle Time	0.0	0.0	93.387	SEC
Calc Start Fast Shot	0.0	0.0	327.65	MM
Sleeve Full Velocity	0.0	0.0	0.32353	MPS
Runner Full Velocity	0.0	0.0	1.6434	MPS
Avg Fill Velocity	0.0	0.0	2.5133	MPS
Intens Pressure	590.0	690.0	0.00188	BAR
Fill Time	40.0	150.0	83.431	MS
User Velocity Pos One	0.0	0.0	0.0	MPS
User Velocity Pos Two	0.0	0.0	0.0	MPS

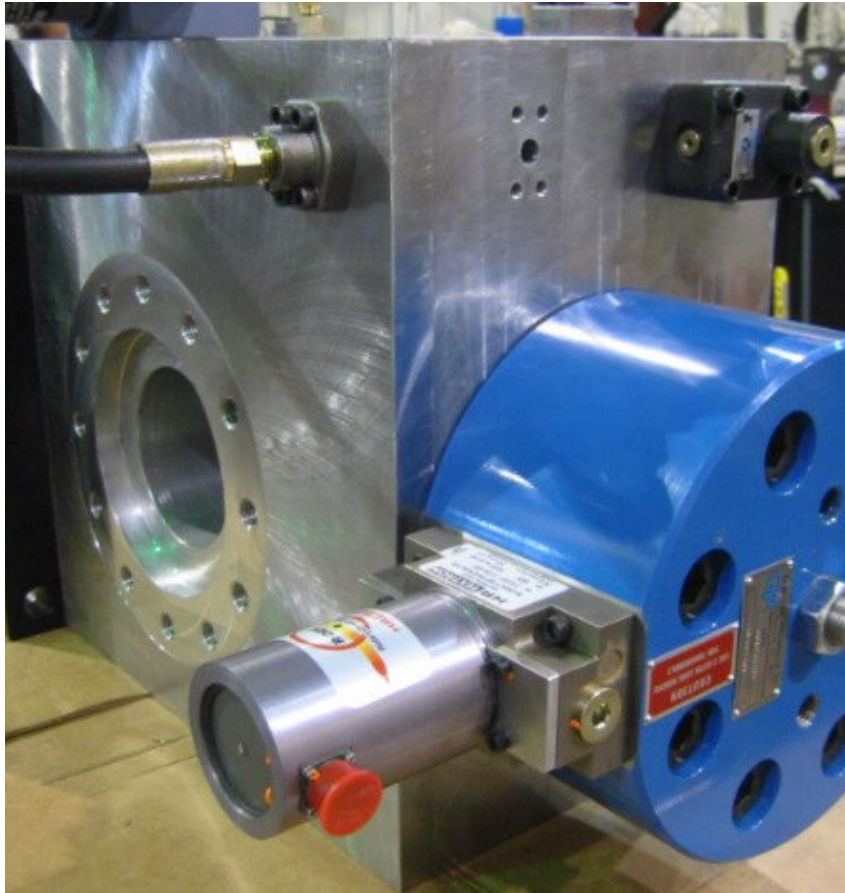




# INSTALLATION OPTIONS

# Field Retrofit – Toro Corp.

**Custom Manifold + 80mm Valve**



**Prince 1600 Binary II**



"The new Visi-Trak valve **increased our top speed by over 100" per second** and has made it possible to continue creating cost-effective castings even after we outgrew the original capability of the machine."

**DAVE BROCKMAN**

*Senior Fabrication Project Engineer*  
The Toro Company, Windom, MN

## Internal Audit Results

- **Challenging castings now easily accomplished**
- **Outstanding velocity control** capability throughout the shot
- Overall equipment **efficiency increased by 15.5%**
- **Scrap rate reduced by 28.5%**
- **Significant flash reduction** using low impact capability
- **Total integration cost: ~40% of new a shotend.**



# Installed with New DCP Shot-end: Nissan Australia

**Visi-Trak<sup>®</sup>**  
SENSE, MONITOR, CONTROL





Part Marking and Plant wide Q.A. Products

# **PART TRACEABILITY**

# Visi-Trak<sup>®</sup>

Part Traceability System

Uniquely identify, track, and store manufacturing QC data for every part you produce



## Network Data Workstation

Access at any True-Trak 20/20<sup>™</sup> System:

- Software runs on a standard desktop PC
- View Parameter Data
- Access Shot Profiles
- Determine Downtime Information
- Complete Data analysis features of the True-Trak 20/20.
- View networked die casting machines on your network,
- Whether it is UP (running) or Down (not running).
- Click any machine to see the most recent data/shot profile available.



# Network Data Archiver



## Archival Process:

- Automatic Back-up and compress data
- Stored in database
- Compress to Directory for archival

## Retrieval Process:

- Data decompresses
- Select and Restore Data
- Access Historical Data for Analysis
- Merge Historic Data



## Implementing Plant wide Process Monitoring

### Networking Solutions at PHB

- The systems were connected via an Ethernet network
- Data collection computer on the shop floor
- Workstations computers in the process control office...
- Data Archiver for back-up and recall
- and to other work stations throughout the plant





# Plantwide Building Blocks



<b>Plant Mngmt. Solutions</b>	Remote Machine Monitoring
	Quality Control Data Archiving
<b>Advanced DCM Control</b>	Part Scribing & Traceability
	PLC HMI – Visualization, Diagnostic, and Set-up Software
<b>Shot Control</b>	Shot Velocity and Pressure Control Software
	Precision Shot Control Package
	High Performance Valves
<b>Process Monitoring</b>	Data Visualization, Diagnostic, and Shot Monitoring Software
<b>High Speed Data Acquisition</b>	High Speed Data Acquisition System
	Precision Sensor Package

**PROCESS CONTROL = IMPROVED OEE =  
BIGGER MARGINS = SUCCESS**

## **Success comes from commitment**

- **A Mandate from Management**
- **An Internal Champion** armed with support and a game plan
- **A Commitment to Training.**

**Visi-Trak Worldwide, LLC.**

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Valley View, Ohio 44125

**Phone:** (216) 524-2363

**Fax:** (216) 524-9594

**[www.Visi-Trak.com](http://www.Visi-Trak.com)**