

# Drag-Racing

## Valving charts & specs

NOTE: The term “valving” usually refers to the actual valve parts used in a hydraulic shock to get a desired Force-Velocity curve.  
Here it merely refers the Force-Velocity curve, which is determined by the user-changeable “settings” on the MagneShock Controller.

**In most cases, the use of these graphs & specs will eliminate the need for a shock dyno.  
If you set your Controller to the settings shown you will get a Force-Velocity Damping curve very close to those shown here.**

Each page contains:

**Graphs** from actual dyno tests on a Roehrig dyno – all are done at approx 85 DegreesF on a standard “5261-20” MagneShock (the “-20” suffix is STANDARD damping range - stiffer or softer ranges are available).  
**Specs** on the velocities tested.  
**SETTINGS** required on the MagneShock [Drag-CONTROLLER](#) to get these “curves”.

There are two (2) types of dyno readings & charts:

### PVP: Peak Velocity Points.

Tests are made at various velocities & the damping values are taken at the highest velocity (in both Rebound & Compression) for each test.  
The “curve” is defined by plotting a point for each different PEAK velocity (and connecting the dots).  
This is a simplified means of seeing the Force-Velocity curve.  
It does not show hysteresis (a shock will usually have a lower value of damping while accelerating. up through a given velocity and a higher damping while decelerating).

### CVP: Constant Velocity Points.

All damping values are recorded as the dyno accelerates up to the peak velocity and decelerates back down (in both Rebound & Compression) for each test.  
The “curve” is defined by all the damping values recorded, at all intermediate velocities as well as at the peak velocity of the test.  
This explicitly shows “HYSTERESIS” – the difference in damping values while accelerating as compared to while decelerating (and time delays).

## “STRAIGHT Valvings”

These are called “50-50” valvings  
(but actually have a little more Rebound damping than Compression damping)  
They are similar to the original Carrera™ D-T (dual-tube) valvings.

## “SPLIT Valvings”

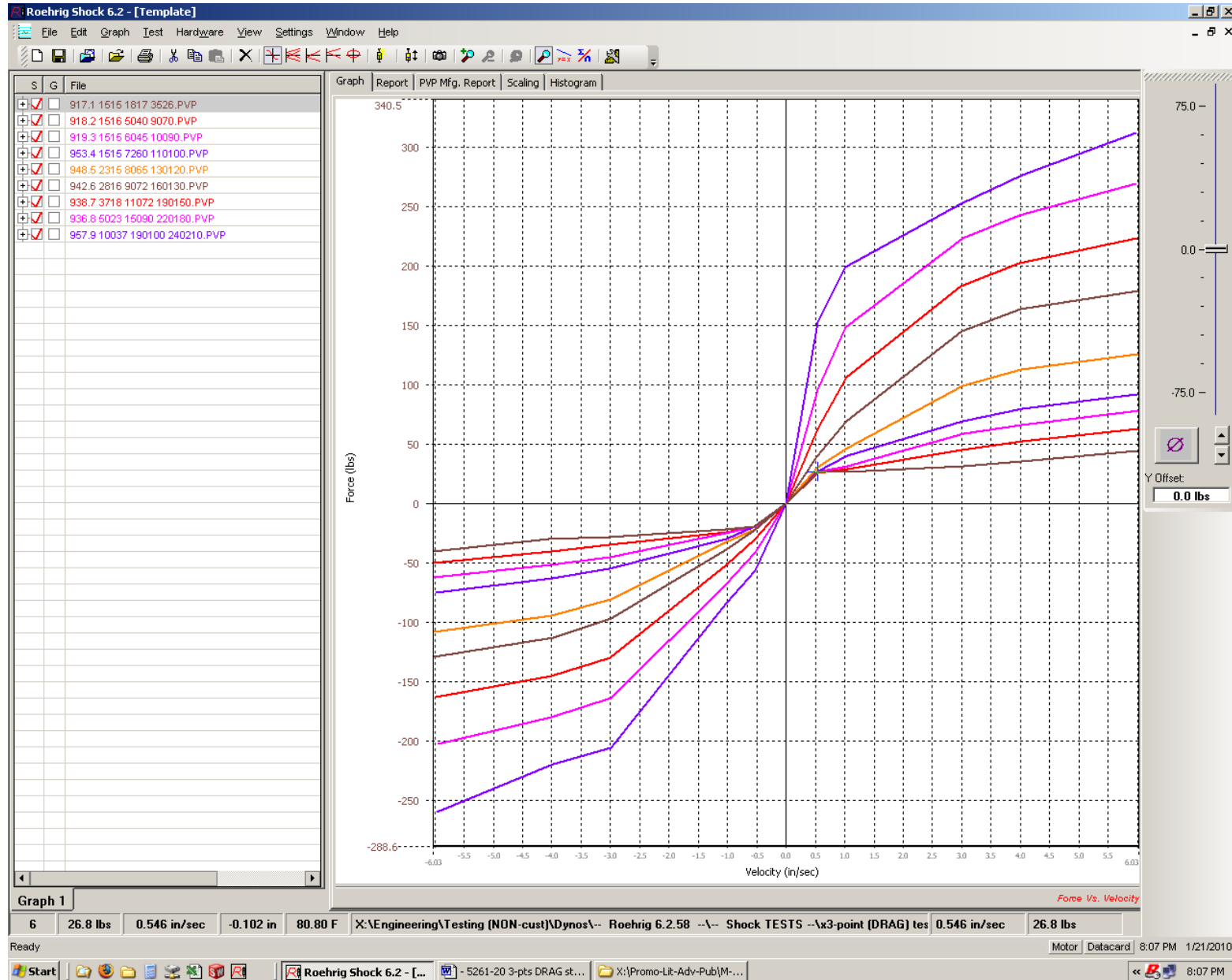
These are variations where the damping in Rebound is raised or lowered in relation to Compression (more difference between Rebound & Compression than the standard “straight valvings” have).  
EX: A #6/4 has the Rebound characteristics of a “std” #6 valving and the Compression of a #4 valving.  
There are a nearly infinite number of “curves” possible (as you can “custom tailored” the Force-Velocity curve with MagneShocks).  
These outline common curves to give an idea where to start and/or how the “settings” may need to be varied to get the desired results.

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# Standard 1 – 9 “PVP” valvings (similar to old Carrera™ D-T) @ 0.5 – 1 – 3 – 4 – 6 inch/sec piston velocities

Code	0	1	3	(Reb/Comp settings)
#1	15/15	18/17	35/26	
#2	15/16	50/40	90/70	
#3	15/15	60/45	100/90	
#4	15/15	72/60	110/100	
#5	23/15	80/65	130/120	

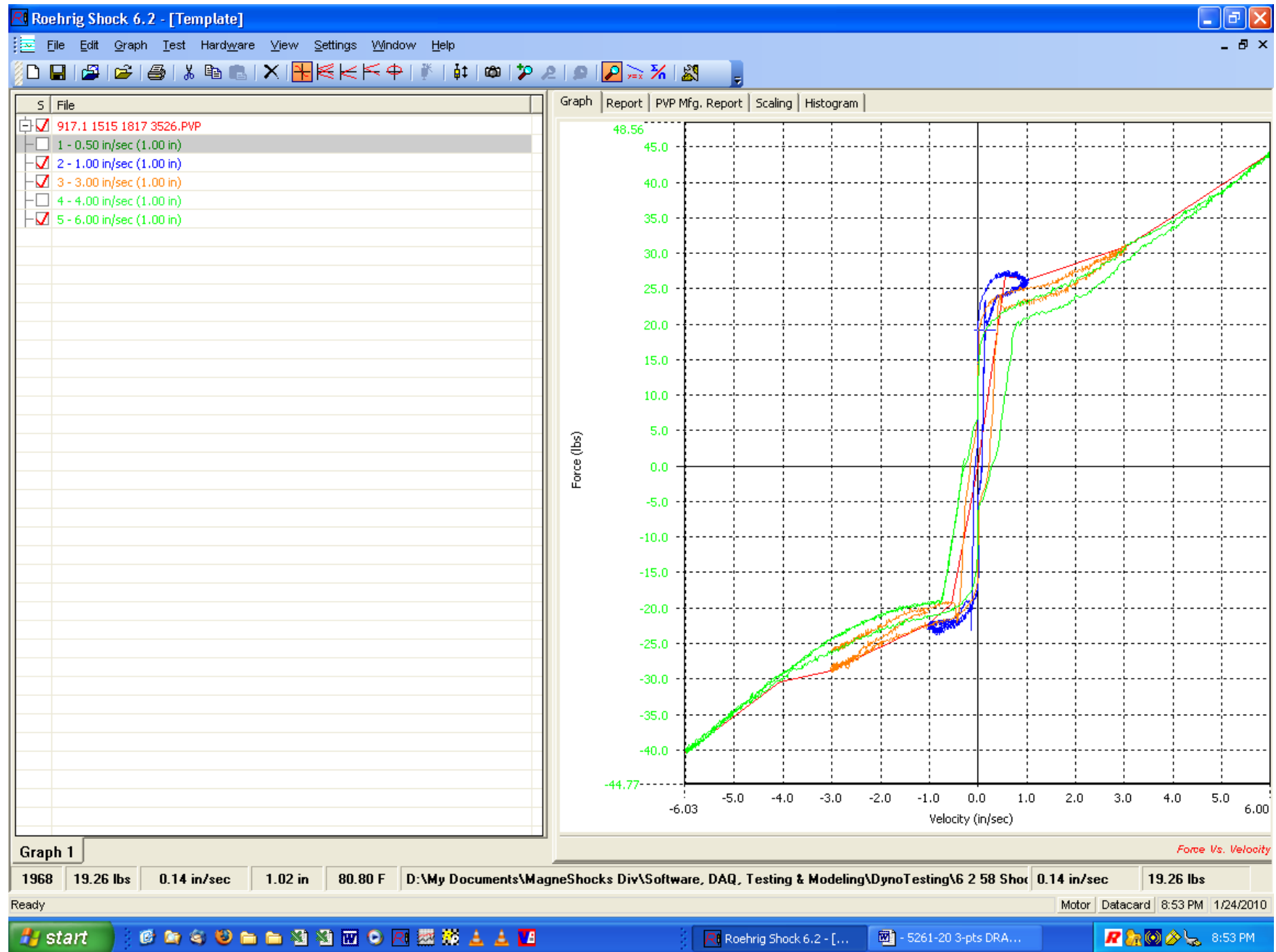
Code	0	1	3
#6	28/16	90/72	160/130
#7	37/18	115/72	190/150
#8	50/23	147/90	220/180
#9	100/37	190/57	240/200



#1 CVP plots at 1 – 3 – 6 in/s and PVP @ 0 – 0.5 – 1 – 3 – 4 – 6 in/s

Code 0 1 3 (Reb/Comp settings)

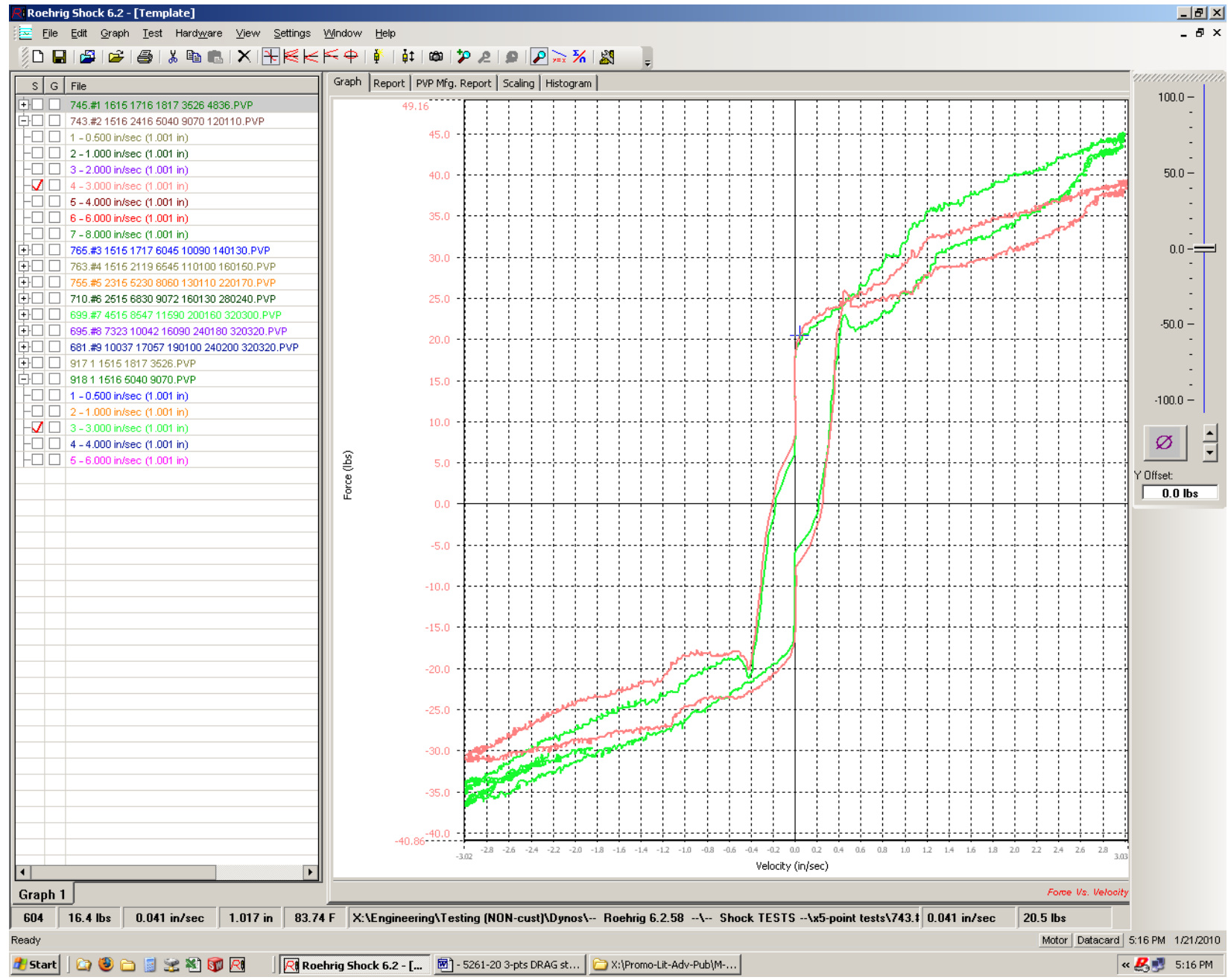
#1 15/15 18/17 35/26



## #2 CVP plots at 1 – 3 – 6 in/s and PVP @ 0 – 0.5 – 1 – 3 – 4 – 6 in/s

Code 0 1 3 (Reb/Comp settings)

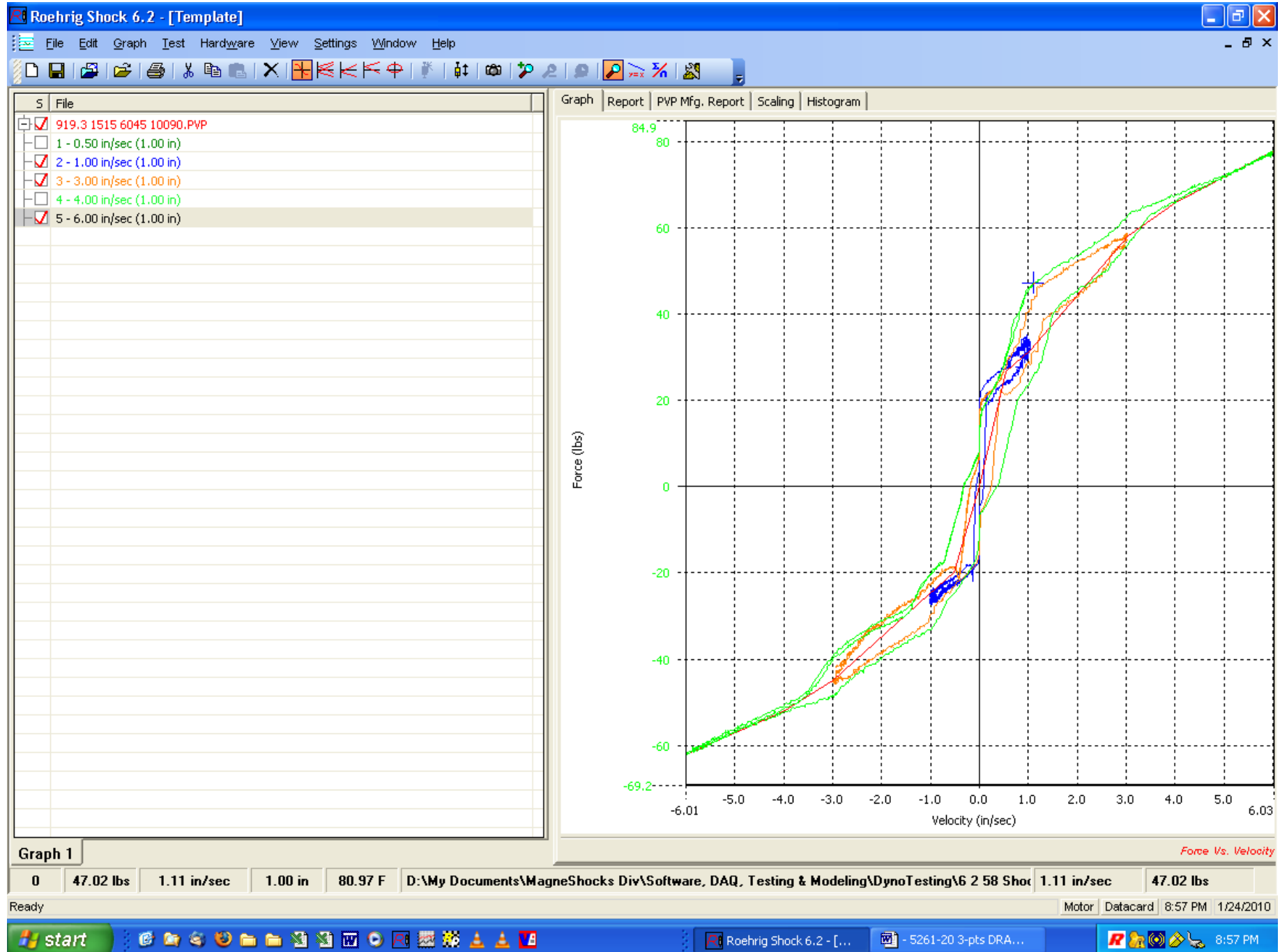
#2 15/16 50/40 90/70



### #3 CVP plots at 1 – 3 – 6 in/s and PVP @ 0 – 0.5 – 1 – 3 – 4 – 6 in/s

Code 0 1 3 (Reb/Comp settings)

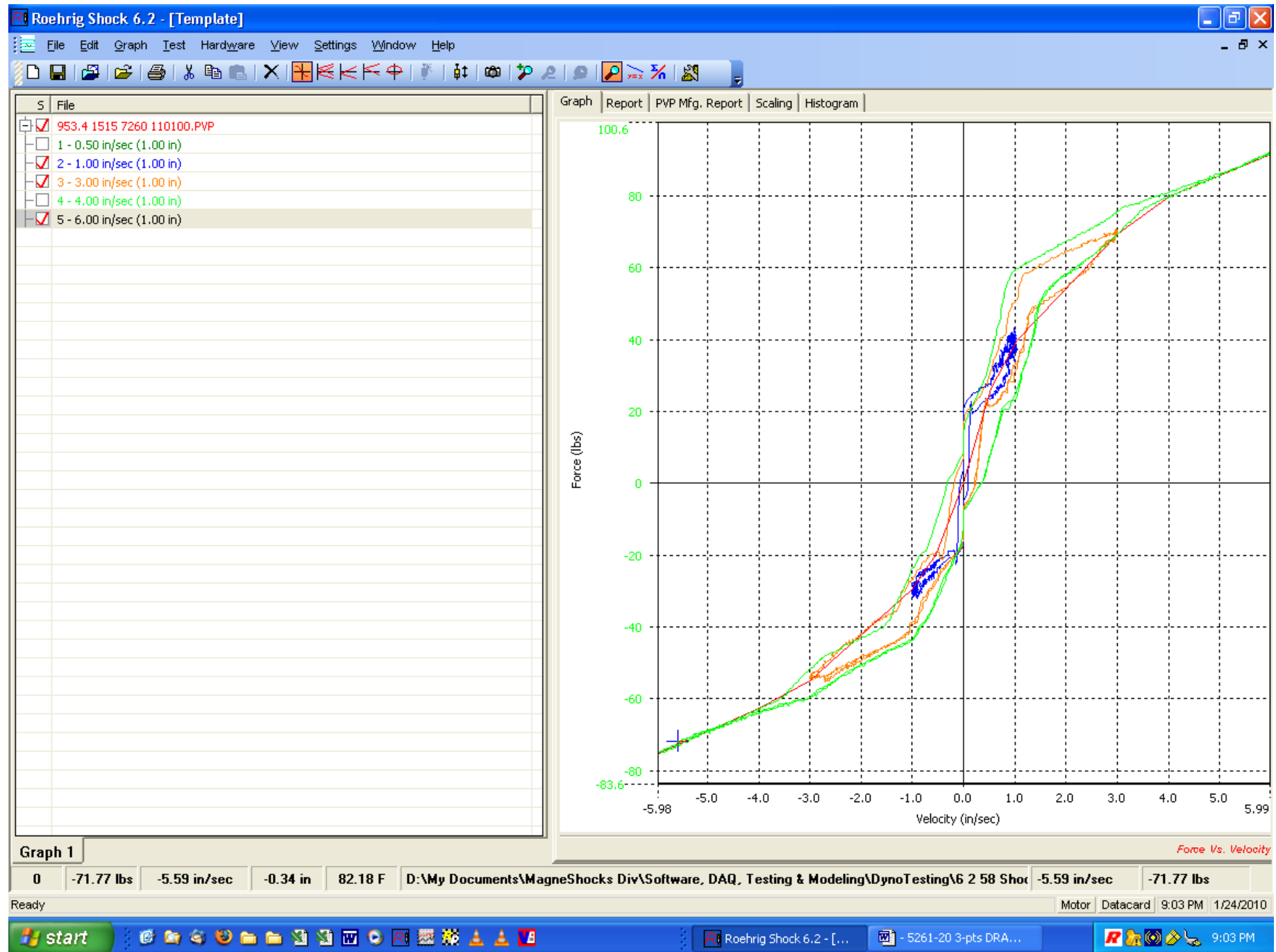
#3 15/15 60/45 100/90



### #4 CVP plots at 1 – 3 – 6 in/s and PVP @ 0 – 0.5 – 1 – 3 – 4 – 6 in/s

Code 0 1 3 (Reb/Comp settings)

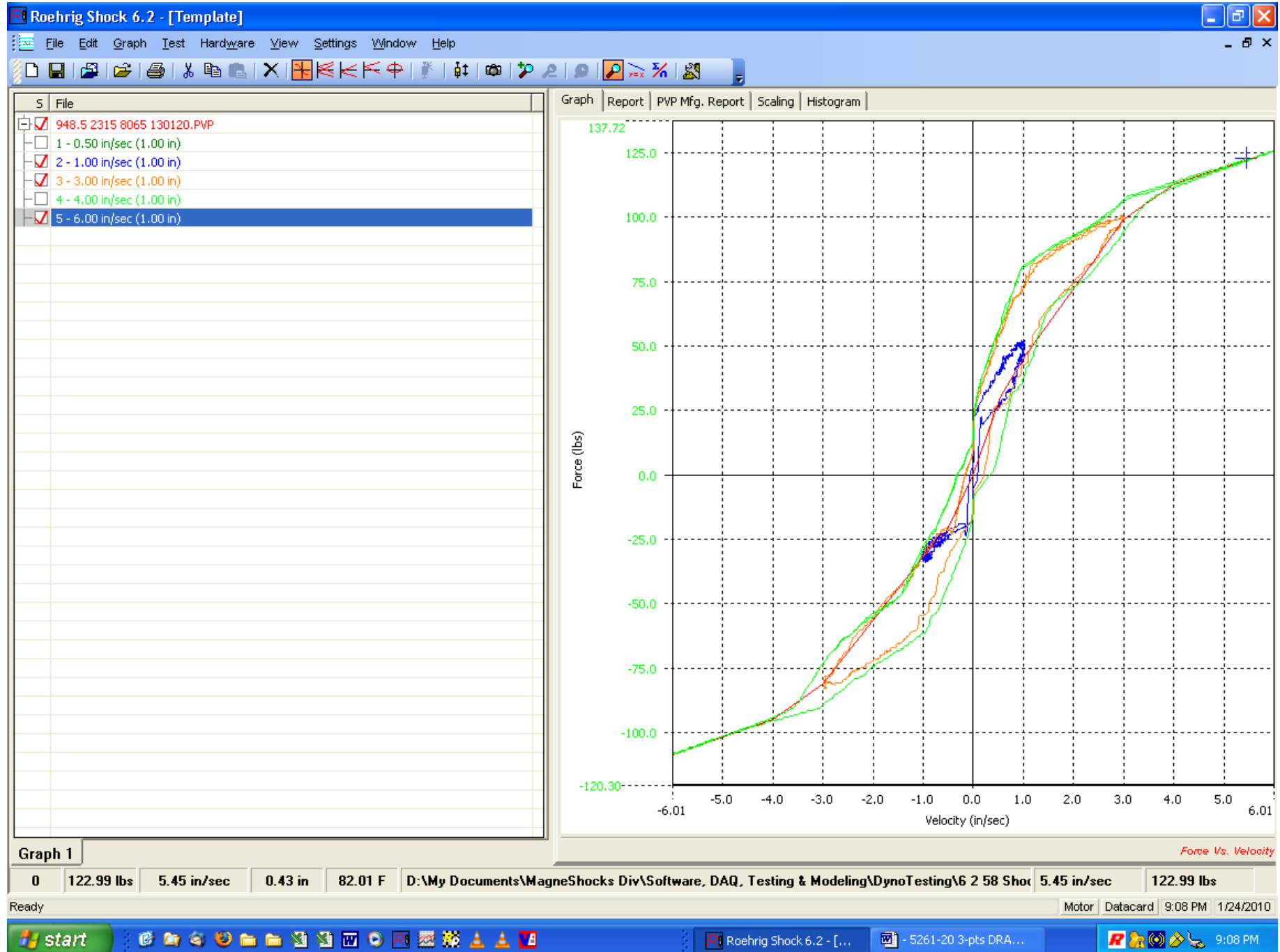
#4 15/15 72/60 110/100



#5 CVP plots at 1 – 3 – 6 in/s and PVP @ 0 – 0.5 – 1 – 3 – 4 – 6 in/s

Code 0 1 3 (Reb/Comp settings)

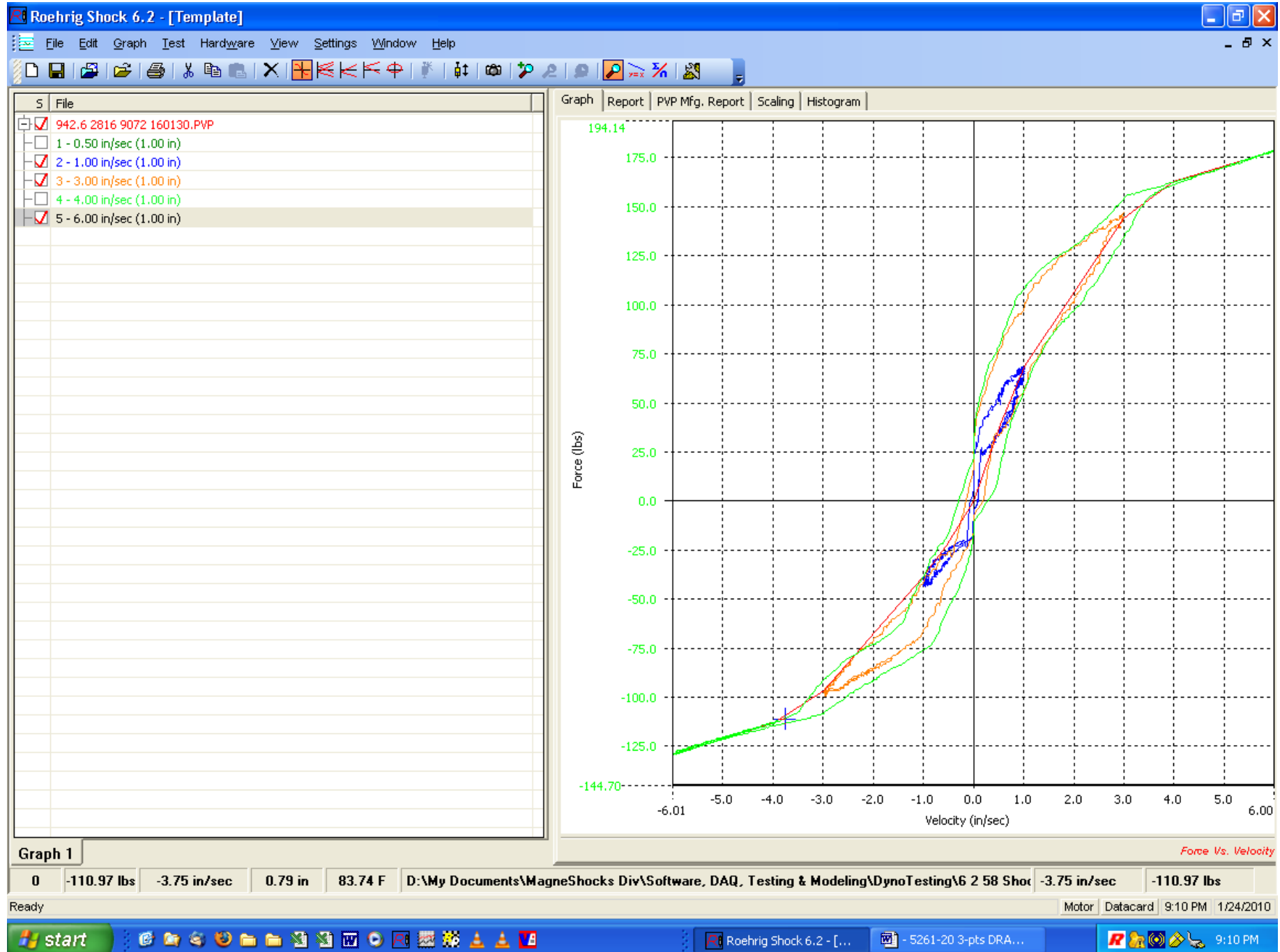
#5 23/15 80/65 130/120



#6 CVP plots at 1 – 3 – 6 in/s and PVP @ 0 – 0.5 – 1 – 3 – 4 – 6 in/s

Code 0 1 3 (Reb/Comp settings)

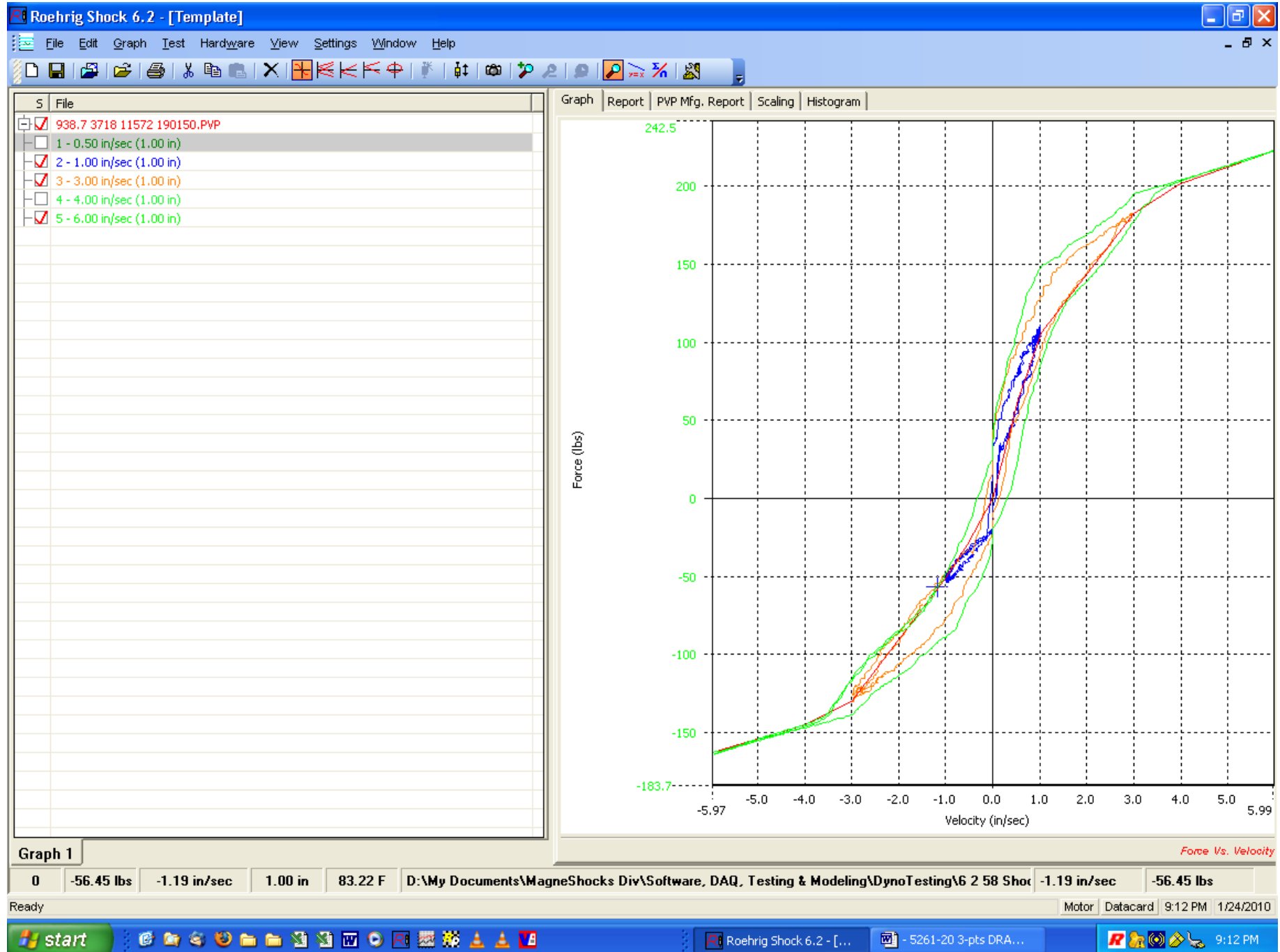
#6 28/16 90/72 160/130



#7 CVP plots at 1 – 3 – 6 in/s and PVP @ 0 – 0.5 – 1 – 3 – 4 – 6 in/s

Code 0 1 3 (Reb/Comp settings)

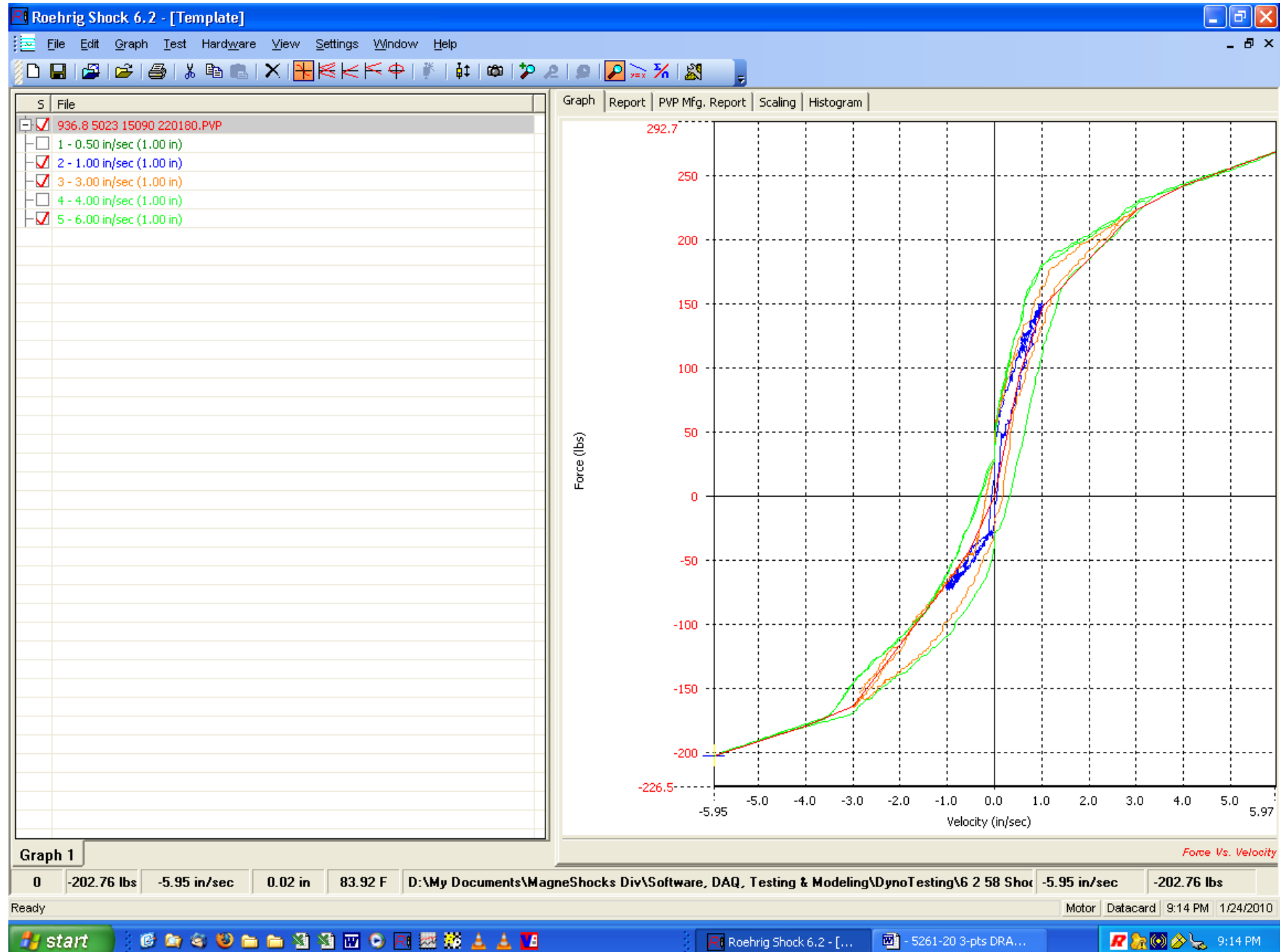
#7 37/18 115/72 190/150



#8 CVP plots at 1 – 3 – 6 in/s and PVP @ 0 – 0.5 – 1 – 3 – 4 – 6 in/s

Code 0 1 3 (Reb/Comp settings)

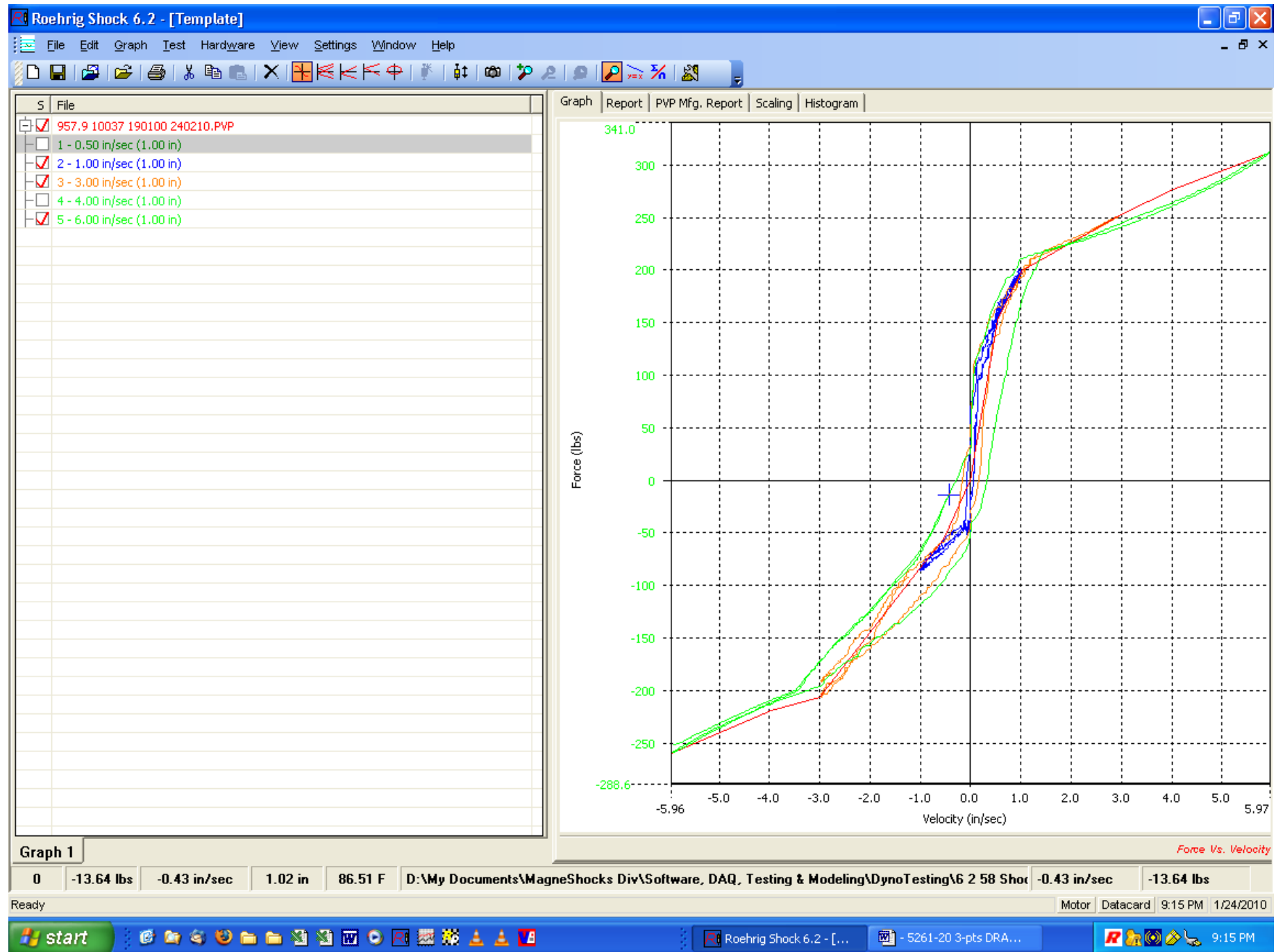
#8 50/23 147/90 220/180



#9 CVP plots at 1 – 3 – 6 in/s and PVP @ 0 – 0.5 – 1 – 3 – 4 – 6 in/s

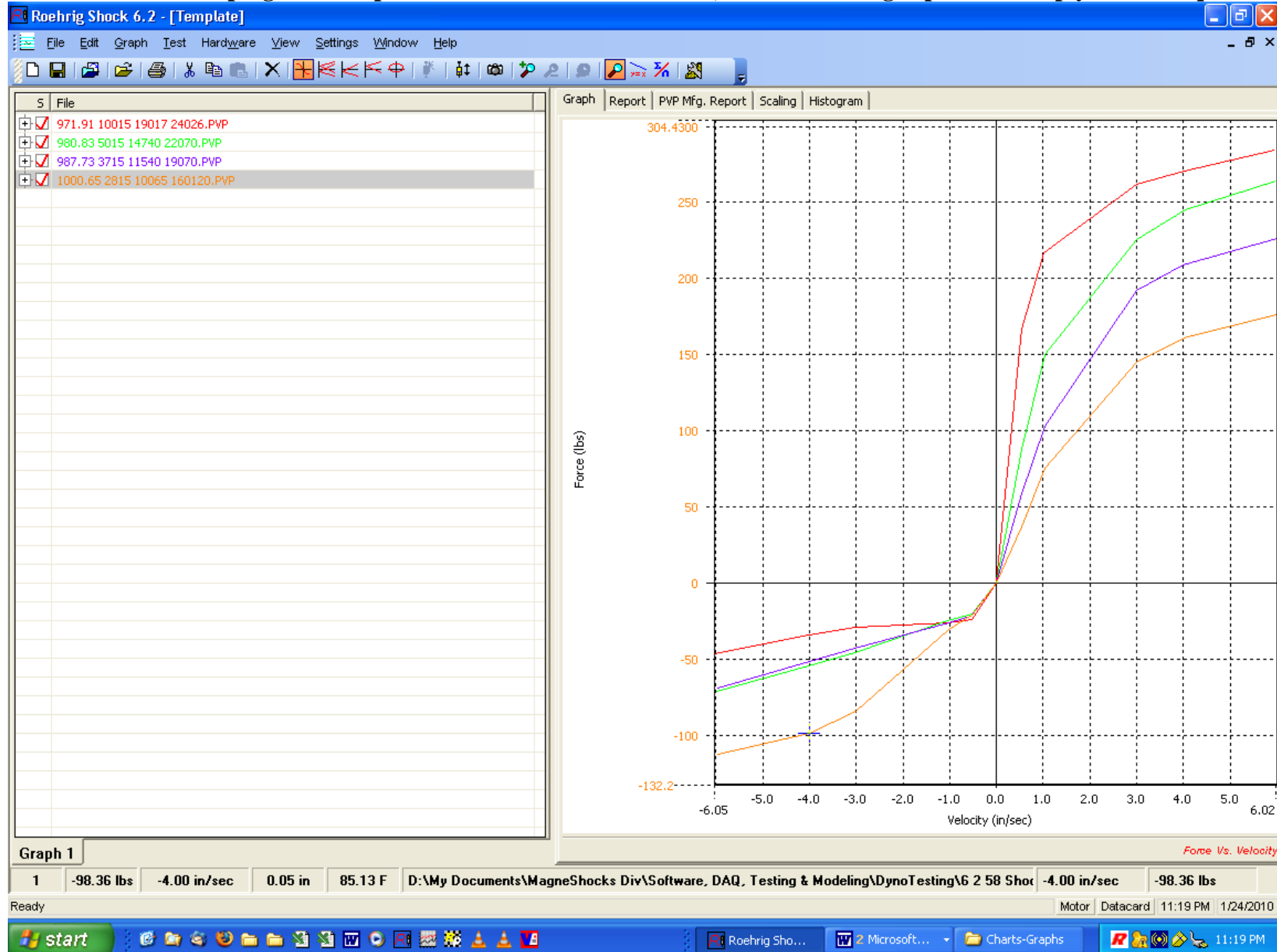
Code 0 1 3 (Reb/Comp settings)

#9 100/37 190/100 240/210



**SPLIT-VALVES “PVP” graphs “Lock-Down”** (stiffer Rebound than Compression - similar to old Carrera™ D-T)  
 Measured @ 0.5 – 1 – 3 – 4 – 6 inch/sec piston velocities

Most current Drag applications use higher “ratios” of Rebound/Compression. **#9/1 – 8/3 – 7/3 – 6/5 (the most common valvings) are shown.** You can easily find intermediate compression valvings (#2 or #4) by choosing settings in between those listed. There are many shocks on the market that have stiffer Rebound. BUT, they are almost always LINEAR VALVINGS (which means damping rises in proportion to the piston velocity). They usually have softer damping at low speeds and the stiff damping is ONLY at higher piston velocities. **Cars with more damping at lower piston velocities are more stable, never attain high speeds & simply do not require stiff high-speed damping.**



**#9/5 Split-valve “CVP graphs @ 1 – 3 – 6 in/s**

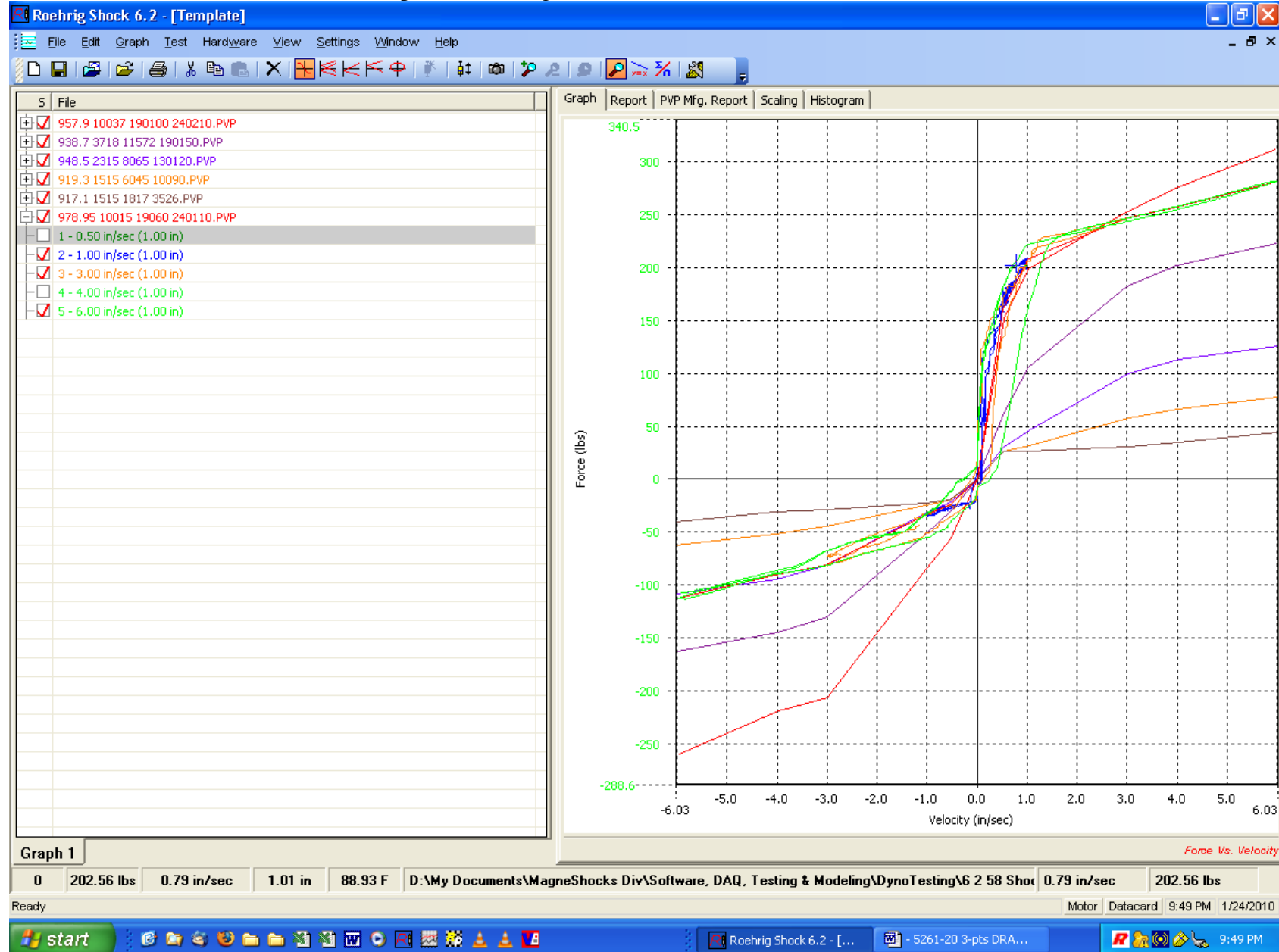
“PVP” graphs also shown to visualize the “relative relationships” @ 0.5 – 1 – 3 – 4 – 6 inch/sec piston velocities

Code 0 1 3 (Reb/Comp settings)

Std #9 100/37 190/57 240/200

Std #5 23/15 80/65 130/120

#9/5 **100/15 190/60 240/110** (compression settings had to be reduced a bit from the “std” codes)



**#9/3 Split-valve “CVP graphs @ 1 – 3 – 6 in/s**

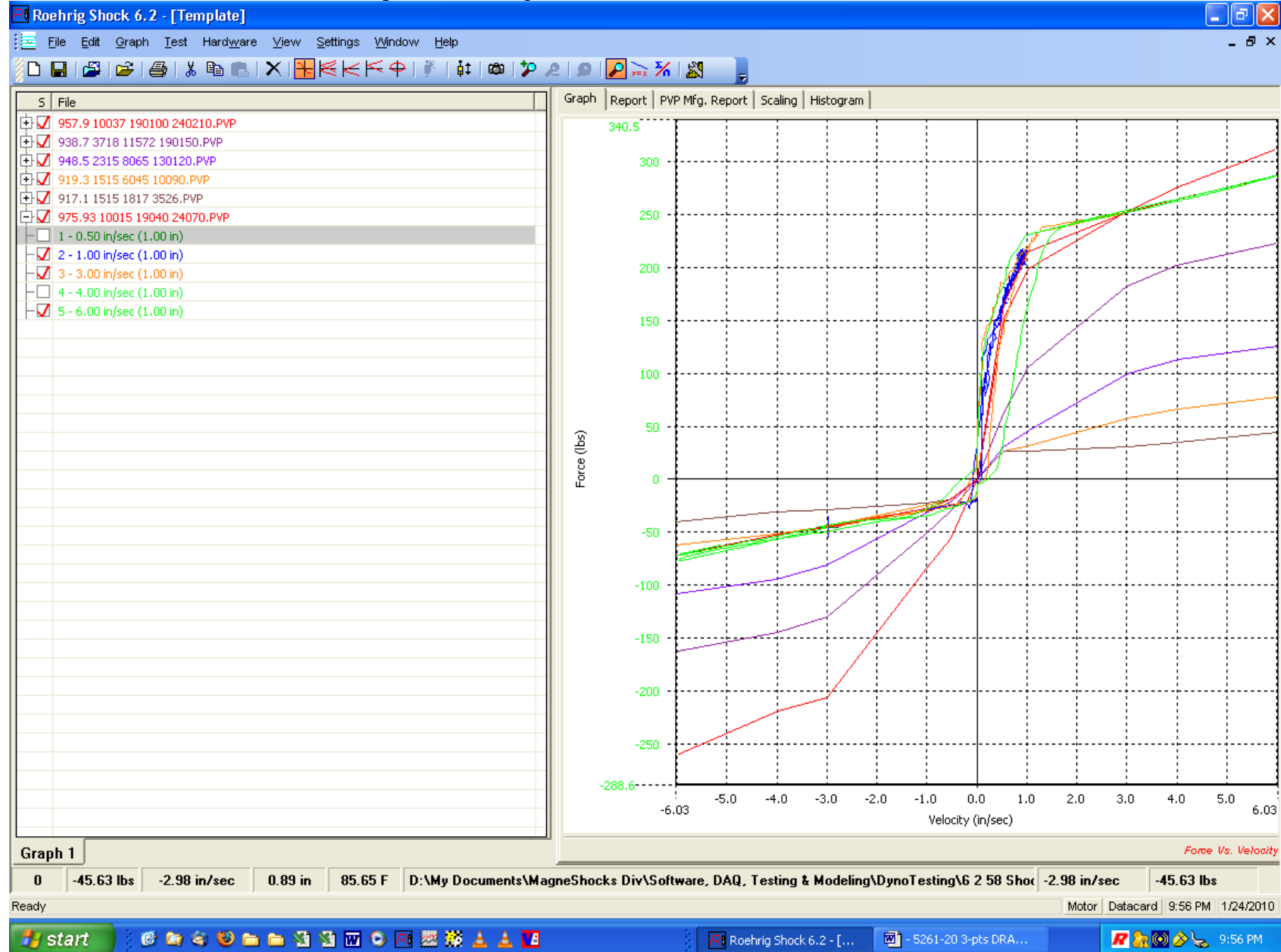
“PVP” graphs also shown to visualize the “relative relationships” @ 0.5 – 1 – 3 – 4 – 6 inch/sec piston velocities

Code 0 1 3 (Reb/Comp settings)

Std #9 100/37 190/57 240/200

Std #3 15/15 60/45 100/90

#9/3 100/15 190/40 240/70 (compression settings had to be reduced a bit from the “std” codes)



**#9/1 Split-valve "CVP graphs @ 1 – 3 – 6 in/s**

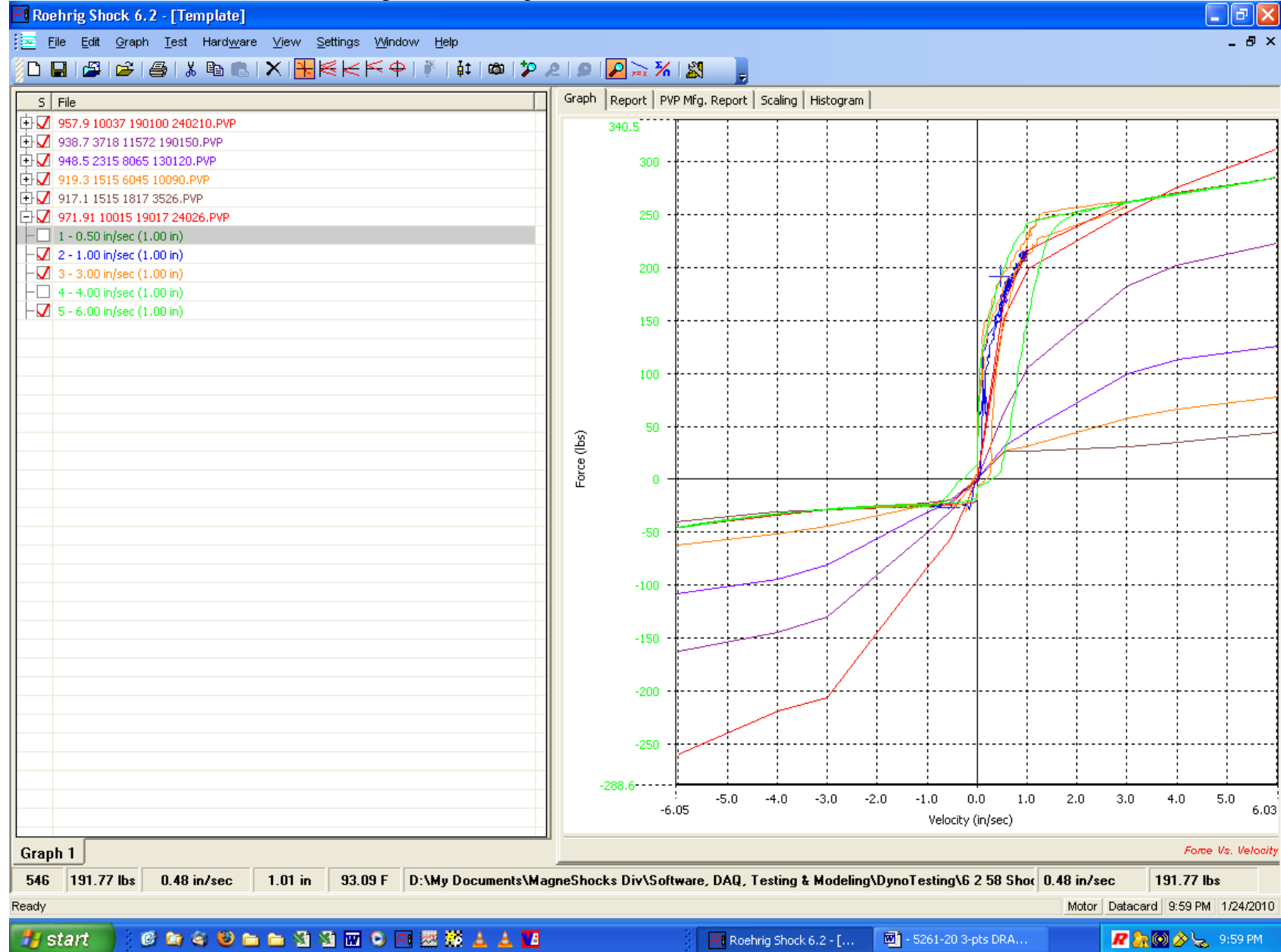
"PVP" graphs also shown to visualize the "relative relationships" @ 0.5 – 1 – 3 – 4 – 6 inch/sec piston velocities

Code 0 1 3 (Reb/Comp settings)

Std #9 100/37 190/57 240/200

Std #1 15/15 18/17 35/26

#9/1 100/15 190/17 240/26 (compression settings same as the "std" codes)



**#8/5 Split-valve “CVP graphs @ 1 – 3 – 6 in/s**

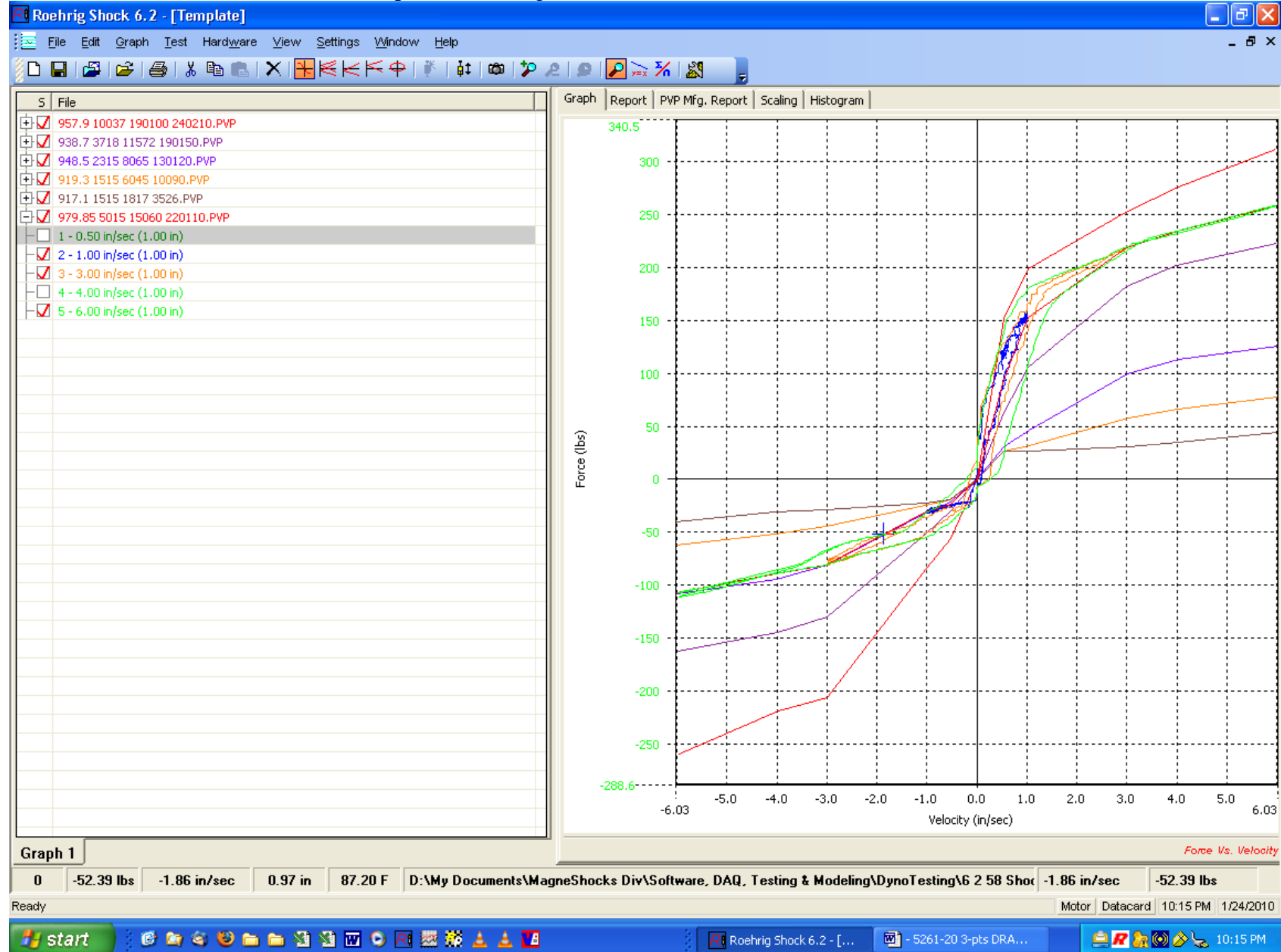
“PVP” graphs also shown to visualize the “relative relationships” @ 0.5 – 1 – 3 – 4 – 6 inch/sec piston velocities

Code 0 1 3 (Reb/Comp settings)

Std #8 50/23 147/90 220/180

Std #5 23/15 80/65 130/120

#8/5 50/15 147/60 220/110 (compression settings had to be reduced a bit from the “std” codes)



**#8/3 Split-valve “CVP graphs @ 1 – 3 – 6 in/s**

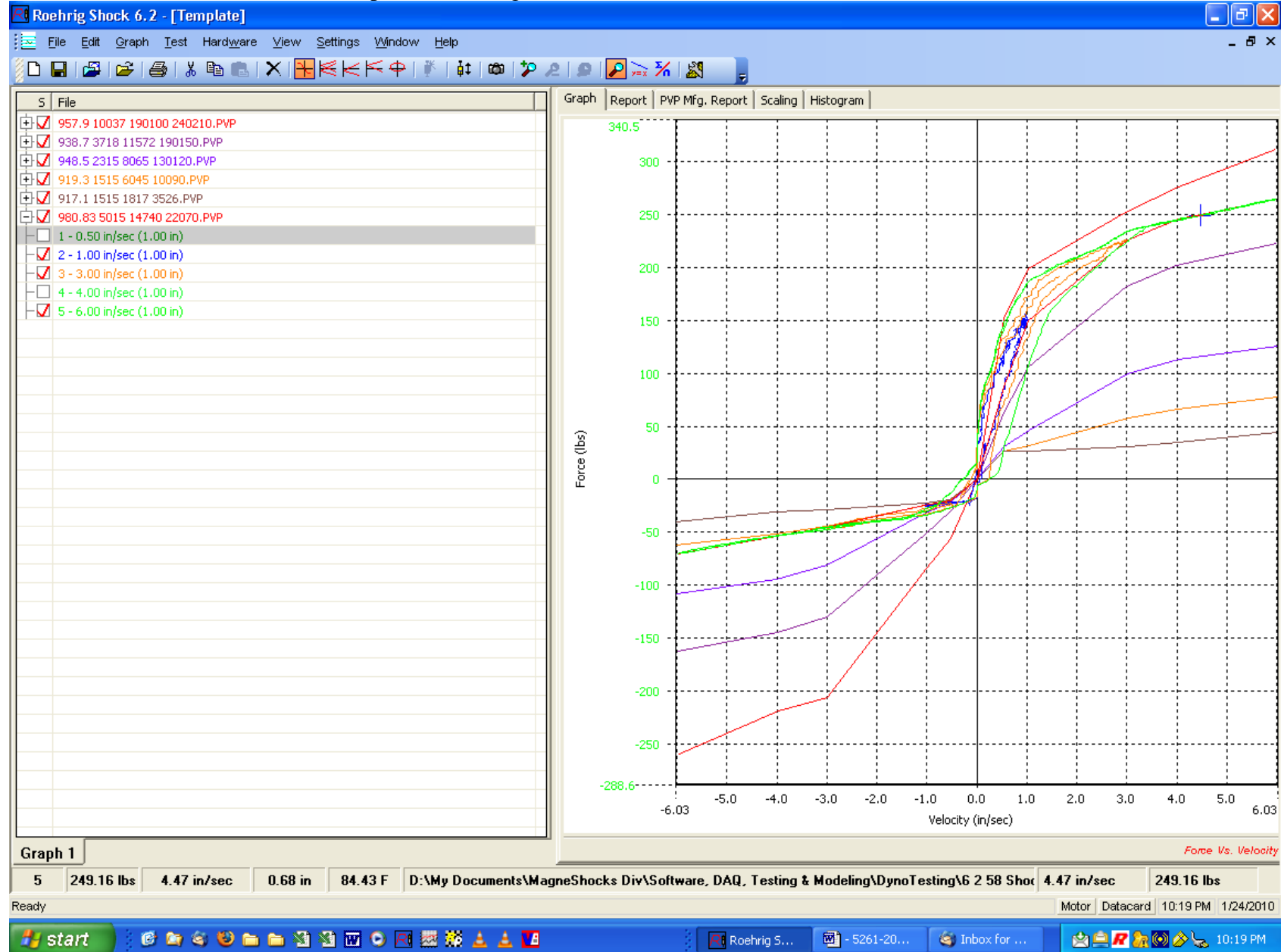
“PVP” graphs also shown to visualize the “relative relationships” @ 0.5 – 1 – 3 – 4 – 6 inch/sec piston velocities

Code 0 1 3 (Reb/Comp settings)

Std #8 50/23 147/90 220/180

Std #3 15/15 60/45 100/90

#8/3 **50/15 147/40 220/70** (compression settings had to be reduced some from the “std” codes)



**#8/1 Split-valve “CVP graphs @ 1 – 3 – 6 in/s**

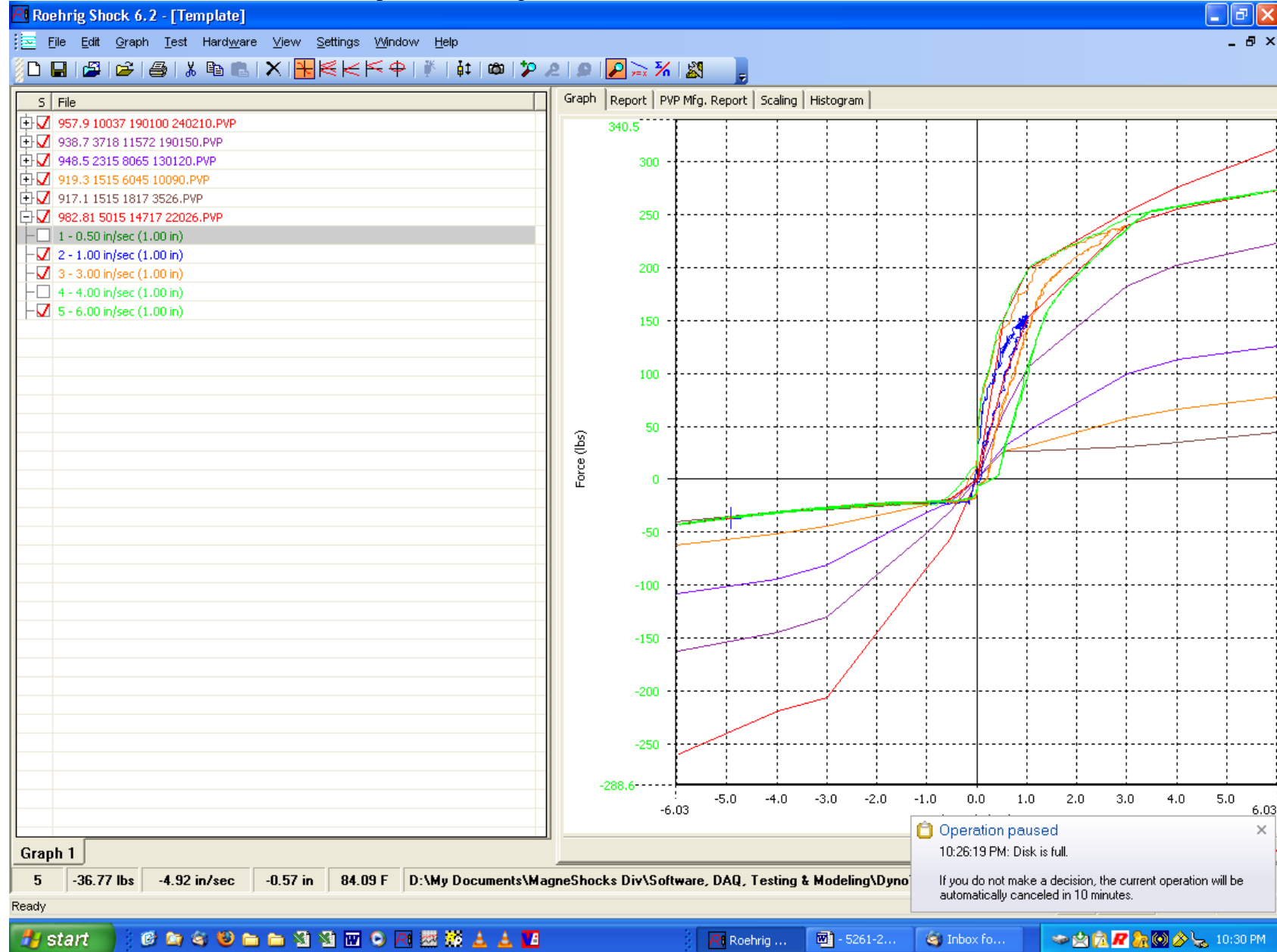
“PVP” graphs also shown to visualize the “relative relationships” @ 0.5 – 1 – 3 – 4 – 6 inch/sec piston velocities

Code 0 1 3 (Reb/Comp settings)

Std #8 50/23 150/90 220/180

Std #1 15/15 18/17 35/26

#8/1 50/15 150/17 220/26 (compression settings are the same as the “std” codes)



### #7/5 Split-valve "CVP graphs @ 1 - 3 - 6 in/s

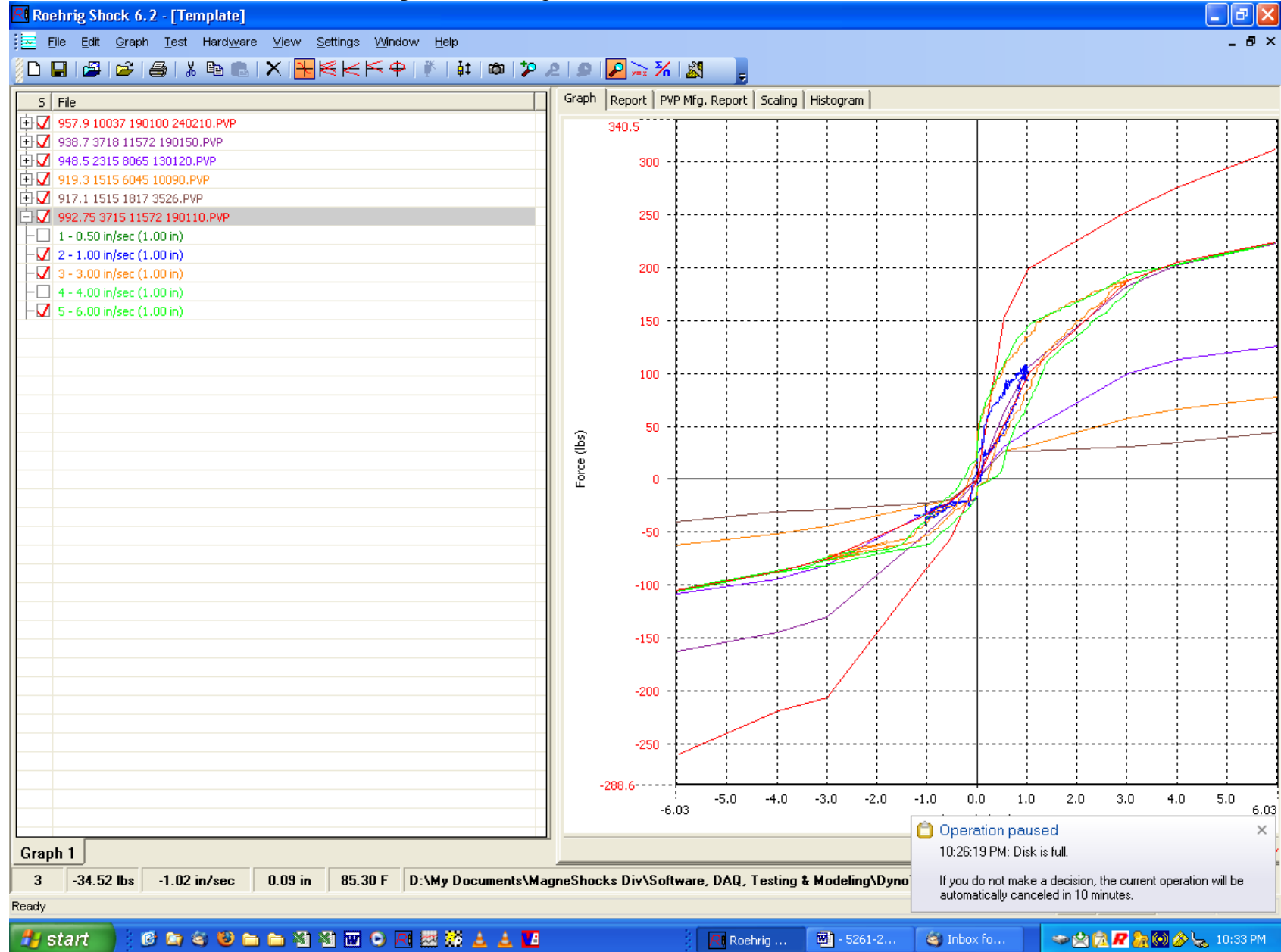
"PVP" graphs also shown to visualize the "relative relationships" @ 0.5 - 1 - 3 - 4 - 6 inch/sec piston velocities

Code 0 1 3 (Reb/Comp settings)

Std #7 37/18 115/72 190/150

Std #5 23/15 80/65 130/120

#7/5 37/15 115/72 190/110 (compression settings had to be raised @1 & reduced @3 from the "std" codes)



### #7/3 Split-valve "CVP graphs @ 1 – 3 – 6 in/s

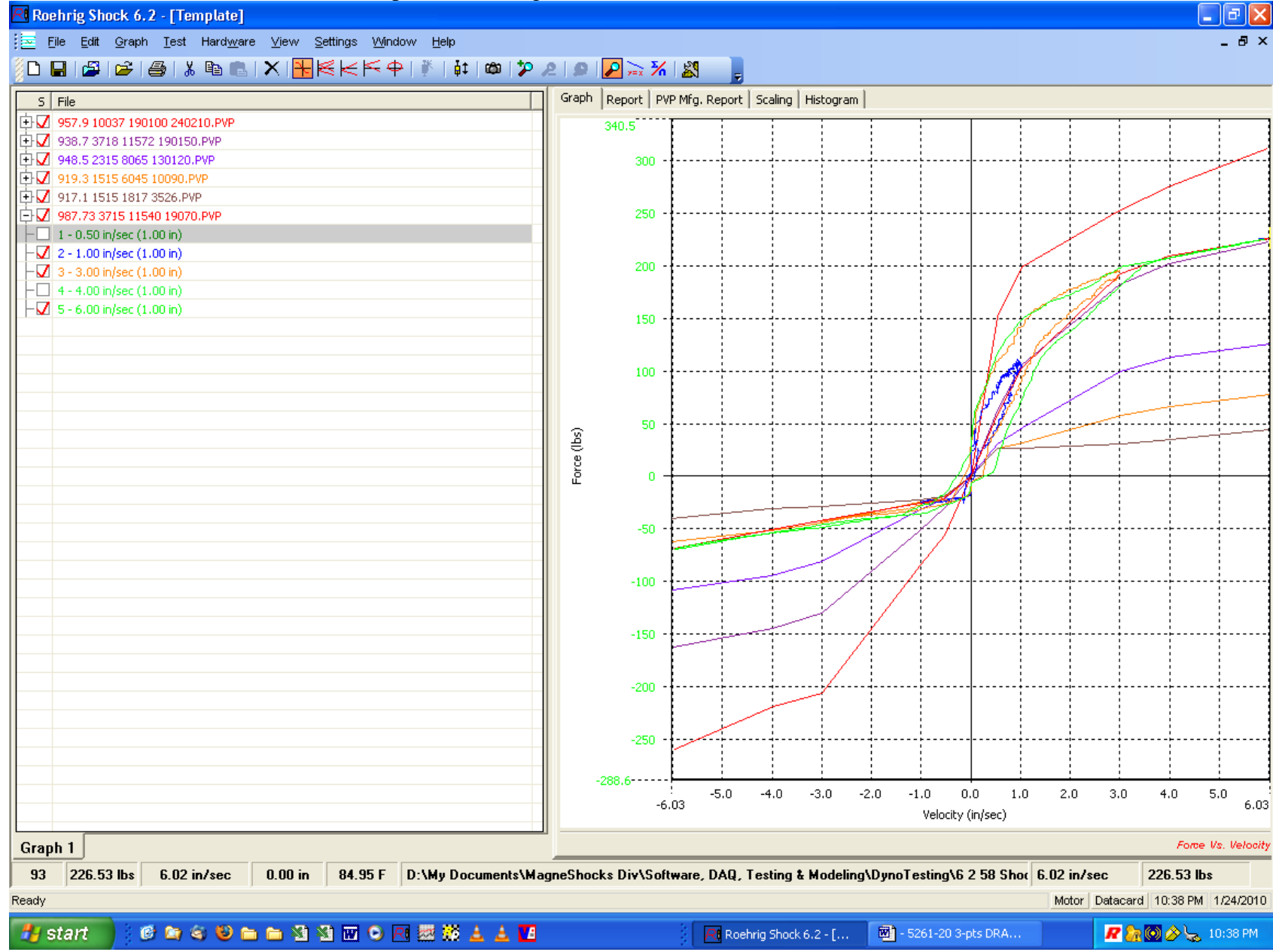
"PVP" graphs also shown to visualize the "relative relationships" @ 0.5 – 1 – 3 – 4 – 6 inch/sec piston velocities

Code 0 1 3 (Reb/Comp settings)

Std #7 37/18 115/72 190/150

Std #3 15/15 60/45 100/90

#7/3 37/15 115/40 190/70 (compression settings had to be reduced a bit from the "std" codes)



**#7/1 Split-valve "CVP graphs @ 1 – 3 – 6 in/s**

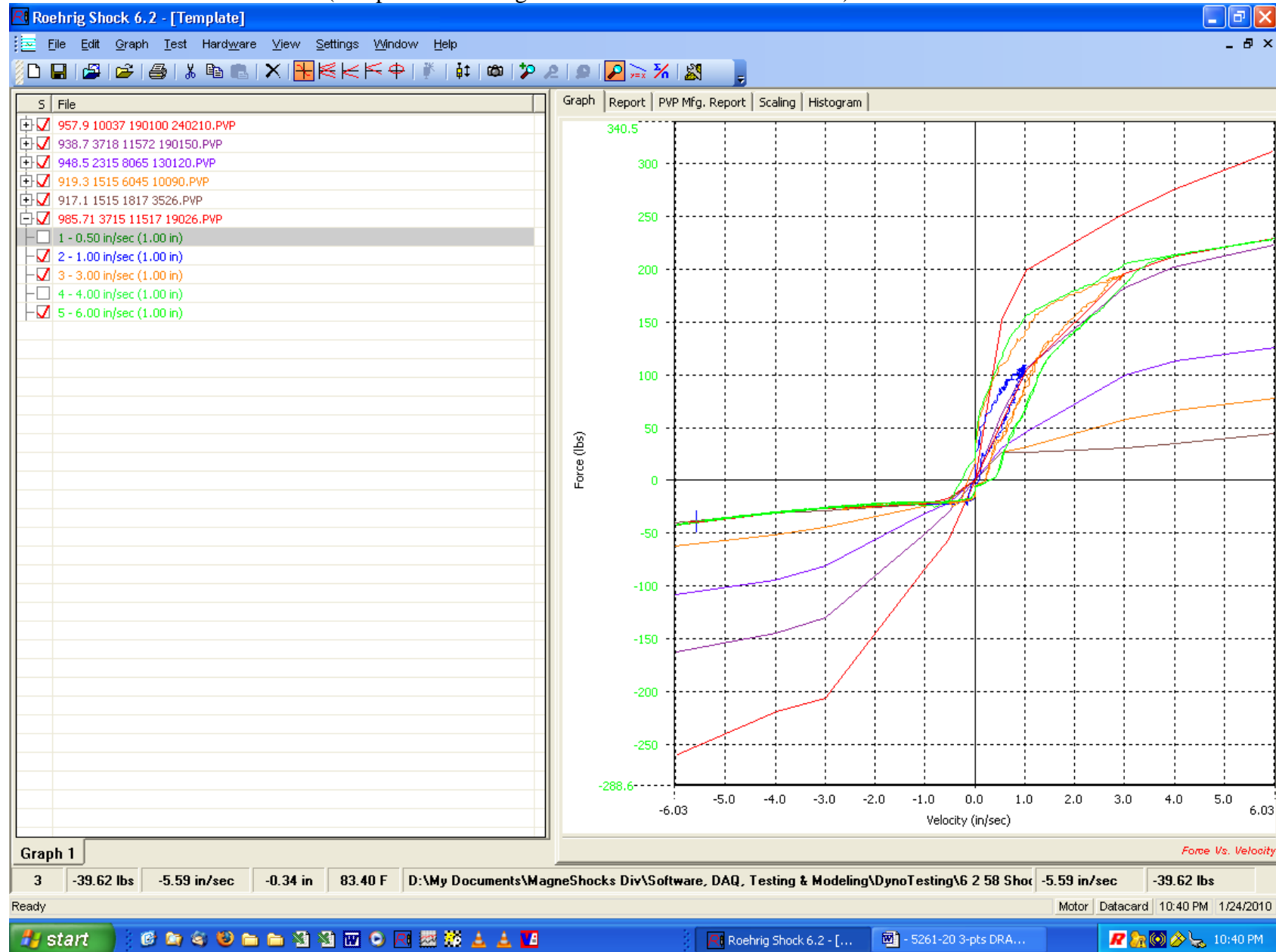
"PVP" graphs also shown to visualize the "relative relationships" @ 0.5 – 1 – 3 – 4 – 6 inch/sec piston velocities

Code 0 1 3 (Reb/Comp settings)

Std #7 37/18 115/72 190/150

Std #1 15/15 18/17 35/26

#7/1 37/15 115/17 190/26 (compression settings are the same as the "std" codes)



**#6/5 Split-valve "CVP graphs @ 1 – 3 – 6 in/s**

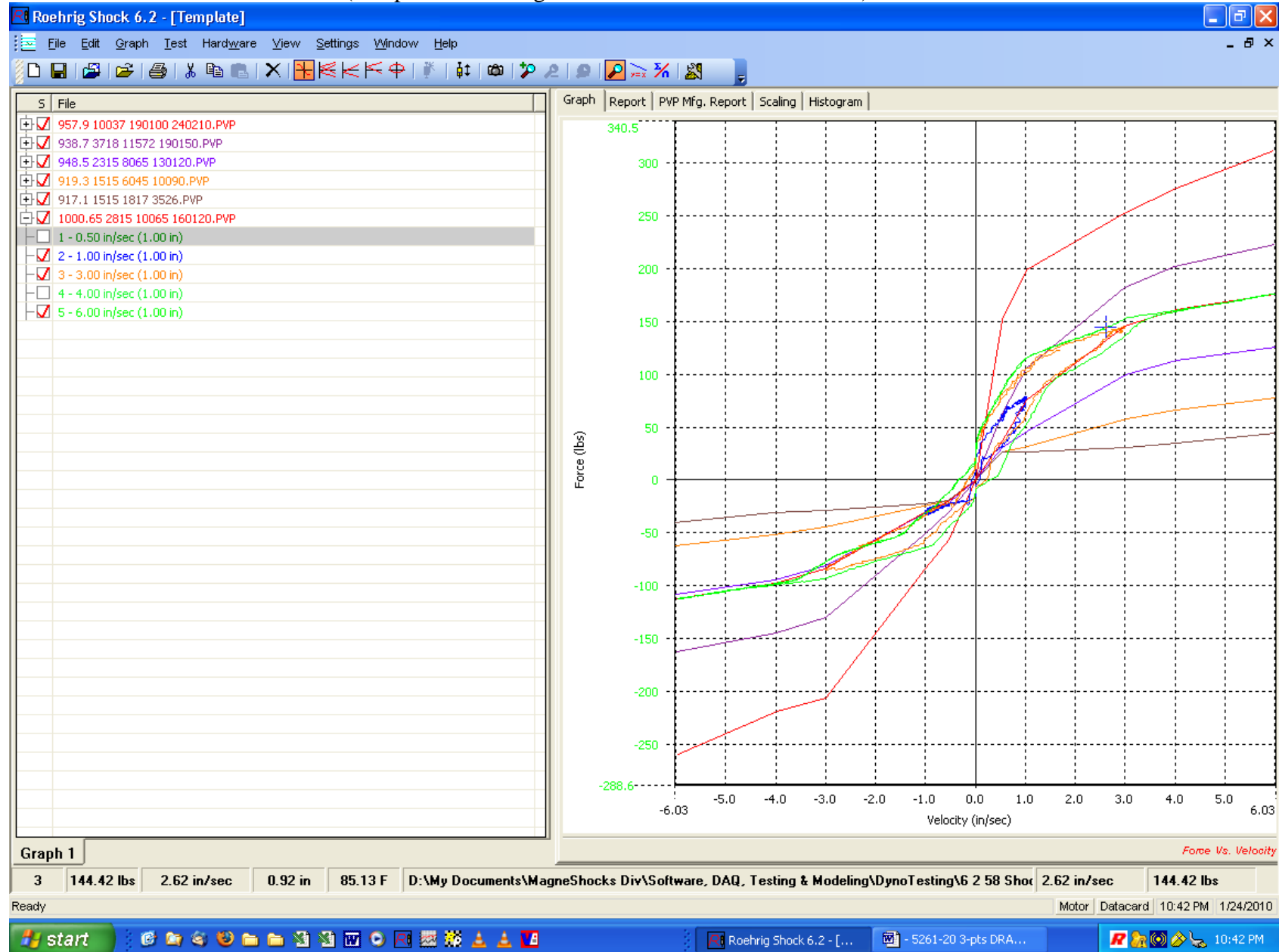
"PVP" graphs also shown to visualize the "relative relationships" @ 0.5 – 1 – 3 – 4 – 6 inch/sec piston velocities

Code 0 1 3 (Reb/Comp settings)

Std #6 28/16 90/72 160/130

Std #5 23/15 80/65 130/120

#6/5 **28/15 90/65 160/130** (compression settings are the same as the "std" codes)



## #6/3 Split-valve "CVP graphs @ 1 – 3 – 6 in/s

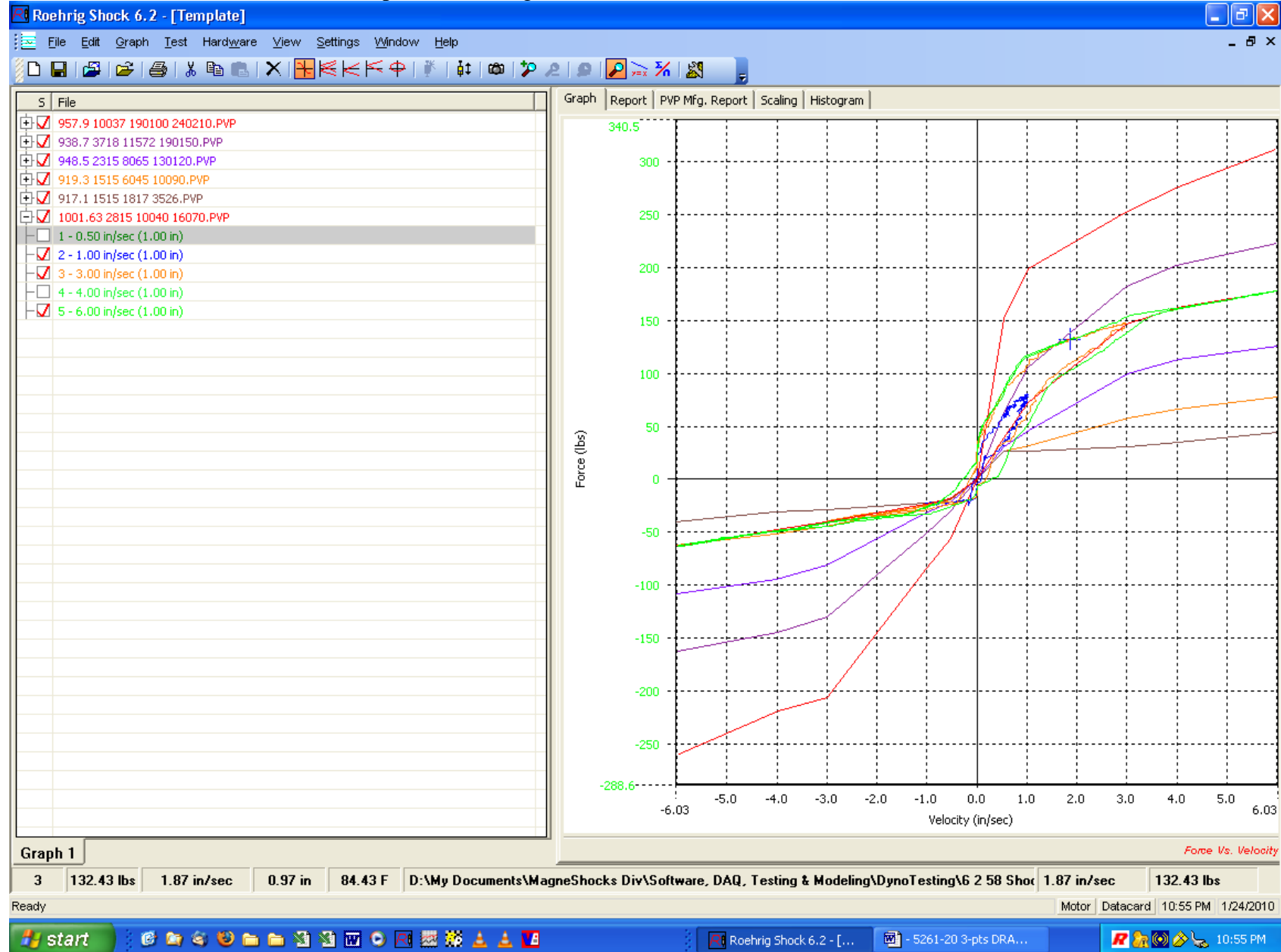
"PVP" graphs also shown to visualize the "relative relationships" @ 0.5 – 1 – 3 – 4 – 6 inch/sec piston velocities

Code 0 1 3 (Reb/Comp settings)

Std #6 28/16 90/72 160/130

Std #3 15/15 60/45 100/90

#6/3 28/15 90/40 160/70 (compression settings had to be reduced a bit from the "std" codes)



## #6/1 Split-valve "CVP graphs @ 1 – 3 – 6 in/s

"PVP" graphs also shown to visualize the "relative relationships" @ 0.5 – 1 – 3 – 4 – 6 inch/sec piston velocities

Code 0 1 3 (Reb/Comp settings)

Std #6 28/16 90/72 160/130

Std #1 15/15 18/17 35/26

#6/1 28/15 90/17 160/26 (compression settings are the same as the "std" codes)

