COGNITE
ACADEMY

Role-Based
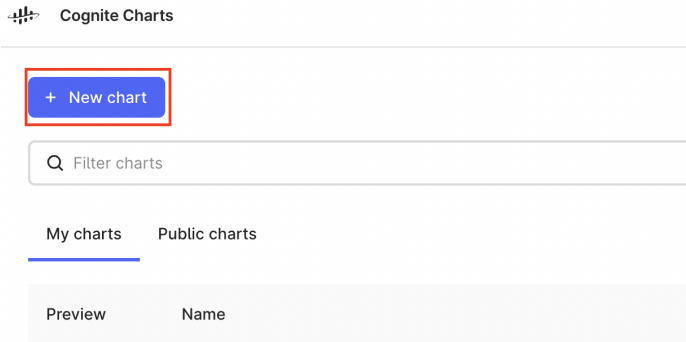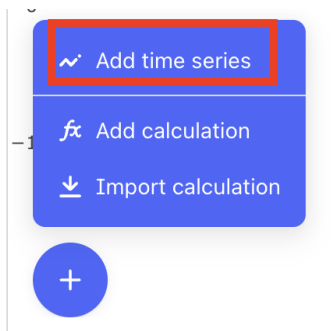Training

My
Overview

Academy
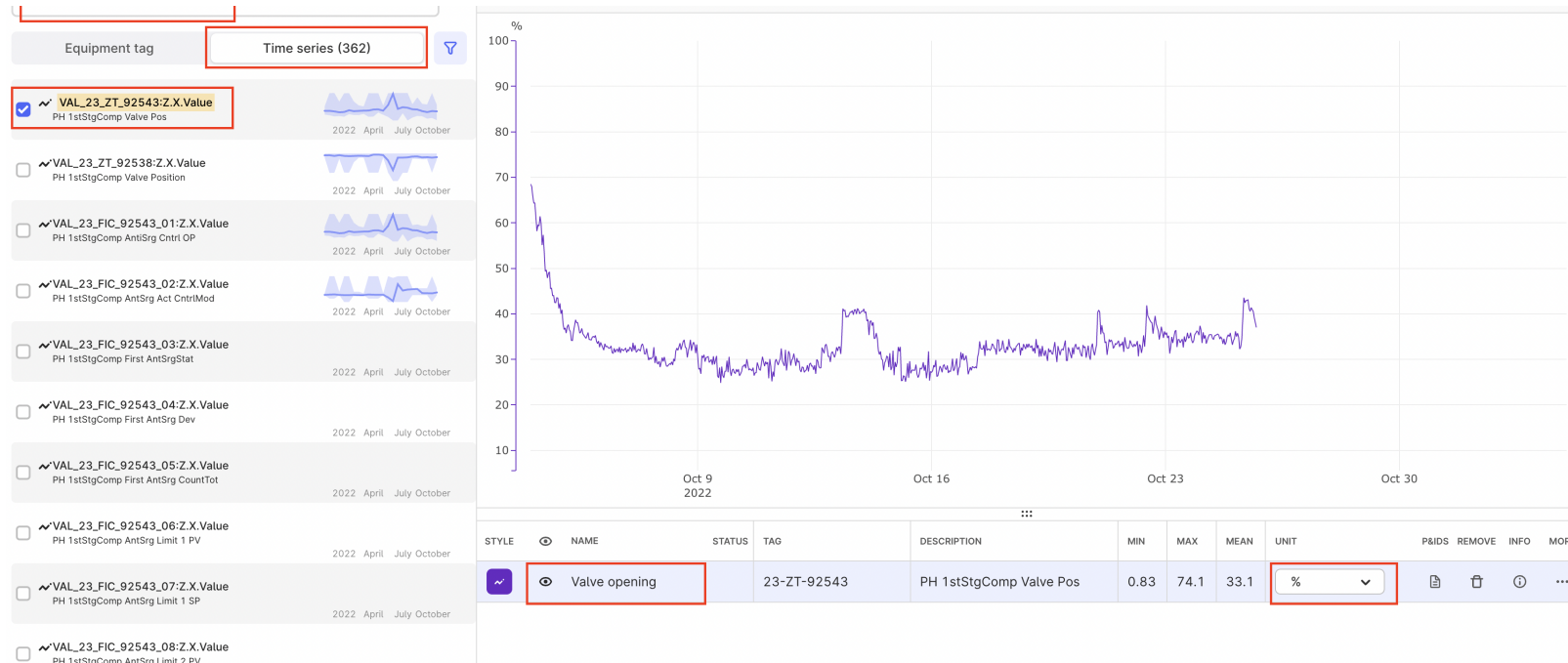Discussions

Search

How to solve it?

1. Create a new chart and give it a unique name, for example, *Valve mileage use case.*

2. Click the blue **+** icon, then click **Add time series**.

- Find and visualize the following time series: **VAL_23_ZT_92543:Z.X.Value.** Name it **Valve opening**, and set the unit as %.

Lessons

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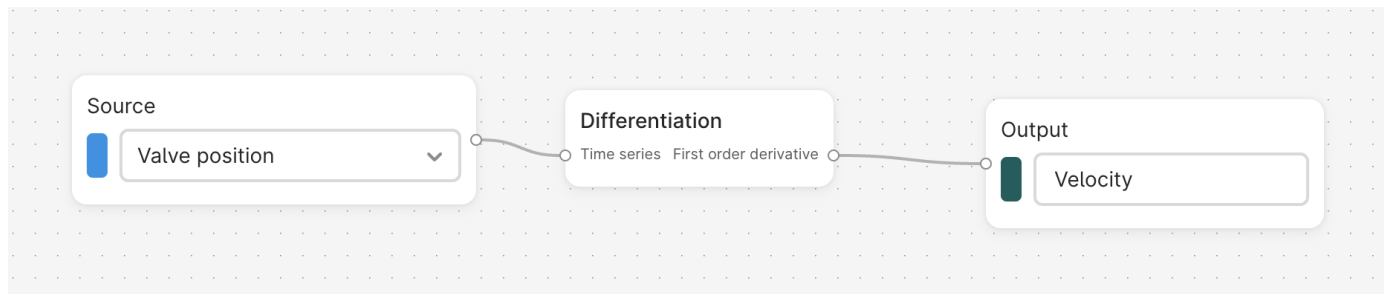ACADEMY

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3. Click the blue **+** icon, then **Add calculation**. Calculate Valve position using the **Division** and **Multiplication** functions.
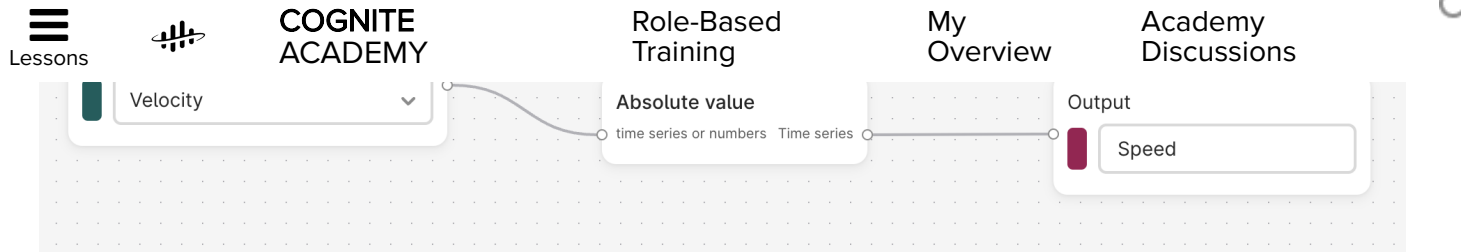
- (Valve opening/100) x 40, unit is cm.
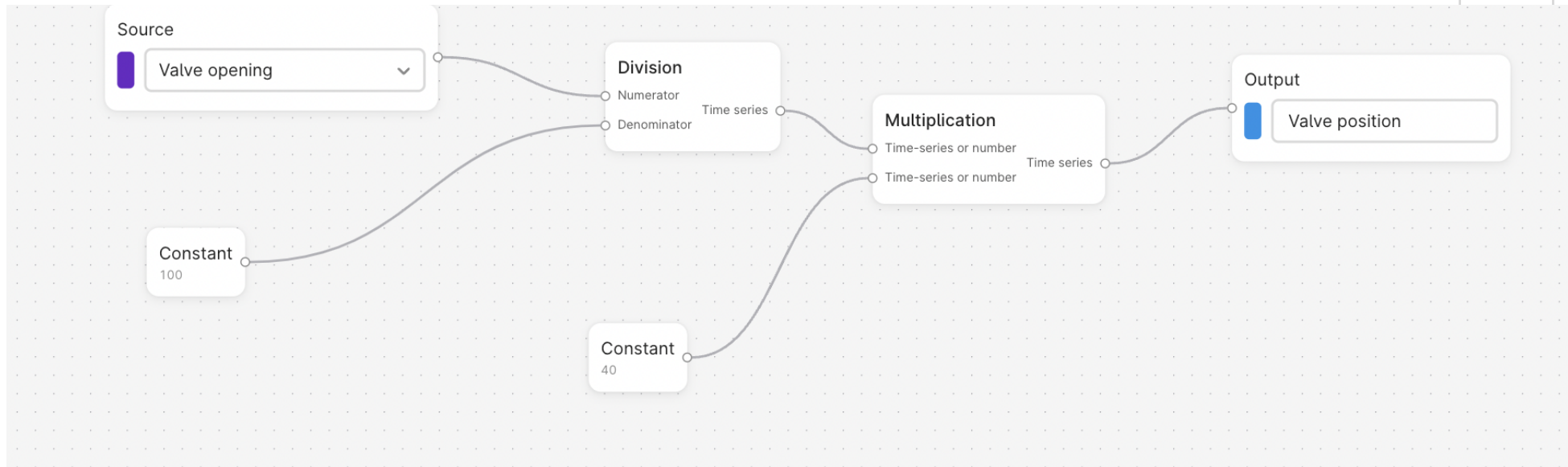
4. Calculate Valve velocity using **Differentiation** function, unit is cm/s.

5. Calculate Valve speed using **Absolute value** function, unit is cm/s.

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| Velocity | ∨ |

Absolute value

time series or numbers   Time series

Output

Speed

6. Lastly, calculate Valve mileage using **Integration** function, where frequency is **1s** and unit is **cm**.

Source

| Speed | ∨ |

Integration

Time series   Cumulative integral

Output
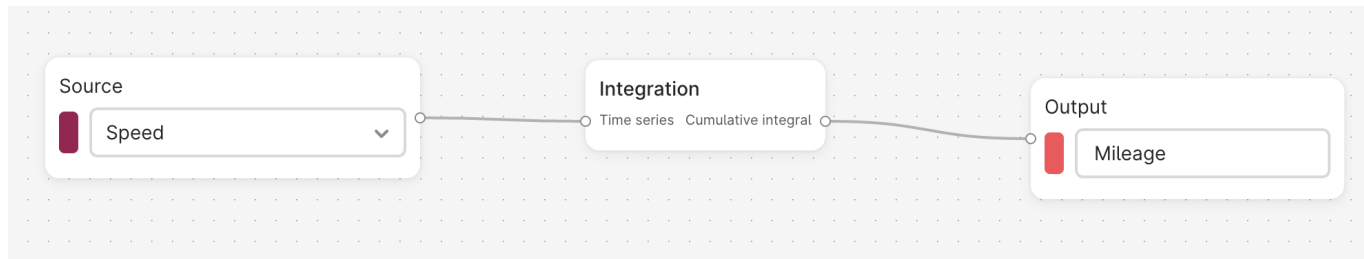
Mileage

7. To improve the visualization, you can close Valve position and Valve opening from the chart view, and merge units in the Y axis.

Lessons

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Y axis

Show Y axes

Merge units

cm/s   cm

0

0

| | | | | 22:00 | | 23:00 | | 00:00 | | 01:00 | | 02:00 | | 03:00 | | 04:00 |
| Sep 8, 2022 | | | | | | | | Sep 9, 2022 | | | | | | | | |
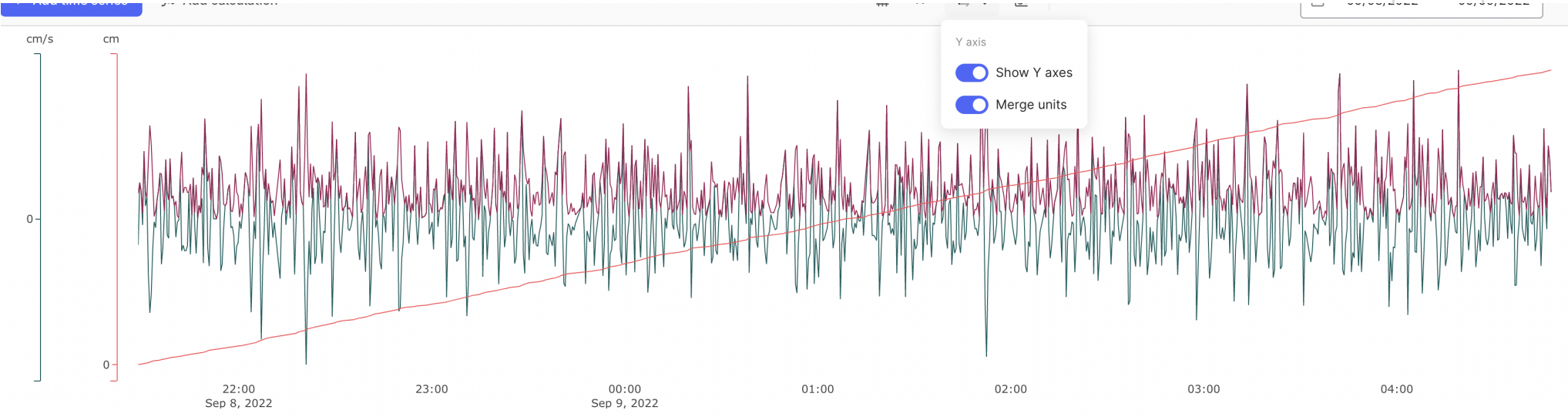
STYLE		NAME	STATUS	TAG	DESCRIPTION	MIN	MAX	MEAN	UNIT		P&IDS	REMOVE	INFO	MORE
fx	👁	Mileage			Mileage	0	975	489	cm *	⌄		🗑	ⓘ	•••
fx	👁	Speed			Speed	0.0105	849	139	cm/s *	⌄		🗑	ⓘ	•••
fx	👁	Velocity			Velocity	-706	849	2.32	cm/s *	⌄		🗑	ⓘ	•••
fx		Valve position			Valve position	7.69	18.3	11.9	cm *	⌄		🗑	ⓘ	•••
		Valve opening		23-ZT-92543	PH 1stStgComp Valve Pos	19.2	45.9	29.7	%	⌄	📄	🗑	ⓘ	•••