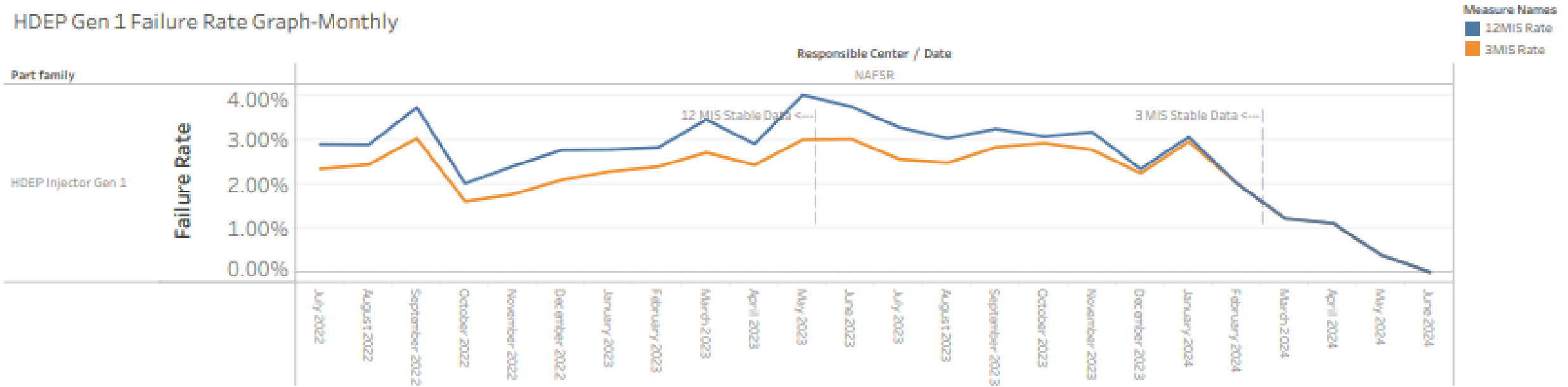


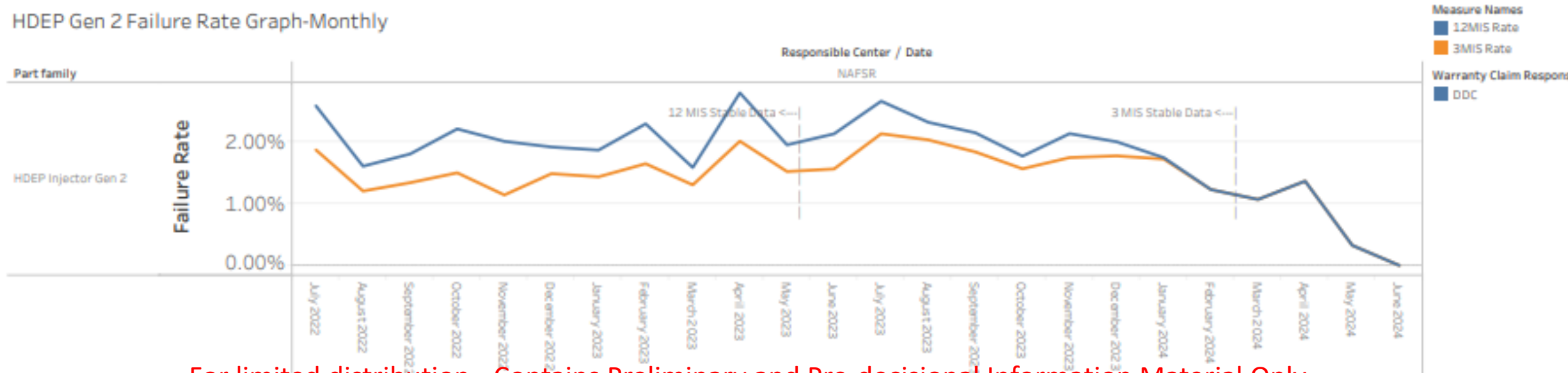
Overview of the Remanufacturing Process

- Injectors are completely torn down and ran through multiple washing processes.
- All of the injector components are kept together.
- The DMV25 (amplifier) needle and seat are re-ground.
- All parts are visually inspected. Spring tensions are checked. O-rings are replaced. Coil resistance is checked.
- Every injector is then ran through a 6 point flow test on a calibration machine using the same specs Bosch uses. They are tested up to 1400 bar and fuel quantity is measured in cubic microns.
- If the injector fails, it will go to re-work. This may involve additional component replacement or grinding work on the DMV24 (needle valve).
- Injectors must pass the calibration test before they are serialized and packaged.

HDEP Gen 1 Failure Rate Graph-Monthly



HDEP Gen 2 Failure Rate Graph-Monthly



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HDEP Gen 1 Inj failure rate (Sub-Family) - 3MIS

Failure Rate

Failure

Net Sales Qty

Part family	Subset Part Family	Responsible Center	Target Source	3MIS Target Rate %	2022		Date 2023				2024		
					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	
HDEP Injector Gen 1	DD13 GEN 1 - INJECTOR	NAFSR	New + 0.5%	3.07%	2.79%	2.31%	2.83%	2.26%	3.05%	2.50%	2.42%	1.00%	
					120	98	110	74	96	76	67	22	
						4,302	4,241	3,891	3,277	3,110	3,035	2,770	2,210
	New Supplier	New	2.57%	2.25%	2.54%	2.19%	3.17%	1.28%	5.08%	2.41%	0.00%		
					10	15	15	16	5	16	9		
					444	591	686	505	390	315	374	250	
	DD15 / 16 GEN 1 - Injector	NAFSR	New + 0.5%	2.09%	2.47%	1.51%	2.32%	2.89%	2.36%	2.84%	1.84%	0.44%	
					156	109	149	142	115	105	99	21	
						6,311	7,198	6,416	4,919	4,872	3,699	5,387	4,775
	New Supplier	New	1.59%	0.78%	3.01%	-366.67%	0.00%	3.52%	2.73%	1.23%	1.16%		
					5	14	11	7	5	3	5		
					641	465	-3	288	199	183	244	431	

HDEP Gen 2 Inj failure rate (Sub-Family) - 3MIS

Failure Rate

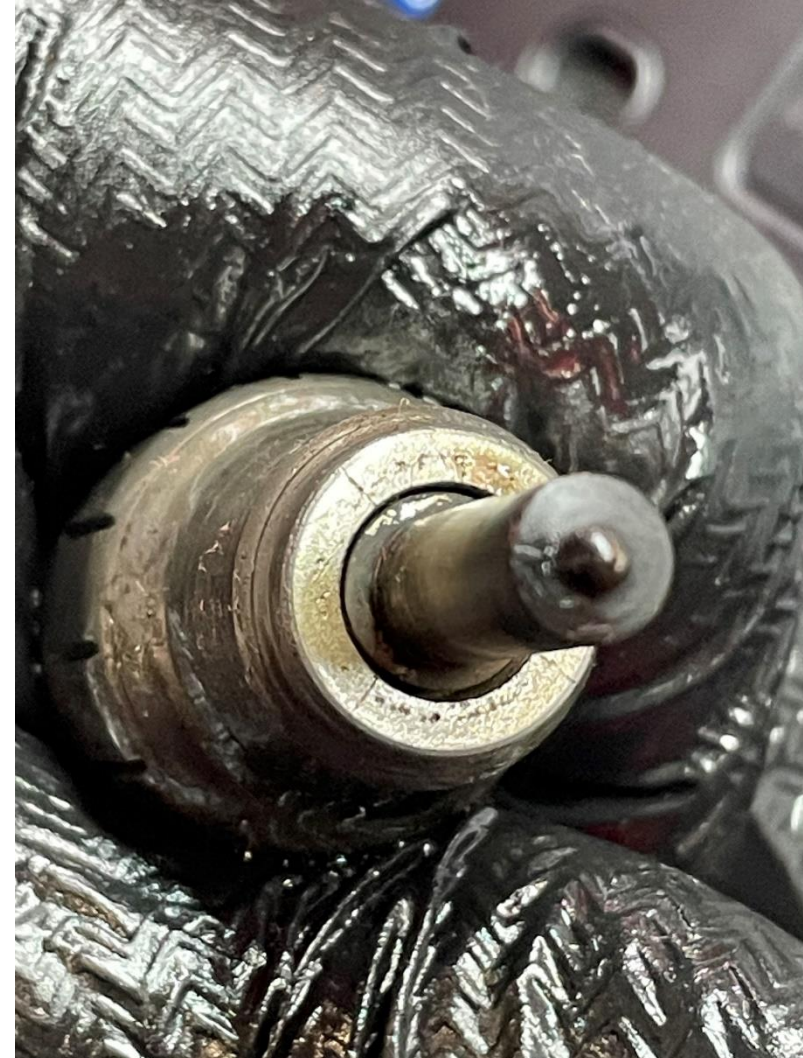
Failure

Net Sales Qty

Part family	Subset Part Family	Responsible Center	Target Source	3MIS Target Rate %	2022		Date 2023				2024		
					Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	
HDEP Injector Gen 2	DD13 GEN 2 - INJECTOR	NAFSR	New + 0.5%	0.92%	0.78%	1.24%	1.14%	0.74%	0.98%	1.21%	0.76%	0.38%	
					17	35	45	29	32	40	32	11	
						2,193	2,826	3,954	3,939	3,275	3,319	4,196	2,880
	New Supplier	New	0.42%	1.72%	1.71%	0.98%	1.00%	2.08%	1.85%	0.96%	0.48%		
					13	19	9	7	8	8	7	3	
					758	1,111	916	701	385	432	730	622	
	DD15 / 16 GEN 2 - Injector	NAFSR	New + 0.5%	1.83%	1.58%	1.42%	1.56%	2.08%	2.32%	1.87%	1.54%	0.64%	
					155	130	166	205	240	171	132	39	
						9,821	9,187	10,615	9,879	10,344	9,130	8,575	6,064
	New Supplier	New	1.33%	1.03%	1.32%	1.74%	1.83%	5.03%	3.80%	0.58%	0.26%		
					23	26	21	14	10	17	12	3	
					2,228	1,975	1,207	763	199	447	2,055	1,155	

Cracked Cap Nuts

- Occasionally we see recently installed reman injectors cause a pinging noise that wasn't there before. We have found the cap nuts cracked. This is being missed during the remanufacturing process.
- On 6/10/24 reman issued a quality alert to their teams with the photo shown.
- Reman will investigate other methods to identify these cracks beyond a visual inspection.



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Cracked Nozzles

- Three sets of reman injectors which experienced early life failure were sent to Bosch in Charleston for analysis. All three found a single injector with a crack at the shoulder of the nozzle. Additional sets are being analyzed.

1st 6 pack of injectors

Mileage at time of failure – 16,565

Injectors replaced for overfueling (fuel found in EGR hot pipe)

2nd 6 pack of injectors

Mileage at time of failure – 2,557

Injectors replaced for DPF Overtemp Faults

Single injector

Mileage at time of failure – 6,190

Injectors replaced for DPF overtemp and engine smoothness faults