



## Test Monitoring Center

6555 Penn Avenue  
Pittsburgh, PA 15206-4489  
(412) 365-1000

MEMORANDUM: 06-034  
DATE: May 12, 2006  
TO: L-37 Surveillance Panel  
FROM: Donald Lind  
SUBJECT: Gear Batch V1L417/P4L792

At the May 9, 2009 L-37 Surveillance Panel Meeting, the panel approved the use of the non-lubricated hardware, gear batch V1L417/P4L792. The approved reference oil targets, plots and data are attached.

These targets are effective for all tests completed on or after May 10, 2006.

DML/dml

Attachments

c: J.L. Zalar, TMC  
F.M. Farber, TMC  
<ftp://ftp.astmtmc.cmu.edu/docs/gear/137/memos/mem06-034.pdf>

Distribution: Electronic Mail

<b>GEAR BATCH V1L417/P4L792</b>											
<b>REFERENCE OIL TEST TARGETS (PINION)</b>											
	Reference Oil 151-3				Reference Oil 152				Reference Oil 153		
	N	Mean	S.D.		N	Mean	S.D.		N	Mean	S.D.
Wear	8	7.88	0.850*		8	8.38	0.870*		8	7.88	0.991*
Ridging	8	0.418 (9.84)	0.5676*		8	0.418 (9.84)	0.5573*		8	-0.322 (9.12)	0.6775*
Rippling	8	0.016 (9.52)	0.5300**		8	0.016 (9.52)	0.6185*		8	-0.524 (8.81)	0.6114*
Spitting	8	0.556 (9.93)	0.3463*		8	0.579 (9.94)	0.0880*		8	0.174 (9.66)	0.5523*

<b>GEAR BATCH V1L417/P4L792</b>											
<b>REFERENCE OIL TEST TARGETS (RING)</b>											
	Reference Oil 151-3				Reference Oil 152				Reference Oil 153		
	N	Mean	S.D.		N	Mean	S.D.		N	Mean	S.D.
Wear	8	8.00	0.771*		8	7.88	0.834*		8	7.75	0.697*
Ridging	8	0.693 (10.0)	0.3747*		8	0.693 (10.0)	0.1590*		8	0.016 (9.52)	0.7322*
Rippling	8	0.144 (9.63)	0.5230**		8	0.281 (9.74)	0.5462*		8	0.144 (9.63)	0.5636*
Spitting	8	0.579 (9.94)	0.1002*		8	0.583 (9.94)	0.1695*		8	0.560 (9.93)	0.1663*

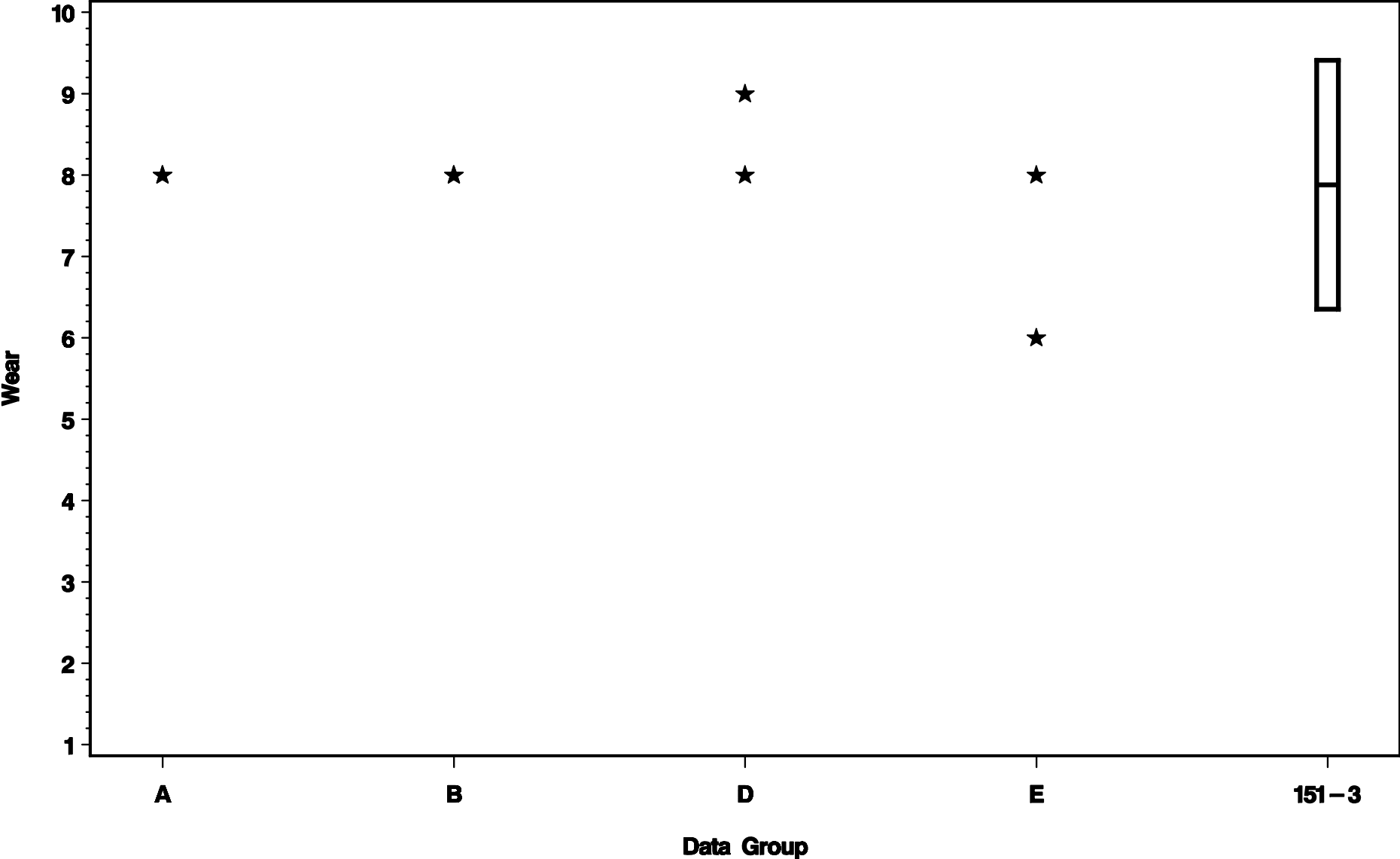
(\*) Industry Pooled Standard Deviation

(\*\*) Adjusted Industry Pooled Standard Deviation to Include Rippling Result of 8

**L-37 Non-lubricated Hardware, Pinion Batch V1L417/P4L792**  
**Test Target Data Set and Shewhart Severity Limits**

Reference Oil 151-3 (Bands Include Merit Ratings of 7, 8 & 9)

Pinion Wear

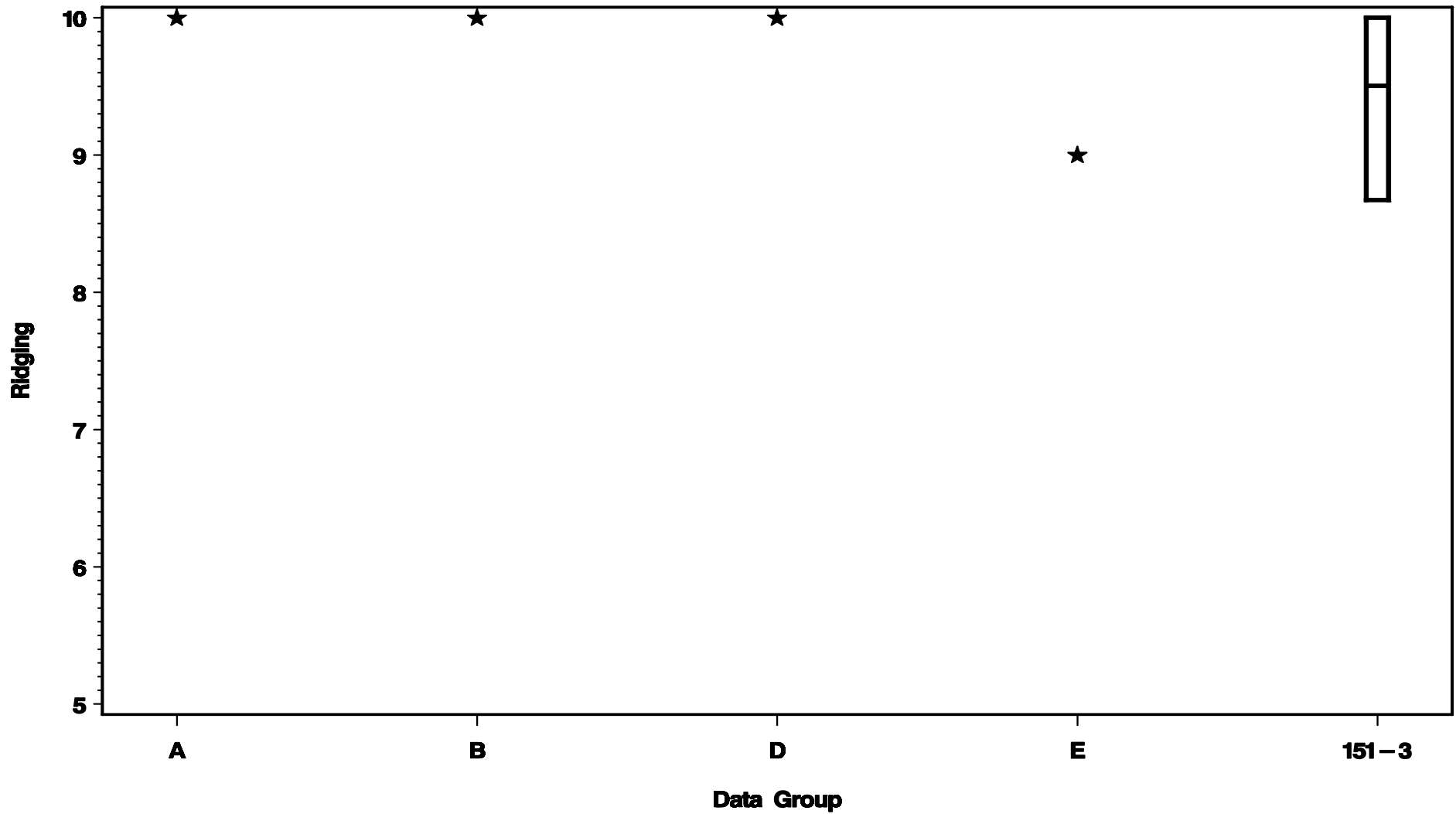


# L-37 Non-lubricated Hardware, Pinion Batch V1L417/P4L792

## Test Target Data Set and Shewhart Severity Limits

Reference Oil 151-3 (Bands Include Merit Ratings of 9 & 10)

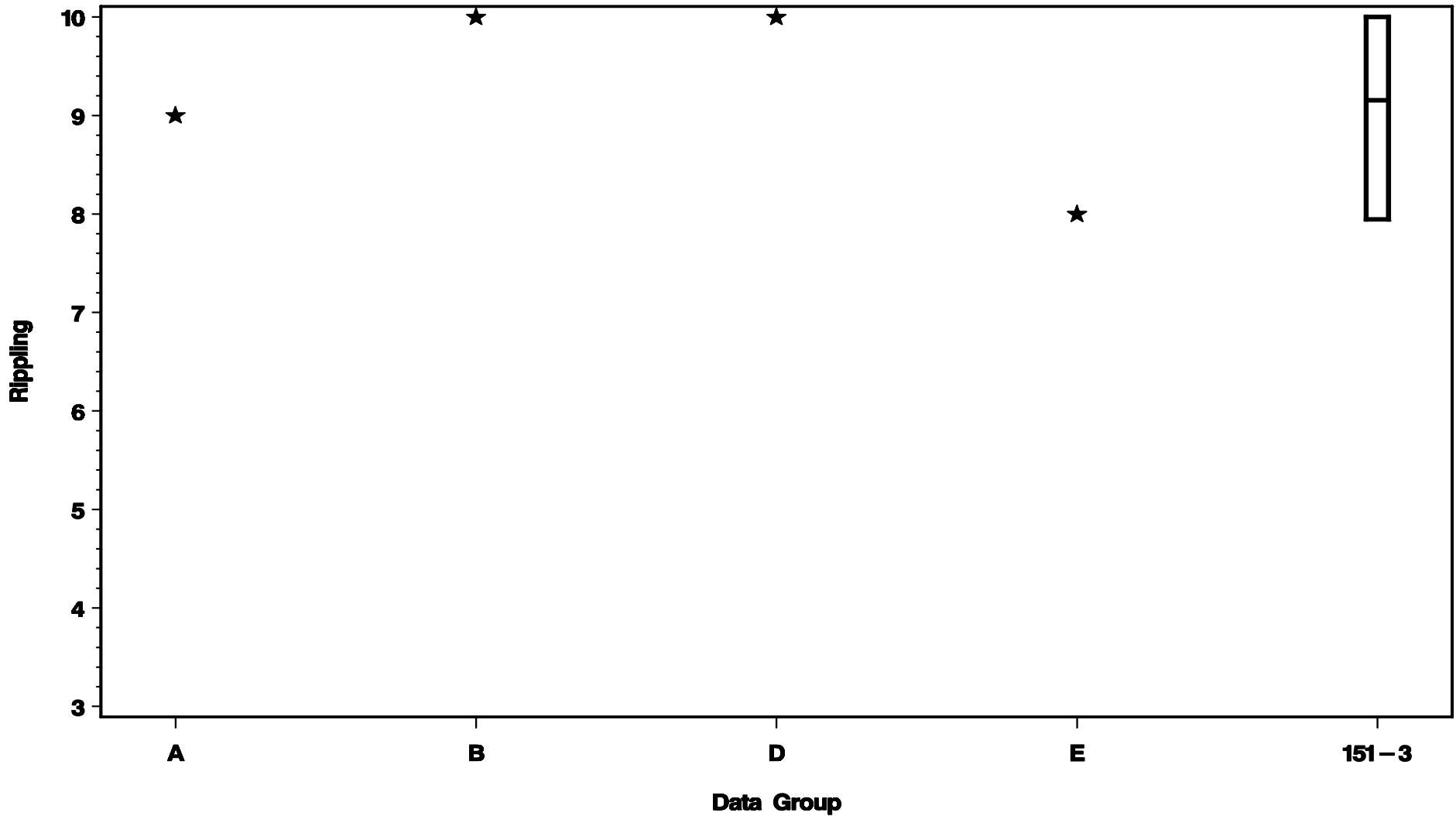
Pinion Ridging



**L-37 Non-lubricated Hardware, Pinion Batch V1L417\ P4L792**  
**Test Target Data Set and Shewhart Severity Limits**

Reference Oil 151-3 (Bands Include Merit Ratings of 8, 9, & 10)

Pinion Rippling

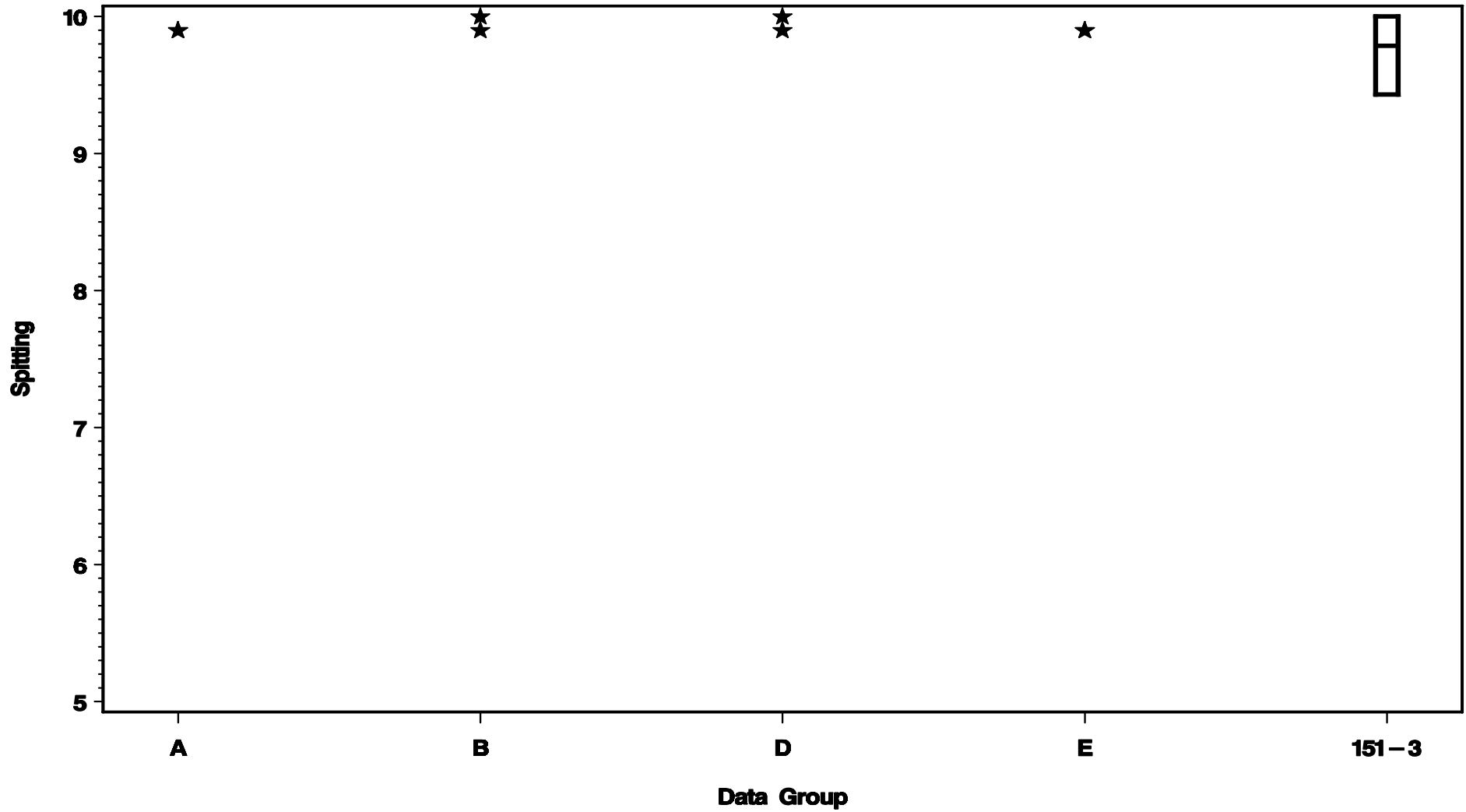


# L-37 Non-lubricated Hardware, Pinion Batch V1L417/P4L792

## Test Target Data Set and Shewhart Severity Limits

Reference Oil 151-3 (Bands Include Merit Ratings of 9.5 Thru 10)

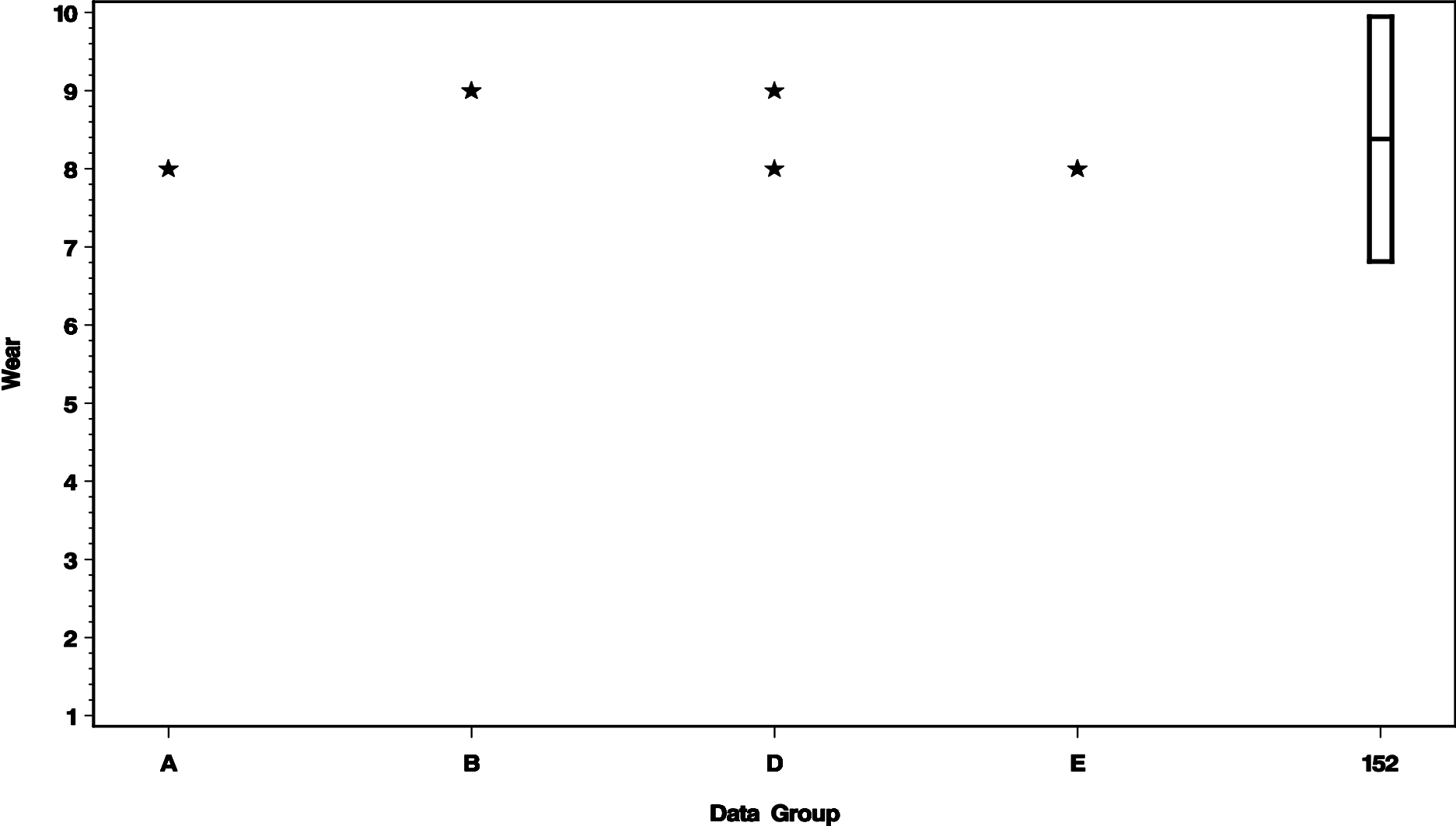
Pinion Spitting



**L-37 Non-lubricated Hardware, Pinion Batch V1L417/P4L792**  
**Test Target Data Set and Shewhart Severity Limits**

Reference Oil 152 (Bands Include Merit Ratings of 7, 8, & 9)

Pinion Wear

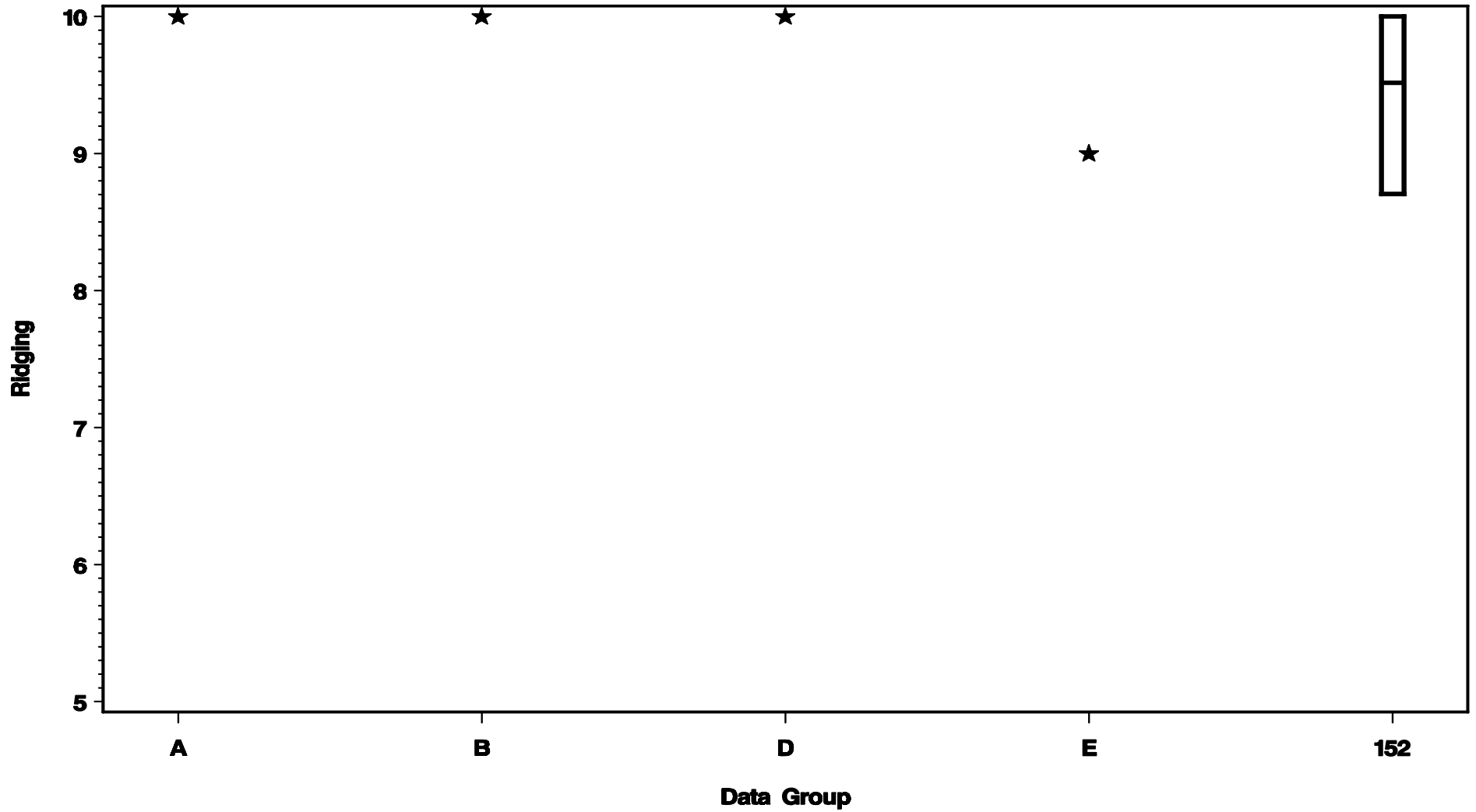


# L-37 Non-lubricated Hardware, Pinion Batch V1L417/P4L792

## Test Target Data Set and Shewhart Severity Limits

Reference Oil 152 (Bands Include Merit Ratings of 9 & 10)

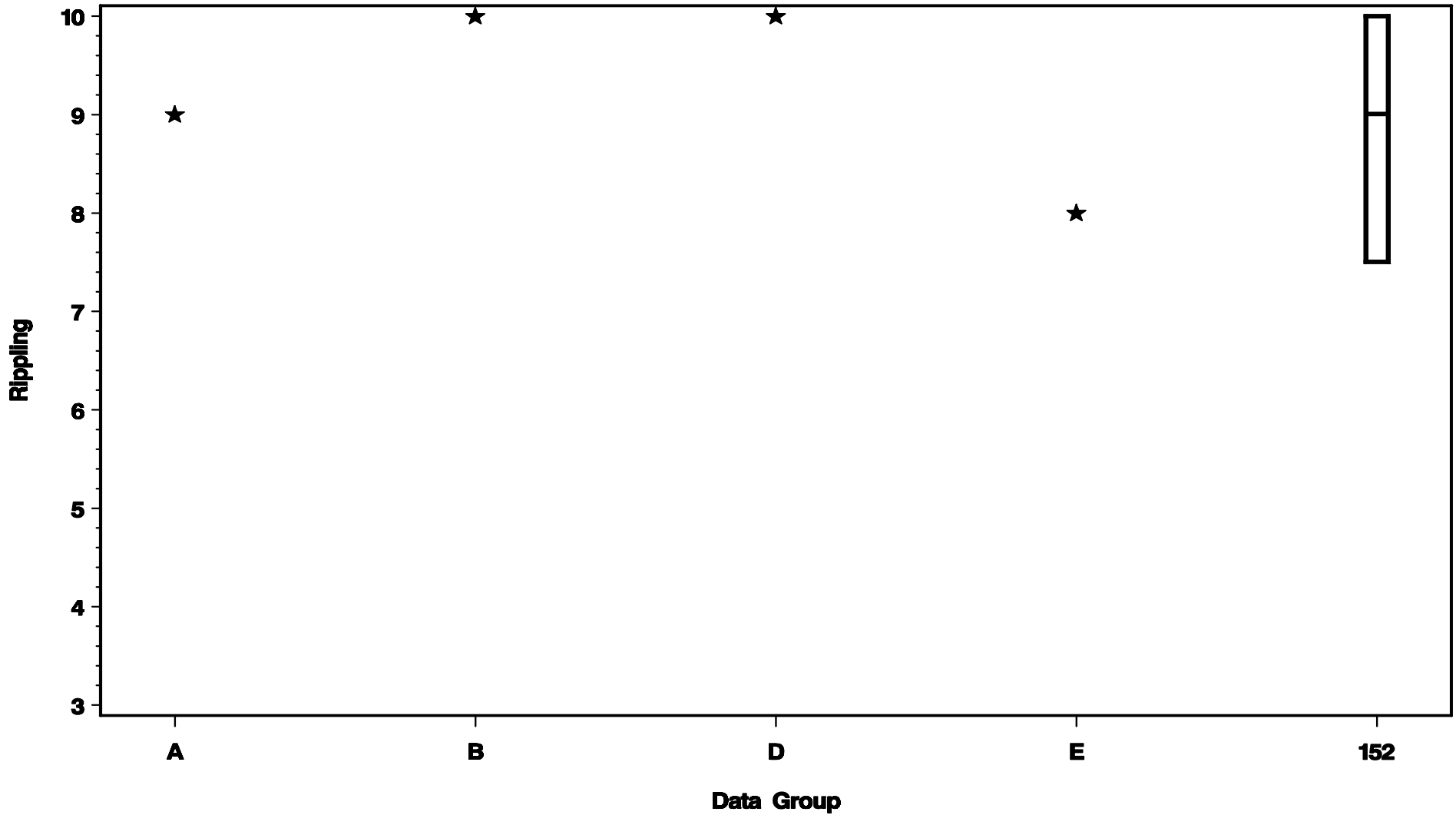
Pinion Ridging





**L-37 Non-lubricated Hardware, Pinion Batch V1L417\P4L792**  
**Test Target Data Set and Shewhart Severity Limits**  
Reference Oil 152 (Bands Include Merit Ratings of 8, 9, & 10)

Pinion Rippling

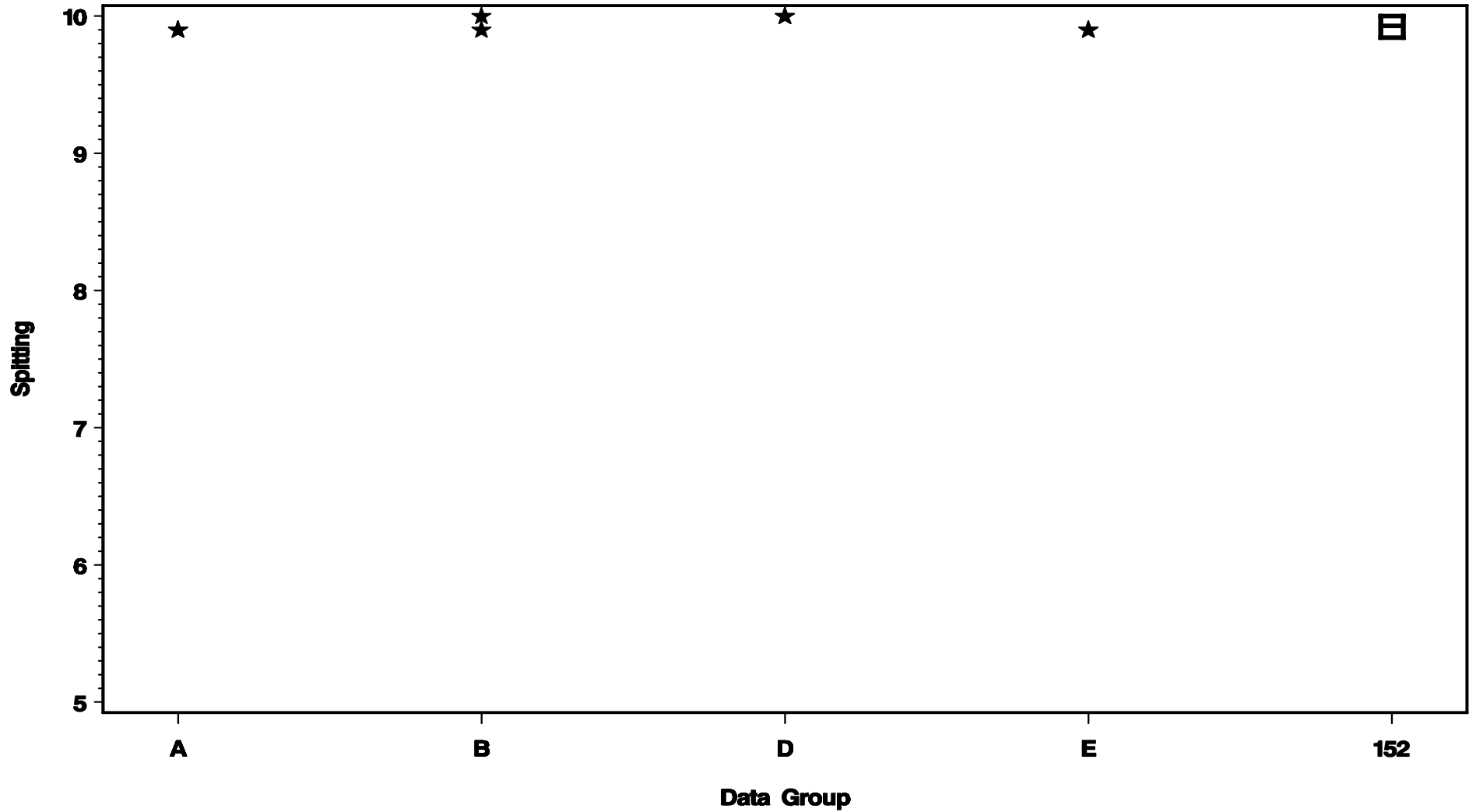


# L-37 Non-lubricated Hardware, Pinion Batch V1L417/P4L792

## Test Target Data Set and Shewhart Severity Limits

Reference Oil 152 (Bands Include Merit Ratings of 9.9 & 10)

Pinion Spitting

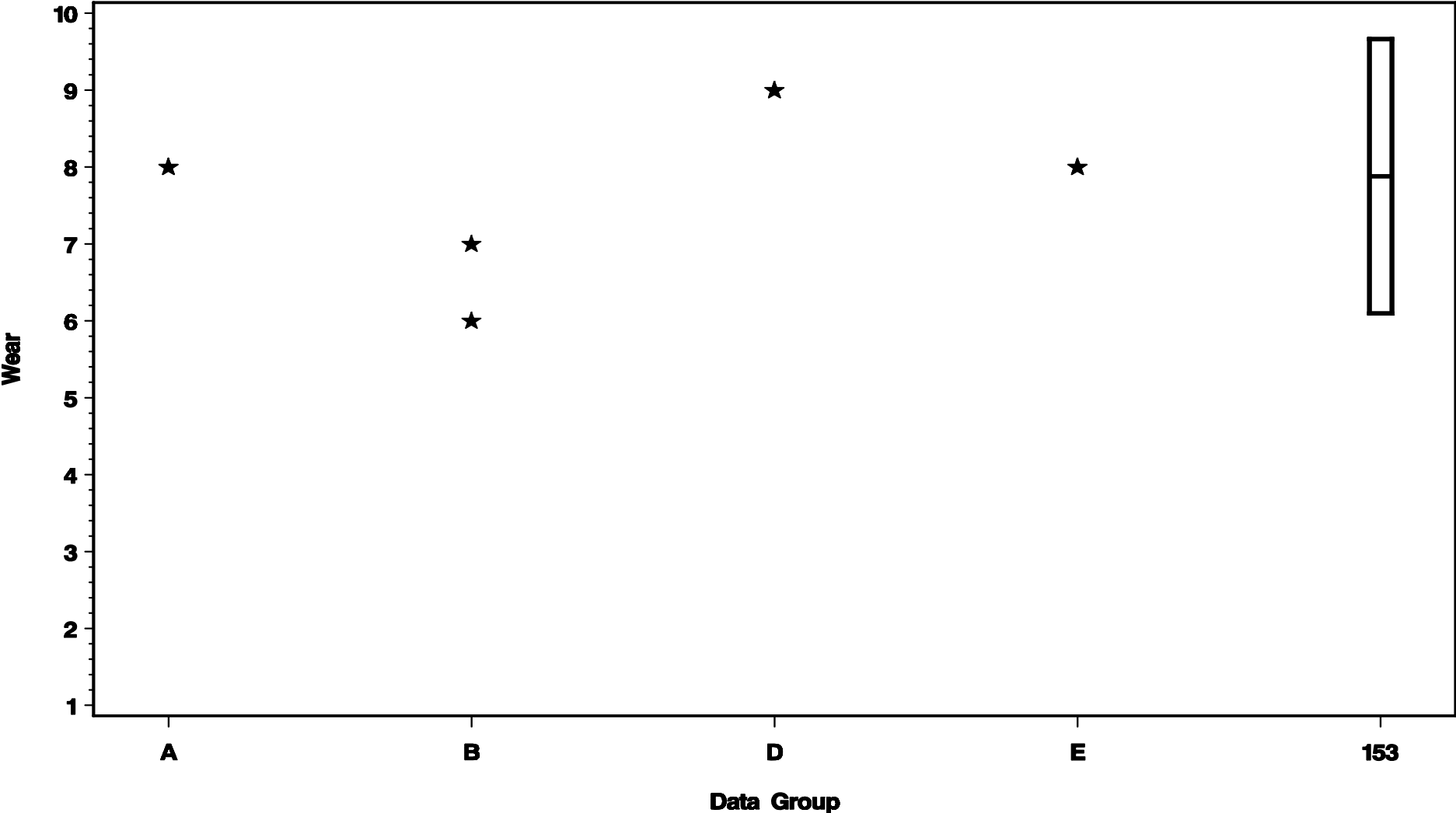


# L-37 Non-lubricated Hardware, Pinion Batch V1L417/P4L792

## Test Target Data Set and Shewhart Severity Limits

Reference Oil 153 (Bands Include Merit Ratings of 7, 8, & 9)

Pinion Wear

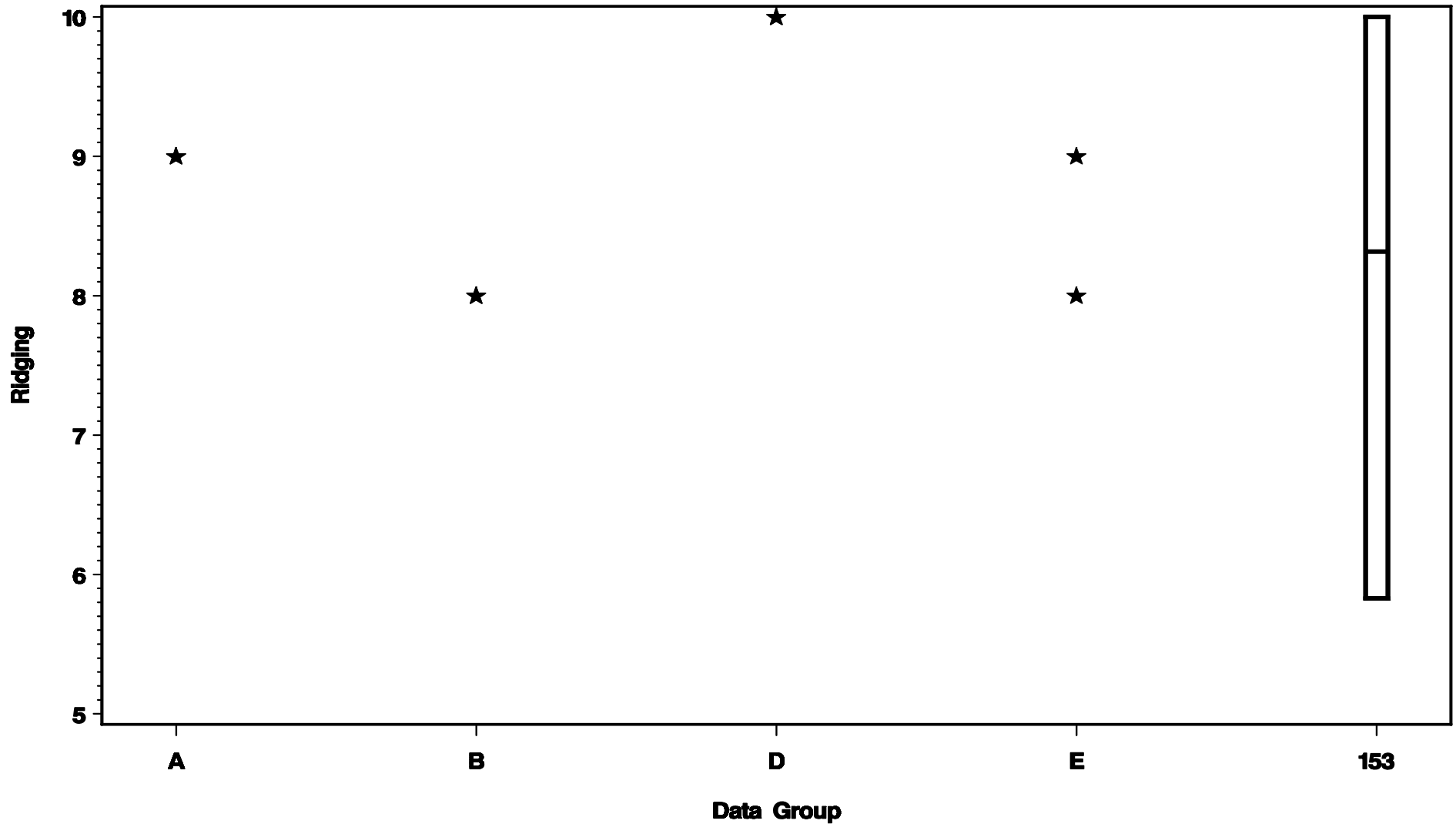


# L-37 Non-lubricated Hardware, Pinion Batch V1L417/P4L792

## Test Target Data Set and Shewhart Severity Limits

Reference Oil 153 (Bands Include Merit Ratings of 6, 7, 8, 9, & 10)

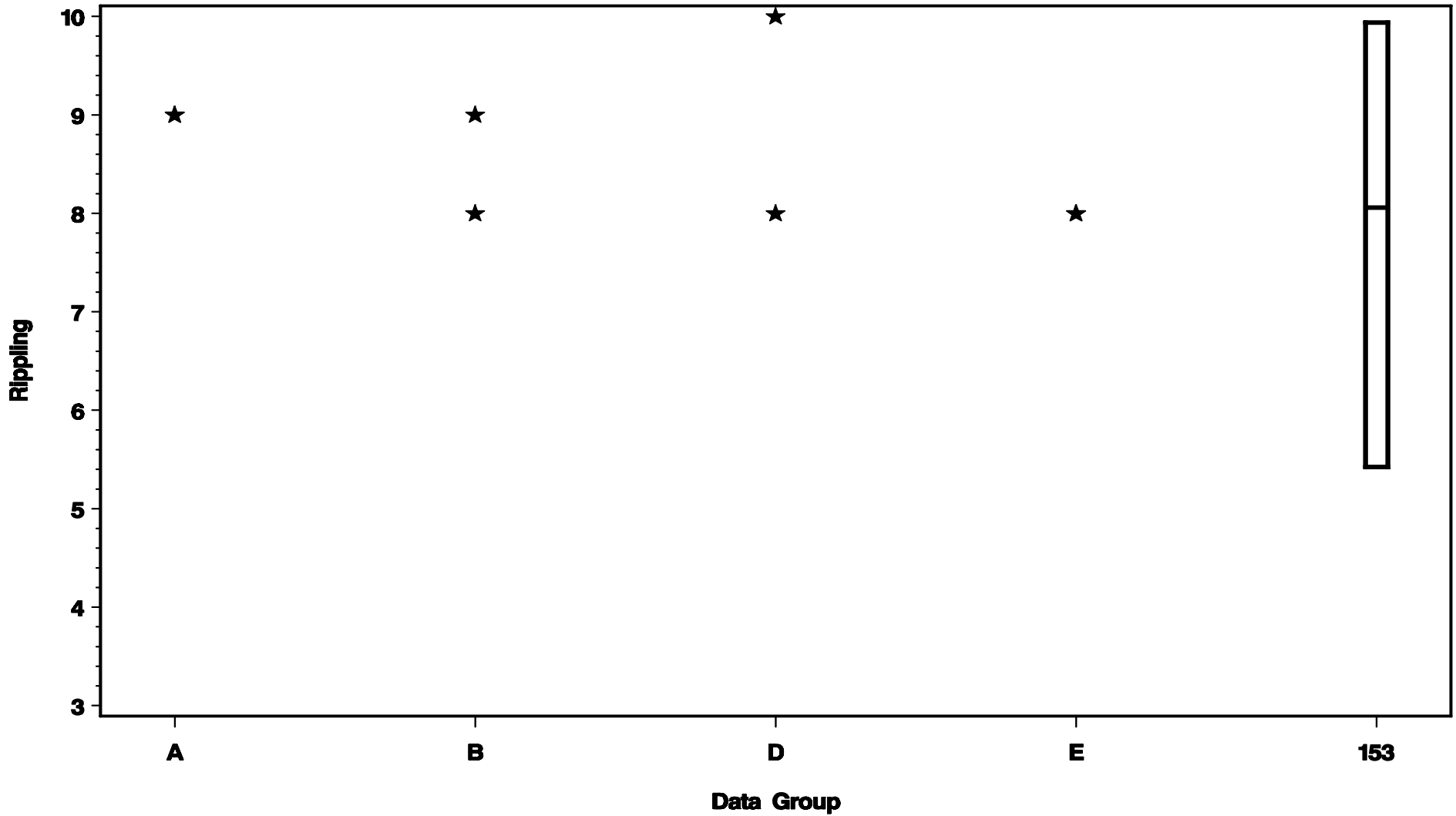
Pinion Ridging



**L-37 Non-lubricated Hardware, Pinion Batch V1L417\ P4L792**  
**Test Target Data Set and Shewhart Severity Limits**

Reference Oil 153 (Bands Include Merit Ratings of 6, 7, 8, & 9)

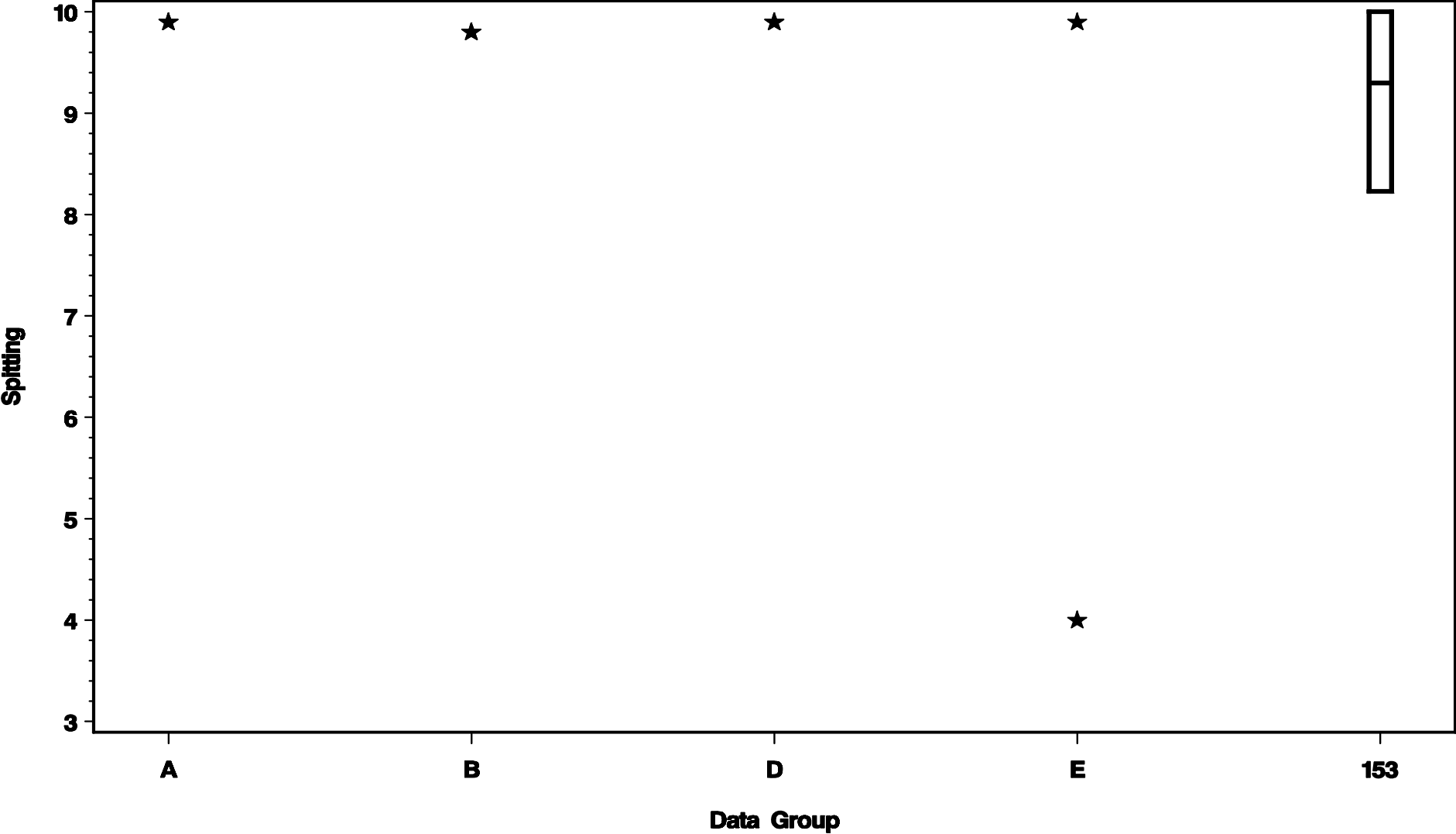
Pinion Rippling



**L-37 Non-lubricated Hardware, Pinion Batch V1L417/P4L792**  
**Test Target Data Set and Shewhart Severity Limits**

Reference Oil 153 (Bands Include Merit Ratings of 9 Thru 10)

**Pinion Spitting**



# GEAR BATCH V1L417/P4L792 NON\_LUBRITED HARDWARE MATRIX DATA

## Standard Temperature Data

CMIR	LAB	Std.	Run	OIL	Pinbat	Ringbat	DTCOMP	Pwear	Pridg	Pripp	Pspit	Rwear	Rridg	Rripp	Rspit
49503	D	3A	464	127	V1L417	P4L792	20060114	8	9	8	9.9	8	10	10	10
46001	B	191	2263	127	V1L417	P4L792	20060107	6	4	8	9.5	7	5	9	9.9
44289	E	2	234	127	V1L417	P4L792	20060112	8	9	7	9.7	7	9	9	9.9
49554	A	2	2917	127	V1L417	P4L792	20060113	7	9	5	9.7	7	9	9	9.9
53444	D	3A	472	151-3	V1L417	P4L792	20060126	9	10	10	9.9	9	10	10	10
53445	D	3A	515	151-3	V1L417	P4L792	20060403	8	10	10	10	9	10	10	10
56556	B	191	2275	151-3	V1L417	P4L792	20060124	8	10	10	10	7	10	10	10
56557	B	191	2301	151-3	V1L417	P4L792	20060325	8	10	10	9.9	9	10	10	9.9
53460	E	2	240	151-3	V1L417	P4L792	20060124	6	9	8	9.9	7	10	9	9.9
55506	E	2	251	151-3	V1L417	P4L792	20060330	8	9	8	9.9	7	10	9	9.9
50356	A	2	2926	151-3	V1L417	P4L792	20060128	8	10	9	9.9	8	10	9	9.9
54426	A	2	2980	151-3	V1L417	P4L792	20060412	8	10	9	9.9	8	10	9	9.9
56536	D	3A	491	152	V1L417	P4L792	20060224	8	10	10	10	9	10	10	10
58274	D	3A	516	152	V1L417	P4L792	20060405	9	10	10	10	9	10	10	10
55496	B	191	2284	152	V1L417	P4L792	20060214	9	10	10	9.9	7	10	10	10
58289	B	191	2305	152	V1L417	P4L792	20060330	9	10	10	10	8	10	10	10
58301	E	2	248	152	V1L417	P4L792	20060310	8	9	8	9.9	7	10	9	9.9
58302	E	2	252	152	V1L417	P4L792	20060331	8	9	8	9.9	7	10	9	9.9
53557	A	2	2940	152	V1L417	P4L792	20060217	8	10	9	9.9	8	10	9	9.9
53558	A	2	2941	152	V1L417	P4L792	20060218	8	10	9	9.9	8	10	10	9.8
56537	D	3A	493	153	V1L417	P4L792	20060227	9	10	10	9.9	9	10	10	10
58279	D	3A	523	153	V1L417	P4L792	20060416	9	10	8	9.9	9	10	10	10
55498	B	191	2286	153	V1L417	P4L792	20060217	6	8	8	9.8	7	8	9	10
58293	B	191	2310	153	V1L417	P4L792	20060405	7	8	9	9.8	7	8	10	9.9
53555	E	2	245	153	V1L417	P4L792	20060301	8	9	8	4	7	9	9	9.8
58306	E	2	254	153	V1L417	P4L792	20060405	8	8	8	9.9	7	9	9	9.9
53560	A	2	2955	153	V1L417	P4L792	20060309	8	9	9	9.9	8	10	10	9.9
53562	A	2	2977	153	V1L417	P4L792	20060406	8	9	9	9.9	8	10	9	9.9