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

November 20, 2007

To The Participants of the
SAE Heavy Duty Rating Workshop

The 2007 SAE Heavy Duty Rating Workshop was held Monday, November 5, through Friday, November 9, 2007. This workshop was the first held under the auspices of SAE (see CRC letter to participants and partners copied on the next page). The ASTM Test Monitoring Center is pleased to continue its role as coordinator for this workshop. Enclosed are the minutes for the workshop and a copy of all of the data generated. For those who met the necessary requirements, a certificate of participation is also enclosed.

I would like to take this opportunity to thank you for your participation in this workshop. It is the full participation of the entire rating community that allows the rating methods of Manuals 20 and 21 to be the vital industry tools that they are. The input of each and every rater is a valued component of that tool.

Sincerely,

Scott Parke
SAE Workshop Coordinator

Enclosure

COORDINATING RESEARCH COUNCIL, INC.
3650 MANSELL ROAD, SUITE 140
ALPHARETTA, GA 30022
TEL: 678/795-0506 FAX: 678/795-0509
WWW.CRCAO.ORG

August 27, 2007

Subject: Transfer of Deposit/Distress Programs to SAE

Dear Participants & Partners of the CRC Deposit/Distress Programs,

For many decades CRC has provided management services to support industry by providing tools for rating levels of deposit and distress in engines and other vehicle systems. These programs have progressed to the state-of-art rating techniques presented in CRC Manual 20 for deposits and CRC Manual 21 for distress. CRC has also conducted workshops designed to assist technical experts who use the CRC manuals and rating aides. These "calibration" workshops have been the mechanism to achieve the needed level of technical excellence among those who provide rating services. Many of you have been instrumental in developing these valuable tools and CRC extends its appreciation to both the individuals and supporting industries who have contributed to this essential activity over these many decades.

Consistent with the mission of CRC to develop test techniques and methods which can be used by industry and maintained by other appropriate organizations, the CRC Board of Directors has instructed us to now transfer management of the Deposit/Distress Programs to SAE International. We will be working with SAE during the next few months to achieve a successful transfer of both workshop management and maintenance of all manuals, rating aides, and rating tools. We are pleased to hear that SAE will enjoy continued support from ASTM-TMC who has agreed to conduct deposit workshops each spring and fall.

A contact point for ongoing communication with program activities will be SAE Customer Service at 877-606-7323 or customerservice@sae.org. The new SAE contact lead for the Deposit/Distress workshop activities is J. Kevin Perry, Ed.D. at SAE International; 724-772-7502 (work); 724-776-5231 (fax).

We invite and encourage your support for SAE during this transfer and once again express our appreciation for all who have provided technical contributions that have made this program possible.

Best regards,

Brent K. Bailey
Executive Director

MINUTES
SAE HEAVY DUTY RATING WORKSHOP
SAN ANTONIO, TX

November 5-9, 2007

SAE Workshop Coordinator: Scott Parke
SAE Deposit Rating Project Leader: Tony Barrera

Sunday, November 4, 2007 – Workshop Coordinator Scott Parke and Frank Farber of the Test Monitoring Center (TMC) collected the workshop equipment from storage and transported it to the meeting room. Loading, transport, and unloading took approximately an hour and a half. Set up took roughly seven hours which is considerably longer than usual but included time developing several improvements that are expected to greatly decrease set up and tear down effort for future workshops.

Monday, November 5, 2007 – With equipment set up completed the previous evening, the only chore remaining for Monday morning was to position the workshop parts in the designated booths. Hardware available included square and keystone ring aluminum pistons, two-piece pistons, C13 pistons, and sequence-III&V-style pistons, as well as sets of C13 2nd rings and ISM and ISB parts for sludge rating. Start time for Session A was 09:00.

As is customary, the rating session began with distribution of a new CRC rust/varnish rating scale to each rater. Each rater then rated two "composite" calibration pistons (to increase throughput for piston calibration, two composite calibration pistons were made up of 12 individual pistons in 12 booths with only one zone rated on each piston). Once the last rater finished the calibration pistons, the data was reviewed by the group and any discrepancies, or misunderstandings, or misapplication of definitions was discussed with the goal being for each rater to make any necessary adjustments. Basic descriptive statistics (the so-called "Yi" data) were used to aid in evaluating the data. These tools have been in use at the workshops in various form since 1997.

After a break for lunch, raters began rating their assigned pistons. Raters interested in rating sludge and C13 rings also rated a set of calibration rings and a sequence V front cover. At 15:40, rating was interrupted to review the ring and sludge calibration data; the review concluded and rating resumed at 16:00. Most raters, however, elected to hold off resumption of rating until the next morning. A total of 37 ratings (not including rings) were completed. Frank Farber and Scott Parke completed the day's database and network work at approximately 19:45.

Tuesday, November 6, 2007 - Rating began at approximately 08:00 and continued throughout the day until approximately 16:15. The rating total by midday was 103; 153 were completed by the end of the day.

Wednesday, November 7, 2007 – Rating again began at approximately 08:00. Data was collected until 10:00 with data review scheduled for 11:20. The data review concluded at 12:05. SAE Manager of Professional Development, Kevin Perry was on hand this day and was introduced to the group. A total of 162 ratings were completed by the Session A group.

Set up for the Session B group ran from 13:00 to 13:30. During opening remarks, Kevin Perry was introduced to the Session B group; this group began rating the calibration pistons at approximately 13:40. Data review for piston calibration finished at 17:45. At day's end, 32 ratings were completed by Session B raters.

Thursday, November 8, 2007 – Rating began at 08:00, continued throughout the day and concluded around 16:30. The rating total at midday was 103; 141 were completed by the end of the day.

Friday, November 9, 2007 – Rating again began at approximately 08:00. Data was collected until 11:30. Data review began after lunch at 12:30 and concluded by 14:00. A total of 229 ratings was completed by the Session B raters.

DISCUSSIONS

Online rating/workshop computer network – The data entry system and computer network developed by Frank Farber and pilot tested during the spring Light Duty workshop was rolled out in production mode for this workshop. The networking component exhibited some occasional instability and will be improved; overall response of the workshop participants was favorable. The system is expected to remain in use for all future workshops.

Notes on the Data

Following is the data produced during the November 5-9, 2007, SAE Heavy Duty Rating Workshop.

Some of the evaluation techniques are destructive and, therefore, do not easily allow repeated measurement (measurable sludge deposits, ring sticking, carbon probing, and parts wiping for example). Every effort is made to limit the destructive impact of repeated measurement of these deposits but repeatability and reproducibility cannot help but be adversely affected. This must be a consideration when reviewing data from deposits of this type.

The statistics presented include the data from all parts (including calibration parts and practical application parts) and all participants (including novice, field, and standardized engine test raters). It is important to have some knowledge of the raters involved when comparing results.

SAE strives to make this data useful to as broad a range of industry consumers as possible, however it is primarily intended to provide guidance to workshop participants. SAE endorses its use for no other purpose.

Heavy Duty Rating Workshop

Rater/Parts Crosstab

	Total parts rated	Calibration_Piston_1	Calibration_Piston_2	A1_Square	A2_Keystone	A3_C13	A4_C13	A5_Seq_III	A6_Two-piece	B1_Square	B2_Keystone	B3_C13	B4_C13	B5_Seq_V	B6_Two-piece	C1_Square	C2_Keystone	C3_C13	C4_C13	C5_Seq_III	C6_Two-piece	C13_Rings_Calibration_Set	C13_Rings_Set_D	C13_Rings_Set_E	C13_Rings_Set_F	C13_Rings_Set_G	C13_Rings_Set_H	*C13_Rings_Set_I*	**Sludge**		
Barrera, Tony	20	●	●							●		●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Cales, Jonathon	15	●	●	●	●	●	●	●	●							●	●	●	●	●	●								●		
Castillo, George	18	●	●							●	●					●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Foecking, Brian	18	●	●	●	●			●								●	●	●	●	●	●	●	●	●	●	●	●		●		
Garcia, Orlando	15	●	●	●	●	●	●	●	●							●	●	●	●	●	●								●		
Hills, Barry	15	●	●	●	●	●	●	●	●	●	●	●	●									●	●						●		
Kobrinetz, Jack	18	●	●	●						●	●	●	●	●	●	●	●	●		●	●	●	●	●					●		
Sanchez, Art	9	●	●	●	●	●	●	●	●																				●		
Viera, Ralph	19	●	●	●	●	●				●	●	●	●	●	●							●	●	●	●	●	●	●	●		
Avis, Steve	15	●	●							●	●	●	●		●	●	●					●	●	●	●	●				●		
Clapperty, Leon	10	●	●	●	●	●	●		●	●	●																			●		
Engelskirchen, Jim	9	●	●													●	●	●	●	●	●								●		
Greenland, Paul	9	●	●							●	●	●	●	●	●														●		
Hill, Howard	15	●	●	●	●	●	●	●	●							●	●	●	●	●	●								●		
Kuipers, Jacques	9	●	●	●						●	●	●	●	●	●																
Lopez, Frank	13	●	●													●	●	●	●	●	●	●	●	●	●				●		
May, Marianne	23	●	●	●	●			●	●	●	●	●	●	●	●	●	●			●		●	●	●	●	●	●	●	●		
McPhail, Scott	11	●	●							●	●	●	●		●	●	●	●	●												
Narasaki, Keith	11	●	●	●	●	●	●	●	●	●					●														●		
Pansza, Mike	8										●					●	●	●	●	●	●								●		
Pitta, Jimmy	8	●	●	●	●	●	●	●	●																						
Radonich, Pete	13	●	●	●	●	●	●	●	●							●	●	●		●									●		
Ramirez, Manny	8	●	●							●	●	●	●	●	●																
Rodriguez, Jesse	11	●	●							●	●					●	●	●	●	●	●								●		
Shoda, Ron	10	●	●						●							●	●	●	●	●	●								●		
Trevino, Robert	9	●	●	●	●	●	●	●	●																				●		
Guarda, Waldyr	17	●	●	●	●	●	●			●	●	●	●	●	●			●				●	●	●					●		
Total Ratings	356	26	26	16	14	12	11	11	12	15	14	11	10	8	11	16	16	15	12	14	12	10	10	9	7	6	5	4	23		

MIN RATINGS/RATER	8	MIN RATINGS/PART	4
MAX RATINGS/RATER	23	MAX RATINGS/PART	23
AVG RATINGS/RATER	13	AVG RATINGS/PART	13

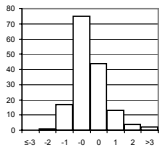
Piston Assignment Key:
Primary Part =
Secondary Part =

Heavy Duty Rating Workshop

PART ID = **Composite Calibration Piston 1**

RATED VALUES

	Groove 1	Groove 2	Groove 3	Land 2	Land 3	TGF%								UWPD	WPD
Barrera, Tony	52.73	25.53	1.39	8.17	7.82	67.00								95.64	95.64
Cales, Jonathon	42.61	29.50	0.49	6.02	8.05	68.00								86.67	86.67
Castillo, George	47.95	25.75	1.64	7.48	7.94	65.00								90.76	90.76
Foecking, Brian	43.02	25.00	0.92	7.46	7.79	66.00								84.19	84.19
Garcia, Orlando	52.93	26.26	1.88	9.18	7.87	78.00								98.12	98.12
Guarda, Waldyr	59.45	26.50	0.60	7.98	8.65	74.00								103.18	103.18
Hills, Barry	54.21	25.00	0.64	7.59	8.72	60.00								96.16	96.16
Kobrinetz, Jack	54.60	26.50	0.96	8.88	7.72	68.00								98.66	98.66
Sanchez, Art	68.20	28.75	0.44	8.23	7.10	70.00								112.72	112.72
Viera, Ralph	57.13	27.76	1.40	8.98	7.89	68.00								103.16	103.16
Avis, Steve	52.85	25.00	1.10	9.04	7.68	77.80								95.67	95.67
Clapperty, Leon	49.11	28.00	0.81	7.92	7.37	72.00								93.21	93.21
Engelskirchen, Jim	60.96	25.00	0.66	7.50	7.88	71.00								102.00	102.00
Greenland, Paul	58.20	23.27	1.38	6.38	7.12	73.00								96.35	96.35
Hill, Howard	65.06	23.18	1.72	7.33	9.17	73.00								106.46	106.46
Kuipers, Jacques	65.12	27.25	0.65	7.88	8.35	71.00								109.25	109.25
Lopez, Frank	62.90	24.51	1.25	7.82	1.81	76.00								98.29	98.29
May, Marianne	60.74	24.76	0.96	9.59	7.92	73.00								103.97	103.97
McPhail, Scott	53.19	25.00	1.45	8.25	6.52	66.00								94.41	94.41
Narasaki, Keith	60.86	40.00	0.30	9.61	1.70	68.00								112.47	112.47
Pitta, Jimmy	59.00	29.80	1.16	11.34	7.95	70.00								109.25	109.25
Radonich, Pete	42.95	24.75	0.56	7.51	7.58	72.00								83.35	83.35
Ramirez, Manny	51.86	37.00	1.15	10.30	26.28	81.00								126.59	126.59
Rodriguez, Jesse	59.63	26.50	1.20	7.72	7.64	69.00								102.69	102.69
Shoda, Ron	48.63	24.77	0.89	9.80	8.64	68.00								92.73	92.73
Trevino, Robert	53.23	28.75	1.19	10.96	7.85	74.00								101.98	101.98
MAXIMUM	68.20	40.00	1.88	11.34	26.28	81.00								126.59	126.59
MINIMUM	42.61	23.18	0.30	6.02	1.70	60.00								83.35	83.35
RANGE (MAX-MIN)	25.59	16.82	1.58	5.32	24.58	21.00								43.24	43.24
MEAN	55.27	27.08	1.03	8.42	8.12	70.72								99.92	99.92
STD	6.96	3.82	0.42	1.29	4.10	4.58								9.56	9.56



yi within 1 76%
yi within 2 96%
yi within 3 99%

PART ID = **Composite Calibration Piston 1**

Yi VALUES

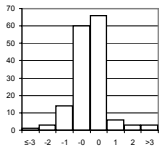
	Groove 1	Groove 2	Groove 3	Land 2	Land 3	TGF%								UWPD	WPD	MEAN	STD
Barrera, Tony	-0.37	-0.41	0.86	-0.19	-0.07	-0.81								-0.45	-0.45	-0.24	0.49
Cales, Jonathon	-1.82	0.63	-1.29	-1.86	-0.02	-0.59								-1.39	-1.39	-0.97	0.89
Castillo, George	-1.05	-0.35	1.46	-0.73	-0.04	-1.25								-0.96	-0.96	-0.49	0.88
Foecking, Brian	-1.76	-0.54	-0.26	-0.74	-0.08	-1.03								-1.65	-1.65	-0.96	0.66
Garcia, Orlando	-0.34	-0.21	2.03	0.59	-0.06	1.59								-0.19	-0.19	0.40	0.92
Guarda, Waldyr	0.60	-0.15	-1.03	-0.34	0.13	0.72								0.34	0.34	0.08	0.57
Hills, Barry	-0.15	-0.54	-0.93	-0.64	0.15	-2.34								-0.39	-0.39	-0.66	0.75
Kobrinetz, Jack	-0.10	-0.15	-0.17	0.36	-0.10	-0.59								-0.13	-0.13	-0.13	0.26
Sanchez, Art	1.86	0.44	-1.41	-0.15	-0.25	-0.16								1.34	1.34	0.38	1.08
Viera, Ralph	0.27	0.18	0.88	0.43	-0.06	-0.59								0.34	0.34	0.22	0.42
Avis, Steve	-0.35	-0.54	0.17	0.48	-0.11	1.55								-0.44	-0.44	0.04	0.70
Clapperty, Leon	-0.89	0.24	-0.53	-0.39	-0.18	0.28								-0.70	-0.70	-0.36	0.44
Engelskirchen, Jim	0.82	-0.54	-0.89	-0.71	-0.06	0.06								0.22	0.22	-0.11	0.57
Greenland, Paul	0.42	-1.00	0.84	-1.58	-0.24	0.50								-0.37	-0.37	-0.23	0.81
Hill, Howard	1.41	-1.02	1.65	-0.84	0.26	0.50								0.68	0.68	0.41	0.95
Kuipers, Jacques	1.41	0.04	-0.91	-0.42	0.06	0.06								0.98	0.98	0.28	0.78
Lopez, Frank	1.10	-0.67	0.52	-0.46	-1.54	1.15								-0.17	-0.17	-0.03	0.92
May, Marianne	0.79	-0.61	-0.17	0.91	-0.05	0.50								0.42	0.42	0.28	0.51
McPhail, Scott	-0.30	-0.54	1.00	-0.13	-0.39	-1.03								-0.58	-0.58	-0.32	0.60
Narasaki, Keith	0.80	3.38	-1.75	0.92	-1.57	-0.59								1.31	1.31	0.48	1.71
Pitta, Jimmy	0.54	0.71	0.31	2.26	-0.04	-0.16								0.98	0.98	0.70	0.76
Radonich, Pete	-1.77	-0.61	-1.12	-0.70	-0.13	0.28								-1.73	-1.73	-0.94	0.78
Ramirez, Manny	-0.49	2.59	0.29	1.46	4.43	2.24								2.79	2.79	2.01	1.56
Rodriguez, Jesse	0.63	-0.15	0.41	-0.54	-0.12	-0.38								0.29	0.29	0.05	0.41
Shoda, Ron	-0.95	-0.60	-0.34	1.07	0.13	-0.59								-0.75	-0.75	-0.35	0.66
Trevino, Robert	-0.29	0.44	0.38	1.97	-0.06	0.72								0.22	0.22	0.45	0.69
Yi MAXIMUM	1.86	3.38	2.03	2.26	4.43	-2.34								2.79	2.79	2.01	1.71
Yi MINIMUM	-0.10	-0.15	-0.17	-0.13	-0.02	-0.16								-0.13	-0.13	-0.03	0.26
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00								1.00	1.00		
Ratings MEAN	55.27	27.08	1.03	8.42	8.12	70.72								99.92	99.92		
Ratings STD	6.96	3.82	0.42	1.29	4.10	4.58								9.56	9.56		

Heavy Duty Rating Workshop

PART ID = **Composite Calibration Piston 2**

RATED VALUES

	Groove 1	Groove 2	Groove 3	Land 2	Land 3	TGF%								UWPD	WPD
Barrera, Tony	71.09	27.33	1.37	5.99	4.90	89.00								110.68	110.68
Cales, Jonathon	73.55	38.05	1.43	4.03	6.16	81.00								123.22	123.22
Castillo, George	71.72	27.76	2.34	5.76	6.11	88.00								113.69	113.69
Foecking, Brian	66.96	27.53	1.64	6.14	5.08	90.00								107.35	107.35
Garcia, Orlando	71.79	27.58	1.87	5.86	4.63	72.00								111.73	111.73
Guarda, Waldyr	68.59	29.08	1.60	7.73	5.60	72.00								112.60	112.60
Hills, Barry	73.30	27.76	1.48	8.98	5.20	89.00								116.72	116.72
Kobrinetz, Jack	74.79	28.27	1.65	6.95	5.20	89.00								116.86	116.86
Sanchez, Art	76.55	26.05	0.90	3.73	3.81	90.00								111.04	111.04
Viera, Ralph	70.64	29.75	1.48	6.33	6.18	71.00								114.38	114.38
Avis, Steve	68.68	28.00	1.82	6.28	3.98	85.80								108.76	108.76
Clapperty, Leon	57.19	30.29	0.84	7.86	4.01	81.00								100.19	100.19
Engelskirchen, Jim	74.09	26.81	1.27	7.52	4.64	71.00								114.33	114.33
Greenland, Paul	75.39	26.15	1.79	6.42	4.79	89.00								114.54	114.54
Hill, Howard	67.48	24.73	2.30	6.27	4.79	53.00								105.57	105.57
Kuipers, Jacques	80.39	33.25	1.84	3.40	7.06	88.00								125.94	125.94
Lopez, Frank	78.43	30.51	1.71	5.56	1.98	96.00								118.19	118.19
May, Marianne	73.16	27.77	1.67	7.60	5.07	97.00								115.27	115.27
McPhail, Scott	76.20	29.79	1.82	5.06	3.47	95.00								116.34	116.34
Narasaki, Keith	65.18	44.50	1.50	5.16	6.96	86.00								123.30	123.30
Pitta, Jimmy	36.55	31.32	1.10	7.84	5.36	87.00								82.17	82.17
Radonich, Pete	70.83	26.78	1.42	5.34	5.13	88.00								109.50	109.50
Ramirez, Manny	44.25	30.31	1.26	11.56	12.34	66.00								99.72	99.72
Rodriguez, Jesse	69.98	30.53	1.60	5.52	4.67	92.00								112.30	112.30
Shoda, Ron	59.78	29.03	1.42	6.16	7.76	86.00								104.15	104.15
Trevino, Robert	72.31	33.78	1.59	6.13	1.56	85.00								115.37	115.37
MAXIMUM	80.39	44.50	2.34	11.56	12.34	97.00								125.94	125.94
MINIMUM	36.55	24.73	0.84	3.40	1.56	53.00								82.17	82.17
RANGE (MAX-MIN)	43.84	19.77	1.50	8.16	10.78	44.00								43.77	43.77
MEAN	68.80	29.72	1.57	6.35	5.25	83.72								111.69	111.69
STD	9.86	4.11	0.35	1.69	2.00	10.33								8.75	8.75



yi within 1	81%
yi within 2	94%
yi within 3	97%

PART ID = **Composite Calibration Piston 2**

Yi VALUES

	Groove 1	Groove 2	Groove 3	Land 2	Land 3	TGF%								UWPD	WPD	MEAN	STD
Barrera, Tony	0.23	-0.58	-0.56	-0.22	-0.17	0.51								-0.12	-0.12	-0.13	0.37
Cales, Jonathon	0.48	2.03	-0.39	-1.38	0.46	-0.26								1.32	1.32	0.45	1.11
Castillo, George	0.30	-0.48	2.23	-0.35	0.43	0.41								0.23	0.23	0.37	0.82
Foecking, Brian	-0.19	-0.53	0.21	-0.13	-0.08	0.61								-0.50	-0.50	-0.14	0.40
Garcia, Orlando	0.30	-0.52	0.88	-0.29	-0.31	-1.14								0.00	0.00	-0.13	0.59
Guarda, Waldyr	-0.02	-0.16	0.10	0.82	0.18	-1.14								0.10	0.10	0.00	0.54
Hills, Barry	0.46	-0.48	-0.25	1.56	-0.02	0.51								0.57	0.57	0.37	0.63
Kobrinetz, Jack	0.61	-0.35	0.24	0.35	-0.02	0.51								0.59	0.59	0.31	0.35
Sanchez, Art	0.79	-0.89	-1.92	-1.56	-0.72	0.61								-0.07	-0.07	-0.48	0.97
Viera, Ralph	0.19	0.01	-0.25	-0.01	0.47	-1.23								0.31	0.31	-0.03	0.54
Avis, Steve	-0.01	-0.42	0.73	-0.04	-0.63	0.20								-0.33	-0.33	-0.11	0.43
Clapperty, Leon	-1.18	0.14	-2.09	0.89	-0.62	-0.26								-1.31	-1.31	-0.72	0.95
Engelskirchen, Jim	0.54	-0.71	-0.85	0.69	-0.30	-1.23								0.30	0.30	-0.16	0.72
Greenland, Paul	0.67	-0.87	0.65	0.04	-0.23	0.51								0.33	0.33	0.18	0.52
Hill, Howard	-0.13	-1.21	2.11	-0.05	-0.23	-2.97								-0.70	-0.70	-0.49	1.41
Kuipers, Jacques	1.17	0.86	0.79	-1.75	0.91	0.41								1.63	1.63	0.71	1.08
Lopez, Frank	0.98	0.19	0.42	-0.47	-1.64	1.19								0.74	0.74	0.27	0.93
May, Marianne	0.44	-0.47	0.30	0.74	-0.09	1.29								0.41	0.41	0.38	0.52
McPhail, Scott	0.75	0.02	0.73	-0.77	-0.89	1.09								0.53	0.53	0.25	0.73
Narasaki, Keith	-0.37	3.60	-0.19	-0.71	0.86	0.22								1.33	1.33	0.76	1.38
Pitta, Jimmy	-3.27	0.39	-1.34	0.88	0.06	0.32								-3.37	-3.37	-1.21	1.87
Radonich, Pete	0.21	-0.72	-0.42	-0.60	-0.06	0.41								-0.25	-0.25	-0.21	0.39
Ramirez, Manny	-2.49	0.14	-0.88	3.09	3.55	-1.72								-1.37	-1.37	-0.13	2.26
Rodriguez, Jesse	0.12	0.20	0.10	-0.49	-0.29	0.80								0.07	0.07	0.07	0.38
Shoda, Ron	-0.91	-0.17	-0.42	-0.11	1.26	0.22								-0.86	-0.86	-0.23	0.73
Trevino, Robert	0.36	0.99	0.07	-0.13	-1.85	0.12								0.42	0.42	0.05	0.84
Yi MAXIMUM	-3.27	3.60	2.23	3.09	3.55	-2.97								-3.37	-3.37	-1.21	2.26
Yi MINIMUM	-0.01	-0.16	-0.19	-0.01	-0.02	-0.26								-0.07	-0.07	0.00	0.35
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00								0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00								1.00	1.00		
Ratings MEAN	68.80	29.72	1.57	6.35	5.25	83.72								111.69	111.69		
Ratings STD	9.86	4.11	0.35	1.69	2.00	10.33								8.75	8.75		

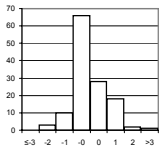
November 5-9, 2007

Heavy Duty Rating Workshop

PART ID = A1 - Square Cut Piston

RATED VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 2	Land 3	Land 4	TGF%							UWPD	WPD
Cales, Jonathon	76.00	14.95	0.25	0.30	46.82	1.25	1.20	78.00							140.77	486.12
Foecking, Brian	77.83	15.05	0.15	0.08	23.34	0.21	0.22	80.00							116.88	332.77
Garcia, Orlando	68.50	17.38	2.06	1.46	30.21	1.42	1.34	68.00							122.37	597.64
Guarda, Waldyr	78.50	14.85	0.58	1.20	30.82	0.80	0.54	82.00							127.29	474.07
Hills, Barry	78.50	14.62	0.30	0.20	43.38	0.57	0.32	81.00							137.89	423.63
Kobrinetz, Jack	73.80	16.71	0.50	0.30	23.21	0.30	0.30	77.00							115.12	377.14
Sanchez, Art	82.25	16.41	0.49	0.20	30.65	0.29	0.26	76.00							130.55	399.68
Viera, Ralph	74.00	16.44	0.95	0.55	29.86	0.60	0.67	78.00							123.07	450.11
Clapperty, Leon	62.50	16.58	0.67	0.39	23.57	0.63	0.51	83.00							104.85	392.00
Hill, Howard	75.25	12.11	0.06	0.05	28.36	0.36	0.16	82.00							116.35	314.01
Kuipers, Jacques	83.50	14.84	1.00	1.00	31.99	1.20	1.20	90.00							134.73	514.87
May, Marianne	68.50	15.90	0.35	0.17	37.88	0.53	0.36	82.00							123.69	407.43
Narasaki, Keith	80.75	15.30	0.43	0.41	53.60	1.08	1.04	77.00							152.61	523.10
Pitta, Jimmy	84.75	14.51	0.50	0.50	31.78	0.99	0.93	85.00							133.96	445.93
Radonich, Pete	80.25	14.29	0.20	0.14	24.13	0.19	0.24	78.00							119.44	336.61
Trevino, Robert	79.25	14.89	0.51	0.42	28.38	0.68	0.50	86.00							124.63	405.83
MAXIMUM	84.75	17.38	2.06	1.46	53.60	1.42	1.34	90.00							152.61	597.64
MINIMUM	62.50	12.11	0.06	0.05	23.21	0.19	0.16	68.00							104.85	314.01
RANGE (MAX-MIN)	22.25	5.27	2.00	1.41	30.39	1.23	1.18	22.00							47.76	283.63
MEAN	76.51	15.30	0.56	0.46	32.37	0.69	0.61	80.19							126.51	430.06
STD	5.99	1.26	0.48	0.41	8.83	0.39	0.40	4.98							11.66	76.44



yi within 1	73%
yi within 2	95%
yi within 3	99%

PART ID = A1 - Square Cut Piston

Yi VALUES

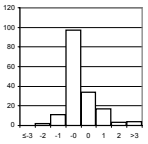
	Groove 1	Groove 2	Groove 3	Groove 4	Land 2	Land 3	Land 4	TGF%							UWPD	WPD	MEAN	STD
Cales, Jonathon	-0.08	-0.28	-0.66	-0.39	1.64	1.42	1.47	-0.44							1.22	0.73	0.46	0.92
Foecking, Brian	0.22	-0.20	-0.87	-0.92	-1.02	-1.23	-0.98	-0.04							-0.83	-1.27	-0.71	0.52
Garcia, Orlando	-1.34	1.65	3.15	2.43	-0.24	1.85	1.82	-2.45							-0.36	2.19	0.87	1.84
Guarda, Waldyr	0.33	-0.36	0.04	1.80	-0.18	0.27	-0.18	0.36							0.07	0.58	0.27	0.61
Hills, Barry	0.33	-0.54	-0.55	-0.63	1.25	-0.32	-0.73	0.16							0.98	-0.08	-0.01	0.69
Kobrinetz, Jack	-0.45	1.12	-0.13	-0.39	-1.04	-1.00	-0.78	-0.64							-0.98	-0.69	-0.50	0.64
Sanchez, Art	0.96	0.88	-0.15	-0.63	-0.20	-1.03	-0.88	-0.84							0.35	-0.40	-0.19	0.71
Viera, Ralph	-0.42	0.90	0.81	0.22	-0.28	-0.24	0.15	-0.44							-0.30	0.26	0.07	0.49
Clapperty, Leon	-2.34	1.01	0.23	-0.17	-1.00	-0.16	-0.25	0.56							-1.86	-0.50	-0.45	1.04
Hill, Howard	-0.21	-2.53	-1.06	-1.00	-0.45	-0.85	-1.13	0.36							-0.87	-1.52	-0.93	0.77
Kuipers, Jacques	1.17	-0.37	0.92	1.31	-0.04	1.29	1.47	1.97							0.70	1.11	0.95	0.70
May, Marianne	-1.34	0.47	-0.45	-0.71	0.62	-0.42	-0.63	0.36							-0.24	-0.30	-0.26	0.60
Narasaki, Keith	0.71	0.00	-0.28	-0.12	2.40	0.98	1.07	-0.64							2.24	1.22	0.76	1.03
Pitta, Jimmy	1.38	-0.63	-0.13	0.10	-0.07	0.75	0.79	0.97							0.64	0.21	0.40	0.61
Radonich, Pete	0.62	-0.80	-0.76	-0.78	-0.93	-1.28	-0.93	-0.44							-0.61	-1.22	-0.71	0.53
Trevino, Robert	0.46	-0.33	-0.11	-0.10	-0.45	-0.04	-0.28	1.17							-0.16	-0.32	-0.02	0.48
Yi MAXIMUM	-2.34	-2.53	3.15	2.43	2.40	1.85	1.82	-2.45							2.24	2.19	0.95	1.84
Yi MINIMUM	-0.08	0.00	-0.11	-0.10	-0.04	-0.04	-0.18	-0.04							-0.16	-0.08	-0.01	0.48
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							1.00	1.00		
Ratings MEAN	76.51	15.30	0.56	0.46	32.37	0.69	0.61	80.19							126.51	430.06		
Ratings STD	5.99	1.26	0.48	0.41	8.83	0.39	0.40	4.98							11.66	76.44		

Heavy Duty Rating Workshop

PART ID = **A2 - Keystone Piston**

RATED VALUES

	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Upper Skirt	Under-crown	TGF%	2nd GF%	TLHC%	TLFC%			UWPD	WPD
Cales, Jonathon	34.50	28.35	0.50	5.00	28.75	2.09	0.22	1.13	19.00	20.00	1.00	0.00			100.54	226.38
Foecking, Brian	32.50	30.53	0.24	2.59	29.28	2.28	0.07	0.67	14.00	25.00	0.00	0.00			98.16	206.32
Garcia, Orlando	47.16	29.67	1.22	2.40	31.53	4.03	0.36	1.40	44.00	43.00	0.00	0.00			117.77	326.43
Guarda, Waldyr	31.00	26.80	0.45	6.20	28.33	3.94	0.44	1.35	23.00	28.00	0.00	0.00			98.51	279.98
Hills, Barry	31.25	27.58	0.29	2.23	30.25	2.29	0.11	0.24	12.00	31.00	0.00	0.00			94.24	195.53
Sanchez, Art	31.75	31.28	0.10	3.95	36.25	2.88	0.12	0.59	15.00	23.00	0.00	0.00			106.92	227.05
Viera, Ralph	33.75	29.03	0.63	6.87	30.78	2.20	0.15	0.95	19.00	32.00	0.00	0.00			104.36	229.07
Clapperty, Leon	31.75	29.29	0.30	14.68	29.79	2.35	0.30	0.72	16.00	26.00	0.00	0.00			109.18	231.68
Hill, Howard	27.87	28.30	1.03	2.14	28.75	3.36	0.05	0.75	16.00	36.00	0.00	0.00			92.25	242.40
May, Marianne	31.25	29.21	0.40	3.15	30.06	3.14	0.09	0.72	15.00	17.00	0.00	0.00			98.02	231.30
Narasaki, Keith	35.50	26.84	0.92	3.12	39.05	3.78	0.09	0.09	20.00	29.00	0.00	0.10			109.39	259.48
Pitta, Jimmy	34.00	30.60	0.68	7.07	43.31	0.65	0.03	1.35	10.00	10.00	0.00	0.00			117.69	209.03
Radonich, Pete	32.75	30.53	0.20	2.76	31.00	2.71	0.16	0.71	15.00	24.00	0.00	0.00			100.82	223.63
Trevino, Robert	31.50	29.05	0.77	4.34	28.54	2.47	0.58	1.22	9.00	4.00	0.00	0.00			98.47	258.11
MAXIMUM	47.16	31.28	1.22	14.68	43.31	4.03	0.58	1.40	44.00	43.00	1.00	0.10			117.77	326.43
MINIMUM	27.87	26.80	0.10	2.14	28.33	0.65	0.03	0.09	9.00	4.00	0.00	0.00			92.25	195.53
RANGE (MAX-MIN	19.29	4.48	1.12	12.54	14.98	3.38	0.55	1.31	35.00	39.00	1.00	0.10			25.52	130.90
MEAN	33.32	29.08	0.55	4.75	31.83	2.73	0.20	0.85	17.64	24.86	0.07	0.01			103.31	239.03
STD	4.40	1.40	0.34	3.33	4.50	0.90	0.16	0.41	8.49	10.06	0.27	0.03			7.95	33.66



yi within 1	78%
yi within 2	95%
yi within 3	98%

PART ID = **A2 - Keystone Piston**

Yi VALUES

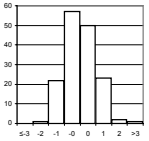
	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Upper Skirt	Under-crown	TGF%	2nd GF%	TLHC%	TLFC%			UWPD	WPD	MEAN	STD
Cales, Jonathon	0.27	-0.52	-0.15	0.08	-0.68	-0.71	0.14	0.69	0.16	-0.48	3.47	-0.27			-0.35	-0.38	0.09	1.05
Foecking, Brian	-0.19	1.04	-0.93	-0.65	-0.57	-0.50	-0.78	-0.44	-0.43	0.01	-0.27	-0.27			-0.65	-0.97	-0.40	0.50
Garcia, Orlando	3.15	0.43	1.98	-0.71	-0.07	1.45	0.99	1.36	3.10	1.80	-0.27	-0.27			1.82	2.60	1.24	1.27
Guarda, Waldyr	-0.53	-1.63	-0.30	0.44	-0.78	1.35	1.48	1.23	0.63	0.31	-0.27	-0.27			-0.60	1.22	0.16	0.94
Hills, Barry	-0.47	-1.07	-0.78	-0.76	-0.35	-0.49	-0.54	-1.50	-0.66	0.61	-0.27	-0.27			-1.14	-1.29	-0.64	0.53
Sanchez, Art	-0.36	1.58	-1.34	-0.24	0.98	0.17	-0.48	-0.64	-0.31	-0.18	-0.27	-0.27			0.45	-0.36	-0.09	0.71
Viera, Ralph	0.10	-0.03	0.23	0.64	-0.23	-0.59	-0.29	0.25	0.16	0.71	-0.27	-0.27			0.13	-0.30	0.02	0.37
Clapperty, Leon	-0.36	0.15	-0.75	2.98	-0.45	-0.42	0.62	-0.32	-0.19	0.11	-0.27	-0.27			0.74	-0.22	0.10	0.93
Hill, Howard	-1.24	-0.56	1.42	-0.78	-0.68	0.71	-0.90	-0.24	-0.19	1.11	-0.27	-0.27			-1.39	0.10	-0.23	0.83
May, Marianne	-0.47	0.10	-0.45	-0.48	-0.39	0.46	-0.66	-0.32	-0.31	-0.78	-0.27	-0.27			-0.67	-0.23	-0.34	0.32
Narasaki, Keith	0.50	-1.60	1.09	-0.49	1.60	1.17	-0.66	-1.87	0.28	0.41	-0.27	3.47			0.77	0.61	0.36	1.35
Pitta, Jimmy	0.15	1.09	0.38	0.70	2.55	-2.31	-1.02	1.23	-0.90	-1.48	-0.27	-0.27			1.81	-0.89	0.06	1.34
Radonich, Pete	-0.13	1.04	-1.05	-0.60	-0.19	-0.02	-0.23	-0.34	-0.31	-0.09	-0.27	-0.27			-0.31	-0.46	-0.23	0.45
Trevino, Robert	-0.41	-0.02	0.65	-0.12	-0.73	-0.29	2.33	0.91	-1.02	-2.07	-0.27	-0.27			-0.61	0.57	-0.10	1.02
Yi MAXIMUM	3.15	-1.63	1.98	2.98	2.55	-2.31	2.33	-1.87	3.10	-2.07	3.47	3.47			1.82	2.60	1.24	1.35
Yi MINIMUM	-0.13	-0.02	-0.15	0.08	-0.07	-0.02	0.14	-0.24	0.16	-0.09	-0.27	-0.27			-0.31	-0.22	-0.09	0.32
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00		
Ratings MEAN	33.32	29.08	0.55	4.75	31.83	2.73	0.20	0.85	17.64	24.86	0.07	0.01			103.31	239.03		
Ratings STD	4.40	1.40	0.34	3.33	4.50	0.90	0.16	0.41	8.49	10.06	0.27	0.03			7.95	33.66		

Heavy Duty Rating Workshop

PART ID = A3 - C13 Piston

RATED VALUES

	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Land 4	Under-crown	TGF%	2nd GF%	AGF%	TLHC%	TLFC%		UWPD	WPD
Cales, Jonathon	65.25	9.06	3.52	15.00	31.54	4.17	2.00	7.50	67.00	2.00	34.50	6.00	0.00		138.04	548.60
Garcia, Orlando	72.03	8.33	3.66	13.41	24.29	4.20	2.72	7.50	70.00	8.00	50.00	2.00	0.00		136.14	583.23
Guarda, Waldyr	73.00	10.07	4.63	18.40	33.26	7.20	0.94	4.50	78.00	2.00	40.00	5.00	2.00		152.00	591.89
Hills, Barry	58.00	6.68	3.60	19.75	30.48	3.62	0.98	7.50	62.00	1.00	36.00	6.00	0.00		130.61	457.93
Sanchez, Art	76.75	6.67	2.28	11.43	31.62	4.45	0.80	4.50	63.00	1.00	32.00	7.00	1.00		138.50	466.90
Viera, Ralph	66.25	10.11	4.83	15.35	28.99	7.66	2.39	4.50	66.00	2.00	38.00	6.00	0.00		140.08	662.85
Clapperty, Leon	61.75	9.84	1.87	21.00	19.86	4.36	1.26	2.26	73.00	1.00	41.00	5.00	0.00		122.20	436.06
Hill, Howard	79.25	9.19	3.40	12.48	22.25	3.51	2.05	2.33	77.00	1.00	45.00	5.00	0.00		134.46	528.83
Narasaki, Keith	71.54	9.95	4.02	16.66	30.68	8.39	2.00	1.50	72.00	1.50	48.00	6.00	1.00		144.74	651.33
Pitta, Jimmy	73.77	9.95	4.62	19.54	30.01	9.41	2.76	1.50	65.00	3.00	40.00	9.00	0.00		151.56	734.66
Radonich, Pete	77.00	7.04	2.50	14.25	30.28	4.54	1.65	2.25	74.00	2.00	47.00	6.00	0.00		139.51	522.26
Trevino, Robert	70.53	8.43	3.23	14.56	25.26	6.51	2.10	1.80	74.00	1.00	33.00	5.00	0.00		132.42	579.29
MAXIMUM	79.25	10.11	4.83	21.00	33.26	9.41	2.76	7.50	78.00	8.00	50.00	9.00	2.00		152.00	734.66
MINIMUM	58.00	6.67	1.87	11.43	19.86	3.51	0.80	1.50	62.00	1.00	32.00	2.00	0.00		122.20	436.06
RANGE (MAX-MIN	21.25	3.44	2.96	9.57	13.40	5.90	1.96	6.00	16.00	7.00	18.00	7.00	2.00		29.80	298.60
MEAN	70.43	8.78	3.51	15.99	28.21	5.67	1.80	3.97	70.08	2.13	40.38	5.67	0.33		138.36	563.65
STD	6.44	1.34	0.95	3.08	4.23	2.05	0.68	2.41	5.40	1.96	6.03	1.61	0.65		8.43	89.53



yi within 1	69%
yi within 2	97%
yi within 3	99%

PART ID = A3 - C13 Piston

Yi VALUES

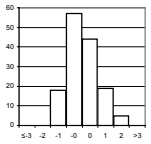
	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Land 4	Under-crown	TGF%	2nd GF%	AGF%	TLHC%	TLFC%		UWPD	WPD	MEAN	STD
Cales, Jonathon	-0.80	0.21	0.01	-0.32	0.79	-0.73	0.29	1.47	-0.57	-0.06	-0.97	0.21	-0.51		-0.04	-0.17	-0.08	0.64
Garcia, Orlando	0.25	-0.33	0.16	-0.84	-0.93	-0.72	1.35	1.47	-0.02	3.00	1.60	-2.27	-0.51		-0.26	0.22	0.14	1.28
Guarda, Waldyr	0.40	0.97	1.18	0.78	1.19	0.75	-1.27	0.22	1.47	-0.06	-0.06	-0.41	2.56		1.62	0.32	0.64	0.93
Hills, Barry	-1.93	-1.56	0.09	1.22	0.54	-1.00	-1.21	1.47	-1.50	-0.58	-0.73	0.21	-0.51		-0.92	-1.18	-0.51	1.01
Sanchez, Art	0.98	-1.57	-1.30	-1.48	0.81	-0.59	-1.48	0.22	-1.31	-0.58	-1.39	0.83	1.02		0.02	-1.08	-0.46	1.01
Viera, Ralph	-0.65	0.99	1.39	-0.21	0.18	0.97	0.86	0.22	-0.76	-0.06	-0.39	0.21	-0.51		0.20	1.11	0.24	0.69
Clapperty, Leon	-1.35	0.79	-1.74	1.63	-1.97	-0.64	-0.80	-0.71	0.54	-0.58	0.10	-0.41	-0.51		-1.92	-1.43	-0.60	1.03
Hill, Howard	1.37	0.31	-0.12	-1.14	-1.41	-1.05	0.36	-0.68	1.28	-0.58	0.77	-0.41	-0.51		-0.46	-0.39	-0.18	0.84
Narasaki, Keith	0.17	0.88	0.54	0.22	0.58	1.33	0.29	-1.03	0.35	-0.32	1.26	0.21	1.02		0.76	0.98	0.48	0.62
Pitta, Jimmy	0.52	0.88	1.17	1.15	0.43	1.83	1.41	-1.03	-0.94	0.45	-0.06	2.06	-0.51		1.57	1.91	0.72	1.01
Radonich, Pete	1.02	-1.30	-1.07	-0.56	0.49	-0.55	-0.23	-0.71	0.73	-0.06	1.10	0.21	-0.51		0.14	-0.46	-0.12	0.72
Trevino, Robert	0.02	-0.26	-0.30	-0.46	-0.70	0.41	0.44	-0.90	0.73	-0.58	-1.22	-0.41	-0.51		-0.70	0.17	-0.29	0.54
Yi MAXIMUM	-1.93	-1.57	-1.74	1.63	-1.97	1.83	-1.48	1.47	-1.50	3.00	1.60	-2.27	2.56		-1.92	1.91	0.72	1.28
Yi MINIMUM	-0.65	0.21	0.01	-0.21	0.18	-0.55	-0.23	0.22	-0.02	-0.06	-0.06	0.21	-0.51		-0.04	-0.17	-0.08	0.54
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		
Ratings MEAN	70.43	8.78	3.51	15.99	28.21	5.67	1.80	3.97	70.08	2.13	40.38	5.67	0.33		138.36	563.65		
Ratings STD	6.44	1.34	0.95	3.08	4.23	2.05	0.68	2.41	5.40	1.96	6.03	1.61	0.65		8.43	89.53		

Heavy Duty Rating Workshop

PART ID = A4 - C13 Piston

RATED VALUES

	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Land 4	Under-crown	TGF%	2nd GF%	AGF%	TLHC%	TLFC%		UWPD	WPD
Cales, Jonathon	42.88	6.54	3.15	27.72	15.79	2.50	2.35	7.50	48.00	1.00	24.50	9.00	0.00		108.43	441.97
Garcia, Orlando	60.69	8.55	2.43	13.58	16.03	2.89	2.41	7.50	60.00	8.00	19.00	0.00	0.00		114.08	467.20
Guarda, Waldyr	57.77	8.56	2.08	25.55	18.04	2.46	1.50	5.10	61.00	3.00	11.00	8.00	1.00		121.06	406.79
Hills, Barry	45.68	5.48	2.28	27.20	17.55	3.13	2.26	7.50	56.00	1.00	8.00	9.00	0.00		111.08	438.95
Sanchez, Art	61.40	6.64	1.90	18.83	12.41	1.59	1.00	7.50	50.00	1.00	14.00	12.00	2.00		111.27	336.08
Clapperty, Leon	44.86	4.01	1.85	23.48	14.22	1.66	1.42	1.50	48.00	1.00	11.00	3.00	0.00		93.00	324.79
Hill, Howard	57.13	3.95	2.80	16.73	8.80	2.18	1.95	2.26	55.00	0.00	15.00	10.00	1.00		95.80	388.10
Narasaki, Keith	53.04	9.11	3.00	23.73	16.57	7.34	2.00	1.50	49.00	2.50	12.00	7.00	0.30		116.29	535.15
Pitta, Jimmy	59.16	8.15	3.25	27.00	27.60	2.95	2.63	1.50	50.00	3.00	10.00	13.00	0.00		132.24	535.87
Radonich, Pete	52.37	6.71	1.75	21.53	13.97	1.57	1.20	1.80	50.00	1.00	13.00	6.00	0.00		100.90	328.51
Trevino, Robert	47.49	7.53	2.61	21.07	11.93	2.91	2.00	1.80	60.00	2.00	9.00	5.00	1.00		97.34	406.63
MAXIMUM	61.40	9.11	3.25	27.72	27.60	7.34	2.63	7.50	61.00	8.00	24.50	13.00	2.00		132.24	535.87
MINIMUM	42.88	3.95	1.75	13.58	8.80	1.57	1.00	1.50	48.00	0.00	8.00	0.00	0.00		93.00	324.79
RANGE (MAX-MIN	18.52	5.16	1.50	14.14	18.80	5.77	1.63	6.00	13.00	8.00	16.50	13.00	2.00		39.24	211.08
MEAN	52.95	6.84	2.46	22.40	15.72	2.83	1.88	4.13	53.36	2.14	13.32	7.45	0.48		109.23	419.09
STD	6.79	1.78	0.54	4.59	4.79	1.60	0.53	2.85	5.16	2.17	4.81	3.83	0.67		11.86	74.56



yi within 1	71%
yi within 2	97%
yi within 3	100%

PART ID = A4 - C13 Piston

Yi VALUES

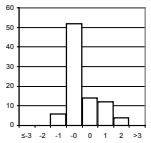
	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Land 4	Under-crown	TGF%	2nd GF%	AGF%	TLHC%	TLFC%		UWPD	WPD	MEAN	STD
Cales, Jonathon	-1.48	-0.17	1.28	1.16	0.01	-0.21	0.88	1.18	-1.04	-0.52	2.33	0.40	-0.72		-0.07	0.31	0.22	1.01
Garcia, Orlando	1.14	0.96	-0.06	-1.92	0.06	0.03	0.99	1.18	1.29	2.70	1.18	-1.95	-0.72		0.41	0.65	0.40	1.23
Guarda, Waldyr	0.71	0.97	-0.71	0.69	0.48	-0.23	-0.72	0.34	1.48	0.40	-0.48	0.14	0.77		1.00	-0.17	0.31	0.66
Hills, Barry	-1.07	-0.76	-0.34	1.05	0.38	0.18	0.71	1.18	0.51	-0.52	-1.11	0.40	-0.72		0.16	0.27	0.02	0.73
Sanchez, Art	1.25	-0.11	-1.05	-0.78	-0.69	-0.78	-1.66	1.18	-0.65	-0.52	0.14	1.19	2.25		0.17	-1.11	-0.08	1.10
Clapperty, Leon	-1.19	-1.59	-1.14	0.23	-0.31	-0.73	-0.87	-0.92	-1.04	-0.52	-0.48	-1.16	-0.72		-1.37	-1.26	-0.87	0.47
Hill, Howard	0.62	-1.63	0.62	-1.24	-1.45	-0.41	0.12	-0.66	0.32	-0.98	0.35	0.66	0.77		-1.13	-0.42	-0.30	0.85
Narasaki, Keith	0.01	1.28	1.00	0.29	0.18	2.81	0.22	-0.92	-0.85	0.17	-0.27	-0.12	-0.27		0.60	1.56	0.38	0.97
Pitta, Jimmy	0.91	0.74	1.46	1.00	2.48	0.07	1.40	-0.92	-0.65	0.40	-0.69	1.45	-0.72		1.94	1.57	0.70	1.07
Radonich, Pete	-0.09	-0.07	-1.33	-0.19	-0.37	-0.79	-1.28	-0.82	-0.65	-0.52	-0.07	-0.38	-0.72		-0.70	-1.21	-0.61	0.43
Trevino, Robert	-0.80	0.39	0.27	-0.29	-0.79	0.05	0.22	-0.82	1.29	-0.06	-0.90	-0.64	0.77		-1.00	-0.17	-0.17	0.68
Yi MAXIMUM	-1.48	-1.63	1.46	-1.92	2.48	2.81	-1.66	1.18	1.48	2.70	2.33	-1.95	2.25		1.94	1.57	-0.87	1.23
Yi MINIMUM	-0.09	-0.07	-0.06	-0.19	0.01	-0.21	-0.72	0.34	-0.65	-0.06	-0.07	-0.12	-0.27		-0.07	-0.17	0.02	0.43
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		
Ratings MEAN	52.95	6.84	2.46	22.40	15.72	2.83	1.88	4.13	53.36	2.14	13.32	7.45	0.48		109.23	419.09		
Ratings STD	6.79	1.78	0.54	4.59	4.79	1.60	0.53	2.85	5.16	2.17	4.81	3.83	0.67		11.86	74.56		

Heavy Duty Rating Workshop

PART ID = **A5 - Sequence III Piston**

RATED VALUES

	Groove 1	Groove 2	Groove 3	Land 2	Land 3	Under-crown	Thrust	Anti-Thrust							UWPD	WPD
Cales, Jonathon	35.35	25.75	0.56	23.41	10.77	8.61	1.13	0.17							105.75	105.75
Foecking, Brian	58.75	24.68	0.09	23.37	12.60	8.94	1.05	0.06							129.54	129.54
Garcia, Orlando	31.00	24.77	0.28	22.56	10.81	**21.70**	1.40	0.23							112.75	112.75
Hills, Barry	28.75	25.00	0.12	24.73	24.73	9.00	0.33	0.12							112.78	112.78
Sanchez, Art	47.50	26.50	0.14	32.26	12.13	8.86	0.90	0.14							128.43	128.43
Hill, Howard	32.13	22.52	0.63	26.71	8.23	6.50	0.68	0.04							97.44	97.44
May, Marianne	36.25	25.75	0.19	25.73	11.76	8.95	0.87	0.16							109.66	109.66
Narasaki, Keith	30.25	**37.00**	0.38	36.95	**36.95**	7.85	0.40	0.20							149.98	149.98
Pitta, Jimmy	29.50	32.50	0.87	**48.89**	21.95	7.60	1.60	0.03							142.94	142.94
Radonich, Pete	58.75	25.00	0.18	23.28	12.16	8.95	1.05	0.06							129.43	129.43
Trevino, Robert	61.00	26.50	0.54	25.83	12.10	8.85	0.95	0.31							136.08	136.08
MAXIMUM	61.00	37.00	0.87	48.89	36.95	21.70	1.60	0.31							149.98	149.98
MINIMUM	28.75	22.52	0.09	22.56	8.23	6.50	0.33	0.03							97.44	97.44
RANGE (MAX-MIN	32.25	14.48	0.78	26.33	28.72	15.20	1.27	0.28							52.54	52.54
MEAN	40.84	26.91	0.36	28.52	15.84	9.62	0.94	0.14							123.16	123.16
STD	13.05	4.15	0.26	8.05	8.60	4.08	0.38	0.09							16.58	16.58



yi within 1 75%
yi within 2 95%
yi within 3 100%

PART ID = **A5 - Sequence III Piston**

Yi VALUES

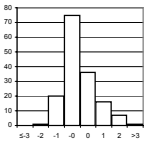
	Groove 1	Groove 2	Groove 3	Land 2	Land 3	Under-crown	Thrust	Anti-Thrust							UWPD	WPD	MEAN	STD
Cales, Jonathon	-0.42	-0.28	0.78	-0.63	-0.59	-0.25	0.49	0.36							-1.05	-1.05	-0.26	0.63
Foecking, Brian	1.37	-0.54	-1.06	-0.64	-0.38	-0.17	0.28	-0.89							0.38	0.38	-0.12	0.74
Garcia, Orlando	-0.75	-0.51	-0.32	-0.74	-0.58	**2.96**	1.21	1.05							-0.63	-0.63	0.10	1.24
Hills, Barry	-0.93	-0.46	-0.95	-0.47	1.03	-0.15	-1.61	-0.21							-0.63	-0.63	-0.50	0.68
Sanchez, Art	0.51	-0.10	-0.87	0.46	-0.43	-0.19	-0.11	0.02							0.32	0.32	-0.01	0.43
Hill, Howard	-0.67	-1.06	1.05	-0.22	-0.88	-0.76	-0.69	-1.12							-1.55	-1.55	-0.75	0.75
May, Marianne	-0.35	-0.28	-0.67	-0.35	-0.47	-0.16	-0.19	0.25							-0.81	-0.81	-0.39	0.33
Narasaki, Keith	-0.81	**2.43**	0.07	1.05	**2.46**	-0.43	-1.43	0.70							1.62	1.62	0.73	1.35
Pitta, Jimmy	-0.87	1.35	1.99	**2.53**	0.71	-0.49	1.73	-1.23							1.19	1.19	0.81	1.27
Radonich, Pete	1.37	-0.46	-0.71	-0.65	-0.43	-0.16	0.28	-0.89							0.38	0.38	-0.09	0.69
Trevino, Robert	1.54	-0.10	0.70	-0.33	-0.43	-0.19	0.02	1.96							0.78	0.78	0.47	0.82
Yi MAXIMUM	1.54	2.43	1.99	2.53	2.46	2.96	1.73	1.96							1.62	1.62	0.81	1.35
Yi MINIMUM	-0.35	-0.10	-0.32	-0.22	-0.38	-0.15	-0.11	-0.21							-0.63	-0.63	-0.01	0.33
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							1.00	1.00		
Ratings MEAN	40.84	26.91	0.36	28.52	15.84	9.62	0.94	0.14							123.16	123.16		
Ratings STD	13.05	4.15	0.26	8.05	8.60	4.08	0.38	0.09							16.58	16.58		

Heavy Duty Rating Workshop

PART ID = A6 - Two-piece Piston

RATED VALUES

	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Land 4	Under-crown	Oil Gallery	TGF%	2nd GF%	TLHC%	TLFC%		UWPD	WPD
Cales, Jonathon	24.37	4.67	1.80	**32.85**	3.98	1.78	0.50	4.50	4.50	6.00	1.00	**24.00**	0.00		78.95	215.89
Garcia, Orlando	**30.55**	4.73	1.84	23.25	4.70	2.44	**1.43**	6.76	5.10	5.00	**3.00**	10.00	0.00		80.80	**293.35**
Hills, Barry	23.45	4.72	1.08	21.66	4.92	2.52	0.78	7.20	2.70	4.00	0.20	10.00	0.00		69.03	224.83
Sanchez, Art	23.80	4.50	0.83	22.98	3.65	1.58	0.96	3.90	3.30	**9.00**	1.00	13.00	**4.00**		65.50	206.38
Clapperty, Leon	21.93	4.15	0.96	22.00	3.57	1.64	0.60	5.70	6.30	5.00	1.00	5.00	0.00		66.85	185.87
Hill, Howard	**14.38**	4.37	1.23	17.42	4.01	2.25	0.98	1.20	6.01	2.00	0.00	9.00	0.00		51.85	203.93
May, Marianne	23.20	5.55	1.41	28.39	5.42	1.90	0.58	3.30	6.90	6.00	1.00	17.00	0.00		76.65	215.45
Narasaki, Keith	23.07	**8.42**	1.88	21.58	4.17	2.59	1.12	3.30	6.01	5.00	1.00	11.00	1.00		72.14	268.40
Pitta, Jimmy	23.08	6.10	2.05	20.44	4.11	2.73	0.63	1.50	1.50	3.00	1.00	9.00	0.00		62.14	232.88
Radonich, Pete	24.31	3.78	1.20	17.09	3.03	1.45	0.63	4.05	2.55	7.00	1.00	5.00	0.00		58.09	182.27
Shoda, Ron	24.12	7.34	0.93	21.25	4.84	1.90	0.81	3.60	2.40	5.00	1.00	9.00	0.00		67.19	216.03
Trevino, Robert	21.38	5.74	1.07	23.79	5.05	3.16	0.87	6.00	6.90	6.00	1.00	11.00	0.00		73.96	245.17
MAXIMUM	30.55	8.42	2.05	32.85	5.42	3.16	1.43	7.20	6.90	9.00	3.00	24.00	4.00		80.80	293.35
MINIMUM	14.38	3.78	0.83	17.09	3.03	1.45	0.50	1.20	1.50	2.00	0.00	5.00	0.00		51.85	182.27
RANGE (MAX-MIN	16.17	4.64	1.22	15.76	2.39	1.71	0.93	6.00	5.40	7.00	3.00	19.00	4.00		28.95	111.09
MEAN	23.14	5.34	1.36	22.73	4.29	2.16	0.82	4.25	4.51	5.25	1.02	11.08	0.42		68.60	224.20
STD	3.58	1.38	0.43	4.33	0.70	0.53	0.27	1.89	1.94	1.82	0.72	5.18	1.16		8.58	32.22



yi within 1	71%
yi within 2	94%
yi within 3	99%

PART ID = A6 - Two-piece Piston

Yi VALUES

	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Land 4	Under-crown	Oil Gallery	TGF%	2nd GF%	TLHC%	TLFC%		UWPD	WPD	MEAN	STD
Cales, Jonathon	0.34	-0.48	1.04	**2.34**	-0.44	-0.72	-1.21	0.13	-0.01	0.41	-0.02	**2.49**	-0.36		1.21	-0.26	0.30	1.06
Garcia, Orlando	**2.07**	-0.44	1.13	0.12	0.59	0.52	**2.26**	1.32	0.30	-0.14	**2.77**	-0.21	-0.36		1.42	**2.15**	0.90	1.06
Hills, Barry	0.09	-0.45	-0.65	-0.25	0.90	0.67	-0.16	1.56	-0.93	-0.69	-1.14	-0.21	-0.36		0.05	0.02	-0.10	0.71
Sanchez, Art	0.19	-0.61	-1.23	0.06	-0.90	-1.09	0.51	-0.19	-0.62	**2.07**	-0.02	0.37	**3.08**		-0.36	-0.55	0.05	1.16
Clapperty, Leon	-0.34	-0.86	-0.93	-0.17	-1.02	-0.98	-0.84	0.76	0.92	-0.14	-0.02	-1.17	-0.36		-0.20	-1.19	-0.44	0.66
Hill, Howard	**-2.45**	-0.70	-0.30	-1.22	-0.39	0.17	0.58	-1.61	0.77	-1.79	-1.42	-0.40	-0.36		-1.95	-0.63	-0.78	0.94
May, Marianne	0.02	0.15	0.12	1.31	1.61	-0.49	-0.91	-0.50	1.23	0.41	-0.02	1.14	-0.36		0.94	-0.27	0.29	0.78
Narasaki, Keith	-0.02	**2.23**	1.23	-0.26	-0.17	0.80	1.10	-0.50	0.77	-0.14	-0.02	-0.02	0.50		0.41	1.37	0.49	0.76
Pitta, Jimmy	-0.02	0.55	1.62	-0.53	-0.25	1.07	-0.72	-1.45	-1.55	-1.24	-0.02	-0.40	-0.36		-0.75	0.27	-0.25	0.89
Radonich, Pete	0.33	-1.13	-0.37	-1.30	-1.79	-1.34	-0.72	-0.11	-1.01	0.96	-0.02	-1.17	-0.36		-1.22	-1.30	-0.70	0.75
Shoda, Ron	0.28	1.45	-1.00	-0.34	0.78	-0.49	-0.05	-0.34	-1.09	-0.14	-0.02	-0.40	-0.36		-0.16	-0.25	-0.14	0.63
Trevino, Robert	-0.49	0.29	-0.67	0.25	1.08	1.88	0.17	0.92	1.23	0.41	-0.02	-0.02	-0.36		0.63	0.65	0.40	0.69
Yi MAXIMUM	-2.45	2.23	1.62	2.34	-1.79	1.88	2.26	-1.61	-1.55	2.07	2.77	2.49	3.08		-1.95	2.15	0.90	1.16
Yi MINIMUM	-0.02	-0.44	-0.30	0.06	-0.17	-0.49	-0.05	-0.11	-0.01	-0.14	-0.02	-0.02	-0.36		0.05	-0.25	-0.10	0.63
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		
Ratings MEAN	23.14	5.34	1.36	22.73	4.29	2.16	0.82	4.25	4.51	5.25	1.02	11.08	0.42		68.60	224.20		
Ratings STD	3.58	1.38	0.43	4.33	0.70	0.53	0.27	1.89	1.94	1.82	0.72	5.18	1.16		8.58	32.22		

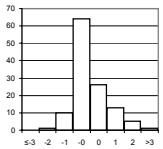
November 5-9, 2007

Heavy Duty Rating Workshop

PART ID = **B1 - Square Cut Piston**

RATED VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 2	Land 3	Land 4	TGF%							UWPD	WPD
Barrera, Tony	33.68	4.32	0.42	0.36	8.50	1.86	0.98	25.00							50.12	218.03
Castillo, George	32.24	3.53	0.38	0.36	7.22	1.98	1.16	28.00							46.87	211.51
Guarda, Waldyr	30.81	**5.84**	0.66	0.34	8.52	**3.85**	0.51	23.00							50.53	260.78
Hills, Barry	28.74	3.18	0.50	0.20	8.99	1.74	0.19	**17.00**							43.54	164.96
Kobrinetz, Jack	30.24	3.56	0.36	0.18	9.52	1.75	0.50	22.00							46.11	176.86
Viera, Ralph	32.33	4.83	0.62	**1.55**	7.39	1.53	0.47	25.00							48.72	283.75
Avis, Steve	30.22	3.44	0.30	0.20	10.11	1.60	0.40	27.00							46.27	170.51
Clapperty, Leon	27.25	5.61	0.42	0.29	**12.63**	1.54	0.45	27.00							48.19	209.11
Greenland, Paul	34.25	4.28	0.85	0.50	7.38	2.09	0.95	26.00							50.30	242.68
Kuipers, Jacques	**43.12**	3.59	0.20	0.03	10.14	2.43	0.30	32.00							**59.81**	182.71
May, Marianne	32.09	3.78	0.32	0.34	9.61	1.84	0.61	24.00							48.59	196.68
McPhail, Scott	33.19	4.09	**1.70**	1.00	9.59	2.63	0.85	27.00							53.05	**319.51**
Narasaki, Keith	39.94	4.36	1.00	0.18	9.50	1.57	0.38	34.00							56.93	209.09
Ramirez, Manny	30.65	3.67	0.65	0.30	12.35	1.91	1.10	29.00							50.63	231.03
Rodriguez, Jesse	39.55	3.32	0.10	0.10	8.09	1.36	0.55	26.00							53.07	158.02
MAXIMUM	43.12	5.84	1.70	1.55	12.63	3.85	1.16	34.00							59.81	319.51
MINIMUM	27.25	3.18	0.10	0.03	7.22	1.36	0.19	17.00							43.54	158.02
RANGE (MAX-MIN)	15.87	2.66	1.60	1.52	5.41	2.49	0.97	17.00							16.27	161.49
MEAN	33.22	4.09	0.57	0.40	9.30	1.98	0.63	26.13							50.18	215.68
STD	4.42	0.80	0.39	0.39	1.61	0.62	0.30	4.03							4.23	45.84



yi within 1	75%
yi within 2	94%
yi within 3	99%

PART ID = **B1 - Square Cut Piston**

Yi VALUES

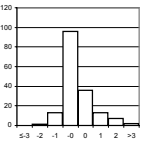
	Groove 1	Groove 2	Groove 3	Groove 4	Land 2	Land 3	Land 4	TGF%							UWPD	WPD	MEAN	STD
Barrera, Tony	0.10	0.28	-0.37	-0.09	-0.50	-0.19	1.16	-0.28							-0.01	0.05	0.02	0.47
Castillo, George	-0.22	-0.70	-0.47	-0.09	-1.29	0.00	1.76	0.46							-0.78	-0.09	-0.14	0.83
Guarda, Waldyr	-0.55	**2.17**	0.24	-0.14	-0.48	**3.02**	-0.38	-0.78							0.08	0.98	0.42	1.27
Hills, Barry	-1.01	-1.14	-0.17	-0.50	-0.19	-0.39	-1.44	**-2.26**							-1.57	-1.11	-0.98	0.68
Kobrinetz, Jack	-0.67	-0.66	-0.52	-0.55	0.13	-0.37	-0.42	-1.02							-0.96	-0.85	-0.59	0.34
Viera, Ralph	-0.20	0.92	0.14	**2.96**	-1.18	-0.72	-0.52	-0.28							-0.35	1.48	0.22	1.24
Avis, Steve	-0.68	-0.81	-0.67	-0.50	0.50	-0.61	-0.75	0.21							-0.92	-0.99	-0.52	0.49
Clapperty, Leon	-1.35	1.89	-0.37	-0.27	**2.06**	-0.71	-0.58	0.21							-0.47	-0.14	0.03	1.10
Greenland, Paul	0.23	0.23	0.72	0.27	-1.19	0.18	1.07	-0.03							0.03	0.59	0.21	0.60
Kuipers, Jacques	**2.24**	-0.63	-0.93	-0.94	0.52	0.73	-1.08	1.45							**2.27**	-0.72	0.29	1.34
May, Marianne	-0.26	-0.39	-0.62	-0.14	0.19	-0.22	-0.05	-0.53							-0.38	-0.41	-0.28	0.24
McPhail, Scott	-0.01	0.00	**2.88**	1.55	0.18	1.05	0.74	0.21							0.68	**2.27**	0.95	0.99
Narasaki, Keith	1.52	0.33	1.10	-0.55	0.12	-0.66	-0.81	1.95							1.59	-0.14	0.45	1.02
Ramirez, Manny	-0.58	-0.53	0.21	-0.24	1.89	-0.11	1.56	0.71							0.11	0.33	0.33	0.83
Rodriguez, Jesse	1.43	-0.96	-1.18	-0.76	-0.75	-1.00	-0.25	-0.03							0.68	-1.26	-0.41	0.88
Yi MAXIMUM	2.24	2.17	2.88	2.96	2.06	3.02	1.76	-2.26							2.27	2.27	-0.98	1.34
Yi MINIMUM	-0.01	0.00	-0.17	-0.09	-0.19	-0.11	-0.05	-0.03							-0.01	0.05	0.02	0.24
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							1.00	1.00		
Ratings MEAN	33.22	4.09	0.57	0.40	9.30	1.98	0.63	26.13							50.18	215.68		
Ratings STD	4.42	0.80	0.39	0.39	1.61	0.62	0.30	4.03							4.23	45.84		

Heavy Duty Rating Workshop

PART ID = **B2 - Keystone Piston**

RATED VALUES

	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Upper Skirt	Under-crown	TGF%	2nd GF%	TLHC%	TLFC%			UWPD	WPD
Castillo, George	31.75	24.40	1.41	7.60	25.93	2.87	**0.85**	0.58	20.00	25.00	0.00	0.00			95.39	278.86
Guarda, Waldyr	28.00	**36.83**	0.53	8.24	33.13	**4.73**	0.45	2.15	24.00	**43.00**	0.00	0.00			114.06	335.62
Hills, Barry	27.25	24.54	0.63	4.67	29.90	**0.74**	0.22	0.38	7.00	18.00	0.00	0.00			88.33	**165.11**
Kobrinetz, Jack	34.50	24.31	0.80	5.95	26.57	2.43	0.27	0.75	20.00	15.00	0.00	0.00			95.58	229.99
Viera, Ralph	39.00	24.84	1.42	6.84	29.59	3.03	0.59	1.49	30.00	24.00	0.00	0.00			106.80	302.74
Avis, Steve	35.00	24.76	1.68	5.25	28.64	2.67	0.32	1.23	20.90	28.10	0.00	0.00			99.55	272.88
Clapperty, Leon	32.25	24.07	0.66	**14.40**	23.90	2.61	0.31	0.91	26.00	14.00	0.00	0.00			99.11	238.23
Greenland, Paul	31.25	24.10	1.02	3.82	30.85	2.60	0.43	1.15	15.00	12.00	0.00	0.00			95.22	252.70
Kuipers, Jacques	38.00	23.86	0.65	3.77	**43.00**	3.08	0.15	2.00	35.00	18.00	0.00	0.00			114.51	280.31
May, Marianne	33.75	24.57	0.43	4.35	28.18	3.06	0.26	1.03	20.00	8.00	0.00	0.00			95.63	240.86
McPhail, Scott	36.00	32.50	1.40	4.09	37.40	3.36	0.35	1.60	20.00	10.00	**1.00**	0.00			116.70	312.74
Pansza, Mike	32.75	23.94	0.68	2.43	26.48	2.81	0.25	0.59	26.00	21.00	0.00	0.00			89.93	225.50
Ramirez, Manny	33.25	23.65	1.25	12.20	26.75	3.21	0.26	0.80	37.00	30.00	0.00	**0.10**			101.37	264.80
Rodriguez, Jesse	**44.75**	23.88	1.14	4.74	33.63	1.89	0.20	0.78	11.00	25.00	0.00	0.00			111.01	242.67
MAXIMUM	44.75	36.83	1.68	14.40	43.00	4.73	0.85	2.15	37.00	43.00	1.00	0.10			116.70	335.62
MINIMUM	27.25	23.65	0.43	2.43	23.90	0.74	0.15	0.38	7.00	8.00	0.00	0.00			88.33	165.11
RANGE (MAX-MIN	17.50	13.18	1.25	11.97	19.10	3.99	0.70	1.77	30.00	35.00	1.00	0.10			28.37	170.51
MEAN	34.11	25.73	0.98	6.31	30.28	2.79	0.35	1.10	22.28	20.79	0.07	0.01			101.66	260.21
STD	4.48	3.89	0.40	3.38	5.12	0.86	0.18	0.54	8.34	9.32	0.27	0.03			9.36	42.58



yi within 1	79%
yi within 2	94%
yi within 3	99%

PART ID = **B2 - Keystone Piston**

Yi VALUES

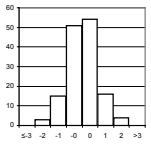
	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Upper Skirt	Under-crown	TGF%	2nd GF%	TLHC%	TLFC%			UWPD	WPD	MEAN	STD
Castillo, George	-0.53	-0.34	1.07	0.38	-0.85	0.09	**2.72**	-0.97	-0.27	0.45	-0.27	-0.27			-0.67	0.44	0.07	0.95
Guarda, Waldyr	-1.36	**2.85**	-1.11	0.57	0.56	**2.24**	0.54	1.95	0.21	**2.38**	-0.27	-0.27			1.32	1.77	0.81	1.31
Hills, Barry	-1.53	-0.31	-0.87	-0.49	-0.07	**-2.37**	-0.71	-1.35	-1.83	-0.30	-0.27	-0.27			-1.42	**-2.23**	-1.00	0.78
Kobrinetz, Jack	0.09	-0.37	-0.44	-0.11	-0.73	-0.42	-0.44	-0.66	-0.27	-0.62	-0.27	-0.27			-0.65	-0.71	-0.42	0.24
Viera, Ralph	1.09	-0.23	1.10	0.16	-0.14	0.28	1.30	0.72	0.93	0.34	-0.27	-0.27			0.55	1.00	0.47	0.56
Avis, Steve	0.20	-0.25	1.74	-0.31	-0.32	-0.14	-0.17	0.24	-0.17	0.78	-0.27	-0.27			-0.23	0.30	0.08	0.57
Clapperty, Leon	-0.41	-0.43	-0.79	**2.39**	-1.25	-0.21	-0.22	-0.36	0.45	-0.73	-0.27	-0.27			-0.27	-0.52	-0.21	0.84
Greenland, Paul	-0.64	-0.42	0.10	-0.74	0.11	-0.22	0.43	0.09	-0.87	-0.94	-0.27	-0.27			-0.69	-0.18	-0.32	0.42
Kuipers, Jacques	0.87	-0.48	-0.82	-0.75	**2.49**	0.33	-1.09	1.67	1.52	-0.30	-0.27	-0.27			1.37	0.47	0.34	1.09
May, Marianne	-0.08	-0.30	-1.36	-0.58	-0.41	0.31	-0.49	-0.14	-0.27	-1.37	-0.27	-0.27			-0.64	-0.45	-0.45	0.45
McPhail, Scott	0.42	1.74	1.05	-0.66	1.39	0.66	0.00	0.93	-0.27	-1.16	**3.47**	-0.27			1.61	1.23	0.72	1.19
Pansza, Mike	-0.30	-0.46	-0.74	-1.15	-0.74	0.02	-0.55	-0.96	0.45	0.02	-0.27	-0.27			-1.25	-0.82	-0.50	0.48
Ramirez, Manny	-0.19	-0.53	0.67	1.74	-0.69	0.48	-0.49	-0.56	1.76	0.99	-0.27	**3.47**			-0.03	0.11	0.46	1.19
Rodriguez, Jesse	**2.37**	-0.48	0.40	-0.46	0.65	-1.04	-0.82	-0.60	-1.35	0.45	-0.27	-0.27			1.00	-0.41	-0.06	0.96
Yi MAXIMUM	2.37	2.85	1.74	2.39	2.49	-2.37	2.72	1.95	-1.83	2.38	3.47	3.47			1.61	-2.23	-1.00	1.31
Yi MINIMUM	-0.08	-0.23	-0.44	-0.11	-0.07	0.02	0.00	-0.14	-0.17	-0.30	-0.27	-0.27			-0.03	-0.18	-0.06	0.24
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00		
Ratings MEAN	34.11	25.73	0.98	6.31	30.28	2.79	0.35	1.10	22.28	20.79	0.07	0.01			101.66	260.21		
Ratings STD	4.48	3.89	0.40	3.38	5.12	0.86	0.18	0.54	8.34	9.32	0.27	0.03			9.36	42.58		

Heavy Duty Rating Workshop

PART ID = **B3 - C13 Piston**

RATED VALUES

	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Land 4	Under-crown	TGF%	2nd GF%	AGF%	TLHC%	TLFC%		UWPD	WPD
Barrera, Tony	39.13	5.95	2.27	12.79	17.22	2.72	1.22	1.50	36.00	1.00	23.00	1.00	0.00		82.80	335.06
Guarda, Waldyr	39.34	6.78	2.71	11.83	13.70	2.16	0.72	4.50	46.00	1.00	25.00	1.00	0.00		81.74	297.05
Hills, Barry	28.56	4.37	2.07	11.76	23.05	1.55	0.78	7.50	19.00	1.00	22.00	1.00	0.00		79.64	277.84
Kobrinetz, Jack	44.04	4.66	2.35	9.28	17.17	2.59	1.40	7.50	41.00	1.00	21.00	0.00	7.00		88.99	353.15
Viera, Ralph	44.86	7.03	3.36	11.69	14.75	2.74	2.36	3.90	38.00	1.00	23.00	1.00	0.00		90.69	434.25
Avis, Steve	40.48	5.68	2.40	7.55	16.26	1.55	0.94	7.50	24.00	0.40	24.80	0.00	0.00		82.36	297.23
Greenland, Paul	45.78	5.31	2.92	6.00	17.05	2.65	1.60	1.50	39.00	1.00	24.00	1.00	0.00		82.81	373.54
Kuipers, Jacques	58.24	6.62	4.00	13.69	29.77	3.00	2.40	4.50	55.00	3.00	16.00	1.00	0.00		122.22	527.84
May, Marianne	44.74	6.93	2.59	11.22	17.18	2.63	1.12	2.70	39.00	1.00	22.00	1.00	1.00		89.11	347.33
McPhail, Scott	50.13	6.10	2.15	8.95	15.89	2.02	1.70	7.50	40.00	2.00	25.00	1.00	1.00		94.44	368.08
Ramirez, Manny	27.65	5.91	2.20	14.39	13.31	2.25	1.97	0.60	37.00	5.00	3.00	1.00	1.00		68.28	335.15
MAXIMUM	58.24	7.03	4.00	14.39	29.77	3.00	2.40	7.50	55.00	5.00	25.00	1.00	7.00		122.22	527.84
MINIMUM	27.65	4.37	2.07	6.00	13.31	1.55	0.72	0.60	19.00	0.40	3.00	0.00	0.00		68.28	277.84
RANGE (MAX-MIN	30.59	2.66	1.93	8.39	16.46	1.45	1.68	6.90	36.00	4.60	22.00	1.00	7.00		53.94	250.00
MEAN	42.09	5.94	2.64	10.83	17.76	2.35	1.47	4.47	37.64	1.58	20.80	0.82	0.91		87.55	358.77
STD	8.76	0.89	0.59	2.60	4.74	0.49	0.59	2.70	9.64	1.33	6.43	0.40	2.07		13.43	70.72



yi within 1	73%
yi within 2	95%
yi within 3	100%

PART ID = **B3 - C13 Piston**

Yi VALUES

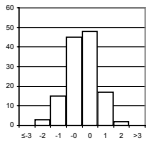
	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Land 4	Under-crown	TGF%	2nd GF%	AGF%	TLHC%	TLFC%		UWPD	WPD	MEAN	STD
Barrera, Tony	-0.34	0.01	-0.62	0.75	-0.11	0.76	-0.43	-1.10	-0.17	-0.44	0.34	0.45	-0.44		-0.35	-0.34	-0.14	0.52
Guarda, Waldyr	-0.31	0.94	0.12	0.38	-0.86	-0.39	-1.28	0.01	0.87	-0.44	0.65	0.45	-0.44		-0.43	-0.87	-0.11	0.67
Hills, Barry	-1.54	-1.76	-0.96	0.36	1.12	-1.64	-1.17	1.12	-1.93	-0.44	0.19	0.45	-0.44		-0.59	-1.14	-0.56	1.02
Kobrinetz, Jack	0.22	-1.44	-0.49	-0.60	-0.12	0.49	-0.12	1.12	0.35	-0.44	0.03	-2.02	2.94		0.11	-0.08	0.00	1.11
Viera, Ralph	0.32	1.22	1.22	0.33	-0.63	0.80	1.50	-0.21	0.04	-0.44	0.34	0.45	-0.44		0.23	1.07	0.39	0.67
Avis, Steve	-0.18	-0.29	-0.40	-1.26	-0.32	-1.64	-0.90	1.12	-1.42	-0.89	0.62	-2.02	-0.44		-0.39	-0.87	-0.62	0.82
Greenland, Paul	0.42	-0.71	0.48	-1.86	-0.15	0.61	0.21	-1.10	0.14	-0.44	0.50	0.45	-0.44		-0.35	0.21	-0.14	0.70
Kuipers, Jacques	1.84	0.76	2.30	1.10	2.53	1.33	1.57	0.01	1.80	1.07	-0.75	0.45	-0.44		2.58	2.39	1.24	1.07
May, Marianne	0.30	1.11	-0.08	0.15	-0.12	0.57	-0.60	-0.66	0.14	-0.44	0.19	0.45	0.04		0.12	-0.16	0.07	0.46
McPhail, Scott	0.92	0.18	-0.83	-0.72	-0.39	-0.68	0.38	1.12	0.25	0.31	0.65	0.45	0.04		0.51	0.13	0.16	0.59
Ramirez, Manny	-1.65	-0.03	-0.74	1.37	-0.94	-0.21	0.84	-1.44	-0.07	2.57	-2.77	0.45	0.04		-1.44	-0.33	-0.29	1.32
Yi MAXIMUM	1.84	-1.76	2.30	-1.86	2.53	-1.64	1.57	-1.44	-1.93	2.57	-2.77	-2.02	2.94		2.58	2.39	1.24	1.32
Yi MINIMUM	-0.18	0.01	-0.08	0.15	-0.11	-0.21	-0.12	-0.21	-0.07	-0.44	0.03	0.45	-0.44		-0.35	-0.08	0.00	0.46
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		
Ratings MEAN	42.09	5.94	2.64	10.83	17.76	2.35	1.47	4.47	37.64	1.58	20.80	0.82	0.91		87.55	358.77		
Ratings STD	8.76	0.89	0.59	2.60	4.74	0.49	0.59	2.70	9.64	1.33	6.43	0.40	2.07		13.43	70.72		

Heavy Duty Rating Workshop

PART ID = **B4 - C13 Piston**

RATED VALUES

	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Land 4	Under-crown	TGF%	2nd GF%	AGF%	TLHC%	TLFC%		UWPD	WPD
Guarda, Waldyr	29.95	8.69	3.99	13.88	23.87	1.30	1.10	2.10	37.00	2.00	30.00	1.00	0.00		84.88	345.36
Hills, Barry	28.34	6.83	1.65	12.90	24.78	1.46	1.21	7.50	16.00	1.00	28.00	2.00	0.00		84.67	306.71
Kobrinetz, Jack	38.74	5.58	2.39	13.85	23.16	2.05	1.65	7.50	35.00	2.00	27.00	0.00	0.00		94.92	372.85
Viera, Ralph	42.17	6.37	3.25	15.12	26.64	2.91	2.30	3.90	39.00	2.00	28.00	1.00	0.00		102.66	463.59
Avis, Steve	40.83	6.85	3.75	13.56	22.60	2.39	0.80	7.50	51.00	0.60	28.20	0.00	0.00		98.28	361.87
Greenland, Paul	50.15	5.88	3.30	15.50	19.00	3.21	2.20	4.50	46.00	2.00	28.00	0.00	0.00		103.74	457.14
Kuipers, Jacques	53.70	7.93	2.00	11.56	32.37	3.13	2.40	7.50	48.00	1.00	35.00	1.00	1.00		**120.59**	493.96
May, Marianne	33.54	6.90	2.87	14.07	25.26	2.74	2.18	1.80	27.00	1.00	**21.00**	1.00	0.00		89.36	422.43
McPhail, Scott	36.46	4.06	1.65	**9.88**	24.18	2.65	1.50	7.50	40.00	1.00	29.00	2.00	**2.00**		87.88	351.02
Ramirez, Manny	32.54	7.72	0.50	15.37	**13.77**	4.17	1.24	0.15	30.00	**6.00**	31.00	1.00	0.10		75.46	312.87
MAXIMUM	53.70	8.69	3.99	15.50	32.37	4.17	2.40	7.50	51.00	6.00	35.00	2.00	2.00		120.59	493.96
MINIMUM	28.34	4.06	0.50	9.88	13.77	1.30	0.80	0.15	16.00	0.60	21.00	0.00	0.00		75.46	306.71
RANGE (MAX-MIN	25.36	4.63	3.49	5.62	18.60	2.87	1.60	7.35	35.00	5.40	14.00	2.00	2.00		45.13	187.25
MEAN	38.64	6.68	2.54	13.57	23.56	2.60	1.66	5.00	36.90	1.86	28.52	0.90	0.31		94.24	388.78
STD	8.34	1.32	1.10	1.76	4.83	0.85	0.58	2.88	10.57	1.56	3.50	0.74	0.67		12.77	66.04



yi within 1	72%
yi within 2	96%
yi within 3	100%

PART ID = **B4 - C13 Piston**

Yi VALUES

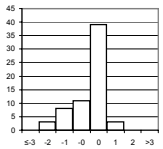
	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Land 4	Under-crown	TGF%	2nd GF%	AGF%	TLHC%	TLFC%		UWPD	WPD	MEAN	STD
Guarda, Waldyr	-1.04	1.53	1.33	0.18	0.06	-1.52	-0.97	-1.00	0.01	0.09	0.42	0.14	-0.46		-0.73	-0.66	-0.18	0.86
Hills, Barry	-1.24	0.11	-0.81	-0.38	0.25	-1.34	-0.78	0.87	-1.98	-0.55	-0.15	1.49	-0.46		-0.75	-1.24	-0.46	0.89
Kobrinetz, Jack	0.01	-0.84	-0.13	0.16	-0.08	-0.64	-0.01	0.87	-0.18	0.09	-0.43	-1.22	-0.46		0.05	-0.24	-0.20	0.48
Viera, Ralph	0.42	-0.24	0.65	0.88	0.64	0.36	1.12	-0.38	0.20	0.09	-0.15	0.14	-0.46		0.66	1.13	0.34	0.51
Avis, Steve	0.26	0.13	1.11	-0.01	-0.20	-0.25	-1.49	0.87	1.33	-0.81	-0.09	-1.22	-0.46		0.32	-0.41	-0.06	0.79
Greenland, Paul	1.38	-0.61	0.70	1.10	-0.95	0.71	0.94	-0.17	0.86	0.09	-0.15	-1.22	-0.46		0.74	1.04	0.27	0.82
Kuipers, Jacques	1.81	0.95	-0.49	-1.14	1.82	0.62	1.29	0.87	1.05	-0.55	1.85	0.14	1.03		**2.06**	1.59	0.86	0.98
May, Marianne	-0.61	0.17	0.31	0.28	0.35	0.16	0.91	-1.11	-0.94	-0.55	**-2.15**	0.14	-0.46		-0.38	0.51	-0.23	0.78
McPhail, Scott	-0.26	-1.99	-0.81	**-2.10**	0.13	0.06	-0.27	0.87	0.29	-0.55	0.14	1.49	**2.52**		-0.50	-0.57	-0.10	1.17
Ramirez, Manny	-0.73	0.79	-1.86	1.02	**-2.03**	1.84	-0.73	-1.68	-0.65	**2.66**	0.71	0.14	-0.31		-1.47	-1.15	-0.23	1.40
Yi MAXIMUM	1.81	-1.99	-1.86	-2.10	-2.03	1.84	-1.49	-1.68	-1.98	2.66	-2.15	1.49	2.52		2.06	1.59	0.86	1.40
Yi MINIMUM	-0.26	0.11	-0.13	-0.01	0.06	-0.25	-0.01	-0.17	0.01	0.09	-0.09	0.14	-0.31		-0.38	-0.24	-0.06	0.48
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		
Ratings MEAN	38.64	6.68	2.54	13.57	23.56	2.60	1.66	5.00	36.90	1.86	28.52	0.90	0.31		94.24	388.78		
Ratings STD	8.34	1.32	1.10	1.76	4.83	0.85	0.58	2.88	10.57	1.56	3.50	0.74	0.67		12.77	66.04		

Heavy Duty Rating Workshop

PART ID = **B5 - Sequence V Pistons**

RATED VALUES

	Skirt 1	Skirt 2	Skirt 3	Skirt 4	Skirt 5	Skirt 6	Skirt 7	Skirt 8							UWPD	WPD
Barrera, Tony	9.59	9.58	9.12	9.59	8.47	8.13	8.26	7.77							70.51	70.51
Guarda, Waldyr	9.46	9.56	9.40	9.50	8.74	8.49	8.43	8.11							71.69	71.69
Kobrinetz, Jack	9.59	9.63	9.19	9.40	8.78	7.62	7.91	7.53							69.65	69.65
Viera, Ralph	9.57	9.66	9.21	9.40	7.70	7.41	7.33	7.10							67.38	67.38
Greenland, Paul	9.60	9.52	9.10	9.28	7.80	7.60	7.50	7.43							67.83	67.83
Kuipers, Jacques	9.00	8.94	8.60	8.76	8.08	7.08	6.72	6.73							63.91	63.91
May, Marianne	9.60	9.59	9.04	9.38	8.60	8.11	7.90	7.50							69.72	69.72
Ramirez, Manny	8.70	8.80	**7.95**	**7.50**	**6.60**	6.35	6.35	5.90							**58.15**	**58.15**
MAXIMUM	9.60	9.66	9.40	9.59	8.78	8.49	8.43	8.11							71.69	71.69
MINIMUM	8.70	8.80	7.95	7.50	6.60	6.35	6.35	5.90							58.15	58.15
RANGE (MAX-MIN)	0.90	0.86	1.45	2.09	2.18	2.14	2.08	2.21							13.54	13.54
MEAN	9.39	9.41	8.95	9.10	8.10	7.60	7.55	7.26							67.36	67.36
STD	0.35	0.34	0.46	0.69	0.73	0.68	0.73	0.69							4.41	4.41



yi within 1	78%
yi within 2	95%
yi within 3	100%

PART ID = **B5 - Sequence V Pistons**

Yi VALUES

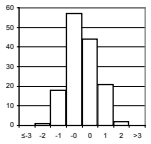
	Skirt 1	Skirt 2	Skirt 3	Skirt 4	Skirt 5	Skirt 6	Skirt 7	Skirt 8							UWPD	WPD	MEAN	STD
Barrera, Tony	0.58	0.50	0.36	0.70	0.51	0.79	0.98	0.74							0.71	0.71	0.66	0.17
Guarda, Waldyr	0.21	0.44	0.97	0.57	0.88	1.32	1.21	1.24							0.98	0.98	0.88	0.36
Kobrinetz, Jack	0.58	0.65	0.51	0.43	0.93	0.03	0.49	0.40							0.52	0.52	0.51	0.22
Viera, Ralph	0.53	0.74	0.56	0.43	-0.54	-0.28	-0.30	-0.23							0.01	0.01	0.09	0.44
Greenland, Paul	0.61	0.33	0.32	0.26	-0.40	0.00	-0.07	0.25							0.11	0.11	0.15	0.27
Kuipers, Jacques	-1.13	-1.39	-0.76	-0.49	-0.02	-0.77	-1.14	-0.77							-0.78	-0.78	-0.80	0.38
May, Marianne	0.61	0.53	0.19	0.40	0.69	0.76	0.48	0.35							0.54	0.54	0.51	0.16
Ramirez, Manny	-2.00	-1.80	**-2.16**	**-2.31**	**-2.04**	-1.85	-1.65	-1.98							**-2.09**	**-2.09**	-2.00	0.19
Yi MAXIMUM	-2.00	-1.80	-2.16	-2.31	-2.04	-1.85	-1.65	-1.98							-2.09	-2.09	-2.00	0.44
Yi MINIMUM	0.21	0.33	0.19	0.26	-0.02	0.00	-0.07	-0.23							0.01	0.01	0.09	0.16
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							1.00	1.00		
Ratings MEAN	9.39	9.41	8.95	9.10	8.10	7.60	7.55	7.26							67.36	67.36		
Ratings STD	0.35	0.34	0.46	0.69	0.73	0.68	0.73	0.69							4.41	4.41		

Heavy Duty Rating Workshop

PART ID = **B6 - Two-piece Piston**

RATED VALUES

	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Land 4	Under-crown	Oil Gallery	TGF%	2nd GF%	TLHC%	TLFC%		UWPD	WPD
Barrera, Tony	31.11	10.82	1.39	38.93	9.44	1.97	0.97	2.26	1.50	19.00	4.00	24.00	1.00		98.39	290.34
Guarda, Waldyr	34.10	11.00	1.61	38.72	12.14	1.87	0.56	6.90	3.90	33.00	4.00	26.00	2.00		110.80	288.39
Kobrinetz, Jack	33.85	11.86	1.20	35.41	9.34	1.86	0.79	6.00	2.26	20.00	3.00	17.00	1.00		102.57	282.44
Viera, Ralph	39.48	12.77	1.59	48.00	11.34	2.03	1.05	5.86	**13.03**	27.00	3.00	35.00	3.00		**135.15**	**347.07**
Avis, Steve	32.66	11.43	1.41	30.76	9.57	1.34	0.58	6.90	3.60	21.60	1.40	12.00	1.00		98.25	257.58
Greenland, Paul	36.34	10.55	1.34	44.95	7.40	0.96	0.25	4.80	5.40	20.00	1.00	31.00	0.00		111.99	239.98
Kuipers, Jacques	38.87	10.51	1.05	47.77	12.04	2.00	0.40	3.45	3.60	30.00	5.00	31.00	2.00		119.69	283.41
May, Marianne	32.43	12.57	1.63	39.72	10.88	1.76	0.62	3.90	5.25	21.00	2.00	24.00	1.00		108.76	286.46
McPhail, Scott	38.95	10.54	1.35	55.99	8.61	1.50	0.40	3.90	1.80	26.00	1.00	43.00	2.00		123.04	277.14
Narasaki, Keith	33.91	12.58	1.72	31.43	11.89	1.76	0.06	2.10	2.10	27.00	5.50	19.00	2.20		97.55	249.01
Ramirez, Manny	32.57	10.12	**0.58**	38.95	10.97	1.24	0.50	1.50	1.50	35.00	**8.00**	20.00	2.00		97.93	236.01
MAXIMUM	39.48	12.77	1.72	55.99	12.14	2.03	1.05	6.90	13.03	35.00	8.00	43.00	3.00		135.15	347.07
MINIMUM	31.11	10.12	0.58	30.76	7.40	0.96	0.06	1.50	1.50	19.00	1.00	12.00	0.00		97.55	236.01
RANGE (MAX-MIN	8.37	2.65	1.14	25.23	4.74	1.07	0.99	5.40	11.53	16.00	7.00	31.00	3.00		37.60	111.06
MEAN	34.93	11.34	1.35	40.97	10.33	1.66	0.56	4.32	3.99	25.42	3.45	25.64	1.56		109.47	276.17
STD	2.98	0.96	0.32	7.60	1.56	0.35	0.29	1.92	3.31	5.56	2.16	8.88	0.83		12.36	30.95



yi within 1	71%
yi within 2	98%
yi within 3	100%

PART ID = **B6 - Two-piece Piston**

Yi VALUES

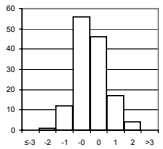
	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Land 4	Under-crown	Oil Gallery	TGF%	2nd GF%	TLHC%	TLFC%		UWPD	WPD	MEAN	STD
Barrera, Tony	-1.28	-0.54	0.12	-0.27	-0.57	0.87	1.39	-1.07	-0.75	-1.15	0.26	-0.18	-0.68		-0.90	0.46	-0.29	0.78
Guarda, Waldyr	-0.28	-0.36	0.80	-0.30	1.16	0.59	-0.01	1.34	-0.03	1.36	0.26	0.04	0.52		0.11	0.39	0.37	0.58
Kobrinetz, Jack	-0.36	0.54	-0.47	-0.73	-0.64	0.56	0.78	0.87	-0.52	-0.97	-0.21	-0.97	-0.68		-0.56	0.20	-0.21	0.63
Viera, Ralph	1.53	1.49	0.73	0.93	0.65	1.04	1.66	0.80	**2.73**	0.28	-0.21	1.05	1.72		**2.08**	**2.29**	1.25	0.78
Avis, Steve	-0.76	0.09	0.18	-1.34	-0.49	-0.91	0.06	1.34	-0.12	-0.69	-0.95	-1.54	-0.68		-0.91	-0.60	-0.49	0.71
Greenland, Paul	0.47	-0.82	-0.04	0.52	-1.88	-1.99	-1.06	0.25	0.42	-0.97	-1.13	0.60	-1.88		0.20	-1.17	-0.56	0.96
Kuipers, Jacques	1.32	-0.87	-0.93	0.89	1.10	0.96	-0.55	-0.45	-0.12	0.82	0.72	0.60	0.52		0.83	0.23	0.34	0.74
May, Marianne	-0.84	1.28	0.86	-0.16	0.35	0.28	0.20	-0.22	0.38	-0.79	-0.67	-0.18	-0.68		-0.06	0.33	0.00	0.61
McPhail, Scott	1.35	-0.83	-0.01	1.98	-1.10	-0.46	-0.55	-0.22	-0.66	0.10	-1.13	1.96	0.52		1.10	0.03	0.14	1.03
Narasaki, Keith	-0.34	1.29	1.14	-1.25	1.00	0.28	-1.71	-1.16	-0.57	0.28	0.95	-0.75	0.76		-0.96	-0.88	-0.13	1.00
Ramirez, Manny	-0.79	-1.27	**-2.38**	-0.27	0.41	-1.20	-0.21	-1.47	-0.75	1.72	**2.11**	-0.63	0.52		-0.93	-1.30	-0.43	1.20
Yi MAXIMUM	1.53	1.49	-2.38	1.98	-1.88	-1.99	-1.71	-1.47	2.73	1.72	2.11	1.96	-1.88		2.08	2.29	1.25	1.20
Yi MINIMUM	-0.28	-0.36	-0.01	-0.16	-0.49	0.28	-0.01	-0.22	-0.03	-0.69	-0.21	-0.18	-0.68		-0.06	0.03	-0.13	0.58
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		
Ratings MEAN	34.93	11.34	1.35	40.97	10.33	1.66	0.56	4.32	3.99	25.42	3.45	25.64	1.56		109.47	276.17		
Ratings STD	2.98	0.96	0.32	7.60	1.56	0.35	0.29	1.92	3.31	5.56	2.16	8.88	0.83		12.36	30.95		

Heavy Duty Rating Workshop

PART ID = C1 - Square Cut Piston

RATED VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 2	Land 3	Land 4	TGF%							UWPD	WPD
Pansza, Mike	70.08	0.49	0.07	0.00	5.88	0.03	0.02	68.00							76.57	99.31
Barrera, Tony	69.60	0.55	0.06	0.05	7.36	0.34	0.30	78.00							78.26	123.76
Cales, Jonathon	76.85	1.08	0.20	0.10	6.49	0.30	0.20	77.00							85.22	137.37
Castillo, George	71.08	1.07	0.32	0.06	5.71	0.39	0.32	82.00							78.95	136.17
Foecking, Brian	81.30	0.60	0.09	0.02	6.77	0.00	0.00	86.00							88.78	115.55
Garcia, Orlando	73.57	1.71	0.33	**0.33**	6.82	0.37	0.12	70.00							83.25	160.79
Kobrinetz, Jack	80.12	0.66	0.05	0.08	7.75	0.13	0.13	82.00							88.92	128.35
Avis, Steve	84.60	0.77	0.10	0.10	8.54	0.20	0.10	91.50							94.41	140.19
Engelskirchen, Jim	80.09	1.06	0.40	0.20	7.68	0.40	0.30	83.00							90.13	164.07
Hill, Howard	79.31	0.49	0.11	0.01	6.38	0.00	0.00	89.00							86.30	111.09
Lopez, Frank	79.35	0.90	0.10	0.10	8.48	0.20	0.20	79.00							89.33	139.53
May, Marianne	80.68	1.80	0.29	0.13	7.35	0.32	0.30	89.00							90.87	160.56
McPhail, Scott	**90.62**	0.30	0.10	0.00	**3.40**	**0.80**	**0.80**	90.00							96.02	153.02
Radonich, Pete	81.08	0.74	0.11	0.02	7.34	0.01	0.00	87.00							89.30	119.62
Rodriguez, Jesse	76.31	1.05	0.25	0.23	6.19	0.40	0.40	78.00							84.83	155.33
Shoda, Ron	72.64	0.50	0.10	0.00	9.67	0.00	0.05	75.00							82.96	116.74
Trevino,Robert	79.60	1.71	0.37	0.12	7.85	0.24	0.16	84.00							90.05	155.93
MAXIMUM	90.62	1.80	0.40	0.33	9.67	0.80	0.80	91.50							96.02	164.07
MINIMUM	69.60	0.30	0.05	0.00	3.40	0.00	0.00	68.00							76.57	99.31
RANGE (MAX-MIN)	21.02	1.50	0.35	0.33	6.27	0.80	0.80	23.50							19.45	64.76
MEAN	78.05	0.91	0.18	0.09	7.04	0.24	0.20	81.68							86.71	136.31
STD	5.47	0.46	0.12	0.09	1.39	0.21	0.20	6.85							5.45	19.89



yi within 1	75%
yi within 2	96%
yi within 3	100%

PART ID = C1 - Square Cut Piston

Yi VALUES

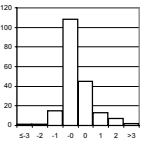
	Groove 1	Groove 2	Groove 3	Groove 4	Land 2	Land 3	Land 4	TGF%							UWPD	WPD	MEAN	STD
Pansza, Mike	-1.46	-0.91	-0.91	-0.99	-0.83	-1.01	-0.90	-2.00							-1.86	-1.86	-1.27	0.47
Barrera, Tony	-1.54	-0.78	-0.99	-0.45	0.23	0.46	0.50	-0.54							-1.55	-0.63	-0.53	0.74
Cales, Jonathon	-0.22	0.37	0.17	0.10	-0.39	0.27	0.00	-0.68							-0.27	0.05	-0.06	0.33
Castillo, George	-1.27	0.35	1.17	-0.34	-0.95	0.70	0.60	0.05							-1.42	-0.01	-0.11	0.87
Foecking, Brian	0.59	-0.67	-0.74	-0.77	-0.19	-1.15	-1.00	0.63							0.38	-1.04	-0.40	0.70
Garcia, Orlando	-0.82	1.73	1.25	**2.60**	-0.16	0.60	-0.40	-1.70							-0.64	1.23	0.37	1.33
Kobrinetz, Jack	0.38	-0.54	-1.08	-0.12	0.51	-0.54	-0.35	0.05							0.40	-0.40	-0.17	0.51
Avis, Steve	1.20	-0.31	-0.66	0.10	1.08	-0.20	-0.50	1.43							1.41	0.19	0.37	0.82
Engelskirchen, Jim	0.37	0.32	1.84	1.18	0.46	0.75	0.50	0.19							0.63	1.40	0.76	0.54
Hill, Howard	0.23	-0.91	-0.58	-0.88	-0.47	-1.15	-1.00	1.07							-0.08	-1.27	-0.50	0.73
Lopez, Frank	0.24	-0.02	-0.66	0.10	1.03	-0.20	0.00	-0.39							0.48	0.16	0.07	0.47
May, Marianne	0.48	1.93	0.92	0.42	0.22	0.37	0.50	1.07							0.76	1.22	0.79	0.52
McPhail, Scott	**2.30**	-1.32	-0.66	-0.99	**-2.61**	**2.65**	**2.99**	1.21							1.71	0.84	0.61	1.90
Radonich, Pete	0.55	-0.37	-0.58	-0.77	0.22	-1.11	-1.00	0.78							0.47	-0.84	-0.26	0.71
Rodriguez, Jesse	-0.32	0.30	0.59	1.51	-0.61	0.75	1.00	-0.54							-0.35	0.96	0.33	0.74
Shoda, Ron	-0.99	-0.89	-0.66	-0.99	1.89	-1.15	-0.75	-0.97							-0.69	-0.98	-0.62	0.89
Trevino,Robert	0.28	1.73	1.59	0.31	0.58	-0.01	-0.20	0.34							0.61	0.99	0.62	0.64
Yi MAXIMUM	2.30	1.93	1.84	2.60	-2.61	2.65	2.99	-2.00							-1.86	-1.86	-1.27	1.90
Yi MINIMUM	-0.22	-0.02	-0.58	-0.12	-0.16	-0.01	-0.20	-0.39							-0.08	-0.01	-0.06	0.33
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							1.00	1.00		
Ratings MEAN	78.05	0.91	0.18	0.09	7.04	0.24	0.20	81.68							86.71	136.31		
Ratings STD	5.47	0.46	0.12	0.09	1.39	0.21	0.20	6.85							5.45	19.89		

Heavy Duty Rating Workshop

PART ID = **C2 - Keystone Piston**

RATED VALUES

	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Upper Skirt	Under-crown	TGF%	2nd GF%	TLHC%	TLFC%			UWPD	WPD
Pansza, Mike	25.00	30.31	0.39	4.16	49.12	1.86	0.09	0.81	12.00	22.00	0.00	0.00			111.74	213.20
Barrera, Tony	25.00	49.30	0.75	5.85	42.18	2.18	0.28	1.77	8.00	52.00	1.00	0.00			127.31	282.13
Cales, Jonathon	25.25	52.35	0.34	5.94	44.99	1.86	0.34	1.82	15.00	61.00	0.00	0.00			132.89	275.73
Castillo, George	27.00	53.80	1.84	5.80	38.89	2.23	0.81	0.62	13.00	62.00	0.00	0.00			130.99	320.54
Foecking, Brian	25.25	61.27	0.22	4.37	46.73	1.71	0.17	0.96	7.00	63.00	0.00	0.00			140.68	256.83
Garcia, Orlando	65.25	55.85	1.30	5.90	54.35	2.52	0.99	2.69	63.00	69.00	0.00	0.00			188.85	440.70
Kobrinetz, Jack	25.00	57.54	0.70	5.05	44.47	1.93	0.22	1.16	10.00	65.00	0.00	0.00			136.07	273.28
Avis, Steve	25.00	53.26	1.21	4.26	46.09	1.69	0.24	1.23	4.00	79.00	0.00	0.00			132.98	276.84
Engelskirchen, Jim	30.25	52.53	0.60	4.83	50.62	1.95	0.30	0.44	6.00	57.00	1.00	0.00			141.52	267.17
Hill, Howard	28.00	54.28	1.18	6.01	40.64	2.03	0.23	1.62	14.00	75.00	0.00	0.00			133.99	294.22
Lopez, Frank	25.00	44.05	1.29	7.50	42.45	3.21	0.60	1.75	11.00	45.00	0.00	0.00			125.85	331.03
May, Marianne	25.00	57.36	0.42	4.99	42.16	2.72	0.25	0.84	7.00	63.00	0.00	0.00			133.74	278.49
McPhail, Scott	14.25	62.33	0.75	4.60	53.68	1.97	1.15	1.75	0.00	79.00	0.00	0.00			140.48	333.65
Radonich, Pete	25.75	60.54	0.23	4.12	45.07	2.02	0.21	1.10	7.00	65.00	0.00	0.00			139.04	267.38
Rodriguez, Jesse	27.50	57.53	1.15	5.28	54.21	1.49	0.47	1.37	14.00	65.00	0.00	0.00			149.00	303.94
Shoda, Ron	25.00	56.78	0.20	5.16	44.24	2.13	0.20	0.91	11.00	57.00	0.00	0.00			134.62	258.52
MAXIMUM	65.25	62.33	1.84	7.50	54.35	3.21	1.15	2.69	63.00	79.00	1.00	0.00			188.85	440.70
MINIMUM	14.25	30.31	0.20	4.12	38.89	1.49	0.09	0.44	0.00	22.00	0.00	0.00			111.74	213.20
RANGE (MAX-MIN	51.00	32.02	1.64	3.38	15.46	1.72	1.06	2.25	63.00	57.00	1.00	0.00			77.11	227.51
MEAN	27.72	53.69	0.79	5.24	46.24	2.09	0.41	1.30	12.63	61.19	0.13	0.00			137.48	292.10
STD	10.54	7.74	0.49	0.90	4.87	0.42	0.31	0.57	14.03	13.79	0.34	0.00			15.98	49.83



yi within 1	80%
yi within 2	94%
yi within 3	98%

PART ID = **C2 - Keystone Piston**

Yi VALUES

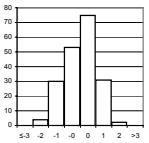
	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Upper Skirt	Under-crown	TGF%	2nd GF%	TLHC%	TLFC%			UWPD	WPD	MEAN	STD
Pansza, Mike	-0.26	-3.02	-0.81	-1.20	0.59	-0.55	-1.02	-0.86	-0.04	-2.84	-0.37	0.00			-1.61	-1.58	-0.97	1.03
Barrera, Tony	-0.26	-0.57	-0.07	0.68	-0.83	0.20	-0.41	0.82	-0.33	-0.67	2.56	0.00			-0.64	-0.20	0.02	0.88
Cales, Jonathon	-0.23	-0.17	-0.91	0.78	-0.26	-0.55	-0.22	0.90	0.17	-0.01	-0.37	0.00			-0.29	-0.33	-0.11	0.48
Castillo, George	-0.07	0.01	2.15	0.62	-1.51	0.32	1.27	-1.19	0.03	0.06	-0.37	0.00			-0.41	0.57	0.11	0.92
Foecking, Brian	-0.23	0.98	-1.15	-0.97	0.10	-0.90	-0.76	-0.60	-0.40	0.13	-0.37	0.00			0.20	-0.71	-0.33	0.58
Garcia, Orlando	3.56	0.28	1.05	0.74	1.67	1.00	1.85	2.42	3.59	0.57	-0.37	0.00			3.21	2.98	1.61	1.35
Kobrinetz, Jack	-0.26	0.50	-0.17	-0.21	-0.36	-0.39	-0.60	-0.25	-0.19	0.28	-0.37	0.00			-0.09	-0.38	-0.18	0.28
Avis, Steve	-0.26	-0.06	0.87	-1.09	-0.03	-0.95	-0.54	-0.13	-0.61	1.29	-0.37	0.00			-0.28	-0.31	-0.18	0.63
Engelskirchen, Jim	0.24	-0.15	-0.38	-0.45	0.90	-0.34	-0.35	-1.51	-0.47	-0.30	2.56	0.00			0.25	-0.50	-0.04	0.92
Hill, Howard	0.03	0.08	0.80	0.86	-1.15	-0.15	-0.57	0.55	0.10	1.00	-0.37	0.00			-0.22	0.04	0.07	0.59
Lopez, Frank	-0.26	-1.25	1.03	2.51	-0.78	2.63	0.61	0.78	-0.12	-1.17	-0.37	0.00			-0.73	0.78	0.26	1.22
May, Marianne	-0.26	0.47	-0.75	-0.28	-0.84	1.48	-0.51	-0.81	-0.40	0.13	-0.37	0.00			-0.23	-0.27	-0.19	0.60
McPhail, Scott	-1.28	1.12	-0.07	-0.71	1.53	-0.29	2.35	0.78	-0.90	1.29	-0.37	0.00			0.19	0.83	0.32	1.03
Radonich, Pete	-0.19	0.88	-1.13	-1.24	-0.24	-0.17	-0.63	-0.35	-0.40	0.28	-0.37	0.00			0.10	-0.50	-0.28	0.54
Rodriguez, Jesse	-0.02	0.50	0.74	0.05	1.64	-1.42	0.19	0.12	0.10	0.28	-0.37	0.00			0.72	0.24	0.20	0.67
Shoda, Ron	-0.26	0.40	-1.19	-0.09	-0.41	0.09	-0.67	-0.69	-0.12	-0.30	-0.37	0.00			-0.18	-0.67	-0.32	0.40
Yi MAXIMUM	3.56	-3.02	2.15	2.51	1.67	2.63	2.35	2.42	3.59	-2.84	2.56	0.00			3.21	2.98	1.61	1.35
Yi MINIMUM	-0.02	-0.06	-0.07	-0.09	-0.03	-0.15	-0.22	-0.13	-0.04	-0.01	-0.37	0.00			-0.09	-0.20	-0.04	0.28
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00			1.00	1.00		
Ratings MEAN	27.72	53.69	0.79	5.24	46.24	2.09	0.41	1.30	12.63	61.19	0.13	0.00			137.48	292.10		
Ratings STD	10.54	7.74	0.49	0.90	4.87	0.42	0.31	0.57	14.03	13.79	0.34	0.00			15.98	49.83		

Heavy Duty Rating Workshop

PART ID = C3 - C13 Piston

RATED VALUES

	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Land 4	Under-crown	TGF%	2nd GF%	AGF%	TLHC%	TLFC%		UWPD	WPD
Pansza, Mike	46.59	4.50	2.46	17.54	23.61	4.30	1.75	0.15	28.00	1.00	30.00	6.00	2.00		100.90	435.40
Barrera, Tony	38.07	5.40	2.55	18.55	29.13	4.47	1.91	1.50	33.00	1.00	28.00	6.00	2.00		101.58	454.78
Cales, Jonathon	41.10	4.71	1.30	20.84	26.40	4.60	2.20	7.50	26.00	1.00	13.50	11.00	3.00		108.65	453.87
Castillo, George	47.09	6.76	2.25	18.03	24.32	5.10	2.40	7.50	45.00	**2.00**	30.00	7.00	1.00		113.45	503.95
Foecking, Brian	36.14	6.04	0.99	16.64	25.79	3.89	1.99	6.90	32.00	1.00	22.00	6.00	2.00		98.38	408.31
Garcia, Orlando	51.19	5.50	2.53	**13.10**	26.04	4.10	2.09	7.36	33.00	1.00	34.00	**0.00**	2.00		111.91	475.46
Guarda, Waldyr	50.75	6.76	2.10	20.50	**30.60**	4.64	**0.98**	4.50	55.00	1.00	12.00	7.00	4.00		**120.83**	432.18
Kobrinetz, Jack	43.43	4.97	1.23	18.78	27.17	3.98	1.91	7.50	45.00	1.00	25.00	5.00	2.00		108.97	428.36
Engelskirchen, Jim	46.37	5.18	1.26	20.94	25.49	3.67	1.41	1.50	38.00	0.00	**9.00**	8.00	1.50		105.82	**390.39**
Hill, Howard	45.45	4.69	2.53	18.50	24.79	3.62	2.50	2.32	56.00	0.00	36.00	8.00	3.00		104.40	473.16
Lopez, Frank	43.01	7.09	1.47	20.36	26.22	4.68	2.05	3.00	29.00	0.00	22.00	8.00	0.00		107.88	455.31
McPhail, Scott	51.49	6.41	1.65	18.51	23.42	4.87	1.90	0.00	57.00	0.00	28.00	9.00	3.00		108.25	455.38
Radonich, Pete	41.85	8.38	1.70	17.63	23.97	4.61	2.12	4.51	35.00	1.00	27.00	6.00	2.00		104.77	456.29
Rodriguez, Jesse	53.36	6.61	1.38	17.26	25.76	3.77	1.90	7.50	46.00	1.00	27.00	7.00	0.00		117.54	445.59
Shoda, Ron	43.39	7.63	2.10	17.87	23.71	5.19	2.30	4.50	36.00	1.00	28.00	5.00	2.00		106.69	486.97
MAXIMUM	53.36	8.38	2.55	20.94	30.60	5.19	2.50	7.50	57.00	2.00	36.00	11.00	4.00		120.83	503.95
MINIMUM	36.14	4.50	0.99	13.10	23.42	3.62	0.98	0.00	26.00	0.00	9.00	0.00	0.00		98.38	390.39
RANGE (MAX-MIN	17.22	3.88	1.56	7.84	7.18	1.57	1.52	7.50	31.00	2.00	27.00	11.00	4.00		22.45	113.56
MEAN	45.29	6.04	1.83	18.34	25.76	4.37	1.96	4.42	39.60	0.80	24.77	6.60	1.97		108.00	450.36
STD	5.01	1.17	0.55	1.98	2.04	0.51	0.38	2.85	10.43	0.56	7.84	2.41	1.08		6.07	29.16



yi within 1	66%
yi within 2	97%
yi within 3	100%

PART ID = C3 - C13 Piston

Yi VALUES

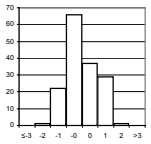
	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Land 4	Under-crown	TGF%	2nd GF%	AGF%	TLHC%	TLFC%		UWPD	WPD	MEAN	STD
Pansza, Mike	0.26	-1.32	1.13	-0.40	-1.06	-0.13	-0.55	-1.49	-1.11	0.36	0.67	-0.25	0.03		-1.17	-0.51	-0.37	0.77
Barrera, Tony	-1.44	-0.55	1.30	0.11	1.65	0.20	-0.13	-1.02	-0.63	0.36	0.41	-0.25	0.03		-1.06	0.15	-0.06	0.83
Cales, Jonathon	-0.83	-1.14	-0.97	1.26	0.31	0.46	0.63	1.08	-1.30	0.36	-1.44	1.82	0.96		0.11	0.12	0.10	1.01
Castillo, George	0.36	0.61	0.75	-0.15	-0.71	1.44	1.15	1.08	0.52	**2.14**	0.67	0.17	-0.90		0.90	1.84	0.66	0.85
Foecking, Brian	-1.82	0.00	-1.53	-0.86	0.01	-0.94	0.08	0.87	-0.73	0.36	-0.35	-0.25	0.03		-1.58	-1.44	-0.54	0.80
Garcia, Orlando	1.18	-0.46	1.26	**-2.64**	0.14	-0.52	0.34	1.03	-0.63	0.36	1.18	**-2.73**	0.03		0.64	0.86	0.00	1.26
Guarda, Waldyr	1.09	0.61	0.48	1.09	**2.38**	0.54	**-2.58**	0.03	1.48	0.36	-1.63	0.17	1.89		**2.11**	-0.62	0.49	1.34
Kobrinetz, Jack	-0.37	-0.92	-1.09	0.22	0.69	-0.76	-0.13	1.08	0.52	0.36	0.03	-0.66	0.03		0.16	-0.75	-0.11	0.64
Engelskirchen, Jim	0.22	-0.74	-1.04	1.31	-0.13	-1.37	-1.45	-1.02	-0.15	-1.43	**-2.01**	0.58	-0.43		-0.36	**-2.06**	-0.67	0.95
Hill, Howard	0.03	-1.16	1.26	0.08	-0.48	-1.47	1.42	-0.73	1.57	-1.43	1.43	0.58	0.96		-0.59	0.78	0.15	1.08
Lopez, Frank	-0.45	0.90	-0.66	1.02	0.23	0.62	0.23	-0.50	-1.02	-1.43	-0.35	0.58	-1.83		-0.02	0.17	-0.17	0.83
McPhail, Scott	1.24	0.31	-0.33	0.09	-1.15	0.99	-0.16	-1.55	1.67	-1.43	0.41	0.99	0.96		0.04	0.17	0.15	0.97
Radonich, Pete	-0.69	2.00	-0.24	-0.36	-0.88	0.48	0.42	0.03	-0.44	0.36	0.28	-0.25	0.03		-0.53	0.20	0.03	0.69
Rodriguez, Jesse	1.61	0.49	-0.82	-0.54	0.00	-1.17	-0.16	1.08	0.61	0.36	0.28	0.17	-1.83		1.57	-0.16	0.10	0.95
Shoda, Ron	-0.38	1.36	0.48	-0.24	-1.01	1.62	0.89	0.03	-0.35	0.36	0.41	-0.66	0.03		-0.22	1.26	0.24	0.77
Yi MAXIMUM	-1.82	2.00	-1.53	-2.64	2.38	1.62	-2.58	-1.55	1.67	2.14	-2.01	-2.73	1.89		2.11	-2.06	-0.67	1.34
Yi MINIMUM	0.03	0.00	-0.24	-0.15	0.00	-0.13	-0.13	-0.50	-0.15	0.36	-0.35	-0.25	0.03		-0.02	-0.16	-0.06	0.64
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		
Ratings MEAN	45.29	6.04	1.83	18.34	25.76	4.37	1.96	4.42	39.60	0.80	24.77	6.60	1.97		108.00	450.36		
Ratings STD	5.01	1.17	0.55	1.98	2.04	0.51	0.38	2.85	10.43	0.56	7.84	2.41	1.08		6.07	29.16		

Heavy Duty Rating Workshop

PART ID = C4 - C13 Piston

RATED VALUES

	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Land 4	Under-crown	TGF%	2nd GF%	AGF%	TLHC%	TLFC%		UWPD	WPD
McPhail, Scott	58.45	12.55	1.90	19.42	32.91	2.97	1.90	0.00	62.00	2.00	39.00	10.00	0.00		130.10	484.10
Pansza, Mike	40.89	6.56	2.33	11.90	23.60	2.57	2.05	0.15	37.00	3.00	30.00	4.00	0.00		90.05	405.31
Barrera, Tony	42.28	9.15	2.50	15.01	26.95	3.05	1.98	1.50	37.00	2.00	41.00	4.00	0.00		102.42	439.17
Cales, Jonathon	41.23	9.01	2.50	17.99	25.27	3.43	2.20	7.50	36.00	2.00	19.00	10.00	0.00		109.13	461.39
Castillo, George	47.44	10.03	3.00	15.40	24.94	3.49	2.68	4.50	60.00	1.00	28.00	6.00	0.00		111.48	510.29
Foecking, Brian	35.90	9.55	1.10	16.22	30.90	2.38	1.83	6.90	51.00	2.00	31.00	7.00	0.00		104.78	395.67
Garcia, Orlando	39.14	8.58	1.98	12.03	27.97	2.49	1.87	7.50	42.00	1.00	34.00	**0.00**	0.00		101.56	409.06
Engelskirchen, Jim	41.27	11.38	1.03	17.50	36.87	2.71	1.99	0.00	24.00	1.00	21.00	7.00	0.00		112.75	438.99
Hill, Howard	55.85	9.17	3.60	16.37	25.93	3.68	2.85	3.30	79.00	0.00	46.00	7.00	0.00		120.75	553.27
Lopez, Frank	34.95	9.00	1.43	15.95	28.43	2.52	1.80	3.00	21.00	1.00	19.00	5.00	0.00		97.08	388.14
Rodriguez, Jesse	**66.46**	8.62	2.28	10.67	33.93	3.35	2.80	7.50	54.00	2.00	31.00	7.00	0.00		135.61	559.34
Shoda, Ron	40.60	11.51	1.50	16.73	23.92	2.98	2.50	3.90	56.00	3.00	41.00	7.00	0.00		103.64	447.72
MAXIMUM	66.46	12.55	3.60	19.42	36.87	3.68	2.85	7.50	79.00	3.00	46.00	10.00	0.00		135.61	559.34
MINIMUM	34.95	6.56	1.03	10.67	23.60	2.38	1.80	0.00	21.00	0.00	19.00	0.00	0.00		90.05	388.14
RANGE (MAX-MIN	31.51	5.99	2.57	8.75	13.27	1.30	1.05	7.50	58.00	3.00	27.00	10.00	0.00		45.56	171.20
MEAN	45.37	9.59	2.10	15.43	28.47	2.97	2.20	3.81	46.58	1.67	31.67	6.17	0.00		109.95	457.70
STD	9.79	1.60	0.77	2.65	4.29	0.44	0.39	3.01	16.82	0.89	9.00	2.72	0.00		13.30	58.41



yi within 1	66%
yi within 2	99%
yi within 3	100%

PART ID = C4 - C13 Piston

Yi VALUES

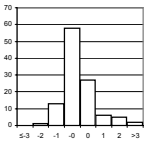
	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Land 4	Under-crown	TGF%	2nd GF%	AGF%	TLHC%	TLFC%		UWPD	WPD	MEAN	STD
McPhail, Scott	1.34	1.85	-0.26	1.51	1.04	0.00	-0.77	-1.27	0.92	0.38	0.81	1.41	0.00		1.51	0.45	0.59	0.91
Pansza, Mike	-0.46	-1.90	0.31	-1.33	-1.14	-0.90	-0.39	-1.22	-0.57	1.50	-0.19	-0.80	0.00		-1.50	-0.90	-0.63	0.83
Barrera, Tony	-0.32	-0.28	0.53	-0.16	-0.35	0.18	-0.57	-0.77	-0.57	0.38	1.04	-0.80	0.00		-0.57	-0.32	-0.17	0.51
Cales, Jonathon	-0.42	-0.36	0.53	0.97	-0.75	1.05	-0.01	1.23	-0.63	0.38	-1.41	1.41	0.00		-0.06	0.06	0.13	0.80
Castillo, George	0.21	0.27	1.18	-0.01	-0.82	1.18	1.21	0.23	0.80	-0.75	-0.41	-0.06	0.00		0.12	0.90	0.27	0.67
Foecking, Brian	-0.97	-0.03	-1.30	0.30	0.57	-1.33	-0.95	1.03	0.26	0.38	-0.07	0.31	0.00		-0.39	-1.06	-0.22	0.74
Garcia, Orlando	-0.64	-0.63	-0.15	-1.29	-0.12	-1.08	-0.85	1.23	-0.27	-0.75	0.26	**-2.26**	0.00		-0.63	-0.83	-0.53	0.78
Engelskirchen, Jim	-0.42	1.12	-1.39	0.78	1.96	-0.58	-0.54	-1.27	-1.34	-0.75	-1.19	0.31	0.00		0.21	-0.32	-0.23	0.97
Hill, Howard	1.07	-0.26	1.96	0.35	-0.59	1.61	1.64	-0.17	1.93	-1.88	1.59	0.31	0.00		0.81	1.64	0.67	1.11
Lopez, Frank	-1.06	-0.37	-0.87	0.20	-0.01	-1.02	-1.02	-0.27	-1.52	-0.75	-1.41	-0.43	0.00		-0.97	-1.19	-0.71	0.53
Rodriguez, Jesse	**2.15**	-0.61	0.24	-1.80	1.27	0.86	1.51	1.23	0.44	0.38	-0.07	0.31	0.00		1.93	1.74	0.64	1.05
Shoda, Ron	-0.49	1.20	-0.78	0.49	-1.06	0.03	0.75	0.03	0.56	1.50	1.04	0.31	0.00		-0.47	-0.17	0.20	0.74
Yi MAXIMUM	2.15	-1.90	1.96	-1.80	1.96	1.61	1.64	-1.27	1.93	-1.88	1.59	-2.26	0.00		1.93	1.74	-0.71	1.11
Yi MINIMUM	-0.32	-0.03	-0.15	-0.01	-0.01	0.00	-0.01	-0.17	-0.27	0.38	-0.07	-0.06	0.00		-0.06	-0.17	-0.17	0.51
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00		1.00	1.00		
Ratings MEAN	45.37	9.59	2.10	15.43	28.47	2.97	2.20	3.81	46.58	1.67	31.67	6.17	0.00		109.95	457.70		
Ratings STD	9.79	1.60	0.77	2.65	4.29	0.44	0.39	3.01	16.82	0.89	9.00	2.72	0.00		13.30	58.41		

Heavy Duty Rating Workshop

PART ID = C5 - Sequence III Piston

RATED VALUES

	Groove 1	Groove 2	Groove 3	Land 2	Land 3	Under-crown	Thrust	Anti-Thrust							UWPD	WPD
May, Marianne	21.80	19.17	0.15	29.96	5.64	8.25	0.73	0.14							85.84	85.84
Pansza, Mike	**37.68**	28.79	0.00	33.07	5.20	8.48	0.43	0.05							113.70	113.70
Barrera, Tony	32.06	18.44	**0.28**	31.39	5.51	8.01	0.80	0.10							96.59	96.59
Cales, Jonathon	17.40	18.12	0.10	24.65	4.00	7.54	1.21	0.15							73.17	73.17
Castillo, George	20.08	18.60	0.01	24.61	5.91	8.43	0.85	0.06							78.55	78.55
Foecking, Brian	20.69	19.06	0.01	23.81	5.73	8.03	0.45	0.11							77.89	77.89
Garcia, Orlando	22.99	18.57	0.20	25.49	4.89	**19.90**	**1.44**	**0.22**							93.70	93.70
Kobrinetz, Jack	21.26	18.49	0.10	28.58	6.27	9.23	0.76	0.10							84.79	84.79
Engelskirchen, Jim	35.48	**51.15**	0.20	**38.17**	4.88	6.10	0.53	0.16							**136.67**	**136.67**
Hill, Howard	19.01	18.46	0.01	28.48	**2.48**	7.05	0.93	0.03							76.45	76.45
Lopez, Frank	20.34	19.71	0.10	25.09	6.25	8.68	1.03	0.14							81.34	81.34
Radonich, Pete	22.55	18.61	0.10	24.05	6.00	8.28	0.77	0.08							80.44	80.44
Rodriguez, Jesse	26.46	20.13	0.10	31.92	5.55	8.56	0.81	0.16							93.69	93.69
Shoda, Ron	25.97	19.36	0.10	26.55	5.78	8.30	0.77	0.10							86.93	86.93
MAXIMUM	37.68	51.15	0.28	38.17	6.27	19.90	1.44	0.22							136.67	136.67
MINIMUM	17.40	18.12	0.00	23.81	2.48	6.10	0.43	0.03							73.17	73.17
RANGE (MAX-MIN	20.28	33.03	0.28	14.36	3.79	13.80	1.01	0.19							63.50	63.50
MEAN	24.56	21.90	0.10	28.27	5.29	8.92	0.82	0.11							89.98	89.98
STD	6.28	8.84	0.08	4.23	1.01	3.25	0.28	0.05							17.04	17.04



yi within 1	76%
yi within 2	93%
yi within 3	98%

PART ID = C5 - Sequence III Piston

Yi VALUES

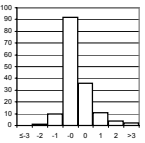
	Groove 1	Groove 2	Groove 3	Land 2	Land 3	Under-crown	Thrust	Anti-Thrust							UWPD	WPD	MEAN	STD
May, Marianne	-0.44	-0.31	0.55	0.40	0.34	-0.21	-0.33	0.50							-0.24	-0.24	0.00	0.39
Pansza, Mike	**2.09**	0.78	-1.26	1.14	-0.09	-0.13	-1.43	-1.26							1.39	1.39	0.26	1.28
Barrera, Tony	1.19	-0.39	**2.12**	0.74	0.22	-0.28	-0.08	-0.28							0.39	0.39	0.40	0.78
Cales, Jonathon	-1.14	-0.43	-0.05	-0.86	-1.28	-0.42	1.41	0.70							-0.99	-0.99	-0.40	0.87
Castillo, George	-0.71	-0.37	-1.14	-0.87	0.61	-0.15	0.10	-1.06							-0.67	-0.67	-0.49	0.55
Foecking, Brian	-0.62	-0.32	-1.14	-1.06	0.43	-0.27	-1.35	-0.08							-0.71	-0.71	-0.58	0.54
Garcia, Orlando	-0.25	-0.38	1.16	-0.66	-0.40	**3.38**	**2.25**	**2.07**							0.22	0.22	0.76	1.38
Kobrinetz, Jack	-0.52	-0.39	-0.05	0.07	0.97	0.10	-0.23	-0.28							-0.30	-0.30	-0.09	0.42
Engelskirchen, Jim	1.74	**3.31**	1.16	**2.34**	-0.41	-0.87	-1.06	0.89							**2.74**	**2.74**	1.26	1.59
Hill, Howard	-0.88	-0.39	-1.14	0.05	**-2.78**	-0.57	0.39	-1.65							-0.79	-0.79	-0.86	0.89
Lopez, Frank	-0.67	-0.25	-0.05	-0.75	0.95	-0.07	0.76	0.50							-0.51	-0.51	-0.06	0.60
Radonich, Pete	-0.32	-0.37	-0.05	-1.00	0.70	-0.20	-0.19	-0.67							-0.56	-0.56	-0.32	0.45
Rodriguez, Jesse	0.30	-0.20	-0.05	0.86	0.25	-0.11	-0.04	0.89							0.22	0.22	0.23	0.38
Shoda, Ron	0.23	-0.29	-0.05	-0.41	0.48	-0.19	-0.19	-0.28							-0.18	-0.18	-0.11	0.27
Yi MAXIMUM	2.09	3.31	2.12	2.34	-2.78	3.38	2.25	2.07							2.74	2.74	1.26	1.59
Yi MINIMUM	-0.25	-0.20	-0.05	0.05	-0.09	-0.07	-0.04	-0.08							-0.18	-0.18	0.00	0.27
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							1.00	1.00		
Ratings MEAN	24.56	21.90	0.10	28.27	5.29	8.92	0.82	0.11							89.98	89.98		
Ratings STD	6.28	8.84	0.08	4.23	1.01	3.25	0.28	0.05							17.04	17.04		

Heavy Duty Rating Workshop

PART ID = C6 - Two-piece Piston

RATED VALUES

	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Land 4	Under-crown	Oil Gallery	TGF%	2nd GF%	TLHC%	TLFC%		UWPD	WPD
Pansza, Mike	17.00	4.10	3.22	9.93	8.19	3.30	1.04	5.70	8.05	1.00	0.00	0.00	0.00		60.53	283.33
Barrera, Tony	12.65	3.65	2.14	14.40	8.72	3.05	1.21	**2.40**	5.40	2.00	1.00	0.00	0.00		53.62	258.31
Cales, Jonathon	10.24	4.24	2.57	12.20	9.60	4.79	0.60	4.73	8.81	4.00	1.00	0.00	0.00		57.78	266.54
Castillo, George	10.50	4.81	2.98	9.25	8.19	3.90	**1.65**	7.06	7.20	3.00	1.00	0.00	0.00		55.54	316.51
Foecking, Brian	14.00	4.50	1.27	9.95	7.79	2.17	0.70	4.73	7.78	1.00	1.00	0.00	0.00		52.89	194.24
Garcia, Orlando	12.64	4.80	2.86	10.71	7.82	3.41	0.91	6.90	7.78	2.00	**2.00**	0.00	0.00		57.83	264.64
Kobrinetz, Jack	14.05	4.71	2.10	12.23	7.86	2.71	1.13	6.30	9.38	2.00	0.50	0.00	0.00		60.47	253.03
Engelskirchen, Jim	17.80	4.30	1.95	**25.00**	7.39	2.82	0.67	6.46	7.47	6.00	0.10	0.00	0.00		73.86	241.47
Hill, Howard	11.26	4.06	2.36	8.34	8.30	3.20	0.37	4.20	6.15	0.00	0.00	0.00	0.00		48.24	208.62
Lopez, Frank	15.51	4.05	2.26	11.68	8.78	3.10	0.80	6.90	6.60	2.00	0.00	0.00	0.00		59.68	246.59
Rodriguez, Jesse	15.42	4.84	1.51	10.51	8.37	2.28	0.64	7.20	7.20	1.00	0.00	0.00	0.00		57.97	205.98
Shoda, Ron	16.21	**10.05**	3.36	11.76	9.39	**11.93**	0.80	4.50	9.31	**8.00**	1.00	0.00	0.00		**77.31**	**465.46**
MAXIMUM	17.80	10.05	3.36	25.00	9.60	11.93	1.65	7.20	9.38	8.00	2.00	0.00	0.00		77.31	465.46
MINIMUM	10.24	3.65	1.27	8.34	7.39	2.17	0.37	2.40	5.40	0.00	0.00	0.00	0.00		48.24	194.24
RANGE (MAX-MIN	7.56	6.40	2.09	16.66	2.21	9.76	1.28	4.80	3.98	8.00	2.00	0.00	0.00		29.07	271.22
MEAN	13.94	4.84	2.38	12.16	8.37	3.89	0.88	5.59	7.59	2.67	0.63	0.00	0.00		59.64	267.06
STD	2.53	1.68	0.65	4.35	0.66	2.63	0.34	1.48	1.21	2.31	0.64	0.00	0.00		8.28	71.27



yi within 1	82%
yi within 2	96%
yi within 3	99%

PART ID = C6 - Two-piece Piston

Yi VALUES

	Groove 1	Groove 2	Groove 3	Land 1	Land 2	Land 3	Land 4	Under-crown	Oil Gallery	TGF%	2nd GF%	TLHC%	TLFC%		UWPD	WPD	MEAN	STD
Pansza, Mike	1.21	-0.44	1.29	-0.51	-0.27	-0.22	0.48	0.07	0.38	-0.72	-1.00	0.00	0.00		0.11	0.23	0.04	0.64
Barrera, Tony	-0.51	-0.71	-0.37	0.51	0.54	-0.32	0.98	**-2.15**	-1.81	-0.29	0.58	0.00	0.00		-0.73	-0.12	-0.29	0.85
Cales, Jonathon	-1.47	-0.36	0.29	0.01	1.87	0.34	-0.81	-0.58	1.00	0.58	0.58	0.00	0.00		-0.23	-0.01	0.08	0.78
Castillo, George	-1.36	-0.02	0.92	-0.67	-0.27	0.00	**2.27**	0.99	-0.33	0.14	0.58	0.00	0.00		-0.50	0.69	0.16	0.85
Foecking, Brian	0.02	-0.20	-1.72	-0.51	-0.88	-0.65	-0.52	-0.58	0.15	-0.72	0.58	0.00	0.00		-0.82	-1.02	-0.46	0.57
Garcia, Orlando	-0.51	-0.03	0.74	-0.33	-0.83	-0.18	0.10	0.88	0.15	-0.29	**2.15**	0.00	0.00		-0.22	-0.03	0.11	0.71
Kobrinetz, Jack	0.04	-0.08	-0.43	0.02	-0.77	-0.45	0.74	0.48	1.48	-0.29	-0.21	0.00	0.00		0.10	-0.20	0.03	0.54
Engelskirchen, Jim	1.53	-0.32	-0.67	**2.95**	-1.48	-0.41	-0.61	0.59	-0.10	1.44	-0.84	0.00	0.00		1.72	-0.36	0.23	1.19
Hill, Howard	-1.06	-0.47	-0.03	-0.88	-0.10	-0.26	-1.49	-0.94	-1.19	-1.15	-1.00	0.00	0.00		-1.38	-0.82	-0.72	0.53
Lopez, Frank	0.62	-0.47	-0.19	-0.11	0.63	-0.30	-0.23	0.88	-0.82	-0.29	-1.00	0.00	0.00		0.00	-0.29	-0.10	0.51
Rodriguez, Jesse	0.59	0.00	-1.35	-0.38	0.01	-0.61	-0.69	1.08	-0.33	-0.72	-1.00	0.00	0.00		-0.20	-0.86	-0.30	0.62
Shoda, Ron	0.90	**3.10**	1.51	-0.09	1.55	**3.06**	-0.23	-0.73	1.42	**2.31**	0.58	0.00	0.00		**2.13**	**2.78**	1.22	1.27
Yi MAXIMUM	1.53	3.10	-1.72	2.95	1.87	3.06	2.27	-2.15	-1.81	2.31	2.15	0.00	0.00		2.13	2.78	1.22	1.27
Yi MINIMUM	-0.51	0.00	-0.03	-0.09	-0.10	-0.18	0.10	0.07	-0.10	-0.29	-0.21	0.00	0.00		0.00	-0.01	0.03	0.51
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00		1.00	1.00		
Ratings MEAN	13.94	4.84	2.38	12.16	8.37	3.89	0.88	5.59	7.59	2.67	0.63	0.00	0.00		59.64	267.06		
Ratings STD	2.53	1.68	0.65	4.35	0.66	2.63	0.34	1.48	1.21	2.31	0.64	0.00	0.00		8.28	71.27		

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

	Number of Parts Rated	-1 < yi ≤ 1	-2 < yi ≤ 2	-3 < yi ≤ 3	>3	Yi STD	Group
Barrera, Tony	11	84.1%	97.2%	100.0%	0.0%	0.72	Red
Cales, Jonathon	14	73.9%	96.4%	99.3%	0.7%	0.81	White
Castillo, George	10	73.4%	94.7%	100.0%	0.0%	0.92	White
Foecking, Brian	11	82.4%	100.0%	100.0%	0.0%	0.66	Red
Garcia, Orlando	14	55.1%	82.6%	94.9%	5.1%	1.29	Yellow
Guarda, Waldyr	12	71.3%	94.3%	99.2%	0.8%	0.98	White
Hills, Barry	12	67.8%	97.5%	100.0%	0.0%	0.89	White
Kobrinetz, Jack	13	90.5%	99.2%	100.0%	0.0%	0.54	Blue
Sanchez, Art	8	72.0%	98.7%	100.0%	0.0%	0.88	White
Viera, Ralph	10	82.7%	98.0%	100.0%	0.0%	0.74	Red
Avis, Steve	9	77.9%	98.8%	100.0%	0.0%	0.75	White
Clapperty, Leon	9	75.6%	94.2%	100.0%	0.0%	0.94	White
Engelskirchen, Jim	8	64.0%	93.3%	98.7%	1.3%	1.08	White
Greenland, Paul	7	82.1%	100.0%	100.0%	0.0%	0.79	Red
Hill, Howard	14	61.6%	96.4%	100.0%	0.0%	1.02	White
Kuipers, Jacques	8	58.7%	94.7%	100.0%	0.0%	1.04	Yellow
Lopez, Frank	8	74.7%	97.3%	100.0%	0.0%	0.87	White
May, Marianne	14	88.7%	99.2%	100.0%	0.0%	0.63	Blue
McPhail, Scott	11	61.8%	92.7%	99.1%	0.9%	1.11	White
Narasaki, Keith	10	66.3%	92.6%	97.9%	2.1%	1.11	White
Pansza, Mike	7	66.2%	95.9%	98.6%	1.4%	0.93	White
Pitta, Jimmy	8	58.7%	90.7%	98.7%	1.3%	1.16	Yellow
Radonich, Pete	12	80.7%	100.0%	100.0%	0.0%	0.67	Red
Ramirez, Manny	7	56.7%	82.1%	95.5%	4.5%	1.52	Yellow
Rodriguez, Jesse	10	80.9%	97.9%	100.0%	0.0%	0.83	Red
Shoda, Ron	9	77.0%	96.6%	97.7%	2.3%	0.94	White
Trevino, Robert	8	82.7%	97.3%	100.0%	0.0%	0.81	Red

Group Criteria

	Minimum Number of Parts Rated	Minimum Yi's within 1 STD of mean	Minimum Yi's within 2 STD of mean	Maximum Overall Yi STD	Group Totals	
White	6	60%	90%	1.20	14	52%
Red	6	80%	95%	0.85	7	26%
Blue	6	85%	98%	0.75	2	7%
Yellow	-	-	-	-	4	15%

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

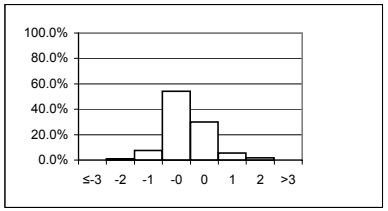
Rater = Barrera, Tony

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	-0.37	-0.41	0.86			-0.19	-0.07							-0.81					-0.45	-0.17	0.56
Calibration_Piston_2	0.23	-0.58	-0.56			-0.22	-0.17							0.51					-0.12	-0.13	0.43
A1_Square																					
A2_Keystone																					
A3_C13																					
A4_C13																					
A5_Seq_III																					
A6_Two-piece																					
B1_Square	0.10	0.28	-0.37	-0.09		-0.50	-0.19	1.16						-0.28					-0.01	0.02	0.53
B2_Keystone																					
B3_C13	-0.34	0.01	-0.62		0.75	-0.11	0.76	-0.43				-1.10		-0.17	-0.44	0.34	0.45	-0.44	-0.35	-0.07	0.57
B4_C13																					
B5_Seq_V																			0.71		
B6_Two-piece	-1.28	-0.54	0.12		-0.27	-0.57	0.87	1.39				-1.07	-0.75	-1.15	0.26		-0.18	-0.68	-0.90	-0.27	0.82
C1_Square	-1.54	-0.78	-0.99	-0.45		0.23	0.46	0.50						-0.54					-1.55	-0.39	0.73
C2_Keystone	-0.26	-0.57	-0.07		0.68	-0.83	0.20		-0.41			0.82		-0.33	-0.67		2.56	0.00	-0.64	0.10	0.97
C3_C13	-1.44	-0.55	1.30		0.11	1.65	0.20	-0.13				-1.02		-0.63	0.36	0.41	-0.25	0.03	-1.06	0.00	0.89
C4_C13	-0.32	-0.28	0.53		-0.16	-0.35	0.18	-0.57				-0.77		-0.57	0.38	1.04	-0.80	0.00	-0.57	-0.14	0.56
C5_Seq_III	1.19	-0.39	2.12			0.74	0.22			-0.08	-0.28	-0.28							0.39	0.41	0.89
C6_Two-piece	-0.51	-0.71	-0.37		0.51	0.54	-0.32	0.98				-2.15	-1.81	-0.29	0.58		0.00	0.00	-0.73	-0.30	0.94
Yi MAXIMUM	-1.54	-0.78	2.12	-0.45	0.75	1.65	0.87	1.39	-0.41	-0.08	-0.28	-2.15	-1.81	-1.15	-0.67	1.04	2.56			0.41	0.97
Yi MINIMUM	0.10	0.01	-0.07	-0.09	0.11	-0.11	-0.07	-0.13	-0.41	-0.08	-0.28	-0.28	-0.75	-0.17	0.26	0.34	0.00			0.00	0.43
Yi MEAN	-0.41	-0.41	0.18	-0.27	0.27	0.03	0.19	0.41	-0.41	-0.08	-0.28	-0.80	-1.28	-0.43	0.08	0.60	0.30				
Yi STD	0.80	0.32	0.94	0.25	0.44	0.71	0.38	0.80				0.91	0.75	0.44	0.50	0.38	1.18				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	1	0.9%	-1 < yi ≤ 1	84.1%
-2 lt yi le -1	8	7.5%	-2 < yi ≤ 2	97.2%
-1 lt yi le 0	58	54.2%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	32	29.9%	>3	0.0%
1 lt yi le 2	6	5.6%		
2 lt yi le 3	2	1.9%	Overall Yi STD	0.72
3 lt yi	0	0.0%		
total	107	100.0%	Parts Rated	11

Yi distribution (excluding shaded columns)



Group: Red

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

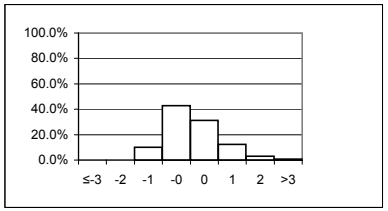
Rater = Cales, Jonathon

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	-1.82	0.63	-1.29			-1.86	-0.02							-0.59					-1.39	-0.82	1.01
Calibration_Piston_2	0.48	2.03	-0.39			-1.38	0.46							-0.26					1.32	0.16	1.14
A1_Square	-0.08	-0.28	-0.66	-0.39		1.64	1.42	1.47						-0.44					1.22	0.33	0.99
A2_Keystone	0.27	-0.52	-0.15		0.08	-0.68	-0.71		0.14			0.69		0.16	-0.48		3.47	-0.27	-0.35	0.20	1.17
A3_C13	-0.80	0.21	0.01		-0.32	0.79	-0.73	0.29				1.47		-0.57	-0.06	-0.97	0.21	-0.51	-0.04	-0.04	0.71
A4_C13	-1.48	-0.17	1.28		1.16	0.01	-0.21	0.88				1.18		-1.04	-0.52	2.33	0.40	-0.72	-0.07	0.32	1.09
A5_Seq_III	-0.42	-0.28	0.78			-0.63	-0.59			0.49	0.36	-0.25							-1.05	-0.07	0.54
A6_Two-piece	0.34	-0.48	1.04		2.34	-0.44	-0.72	-1.21				0.13	-0.01	0.41	-0.02		2.49	-0.36	1.21	0.32	1.14
B1_Square																					
B2_Keystone																					
B3_C13																					
B4_C13																					
B5_Seq_V																					
B6_Two-piece																					
C1_Square	-0.22	0.37	0.17	0.10		-0.39	0.27	0.00						-0.68					-0.27	-0.05	0.36
C2_Keystone	-0.23	-0.17	-0.91		0.78	-0.26	-0.55		-0.22			0.90		0.17	-0.01		-0.37	0.00	-0.29	-0.08	0.53
C3_C13	-0.83	-1.14	-0.97		1.26	0.31	0.46	0.63				1.08		-1.30	0.36	-1.44	1.82	0.96	0.11	0.02	1.11
C4_C13	-0.42	-0.36	0.53		0.97	-0.75	1.05	-0.01				1.23		-0.63	0.38	-1.41	1.41	0.00	-0.06	0.16	0.90
C5_Seq_III	-1.14	-0.43	-0.05			-0.86	-1.28			1.41	0.70	-0.42							-0.99	-0.26	0.92
C6_Two-piece	-1.47	-0.36	0.29		0.01	1.87	0.34	-0.81				-0.58	1.00	0.58	0.58		0.00	0.00	-0.23	0.12	0.88
Yi MAXIMUM	-1.82	2.03	-1.29	-0.39	2.34	1.87	1.42	1.47	-0.22	1.41	0.70	1.47	1.00	-1.30	0.58	2.33	3.47			-0.82	1.17
Yi MINIMUM	-0.08	-0.17	0.01	0.10	0.01	0.01	-0.02	0.00	0.14	0.49	0.36	0.13	-0.01	0.16	-0.01	-0.97	0.00			0.02	0.36
Yi MEAN	-0.56	-0.07	-0.02	-0.15	0.78	-0.19	-0.06	0.15	-0.04	0.95	0.53	0.54	0.50	-0.35	0.03	-0.37	1.18				
Yi STD	0.72	0.74	0.77	0.34	0.86	1.05	0.76	0.87	0.25	0.65	0.24	0.76	0.72	0.58	0.40	1.81	1.35				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	73.9%
-2 lt yi le -1	14	10.1%	-2 < yi ≤ 2	96.4%
-1 lt yi le 0	59	42.8%	-3 < yi ≤ 3	99.3%
0 lt yi le 1	43	31.2%	>3	0.7%
1 lt yi le 2	17	12.3%		
2 lt yi le 3	4	2.9%	Overall Yi STD	0.81
3 lt yi	1	0.7%		
total	138	100.0%	Parts Rated	14

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

Rater = Castillo, George

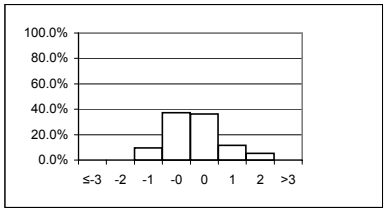
Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	-1.05	-0.35	1.46			-0.73	-0.04							-1.25					-0.96	-0.33	0.98
Calibration_Piston_2	0.30	-0.48	2.23			-0.35	0.43							0.41					0.23	0.42	0.97
A1_Square																					
A2_Keystone																					
A3_C13																					
A4_C13																					
A5_Seq_III																					
A6_Two-piece																					
B1_Square	-0.22	-0.70	-0.47	-0.09		-1.29	0.00	1.76						0.46					-0.78	-0.07	0.90
B2_Keystone	-0.53	-0.34	1.07		0.38	-0.85	0.09		2.72			-0.97		-0.27	0.45		-0.27	-0.27	-0.67	0.13	1.04
B3_C13																					
B4_C13																					
B5_Seq_V																					
B6_Two-piece																					
C1_Square	-1.27	0.35	1.17	-0.34		-0.95	0.70	0.60						0.05					-1.42	0.04	0.84
C2_Keystone	-0.07	0.01	2.15		0.62	-1.51	0.32		1.27			-1.19		0.03	0.06		-0.37	0.00	-0.41	0.12	1.02
C3_C13	0.36	0.61	0.75		-0.15	-0.71	1.44	1.15				1.08		0.52	2.14	0.67	0.17	-0.90	0.90	0.67	0.75
C4_C13	0.21	0.27	1.18		-0.01	-0.82	1.18	1.21				0.23		0.80	-0.75	-0.41	-0.06	0.00	0.12	0.25	0.72
C5_Seq_III	-0.71	-0.37	-1.14			-0.87	0.61			0.10	-1.06	-0.15							-0.67	-0.45	0.61
C6_Two-piece	-1.36	-0.02	0.92		-0.67	-0.27	0.00	2.27				0.99	-0.33	0.14	0.58		0.00	0.00	-0.50	0.19	0.92
Yi MAXIMUM	-1.36	-0.70	2.23	-0.34	-0.67	-1.51	1.44	2.27	2.72	0.10	-1.06	-1.19	-0.33	-1.25	2.14	0.67	-0.37			0.67	1.04
Yi MINIMUM	-0.07	0.01	-0.47	-0.09	-0.01	-0.27	0.00	0.60	1.27	0.10	-1.06	-0.15	-0.33	0.03	0.06	-0.41	0.00			0.04	0.61
Yi MEAN	-0.43	-0.10	0.93	-0.21	0.03	-0.84	0.47	1.40	2.00	0.10	-1.06	0.00	-0.33	0.10	0.50	0.13	-0.11				
Yi STD	0.65	0.42	1.05	0.18	0.50	0.37	0.52	0.64	1.02			0.96		0.60	1.06	0.76	0.21				

	count	percent
yi le -3	0	0.0%
-3 lt yi le -2	0	0.0%
-2 lt yi le -1	9	9.6%
-1 lt yi le 0	35	37.2%
0 lt yi le 1	34	36.2%
1 lt yi le 2	11	11.7%
2 lt yi le 3	5	5.3%
3 lt yi	0	0.0%
total	94	100.0%

-1 < yi ≤ 1	73.4%
-2 < yi ≤ 2	94.7%
-3 < yi ≤ 3	100.0%
>3	0.0%
Overall Yi STD	0.92
Parts Rated	10

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

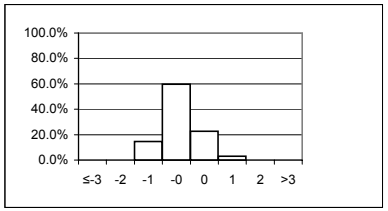
Rater = **Foecking, Brian**

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	-1.76	-0.54	-0.26			-0.74	-0.08							-1.03					-1.65	-0.74	0.60
Calibration_Piston_2	-0.19	-0.53	0.21			-0.13	-0.08							0.61					-0.50	-0.02	0.39
A1_Square	0.22	-0.20	-0.87	-0.92		-1.02	-1.23	-0.98						-0.04					-0.83	-0.63	0.54
A2_Keystone	-0.19	1.04	-0.93		-0.65	-0.57	-0.50		-0.78			-0.44		-0.43	0.01		-0.27	-0.27	-0.65	-0.34	0.53
A3_C13																					
A4_C13																					
A5_Seq_III	1.37	-0.54	-1.06			-0.64	-0.38			0.28	-0.89	-0.17							0.38	-0.25	0.78
A6_Two-piece																					
B1_Square																					
B2_Keystone																					
B3_C13																					
B4_C13																					
B5_Seq_V																					
B6_Two-piece																					
C1_Square	0.59	-0.67	-0.74	-0.77		-0.19	-1.15	-1.00						0.63					0.38	-0.41	0.69
C2_Keystone	-0.23	0.98	-1.15		-0.97	0.10	-0.90		-0.76			-0.60		-0.40	0.13		-0.37	0.00	0.20	-0.38	0.61
C3_C13	-1.82	0.00	-1.53		-0.86	0.01	-0.94	0.08				0.87		-0.73	0.36	-0.35	-0.25	0.03	-1.58	-0.43	0.78
C4_C13	-0.97	-0.03	-1.30		0.30	0.57	-1.33	-0.95				1.03		0.26	0.38	-0.07	0.31	0.00	-0.39	-0.15	0.79
C5_Seq_III	-0.62	-0.32	-1.14			-1.06	0.43			-1.35	-0.08	-0.27							-0.71	-0.55	0.61
C6_Two-piece	0.02	-0.20	-1.72		-0.51	-0.88	-0.65	-0.52				-0.58	0.15	-0.72	0.58		0.00	0.00	-0.82	-0.42	0.59
Yi MAXIMUM	-1.82	1.04	-1.72	-0.92	-0.97	-1.06	-1.33	-1.00	-0.78	-1.35	-0.89	1.03	0.15	-1.03	0.58	-0.35	-0.37			-0.74	0.79
Yi MINIMUM	0.02	0.00	0.21	-0.77	0.30	0.01	-0.08	0.08	-0.76	0.28	-0.08	-0.17	0.15	-0.04	0.01	-0.07	0.00			-0.02	0.39
Yi MEAN	-0.32	-0.09	-0.95	-0.85	-0.54	-0.41	-0.62	-0.67	-0.77	-0.53	-0.49	-0.02	0.15	-0.21	0.29	-0.21	-0.12				
Yi STD	0.95	0.59	0.55	0.11	0.50	0.52	0.56	0.46	0.01	1.16	0.57	0.68		0.60	0.22	0.20	0.27				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	82.4%
-2 lt yi le -1	15	14.7%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	61	59.8%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	23	22.5%	>3	0.0%
1 lt yi le 2	3	2.9%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.66
3 lt yi	0	0.0%		
total	102	100.0%	Parts Rated	11

Yi distribution (excluding shaded columns)



Group: Red

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

Rater = Garcia, Orlando

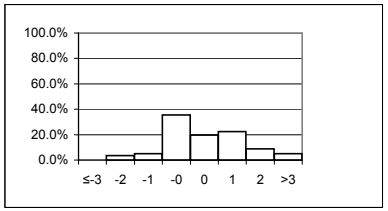
Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	-0.34	-0.21	**2.03**			0.59	-0.06							1.59					-0.19	0.60	1.00
Calibration_Piston_2	0.30	-0.52	0.88			-0.29	-0.31							-1.14					0.00	-0.18	0.69
A1_Square	-1.34	1.65	**3.15**	**2.43**		-0.24	1.85	1.82						**-2.45**					-0.36	0.86	1.97
A2_Keystone	**3.15**	0.43	1.98		-0.71	-0.07	1.45		0.99			1.36		**3.10**	1.80		-0.27	-0.27	1.82	1.20	1.29
A3_C13	0.25	-0.33	0.16		-0.84	-0.93	-0.72	1.35				1.47		-0.02	**3.00**	1.60	**-2.27**	-0.51	-0.26	0.23	1.43
A4_C13	1.14	0.96	-0.06		-1.92	0.06	0.03	0.99				1.18		1.29	**2.70**	1.18	-1.95	-0.72	0.41	0.47	1.34
A5_Seq_III	-0.75	-0.51	-0.32			-0.74	-0.58			1.21	1.05	**2.96**							-0.63	0.29	1.33
A6_Two-piece	**2.07**	-0.44	1.13		0.12	0.59	0.52	**2.26**				1.32	0.30	-0.14	**2.77**		-0.21	-0.36	1.42	0.86	1.06
B1_Square																					
B2_Keystone																					
B3_C13																					
B4_C13																					
B5_Seq_V																					
B6_Two-piece																					
C1_Square	-0.82	1.73	1.25	**2.60**		-0.16	0.60	-0.40						-1.70					-0.64	0.39	1.43
C2_Keystone	**3.56**	0.28	1.05		0.74	1.67	1.00		1.85			**2.42**		**3.59**	0.57		-0.37	0.00	**3.21**	1.49	1.28
C3_C13	1.18	-0.46	1.26		**-2.64**	0.14	-0.52	0.34				1.03		-0.63	0.36	1.18	**-2.73**	0.03	0.64	-0.13	1.38
C4_C13	-0.64	-0.63	-0.15		-1.29	-0.12	-1.08	-0.85				1.23		-0.27	-0.75	0.26	**-2.26**	0.00	-0.63	-0.55	0.86
C5_Seq_III	-0.25	-0.38	1.16			-0.66	-0.40			**2.25**	**2.07**	**3.38**							0.22	0.90	1.53
C6_Two-piece	-0.51	-0.03	0.74		-0.33	-0.83	-0.18	0.10				0.88	0.15	-0.29	**2.15**		0.00	0.00	-0.22	0.15	0.79
Yi MAXIMUM	**3.56**	1.73	**3.15**	**2.60**	**-2.64**	1.67	1.85	**2.26**	1.85	**2.25**	**2.07**	**3.38**	0.30	**3.59**	**3.00**	1.60	**-2.73**			1.49	1.97
Yi MINIMUM	0.25	-0.03	-0.06	**2.43**	0.12	0.06	0.03	0.10	0.99	1.21	1.05	0.88	0.15	-0.02	0.36	0.26	0.00			-0.13	0.69
Yi MEAN	0.50	0.11	1.02	**2.51**	-0.86	-0.07	0.12	0.70	1.42	1.73	1.56	1.72	0.23	0.24	1.58	1.05	-1.26				
Yi STD	1.52	0.80	0.95	0.12	1.09	0.69	0.86	1.09	0.61	0.74	0.72	0.87	0.10	1.83	1.36	0.56	1.14				

	count	percent
yi le -3	0	0.0%
-3 lt yi le -2	5	3.6%
-2 lt yi le -1	7	5.1%
-1 lt yi le 0	49	35.5%
0 lt yi le 1	27	19.6%
1 lt yi le 2	31	22.5%
2 lt yi le 3	12	8.7%
3 lt yi	7	5.1%
total	138	100.0%

-1 < yi ≤ 1	55.1%
-2 < yi ≤ 2	82.6%
-3 < yi ≤ 3	94.9%
>3	5.1%
Overall Yi STD	1.29
Parts Rated	14

Yi distribution (excluding shaded columns)



Group: Yellow

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

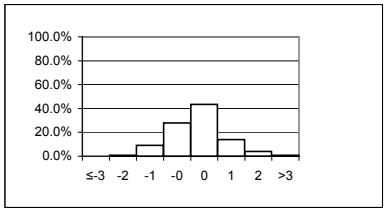
Rater = Guarda, Waldyr

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	0.60	-0.15	-1.03			-0.34	0.13							0.72					0.34	-0.01	0.65
Calibration_Piston_2	-0.02	-0.16	0.10			0.82	0.18							-1.14					0.10	-0.04	0.63
A1_Square	0.33	-0.36	0.04	1.80		-0.18	0.27	-0.18						0.36					0.07	0.26	0.67
A2_Keystone	-0.53	-1.63	-0.30		0.44	-0.78	1.35		1.48			1.23		0.63	0.31		-0.27	-0.27	-0.60	0.18	0.98
A3_C13	0.40	0.97	1.18		0.78	1.19	0.75	-1.27				0.22		1.47	-0.06	-0.06	-0.41	2.56	1.62	0.43	0.79
A4_C13	0.71	0.97	-0.71		0.69	0.48	-0.23	-0.72				0.34		1.48	0.40	-0.48	0.14	0.77	1.00	0.25	0.69
A5_Seq_III																					
A6_Two-piece																					
B1_Square	-0.55	2.17	0.24	-0.14		-0.48	3.02	-0.38						-0.78					0.08	0.39	1.41
B2_Keystone	-1.36	2.85	-1.11		0.57	0.56	2.24		0.54			1.95		0.21	2.38		-0.27	-0.27	1.32	0.78	1.42
B3_C13	-0.31	0.94	0.12		0.38	-0.86	-0.39	-1.28				0.01		0.87	-0.44	0.65	0.45	-0.44	-0.43	0.01	0.69
B4_C13	-1.04	1.53	1.33		0.18	0.06	-1.52	-0.97				-1.00		0.01	0.09	0.42	0.14	-0.46	-0.73	-0.07	0.94
B5_Seq_V																			0.98		
B6_Two-piece	-0.28	-0.36	0.80		-0.30	1.16	0.59	-0.01				1.34	-0.03	1.36	0.26		0.04	0.52	0.11	0.38	0.65
C1_Square																					
C2_Keystone																					
C3_C13	1.09	0.61	0.48		1.09	2.38	0.54	-2.58				0.03		1.48	0.36	-1.63	0.17	1.89	2.11	0.33	1.32
C4_C13																					
C5_Seq_III																					
C6_Two-piece																					
Yi MAXIMUM	-1.36	2.85	1.33	1.80	1.09	2.38	3.02	-2.58	1.48			1.95	-0.03	1.48	2.38	-1.63	0.45			0.78	1.42
Yi MINIMUM	-0.02	-0.15	0.04	-0.14	0.18	0.06	0.13	-0.01	0.54			0.01	-0.03	0.01	-0.06	-0.06	0.04			-0.01	0.63
Yi MEAN	-0.08	0.62	0.09	0.83	0.48	0.33	0.58	-0.92	1.01			0.52	-0.03	0.56	0.41	-0.22	0.00				
Yi STD	0.73	1.23	0.79	1.37	0.42	0.95	1.20	0.82	0.66			0.94		0.87	0.84	0.90	0.29				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	1	0.8%	-1 < yi ≤ 1	71.3%
-2 lt yi le -1	11	9.0%	-2 < yi ≤ 2	94.3%
-1 lt yi le 0	34	27.9%	-3 < yi ≤ 3	99.2%
0 lt yi le 1	53	43.4%	>3	0.8%
1 lt yi le 2	17	13.9%		
2 lt yi le 3	5	4.1%	Overall Yi STD	0.98
3 lt yi	1	0.8%		
total	122	100.0%	Parts Rated	12

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

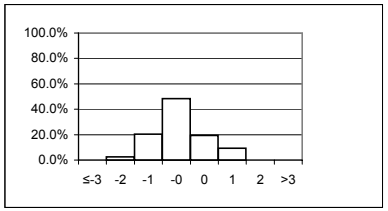
Rater = Hills, Barry

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	-0.15	-0.54	-0.93			-0.64	0.15							-2.34					-0.39	-0.74	0.87
Calibration_Piston_2	0.46	-0.48	-0.25			1.56	-0.02							0.51					0.57	0.30	0.73
A1_Square	0.33	-0.54	-0.55	-0.63		1.25	-0.32	-0.73						0.16					0.98	-0.13	0.67
A2_Keystone	-0.47	-1.07	-0.78		-0.76	-0.35	-0.49		-0.54			-1.50		-0.66	0.61		-0.27	-0.27	-1.14	-0.57	0.53
A3_C13	-1.93	-1.56	0.09		1.22	0.54	-1.00	-1.21				1.47		-1.50	-0.58	-0.73	0.21	-0.51	-0.92	-0.41	1.11
A4_C13	-1.07	-0.76	-0.34		1.05	0.38	0.18	0.71				1.18		0.51	-0.52	-1.11	0.40	-0.72	0.16	0.05	0.79
A5_Seq_III	-0.93	-0.46	-0.95			-0.47	1.03			-1.61	-0.21	-0.15							-0.63	-0.47	0.77
A6_Two-piece	0.09	-0.45	-0.65		-0.25	0.90	0.67	-0.16				1.56	-0.93	-0.69	-1.14		-0.21	-0.36	0.05	-0.11	0.80
B1_Square	-1.01	-1.14	-0.17	-0.50		-0.19	-0.39	-1.44						-2.26					-1.57	-0.89	0.73
B2_Keystone	-1.53	-0.31	-0.87		-0.49	-0.07	-2.37		-0.71			-1.35		-1.83	-0.30		-0.27	-0.27	-1.42	-0.92	0.75
B3_C13	-1.54	-1.76	-0.96		0.36	1.12	-1.64	-1.17				1.12		-1.93	-0.44	0.19	0.45	-0.44	-0.59	-0.52	1.13
B4_C13	-1.24	0.11	-0.81		-0.38	0.25	-1.34	-0.78				0.87		-1.98	-0.55	-0.15	1.49	-0.46	-0.75	-0.37	0.97
B5_Seq_V																					
B6_Two-piece																					
C1_Square																					
C2_Keystone																					
C3_C13																					
C4_C13																					
C5_Seq_III																					
C6_Two-piece																					
Yi MAXIMUM	-1.93	-1.76	-0.96	-0.63	1.22	1.56	-2.37	-1.44	-0.71	-1.61	-0.21	1.56	-0.93	-2.34	-1.14	-1.11	1.49			-0.92	1.13
Yi MINIMUM	0.09	0.11	0.09	-0.50	-0.25	-0.07	-0.02	-0.16	-0.54	-1.61	-0.21	-0.15	-0.93	0.16	-0.30	-0.15	0.21			0.05	0.53
Yi MEAN	-0.75	-0.75	-0.60	-0.57	0.11	0.35	-0.46	-0.68	-0.62	-1.61	-0.21	0.40	-0.93	-1.09	-0.42	-0.45	0.26				
Yi STD	0.79	0.54	0.35	0.09	0.78	0.73	0.98	0.74	0.12			1.24		1.10	0.52	0.58	0.63				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	3	2.5%	-1 < yi ≤ 1	67.8%
-2 lt yi le -1	24	20.3%	-2 < yi ≤ 2	97.5%
-1 lt yi le 0	57	48.3%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	23	19.5%	>3	0.0%
1 lt yi le 2	11	9.3%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.89
3 lt yi	0	0.0%		
total	118	100.0%	Parts Rated	12

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

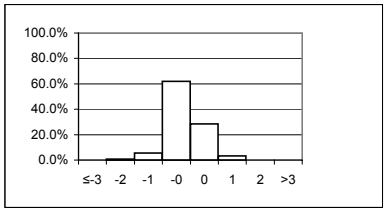
Rater = Kobrinetz, Jack

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	-0.10	-0.15	-0.17			0.36	-0.10							-0.59					-0.13	-0.13	0.30
Calibration_Piston_2	0.61	-0.35	0.24			0.35	-0.02							0.51					0.59	0.22	0.36
A1_Square	-0.45	1.12	-0.13	-0.39		-1.04	-1.00	-0.78						-0.64					-0.98	-0.41	0.69
A2_Keystone																					
A3_C13																					
A4_C13																					
A5_Seq_III																					
A6_Two-piece																					
B1_Square	-0.67	-0.66	-0.52	-0.55		0.13	-0.37	-0.42						-1.02					-0.96	-0.51	0.33
B2_Keystone	0.09	-0.37	-0.44		-0.11	-0.73	-0.42		-0.44			-0.66		-0.27	-0.62		-0.27	-0.27	-0.65	-0.38	0.24
B3_C13	0.22	-1.44	-0.49		-0.60	-0.12	0.49	-0.12				1.12		0.35	-0.44	0.03	**-2.02**	**2.94**	0.11	-0.25	0.85
B4_C13	0.01	-0.84	-0.13		0.16	-0.08	-0.64	-0.01				0.87		-0.18	0.09	-0.43	-1.22	-0.46	0.05	-0.20	0.54
B5_Seq_V																			0.52		
B6_Two-piece	-0.36	0.54	-0.47		-0.73	-0.64	0.56	0.78				0.87	-0.52	-0.97	-0.21		-0.97	-0.68	-0.56	-0.18	0.68
C1_Square	0.38	-0.54	-1.08	-0.12		0.51	-0.54	-0.35						0.05					0.40	-0.21	0.52
C2_Keystone	-0.26	0.50	-0.17		-0.21	-0.36	-0.39		-0.60			-0.25		-0.19	0.28		-0.37	0.00	-0.09	-0.18	0.31
C3_C13	-0.37	-0.92	-1.09		0.22	0.69	-0.76	-0.13				1.08		0.52	0.36	0.03	-0.66	0.03	0.16	-0.09	0.69
C4_C13																					
C5_Seq_III	-0.52	-0.39	-0.05			0.07	0.97			-0.23	-0.28	0.10							-0.30	-0.04	0.46
C6_Two-piece	0.04	-0.08	-0.43		0.02	-0.77	-0.45	0.74				0.48	1.48	-0.29	-0.21		0.00	0.00	0.10	0.04	0.61
Yi MAXIMUM	-0.67	-1.44	-1.09	-0.55	-0.73	-1.04	-1.00	-0.78	-0.60	-0.23	-0.28	1.12	1.48	-1.02	-0.62	-0.43	**-2.02**			-0.51	0.85
Yi MINIMUM	0.01	-0.08	-0.05	-0.12	0.02	0.07	-0.02	-0.01	-0.44	-0.23	-0.28	0.10	-0.52	0.05	0.09	0.03	0.00			-0.04	0.24
Yi MEAN	-0.11	-0.28	-0.38	-0.35	-0.18	-0.12	-0.21	-0.04	-0.52	-0.23	-0.28	0.45	0.48	-0.23	-0.11	-0.12	-0.79				
Yi STD	0.38	0.68	0.38	0.22	0.37	0.55	0.57	0.55	0.11			0.66	1.41	0.52	0.36	0.27	0.69				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	1	0.8%	-1 < yi ≤ 1	90.5%
-2 lt yi le -1	7	5.6%	-2 < yi ≤ 2	99.2%
-1 lt yi le 0	78	61.9%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	36	28.6%	>3	0.0%
1 lt yi le 2	4	3.2%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.54
3 lt yi	0	0.0%		
total	126	100.0%	Parts Rated	13

Yi distribution (excluding shaded columns)



Group: Blue

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

Rater = Sanchez, Art

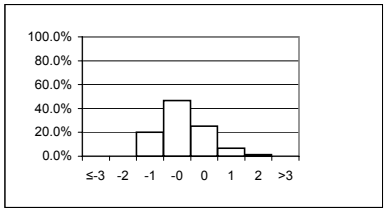
Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	1.86	0.44	-1.41			-0.15	-0.25							-0.16					1.34	0.05	1.07
Calibration_Piston_2	0.79	-0.89	-1.92			-1.56	-0.72							0.61					-0.07	-0.62	1.11
A1_Square	0.96	0.88	-0.15	-0.63		-0.20	-1.03	-0.88						-0.84					0.35	-0.24	0.78
A2_Keystone	-0.36	1.58	-1.34		-0.24	0.98	0.17		-0.48			-0.64		-0.31	-0.18		-0.27	-0.27	0.45	-0.10	0.79
A3_C13	0.98	-1.57	-1.30		-1.48	0.81	-0.59	-1.48				0.22		-1.31	-0.58	-1.39	0.83	1.02	0.02	-0.57	1.01
A4_C13	1.25	-0.11	-1.05		-0.78	-0.69	-0.78	-1.66				1.18		-0.65	-0.52	0.14	1.19	2.25	0.17	-0.21	0.96
A5_Seq_III	0.51	-0.10	-0.87			0.46	-0.43			-0.11	0.02	-0.19							0.32	-0.09	0.45
A6_Two-piece	0.19	-0.61	-1.23		0.06	-0.90	-1.09	0.51				-0.19	-0.62	2.07	-0.02		0.37	3.08	-0.36	-0.12	0.90
B1_Square																					
B2_Keystone																					
B3_C13																					
B4_C13																					
B5_Seq_V																					
B6_Two-piece																					
C1_Square																					
C2_Keystone																					
C3_C13																					
C4_C13																					
C5_Seq_III																					
C6_Two-piece																					
Yi MAXIMUM	1.86	1.58	-1.92	-0.63	-1.48	-1.56	-1.09	-1.66	-0.48	-0.11	0.02	1.18	-0.62	2.07	-0.58	-1.39	1.19			-0.62	1.11
Yi MINIMUM	0.19	-0.10	-0.15	-0.63	0.06	-0.15	0.17	0.51	-0.48	-0.11	0.02	-0.19	-0.62	-0.16	-0.02	0.14	-0.27			0.05	0.45
Yi MEAN	0.77	-0.05	-1.16	-0.63	-0.61	-0.16	-0.59	-0.88	-0.48	-0.11	0.02	0.08	-0.62	-0.09	-0.33	-0.62	0.53				
Yi STD	0.67	1.01	0.51		0.68	0.88	0.42	0.98				0.69		1.12	0.27	1.08	0.63				

	count	percent
yi le -3	0	0.0%
-3 lt yi le -2	0	0.0%
-2 lt yi le -1	15	20.0%
-1 lt yi le 0	35	46.7%
0 lt yi le 1	19	25.3%
1 lt yi le 2	5	6.7%
2 lt yi le 3	1	1.3%
3 lt yi	0	0.0%
total	75	100.0%

-1 < yi ≤ 1	72.0%
-2 < yi ≤ 2	98.7%
-3 < yi ≤ 3	100.0%
>3	0.0%
Overall Yi STD	0.88
Parts Rated	8

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

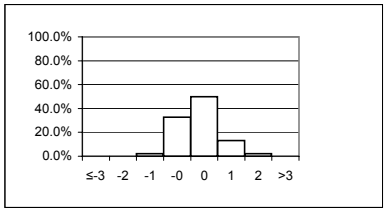
Rater = Viera, Ralph

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	0.27	0.18	0.88			0.43	-0.06							-0.59					0.34	0.19	0.49
Calibration_Piston_2	0.19	0.01	-0.25			-0.01	0.47							-1.23					0.31	-0.14	0.59
A1_Square	-0.42	0.90	0.81	0.22		-0.28	-0.24	0.15						-0.44					-0.30	0.09	0.53
A2_Keystone	0.10	-0.03	0.23		0.64	-0.23	-0.59		-0.29			0.25		0.16	0.71		-0.27	-0.27	0.13	0.06	0.40
A3_C13	-0.65	0.99	1.39		-0.21	0.18	0.97	0.86				0.22		-0.76	-0.06	-0.39	0.21	-0.51	0.20	0.23	0.69
A4_C13																					
A5_Seq_III																					
A6_Two-piece																					
B1_Square	-0.20	0.92	0.14	2.96		-1.18	-0.72	-0.52						-0.28					-0.35	0.14	1.30
B2_Keystone	1.09	-0.23	1.10		0.16	-0.14	0.28		1.30			0.72		0.93	0.34		-0.27	-0.27	0.55	0.48	0.57
B3_C13	0.32	1.22	1.22		0.33	-0.63	0.80	1.50				-0.21		0.04	-0.44	0.34	0.45	-0.44	0.23	0.41	0.68
B4_C13	0.42	-0.24	0.65		0.88	0.64	0.36	1.12				-0.38		0.20	0.09	-0.15	0.14	-0.46	0.66	0.31	0.46
B5_Seq_V																			0.01		
B6_Two-piece	1.53	1.49	0.73		0.93	0.65	1.04	1.66				0.80	2.73	0.28	-0.21		1.05	1.72	2.08	1.06	0.75
C1_Square																					
C2_Keystone																					
C3_C13																					
C4_C13																					
C5_Seq_III																					
C6_Two-piece																					
Yi MAXIMUM	1.53	1.49	1.39	2.96	0.93	-1.18	1.04	1.66	1.30			0.80	2.73	-1.23	0.71	-0.39	1.05			1.06	1.30
Yi MINIMUM	0.10	0.01	0.14	0.22	0.16	-0.01	-0.06	0.15	-0.29			-0.21	2.73	0.04	-0.06	-0.15	0.14			0.06	0.40
Yi MEAN	0.26	0.52	0.69	1.59	0.45	-0.06	0.23	0.79	0.51			0.23	2.73	-0.17	0.07	-0.07	0.22				
Yi STD	0.65	0.65	0.52	1.94	0.44	0.58	0.62	0.84	1.13			0.48		0.62	0.41	0.37	0.50				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	82.7%
-2 lt yi le -1	2	2.0%	-2 < yi ≤ 2	98.0%
-1 lt yi le 0	32	32.7%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	49	50.0%	>3	0.0%
1 lt yi le 2	13	13.3%		
2 lt yi le 3	2	2.0%	Overall Yi STD	0.74
3 lt yi	0	0.0%		
total	98	100.0%	Parts Rated	10

Yi distribution (excluding shaded columns)



Group: Red

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

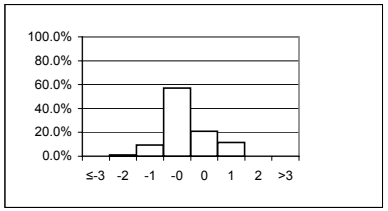
Rater = Avis, Steve

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	-0.35	-0.54	0.17			0.48	-0.11							1.55					-0.44	0.20	0.75
Calibration_Piston_2	-0.01	-0.42	0.73			-0.04	-0.63							0.20					-0.33	-0.03	0.48
A1_Square																					
A2_Keystone																					
A3_C13																					
A4_C13																					
A5_Seq_III																					
A6_Two-piece																					
B1_Square	-0.68	-0.81	-0.67	-0.50		0.50	-0.61	-0.75						0.21					-0.92	-0.41	0.49
B2_Keystone	0.20	-0.25	1.74		-0.31	-0.32	-0.14		-0.17			0.24		-0.17	0.78		-0.27	-0.27	-0.23	0.12	0.63
B3_C13	-0.18	-0.29	-0.40		-1.26	-0.32	-1.64	-0.90				1.12		-1.42	-0.89	0.62	**-2.02**	-0.44	-0.39	-0.63	0.92
B4_C13	0.26	0.13	1.11		-0.01	-0.20	-0.25	-1.49				0.87		1.33	-0.81	-0.09	-1.22	-0.46	0.32	-0.03	0.87
B5_Seq_V																					
B6_Two-piece	-0.76	0.09	0.18		-1.34	-0.49	-0.91	0.06				1.34	-0.12	-0.69	-0.95		-1.54	-0.68	-0.91	-0.43	0.79
C1_Square	1.20	-0.31	-0.66	0.10		1.08	-0.20	-0.50						1.43					1.41	0.27	0.84
C2_Keystone	-0.26	-0.06	0.87		-1.09	-0.03	-0.95		-0.54			-0.13		-0.61	1.29		-0.37	0.00	-0.28	-0.17	0.71
C3_C13																					
C4_C13																					
C5_Seq_III																					
C6_Two-piece																					
Yi MAXIMUM	1.20	-0.81	1.74	-0.50	-1.34	1.08	-1.64	-1.49	-0.54			1.34	-0.12	1.55	1.29	0.62	**-2.02**			-0.63	0.92
Yi MINIMUM	-0.01	-0.06	0.17	0.10	-0.01	-0.03	-0.11	0.06	-0.17			-0.13	-0.12	-0.17	0.78	-0.09	-0.27			-0.03	0.48
Yi MEAN	-0.07	-0.27	0.34	-0.20	-0.80	0.07	-0.61	-0.72	-0.35			0.69	-0.12	0.21	-0.11	0.27	-1.08				
Yi STD	0.59	0.30	0.84	0.42	0.60	0.51	0.51	0.57	0.26			0.61		1.05	1.07	0.50	0.76				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	1	1.2%	-1 < yi ≤ 1	77.9%
-2 lt yi le -1	8	9.3%	-2 < yi ≤ 2	98.8%
-1 lt yi le 0	49	57.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	18	20.9%	>3	0.0%
1 lt yi le 2	10	11.6%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.75
3 lt yi	0	0.0%		
total	86	100.0%	Parts Rated	9

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

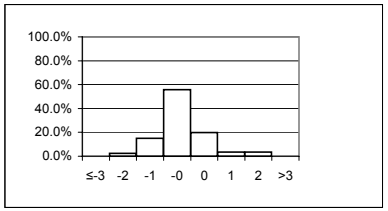
Rater = Clapperty, Leon

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	-0.89	0.24	-0.53			-0.39	-0.18							0.28					-0.70	-0.24	0.45
Calibration_Piston_2	-1.18	0.14	-2.09			0.89	-0.62							-0.26					-1.31	-0.52	1.04
A1_Square	-2.34	1.01	0.23	-0.17		-1.00	-0.16	-0.25						0.56					-1.86	-0.26	1.03
A2_Keystone	-0.36	0.15	-0.75		2.98	-0.45	-0.42		0.62			-0.32		-0.19	0.11		-0.27	-0.27	0.74	0.10	1.02
A3_C13	-1.35	0.79	-1.74		1.63	-1.97	-0.64	-0.80				-0.71		0.54	-0.58	0.10	-0.41	-0.51	-1.92	-0.43	1.05
A4_C13	-1.19	-1.59	-1.14		0.23	-0.31	-0.73	-0.87				-0.92		-1.04	-0.52	-0.48	-1.16	-0.72	-1.37	-0.81	0.49
A5_Seq_III																					
A6_Two-piece	-0.34	-0.86	-0.93		-0.17	-1.02	-0.98	-0.84				0.76	0.92	-0.14	-0.02		-1.17	-0.36	-0.20	-0.40	0.70
B1_Square	-1.35	1.89	-0.37	-0.27		2.06	-0.71	-0.58						0.21					-0.47	0.11	1.23
B2_Keystone	-0.41	-0.43	-0.79		2.39	-1.25	-0.21		-0.22			-0.36		0.45	-0.73		-0.27	-0.27	-0.27	-0.17	0.95
B3_C13																					
B4_C13																					
B5_Seq_V																					
B6_Two-piece																					
C1_Square																					
C2_Keystone																					
C3_C13																					
C4_C13																					
C5_Seq_III																					
C6_Two-piece																					
Yi MAXIMUM	-2.34	1.89	-2.09	-0.27	2.98	2.06	-0.98	-0.87	0.62			-0.92	0.92	-1.04	-0.73	-0.48	-1.17			-0.81	1.23
Yi MINIMUM	-0.34	0.14	0.23	-0.17	-0.17	-0.31	-0.16	-0.25	-0.22			-0.32	0.92	-0.14	-0.02	0.10	-0.27			0.10	0.45
Yi MEAN	-1.04	0.15	-0.90	-0.22	1.41	-0.38	-0.52	-0.67	0.20			-0.31	0.92	0.05	-0.35	-0.19	-0.66				
Yi STD	0.64	1.04	0.70	0.07	1.36	1.21	0.29	0.26	0.60			0.65		0.51	0.37	0.41	0.47				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	2	2.3%	-1 < yi ≤ 1	75.6%
-2 lt yi le -1	13	15.1%	-2 < yi ≤ 2	94.2%
-1 lt yi le 0	48	55.8%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	17	19.8%	>3	0.0%
1 lt yi le 2	3	3.5%		
2 lt yi le 3	3	3.5%	Overall Yi STD	0.94
3 lt yi	0	0.0%		
total	86	100.0%	Parts Rated	9

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

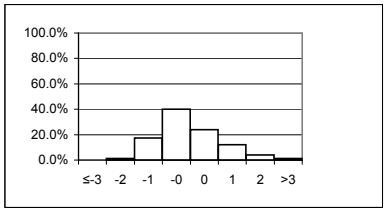
Rater = Engelskirchen, Jim

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	0.82	-0.54	-0.89			-0.71	-0.06							0.06					0.22	-0.22	0.63
Calibration_Piston_2	0.54	-0.71	-0.85			0.69	-0.30							-1.23					0.30	-0.31	0.78
A1_Square																					
A2_Keystone																					
A3_C13																					
A4_C13																					
A5_Seq_III																					
A6_Two-piece																					
B1_Square																					
B2_Keystone																					
B3_C13																					
B4_C13																					
B5_Seq_V																					
B6_Two-piece																					
C1_Square	0.37	0.32	1.84	1.18		0.46	0.75	0.50						0.19					0.63	0.70	0.55
C2_Keystone	0.24	-0.15	-0.38		-0.45	0.90	-0.34		-0.35			-1.51		-0.47	-0.30		**2.56**	0.00	0.25	-0.02	1.03
C3_C13	0.22	-0.74	-1.04		1.31	-0.13	-1.37	-1.45				-1.02		-0.15	-1.43	**-2.01**	0.58	-0.43	-0.36	-0.60	0.98
C4_C13	-0.42	1.12	-1.39		0.78	1.96	-0.58	-0.54				-1.27		-1.34	-0.75	-1.19	0.31	0.00	0.21	-0.28	1.09
C5_Seq_III	1.74	**3.31**	1.16			**2.34**	-0.41			-1.06	0.89	-0.87							**2.74**	0.89	1.57
C6_Two-piece	1.53	-0.32	-0.67		**2.95**	-1.48	-0.41	-0.61				0.59	-0.10	1.44	-0.84		0.00	0.00	1.72	0.17	1.25
Yi MAXIMUM	1.74	**3.31**	1.84	1.18	**2.95**	**2.34**	-1.37	-1.45	-0.35	-1.06	0.89	-1.51	-0.10	1.44	-1.43	**-2.01**	**2.56**			0.89	1.57
Yi MINIMUM	0.22	-0.15	-0.38	1.18	-0.45	-0.13	-0.06	0.50	-0.35	-1.06	0.89	0.59	-0.10	0.06	-0.30	-1.19	0.00			-0.02	0.55
Yi MEAN	0.63	0.29	-0.28	1.18	1.15	0.50	-0.34	-0.52	-0.35	-1.06	0.89	-0.81	-0.10	-0.21	-0.83	-1.60	0.86				
Yi STD	0.71	1.37	1.15		1.41	1.28	0.58	0.80				0.82		0.95	0.46	0.58	1.16				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	1	1.3%	-1 < yi ≤ 1	64.0%
-2 lt yi le -1	13	17.3%	-2 < yi ≤ 2	93.3%
-1 lt yi le 0	30	40.0%	-3 < yi ≤ 3	98.7%
0 lt yi le 1	18	24.0%	>3	1.3%
1 lt yi le 2	9	12.0%		
2 lt yi le 3	3	4.0%	Overall Yi STD	1.08
3 lt yi	1	1.3%		
total	75	100.0%	Parts Rated	8

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

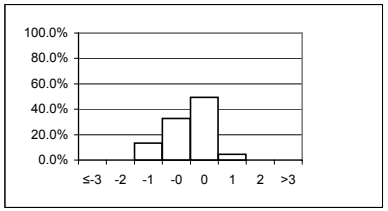
Rater = Greenland, Paul

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	0.42	-1.00	0.84			-1.58	-0.24							0.50					-0.37	-0.18	0.95
Calibration_Piston_2	0.67	-0.87	0.65			0.04	-0.23							0.51					0.33	0.13	0.61
A1_Square																					
A2_Keystone																					
A3_C13																					
A4_C13																					
A5_Seq_III																					
A6_Two-piece																					
B1_Square	0.23	0.23	0.72	0.27		-1.19	0.18	1.07						-0.03					0.03	0.18	0.66
B2_Keystone	-0.64	-0.42	0.10		-0.74	0.11	-0.22		0.43			0.09		-0.87	-0.94		-0.27	-0.27	-0.69	-0.31	0.46
B3_C13	0.42	-0.71	0.48		-1.86	-0.15	0.61	0.21				-1.10		0.14	-0.44	0.50	0.45	-0.44	-0.35	-0.12	0.77
B4_C13	1.38	-0.61	0.70		1.10	-0.95	0.71	0.94				-0.17		0.86	0.09	-0.15	-1.22	-0.46	0.74	0.22	0.85
B5_Seq_V																			0.11		
B6_Two-piece	0.47	-0.82	-0.04		0.52	-1.88	-1.99	-1.06				0.25	0.42	-0.97	-1.13		0.60	-1.88	0.20	-0.47	0.95
C1_Square																					
C2_Keystone																					
C3_C13																					
C4_C13																					
C5_Seq_III																					
C6_Two-piece																					
Yi MAXIMUM	1.38	-1.00	0.84	0.27	-1.86	-1.88	-1.99	1.07	0.43			-1.10	0.42	-0.97	-1.13	0.50	-1.22			-0.47	0.95
Yi MINIMUM	0.23	0.23	-0.04	0.27	0.52	0.04	0.18	0.21	0.43			0.09	0.42	-0.03	0.09	-0.15	-0.27			-0.12	0.46
Yi MEAN	0.42	-0.60	0.49	0.27	-0.24	-0.80	-0.17	0.29	0.43			-0.23	0.42	0.02	-0.61	0.17	-0.11				
Yi STD	0.60	0.41	0.33		1.32	0.81	0.90	0.98				0.60		0.70	0.55	0.46	0.83				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	82.1%
-2 lt yi le -1	9	13.4%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	22	32.8%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	33	49.3%	>3	0.0%
1 lt yi le 2	3	4.5%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.79
3 lt yi	0	0.0%		
total	67	100.0%	Parts Rated	7

Yi distribution (excluding shaded columns)



Group: Red

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

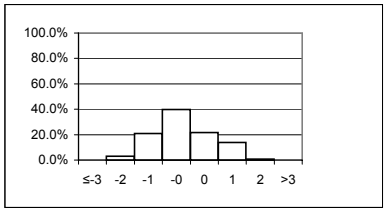
Rater = Hill, Howard

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	1.41	-1.02	1.65			-0.84	0.26							0.50					0.68	0.32	1.11
Calibration_Piston_2	-0.13	-1.21	2.11			-0.05	-0.23							-2.97					-0.70	-0.41	1.66
A1_Square	-0.21	-2.53	-1.06	-1.00		-0.45	-0.85	-1.13						0.36					-0.87	-0.86	0.85
A2_Keystone	-1.24	-0.56	1.42		-0.78	-0.68	0.71		-0.90			-0.24		-0.19	1.11		-0.27	-0.27	-1.39	-0.15	0.86
A3_C13	1.37	0.31	-0.12		-1.14	-1.41	-1.05	0.36				-0.68		1.28	-0.58	0.77	-0.41	-0.51	-0.46	-0.11	0.93
A4_C13	0.62	-1.63	0.62		-1.24	-1.45	-0.41	0.12				-0.66		0.32	-0.98	0.35	0.66	0.77	-1.13	-0.31	0.86
A5_Seq_III	-0.67	-1.06	1.05			-0.22	-0.88			-0.69	-1.12	-0.76							-1.55	-0.54	0.70
A6_Two-piece	-2.45	-0.70	-0.30		-1.22	-0.39	0.17	0.58				-1.61	0.77	-1.79	-1.42		-0.40	-0.36	-1.95	-0.73	0.99
B1_Square																					
B2_Keystone																					
B3_C13																					
B4_C13																					
B5_Seq_V																					
B6_Two-piece																					
C1_Square	0.23	-0.91	-0.58	-0.88		-0.47	-1.15	-1.00						1.07					-0.08	-0.46	0.75
C2_Keystone	0.03	0.08	0.80		0.86	-1.15	-0.15		-0.57			0.55		0.10	1.00		-0.37	0.00	-0.22	0.11	0.66
C3_C13	0.03	-1.16	1.26		0.08	-0.48	-1.47	1.42				-0.73		1.57	-1.43	1.43	0.58	0.96	-0.59	0.09	1.15
C4_C13	1.07	-0.26	1.96		0.35	-0.59	1.61	1.64				-0.17		1.93	-1.88	1.59	0.31	0.00	0.81	0.63	1.20
C5_Seq_III	-0.88	-0.39	-1.14			0.05	-2.78			0.39	-1.65	-0.57							-0.79	-0.87	1.00
C6_Two-piece	-1.06	-0.47	-0.03		-0.88	-0.10	-0.26	-1.49				-0.94	-1.19	-1.15	-1.00		0.00	0.00	-1.38	-0.71	0.51
Yi MAXIMUM	-2.45	-2.53	2.11	-1.00	-1.24	-1.45	-2.78	1.64	-0.90	-0.69	-1.65	-1.61	-1.19	-2.97	-1.88	1.59	0.66			-0.87	1.66
Yi MINIMUM	0.03	0.08	-0.03	-0.88	0.08	0.05	-0.15	0.12	-0.57	0.39	-1.12	-0.17	0.77	0.10	-0.58	0.35	0.00			0.09	0.51
Yi MEAN	-0.14	-0.82	0.55	-0.94	-0.50	-0.59	-0.46	0.06	-0.74	-0.15	-1.38	-0.58	-0.21	0.08	-0.65	1.04	0.01				
Yi STD	1.08	0.72	1.09	0.08	0.81	0.48	1.05	1.17	0.23	0.76	0.38	0.56	1.39	1.44	1.12	0.58	0.45				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	4	2.9%	-1 < yi ≤ 1	61.6%
-2 lt yi le -1	29	21.0%	-2 < yi ≤ 2	96.4%
-1 lt yi le 0	55	39.9%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	30	21.7%	>3	0.0%
1 lt yi le 2	19	13.8%		
2 lt yi le 3	1	0.7%	Overall Yi STD	1.02
3 lt yi	0	0.0%		
total	138	100.0%	Parts Rated	14

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

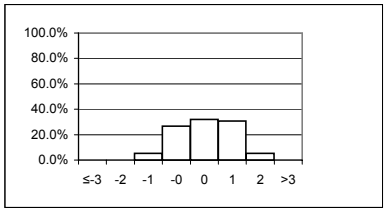
Rater = Kuipers, Jacques

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	1.41	0.04	-0.91			-0.42	0.06							0.06					0.98	0.04	0.77
Calibration_Piston_2	1.17	0.86	0.79			-1.75	0.91							0.41					1.63	0.40	1.08
A1_Square	1.17	-0.37	0.92	1.31		-0.04	1.29	1.47						1.97					0.70	0.96	0.79
A2_Keystone																					
A3_C13																					
A4_C13																					
A5_Seq_III																					
A6_Two-piece																					
B1_Square	2.24	-0.63	-0.93	-0.94		0.52	0.73	-1.08						1.45					2.27	0.17	1.25
B2_Keystone	0.87	-0.48	-0.82		-0.75	2.49	0.33		-1.09			1.67		1.52	-0.30		-0.27	-0.27	1.37	0.29	1.19
B3_C13	1.84	0.76	2.30		1.10	2.53	1.33	1.57				0.01		1.80	1.07	-0.75	0.45	-0.44	2.58	1.17	0.95
B4_C13	1.81	0.95	-0.49		-1.14	1.82	0.62	1.29				0.87		1.05	-0.55	1.85	0.14	1.03	2.06	0.68	1.00
B5_Seq_V																			-0.78		
B6_Two-piece	1.32	-0.87	-0.93		0.89	1.10	0.96	-0.55				-0.45	-0.12	0.82	0.72		0.60	0.52	0.83	0.29	0.82
C1_Square																					
C2_Keystone																					
C3_C13																					
C4_C13																					
C5_Seq_III																					
C6_Two-piece																					
Yi MAXIMUM	2.24	0.95	2.30	1.31	-1.14	2.53	1.33	1.57	-1.09			1.67	-0.12	1.97	1.07	1.85	0.60			1.17	1.25
Yi MINIMUM	0.87	0.04	-0.49	-0.94	-0.75	-0.04	0.06	-0.55	-1.09			0.01	-0.12	0.06	-0.30	-0.75	0.14			0.04	0.77
Yi MEAN	1.48	0.03	-0.01	0.19	0.03	0.78	0.78	0.54	-1.09			0.52	-0.12	1.14	0.23	0.55	0.23				
Yi STD	0.45	0.73	1.21	1.59	1.14	1.50	0.44	1.25				0.94		0.67	0.78	1.84	0.38				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	58.7%
-2 lt yi le -1	4	5.3%	-2 < yi ≤ 2	94.7%
-1 lt yi le 0	20	26.7%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	24	32.0%	>3	0.0%
1 lt yi le 2	23	30.7%		
2 lt yi le 3	4	5.3%	Overall Yi STD	1.04
3 lt yi	0	0.0%		
total	75	100.0%	Parts Rated	8

Yi distribution (excluding shaded columns)



Group: Yellow

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

Rater = Lopez, Frank

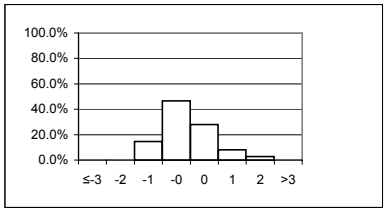
Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	1.10	-0.67	0.52			-0.46	-1.54							1.15					-0.17	0.02	1.08
Calibration_Piston_2	0.98	0.19	0.42			-0.47	-1.64							1.19					0.74	0.11	1.04
A1_Square																					
A2_Keystone																					
A3_C13																					
A4_C13																					
A5_Seq_III																					
A6_Two-piece																					
B1_Square																					
B2_Keystone																					
B3_C13																					
B4_C13																					
B5_Seq_V																					
B6_Two-piece																					
C1_Square	0.24	-0.02	-0.66	0.10		1.03	-0.20	0.00						-0.39					0.48	0.01	0.50
C2_Keystone	-0.26	-1.25	1.03		2.51	-0.78	2.63		0.61			0.78		-0.12	-1.17		-0.37	0.00	-0.73	0.33	1.34
C3_C13	-0.45	0.90	-0.66		1.02	0.23	0.62	0.23				-0.50		-1.02	-1.43	-0.35	0.58	-1.83	-0.02	-0.07	0.78
C4_C13	-1.06	-0.37	-0.87		0.20	-0.01	-1.02	-1.02				-0.27		-1.52	-0.75	-1.41	-0.43	0.00	-0.97	-0.71	0.54
C5_Seq_III	-0.67	-0.25	-0.05			-0.75	0.95			0.76	0.50	-0.07							-0.51	0.05	0.63
C6_Two-piece	0.62	-0.47	-0.19		-0.11	0.63	-0.30	-0.23				0.88	-0.82	-0.29	-1.00		0.00	0.00	0.00	-0.11	0.57
Yi MAXIMUM	1.10	-1.25	1.03	0.10	2.51	1.03	2.63	-1.02	0.61	0.76	0.50	0.88	-0.82	-1.52	-1.43	-1.41	0.58			-0.71	1.34
Yi MINIMUM	0.24	-0.02	-0.05	0.10	-0.11	-0.01	-0.20	0.00	0.61	0.76	0.50	-0.07	-0.82	-0.12	-0.75	-0.35	0.00			0.01	0.50
Yi MEAN	0.06	-0.24	-0.06	0.10	0.90	-0.07	-0.06	-0.25	0.61	0.76	0.50	0.16	-0.82	-0.14	-1.09	-0.88	-0.05				
Yi STD	0.79	0.63	0.67		1.17	0.66	1.43	0.55				0.63		1.02	0.29	0.75	0.46				

	count	percent
yi le -3	0	0.0%
-3 lt yi le -2	0	0.0%
-2 lt yi le -1	11	14.7%
-1 lt yi le 0	35	46.7%
0 lt yi le 1	21	28.0%
1 lt yi le 2	6	8.0%
2 lt yi le 3	2	2.7%
3 lt yi	0	0.0%
total	75	100.0%

-1 < yi ≤ 1	74.7%
-2 < yi ≤ 2	97.3%
-3 < yi ≤ 3	100.0%
>3	0.0%
Overall Yi STD	0.87
Parts Rated	8

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

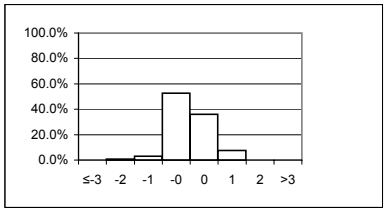
Rater = May, Marianne

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	0.79	-0.61	-0.17			0.91	-0.05							0.50					0.42	0.23	0.60
Calibration_Piston_2	0.44	-0.47	0.30			0.74	-0.09							1.29					0.41	0.37	0.62
A1_Square	-1.34	0.47	-0.45	-0.71		0.62	-0.42	-0.63						0.36					-0.24	-0.26	0.68
A2_Keystone	-0.47	0.10	-0.45		-0.48	-0.39	0.46		-0.66			-0.32		-0.31	-0.78		-0.27	-0.27	-0.67	-0.33	0.34
A3_C13																					
A4_C13																					
A5_Seq_III	-0.35	-0.28	-0.67			-0.35	-0.47			-0.19	0.25	-0.16							-0.81	-0.28	0.27
A6_Two-piece	0.02	0.15	0.12		1.31	1.61	-0.49	-0.91				-0.50	1.23	0.41	-0.02		1.14	-0.36	0.94	0.34	0.81
B1_Square	-0.26	-0.39	-0.62	-0.14		0.19	-0.22	-0.05						-0.53					-0.38	-0.25	0.26
B2_Keystone	-0.08	-0.30	-1.36		-0.58	-0.41	0.31		-0.49			-0.14		-0.27	-1.37		-0.27	-0.27	-0.64	-0.45	0.51
B3_C13	0.30	1.11	-0.08		0.15	-0.12	0.57	-0.60				-0.66		0.14	-0.44	0.19	0.45	0.04	0.12	0.08	0.51
B4_C13	-0.61	0.17	0.31		0.28	0.35	0.16	0.91				-1.11		-0.94	-0.55	**-2.15**	0.14	-0.46	-0.38	-0.25	0.84
B5_Seq_V																			0.54		
B6_Two-piece	-0.84	1.28	0.86		-0.16	0.35	0.28	0.20				-0.22	0.38	-0.79	-0.67		-0.18	-0.68	-0.06	0.04	0.65
C1_Square	0.48	1.93	0.92	0.42		0.22	0.37	0.50						1.07					0.76	0.74	0.56
C2_Keystone	-0.26	0.47	-0.75		-0.28	-0.84	1.48		-0.51			-0.81		-0.40	0.13		-0.37	0.00	-0.23	-0.19	0.68
C3_C13																					
C4_C13																					
C5_Seq_III	-0.44	-0.31	0.55			0.40	0.34			-0.33	0.50	-0.21							-0.24	0.06	0.42
C6_Two-piece																					
Yi MAXIMUM	-1.34	1.93	-1.36	-0.71	1.31	1.61	1.48	-0.91	-0.66	-0.33	0.50	-1.11	1.23	1.29	-1.37	**-2.15**	1.14			0.74	0.84
Yi MINIMUM	0.02	0.10	-0.08	-0.14	0.15	-0.12	-0.05	-0.05	-0.49	-0.19	0.25	-0.14	0.38	0.14	-0.02	0.19	0.14			0.04	0.26
Yi MEAN	-0.19	0.24	-0.11	-0.14	0.03	0.23	0.16	-0.08	-0.55	-0.26	0.38	-0.46	0.80	0.04	-0.53	-0.98	0.09				
Yi STD	0.57	0.75	0.66	0.56	0.64	0.63	0.52	0.66	0.09	0.10	0.18	0.34	0.60	0.70	0.50	1.65	0.54				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	1	0.8%	-1 < yi ≤ 1	88.7%
-2 lt yi le -1	4	3.0%	-2 < yi ≤ 2	99.2%
-1 lt yi le 0	70	52.6%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	48	36.1%	>3	0.0%
1 lt yi le 2	10	7.5%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.63
3 lt yi	0	0.0%		
total	133	100.0%	Parts Rated	14

Yi distribution (excluding shaded columns)



Group: Blue

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

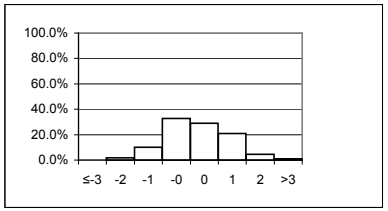
Rater = McPhail, Scott

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	-0.30	-0.54	1.00			-0.13	-0.39							-1.03					-0.58	-0.23	0.68
Calibration_Piston_2	0.75	0.02	0.73			-0.77	-0.89							1.09					0.53	0.16	0.84
A1_Square																					
A2_Keystone																					
A3_C13																					
A4_C13																					
A5_Seq_III																					
A6_Two-piece																					
B1_Square	-0.01	0.00	**2.88**	1.55		0.18	1.05	0.74						0.21					0.68	0.82	1.00
B2_Keystone	0.42	1.74	1.05		-0.66	1.39	0.66		0.00			0.93		-0.27	-1.16		**3.47**	-0.27	1.61	0.69	1.27
B3_C13	0.92	0.18	-0.83		-0.72	-0.39	-0.68	0.38				1.12		0.25	0.31	0.65	0.45	0.04	0.51	0.14	0.65
B4_C13	-0.26	-1.99	-0.81		**-2.10**	0.13	0.06	-0.27				0.87		0.29	-0.55	0.14	1.49	**2.52**	-0.50	-0.25	1.04
B5_Seq_V																					
B6_Two-piece	1.35	-0.83	-0.01		1.98	-1.10	-0.46	-0.55				-0.22	-0.66	0.10	-1.13		1.96	0.52	1.10	0.03	1.12
C1_Square	**2.30**	-1.32	-0.66	-0.99		**-2.61**	**2.65**	**2.99**						1.21					1.71	0.45	2.11
C2_Keystone	-1.28	1.12	-0.07		-0.71	1.53	-0.29		**2.35**			0.78		-0.90	1.29		-0.37	0.00	0.19	0.31	1.16
C3_C13	1.24	0.31	-0.33		0.09	-1.15	0.99	-0.16				-1.55		1.67	-1.43	0.41	0.99	0.96	0.04	0.09	1.06
C4_C13	1.34	1.85	-0.26		1.51	1.04	0.00	-0.77				-1.27		0.92	0.38	0.81	1.41	0.00	1.51	0.58	0.97
C5_Seq_III																					
C6_Two-piece																					
Yi MAXIMUM	**2.30**	-1.99	**2.88**	1.55	**-2.10**	**-2.61**	**2.65**	**2.99**	**2.35**			-1.55	-0.66	1.67	-1.43	0.81	**3.47**			0.82	2.11
Yi MINIMUM	-0.01	0.00	-0.01	-0.99	0.09	0.13	0.00	-0.16	0.00			-0.22	-0.66	0.10	0.31	0.14	-0.37			0.03	0.65
Yi MEAN	0.59	0.05	0.25	0.28	-0.09	-0.17	0.25	0.34	1.18			0.09	-0.66	0.32	-0.33	0.50	1.34				
Yi STD	1.00	1.20	1.10	1.80	1.41	1.23	1.03	1.28	1.67			1.12		0.85	1.01	0.30	1.21				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	2	1.8%	-1 < yi ≤ 1	61.8%
-2 lt yi le -1	11	10.0%	-2 < yi ≤ 2	92.7%
-1 lt yi le 0	36	32.7%	-3 < yi ≤ 3	99.1%
0 lt yi le 1	32	29.1%	>3	0.9%
1 lt yi le 2	23	20.9%		
2 lt yi le 3	5	4.5%	Overall Yi STD	1.11
3 lt yi	1	0.9%		
total	110	100.0%	Parts Rated	11

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

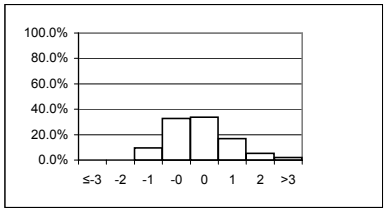
Rater = Narasaki, Keith

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	0.80	3.38	-1.75			0.92	-1.57							-0.59					1.31	0.20	1.92
Calibration_Piston_2	-0.37	3.60	-0.19			-0.71	0.86							0.22					1.33	0.57	1.58
A1_Square	0.71	0.00	-0.28	-0.12		2.40	0.98	1.07						-0.64					2.24	0.52	0.98
A2_Keystone	0.50	-1.60	1.09		-0.49	1.60	1.17		-0.66			-1.87		0.28	0.41		-0.27	3.47	0.77	0.02	1.12
A3_C13	0.17	0.88	0.54		0.22	0.58	1.33	0.29				-1.03		0.35	-0.32	1.26	0.21	1.02	0.76	0.37	0.64
A4_C13	0.01	1.28	1.00		0.29	0.18	2.81	0.22				-0.92		-0.85	0.17	-0.27	-0.12	-0.27	0.60	0.32	1.01
A5_Seq_III	-0.81	2.43	0.07			1.05	2.46			-1.43	0.70	-0.43							1.62	0.51	1.43
A6_Two-piece	-0.02	2.23	1.23		-0.26	-0.17	0.80	1.10				-0.50	0.77	-0.14	-0.02		-0.02	0.50	0.41	0.42	0.81
B1_Square	1.52	0.33	1.10	-0.55		0.12	-0.66	-0.81						1.95					1.59	0.38	1.05
B2_Keystone																					
B3_C13																					
B4_C13																					
B5_Seq_V																					
B6_Two-piece	-0.34	1.29	1.14		-1.25	1.00	0.28	-1.71				-1.16	-0.57	0.28	0.95		-0.75	0.76	-0.96	-0.07	1.04
C1_Square																					
C2_Keystone																					
C3_C13																					
C4_C13																					
C5_Seq_III																					
C6_Two-piece																					
Yi MAXIMUM	1.52	3.60	-1.75	-0.55	-1.25	2.40	2.81	-1.71	-0.66	-1.43	0.70	-1.87	0.77	1.95	0.95	1.26	-0.75			0.57	1.92
Yi MINIMUM	0.01	0.00	0.07	-0.12	0.22	0.12	0.28	0.22	-0.66	-1.43	0.70	-0.43	-0.57	-0.14	-0.02	-0.27	-0.02			0.02	0.64
Yi MEAN	0.22	1.38	0.39	-0.34	-0.30	0.70	0.85	0.03	-0.66	-1.43	0.70	-0.99	0.10	0.10	0.24	0.49	-0.19				
Yi STD	0.68	1.60	0.95	0.30	0.63	0.90	1.30	1.10				0.52	0.95	0.83	0.48	1.09	0.36				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	66.3%
-2 lt yi le -1	9	9.5%	-2 < yi ≤ 2	92.6%
-1 lt yi le 0	31	32.6%	-3 < yi ≤ 3	97.9%
0 lt yi le 1	32	33.7%	>3	2.1%
1 lt yi le 2	16	16.8%		
2 lt yi le 3	5	5.3%	Overall Yi STD	1.11
3 lt yi	2	2.1%		
total	95	100.0%	Parts Rated	10

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

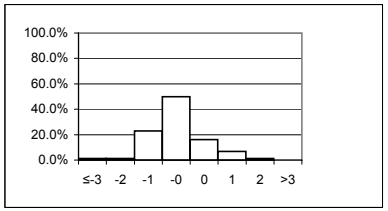
Rater = Pansza, Mike

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1																					
Calibration_Piston_2																					
A1_Square																					
A2_Keystone																					
A3_C13																					
A4_C13																					
A5_Seq_III																					
A6_Two-piece																					
B1_Square																					
B2_Keystone	-0.30	-0.46	-0.74		-1.15	-0.74	0.02		-0.55			-0.96		0.45	0.02		-0.27	-0.27	-1.25	-0.43	0.47
B3_C13																					
B4_C13																					
B5_Seq_V																					
B6_Two-piece																					
C1_Square	-1.46	-0.91	-0.91	-0.99		-0.83	-1.01	-0.90						-2.00					-1.86	-1.13	0.40
C2_Keystone	-0.26	**-3.02**	-0.81		-1.20	0.59	-0.55		-1.02			-0.86		-0.04	**-2.84**		-0.37	0.00	-1.61	-0.94	1.10
C3_C13	0.26	-1.32	1.13		-0.40	-1.06	-0.13	-0.55				-1.49		-1.11	0.36	0.67	-0.25	0.03	-1.17	-0.32	0.83
C4_C13	-0.46	-1.90	0.31		-1.33	-1.14	-0.90	-0.39				-1.22		-0.57	1.50	-0.19	-0.80	0.00	-1.50	-0.59	0.88
C5_Seq_III	**2.09**	0.78	-1.26			1.14	-0.09			-1.43	-1.26	-0.13							1.39	-0.02	1.28
C6_Two-piece	1.21	-0.44	1.29		-0.51	-0.27	-0.22	0.48				0.07	0.38	-0.72	-1.00		0.00	0.00	0.11	0.02	0.71
Yi MAXIMUM	**2.09**	**-3.02**	1.29	-0.99	-1.33	-1.14	-1.01	-0.90	-1.02	-1.43	-1.26	-1.49	0.38	-2.00	**-2.84**	0.67	-0.80			-1.13	1.28
Yi MINIMUM	-0.26	-0.44	0.31	-0.99	-0.40	-0.27	0.02	-0.39	-0.55	-1.43	-1.26	0.07	0.38	-0.04	0.02	-0.19	0.00			-0.02	0.40
Yi MEAN	0.16	-1.04	-0.14	-0.99	-0.92	-0.33	-0.41	-0.34	-0.78	-1.43	-1.26	-0.76	0.38	-0.67	-0.39	0.24	-0.34				
Yi STD	1.17	1.21	1.04		0.43	0.88	0.41	0.59	0.33			0.61		0.85	1.63	0.60	0.29				

	count	percent		
yi le -3	1	1.4%		
-3 lt yi le -2	1	1.4%	-1 < yi ≤ 1	66.2%
-2 lt yi le -1	17	23.0%	-2 < yi ≤ 2	95.9%
-1 lt yi le 0	37	50.0%	-3 < yi ≤ 3	98.6%
0 lt yi le 1	12	16.2%	>3	1.4%
1 lt yi le 2	5	6.8%		
2 lt yi le 3	1	1.4%	Overall Yi STD	0.93
3 lt yi	0	0.0%		
total	74	100.0%	Parts Rated	7

Yi distribution (excluding shaded columns)



Group: White

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November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

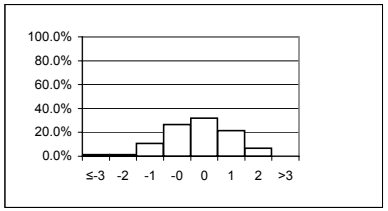
Rater = Pitta, Jimmy

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	0.54	0.71	0.31			**2.26**	-0.04							-0.16					0.98	0.60	0.88
Calibration_Piston_2	**-3.27**	0.39	-1.34			0.88	0.06							0.32					**-3.37**	-0.49	1.55
A1_Square	1.38	-0.63	-0.13	0.10		-0.07	0.75	0.79						0.97					0.64	0.39	0.68
A2_Keystone	0.15	1.09	0.38		0.70	**2.55**	**-2.31**		-1.02			1.23		-0.90	-1.48		-0.27	-0.27	1.81	0.01	1.39
A3_C13	0.52	0.88	1.17		1.15	0.43	1.83	1.41				-1.03		-0.94	0.45	-0.06	**2.06**	-0.51	1.57	0.66	0.98
A4_C13	0.91	0.74	1.46		1.00	**2.48**	0.07	1.40				-0.92		-0.65	0.40	-0.69	1.45	-0.72	1.94	0.64	1.03
A5_Seq_III	-0.87	1.35	1.99			**2.53**	0.71			1.73	-1.23	-0.49							1.19	0.71	1.42
A6_Two-piece	-0.02	0.55	1.62		-0.53	-0.25	1.07	-0.72				-1.45	-1.55	-1.24	-0.02		-0.40	-0.36	-0.75	-0.25	0.97
B1_Square																					
B2_Keystone																					
B3_C13																					
B4_C13																					
B5_Seq_V																					
B6_Two-piece																					
C1_Square																					
C2_Keystone																					
C3_C13																					
C4_C13																					
C5_Seq_III																					
C6_Two-piece																					
Yi MAXIMUM	**-3.27**	1.35	1.99	0.10	1.15	**2.55**	**-2.31**	1.41	-1.02	1.73	-1.23	-1.45	-1.55	-1.24	-1.48	-0.69	**2.06**			0.71	1.55
Yi MINIMUM	-0.02	0.39	-0.13	0.10	-0.53	-0.07	-0.04	-0.72	-1.02	1.73	-1.23	-0.49	-1.55	-0.16	-0.02	-0.06	-0.27			0.01	0.68
Yi MEAN	-0.08	0.63	0.68	0.10	0.58	1.35	0.27	0.72	-1.02	1.73	-1.23	-0.53	-1.55	-0.37	-0.16	-0.38	0.71				
Yi STD	1.45	0.59	1.10		0.76	1.23	1.22	1.00				1.04		0.79	0.90	0.44	1.23				

	count	percent		
yi le -3	1	1.3%		
-3 lt yi le -2	1	1.3%	-1 < yi ≤ 1	58.7%
-2 lt yi le -1	8	10.7%	-2 < yi ≤ 2	90.7%
-1 lt yi le 0	20	26.7%	-3 < yi ≤ 3	98.7%
0 lt yi le 1	24	32.0%	>3	1.3%
1 lt yi le 2	16	21.3%		
2 lt yi le 3	5	6.7%	Overall Yi STD	1.16
3 lt yi	0	0.0%		
total	75	100.0%	Parts Rated	8

Yi distribution (excluding shaded columns)



Group: Yellow

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

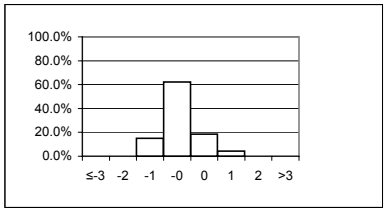
Rater = Radonich, Pete

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	-1.77	-0.61	-1.12			-0.70	-0.13							0.28					-1.73	-0.68	0.72
Calibration_Piston_2	0.21	-0.72	-0.42			-0.60	-0.06							0.41					-0.25	-0.20	0.46
A1_Square	0.62	-0.80	-0.76	-0.78		-0.93	-1.28	-0.93						-0.44					-0.61	-0.66	0.57
A2_Keystone	-0.13	1.04	-1.05		-0.60	-0.19	-0.02		-0.23			-0.34		-0.31	-0.09		-0.27	-0.27	-0.31	-0.20	0.50
A3_C13	1.02	-1.30	-1.07		-0.56	0.49	-0.55	-0.23				-0.71		0.73	-0.06	1.10	0.21	-0.51	0.14	-0.08	0.80
A4_C13	-0.09	-0.07	-1.33		-0.19	-0.37	-0.79	-1.28				-0.82		-0.65	-0.52	-0.07	-0.38	-0.72	-0.70	-0.55	0.44
A5_Seq_III	1.37	-0.46	-0.71			-0.65	-0.43			0.28	-0.89	-0.16							0.38	-0.21	0.73
A6_Two-piece	0.33	-1.13	-0.37		-1.30	-1.79	-1.34	-0.72				-0.11	-1.01	0.96	-0.02		-1.17	-0.36	-1.22	-0.64	0.81
B1_Square																					
B2_Keystone																					
B3_C13																					
B4_C13																					
B5_Seq_V																					
B6_Two-piece																					
C1_Square	0.55	-0.37	-0.58	-0.77		0.22	-1.11	-1.00						0.78					0.47	-0.29	0.72
C2_Keystone	-0.19	0.88	-1.13		-1.24	-0.24	-0.17		-0.63			-0.35		-0.40	0.28		-0.37	0.00	0.10	-0.32	0.59
C3_C13	-0.69	2.00	-0.24		-0.36	-0.88	0.48	0.42				0.03		-0.44	0.36	0.28	-0.25	0.03	-0.53	0.06	0.75
C4_C13																					
C5_Seq_III	-0.32	-0.37	-0.05			-1.00	0.70			-0.19	-0.67	-0.20							-0.56	-0.26	0.49
C6_Two-piece																					
Yi MAXIMUM	-1.77	2.00	-1.33	-0.78	-1.30	-1.79	-1.34	-1.28	-0.63	0.28	-0.89	-0.82	-1.01	0.96	-0.52	1.10	-1.17			-0.68	0.81
Yi MINIMUM	-0.09	-0.07	-0.05	-0.77	-0.19	-0.19	-0.02	-0.23	-0.23	-0.19	-0.67	0.03	-1.01	0.28	-0.02	-0.07	0.21			0.06	0.44
Yi MEAN	0.08	-0.16	-0.74	-0.78	-0.71	-0.55	-0.39	-0.62	-0.43	0.05	-0.78	-0.33	-1.01	0.09	-0.01	0.44	-0.37				
Yi STD	0.82	0.98	0.41	0.00	0.46	0.60	0.65	0.62	0.28	0.34	0.15	0.30		0.60	0.31	0.60	0.45				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	80.7%
-2 lt yi le -1	17	14.9%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	71	62.3%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	21	18.4%	>3	0.0%
1 lt yi le 2	5	4.4%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.67
3 lt yi	0	0.0%		
total	114	100.0%	Parts Rated	12

Yi distribution (excluding shaded columns)



Group: Red

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

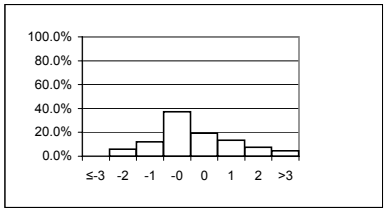
Rater = Ramirez, Manny

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	-0.49	2.59	0.29			1.46	4.43							2.24					2.79	1.75	1.76
Calibration_Piston_2	-2.49	0.14	-0.88			3.09	3.55							-1.72					-1.37	0.28	2.51
A1_Square																					
A2_Keystone																					
A3_C13																					
A4_C13																					
A5_Seq_III																					
A6_Two-piece																					
B1_Square	-0.58	-0.53	0.21	-0.24		1.89	-0.11	1.56						0.71					0.11	0.36	0.94
B2_Keystone	-0.19	-0.53	0.67		1.74	-0.69	0.48		-0.49			-0.56		1.76	0.99		-0.27	3.47	-0.03	0.26	0.92
B3_C13	-1.65	-0.03	-0.74		1.37	-0.94	-0.21	0.84				-1.44		-0.07	2.57	-2.77	0.45	0.04	-1.44	-0.22	1.44
B4_C13	-0.73	0.79	-1.86		1.02	-2.03	1.84	-0.73				-1.68		-0.65	2.66	0.71	0.14	-0.31	-1.47	-0.04	1.49
B5_Seq_V																			-2.09		
B6_Two-piece	-0.79	-1.27	-2.38		-0.27	0.41	-1.20	-0.21				-1.47	-0.75	1.72	2.11		-0.63	0.52	-0.93	-0.39	1.29
C1_Square																					
C2_Keystone																					
C3_C13																					
C4_C13																					
C5_Seq_III																					
C6_Two-piece																					
Yi MAXIMUM	-2.49	2.59	-2.38	-0.24	1.74	3.09	4.43	1.56	-0.49			-1.68	-0.75	2.24	2.66	-2.77	-0.63			1.75	2.51
Yi MINIMUM	-0.19	-0.03	0.21	-0.24	-0.27	0.41	-0.11	-0.21	-0.49			-0.56	-0.75	-0.07	0.99	0.71	0.14			-0.04	0.92
Yi MEAN	-0.99	0.17	-0.67	-0.24	0.97	0.46	1.26	0.37	-0.49			-1.29	-0.75	0.57	2.08	-1.03	-0.08				
Yi STD	0.80	1.25	1.15		0.87	1.80	2.09	1.03				0.49		1.46	0.77	2.46	0.47				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	4	6.0%	-1 < yi ≤ 1	56.7%
-2 lt yi le -1	8	11.9%	-2 < yi ≤ 2	82.1%
-1 lt yi le 0	25	37.3%	-3 < yi ≤ 3	95.5%
0 lt yi le 1	13	19.4%	>3	4.5%
1 lt yi le 2	9	13.4%		
2 lt yi le 3	5	7.5%	Overall Yi STD	1.52
3 lt yi	3	4.5%		
total	67	100.0%	Parts Rated	7

Yi distribution (excluding shaded columns)



Group: Yellow

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

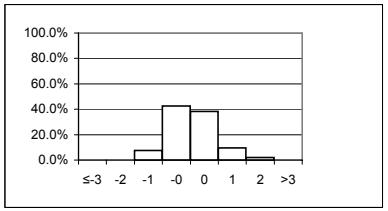
Rater = Rodriguez, Jesse

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	0.63	-0.15	0.41			-0.54	-0.12							-0.38					0.29	-0.03	0.45
Calibration_Piston_2	0.12	0.20	0.10			-0.49	-0.29							0.80					0.07	0.07	0.45
A1_Square																					
A2_Keystone																					
A3_C13																					
A4_C13																					
A5_Seq_III																					
A6_Two-piece																					
B1_Square	1.43	-0.96	-1.18	-0.76		-0.75	-1.00	-0.25						-0.03					0.68	-0.44	0.85
B2_Keystone	2.37	-0.48	0.40		-0.46	0.65	-1.04		-0.82			-0.60		-1.35	0.45		-0.27	-0.27	1.00	-0.10	1.04
B3_C13																					
B4_C13																					
B5_Seq_V																					
B6_Two-piece																					
C1_Square	-0.32	0.30	0.59	1.51		-0.61	0.75	1.00						-0.54					-0.35	0.34	0.77
C2_Keystone	-0.02	0.50	0.74		0.05	1.64	-1.42		0.19			0.12		0.10	0.28		-0.37	0.00	0.72	0.16	0.74
C3_C13	1.61	0.49	-0.82		-0.54	0.00	-1.17	-0.16				1.08		0.61	0.36	0.28	0.17	-1.83	1.57	0.16	0.78
C4_C13	2.15	-0.61	0.24		-1.80	1.27	0.86	1.51				1.23		0.44	0.38	-0.07	0.31	0.00	1.93	0.49	1.04
C5_Seq_III	0.30	-0.20	-0.05			0.86	0.25			-0.04	0.89	-0.11							0.22	0.24	0.43
C6_Two-piece	0.59	0.00	-1.35		-0.38	0.01	-0.61	-0.69				1.08	-0.33	-0.72	-1.00		0.00	0.00	-0.20	-0.28	0.67
Yi MAXIMUM	2.37	-0.96	-1.35	1.51	-1.80	1.64	-1.42	1.51	-0.82	-0.04	0.89	1.23	-0.33	-1.35	-1.00	0.28	-0.37			0.49	1.04
Yi MINIMUM	-0.02	0.00	-0.05	-0.76	0.05	0.00	-0.12	-0.16	0.19	-0.04	0.89	-0.11	-0.33	-0.03	0.28	-0.07	0.00			-0.03	0.43
Yi MEAN	0.89	-0.09	-0.09	0.38	-0.63	0.20	-0.38	0.28	-0.31	-0.04	0.89	0.47	-0.33	-0.12	0.09	0.11	-0.03				
Yi STD	0.94	0.48	0.75	1.60	0.69	0.85	0.81	0.93	0.72			0.77		0.70	0.61	0.25	0.28				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	80.9%
-2 lt yi le -1	7	7.4%	-2 < yi ≤ 2	97.9%
-1 lt yi le 0	40	42.6%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	36	38.3%	>3	0.0%
1 lt yi le 2	9	9.6%		
2 lt yi le 3	2	2.1%	Overall Yi STD	0.83
3 lt yi	0	0.0%		
total	94	100.0%	Parts Rated	10

Yi distribution (excluding shaded columns)



Group: Red

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

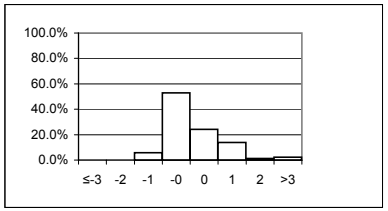
Rater = Shoda, Ron

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	-0.95	-0.60	-0.34			1.07	0.13							-0.59					-0.75	-0.22	0.72
Calibration_Piston_2	-0.91	-0.17	-0.42			-0.11	1.26							0.22					-0.86	-0.02	0.73
A1_Square																					
A2_Keystone																					
A3_C13																					
A4_C13																					
A5_Seq_III																					
A6_Two-piece	0.28	1.45	-1.00		-0.34	0.78	-0.49	-0.05				-0.34	-1.09	-0.14	-0.02		-0.40	-0.36	-0.16	-0.11	0.71
B1_Square																					
B2_Keystone																					
B3_C13																					
B4_C13																					
B5_Seq_V																					
B6_Two-piece																					
C1_Square	-0.99	-0.89	-0.66	-0.99		1.89	-1.15	-0.75						-0.97					-0.69	-0.57	1.00
C2_Keystone	-0.26	0.40	-1.19		-0.09	-0.41	0.09		-0.67			-0.69		-0.12	-0.30		-0.37	0.00	-0.18	-0.33	0.43
C3_C13	-0.38	1.36	0.48		-0.24	-1.01	1.62	0.89				0.03		-0.35	0.36	0.41	-0.66	0.03	-0.22	0.21	0.80
C4_C13	-0.49	1.20	-0.78		0.49	-1.06	0.03	0.75				0.03		0.56	1.50	1.04	0.31	0.00	-0.47	0.30	0.79
C5_Seq_III	0.23	-0.29	-0.05			-0.41	0.48			-0.19	-0.28	-0.19							-0.18	-0.09	0.30
C6_Two-piece	0.90	**3.10**	1.51		-0.09	1.55	**3.06**	-0.23				-0.73	1.42	**2.31**	0.58		0.00	0.00	**2.13**	1.11	1.27
Yi MAXIMUM	-0.99	**3.10**	1.51	-0.99	0.49	1.89	**3.06**	0.89	-0.67	-0.19	-0.28	-0.73	1.42	**2.31**	1.50	1.04	-0.66			1.11	1.27
Yi MINIMUM	0.23	-0.17	-0.05	-0.99	-0.09	-0.11	0.03	-0.05	-0.67	-0.19	-0.28	0.03	-1.09	-0.12	-0.02	0.41	0.00			-0.02	0.30
Yi MEAN	-0.29	0.62	-0.27	-0.99	-0.05	0.25	0.56	0.12	-0.67	-0.19	-0.28	-0.32	0.17	0.12	0.42	0.72	-0.23				
Yi STD	0.65	1.27	0.84		0.32	1.10	1.26	0.69				0.34	1.77	1.00	0.69	0.44	0.38				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	77.0%
-2 lt yi le -1	5	5.7%	-2 < yi ≤ 2	96.6%
-1 lt yi le 0	46	52.9%	-3 < yi ≤ 3	97.7%
0 lt yi le 1	21	24.1%	>3	2.3%
1 lt yi le 2	12	13.8%		
2 lt yi le 3	1	1.1%	Overall Yi STD	0.94
3 lt yi	2	2.3%		
total	87	100.0%	Parts Rated	9

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - Pistons

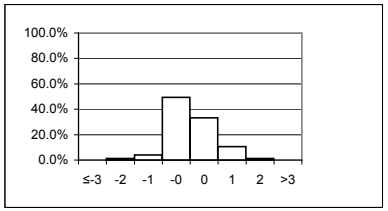
Rater = Trevino, Robert

Yi VALUES

	Groove 1	Groove 2	Groove 3	Groove 4	Land 1	Land 2	Land 3	Land 4	Upper Skirt	Thrust	Anti-Thrust	Under-crown	Oil Gallery	TGF%	2nd GF%	AGF%	TLHC%	TLFC%	UWPD	MEAN	STD
Calibration_Piston_1	-0.29	0.44	0.38			1.97	-0.06							0.72					0.22	0.52	0.80
Calibration_Piston_2	0.36	0.99	0.07			-0.13	-1.85							0.12					0.42	-0.07	0.95
A1_Square	0.46	-0.33	-0.11	-0.10		-0.45	-0.04	-0.28						1.17					-0.16	0.04	0.53
A2_Keystone	-0.41	-0.02	0.65		-0.12	-0.73	-0.29		2.33			0.91		-1.02	-2.07		-0.27	-0.27	-0.61	-0.09	1.13
A3_C13	0.02	-0.26	-0.30		-0.46	-0.70	0.41	0.44				-0.90		0.73	-0.58	-1.22	-0.41	-0.51	-0.70	-0.27	0.58
A4_C13	-0.80	0.39	0.27		-0.29	-0.79	0.05	0.22				-0.82		1.29	-0.06	-0.90	-0.64	0.77	-1.00	-0.17	0.66
A5_Seq_III	1.54	-0.10	0.70			-0.33	-0.43			0.02	1.96	-0.19							0.78	0.40	0.91
A6_Two-piece	-0.49	0.29	-0.67		0.25	1.08	1.88	0.17				0.92	1.23	0.41	-0.02		-0.02	-0.36	0.63	0.42	0.74
B1_Square																					
B2_Keystone																					
B3_C13																					
B4_C13																					
B5_Seq_V																					
B6_Two-piece																					
C1_Square																					
C2_Keystone																					
C3_C13																					
C4_C13																					
C5_Seq_III																					
C6_Two-piece																					
Yi MAXIMUM	1.54	0.99	0.70	-0.10	-0.46	1.97	1.88	0.44	2.33	0.02	1.96	0.92	1.23	1.29	-2.07	-1.22	-0.64			0.52	1.13
Yi MINIMUM	0.02	-0.02	0.07	-0.10	-0.12	-0.13	-0.04	0.17	2.33	0.02	1.96	-0.19	1.23	0.12	-0.02	-0.90	-0.02			0.04	0.53
Yi MEAN	0.05	0.18	0.12	-0.10	-0.16	-0.01	-0.04	0.14	2.33	0.02	1.96	-0.01	1.23	0.49	-0.68	-1.06	-0.33				
Yi STD	0.74	0.44	0.47		0.30	1.00	1.03	0.30				0.89		0.78	0.96	0.23	0.26				

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	1	1.3%	-1 < yi ≤ 1	82.7%
-2 lt yi le -1	3	4.0%	-2 < yi ≤ 2	97.3%
-1 lt yi le 0	37	49.3%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	25	33.3%	>3	0.0%
1 lt yi le 2	8	10.7%		
2 lt yi le 3	1	1.3%	Overall Yi STD	0.81
3 lt yi	0	0.0%		
total	75	100.0%	Parts Rated	8

Yi distribution (excluding shaded columns)



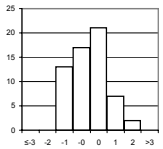
Group: Red

Heavy Duty Rating Workshop

PART ID = **C13 Rings - Calibration Set**

RATED VALUES

	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6
Kobrinetz, Jack	33.50	14.25	34.00	15.38	51.25	45.75
Hills, Barry	18.00	13.00	24.75	16.50	49.75	41.50
Castillo, George	31.12	16.50	31.25	15.00	69.00	**53.38**
Viera, Ralph	34.75	12.25	32.50	15.25	52.25	48.50
Guarda, Waldyr	22.75	14.00	23.00	16.25	37.75	42.50
Barrera, Tony	32.75	16.00	33.00	**18.50**	55.75	44.23
Foecking, Brian	30.25	14.50	40.00	17.50	54.00	41.75
Lopez, Frank	22.25	14.50	25.75	14.25	44.25	47.75
May, Marianne	34.25	14.25	34.25	15.75	57.75	46.00
Avis, Steve	39.88	16.50	36.88	15.38	59.38	46.50
MAXIMUM	39.88	16.50	40.00	18.50	69.00	53.38
MINIMUM	18.00	12.25	23.00	14.25	37.75	41.50
RANGE (MAX-MIN)	21.88	4.25	17.00	4.25	31.25	11.88
MEAN	29.95	14.58	31.54	15.98	53.11	45.79
STD	6.80	1.41	5.47	1.26	8.50	3.61



yi within 1	63%
yi within 2	97%
yi within 3	100%

PART ID = **C13 Rings - Calibration Set**

Yi VALUES

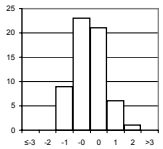
	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6	MEAN	STD
Kobrinetz, Jack	0.52	-0.23	0.45	-0.47	-0.22	-0.01	0.01	0.40
Hills, Barry	-1.76	-1.12	-1.24	0.42	-0.40	-1.19	-0.88	0.77
Castillo, George	0.17	1.37	-0.05	-0.78	1.87	**2.10**	0.78	1.16
Viera, Ralph	0.71	-1.65	0.18	-0.58	-0.10	0.75	-0.12	0.90
Guarda, Waldyr	-1.06	-0.41	-1.56	0.22	-1.81	-0.91	-0.92	0.74
Barrera, Tony	0.41	1.01	0.27	**2.00**	0.31	-0.43	0.60	0.83
Foecking, Brian	0.04	-0.05	1.55	1.21	0.10	-1.12	0.29	0.96
Lopez, Frank	-1.13	-0.05	-1.06	-1.37	-1.04	0.54	-0.69	0.75
May, Marianne	0.63	-0.23	0.50	-0.18	0.55	0.06	0.22	0.38
Avis, Steve	1.46	1.37	0.98	-0.47	0.74	0.20	0.71	0.74
Yi MAXIMUM	-1.76	-1.65	-1.56	2.00	1.87	2.10	-0.92	1.16
Yi MINIMUM	0.04	-0.05	-0.05	-0.18	-0.10	-0.01	0.01	0.38
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00		
Ratings MEAN	29.95	14.58	31.54	15.98	53.11	45.79		
Ratings STD	6.80	1.41	5.47	1.26	8.50	3.61		

Heavy Duty Rating Workshop

PART ID = C13 Rings - Set D

RATED VALUES

	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6
Viera, Ralph	53.00	11.50	9.75	15.00	12.75	9.75
Foecking, Brian	45.50	11.00	8.25	13.25	7.75	8.25
Kobrinetz, Jack	60.00	9.62	8.00	11.25	9.62	9.25
Castillo, George	35.25	11.75	11.50	16.88	16.50	10.25
Barrera, Tony	54.25	11.00	8.50	13.75	10.00	8.75
Hills, Barry	54.00	12.00	9.50	15.00	11.00	9.50
Guarda, Waldyr	40.00	12.75	7.00	14.00	10.75	12.00
May, Marianne	45.50	9.50	8.00	9.75	8.50	8.00
Lopez, Frank	32.75	11.50	7.75	15.25	14.50	10.25
Avis, Steve	39.00	10.25	8.12	9.75	6.50	6.25
MAXIMUM	60.00	12.75	11.50	16.88	16.50	12.00
MINIMUM	32.75	9.50	7.00	9.75	6.50	6.25
RANGE (MAX-MIN)	27.25	3.25	4.50	7.13	10.00	5.75
MEAN	45.93	11.09	8.64	13.39	10.79	9.23
STD	9.15	1.04	1.29	2.41	3.08	1.55



yi within 1	73%
yi within 2	98%
yi within 3	100%

PART ID = C13 Rings - Set D

Yi VALUES

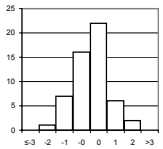
	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6	MEAN	STD
Viera, Ralph	0.77	0.40	0.87	0.67	0.64	0.34	0.61	0.21
Foecking, Brian	-0.05	-0.08	-0.30	-0.06	-0.99	-0.63	-0.35	0.38
Kobrinetz, Jack	1.54	-1.41	-0.50	-0.89	-0.38	0.02	-0.27	1.01
Castillo, George	-1.17	0.64	2.23	1.45	1.86	0.66	0.94	1.21
Barrera, Tony	0.91	-0.08	-0.11	0.15	-0.26	-0.31	0.05	0.45
Hills, Barry	0.88	0.88	0.67	0.67	0.07	0.18	0.56	0.35
Guarda, Waldyr	-0.65	1.60	-1.27	0.25	-0.01	1.79	0.28	1.21
May, Marianne	-0.05	-1.52	-0.50	-1.51	-0.74	-0.79	-0.85	0.58
Lopez, Frank	-1.44	0.40	-0.69	0.77	1.21	0.66	0.15	1.01
Avis, Steve	-0.76	-0.80	-0.40	-1.51	-1.39	-1.92	-1.13	0.57
Yi MAXIMUM	1.54	1.60	2.23	-1.51	1.86	-1.92	-1.13	1.21
Yi MINIMUM	-0.05	-0.08	-0.11	-0.06	-0.01	0.02	-0.27	0.21
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00		
Ratings MEAN	45.93	11.09	8.64	13.39	10.79	9.23		
Ratings STD	9.15	1.04	1.29	2.41	3.08	1.55		

Heavy Duty Rating Workshop

PART ID = C13 Rings - Set E

RATED VALUES

	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6
Viera, Ralph	19.00	21.50	52.00	15.50	43.25	15.75
Foecking, Brian	40.50	33.75	52.00	**27.75**	40.50	32.75
Castillo, George	23.12	15.25	**35.38**	20.50	35.50	18.25
Kobrinetz, Jack	31.50	36.00	50.50	21.50	47.75	26.75
Barrera, Tony	30.00	33.00	44.00	21.50	43.75	32.25
Guarda, Waldyr	32.25	27.75	43.25	18.00	39.25	17.75
May, Marianne	27.50	**55.50**	52.75	19.00	42.00	27.75
Avis, Steve	34.12	28.12	55.62	20.25	48.88	28.88
Lopez, Frank	19.50	26.00	48.25	17.25	43.75	16.50
MAXIMUM	40.50	55.50	55.62	27.75	48.88	32.75
MINIMUM	19.00	15.25	35.38	15.50	35.50	15.75
RANGE (MAX-MIN)	21.50	40.25	20.24	12.25	13.38	17.00
MEAN	28.61	30.76	48.19	20.14	42.74	24.07
STD	7.09	11.28	6.29	3.49	4.11	6.95



yi within 1	70%
yi within 2	94%
yi within 3	100%

PART ID = C13 Rings - Set E

Yi VALUES

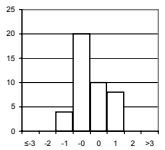
	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6	MEAN	STD
Viera, Ralph	-1.36	-0.82	0.61	-1.33	0.12	-1.20	-0.66	0.83
Foecking, Brian	1.68	0.26	0.61	**2.18**	-0.54	1.25	0.91	0.99
Castillo, George	-0.77	-1.37	**-2.04**	0.10	-1.76	-0.84	-1.11	0.78
Kobrinetz, Jack	0.41	0.46	0.37	0.39	1.22	0.39	0.54	0.33
Barrera, Tony	0.20	0.20	-0.67	0.39	0.25	1.18	0.26	0.59
Guarda, Waldyr	0.51	-0.27	-0.79	-0.61	-0.85	-0.91	-0.48	0.54
May, Marianne	-0.16	**2.19**	0.72	-0.33	-0.18	0.53	0.46	0.95
Avis, Steve	0.78	-0.23	1.18	0.03	1.49	0.69	0.66	0.66
Lopez, Frank	-1.29	-0.42	0.01	-0.83	0.25	-1.09	-0.56	0.61
Yi MAXIMUM	1.68	2.19	-2.04	2.18	-1.76	1.25	-1.11	0.99
Yi MINIMUM	-0.16	-0.23	0.01	-0.33	0.12	-0.84	-0.48	0.33
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00		
Ratings MEAN	28.61	30.76	48.19	20.14	42.74	24.07		
Ratings STD	7.09	11.28	6.29	3.49	4.11	6.95		

Heavy Duty Rating Workshop

PART ID = **C13 Rings - Set F**

RATED VALUES

	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6
Viera, Ralph	14.75	44.25	24.75	17.00	10.75	23.75
Castillo, George	21.00	49.00	31.50	19.75	15.50	26.50
Barrera, Tony	24.75	63.25	31.00	16.75	11.50	26.50
Foecking, Brian	21.00	48.25	31.25	19.50	17.00	27.25
May, Marianne	18.25	60.00	28.50	17.00	12.75	27.50
Lopez, Frank	15.25	58.00	19.50	16.75	11.50	32.25
Avis, Steve	16.75	72.00	28.25	17.12	11.12	34.75
MAXIMUM	24.75	72.00	31.50	19.75	17.00	34.75
MINIMUM	14.75	44.25	19.50	16.75	10.75	23.75
RANGE (MAX-MIN)	10.00	27.75	12.00	3.00	6.25	11.00
MEAN	18.82	56.39	27.82	17.70	12.87	28.36
STD	3.62	9.79	4.37	1.33	2.43	3.79



yi within 1	71%
yi within 2	100%
yi within 3	100%

PART ID = **C13 Rings - Set F**

Yi VALUES

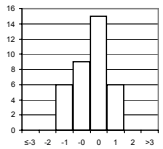
	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6	MEAN	STD
Viera, Ralph	-1.12	-1.24	-0.70	-0.52	-0.88	-1.22	-0.95	0.29
Castillo, George	0.60	-0.76	0.84	1.55	1.08	-0.49	0.47	0.91
Barrera, Tony	1.64	0.70	0.73	-0.71	-0.57	-0.49	0.22	0.95
Foecking, Brian	0.60	-0.83	0.78	1.36	1.70	-0.29	0.55	0.97
May, Marianne	-0.16	0.37	0.16	-0.52	-0.05	-0.23	-0.07	0.31
Lopez, Frank	-0.99	0.16	-1.90	-0.71	-0.57	1.03	-0.50	1.00
Avis, Steve	-0.57	1.59	0.10	-0.43	-0.72	1.69	0.28	1.09
Yi MAXIMUM	1.64	1.59	-1.90	1.55	1.70	1.69	-0.95	1.09
Yi MINIMUM	-0.16	-0.76	-0.70	-0.43	-0.05	-0.23	-0.07	0.29
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00		
Ratings MEAN	18.82	56.39	27.82	17.70	12.87	28.36		
Ratings STD	3.62	9.79	4.37	1.33	2.43	3.79		

Heavy Duty Rating Workshop

PART ID = **C13 Rings - Set G**

RATED VALUES

	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6
Viera, Ralph	45.75	42.00	47.00	51.75	31.00	47.00
Castillo, George	32.25	38.50	38.25	44.00	30.25	44.50
Foecking, Brian	45.75	46.50	40.25	50.00	29.50	37.00
Barrera, Tony	47.50	51.25	46.25	48.75	30.25	68.00
May, Marianne	50.00	54.25	49.75	50.25	29.25	63.00
Avis, Steve	45.62	45.38	40.75	48.00	31.00	56.25
MAXIMUM	50.00	54.25	49.75	51.75	31.00	68.00
MINIMUM	32.25	38.50	38.25	44.00	29.25	37.00
RANGE (MAX-MIN)	17.75	15.75	11.50	7.75	1.75	31.00
MEAN	44.48	46.31	43.71	48.79	30.21	52.63
STD	6.22	5.80	4.57	2.68	0.73	11.82



yi within 1	67%
yi within 2	100%
yi within 3	100%

PART ID = **C13 Rings - Set G**

Yi VALUES

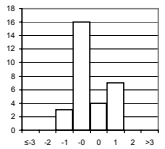
	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6	MEAN	STD
Viera, Ralph	0.20	-0.74	0.72	1.10	1.08	-0.48	0.32	0.79
Castillo, George	-1.96	-1.35	-1.20	-1.79	0.06	-0.69	-1.15	0.75
Foecking, Brian	0.20	0.03	-0.76	0.45	-0.97	-1.32	-0.39	0.72
Barrera, Tony	0.49	0.85	0.56	-0.02	0.06	1.30	0.54	0.49
May, Marianne	0.89	1.37	1.32	0.54	-1.31	0.88	0.62	0.99
Avis, Steve	0.18	-0.16	-0.65	-0.30	1.08	0.31	0.08	0.60
Yi MAXIMUM	-1.96	1.37	1.32	-1.79	-1.31	-1.32	-1.15	0.99
Yi MINIMUM	0.18	-0.16	0.56	-0.02	0.06	-0.48	0.08	0.49
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00		
Ratings MEAN	44.48	46.31	43.71	48.79	30.21	52.63		
Ratings STD	6.22	5.80	4.57	2.68	0.73	11.82		

Heavy Duty Rating Workshop

PART ID = **C13 Rings - Set H**

RATED VALUES

	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6
Castillo, George	18.00	5.75	17.25	2.25	13.00	12.00
Viera, Ralph	14.75	5.00	10.50	1.75	10.75	11.75
Barrera, Tony	23.75	6.00	10.00	1.50	11.50	8.50
Foecking, Brian	28.75	9.75	12.25	3.50	11.50	7.75
May, Marianne	24.00	5.75	9.75	1.75	11.25	7.00
MAXIMUM	28.75	9.75	17.25	3.50	13.00	12.00
MINIMUM	14.75	5.00	9.75	1.50	10.75	7.00
RANGE (MAX-MIN)	14.00	4.75	7.50	2.00	2.25	5.00
MEAN	21.85	6.45	11.95	2.15	11.60	9.40
STD	5.50	1.88	3.12	0.80	0.84	2.32



yi within 1	67%
yi within 2	100%
yi within 3	100%

PART ID = **C13 Rings - Set H**

Yi VALUES

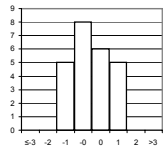
	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6	MEAN	STD
Castillo, George	-0.70	-0.37	1.70	0.12	1.67	1.12	0.59	1.05
Viera, Ralph	-1.29	-0.77	-0.46	-0.50	-1.01	1.01	-0.50	0.81
Barrera, Tony	0.35	-0.24	-0.63	-0.81	-0.12	-0.39	-0.31	0.41
Foecking, Brian	1.25	1.75	0.10	1.68	-0.12	-0.71	0.66	1.04
May, Marianne	0.39	-0.37	-0.71	-0.50	-0.42	-1.03	-0.44	0.47
Yi MAXIMUM	-1.29	1.75	1.70	1.68	1.67	1.12	0.66	1.05
Yi MINIMUM	-0.70	-0.24	-0.46	0.12	-0.12	-0.39	-0.31	0.41
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00		
Ratings MEAN	21.85	6.45	11.95	2.15	11.60	9.40		
Ratings STD	5.50	1.88	3.12	0.80	0.84	2.32		

Heavy Duty Rating Workshop

PART ID = **C13 Rings - Set I**

RATED VALUES

	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6
Castillo, George	31.75	26.00	17.25	16.00	30.75	36.25
Viera, Ralph	36.75	37.25	17.00	13.25	40.75	46.75
Barrera, Tony	43.00	33.00	16.50	11.50	37.75	43.50
May, Marianne	37.50	31.25	18.25	36.00	40.25	41.50
MAXIMUM	43.00	37.25	18.25	36.00	40.75	46.75
MINIMUM	31.75	26.00	16.50	11.50	30.75	36.25
RANGE (MAX-MIN)	11.25	11.25	1.75	24.50	10.00	10.50
MEAN	37.25	31.88	17.25	19.19	37.38	42.00
STD	4.61	4.66	0.74	11.36	4.61	4.40



yi within 1	58%
yi within 2	100%
yi within 3	100%

PART ID = **C13 Rings - Set I**

Yi VALUES

	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6	MEAN	STD
Castillo, George	-1.19	-1.26	0.00	-0.28	-1.44	-1.31	-0.91	0.61
Viera, Ralph	-0.11	1.15	-0.34	-0.52	0.73	1.08	0.33	0.74
Barrera, Tony	1.25	0.24	-1.02	-0.68	0.08	0.34	0.04	0.80
May, Marianne	0.05	-0.13	1.36	1.48	0.62	-0.11	0.54	0.73
Yi MAXIMUM	1.25	-1.26	1.36	1.48	-1.44	-1.31	-0.91	0.80
Yi MINIMUM	-0.11	-0.13	0.00	-0.28	-1.44	-0.11	-0.91	0.61
Yi MEAN	0.00	0.00	0.00	0.00	0.00	0.00		
Yi STD	1.00	1.00	1.00	1.00	1.00	1.00		
Ratings MEAN	37.25	31.88	17.25	19.19	37.38	42.00		
Ratings STD	4.61	4.66	0.74	11.36	4.61	4.40		

November 5-9, 2007

Heavy Duty Rating Workshop - C13 Rings

	Number of Parts Rated	-1 < yi ≤ 1	-2 < yi ≤ 2	-3 < yi ≤ 3	>3	Yi STD	Group
Barrera, Tony	7	83.3%	97.6%	100.0%	0.0%	0.69	Red
Castillo, George	7	45.2%	92.9%	100.0%	0.0%	1.25	Yellow
Foecking, Brian	6	66.7%	97.2%	100.0%	0.0%	0.95	White
Guarda, Waldyr	3	66.7%	100.0%	100.0%	0.0%	0.97	White
Hills, Barry	2	66.7%	100.0%	100.0%	0.0%	0.94	White
Kobrinetz, Jack	3	83.3%	100.0%	100.0%	0.0%	0.71	Red
Viera, Ralph	7	66.7%	100.0%	100.0%	0.0%	0.85	White
Avis, Steve	5	66.7%	100.0%	100.0%	0.0%	0.98	White
Lopez, Frank	4	58.3%	100.0%	100.0%	0.0%	0.87	Yellow
May, Marianne	7	78.6%	97.6%	100.0%	0.0%	0.81	White

Group Criteria

	Minimum Number of Parts Rated	Minimum Yi's within 1 STD of mean	Minimum Yi's within 2 STD of mean	Maximum Overall Yi STD	Group Totals	
White	1	60%	90%	1.20	6	60%
Red	1	80%	95%	0.85	2	20%
Blue	1	85%	98%	0.75	0	0%
Yellow	-	-	-	-	2	20%

November 5-9, 2007

Heavy Duty Rating Workshop - C13 Rings

Rater = **Barrera, Tony**

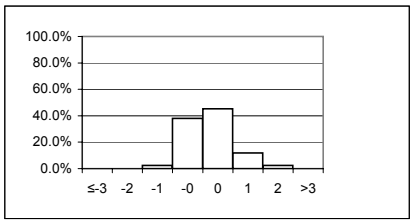
Yi VALUES

	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6												MEAN	STD
C13_Rings_Calibration	0.41	1.01	0.27	2.00	0.31	-0.43												0.60	0.83
C13_Rings_Set_D	0.91	-0.08	-0.11	0.15	-0.26	-0.31												0.05	0.45
C13_Rings_Set_E	0.20	0.20	-0.67	0.39	0.25	1.18												0.26	0.59
C13_Rings_Set_F	1.64	0.70	0.73	-0.71	-0.57	-0.49												0.22	0.95
C13_Rings_Set_G	0.49	0.85	0.56	-0.02	0.06	1.30												0.54	0.49
C13_Rings_Set_H	0.35	-0.24	-0.63	-0.81	-0.12	-0.39												-0.31	0.41
C13_Rings_Set_I	1.25	0.24	-1.02	-0.68	0.08	0.34												0.04	0.80
Yi MAXIMUM	1.64	1.01	-1.02	2.00	-0.57	1.30												0.60	0.95
Yi MINIMUM	0.20	-0.08	-0.11	-0.02	0.06	-0.31												0.04	0.41
Yi MEAN	0.75	0.38	-0.12	0.05	-0.04	0.17													
Yi STD	0.54	0.48	0.67	0.98	0.31	0.78													

	count	percent
yi le -3	0	0.0%
-3 lt yi le -2	0	0.0%
-2 lt yi le -1	1	2.4%
-1 lt yi le 0	16	38.1%
0 lt yi le 1	19	45.2%
1 lt yi le 2	5	11.9%
2 lt yi le 3	1	2.4%
3 lt yi	0	0.0%
total	42	100.0%

-1 < yi ≤ 1	83.3%
-2 < yi ≤ 2	97.6%
-3 < yi ≤ 3	100.0%
>3	0.0%
Overall Yi STD	0.69
Parts Rated	7

Yi distribution (excluding shaded columns)



Group: Red

November 5-9, 2007

Heavy Duty Rating Workshop - C13 Rings

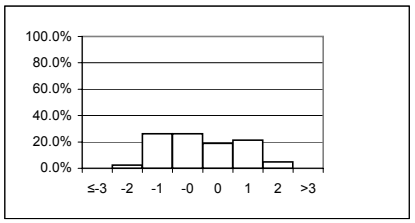
Rater = **Castillo, George**

Yi VALUES

	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6												MEAN	STD
C13_Rings_Calibration	0.17	1.37	-0.05	-0.78	1.87	2.10												0.78	1.16
C13_Rings_Set_D	-1.17	0.64	2.23	1.45	1.86	0.66												0.94	1.21
C13_Rings_Set_E	-0.77	-1.37	-2.04	0.10	-1.76	-0.84												-1.11	0.78
C13_Rings_Set_F	0.60	-0.76	0.84	1.55	1.08	-0.49												0.47	0.91
C13_Rings_Set_G	-1.96	-1.35	-1.20	-1.79	0.06	-0.69												-1.15	0.75
C13_Rings_Set_H	-0.70	-0.37	1.70	0.12	1.67	1.12												0.59	1.05
C13_Rings_Set_I	-1.19	-1.26	0.00	-0.28	-1.44	-1.31												-0.91	0.61
Yi MAXIMUM	-1.96	-1.37	2.23	-1.79	1.87	2.10												-1.15	1.21
Yi MINIMUM	0.17	-0.37	0.00	0.10	0.06	-0.49												0.47	0.61
Yi MEAN	-0.72	-0.44	0.21	0.05	0.48	0.08													
Yi STD	0.87	1.07	1.52	1.18	1.55	1.24													

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	1	2.4%	-1 < yi ≤ 1	45.2%
-2 lt yi le -1	11	26.2%	-2 < yi ≤ 2	92.9%
-1 lt yi le 0	11	26.2%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	8	19.0%	>3	0.0%
1 lt yi le 2	9	21.4%		
2 lt yi le 3	2	4.8%	Overall Yi STD	1.25
3 lt yi	0	0.0%		
total	42	100.0%	Parts Rated	7

Yi distribution (excluding shaded columns)



Group: Yellow

November 5-9, 2007

Heavy Duty Rating Workshop - C13 Rings

Rater = **Foecking, Brian**

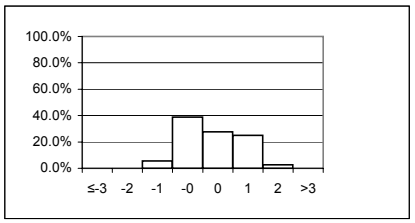
Yi VALUES

	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6												MEAN	STD
C13_Rings_Calibration	0.04	-0.05	1.55	1.21	0.10	-1.12												0.29	0.96
C13_Rings_Set_D	-0.05	-0.08	-0.30	-0.06	-0.99	-0.63												-0.35	0.38
C13_Rings_Set_E	1.68	0.26	0.61	**2.18**	-0.54	1.25												0.91	0.99
C13_Rings_Set_F	0.60	-0.83	0.78	1.36	1.70	-0.29												0.55	0.97
C13_Rings_Set_G	0.20	0.03	-0.76	0.45	-0.97	-1.32												-0.39	0.72
C13_Rings_Set_H	1.25	1.75	0.10	1.68	-0.12	-0.71												0.66	1.04
C13_Rings_Set_I																			
Yi MAXIMUM	1.68	1.75	1.55	**2.18**	1.70	-1.32												0.91	1.04
Yi MINIMUM	0.04	0.03	0.10	-0.06	0.10	-0.29												0.29	0.38
Yi MEAN	0.62	0.18	0.33	1.14	-0.14	-0.47													
Yi STD	0.70	0.85	0.82	0.82	1.00	0.92													

	count	percent
yi le -3	0	0.0%
-3 lt yi le -2	0	0.0%
-2 lt yi le -1	2	5.6%
-1 lt yi le 0	14	38.9%
0 lt yi le 1	10	27.8%
1 lt yi le 2	9	25.0%
2 lt yi le 3	1	2.8%
3 lt yi	0	0.0%
total	36	100.0%

-1 < yi ≤ 1	66.7%
-2 < yi ≤ 2	97.2%
-3 < yi ≤ 3	100.0%
>3	0.0%
Overall Yi STD	0.95
Parts Rated	6

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - C13 Rings

Rater = **Guarda, Waldyr**

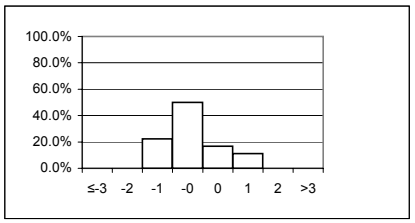
Yi VALUES

	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6												MEAN	STD
C13_Rings_Calibration	-1.06	-0.41	-1.56	0.22	-1.81	-0.91												-0.92	0.74
C13_Rings_Set_D	-0.65	1.60	-1.27	0.25	-0.01	1.79												0.28	1.21
C13_Rings_Set_E	0.51	-0.27	-0.79	-0.61	-0.85	-0.91												-0.48	0.54
C13_Rings_Set_F																			
C13_Rings_Set_G																			
C13_Rings_Set_H																			
C13_Rings_Set_I																			
Yi MAXIMUM	-1.06	1.60	-1.56	-0.61	-1.81	1.79												-0.92	1.21
Yi MINIMUM	0.51	-0.27	-0.79	0.22	-0.01	-0.91												0.28	0.54
Yi MEAN	-0.40	0.31	-1.21	-0.05	-0.89	-0.01													
Yi STD	0.82	1.12	0.39	0.49	0.90	1.56													

	count	percent
yi le -3	0	0.0%
-3 lt yi le -2	0	0.0%
-2 lt yi le -1	4	22.2%
-1 lt yi le 0	9	50.0%
0 lt yi le 1	3	16.7%
1 lt yi le 2	2	11.1%
2 lt yi le 3	0	0.0%
3 lt yi	0	0.0%
total	18	100.0%

-1 < yi ≤ 1	66.7%
-2 < yi ≤ 2	100.0%
-3 < yi ≤ 3	100.0%
>3	0.0%
Overall Yi STD	0.97
Parts Rated	3

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - C13 Rings

Rater = **Hills, Barry**

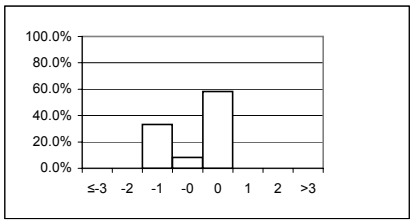
Yi VALUES

	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6												MEAN	STD
C13_Rings_Calibration	-1.76	-1.12	-1.24	0.42	-0.40	-1.19												-0.88	0.77
C13_Rings_Set_D	0.88	0.88	0.67	0.67	0.07	0.18												0.56	0.35
C13_Rings_Set_E																			
C13_Rings_Set_F																			
C13_Rings_Set_G																			
C13_Rings_Set_H																			
C13_Rings_Set_I																			
Yi MAXIMUM	-1.76	-1.12	-1.24	0.67	-0.40	-1.19												-0.88	0.77
Yi MINIMUM	0.88	0.88	0.67	0.42	0.07	0.18												0.56	0.35
Yi MEAN	-0.44	-0.12	-0.29	0.54	-0.16	-0.50													
Yi STD	1.87	1.41	1.35	0.18	0.33	0.96													

	count	percent
yi le -3	0	0.0%
-3 lt yi le -2	0	0.0%
-2 lt yi le -1	4	33.3%
-1 lt yi le 0	1	8.3%
0 lt yi le 1	7	58.3%
1 lt yi le 2	0	0.0%
2 lt yi le 3	0	0.0%
3 lt yi	0	0.0%
total	12	100.0%

-1 < yi ≤ 1	66.7%
-2 < yi ≤ 2	100.0%
-3 < yi ≤ 3	100.0%
>3	0.0%
Overall Yi STD	0.94
Parts Rated	2

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - C13 Rings

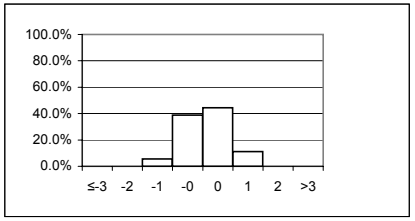
Rater = **Kobrinetz, Jack**

Yi VALUES

	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6												MEAN	STD
C13_Rings_Calibration	0.52	-0.23	0.45	-0.47	-0.22	-0.01												0.01	0.40
C13_Rings_Set_D	1.54	-1.41	-0.50	-0.89	-0.38	0.02												-0.27	1.01
C13_Rings_Set_E	0.41	0.46	0.37	0.39	1.22	0.39												0.54	0.33
C13_Rings_Set_F																			
C13_Rings_Set_G																			
C13_Rings_Set_H																			
C13_Rings_Set_I																			
Yi MAXIMUM	1.54	-1.41	-0.50	-0.89	1.22	0.39												0.54	1.01
Yi MINIMUM	0.41	-0.23	0.37	0.39	-0.22	-0.01												0.01	0.33
Yi MEAN	0.82	-0.39	0.11	-0.32	0.21	0.13													
Yi STD	0.62	0.95	0.52	0.65	0.88	0.22													

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	83.3%
-2 lt yi le -1	1	5.6%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	7	38.9%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	8	44.4%	>3	0.0%
1 lt yi le 2	2	11.1%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.71
3 lt yi	0	0.0%		
total	18	100.0%	Parts Rated	3

Yi distribution (excluding shaded columns)



Group: Red

November 5-9, 2007

Heavy Duty Rating Workshop - C13 Rings

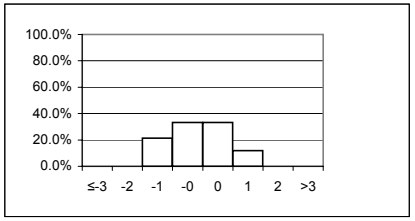
Rater = Viera, Ralph

Yi VALUES

	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6	MEAN	STD
C13_Rings_Calibration	0.71	-1.65	0.18	-0.58	-0.10	0.75	-0.12	0.90
C13_Rings_Set_D	0.77	0.40	0.87	0.67	0.64	0.34	0.61	0.21
C13_Rings_Set_E	-1.36	-0.82	0.61	-1.33	0.12	-1.20	-0.66	0.83
C13_Rings_Set_F	-1.12	-1.24	-0.70	-0.52	-0.88	-1.22	-0.95	0.29
C13_Rings_Set_G	0.20	-0.74	0.72	1.10	1.08	-0.48	0.32	0.79
C13_Rings_Set_H	-1.29	-0.77	-0.46	-0.50	-1.01	1.01	-0.50	0.81
C13_Rings_Set_I	-0.11	1.15	-0.34	-0.52	0.73	1.08	0.33	0.74
Yi MAXIMUM	-1.36	-1.65	0.87	-1.33	1.08	-1.22	-0.95	0.90
Yi MINIMUM	-0.11	0.40	0.18	-0.50	-0.10	0.34	-0.12	0.21
Yi MEAN	-0.31	-0.53	0.12	-0.24	0.08	0.04		
Yi STD	0.93	0.97	0.63	0.83	0.80	1.00		

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	66.7%
-2 lt yi le -1	9	21.4%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	14	33.3%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	14	33.3%	>3	0.0%
1 lt yi le 2	5	11.9%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.85
3 lt yi	0	0.0%		
total	42	100.0%	Parts Rated	7

Yi distribution (excluding shaded columns)



Group: White

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November 5-9, 2007

Heavy Duty Rating Workshop - C13 Rings

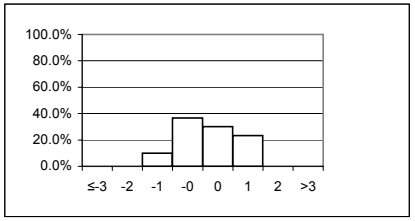
Rater = **Avis, Steve**

Yi VALUES

	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6												MEAN	STD
C13_Rings_Calibration	1.46	1.37	0.98	-0.47	0.74	0.20												0.71	0.74
C13_Rings_Set_D	-0.76	-0.80	-0.40	-1.51	-1.39	-1.92												-1.13	0.57
C13_Rings_Set_E	0.78	-0.23	1.18	0.03	1.49	0.69												0.66	0.66
C13_Rings_Set_F	-0.57	1.59	0.10	-0.43	-0.72	1.69												0.28	1.09
C13_Rings_Set_G	0.18	-0.16	-0.65	-0.30	1.08	0.31												0.08	0.60
C13_Rings_Set_H																			
C13_Rings_Set_I																			
Yi MAXIMUM	1.46	1.59	1.18	-1.51	1.49	-1.92												-1.13	1.09
Yi MINIMUM	0.18	-0.16	0.10	0.03	-0.72	0.20												0.08	0.57
Yi MEAN	0.22	0.35	0.24	-0.54	0.24	0.19													
Yi STD	0.93	1.06	0.81	0.58	1.24	1.32													

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	66.7%
-2 lt yi le -1	3	10.0%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	11	36.7%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	9	30.0%	>3	0.0%
1 lt yi le 2	7	23.3%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.98
3 lt yi	0	0.0%		
total	30	100.0%	Parts Rated	5

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - C13 Rings

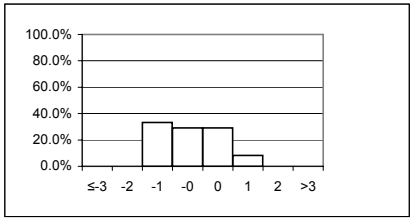
Rater = Lopez, Frank

Yi VALUES

	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6												MEAN	STD
C13_Rings_Calibration	-1.13	-0.05	-1.06	-1.37	-1.04	0.54												-0.69	0.75
C13_Rings_Set_D	-1.44	0.40	-0.69	0.77	1.21	0.66												0.15	1.01
C13_Rings_Set_E	-1.29	-0.42	0.01	-0.83	0.25	-1.09												-0.56	0.61
C13_Rings_Set_F	-0.99	0.16	-1.90	-0.71	-0.57	1.03												-0.50	1.00
C13_Rings_Set_G																			
C13_Rings_Set_H																			
C13_Rings_Set_I																			
Yi MAXIMUM	-1.44	-0.42	-1.90	-1.37	1.21	-1.09												-0.69	1.01
Yi MINIMUM	-0.99	-0.05	0.01	-0.71	0.25	0.54												0.15	0.61
Yi MEAN	-1.21	0.02	-0.91	-0.53	-0.04	0.29													
Yi STD	0.20	0.35	0.80	0.92	0.99	0.94													

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	58.3%
-2 lt yi le -1	8	33.3%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	7	29.2%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	7	29.2%	>3	0.0%
1 lt yi le 2	2	8.3%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.87
3 lt yi	0	0.0%		
total	24	100.0%	Parts Rated	4

Yi distribution (excluding shaded columns)



Group: Yellow

November 5-9, 2007

Heavy Duty Rating Workshop - C13 Rings

Rater = **May, Marianne**

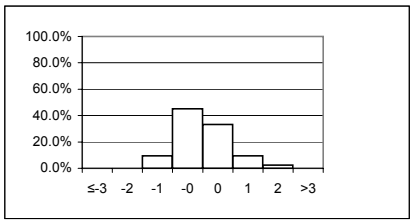
Yi VALUES

	Ring 1	Ring 2	Ring 3	Ring 4	Ring 5	Ring 6												MEAN	STD
C13_Rings_Calibration	0.63	-0.23	0.50	-0.18	0.55	0.06												0.22	0.38
C13_Rings_Set_D	-0.05	-1.52	-0.50	-1.51	-0.74	-0.79												-0.85	0.58
C13_Rings_Set_E	-0.16	2.19	0.72	-0.33	-0.18	0.53												0.46	0.95
C13_Rings_Set_F	-0.16	0.37	0.16	-0.52	-0.05	-0.23												-0.07	0.31
C13_Rings_Set_G	0.89	1.37	1.32	0.54	-1.31	0.88												0.62	0.99
C13_Rings_Set_H	0.39	-0.37	-0.71	-0.50	-0.42	-1.03												-0.44	0.47
C13_Rings_Set_I	0.05	-0.13	1.36	1.48	0.62	-0.11												0.54	0.73
Yi MAXIMUM	0.89	2.19	1.36	-1.51	-1.31	-1.03												-0.85	0.99
Yi MINIMUM	-0.05	-0.13	0.16	-0.18	-0.05	0.06												-0.07	0.31
Yi MEAN	0.23	0.24	0.41	-0.14	-0.22	-0.10													
Yi STD	0.41	1.22	0.81	0.94	0.69	0.68													

	count	percent
yi le -3	0	0.0%
-3 lt yi le -2	0	0.0%
-2 lt yi le -1	4	9.5%
-1 lt yi le 0	19	45.2%
0 lt yi le 1	14	33.3%
1 lt yi le 2	4	9.5%
2 lt yi le 3	1	2.4%
3 lt yi	0	0.0%
total	42	100.0%

-1 < yi ≤ 1	78.6%
-2 < yi ≤ 2	97.6%
-3 < yi ≤ 3	100.0%
>3	0.0%
Overall Yi STD	0.81
Parts Rated	7

Yi distribution (excluding shaded columns)



Group: White

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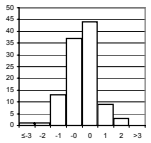
Heavy Duty Rating Workshop

PART ID = **Sludge**

RATED VALUES

	Calibration	ISB Pan	ISB Cover	ISM Pan	ISM Cover											
Avis, Steve	9.15	9.18	9.39	7.45	5.40											
Barrera, Tony	8.83	9.26	9.54	8.01	5.07											
Cales, Jonathon	8.96	9.36	9.44	8.32	5.05											
Castillo, George	8.87	9.26	9.39	7.87	5.33											
Clapperty, Leon	9.22	9.16	9.35	8.15	5.46											
Engelskirchen, Jim	9.22	8.91	9.58	7.63	5.44											
Foecking, Brian	9.01	9.47	9.49	8.00	5.40											
Garcia, Orlando	9.11	9.22	9.37	8.03	5.45											
Greenland, Paul	**8.60**	9.54	9.50	8.17	5.47											
Guarda, Waldyr	8.96	**8.60**	9.27	7.29	5.06											
Hill, Howard	9.30	9.09	9.39	7.82	5.46											
Hills, Barry	9.01	9.29	9.43	**8.94**	5.42											
Kobrinetz, Jack	8.93	9.43	9.54	7.97	5.12											
Lopez, Frank	9.20	9.32	9.42	7.96	5.41											
May, Marianne	9.05	9.46	9.42	7.92	5.40											
Narasaki, Keith		9.52	**9.67**													
Pansza, Mike	8.73	9.50	9.38	8.46	5.31											
Radonich, Pete	9.04	9.47	9.50	7.97	5.40											
Rodriguez, Jesse	8.83	9.29	9.44	7.87	5.38											
Sanchez, Art	8.91	9.26	9.41	7.86	5.05											
Shoda, Ron	8.83	9.30	9.41	7.60	5.39											
Trevino, Robert	8.72															
Viera, Ralph	8.83	9.39	**9.65**	7.87	5.36											
MAXIMUM	9.30	9.54	9.67	8.94	5.47											
MINIMUM	8.60	8.60	9.27	7.29	5.05											
RANGE (MAX-MIN	0.70	0.94	0.40	1.65	0.42											
MEAN	8.97	9.29	9.45	7.96	5.33											
STD	0.18	0.22	0.10	0.35	0.15											



yi within 1	75%
yi within 2	95%
yi within 3	99%

PART ID = **Sludge**

Yi VALUES

	Calibration	ISB Pan	ISB Cover	ISM Pan	ISM Cover												MEAN	STD
Avis, Steve	0.99	-0.49	-0.66	-1.46	0.49												-0.22	0.97
Barrera, Tony	-0.76	-0.12	0.89	0.14	-1.68												-0.30	0.97
Cales, Jonathon	-0.05	0.34	-0.14	1.03	-1.81												-0.12	1.05
Castillo, George	-0.54	-0.12	-0.66	-0.26	0.03												-0.31	0.29
Clapperty, Leon	1.37	-0.58	-1.07	0.54	0.89												0.23	1.02
Engelskirchen, Jim	1.37	-1.73	1.30	-0.95	0.75												0.15	1.41
Foecking, Brian	0.23	0.85	0.37	0.11	0.49												0.41	0.28
Garcia, Orlando	0.77	-0.30	-0.86	0.20	0.82												0.13	0.72
Greenland, Paul	**-2.01**	1.18	0.48	0.60	0.95												0.24	1.29
Guarda, Waldyr	-0.05	**-3.16**	-1.89	-1.92	-1.74												-1.75	1.11
Hill, Howard	1.81	-0.90	-0.66	-0.40	0.89												0.15	1.16
Hills, Barry	0.23	0.02	-0.24	**2.81**	0.62												0.69	1.23
Kobrinetz, Jack	-0.21	0.67	0.89	0.03	-1.35												0.00	0.88
Lopez, Frank	1.26	0.16	-0.35	0.00	0.56												0.33	0.62
May, Marianne	0.44	0.81	-0.35	-0.11	0.49												0.26	0.47
Narasaki, Keith		1.08	**2.23**														1.66	0.81
Pansza, Mike	-1.30	0.99	-0.76	1.43	-0.10												0.05	1.15
Radonich, Pete	0.39	0.85	0.48	0.03	0.49												0.45	0.29
Rodriguez, Jesse	-0.76	0.02	-0.14	-0.26	0.36												-0.15	0.41
Sanchez, Art	-0.32	-0.12	-0.45	-0.29	-1.81												-0.60	0.69
Shoda, Ron	-0.76	0.07	-0.45	-1.03	0.43												-0.35	0.60
Trevino, Robert	-1.36																-1.36	
Viera, Ralph	-0.76	0.48	**2.02**	-0.26	0.23												0.34	1.05
Yi MAXIMUM	-2.01	-3.16	2.23	2.81	-1.81												-1.75	1.41
Yi MINIMUM	-0.05	-0.12	-0.14	0.00	0.03												-0.12	0.28
Yi MEAN	0.00	0.00	0.00	0.00	0.00													
Yi STD	1.00	1.00	1.00	1.00	1.00													
Ratings MEAN	8.97	9.29	9.45	7.96	5.33													
Ratings STD	0.18	0.22	0.10	0.35	0.15													

November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

	Number of Parts Rated	-1 < yi ≤ 1	-2 < yi ≤ 2	-3 < yi ≤ 3	>3	Yi STD	Group
Barrera, Tony	1	80.0%	100.0%	100.0%	0.0%	0.97	White
Cales, Jonathon	1	60.0%	100.0%	100.0%	0.0%	1.05	White
Castillo, George	1	100.0%	100.0%	100.0%	0.0%	0.29	Blue
Foecking, Brian	1	100.0%	100.0%	100.0%	0.0%	0.28	Blue
Garcia, Orlando	1	100.0%	100.0%	100.0%	0.0%	0.72	Blue
Guarda, Waldyr	1	20.0%	80.0%	80.0%	20.0%	1.11	Yellow
Hills, Barry	1	80.0%	80.0%	100.0%	0.0%	1.23	Yellow
Kobrinetz, Jack	1	80.0%	100.0%	100.0%	0.0%	0.88	White
Sanchez, Art	1	80.0%	100.0%	100.0%	0.0%	0.69	Red
Viera, Ralph	1	80.0%	80.0%	100.0%	0.0%	1.05	Yellow
Avis, Steve	1	80.0%	100.0%	100.0%	0.0%	0.97	White
Clapperty, Leon	1	60.0%	100.0%	100.0%	0.0%	1.02	White
Engelskirchen, Jim	1	40.0%	100.0%	100.0%	0.0%	1.41	Yellow
Greenland, Paul	1	60.0%	80.0%	100.0%	0.0%	1.29	Yellow
Hill, Howard	1	80.0%	100.0%	100.0%	0.0%	1.16	White
Lopez, Frank	1	80.0%	100.0%	100.0%	0.0%	0.62	Red
May, Marianne	1	100.0%	100.0%	100.0%	0.0%	0.47	Blue
Narasaki, Keith	1	0.0%	50.0%	100.0%	0.0%	0.81	Yellow
Pansza, Mike	1	60.0%	100.0%	100.0%	0.0%	1.15	White
Radonich, Pete	1	100.0%	100.0%	100.0%	0.0%	0.29	Blue
Rodriguez, Jesse	1	100.0%	100.0%	100.0%	0.0%	0.41	Blue
Shoda, Ron	1	80.0%	100.0%	100.0%	0.0%	0.60	Red
Trevino, Robert	1	0.0%	100.0%	100.0%	0.0%		Yellow

Group Criteria

	Minimum Number of Parts Rated	Minimum Yi's within 1 STD of mean	Minimum Yi's within 2 STD of mean	Maximum Overall Yi STD	Group Totals	
White	1	60%	90%	1.20	7	30%
Red	1	80%	95%	0.85	3	13%
Blue	1	85%	98%	0.75	6	26%
Yellow	-	-	-	-	7	30%

November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

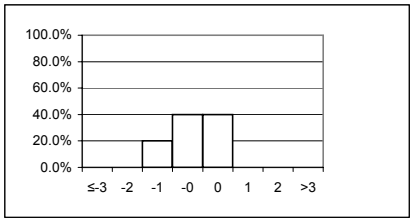
Rater = **Barrera, Tony**

Yi VALUES

	Calibration	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	-0.76	-0.12	0.89	0.14	-1.68													-0.30	0.97
Yi MAXIMUM	-0.76	-0.12	0.89	0.14	-1.68													-0.30	0.97
Yi MINIMUM	-0.76	-0.12	0.89	0.14	-1.68													-0.30	0.97
Yi MEAN	-0.76	-0.12	0.89	0.14	-1.68														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	80.0%
-2 lt yi le -1	1	20.0%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	2	40.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	2	40.0%	>3	0.0%
1 lt yi le 2	0	0.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.97
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

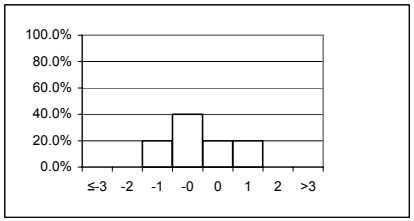
Rater = **Cales, Jonathon**

Yi VALUES

	Calibration	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	-0.05	0.34	-0.14	1.03	-1.81													-0.12	1.05
Yi MAXIMUM	-0.05	0.34	-0.14	1.03	-1.81													-0.12	1.05
Yi MINIMUM	-0.05	0.34	-0.14	1.03	-1.81													-0.12	1.05
Yi MEAN	-0.05	0.34	-0.14	1.03	-1.81														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	60.0%
-2 lt yi le -1	1	20.0%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	2	40.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	1	20.0%	>3	0.0%
1 lt yi le 2	1	20.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	1.05
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: White

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Heavy Duty Rating Workshop - Sludge

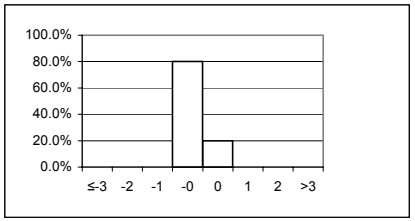
Rater = **Castillo, George**

Yi VALUES

	Calibration	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	-0.54	-0.12	-0.66	-0.26	0.03													-0.31	0.29
Yi MAXIMUM	-0.54	-0.12	-0.66	-0.26	0.03													-0.31	0.29
Yi MINIMUM	-0.54	-0.12	-0.66	-0.26	0.03													-0.31	0.29
Yi MEAN	-0.54	-0.12	-0.66	-0.26	0.03														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	100.0%
-2 lt yi le -1	0	0.0%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	4	80.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	1	20.0%	>3	0.0%
1 lt yi le 2	0	0.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.29
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: Blue

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Heavy Duty Rating Workshop - Sludge

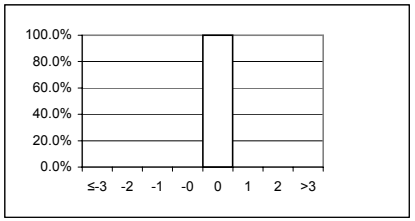
Rater = **Foecking, Brian**

Yi VALUES

	Calibration	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	0.23	0.85	0.37	0.11	0.49													0.41	0.28
Yi MAXIMUM	0.23	0.85	0.37	0.11	0.49													0.41	0.28
Yi MINIMUM	0.23	0.85	0.37	0.11	0.49													0.41	0.28
Yi MEAN	0.23	0.85	0.37	0.11	0.49														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	100.0%
-2 lt yi le -1	0	0.0%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	0	0.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	5	100.0%	>3	0.0%
1 lt yi le 2	0	0.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.28
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: Blue

November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

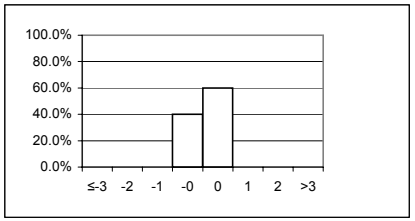
Rater = Garcia, Orlando

Yi VALUES

	Calibration	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	0.77	-0.30	-0.86	0.20	0.82													0.13	0.72
Yi MAXIMUM	0.77	-0.30	-0.86	0.20	0.82													0.13	0.72
Yi MINIMUM	0.77	-0.30	-0.86	0.20	0.82													0.13	0.72
Yi MEAN	0.77	-0.30	-0.86	0.20	0.82														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	100.0%
-2 lt yi le -1	0	0.0%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	2	40.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	3	60.0%	>3	0.0%
1 lt yi le 2	0	0.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.72
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: Blue

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Heavy Duty Rating Workshop - Sludge

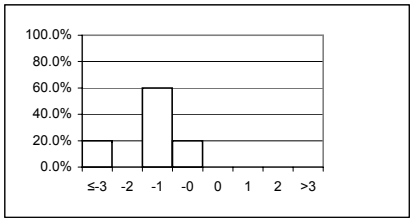
Rater = **Guarda, Waldyr**

Yi VALUES

	Calibra-tion	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	-0.05	-3.16	-1.89	-1.92	-1.74													-1.75	1.11
Yi MAXIMUM	-0.05	-3.16	-1.89	-1.92	-1.74													-1.75	1.11
Yi MINIMUM	-0.05	-3.16	-1.89	-1.92	-1.74													-1.75	1.11
Yi MEAN	-0.05	-3.16	-1.89	-1.92	-1.74														
Yi STD																			

	count	percent		
yi le -3	1	20.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	20.0%
-2 lt yi le -1	3	60.0%	-2 < yi ≤ 2	80.0%
-1 lt yi le 0	1	20.0%	-3 < yi ≤ 3	80.0%
0 lt yi le 1	0	0.0%	>3	20.0%
1 lt yi le 2	0	0.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	1.11
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: Yellow

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Heavy Duty Rating Workshop - Sludge

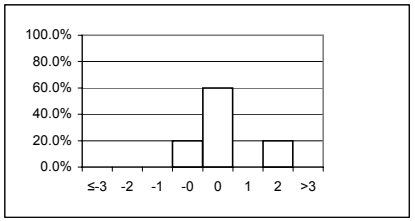
Rater = **Hills, Barry**

Yi VALUES

	Calibra-tion	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	0.23	0.02	-0.24	**2.81**	0.62													0.69	1.23
Yi MAXIMUM	0.23	0.02	-0.24	**2.81**	0.62													0.69	1.23
Yi MINIMUM	0.23	0.02	-0.24	**2.81**	0.62													0.69	1.23
Yi MEAN	0.23	0.02	-0.24	**2.81**	0.62														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	80.0%
-2 lt yi le -1	0	0.0%	-2 < yi ≤ 2	80.0%
-1 lt yi le 0	1	20.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	3	60.0%	>3	0.0%
1 lt yi le 2	0	0.0%		
2 lt yi le 3	1	20.0%	Overall Yi STD	1.23
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: Yellow

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November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

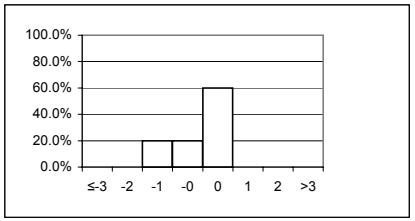
Rater = **Kobrinetz, Jack**

Yi VALUES

	Calibration	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	-0.21	0.67	0.89	0.03	-1.35													0.00	0.88
Yi MAXIMUM	-0.21	0.67	0.89	0.03	-1.35													0.00	0.88
Yi MINIMUM	-0.21	0.67	0.89	0.03	-1.35													0.00	0.88
Yi MEAN	-0.21	0.67	0.89	0.03	-1.35														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	80.0%
-2 lt yi le -1	1	20.0%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	1	20.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	3	60.0%	>3	0.0%
1 lt yi le 2	0	0.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.88
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

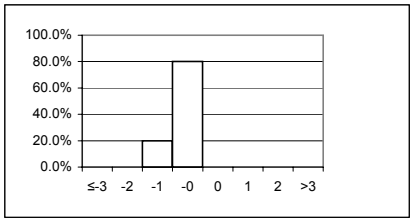
Rater = **Sanchez, Art**

Yi VALUES

	Calibration	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	-0.32	-0.12	-0.45	-0.29	-1.81													-0.60	0.69
Yi MAXIMUM	-0.32	-0.12	-0.45	-0.29	-1.81													-0.60	0.69
Yi MINIMUM	-0.32	-0.12	-0.45	-0.29	-1.81													-0.60	0.69
Yi MEAN	-0.32	-0.12	-0.45	-0.29	-1.81														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	80.0%
-2 lt yi le -1	1	20.0%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	4	80.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	0	0.0%	>3	0.0%
1 lt yi le 2	0	0.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.69
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: Red

November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

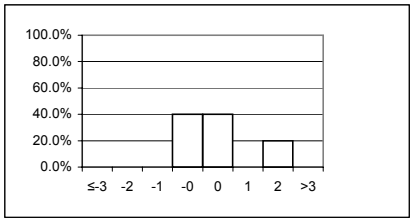
Rater = Viera, Ralph

Yi VALUES

	Calibra-tion	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	-0.76	0.48	2.02	-0.26	0.23													0.34	1.05
Yi MAXIMUM	-0.76	0.48	2.02	-0.26	0.23													0.34	1.05
Yi MINIMUM	-0.76	0.48	2.02	-0.26	0.23													0.34	1.05
Yi MEAN	-0.76	0.48	2.02	-0.26	0.23														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	80.0%
-2 lt yi le -1	0	0.0%	-2 < yi ≤ 2	80.0%
-1 lt yi le 0	2	40.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	2	40.0%	>3	0.0%
1 lt yi le 2	0	0.0%		
2 lt yi le 3	1	20.0%	Overall Yi STD	1.05
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: Yellow

3:42 PM 11/13/2007

November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

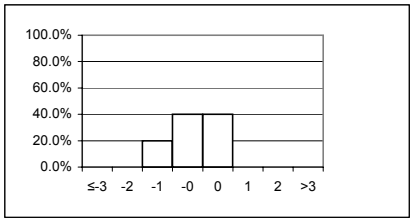
Rater = **Avis, Steve**

Yi VALUES

	Calibra-tion	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	0.99	-0.49	-0.66	-1.46	0.49													-0.22	0.97
Yi MAXIMUM	0.99	-0.49	-0.66	-1.46	0.49													-0.22	0.97
Yi MINIMUM	0.99	-0.49	-0.66	-1.46	0.49													-0.22	0.97
Yi MEAN	0.99	-0.49	-0.66	-1.46	0.49														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	80.0%
-2 lt yi le -1	1	20.0%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	2	40.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	2	40.0%	>3	0.0%
1 lt yi le 2	0	0.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.97
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

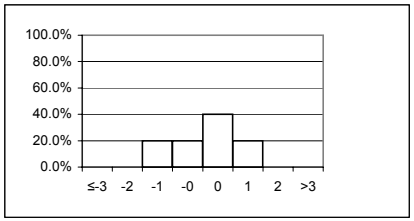
Rater = **Clapperty, Leon**

Yi VALUES

	Calibra-tion	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	1.37	-0.58	-1.07	0.54	0.89													0.23	1.02
Yi MAXIMUM	1.37	-0.58	-1.07	0.54	0.89													0.23	1.02
Yi MINIMUM	1.37	-0.58	-1.07	0.54	0.89													0.23	1.02
Yi MEAN	1.37	-0.58	-1.07	0.54	0.89														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	60.0%
-2 lt yi le -1	1	20.0%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	1	20.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	2	40.0%	>3	0.0%
1 lt yi le 2	1	20.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	1.02
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

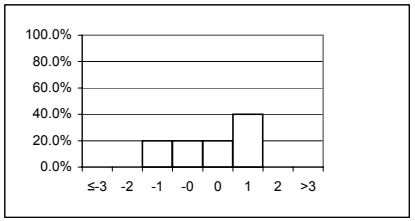
Rater = **Engelskirchen, Jim**

Yi VALUES

	Calibra-tion	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	1.37	-1.73	1.30	-0.95	0.75													0.15	1.41
Yi MAXIMUM	1.37	-1.73	1.30	-0.95	0.75													0.15	1.41
Yi MINIMUM	1.37	-1.73	1.30	-0.95	0.75													0.15	1.41
Yi MEAN	1.37	-1.73	1.30	-0.95	0.75														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	40.0%
-2 lt yi le -1	1	20.0%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	1	20.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	1	20.0%	>3	0.0%
1 lt yi le 2	2	40.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	1.41
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: Yellow

November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

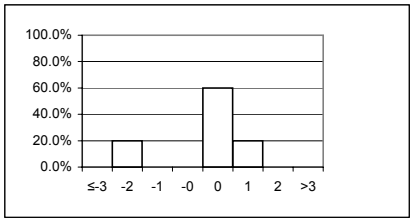
Rater = **Greenland, Paul**

Yi VALUES

	Calibration	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	-2.01	1.18	0.48	0.60	0.95													0.24	1.29
Yi MAXIMUM	-2.01	1.18	0.48	0.60	0.95													0.24	1.29
Yi MINIMUM	-2.01	1.18	0.48	0.60	0.95													0.24	1.29
Yi MEAN	-2.01	1.18	0.48	0.60	0.95														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	1	20.0%	-1 < yi ≤ 1	60.0%
-2 lt yi le -1	0	0.0%	-2 < yi ≤ 2	80.0%
-1 lt yi le 0	0	0.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	3	60.0%	>3	0.0%
1 lt yi le 2	1	20.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	1.29
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: Yellow

November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

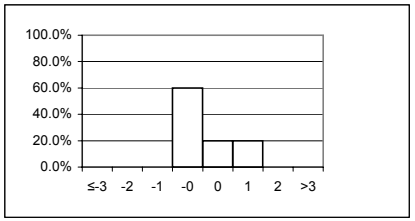
Rater = Hill, Howard

Yi VALUES

	Calibration	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	1.81	-0.90	-0.66	-0.40	0.89													0.15	1.16
Yi MAXIMUM	1.81	-0.90	-0.66	-0.40	0.89													0.15	1.16
Yi MINIMUM	1.81	-0.90	-0.66	-0.40	0.89													0.15	1.16
Yi MEAN	1.81	-0.90	-0.66	-0.40	0.89														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	80.0%
-2 lt yi le -1	0	0.0%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	3	60.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	1	20.0%	>3	0.0%
1 lt yi le 2	1	20.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	1.16
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

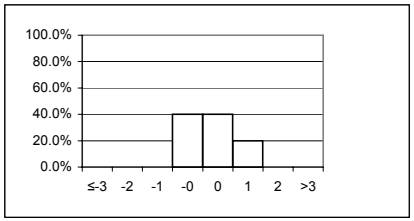
Rater = **Lopez, Frank**

Yi VALUES

	Calibra-tion	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	1.26	0.16	-0.35	0.00	0.56													0.33	0.62
Yi MAXIMUM	1.26	0.16	-0.35	0.00	0.56													0.33	0.62
Yi MINIMUM	1.26	0.16	-0.35	0.00	0.56													0.33	0.62
Yi MEAN	1.26	0.16	-0.35	0.00	0.56														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	80.0%
-2 lt yi le -1	0	0.0%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	2	40.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	2	40.0%	>3	0.0%
1 lt yi le 2	1	20.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.62
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: Red

November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

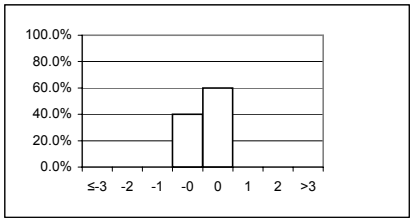
Rater = **May, Marianne**

Yi VALUES

	Calibration	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	0.44	0.81	-0.35	-0.11	0.49													0.26	0.47
Yi MAXIMUM	0.44	0.81	-0.35	-0.11	0.49													0.26	0.47
Yi MINIMUM	0.44	0.81	-0.35	-0.11	0.49													0.26	0.47
Yi MEAN	0.44	0.81	-0.35	-0.11	0.49														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	100.0%
-2 lt yi le -1	0	0.0%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	2	40.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	3	60.0%	>3	0.0%
1 lt yi le 2	0	0.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.47
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: Blue

November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

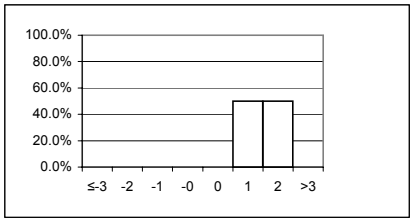
Rater = Narasaki, Keith

Yi VALUES

	Calibra-tion	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge		1.08	2.23															1.66	0.81
Yi MAXIMUM		1.08	2.23															1.66	0.81
Yi MINIMUM		1.08	2.23															1.66	0.81
Yi MEAN		1.08	2.23																
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	0.0%
-2 lt yi le -1	0	0.0%	-2 < yi ≤ 2	50.0%
-1 lt yi le 0	0	0.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	0	0.0%	>3	0.0%
1 lt yi le 2	1	50.0%		
2 lt yi le 3	1	50.0%	Overall Yi STD	0.81
3 lt yi	0	0.0%		
total	2	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: Yellow

3:42 PM 11/13/2007

November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

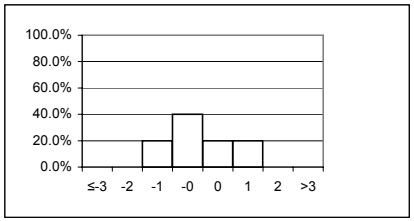
Rater = **Pansza, Mike**

Yi VALUES

	Calibration	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	-1.30	0.99	-0.76	1.43	-0.10													0.05	1.15
Yi MAXIMUM	-1.30	0.99	-0.76	1.43	-0.10													0.05	1.15
Yi MINIMUM	-1.30	0.99	-0.76	1.43	-0.10													0.05	1.15
Yi MEAN	-1.30	0.99	-0.76	1.43	-0.10														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	60.0%
-2 lt yi le -1	1	20.0%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	2	40.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	1	20.0%	>3	0.0%
1 lt yi le 2	1	20.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	1.15
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: White

November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

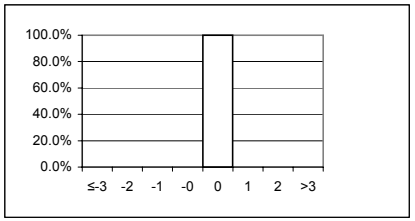
Rater = Radonich, Pete

Yi VALUES

	Calibration	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	0.39	0.85	0.48	0.03	0.49													0.45	0.29
Yi MAXIMUM	0.39	0.85	0.48	0.03	0.49													0.45	0.29
Yi MINIMUM	0.39	0.85	0.48	0.03	0.49													0.45	0.29
Yi MEAN	0.39	0.85	0.48	0.03	0.49														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	100.0%
-2 lt yi le -1	0	0.0%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	0	0.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	5	100.0%	>3	0.0%
1 lt yi le 2	0	0.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.29
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: Blue

November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

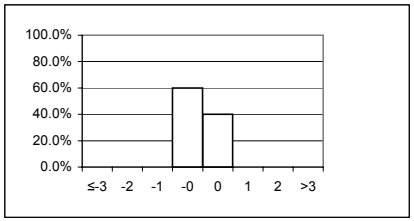
Rater = **Rodriguez, Jesse**

Yi VALUES

	Calibra-tion	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	-0.76	0.02	-0.14	-0.26	0.36													-0.15	0.41
Yi MAXIMUM	-0.76	0.02	-0.14	-0.26	0.36													-0.15	0.41
Yi MINIMUM	-0.76	0.02	-0.14	-0.26	0.36													-0.15	0.41
Yi MEAN	-0.76	0.02	-0.14	-0.26	0.36														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	100.0%
-2 lt yi le -1	0	0.0%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	3	60.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	2	40.0%	>3	0.0%
1 lt yi le 2	0	0.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.41
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: Blue

November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

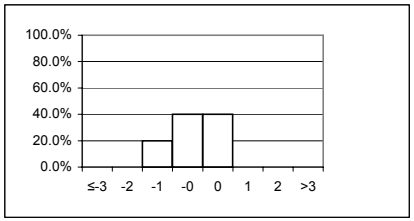
Rater = **Shoda, Ron**

Yi VALUES

	Calibra-tion	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	-0.76	0.07	-0.45	-1.03	0.43													-0.35	0.60
Yi MAXIMUM	-0.76	0.07	-0.45	-1.03	0.43													-0.35	0.60
Yi MINIMUM	-0.76	0.07	-0.45	-1.03	0.43													-0.35	0.60
Yi MEAN	-0.76	0.07	-0.45	-1.03	0.43														
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	80.0%
-2 lt yi le -1	1	20.0%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	2	40.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	2	40.0%	>3	0.0%
1 lt yi le 2	0	0.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	0.60
3 lt yi	0	0.0%		
total	5	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: Red

November 5-9, 2007

Heavy Duty Rating Workshop - Sludge

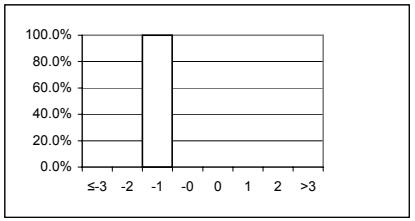
Rater = **Trevino, Robert**

Yi VALUES

	Calibration	ISB Pan	ISB Cover	ISM Pan	ISM Cover													MEAN	STD
Sludge	-1.36																	-1.36	
Yi MAXIMUM	-1.36																	-1.36	
Yi MINIMUM	-1.36																	-1.36	
Yi MEAN	-1.36																		
Yi STD																			

	count	percent		
yi le -3	0	0.0%		
-3 lt yi le -2	0	0.0%	-1 < yi ≤ 1	0.0%
-2 lt yi le -1	1	100.0%	-2 < yi ≤ 2	100.0%
-1 lt yi le 0	0	0.0%	-3 < yi ≤ 3	100.0%
0 lt yi le 1	0	0.0%	>3	0.0%
1 lt yi le 2	0	0.0%		
2 lt yi le 3	0	0.0%	Overall Yi STD	
3 lt yi	0	0.0%		
total	1	100.0%	Parts Rated	1

Yi distribution (excluding shaded columns)



Group: Yellow