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June 14, 1989

Mr. Joel Monnier
Vice President Manufacturing
SGS-Thomson Microelectronics
17 Avenue des Martyrs - BP 217
38019 Grenoble cedex
France

Dear Mr. Monnier:

Enclosed is the Multi-Client Productivity Study of which you were a participant. We regret that we are late in sending you the results of the study, but we hope that you will find the study of great value to you.

Concerning the delay, we had hoped to have all of the data submitted to Price Waterhouse by the end of 1988 to enable us to meet our targeted goals. However, some participants were late in sending in their data, and the data was not complete to Price Waterhouse until the end of February. Further, when we begin to work with the data we found errors and twice we had to go back to Price Waterhouse to correct the data. It was not until after mid-March when we had complete and totally correct data.

In addition, the shear magnitude of the data reported caused us additional delays. Also, the data reported by the participants was not uniform and in some cases incomplete, and hence we were not able to do all of the analysis that we intended. I do not mention these delays to make excuses, but only to point out that, with this type of study, which was the first of its kind ever, we were breaking new ground and inevitably unforeseen obstacles crept up.

We feel we have learned greatly from this project, and the groundwork has been made for the smooth execution of future projects of this nature. We believe that we can execute future studies with a clearer definition, sense of goals, and more precise timing.

We believe that this study contains very valuable information on semiconductor manufacturing productivity in general, and in particular, to each of the participants who can now compare their individual results against the average. We also believe that this pioneering study is just the beginning, and the tip of the iceberg of the subject of semiconductor manufacturing, a subject the knowledge of which is woefully inadaquate. Because of our involvement in this project we have many ideas on future projects that can provide meaningful data on the topic of semiconductor manufacuturing.

Dataquest thanks you for your participation in this project, and we would gratefully appreciate your feedback on the enclosed report.

Best Regards,

Joe Grenier
Director
Semiconductor Equipment
and Materials Service

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DATAQUEST

MULTI-CLIENT EQUIPMENT PRODUCTIVTY STUDY

June 15, 1989

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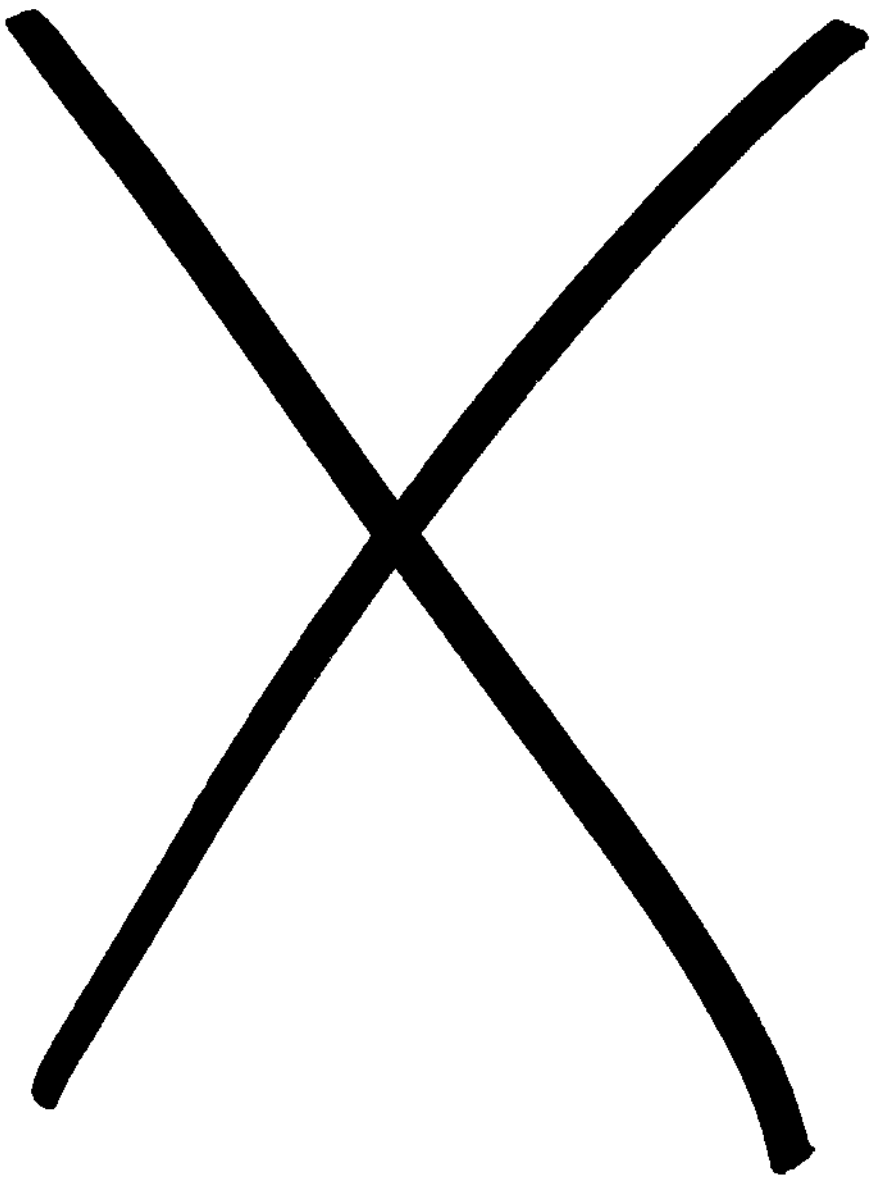

INTRODUCTION

THE STUDY

The Multi-Client Productivity Study consists of three main sections, plus an Appendix. The three main sections cover the following topics: semiconductor processing equipment performance in the fab; semiconductor processing equipment failure analysis; and a wafer-out cost structure analysis.

THE PARTICIPANTS

This report is the result of a multi-client consulting project between Dataquest and the participating semiconductor companies. The participants include:

DELCO
DIGITAL EQUIPMENT CORPORATION
HYUNDAI
IBM
NATIONAL SEMICONDUCTOR
SGS/THOMSON
TEXAS INSTRUMENTS
UNITED MICROELECTRONIC CORPORATION
VLSI TECHNOLOGY
WESTERN DIGITAL

THE METHODOLOGY

Each participant was given a questionnaire to distribute to its participating fabs. The number of such fabs that participated in the study was 20.

The completed questionnaires were returned to Price Waterhouse where the data was compiled, sorted, and checked for confidentiality. Price Waterhouse then sent the data on to Dataquest for the preparation of this report.

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THE REPORT'S STRUCTURE

Equipment Performance

Equipment performance was measured by the following parameters:

- AVAILABLE TIME
- PRODUCTIVE TIME
- UNSCHEDULED DOWNTIME
- SCHEDULED DOWNTIME
- MEAN-TIME BETWEEN FAILURE
- MEAN-TIME TO REPAIR
- MEAN-TIME BETWEEN SET-UP
- MEAN-TIME FOR SET-UP
- MEAN-TIME BETWEEN MAINTENANCE
- MEAN-TIME FOR MAINTENANCE
- RATED THROUGHPUT
- MAXIMUM FAB THROUGHPUT
- ACTUAL-TO-RATED THROUGHPUT
- NET THROUGHPUT
- NET TO MAXIMUM THROUGHPUT

This report summarizes the above parameters by the following:

- SUMMARY DATA
- PRODUCTS
- TECHNOLOGY
- LINE GEOMETRIES

Complete data for all equipment types by manufacturer is found in the appendix of this report. The appendix reports on the above performance parameters by the following sorts: by products, technology, number of mask levels, minimum line geometries, number of equipment engineers in the fab, maintenance as a percent of total wafer-out cost, the presence or absence of financial incentives in the purchase contract, the presence or absence of equipment modifications, the number of process engineers in the fab, the number of process flows in the fab, the level of training of the equipment operators, and the level of capacity utilization of the fab.

Cost Structure

The major cost elements in this report include: maintenance, facilities, silicon, direct labor, other materials, depreciation, and overhead. These cost elements are reported on by products produced in the fab, technology, minimum line geometry, capacity utilization, and plant size.

Failure Analysis

Respondents were asked to report their major causes of equipment failure by model number by equipment type. The results of this survey are reported in the Failure Analysis of this report.

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Appendix Data

The appendix of this report contains equipment performance data, both for summary data and for the following parameters sorts:

PRODUCTS
TECHNOLOGY
THE PRESENCE OR ABSENCE OF FINANCIAL INCENTIVES IN PURCHASE CONTRACT
THE NUMBER OF EQUIPMENT ENGINEERS IN THE FAB
LINE GEOMETRIES
MASK LEVELS
TRAINING LEVEL OF OPERATORS
MAINTENANCE COST AS A PERCENT OF TOTAL COST
THE PRESENCE OR ABSENCE OF EQUIPMENT MODIFICATIONS
THE NUMBER OF PROCESS ENGINEERS IN THE FAB
THE NUMBER OF PROCESS FLOWS
CAPACITY UTILIZATION

The appendix also contains a list of all definitions used in the report, and a list and count of items that are included in respondent's definition of corporate overhead.

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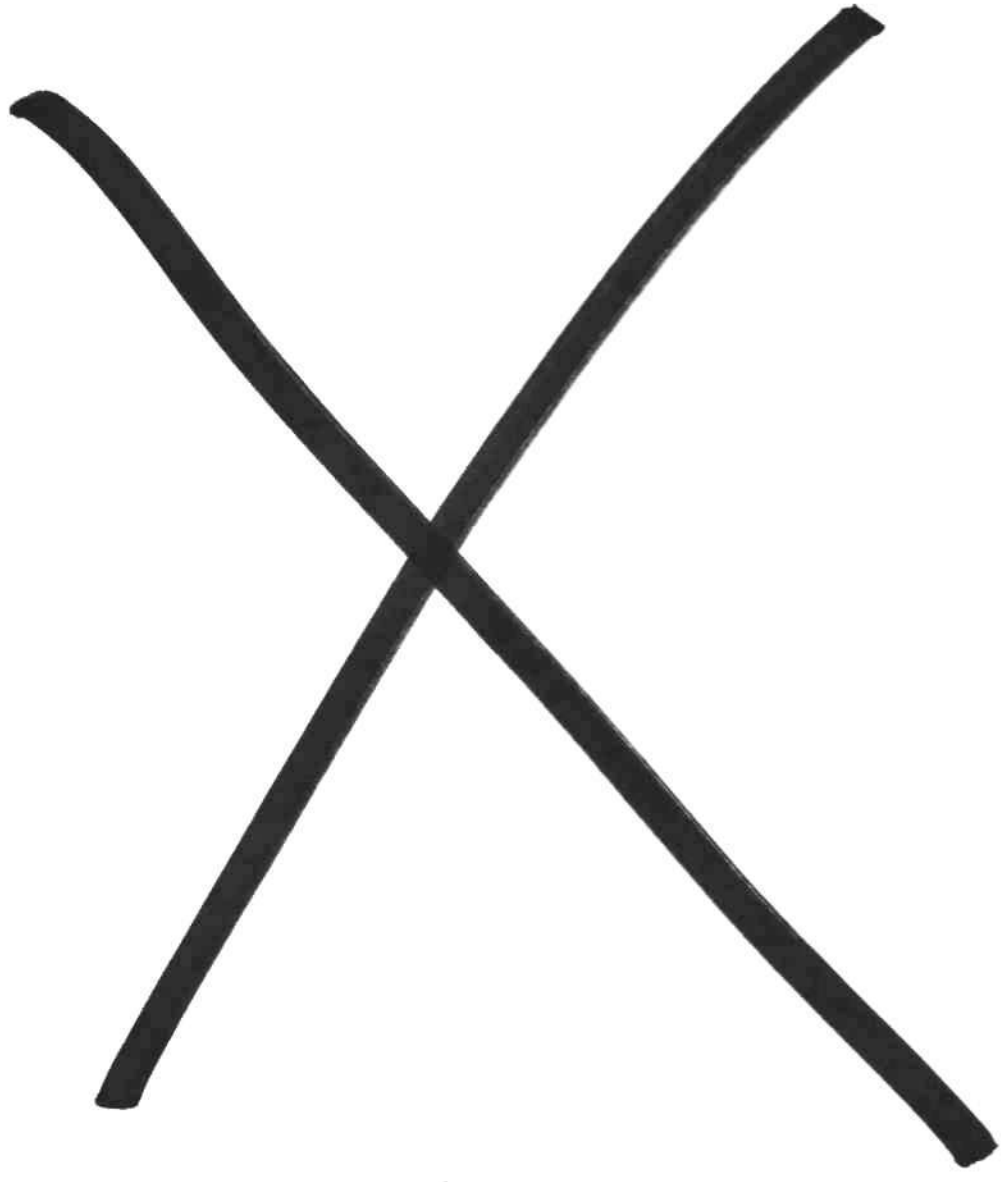

EXECUTIVE SUMMARY

The major sections of this report include the equipment performance section, the cost structure section, and the failure analysis section. This summary will present the highlights of each of the above sections.

EQUIPMENT PERFORMANCE

Please note that the following comments are for summary data only. Summary data is data that cuts across all categories and is not sorted by products, technology, minimum line geometries, etc.

Available Time

Available time ranged from a low of 67 percent for all epi reactors to a high of 91 percent for track equipment. Across all equipment types, available time averaged 80 percent.

Unscheduled Downtime

With the exception of ion implanters, unscheduled downtime tended to stay between 100 to 200 hours per quarter, with an average of 160 hours. Ion implanters had an unscheduled downtime that was 43 percent higher than any other equipment type. Across all equipment types, unscheduled downtime showed less variability than scheduled downtime. This is to be expected since, as unscheduled downtime is much more disruptive to the manufacturing process, the industry has been focusing on bringing down this number.

Scheduled Downtime

Scheduled downtime, as mentioned previously, showed much more variability than unscheduled downtime. Scheduled downtime ranged from a low of 48 hours per quarter for track equipment to a high of 268 hours per quarter for PVD equipment. The average across all equipment types was 120 hours per quarter. In the cases of PVD, epi reactors, and diffusion equipment, scheduled downtime exceeded unscheduled downtime.

Actual Throughput/Rated Throughput

Actual-to-rated throughput varied from a low of 41 percent for wet processing equipment to a high of 135 percent for epi reactors. The average across all equipment types is 75 percent. In other words, performance in the fab is about three-fourths of what vendors claim that it will be.

Maximum Fab Throughput (4-inch Equivalents)

Maximum fab throughput is throughput in the fab which has not been discounted for unavailable time. Maximum fab throughput ranged from a low of 10 wafers per hour for epi reactors to a high of 113 wafer per hour for wet processing equipment. The average across all categories is 56 wafers per hour.

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Net Fab Throughput (4-inch Equivalents)

Net fab throughput, which is a measure of throughput that is discounted for unavailable time, is the best measure of equipment performance in the fab. Across all types of equipment net throughput averaged 46 wafers, or 82 percent of the maximum fab throughput. Measured against rated throughput, net fab throughput, averaged across all equipment types, is 62 percent of rated throughput.

COST STRUCTURE

Of all the major cost categories, manufacturing overhead is the largest component of wafer-out cost ranging from a low of 18 percent to a high of 38 percent. Equipment depreciation was the next largest component of total wafer-out cost, ranging from a low of 8 percent to a high of 21 percent.

Maintenance and facilities were, on the average, the two smallest components of total wafer-out costs. Maintenance ranged from a low of 3 percent to a high of 12 percent. Facilities ranged from a low of 1 percent to a high of 15 percent.

Silicon cost was the most stable of all cost elements, averaging 10 percent of total wafer-out costs.

By Product Family

Logic, MPUs and ASICs have similar cost structures. Memory products, however, have different structures: a smaller percentage of their costs are allocated to maintenance and facilities. Memories also have a much higher percentage of their costs allocated to depreciation than do logic, MPUs, or ASICs.

Cost Structure By Technology

CMOS and NMOS have similar cost structures. Bipolar, however, has a much higher facility cost (10 percent versus 5 percent for CMOS and NMOS). Depreciation as a percent of total wafer-out cost is also less for production of bipolar devices.

Cost Structure By Line Geometry

Maintenance and facilities as percent of total cost tend to decrease as line geometries decrease. Depreciation and overhead tend to increase as as line geometries decrease.

Cost Structure By Plant Utilization

Maintenance, facilities, direct labor, and even silicon, decreased as a percent of total wafer cost as plant or capacity utilization increased. Depreciation and overhead, on the other hand, tended to increase with utilization rates.

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Cost Structure By Plant Size

Maintenance costs as a percent of total wafer-out cost increase as plant size increases. Facility costs for large plants, between 20,000 and 50,000 square feet, are much higher as a percent of total wafer-out cost than for smaller plants. Costs for facilities between 20,000 and 50,000 square feet were 15 percent of total costs -- three times the facility percentage for facilities of less than 12,000 square feet.

The percentage of cost devoted to direct labor also tended to increase as plant size increased. Depreciation costs and overhead costs, however, tended to decrease as plant size increased.

FAILURE ANALYSIS

Respondents were asked to report their major causes of equipment failure by model number by equipment type. The results of this survey are reported in the Failure Analysis of this report. Due to the incompleteness of the responses to these questions, no analysis of this data is presented.

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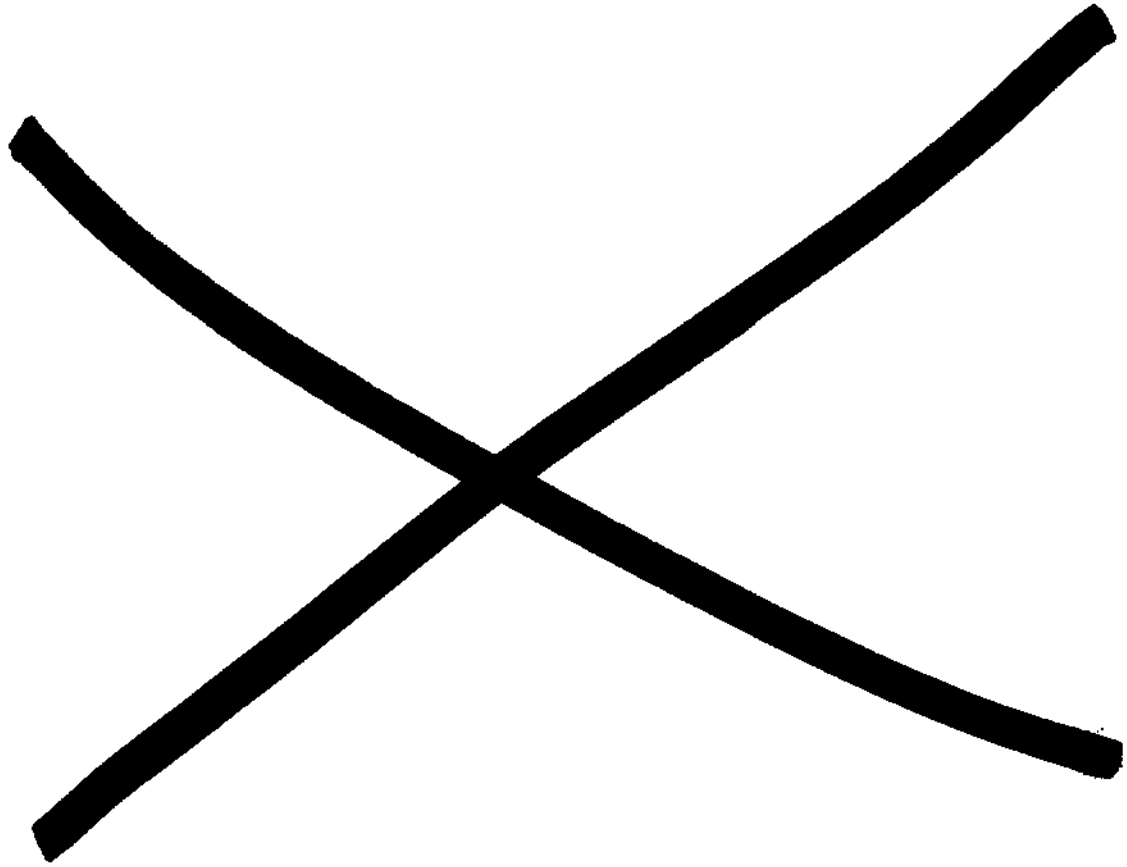
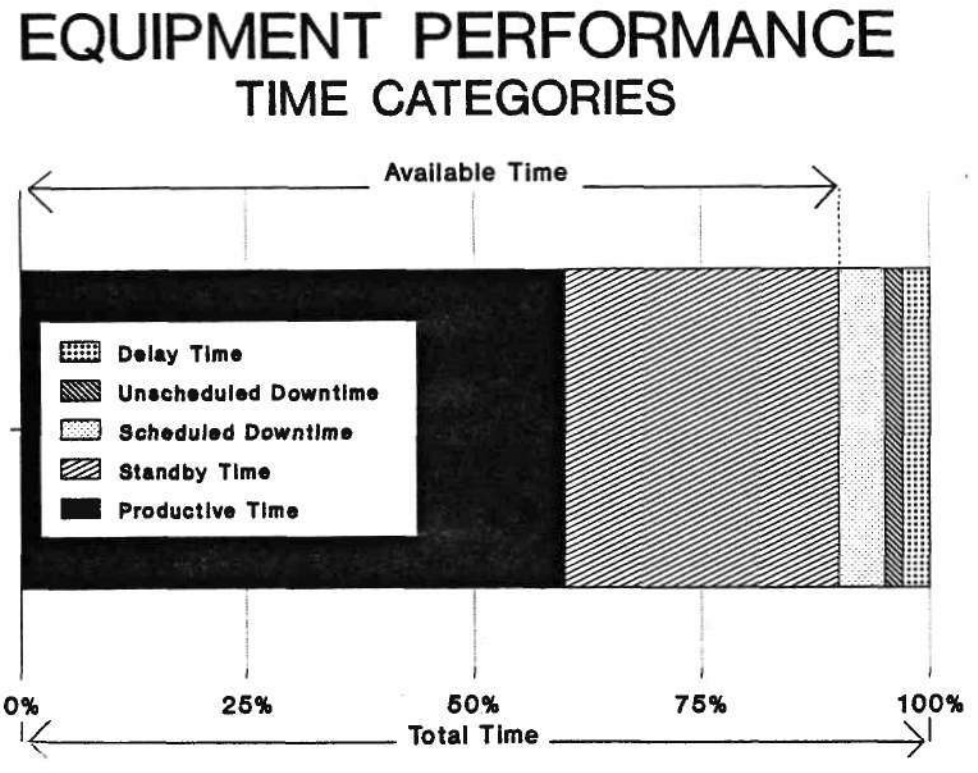


EQUIPMENT PERFORMANCE: ALL FABS
SUMMARY EQUIPMENT PERFORMANCE

This chapter summarizes equipment performance by equipment type from all fabs in our survey. The data is from all equipment vendors covered in our survey, and represents weighted averages for each equipment category. Raw data is available in the appendix of this report. Summary data has not been sorted by semiconductor products, technology, line geometry, or any other fab characteristic.

DEFINITIONS

Complete definitions of performance parameters are given in the appendix of this report. Shorter definitions of available time, productive time, rated throughput, maximum fab throughput, actual-to-rated throughput, net throughput, and net-to-maximum fab throughput are given in the accompanying tables. A pictorial view of the relationship between total time, available time, and productive time is shown in the following figure:



Please note that in the accompanying table and graphs that productive time is expressed as a percentage of available time, not as a percentage of total time. Productive time as a percentage of available time is a measure of scheduling efficiency.

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Rated throughput, expressed in 4-inch equivalents, is what respondents reported that equipment vendors claimed their throughput to be.

Maximum fab throughput, on the other hand, is a measure of how the equipment actually performs in the fab. The maximum fab throughput was calculated by dividing the total number of wafers out in a quarter by the total number of productive hours in that quarter.

The maximum fab throughput is a measure of equipment performance when the equipment is actually running wafers. However, because of scheduled and unscheduled downtime and delay time, net throughput is less than the maximum fab throughput.

In other words, to measure an equipment's potential performance, one must take into account the non-available time of the equipment.

We do this in this report by multiplying the maximum fab throughput by the percentage of available time. This is termed "net throughput," and is a measure of equipment's potential output that does take into account the scheduled, unscheduled downtimes, and delay times. For example, assume the following:

Maximum fab throughput = 50 wafers per hour.
Available time = 80 percent.
Then the available hours per day would be:
0.80 x 24 hours = 19.2 hours.
The potential output per day, assuming no standby time, would be:
50 wafers per hour x 19.2 hours
= 960 wafers per day.

We get the same result by multiplying net throughput by 24 hours:
Maximum fab throughput = 50 wafers per hour.
Available time = 80 percent.
Therefore, net throughput is:
0.80 x 50 wafers per hour
= 40 wafers per hour;
and, wafers per day, assuming no standby time, would be:
40 wafers per hour x 24 hours per day:
= 960 wafers per day.

Net throughput measures those variables that are under the equipment vendor's control. These variables are scheduled downtime, unscheduled downtime, and delay time, which, when subtracted from total time, equal available time. Productive time, on the other hand, is not a variable that the equipment vendor can control; it is, rather, a variable under the control of the fab.

Net throughput ranged from a low of seven, 4-inch equivalent wafers per hour for epi reactors to a high of ninety-eight 4-inch equivalent wafers per hour for wet processing equipment.

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SUMMARY EQUIPMENT PERFORMANCE

ITEM	PERFORMANCE PARAMETER	TRACK	ALIGN	STEP WET	PROC	ETCH	CVD	PVD	EPI	DIFF	IMPLANT
1	NUMBER	226	107	81	85	144	87	46	18	209	56
2	AVAILABLE TIME (% of total time)	91%	78%	83%	87%	83%	78%	69%	67%	87%	72%
3	PRODUCTIVE TIME (% of available time)	78%	86%	81%	89%	65%	76%	76%	75%	66%	73%
4	UNSCHEDULED DOWNTIME (hours/quarter)	100	147	167	110	193	182	177	169	79	277
5	SCHEDULED DOWNTIME (hours/quarter)	48	105	95	84	57	97	265	220	112	159
6	MTBF (hrs)	107	73	96	180	108	136	83	64	566	36
7	MTTR (hrs)	3	7	6	5	8	24	8	7	26	7
8	MTBS (hrs)	60	57	113	138	80	99	23	22	199	27
9	MTFS (hrs)	2	1	3	1	5	3	21	1	17	2
10	MTBM (hrs)	205	55	227	338	291	198	197	215	283	98
11	MTFM (hrs)	8	3	3	3	12	7	14	5	19	8
12	RATED THROUGHPUT (wafers/hr: 4" equiv)	66	79	53	276	74	78	55	8	100	123
13	MAX. FAB THROUGHPUT (wafers/hr: 4" equiv)	51	53	41	113	48	57	45	10	67	77
14	ACTUAL/RATED (item #13/item #12)	0.77	0.68	0.77	0.41	0.64	0.73	0.82	1.35	0.67	0.62
15	NET THROUGHPUT (wafers/hr: item #13 x item #2)	46	41	34	98	40	46	31	7	58	56
16	NET/MAX FAB T.P. (item # 15/item # 13)	90%	78%	83%	86%	84%	80%	68%	71%	88%	73%

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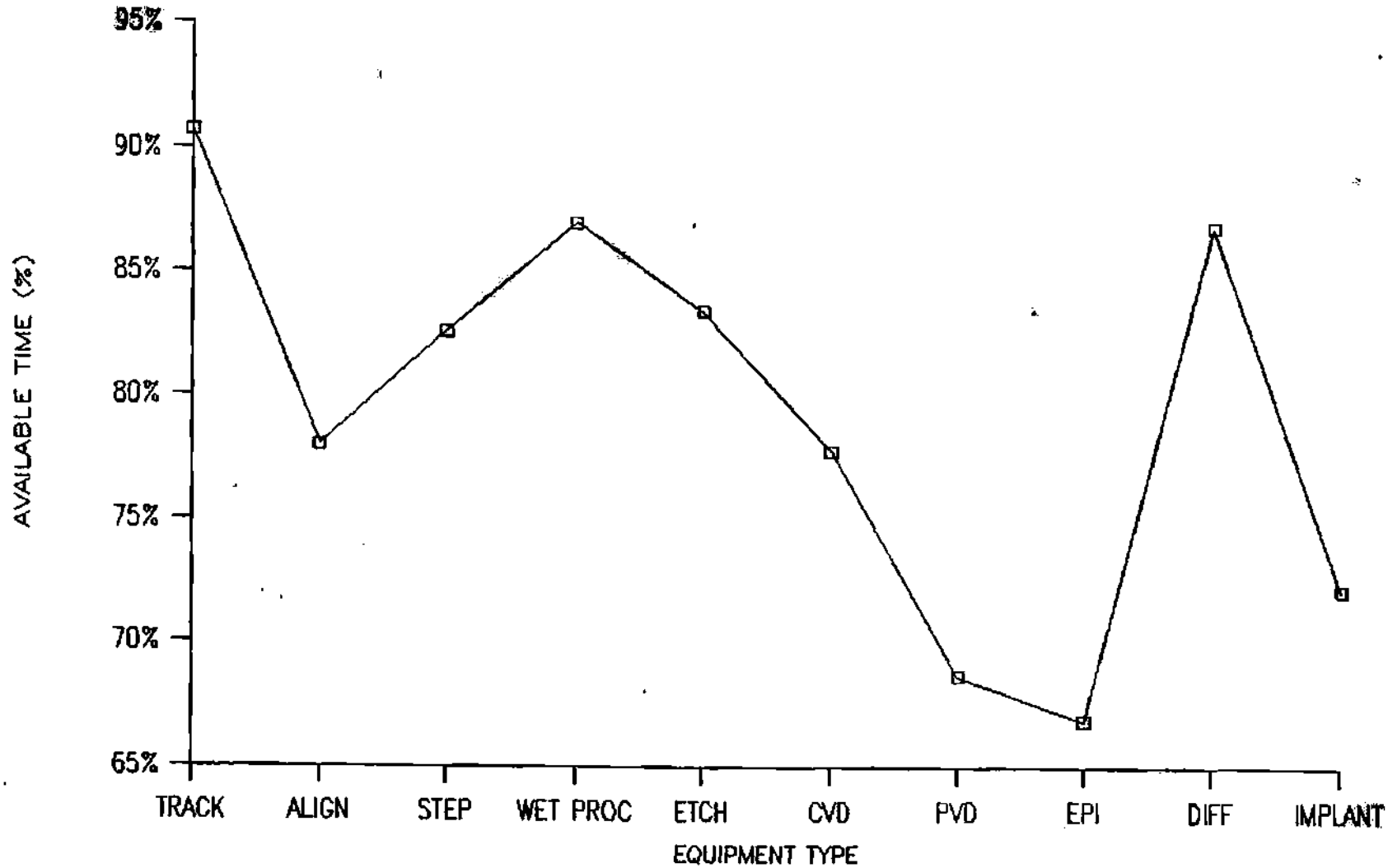
AVAILABLE TIME: ALL VENDORS

SUMMARY DATA



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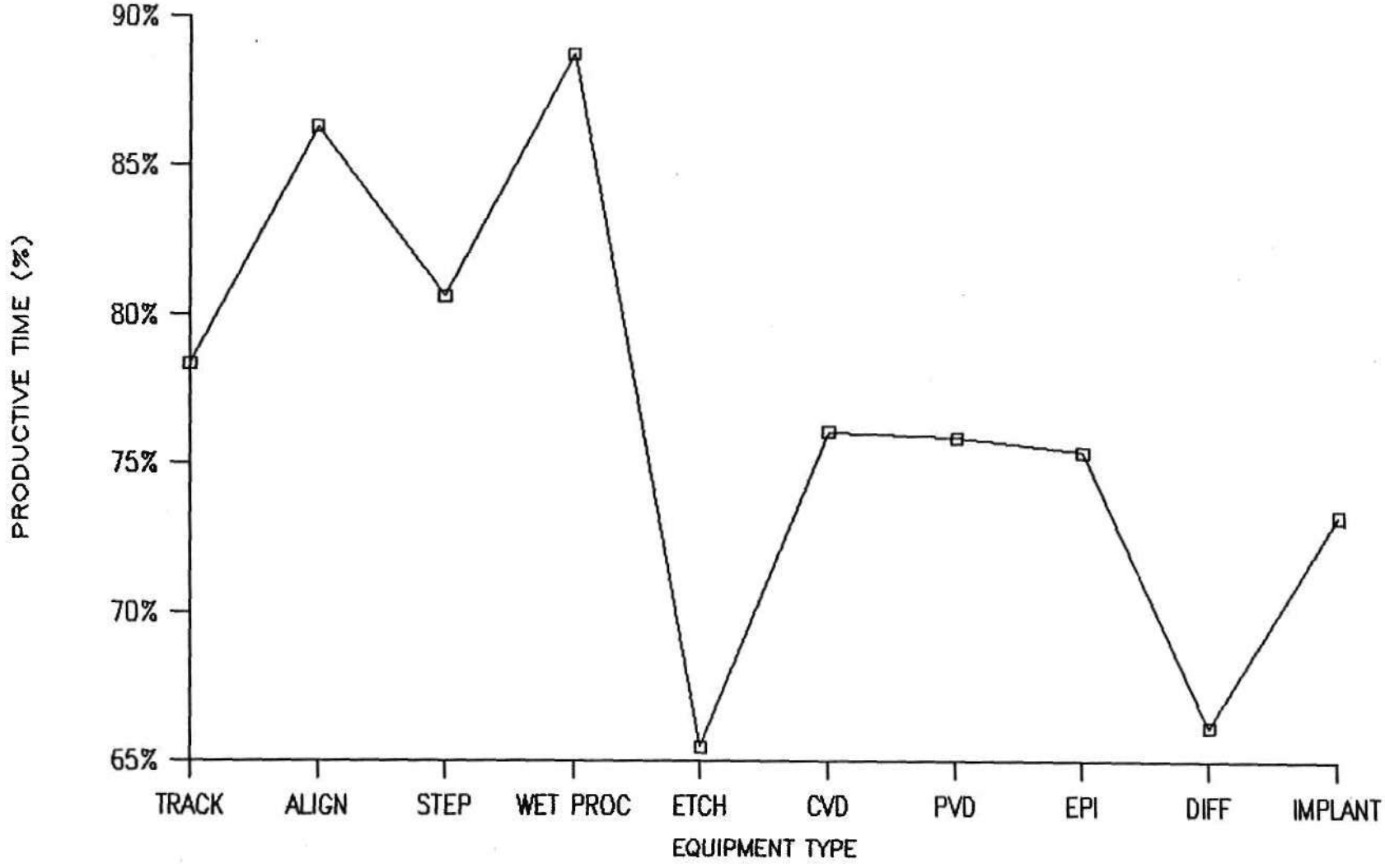
PRODUCTIVE TIME: ALL VENDORS

SUMMARY DATA



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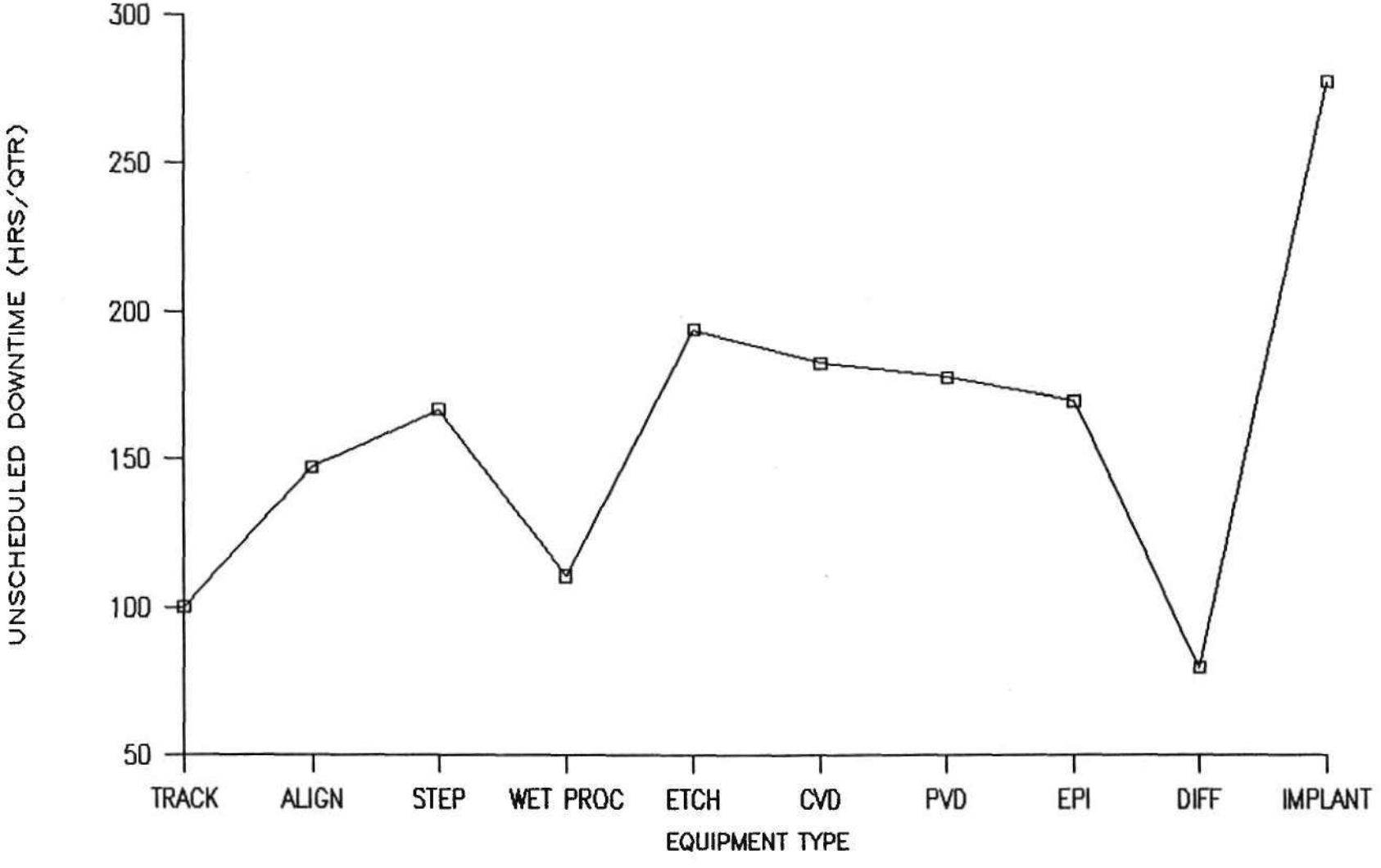
UNSCHEDULED DOWNTIME: ALL VENDORS

SUMMARY DATA



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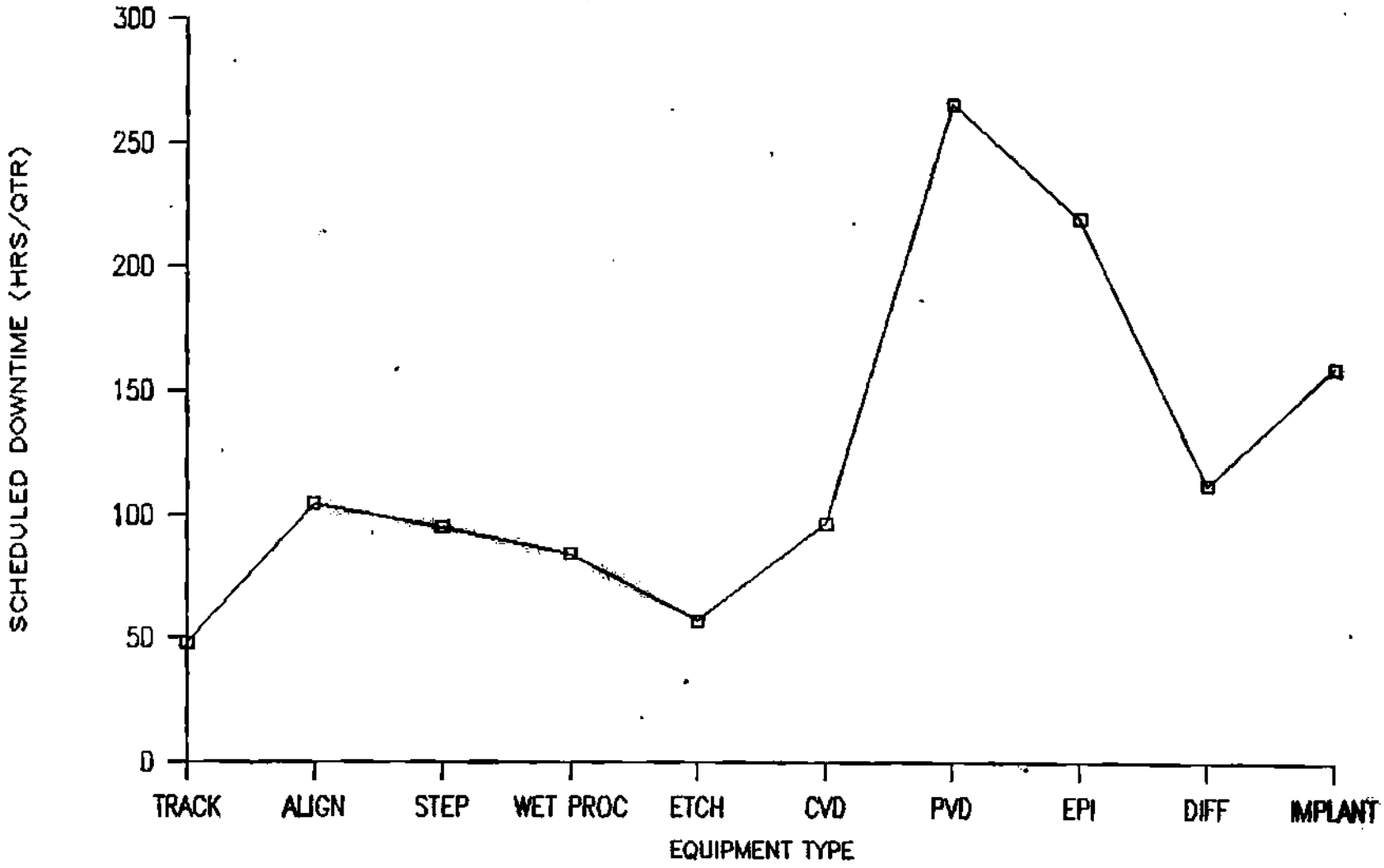
SCHEDULED DOWNTIME: ALL VENDORS

SUMMARY DATA



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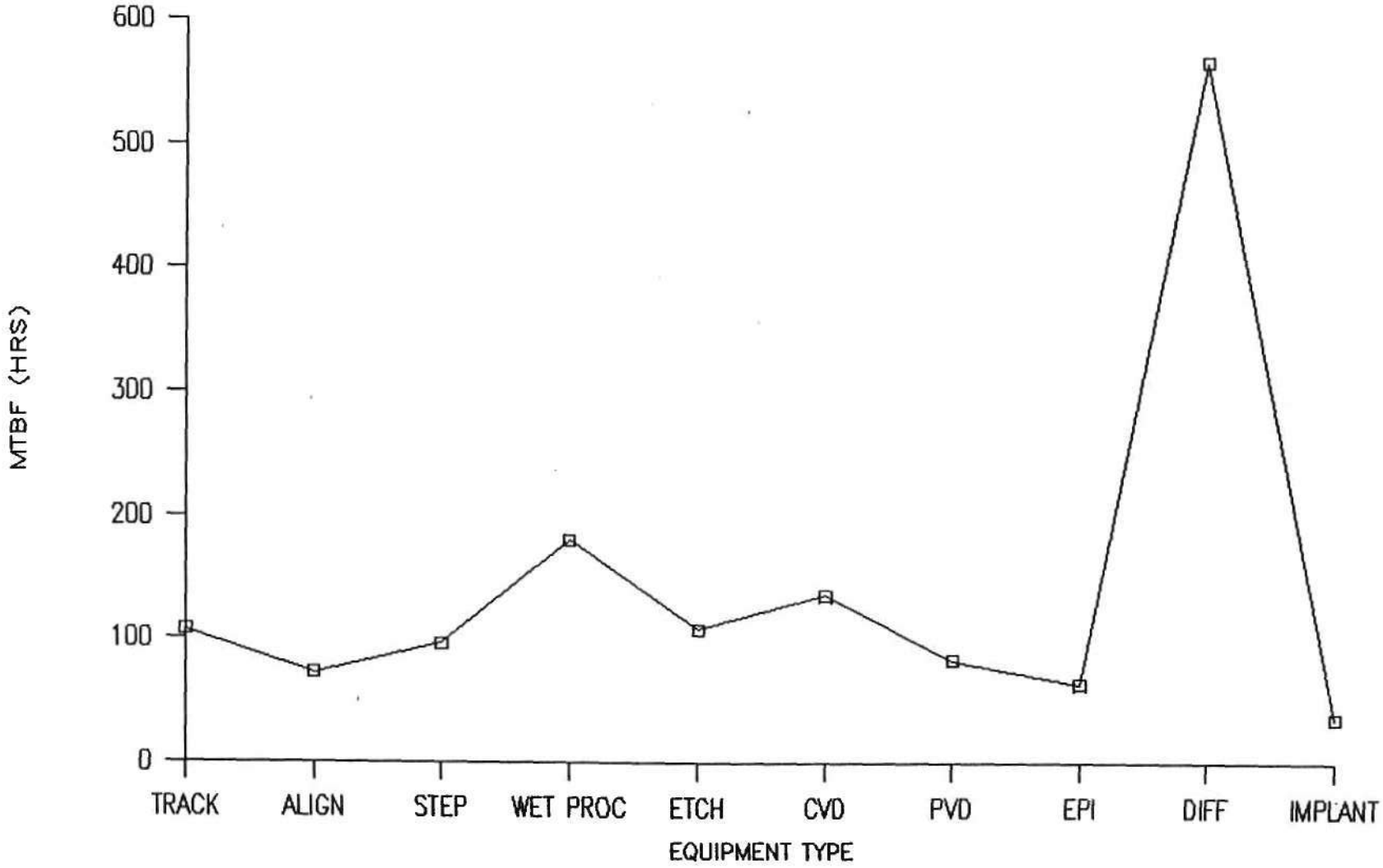
MEAN TIME BETWEEN FAILURE: ALL VENDORS

SUMMARY DATA



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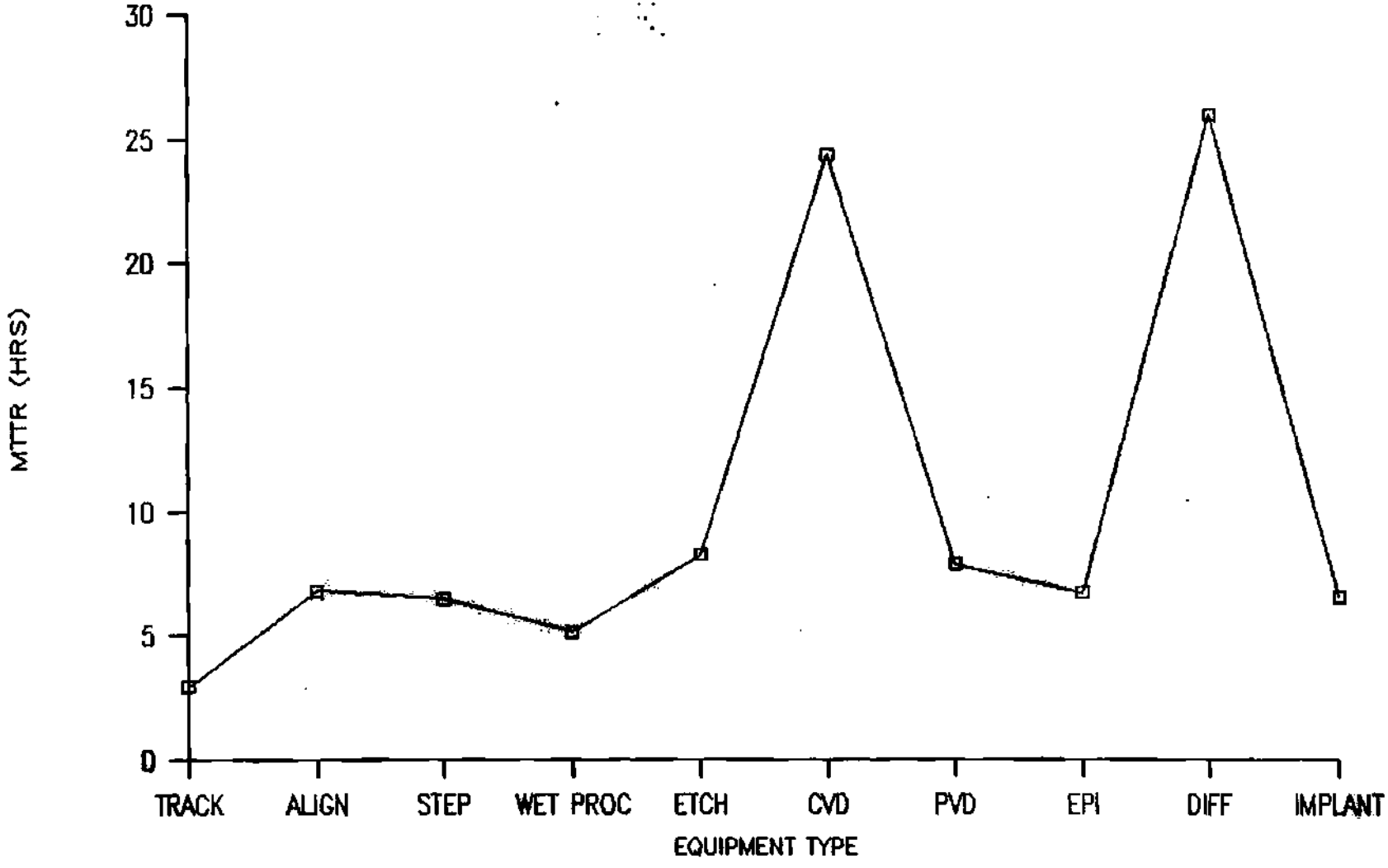
MEAN TIME TO REPAIR: ALL VENDORS

SUMMARY DATA



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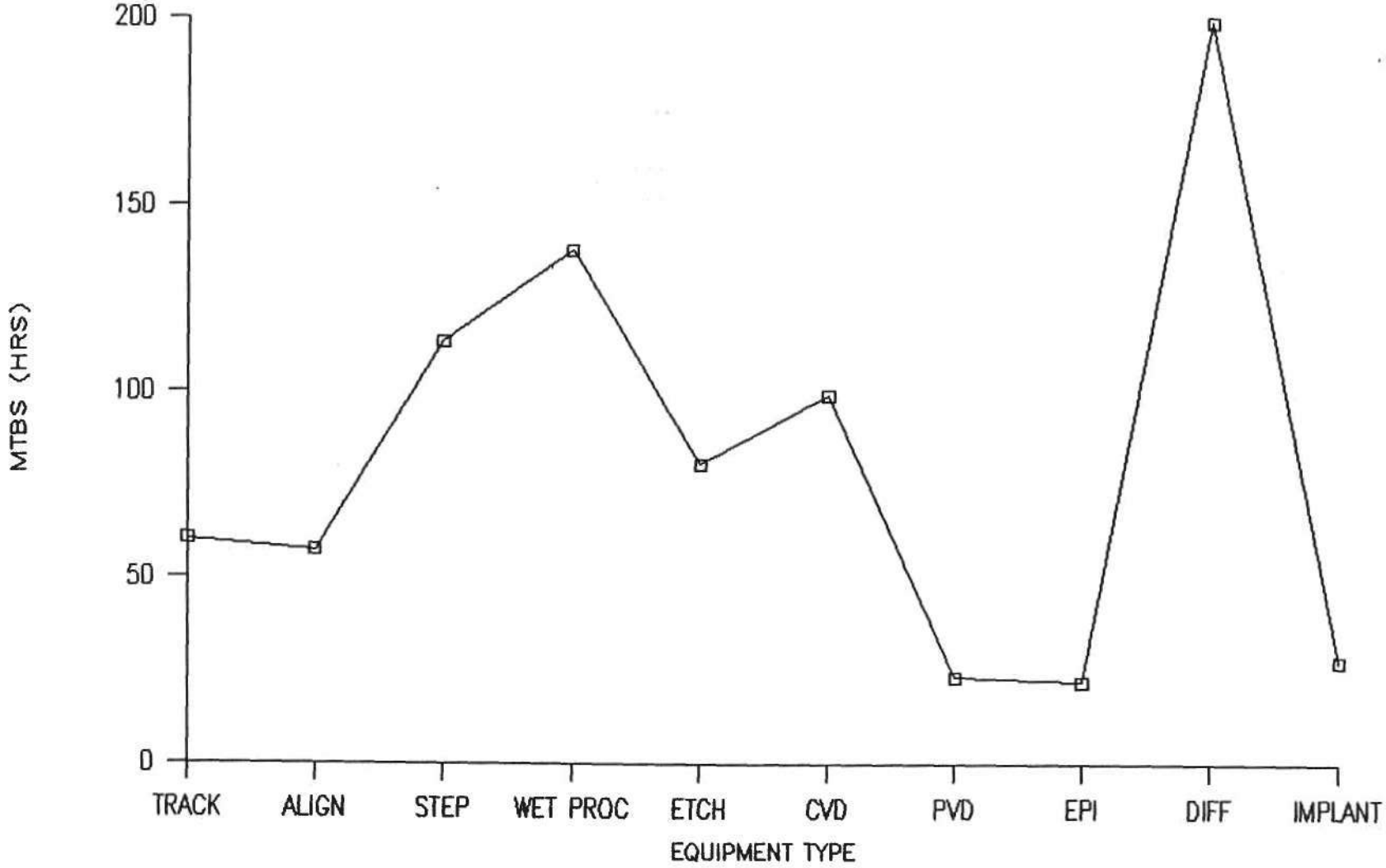
MEAN TIME BETWEEN SET-UPS: ALL VENDORS

SUMMARY DATA



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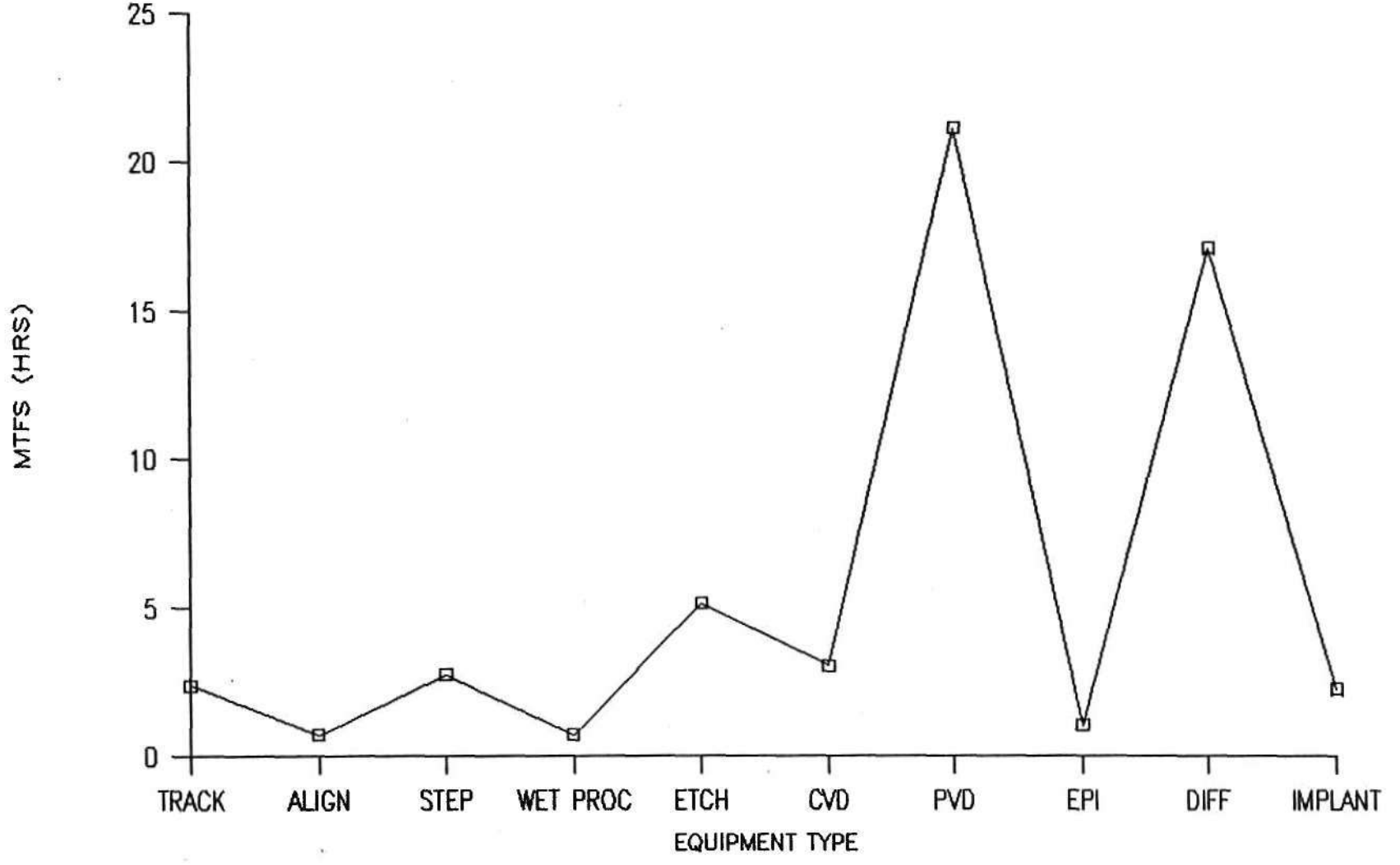
MEAN TIME FOR SET-UP: ALL VENDORS

SUMMARY DATA



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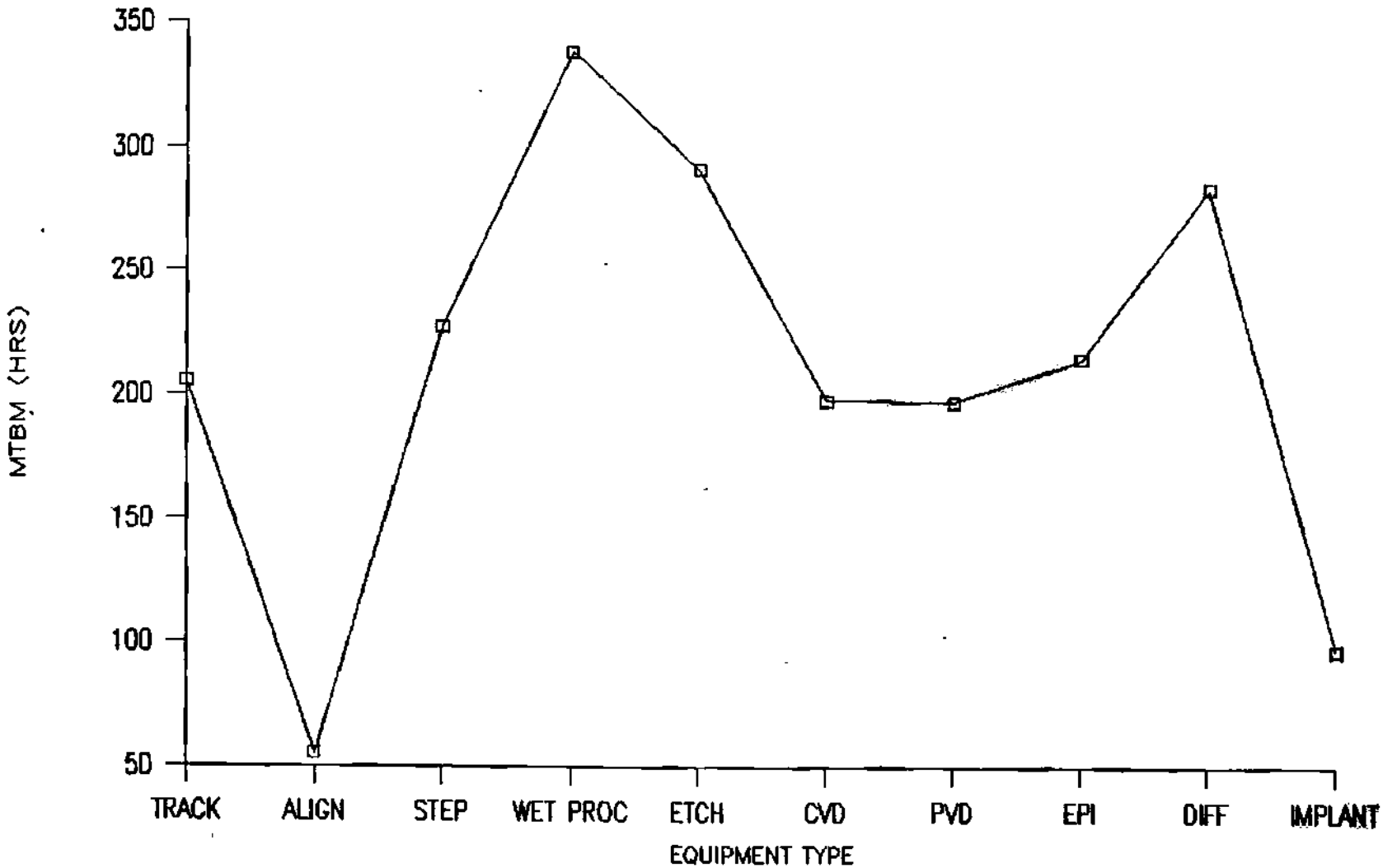
MEAN TIME BTW MAINTENANCE: ALL VENDORS

SUMMARY DATA



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MEAN TIME FOR MAINTENANCE: ALL VENDORS

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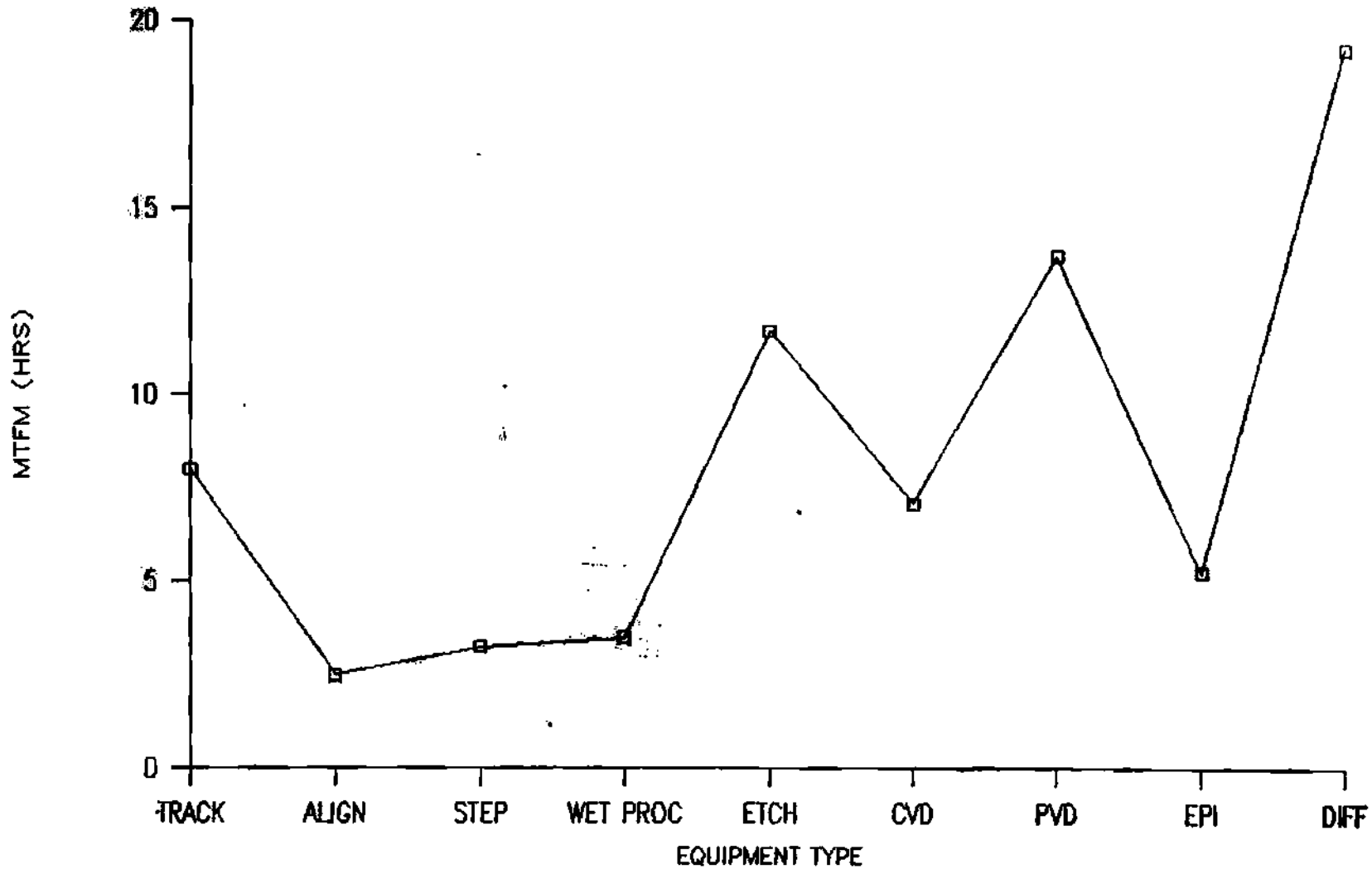

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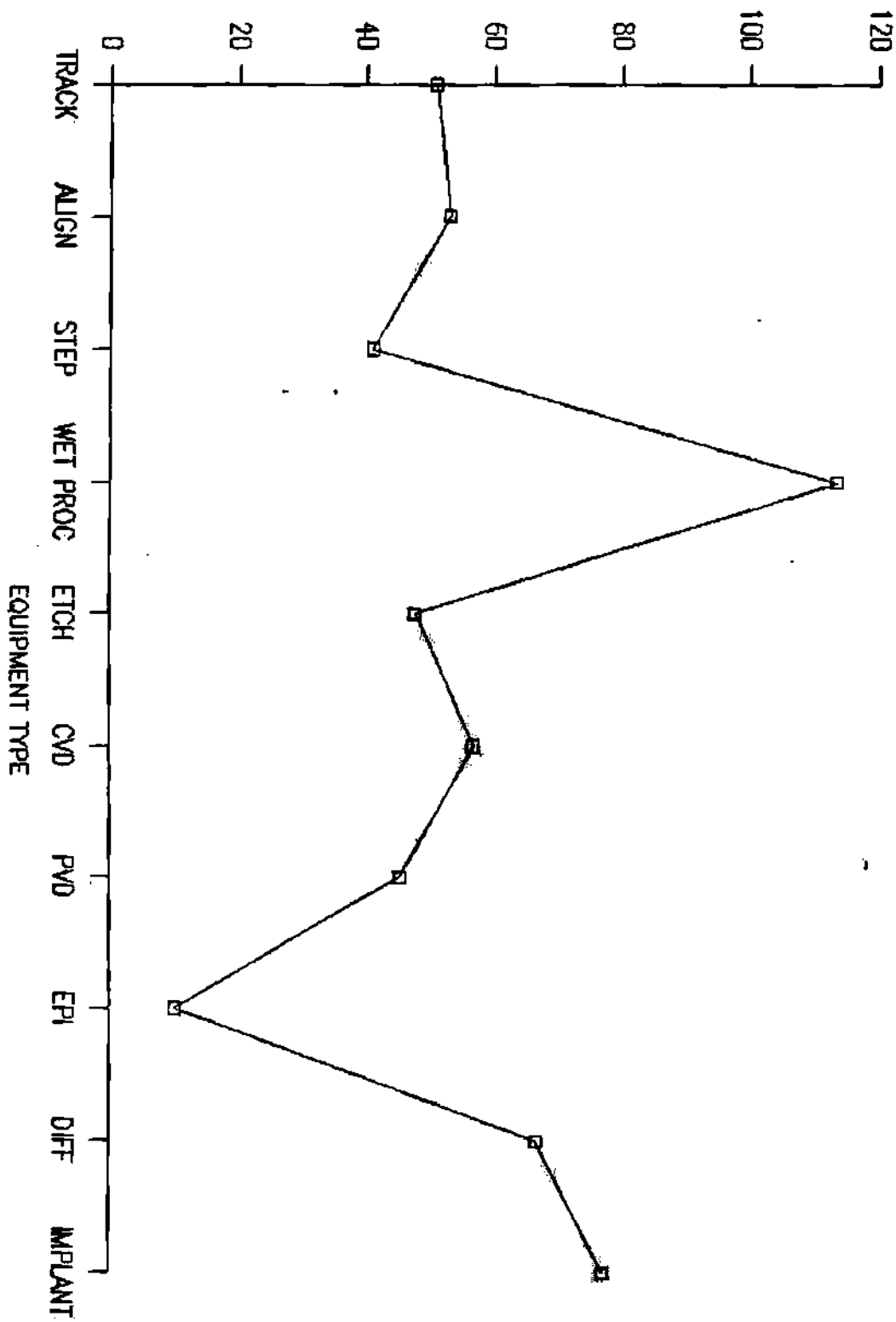
MAX FAB RATE: ALL VENDORS

SUMMARY DATA



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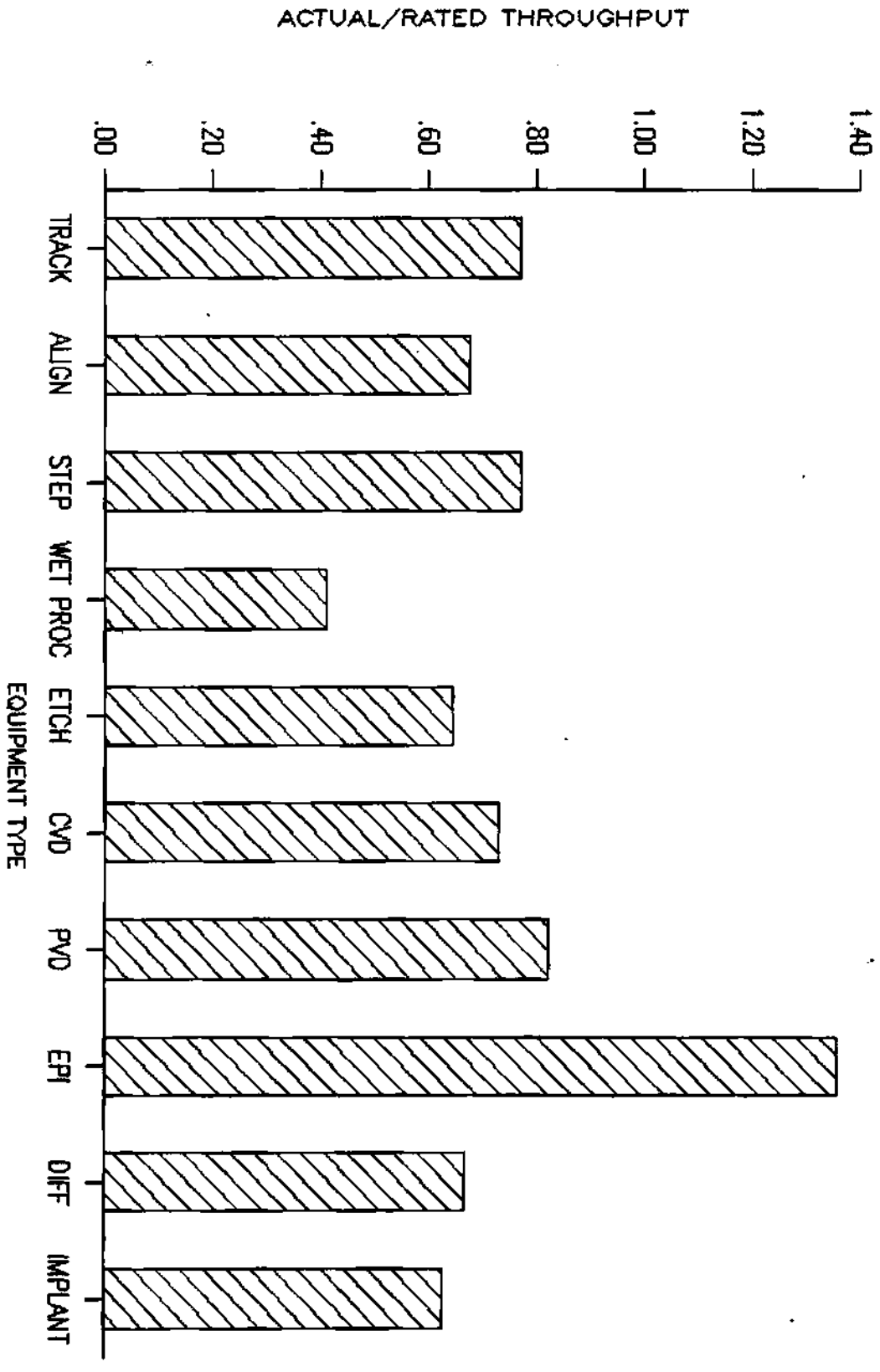
ACTUAL/RATED THROUGHPUT: ALL VENDORS

SUMMARY DATA



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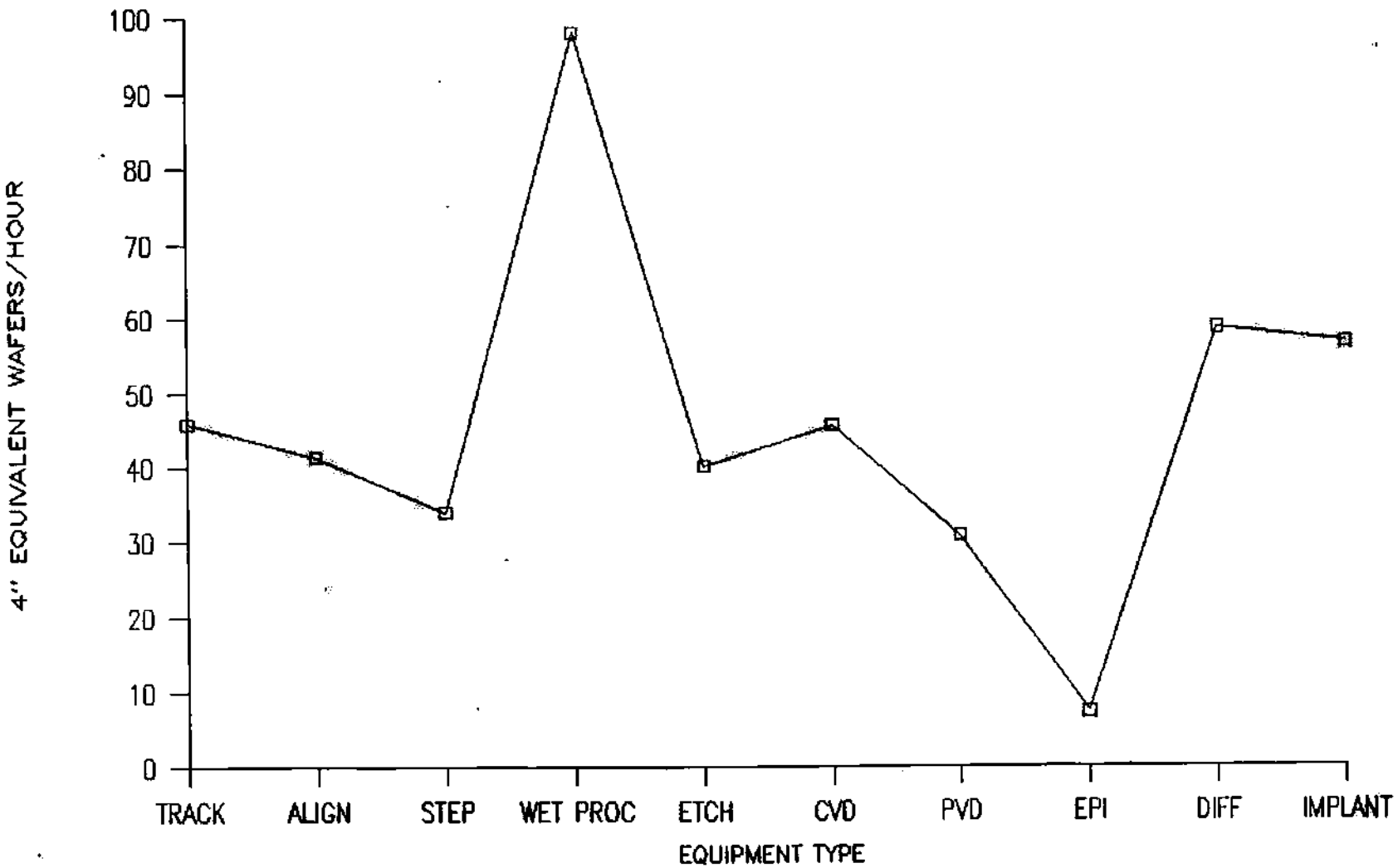
NET THROUGHPUT

ALL VENDORS: SUMMARY DATA



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NET/MAX FAB THROUGHPUT: ALL VENDORS

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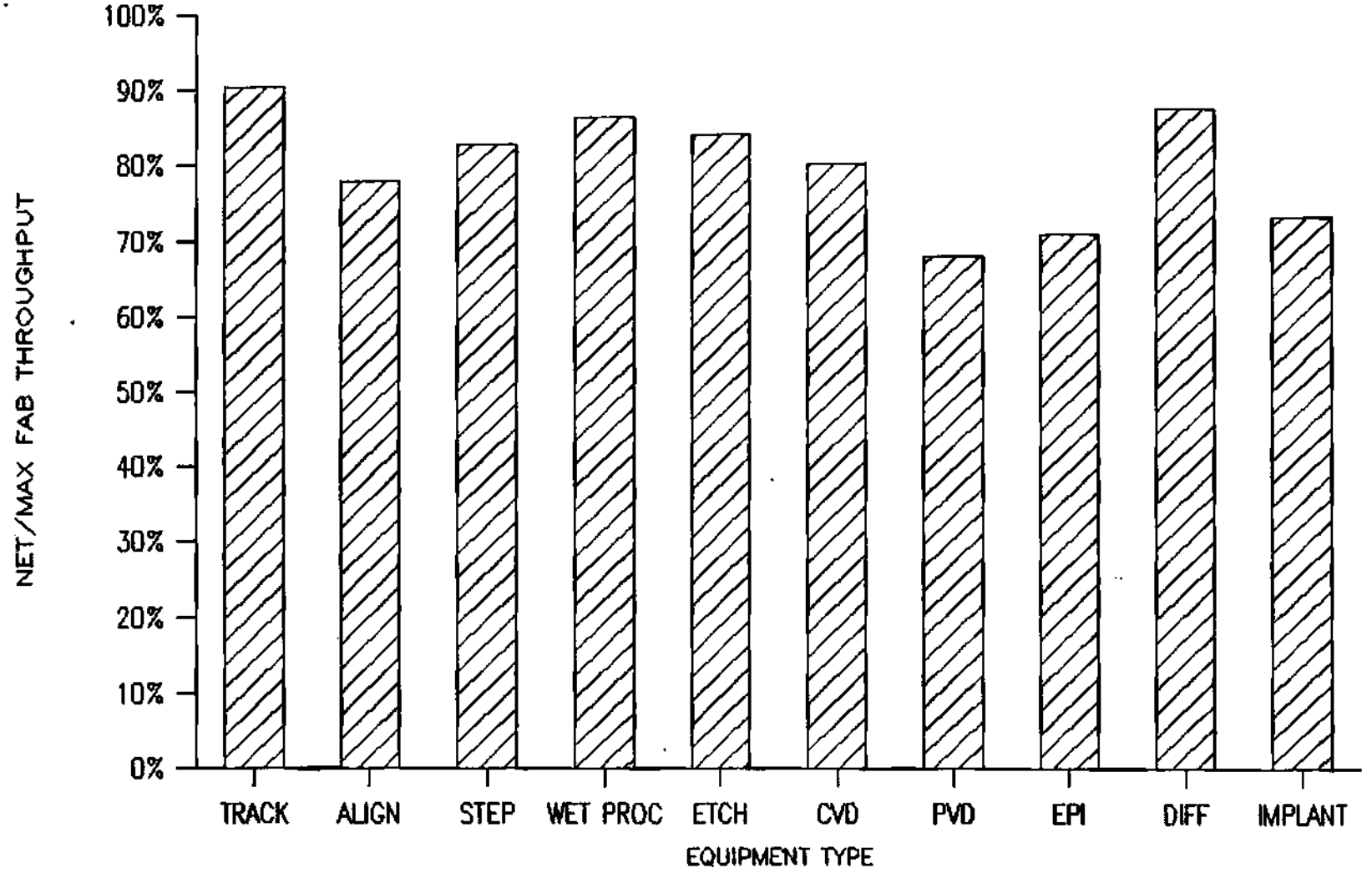

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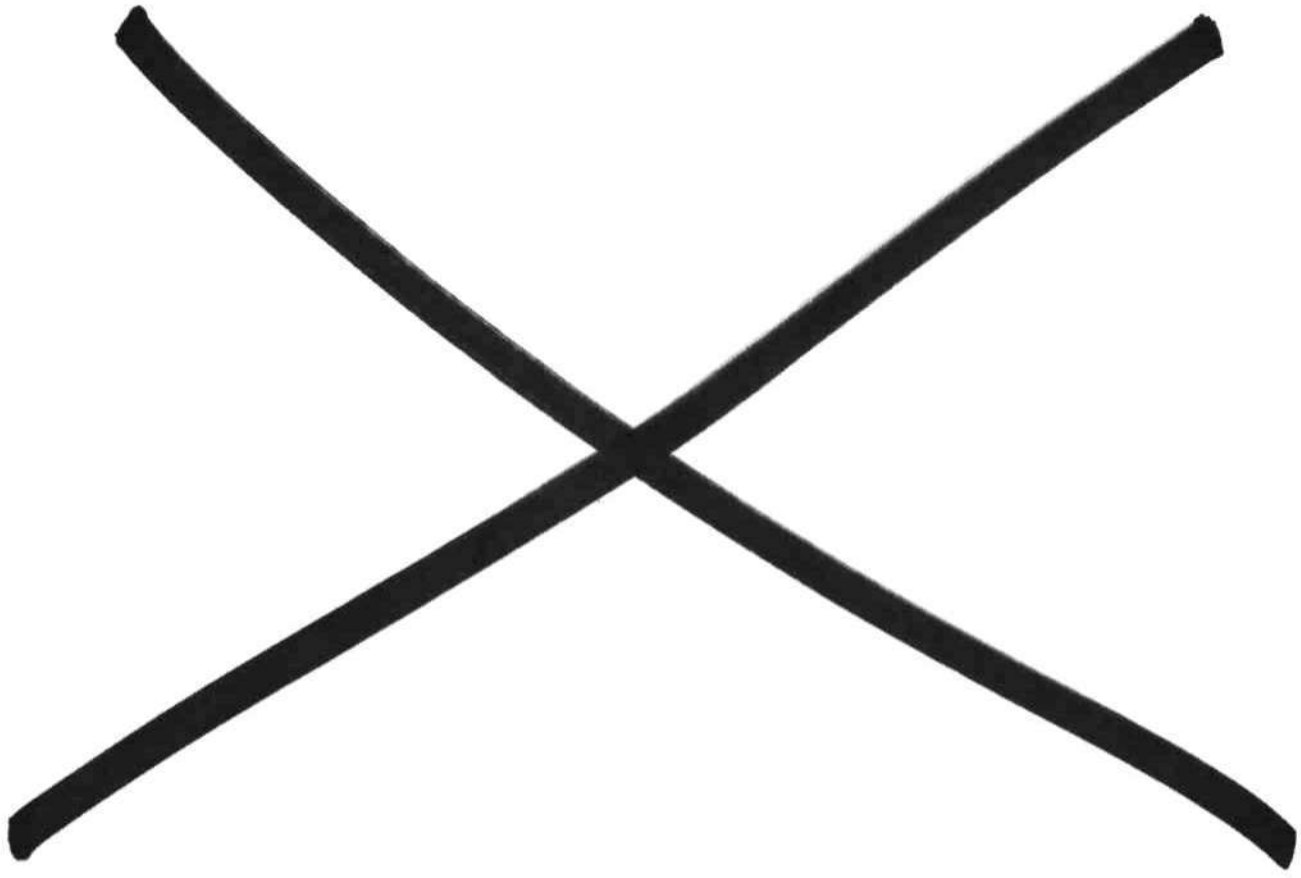
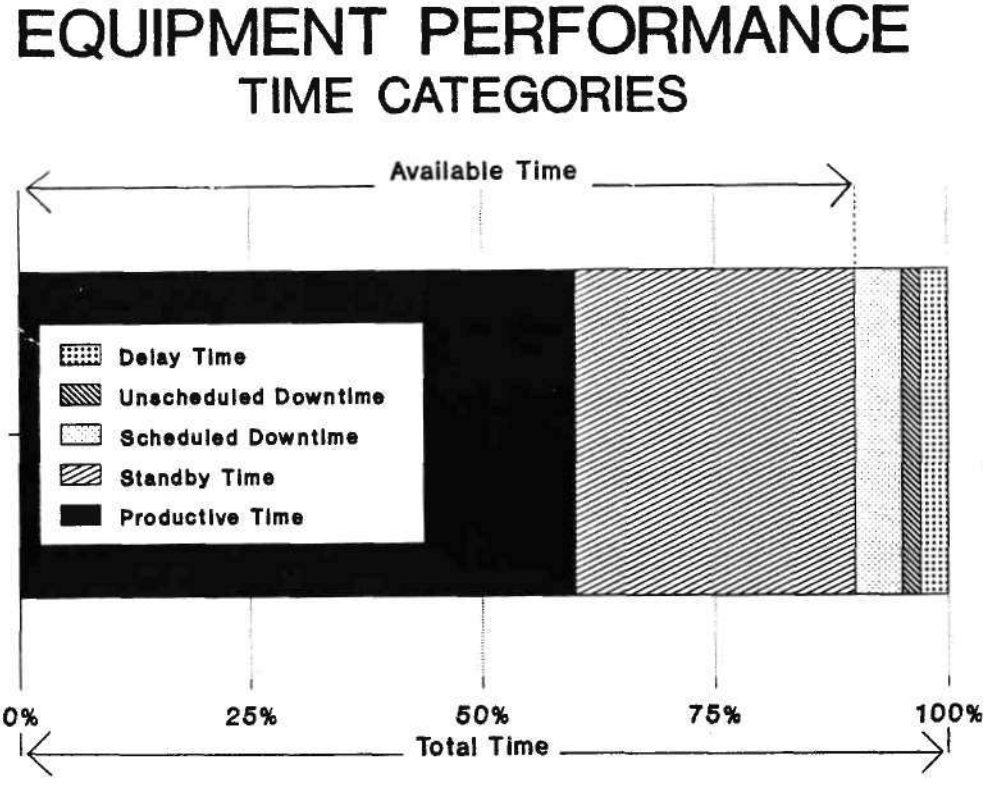


EQUIPMENT PERFORMANCE BY PRODUCTS

This chapter summarizes equipment performance by equipment type by products produced in the fab. These products include: ASICS, logic, memory, and micro-devices. The data is from all equipment vendors covered in our survey, and represents weighted averages for each equipment category. Raw data is available in the appendix of this report.

DEFINITIONS

Complete definitions of performance parameters are given in the appendix of this report. Shorter definitions of available time, productive time, rated throughput, maximum fab throughput, actual-to-rated throughput, net throughput, and net-to-maximum fab throughput are given in the accompanying tables. A pictorial view of the relationship between total time, available time, and productive time is shown in the following figure:



Please note that in the accompanying table and graphs that productive time is expressed as a percentage of available time, not as a percentage of total time. Productive time as a percentage of available time is a measure of scheduling efficiency.

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Rated throughput, expressed in 4-inch equivalents, is what respondents reported that equipment vendors claimed their throughput to be.

Maximum fab throughput, on the other hand, is a measure of how the equipment actually performs in the fab. The maximum fab throughput was calculated by dividing the total number of wafers out in a quarter by the total number of productive hours in that quarter.

The maximum fab throughput is a measure of equipment performance when the equipment is actually running wafers. However, because of scheduled and unscheduled downtime and delay time, net throughput is less than the maximum fab throughput.

In other words, to measure a piece of equipment's potential performance, one must take into account the non-available time of the equipment.

We do this in this report by multiplying the maximum fab throughput by the percentage of available time. This is termed "net throughput," and is a measure of equipment's potential output that does take into account the scheduled, unscheduled downtimes, and delay times. For example, assume the following:

Maximum fab throughput = 50 wafers per hour.
Available time = 80 percent.
Then the available hours per day would be:
0.80 x 24 hours = 19.2 hours.
The potential output per day, assuming no standby time, would be:
50 wafers per hour x 19.2 hours
= 960 wafers per day.

We get the same result by multiplying net throughput by 24 hours:
Maximum fab throughput = 50 wafers per hour.
Available time = 80 percent.
Therefore, net throughput is:
0.80 x 50 wafers per hour
= 40 wafers per hour;
and, wafers per day, assuming no standby time, would be:
40 wafers per hour x 24 hours per day:
= 960 wafers per day.

Net throughput measures those variables that are under the equipment vendor's control. These variables are scheduled downtime, unscheduled downtime, and delay time, which, when subtracted from total time, equal available time. Productive time, on the other hand, is not a variable that the equipment vendor can control; it is, rather, a variable under the control of the fab.

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ASIC EQUIPMENT PERFORMANCE

ITEM	PERFORMANCE PARAMETER	TRACK	ALIGN	STEP	WET PROC	ETCH	CVD	PVD	EPI	DIFF	IMPLANT
1	NUMBER	153	87	91	61	78	25	24	2	2	33
2	AVAILABLE TIME (% of total time)	91%	76%	82%	86%	84%	79%	66%	79%	85%	74%
3	PRODUCTIVE TIME (% of available time)	87%	85%	91%	92%	79%	87%	86%	66%	97%	83%
4	UNSCHEDULED DOWNTIME (hours/quarter)	98	160	174	121	181	134	171	156	32	221
5	SCHEDULED DOWNTIME (hours/quarter)	35	114	79	91	67	124	291	130	165	185
6	MTBF (hrs)	120	73	79	165	81	127	102	50	204	21
7	MTTR (hrs)	3	7	3	6	4	6	8	2	5	2
8	MTBS (hrs)	81	2	135	13	69	45	14	2	14	14
9	MTFS (hrs)	3	0	3	1	1	2	5	0	8	1
10	MTBM (hrs)	171	56	199	375	444	225	220	720	51	128
11	MTFM (hrs)	15	3	3	4	14	14	17	4	9	12
12	RATED THROUGHPUT (wafers/hr: 4" equiv)	72	82	57	314	62	155	71	23	200	109
13	MAX. FAB THROUGHPUT (wafers/hr: 4" equiv)	55	54	43	138	46	115	58	17	150	81
14	ACTUAL/RATED (item #13/item #12)	0.77	0.66	0.75	0.44	0.74	0.74	0.82	0.76	0.75	0.74
15	NET THROUGHPUT (wafers/hr: item #13 x item #2)	50	41	35	119	39	91	39	14	127	60
16	NET/MAX FAB T.P. (item # 15/item # 13)	91%	76%	82%	86%	84%	79%	66%	79%	85%	74%

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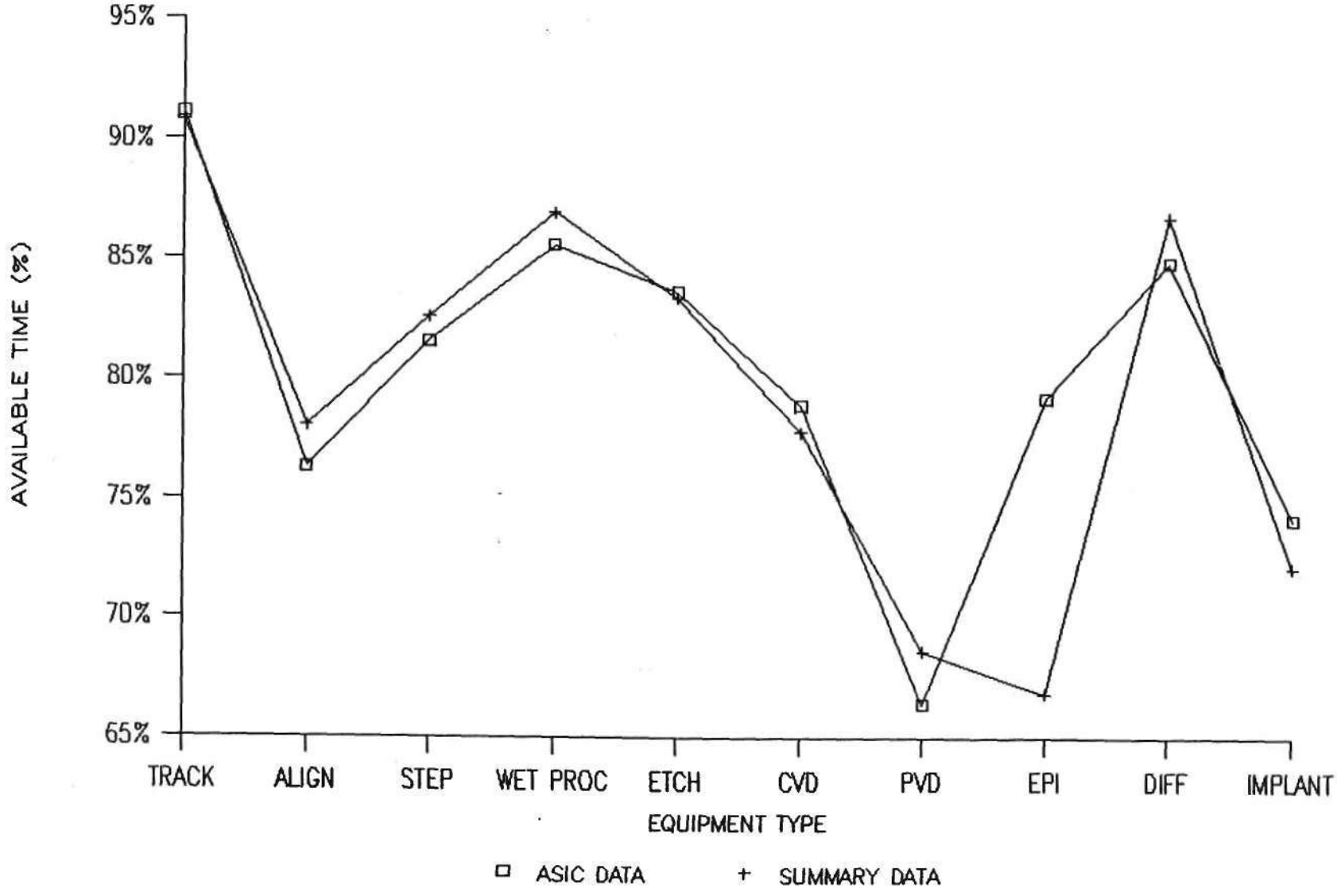
AVAILABLE TIME: ALL VENDORS

ASIC DATA



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PRODUCTIVE TIME: ALL VENDORS

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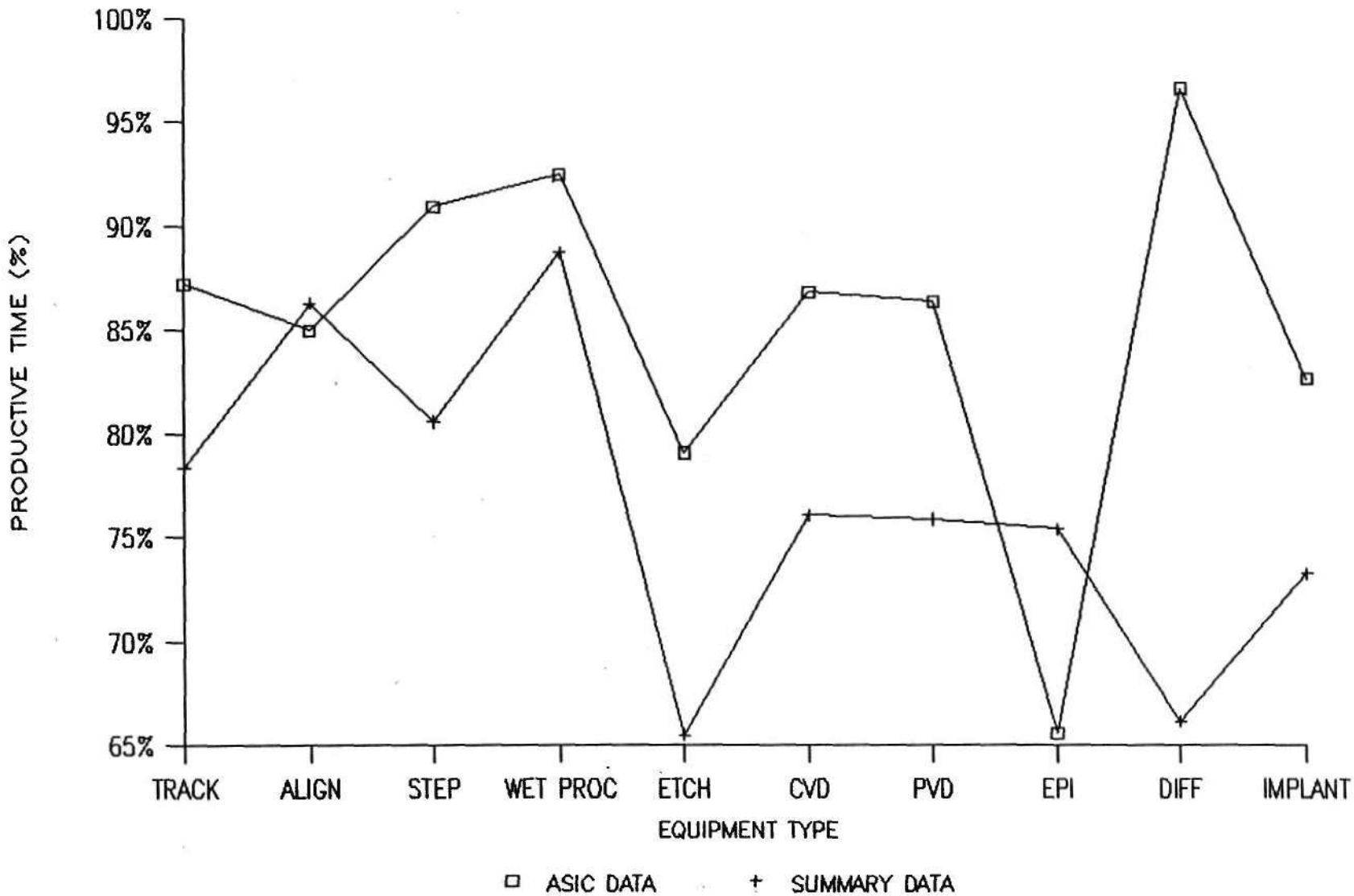

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UNSCHEDULED DOWNTIME: ALL VENDORS

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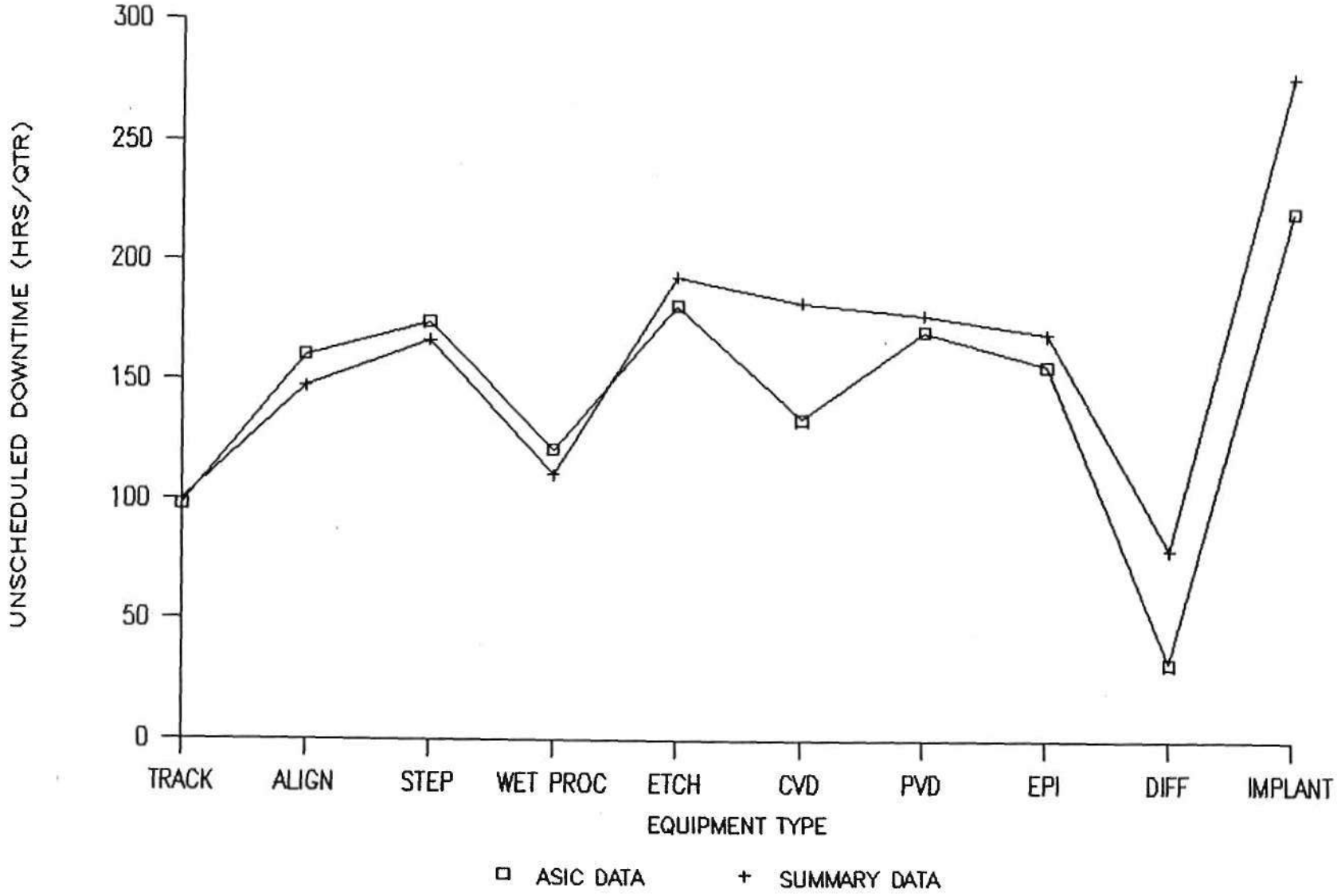

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SCHEDULED DOWNTIME: ALL VENDORS

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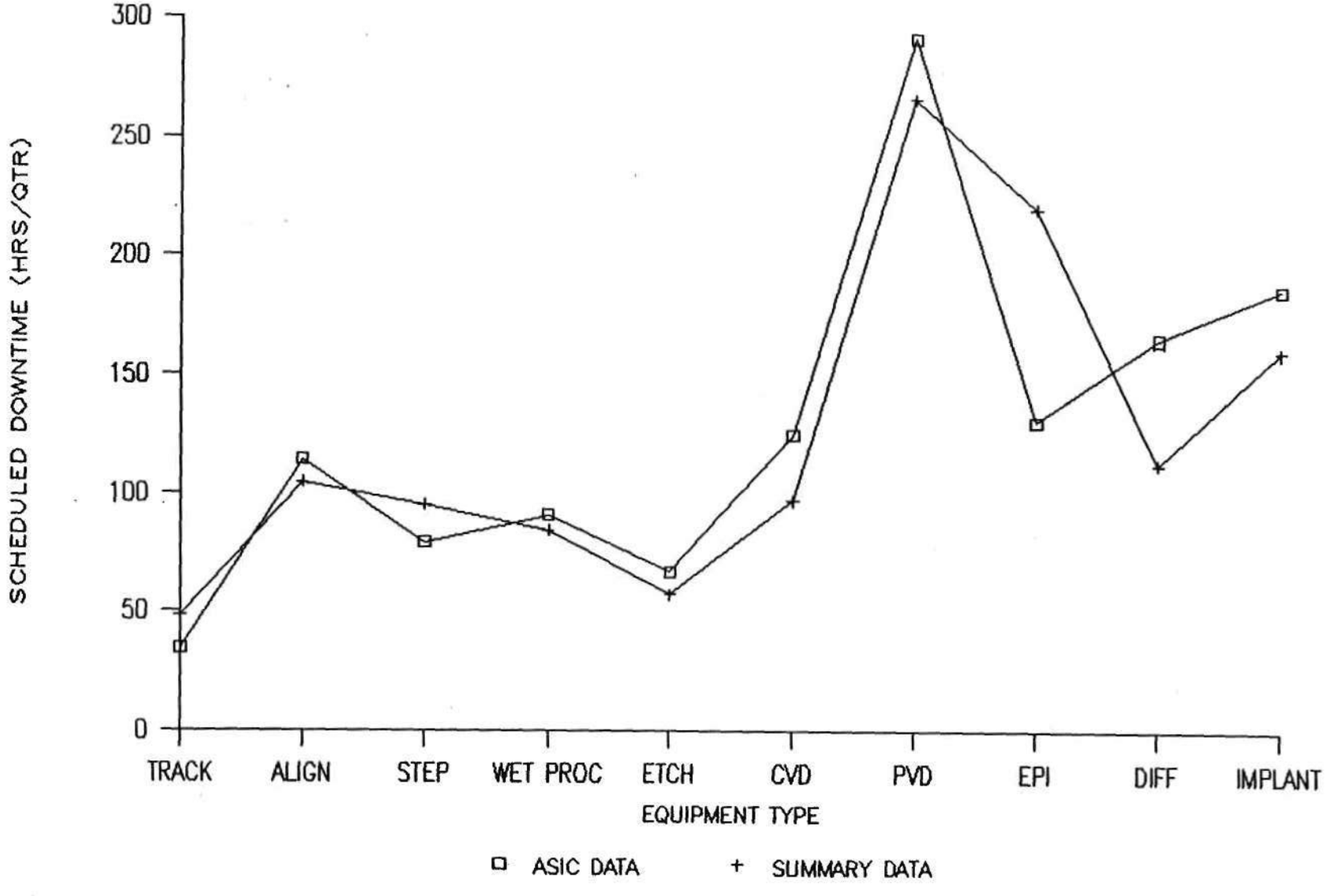

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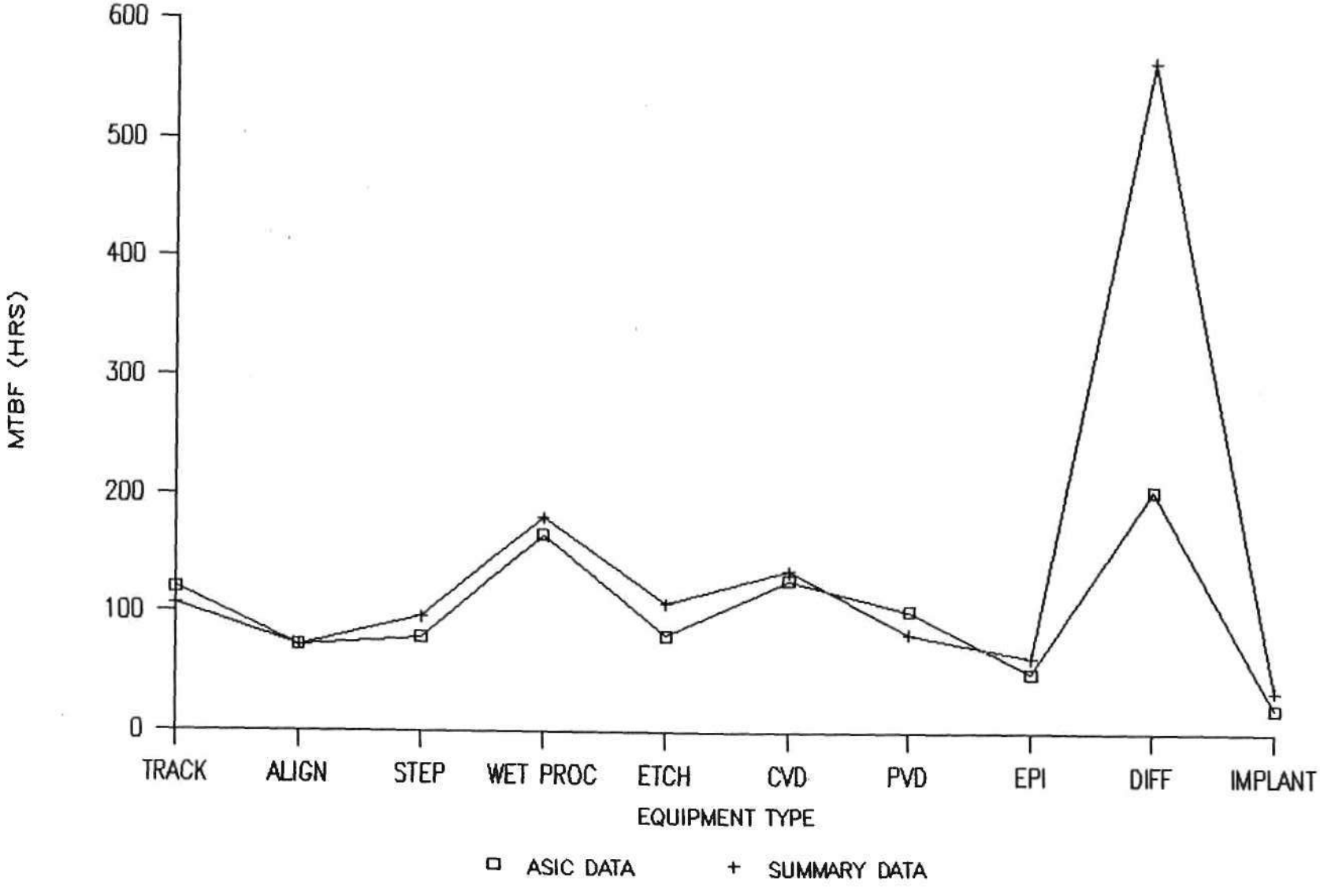
MEAN TIME BETWEEN FAILURE: ALL VENDORS

ASIC DATA



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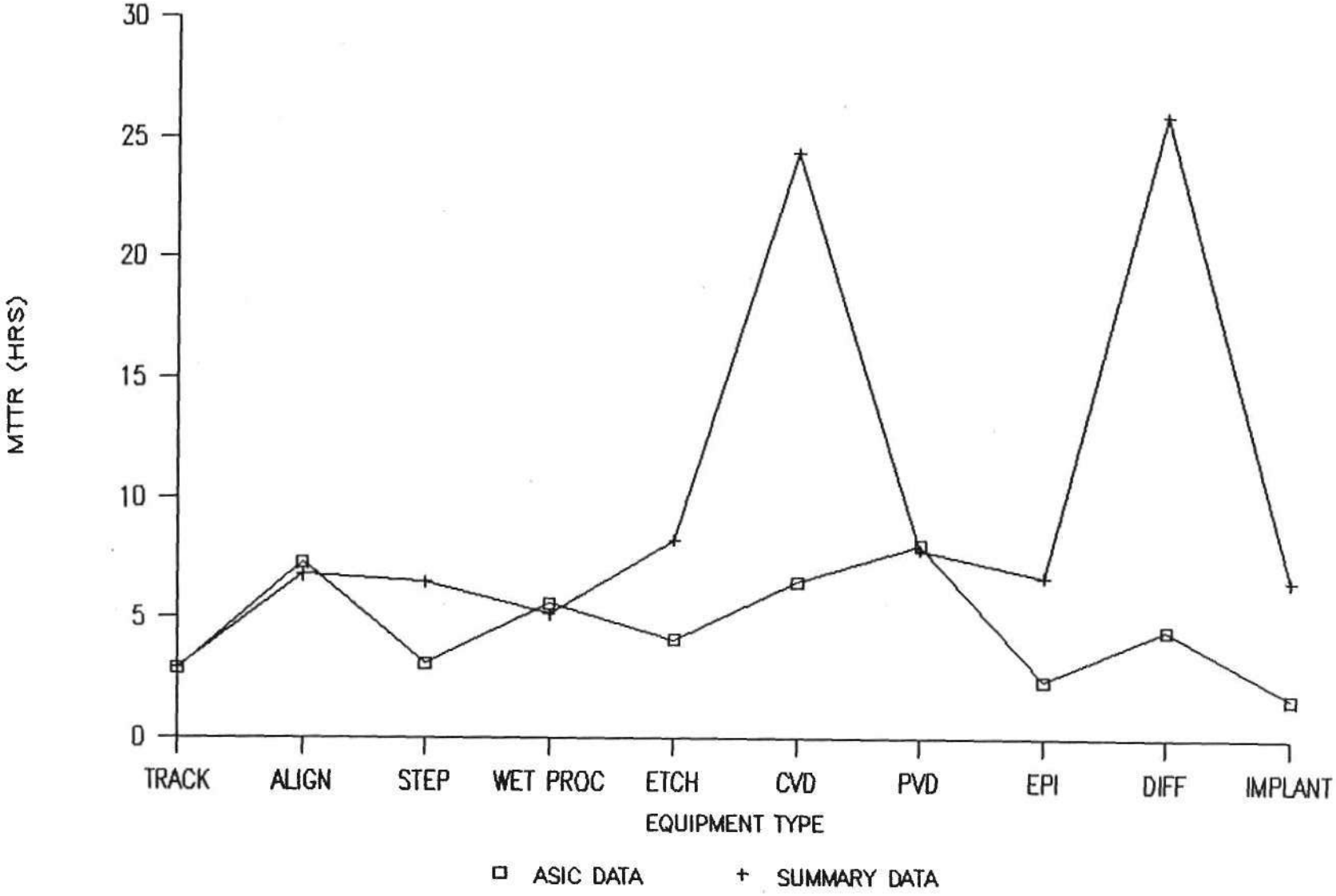
MEAN TIME TO REPAIR: ALL VENDORS

ASIC DATA



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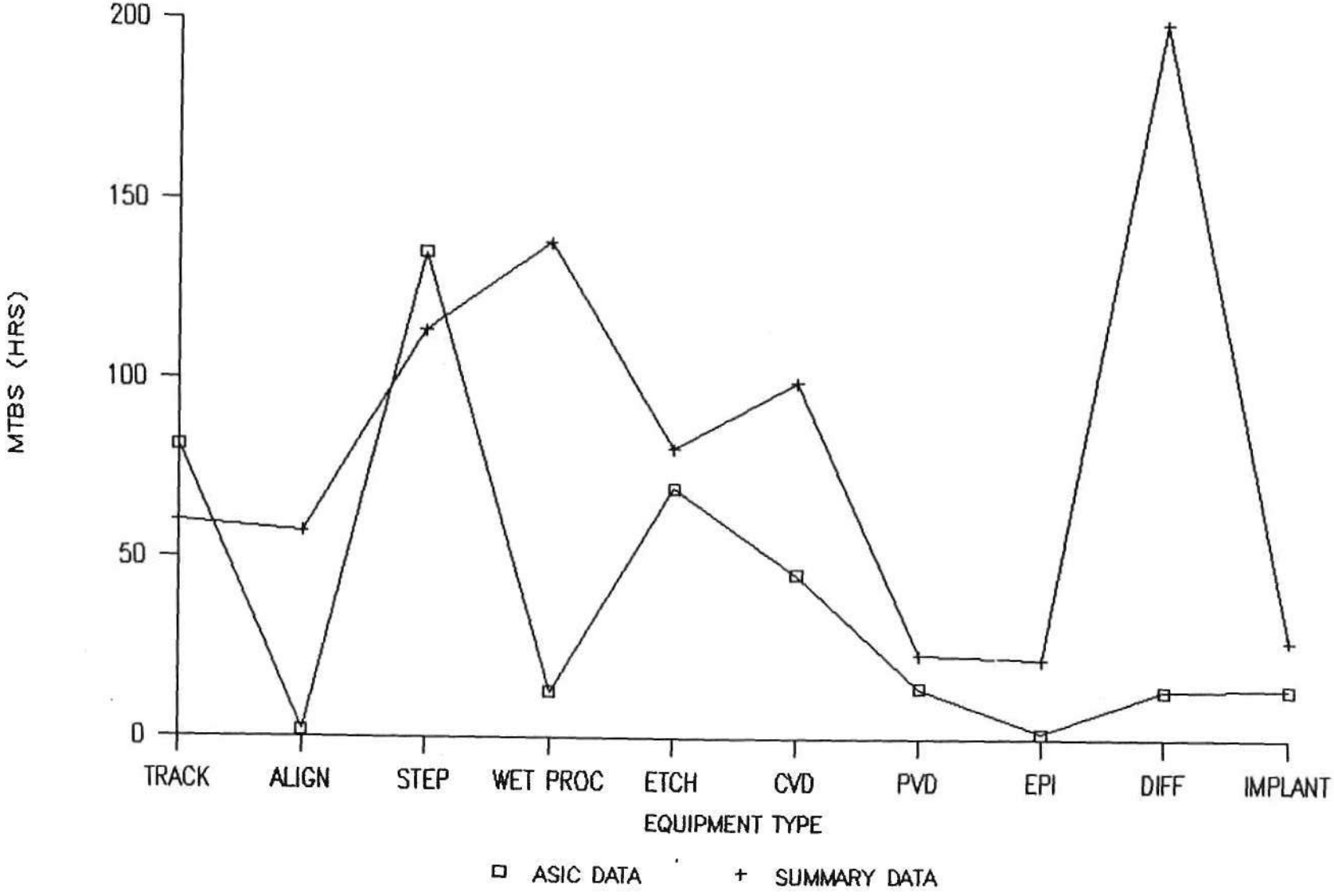
MEAN TIME BETWEEN SET-UPS: ALL VENDORS

ASIC DATA



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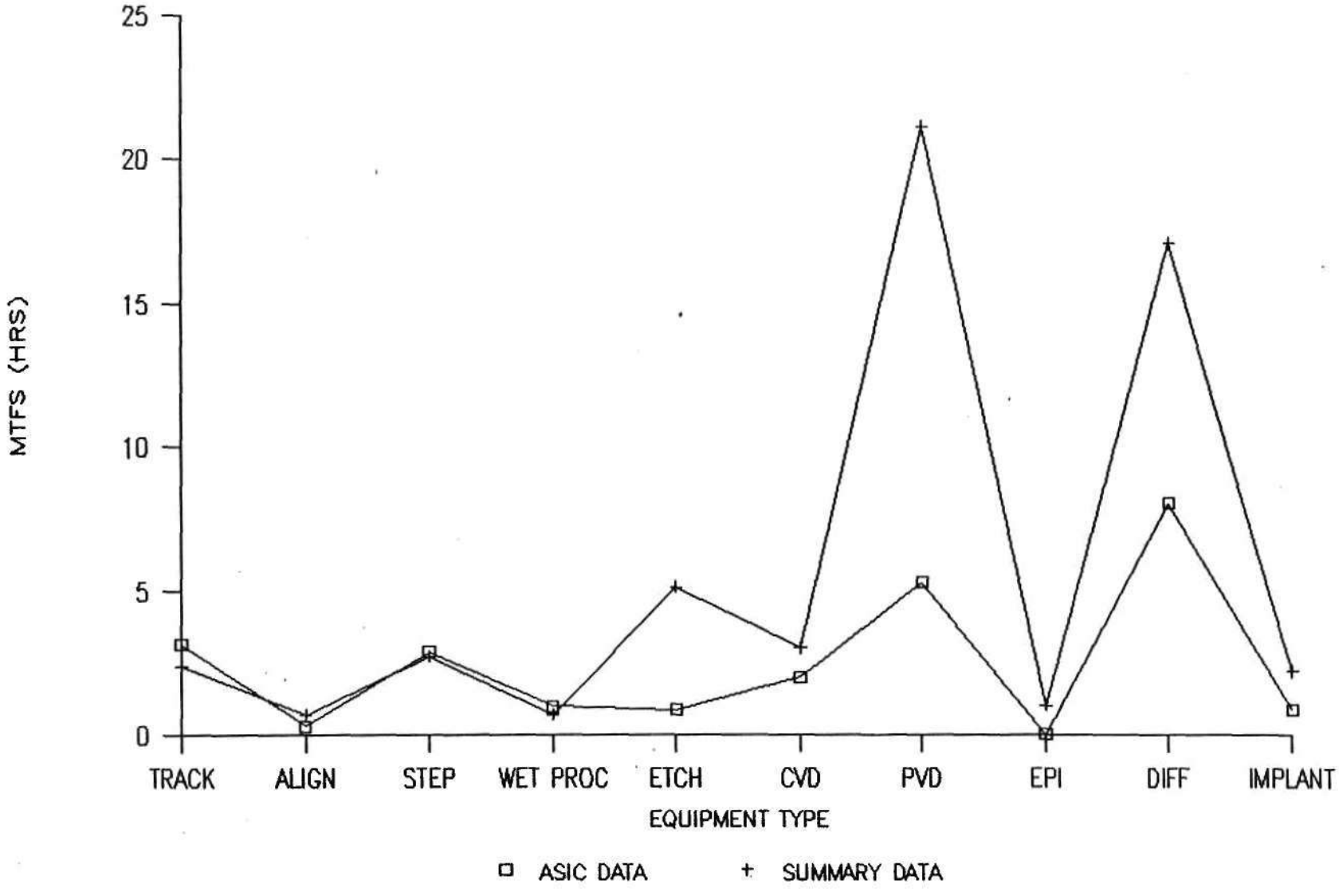
MEAN TIME FOR SET-UP: ALL VENDORS

ASIC DATA



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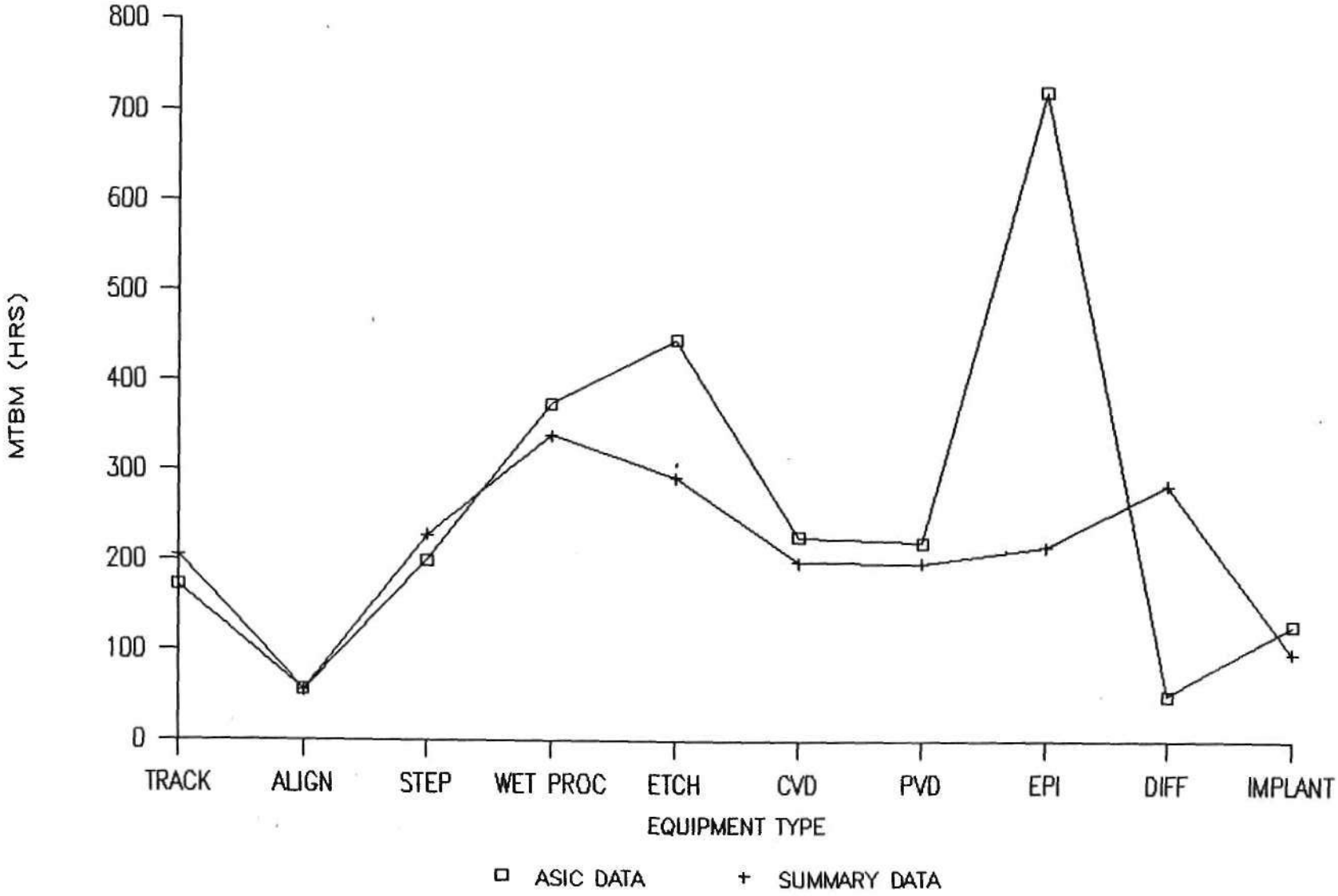
MEAN TIME BTW MAINTENANCE: ALL VENDORS

ASIC DATA



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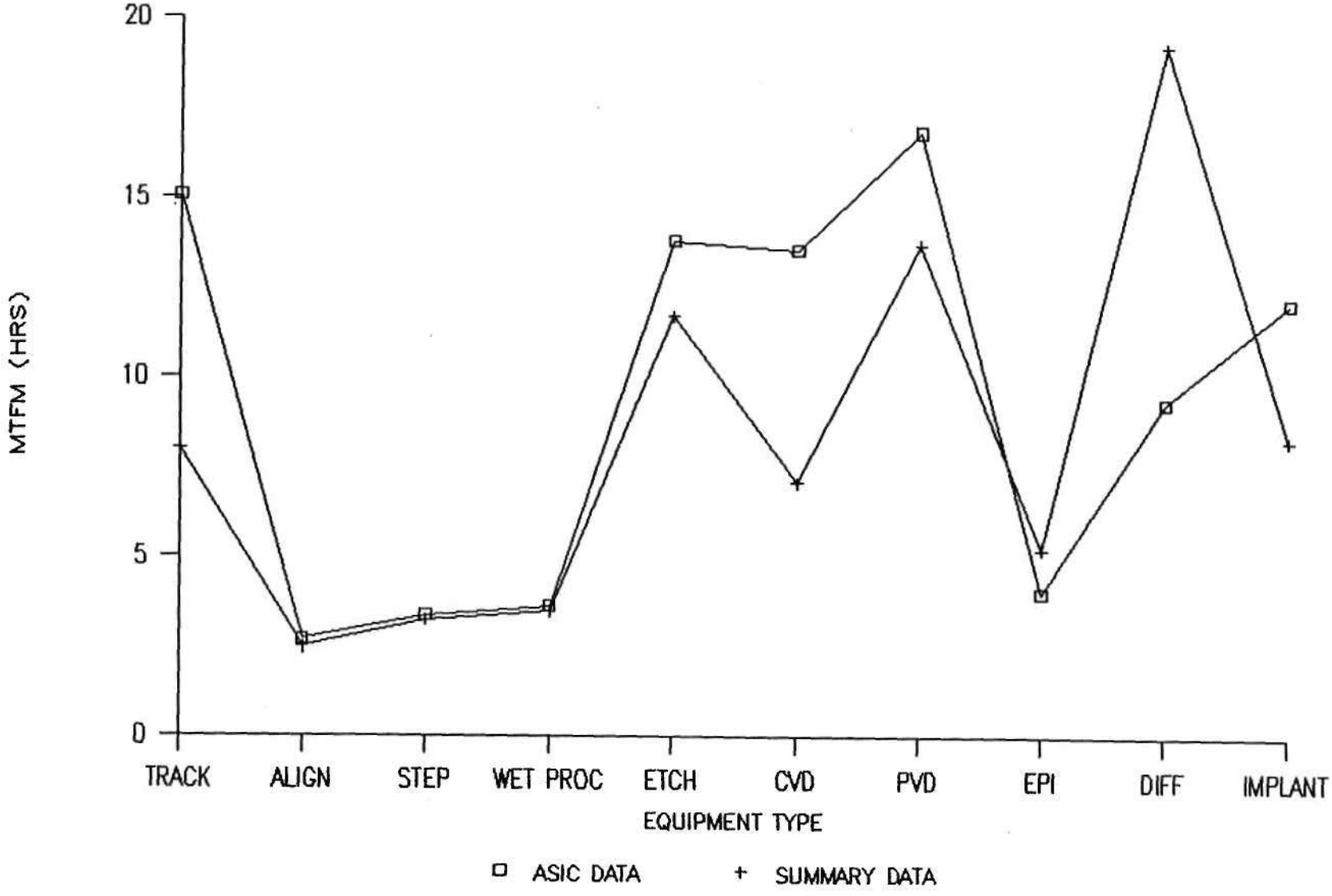
MEAN TIME FOR MAINTENANCE: ALL VENDORS

ASIC DATA



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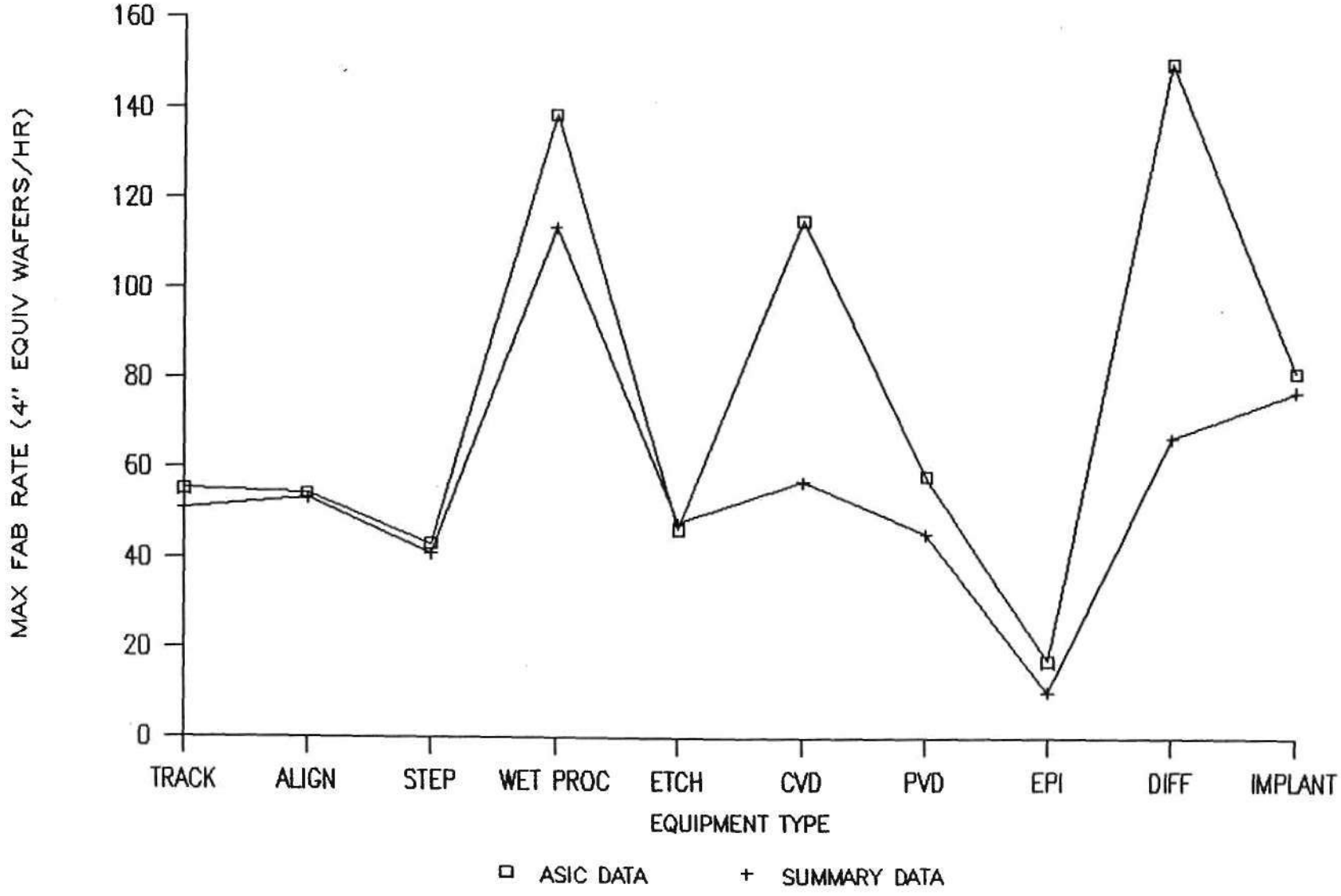
MAX FAB RATE: ALL VENDORS

ASIC DATA



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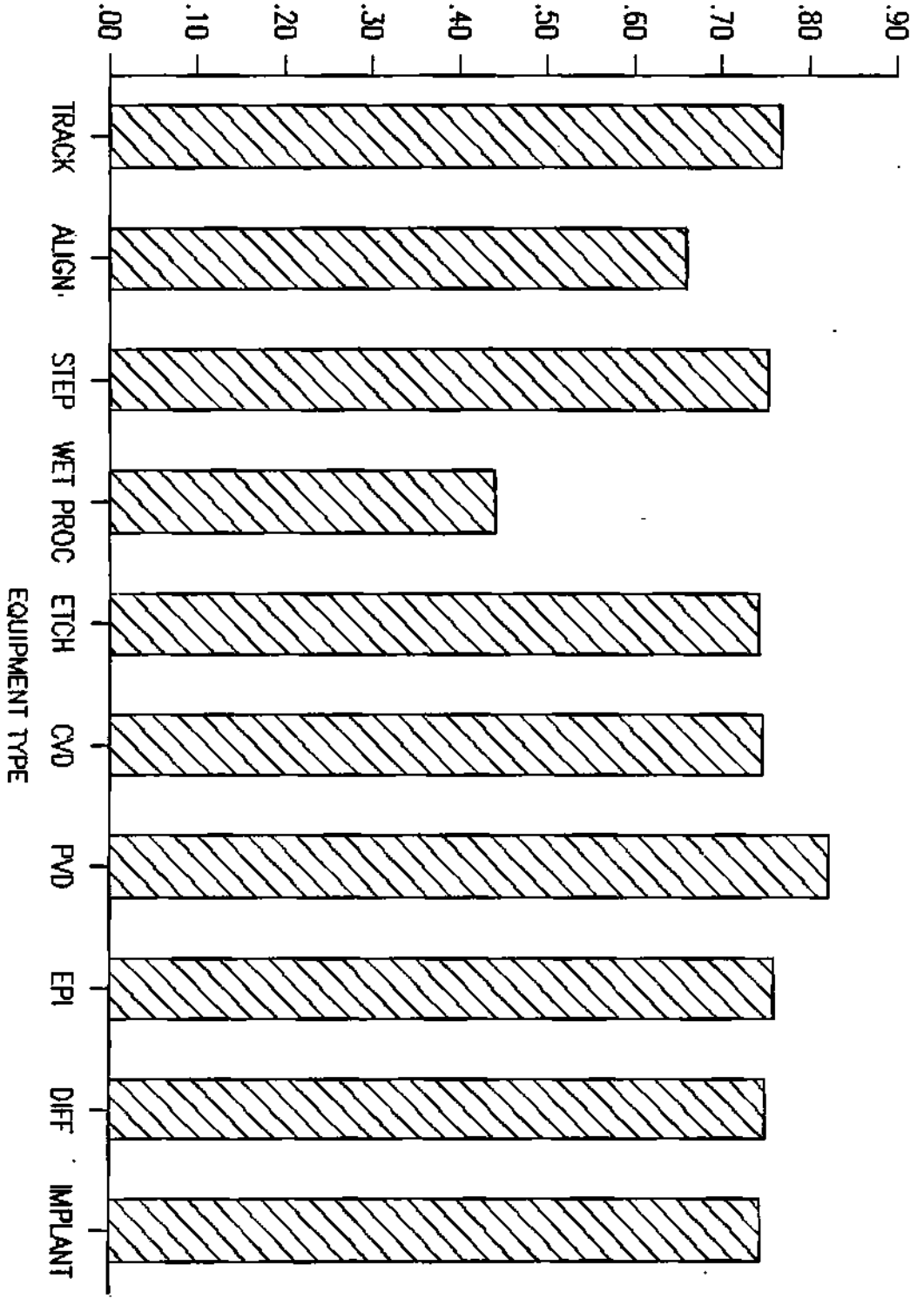
ACTUAL-TO-RATED THROUGHPUT: ALL VENDORS

ASIC DATA



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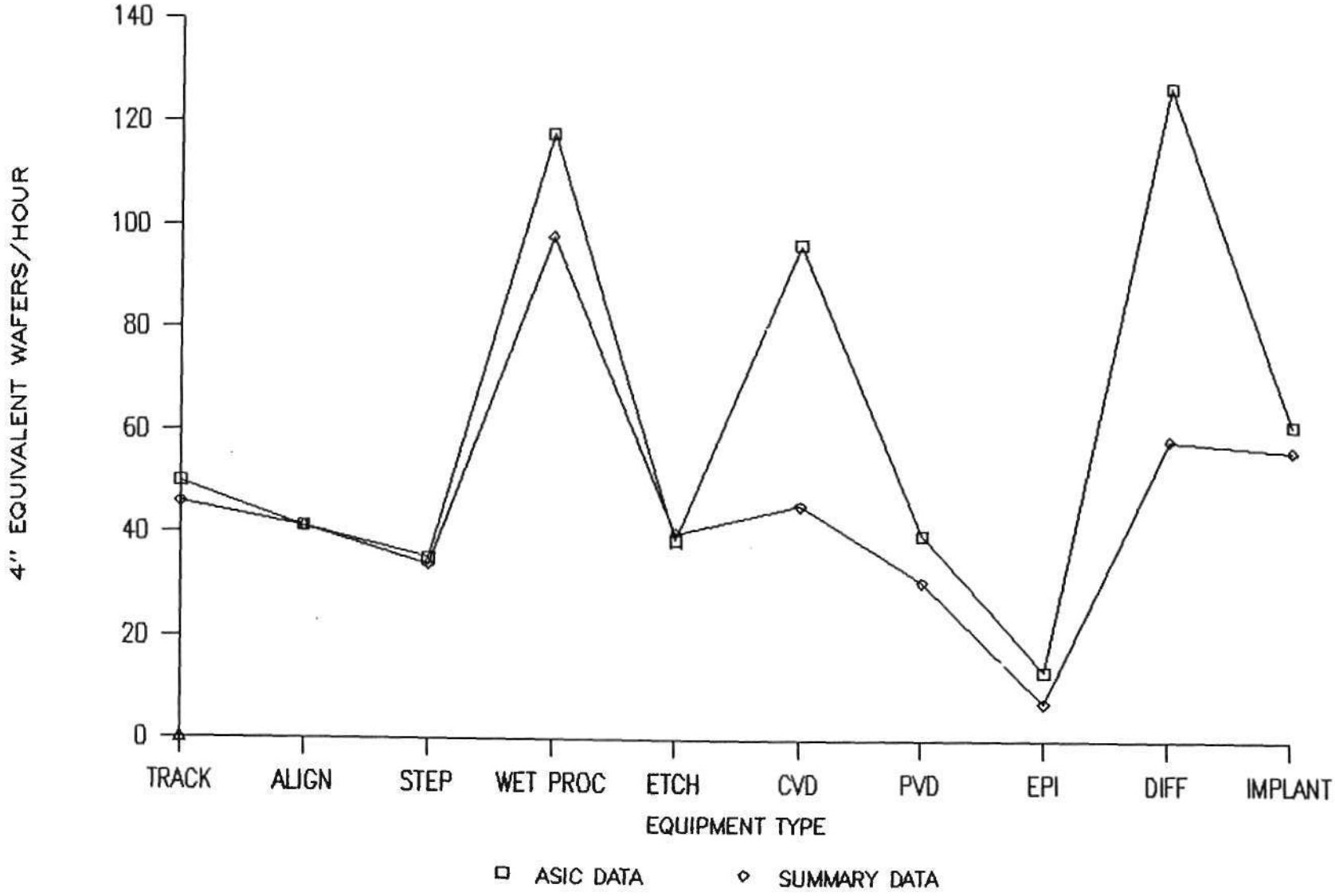
NET THROUGHPUT

ALL VENDORS: ASIC DATA



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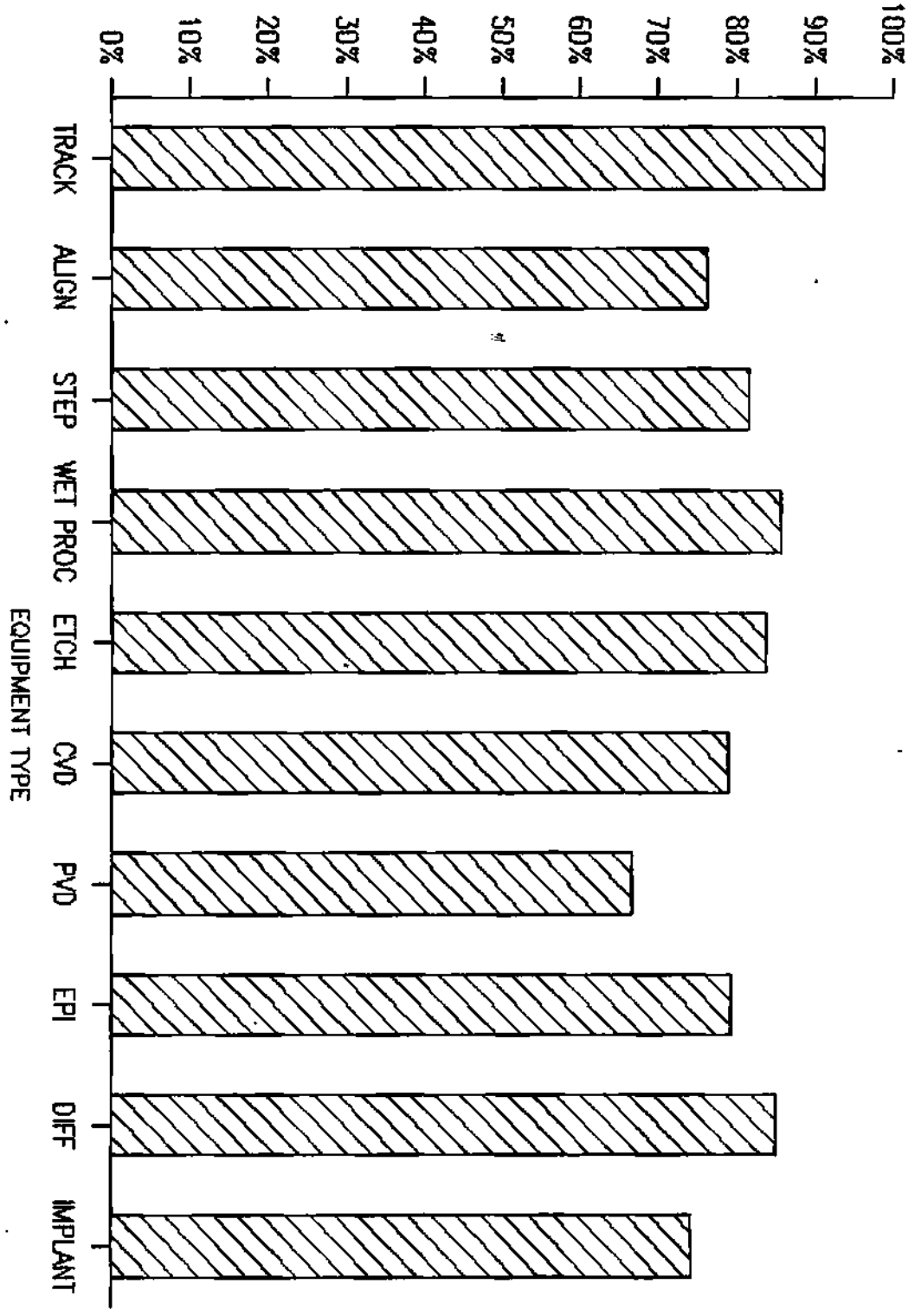
NET/MAX. FAB THROUGHPUT

NET-TO-MAX. FAB THROUGHPUT: ALL VENDORS

ASIC DATA



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LOGIC EQUIPMENT PERFORMANCE

ITEM	PERFORMANCE PARAMETER	TRACK	ALIGN	STEP WET	PROC	ETCH	CVD	PVD	EPI	DIFF	IMPLANT
1	NUMBER	190	95	91	77	73	35	32	12	-	39
2	AVAILABLE TIME (% of total time)	90%	76%	82%	89%	83%	78%	71%	67%	-	71%
3	PRODUCTIVE TIME (% of available time)	82%	85%	91%	92%	79%	71%	82%	64%	-	74%
4	UNSCHEDULED DOWNTIME (hours/quarter)	106	160	174	120	193	249	171	254	-	287
5	SCHEDULED DOWNTIME (hours/quarter)	46	114	79	51	67	100	308	348	-	201
6	MTBF (hrs)	107	73	79	187	112	198	91	79	-	34
7	MTTR (hrs)	3	7	3	6	6	24	7	10	-	5
8	MTBS (hrs)	44	2	135	388	127	141	16	45	-	26
9	MTFS (hrs)	1	0	3	1	1	2	5	1	-	1
10	MTBM (hrs)	158	56	137	151	403	158	123	178	-	95
11	MTFM (hrs)	3	3	3	4	4	7	11	8	-	9
12	RATED THROUGHPUT (wafers/hr: 4" equiv)	63	82	57	287	78	62	54	7	-	106
13	MAX. FAB THROUGHPUT (wafers/hr: 4" equiv)	46	54	43	137	42	44	41	7	-	71
14	ACTUAL/RATED (item #13/item #12)	0.74	0.66	0.75	0.48	0.53	0.71	0.76	0.93	-	0.67
15	NET THROUGHPUT (wafers/hr: item #13 x item #2)	42	41	35	122	35	34	29	4	-	50
16	NET/MAX FAB T.P. (item # 15/item # 13)	90%	76%	82%	89%	83%	78%	71%	67%	-	71%

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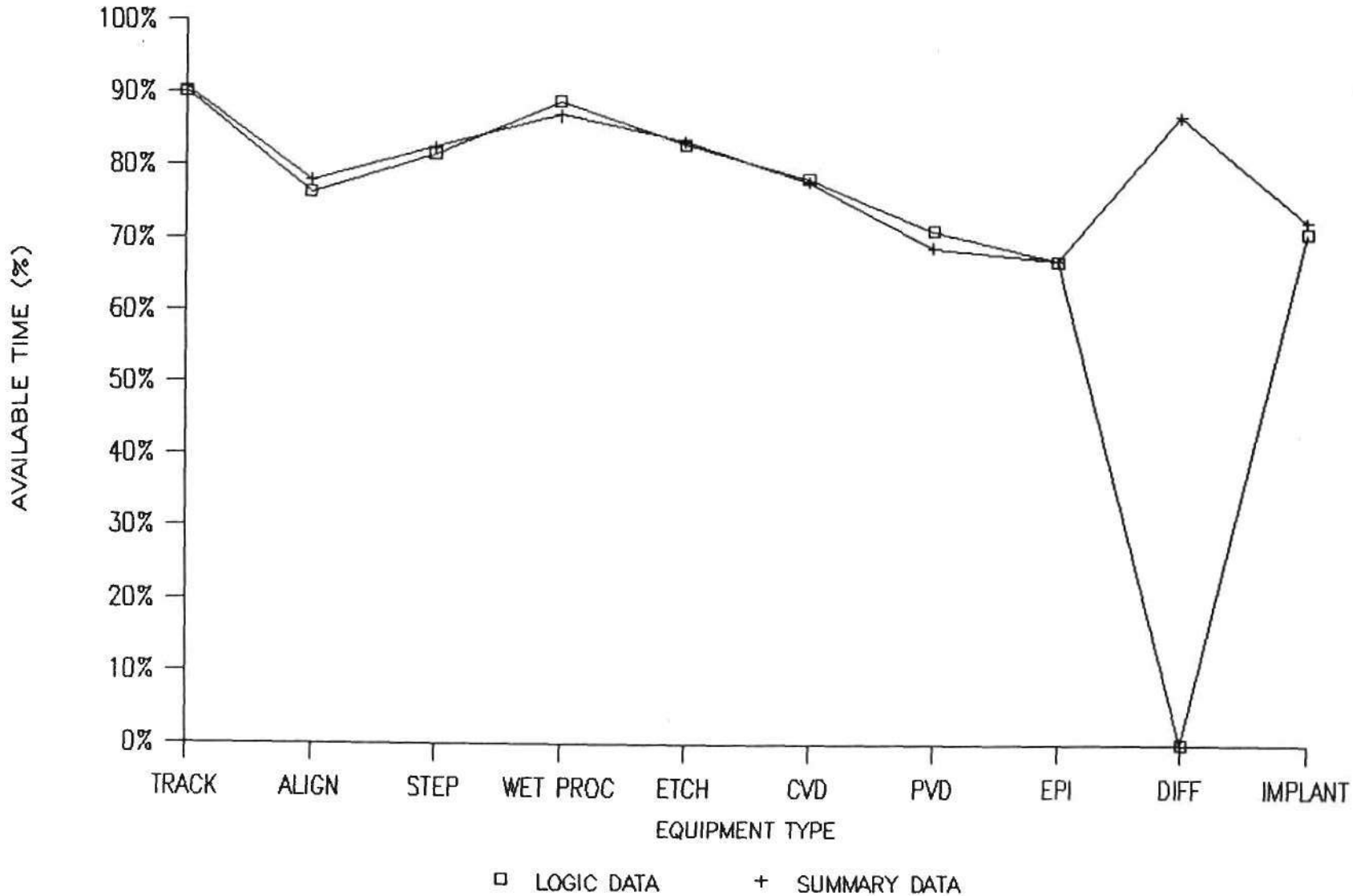
AVAILABLE TIME: ALL VENDORS

LOGIC DATA



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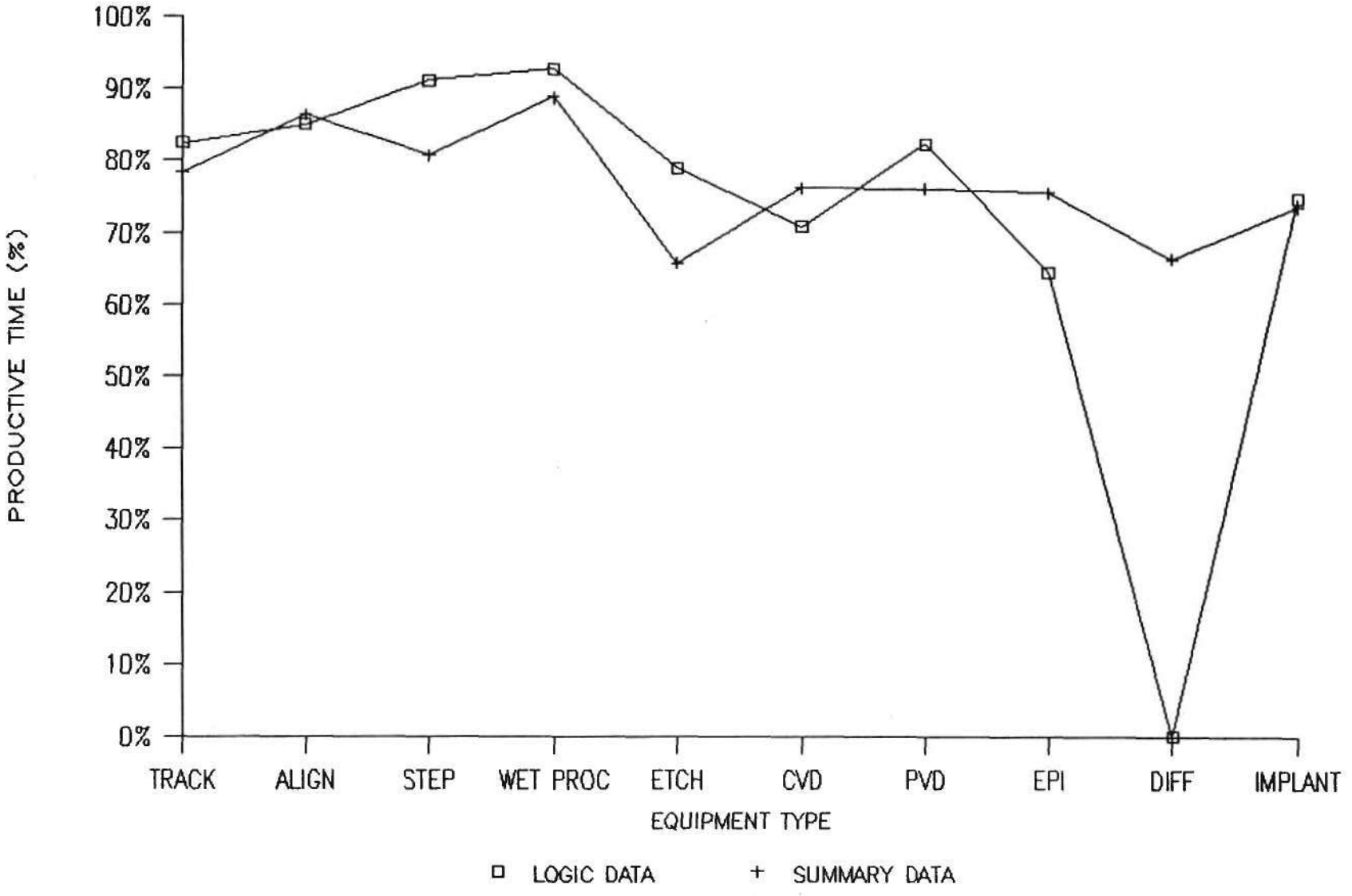
PRODUCTIVE TIME: ALL VENDORS

LOGIC



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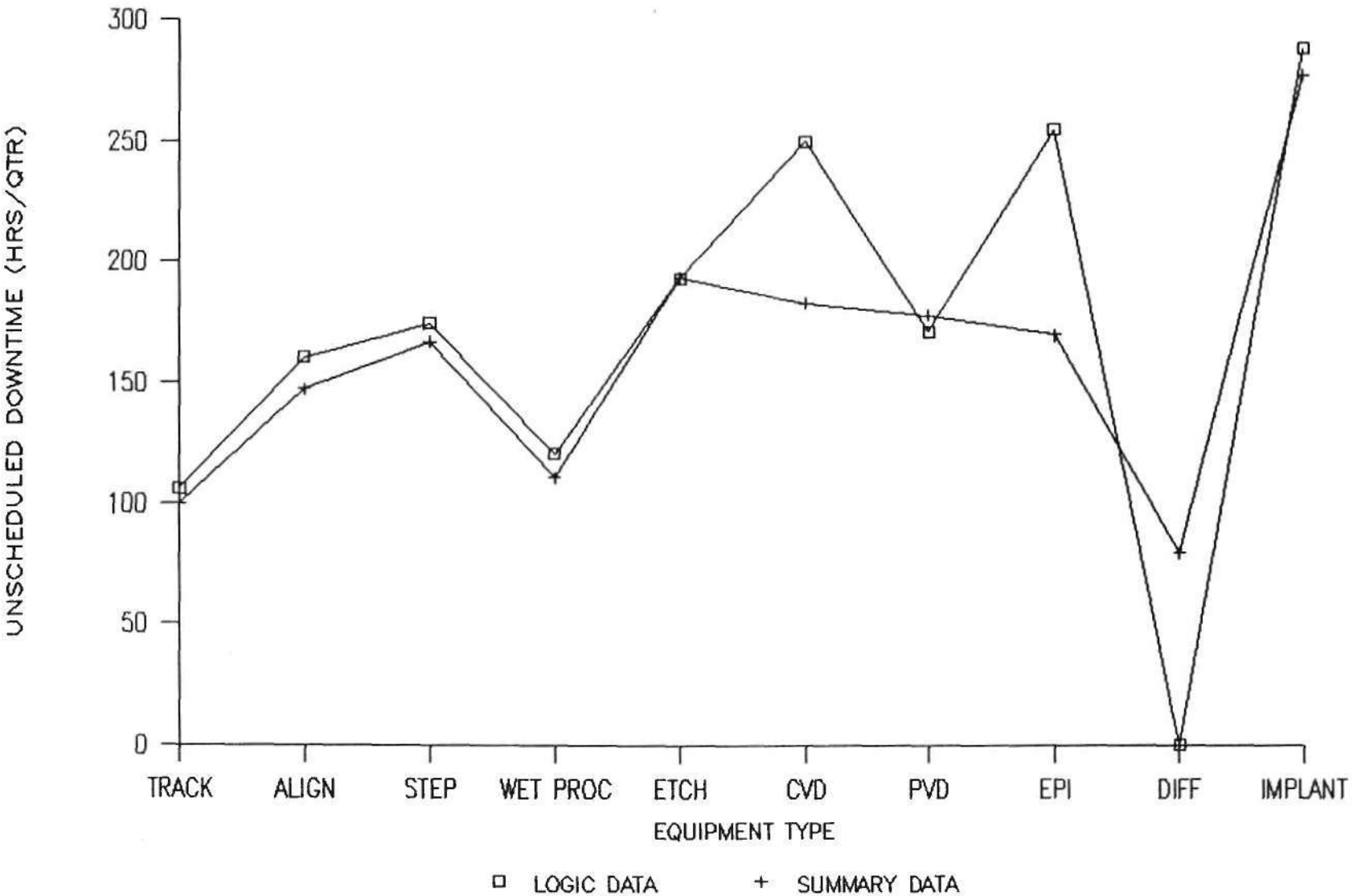
UNSCHEDULED DOWNTIME: ALL VENDORS

LOGIC



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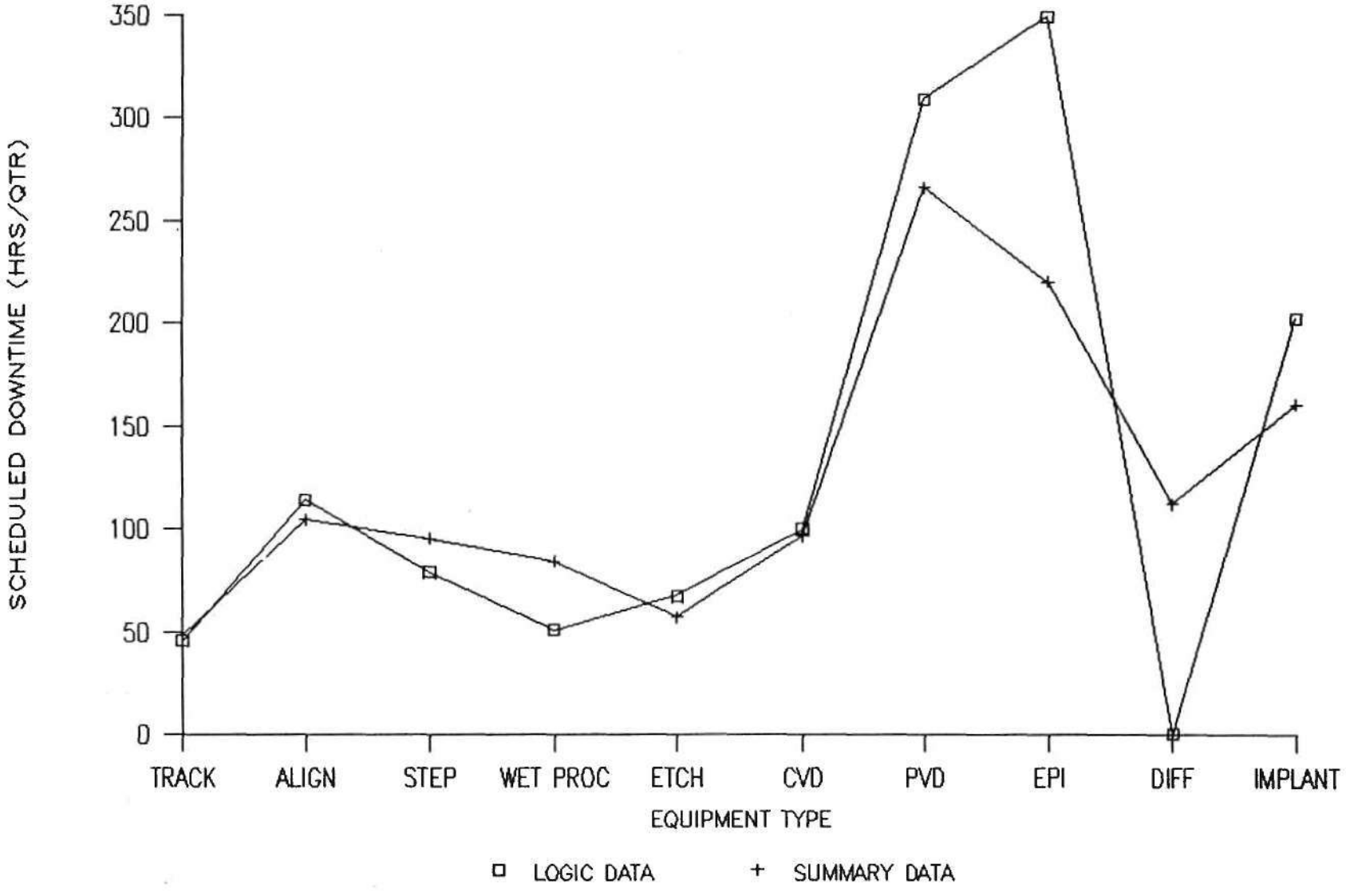
SCHEDULED DOWNTIME: ALL VENDORS

LOGIC



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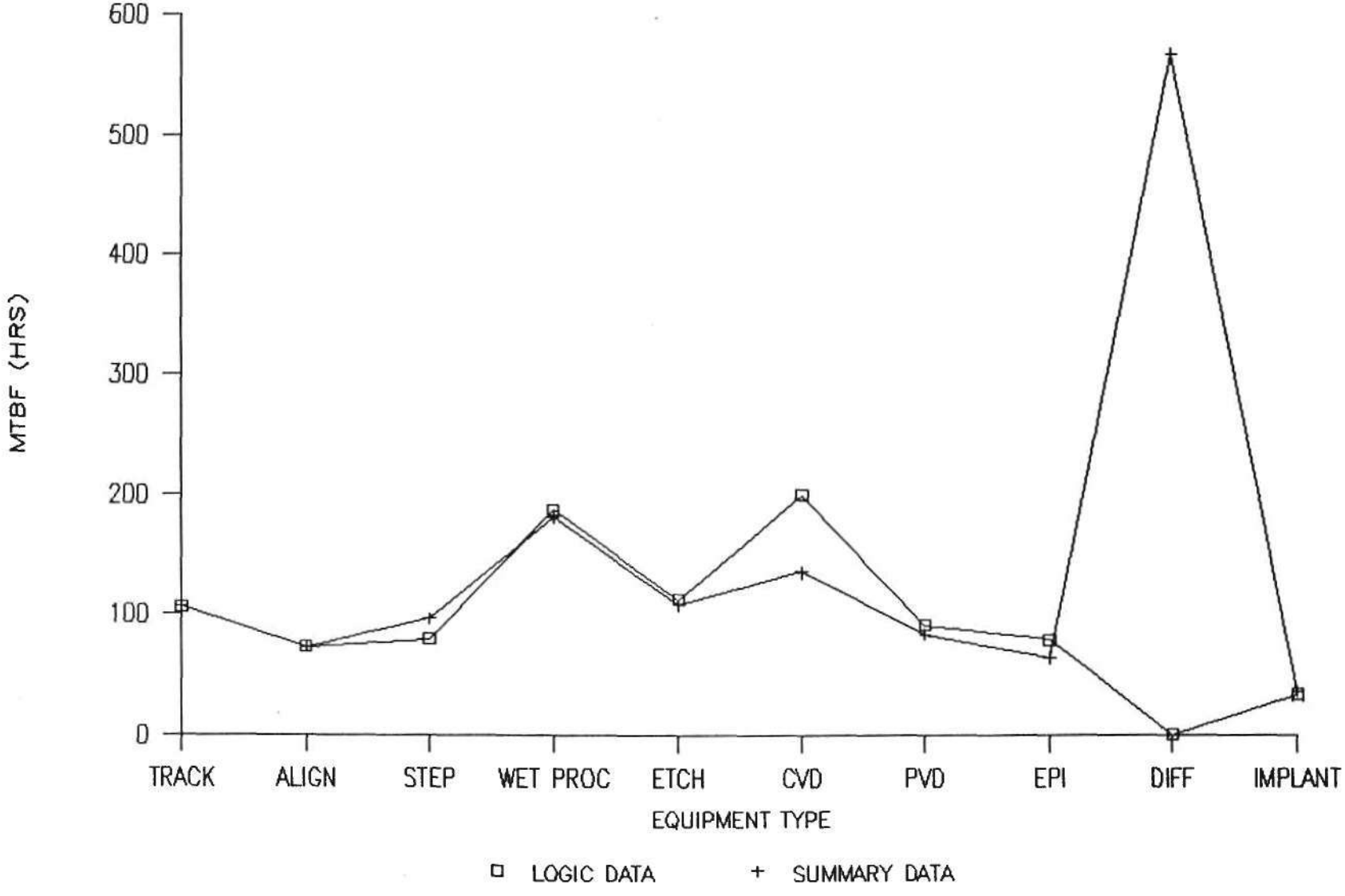
MEAN TIME BETWEEN FAILURE: ALL VENDORS

LOGIC DATA



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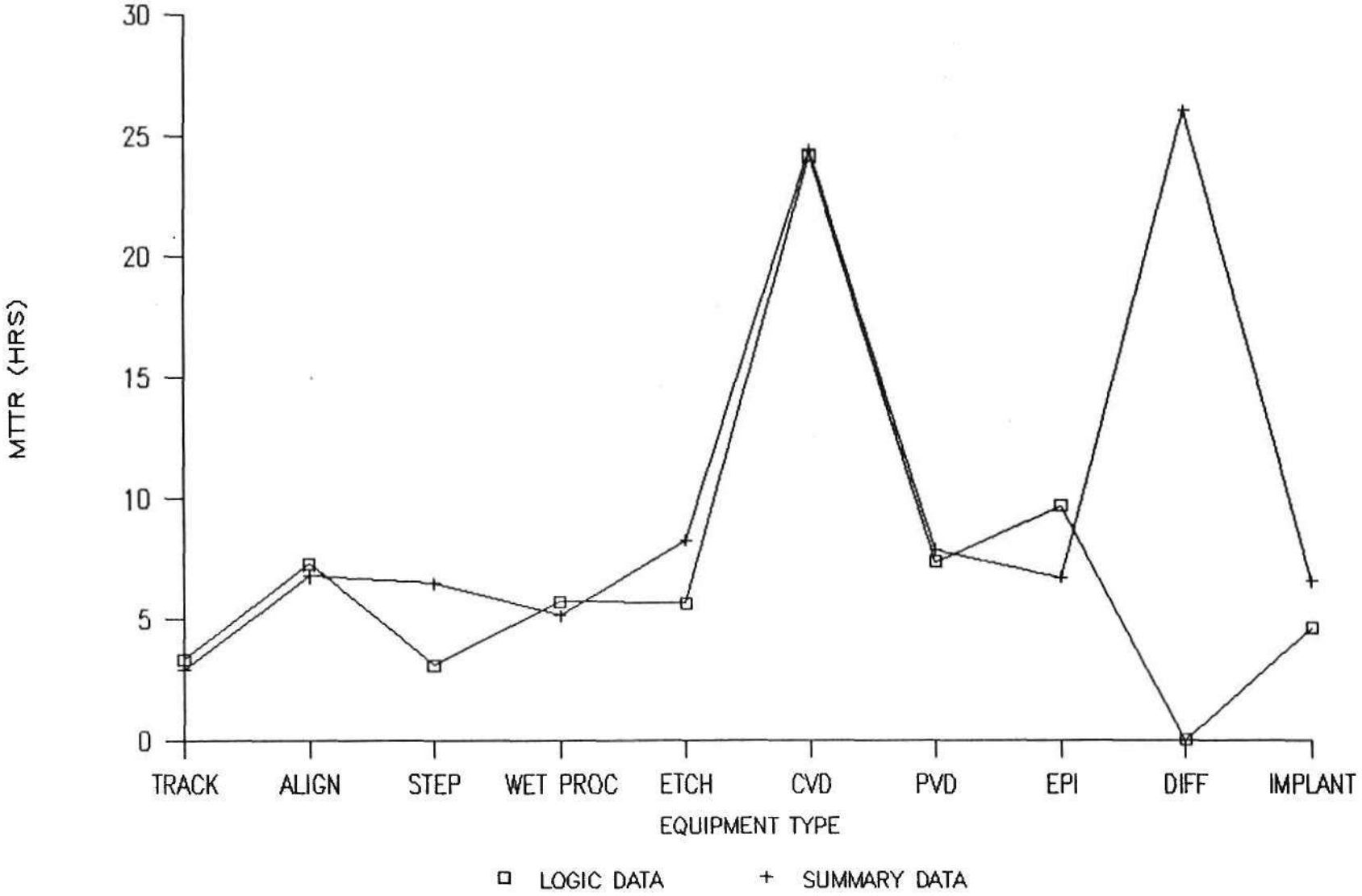
MEAN TIME TO REPAIR: ALL VENDORS

LOGIC



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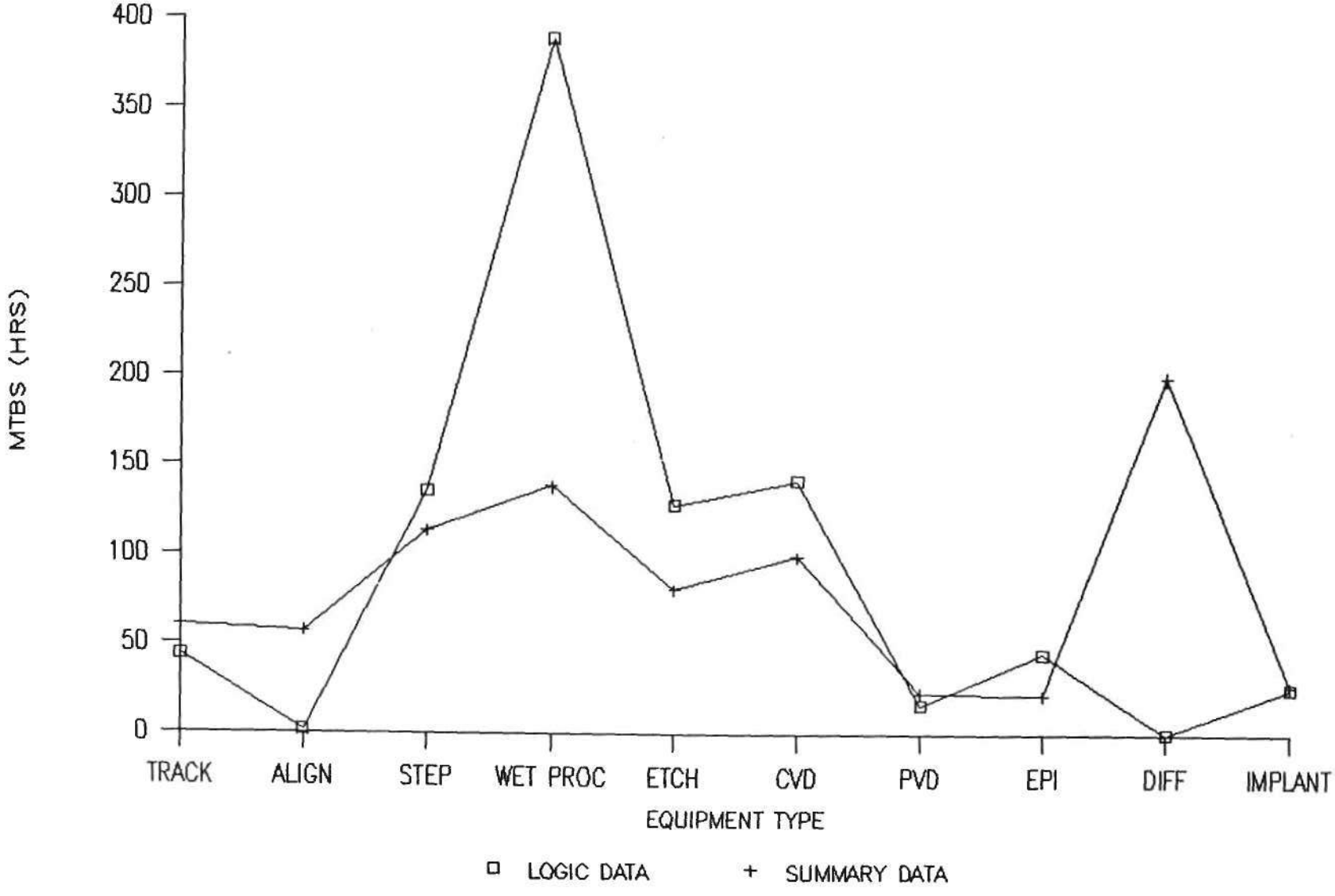
MEAN TIME BETWEEN SET-UPS: ALL VENDORS

LOGIC DATA



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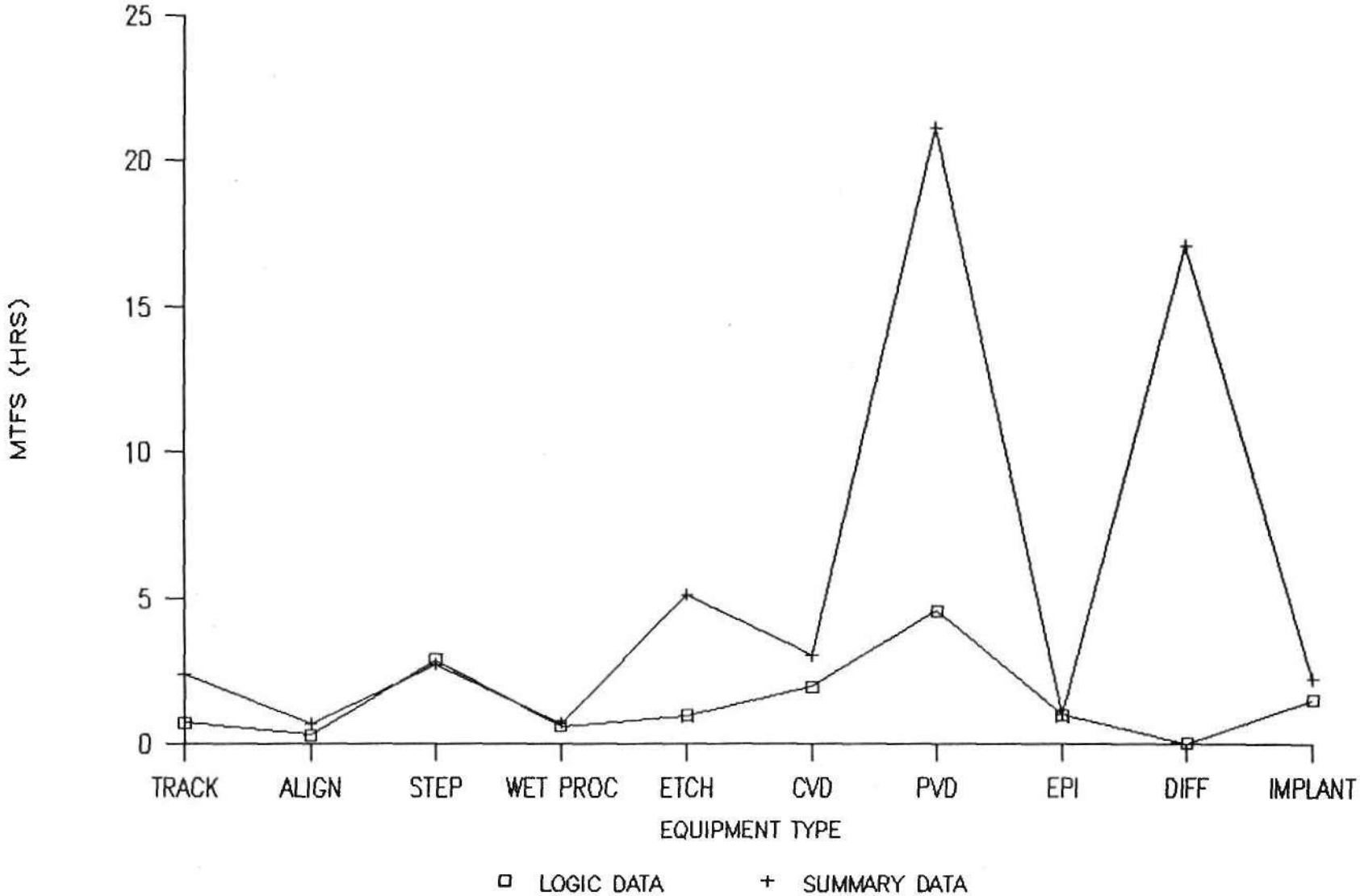
MEAN TIME FOR SET-UP: ALL VENDORS

LOGIC DATA



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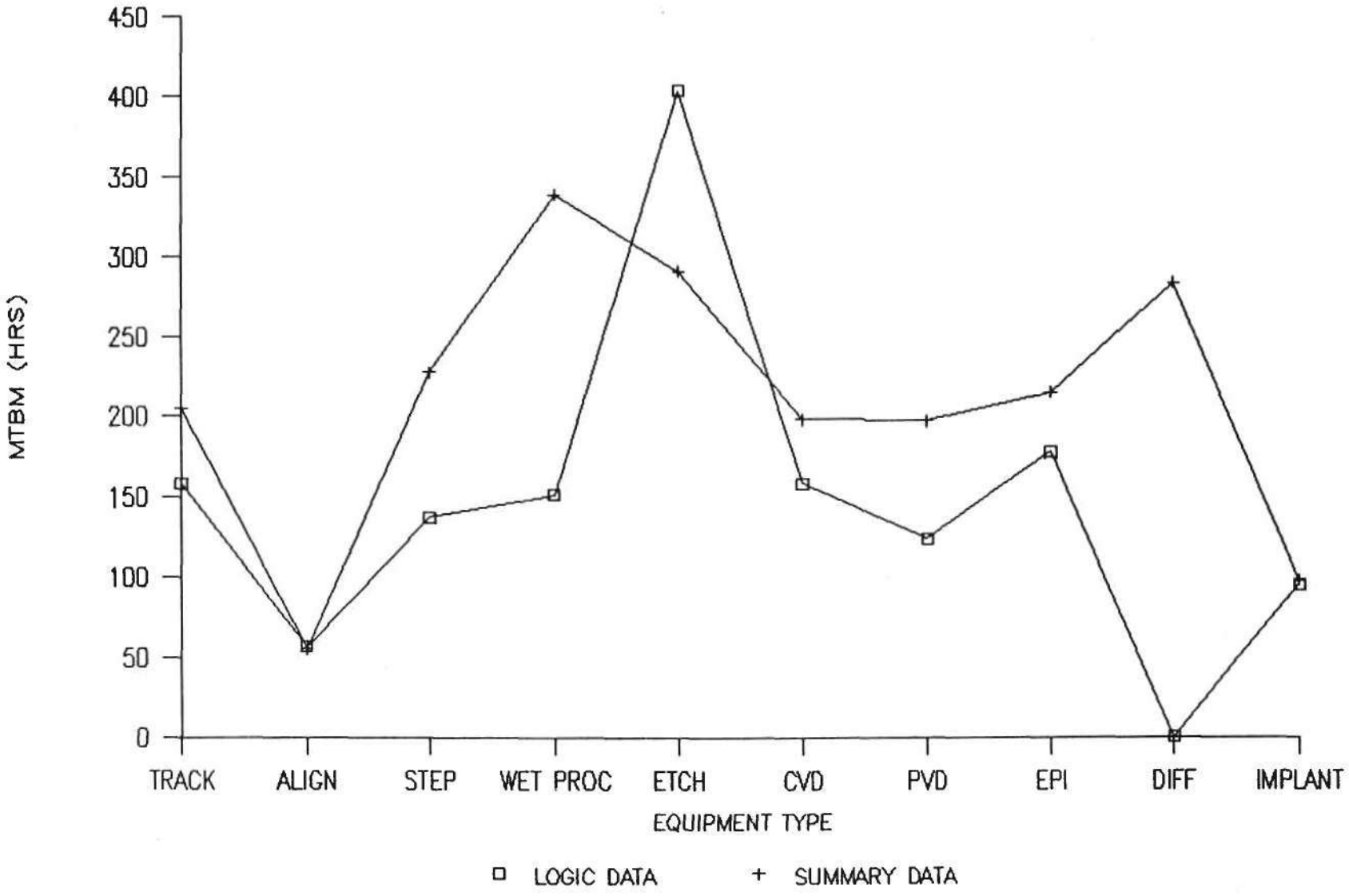
MEAN TIME BTW MAINTENANCE: ALL VENDORS

LOGIC DATA



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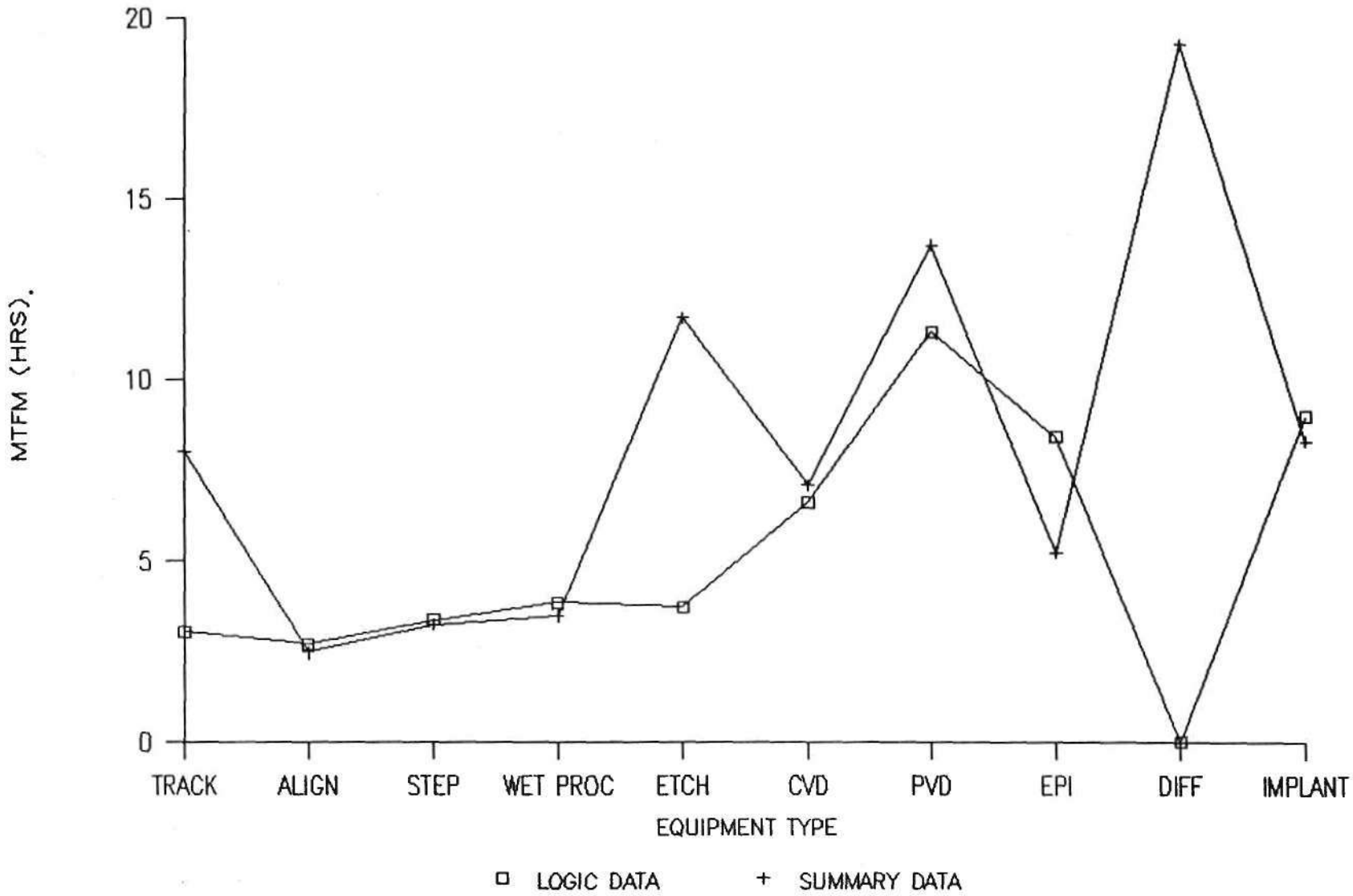
MEAN TIME FOR MAINTENANCE: ALL VENDORS

LOGIC DATA



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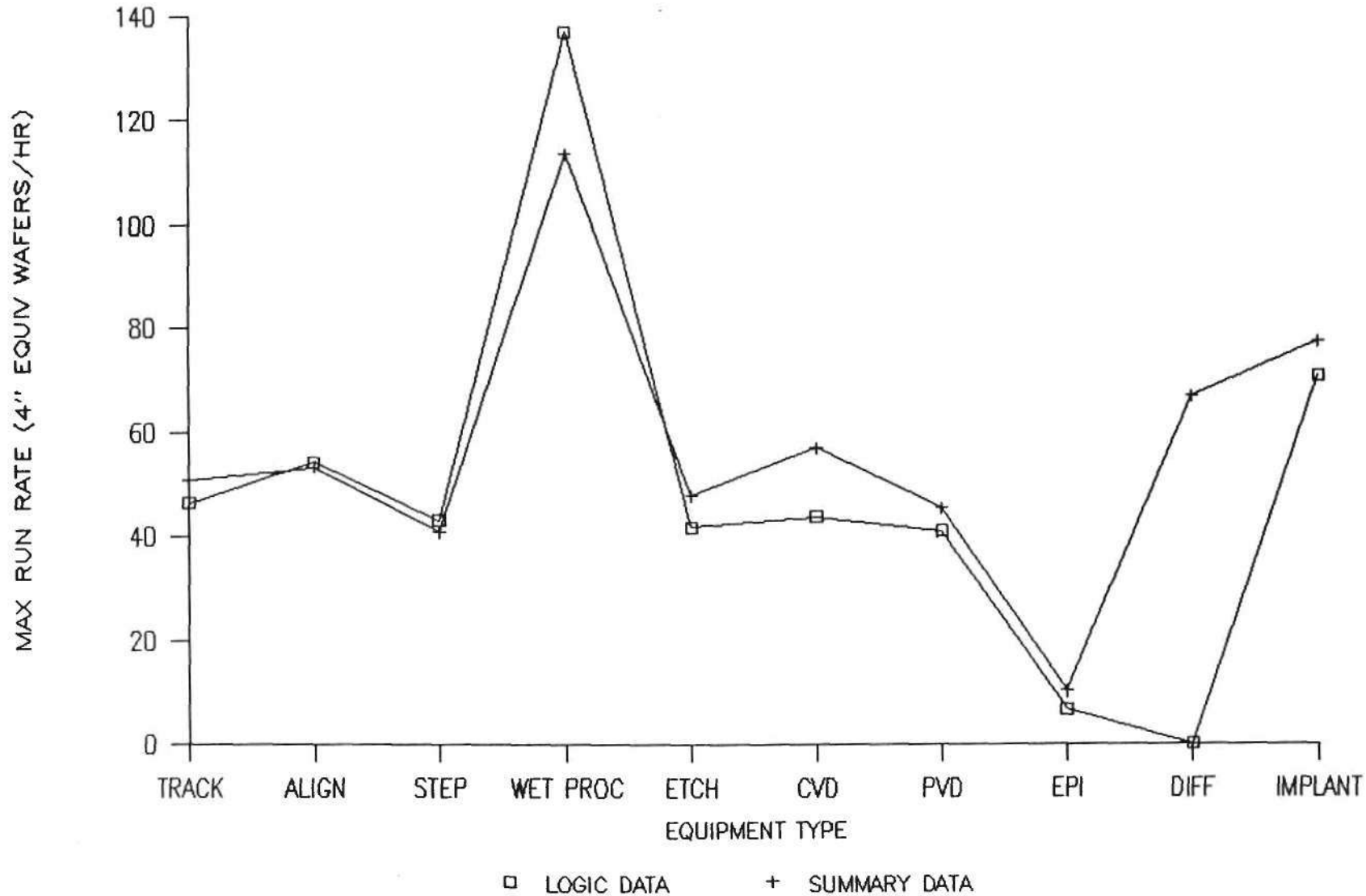
MAX RUN RATE: ALL VENDORS

LOGIC DATA



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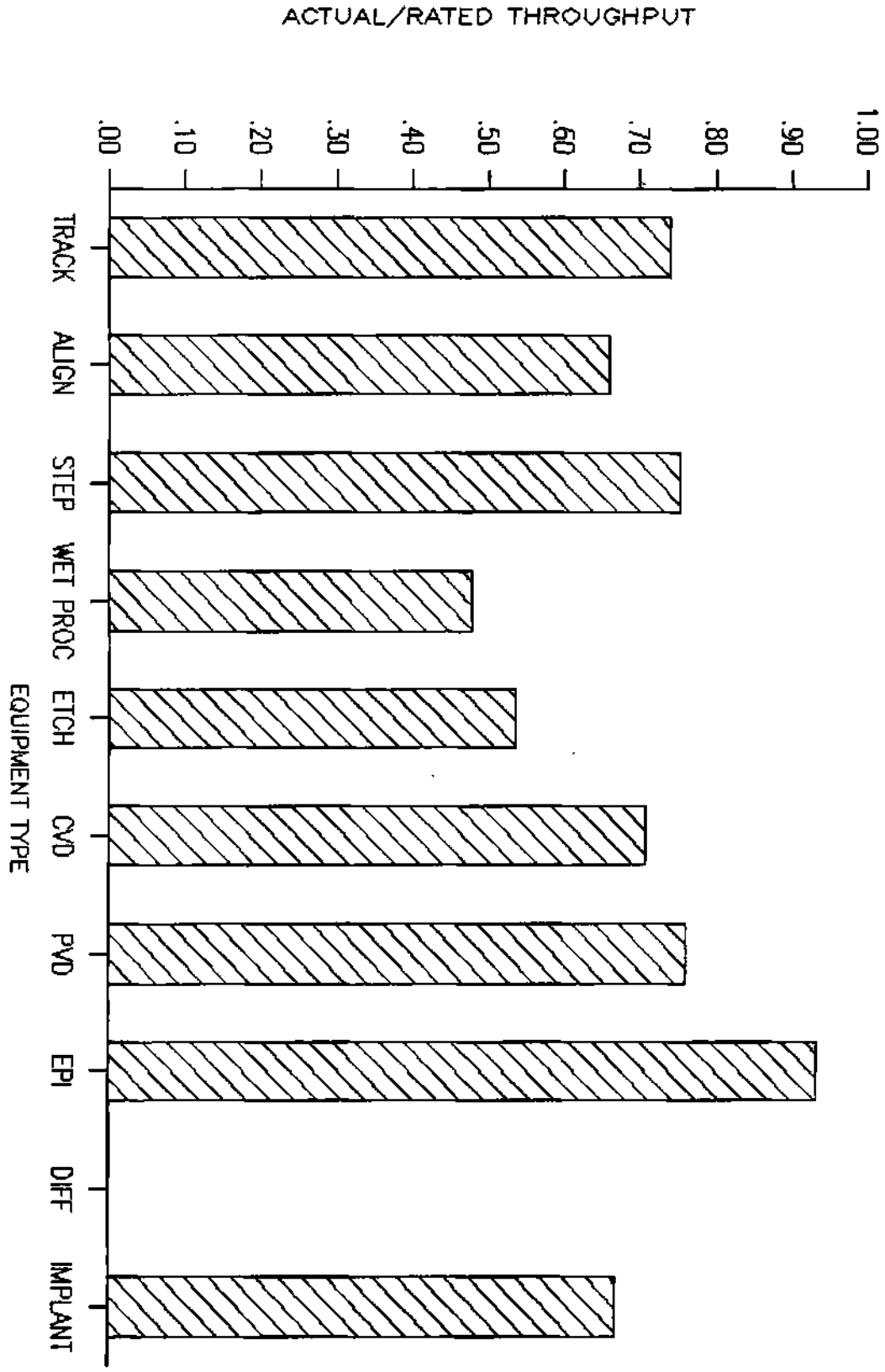
ACTUAL-TO-RATED THROUGHPUT: ALL VENDORS

LOGIC DATA



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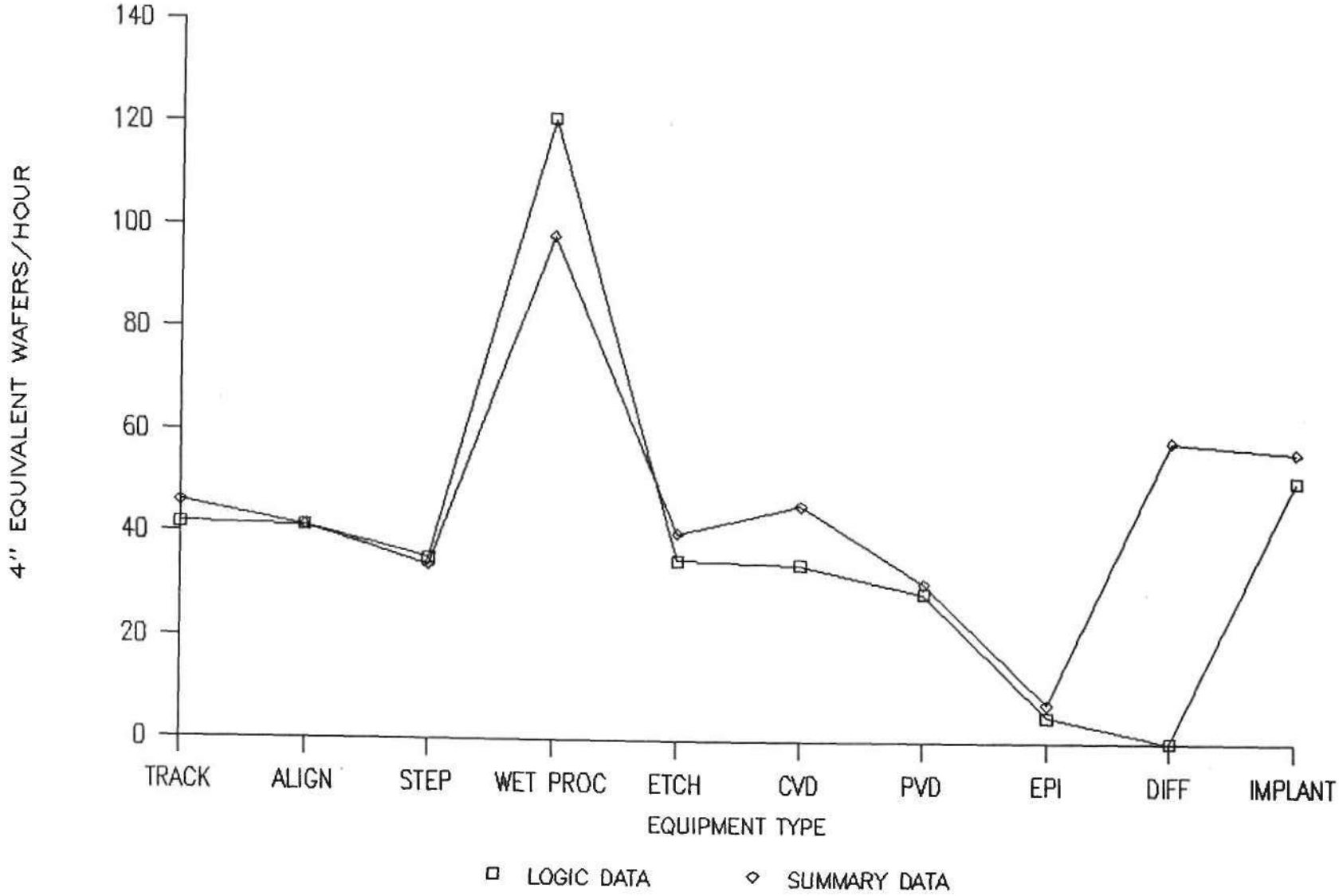
NET THROUGHPUT

ALL VENDORS: LOGIC DATA



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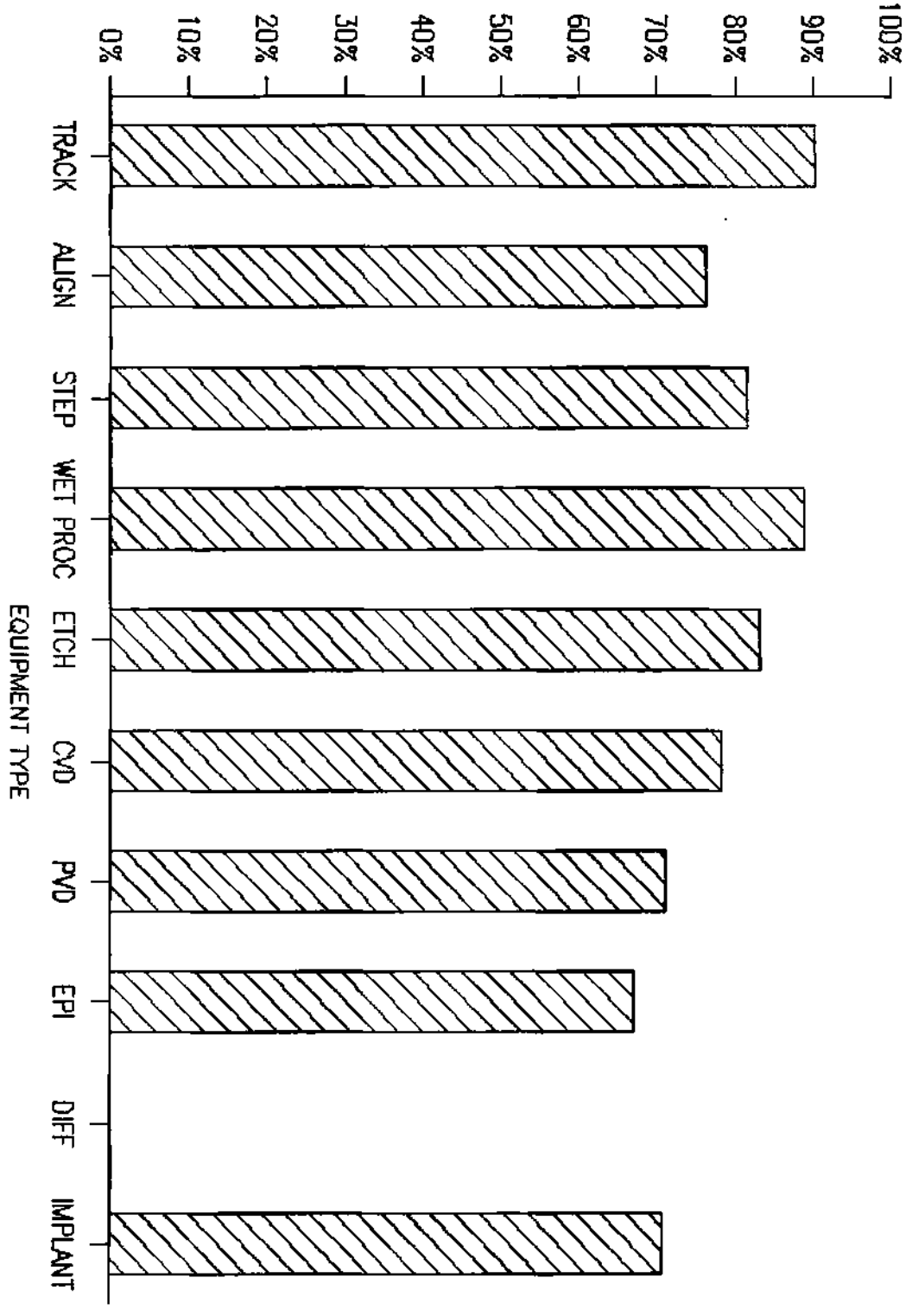
NET/MAX. FAB THROUGHPUT



NET-TO-MAX. FAB THROUGHPUT: ALL VENDORS

LOGIC DATA

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MEMORY EQUIPMENT PERFORMANCE

ITEM	PERFORMANCE PARAMETER	TRACK	ALIGN	STEP	WET PROC	ETCH	CVD	PVD	EPI	DIFF	IMPLANT
1	NUMBER	81	18	78	7	68	27	15	4	139	19
2	AVAILABLE TIME (% of total time)	91%	86%	83%	94%	80%	81%	69%	61%	87%	73%
3	PRODUCTIVE TIME (% of available time)	80%	100%	78%	94%	55%	64%	76%	97%	54%	78%
4	UNSCHEDULED DOWNTIME (hours/quarter)	87	117	170	79	235	125	126	49	92	261
5	SCHEDULED DOWNTIME (hours/quarter)	60	49	87	0	68	119	366	71	148	118
6	MTBF (hrs)	114	51	93	171	130	169	119	48	757	41
7	MTTR (hrs)	3	3	9	5	11	21	11	5	35	9
8	MTBS (hrs)	78	85	84	0	74	42	21	5	198	20
9	MTFS (hrs)	1	1	2	1	8	4	35	2	22	3
10	MTBM (hrs)	188	103	133	0	230	119	67	17	260	68
11	MTFM (hrs)	1	5	3	4	10	5	15	1	26	5
12	RATED THROUGHPUT (wafers/hr: 4" equiv)	76	94	47	88	74	54	62	0	41	144
13	MAX. FAB THROUGHPUT (wafers/hr: 4" equiv)	61	58	35	34	51	40	55	10	33	98
14	ACTUAL/RATED (item #13/item #12)	0.81	0.62	0.74	0.39	0.69	0.74	0.88	-	0.81	0.68
15	NET THROUGHPUT (wafers/hr: item #13 x item #2)	56	50	29	32	41	32	38	6	29	71
16	NET/MAX FAB T.P. (item # 15/item # 13)	91%	86%	83%	94%	80%	81%	69%	61%	87%	73%

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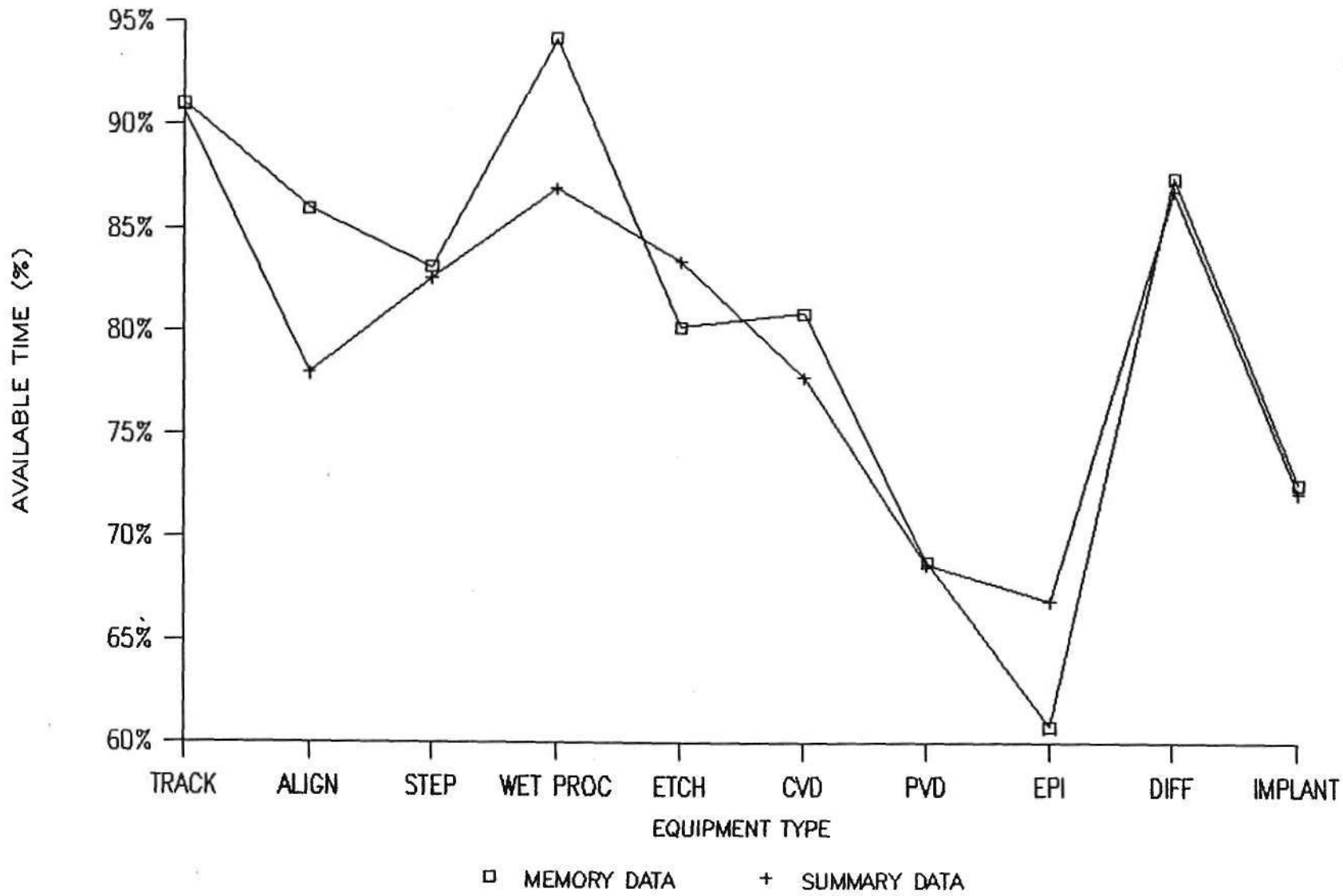
AVAILABLE TIME: ALL VENDORS

MEMORY DATA



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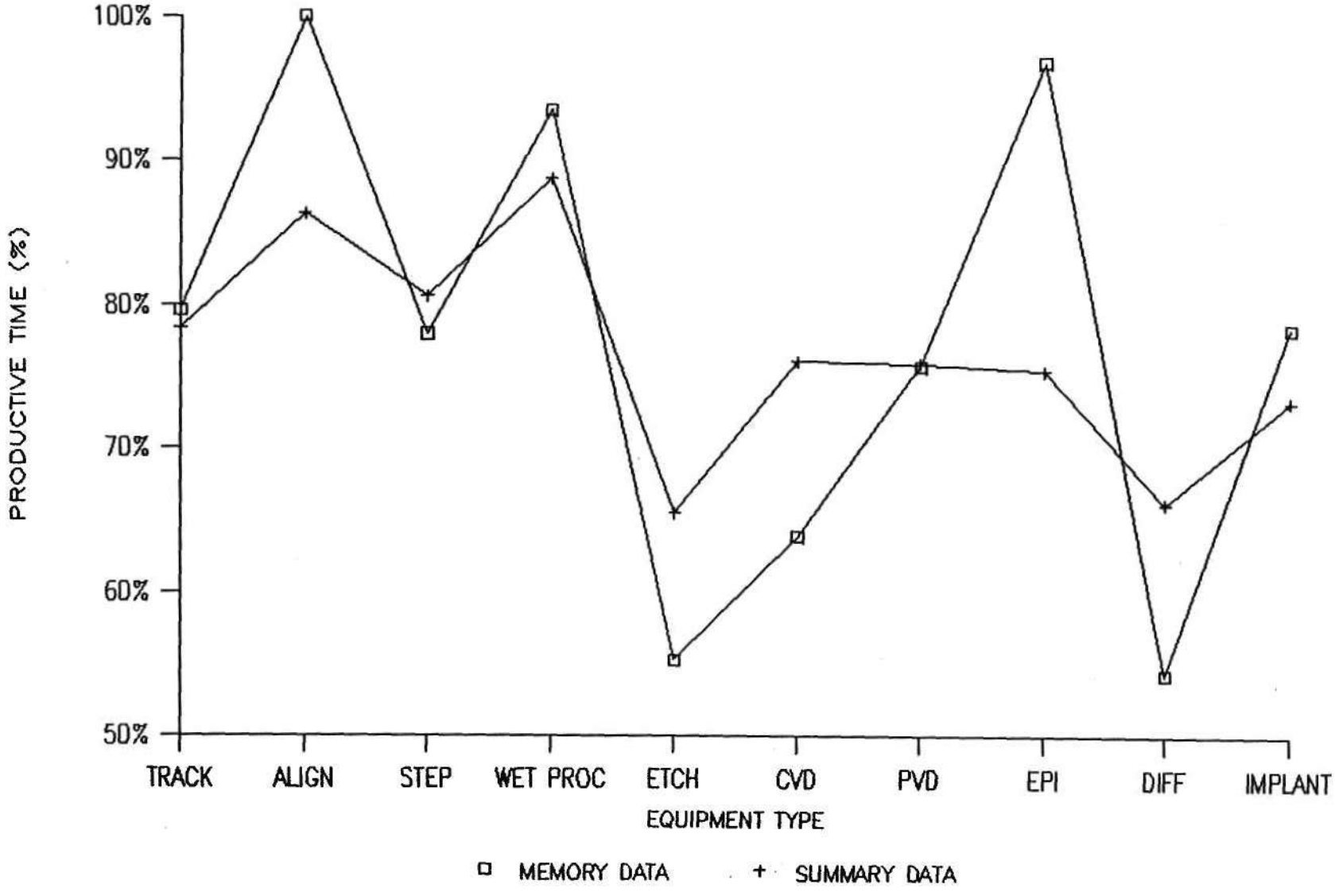
PRODUCTIVE TIME: ALL VENDORS

MEMORY DATA



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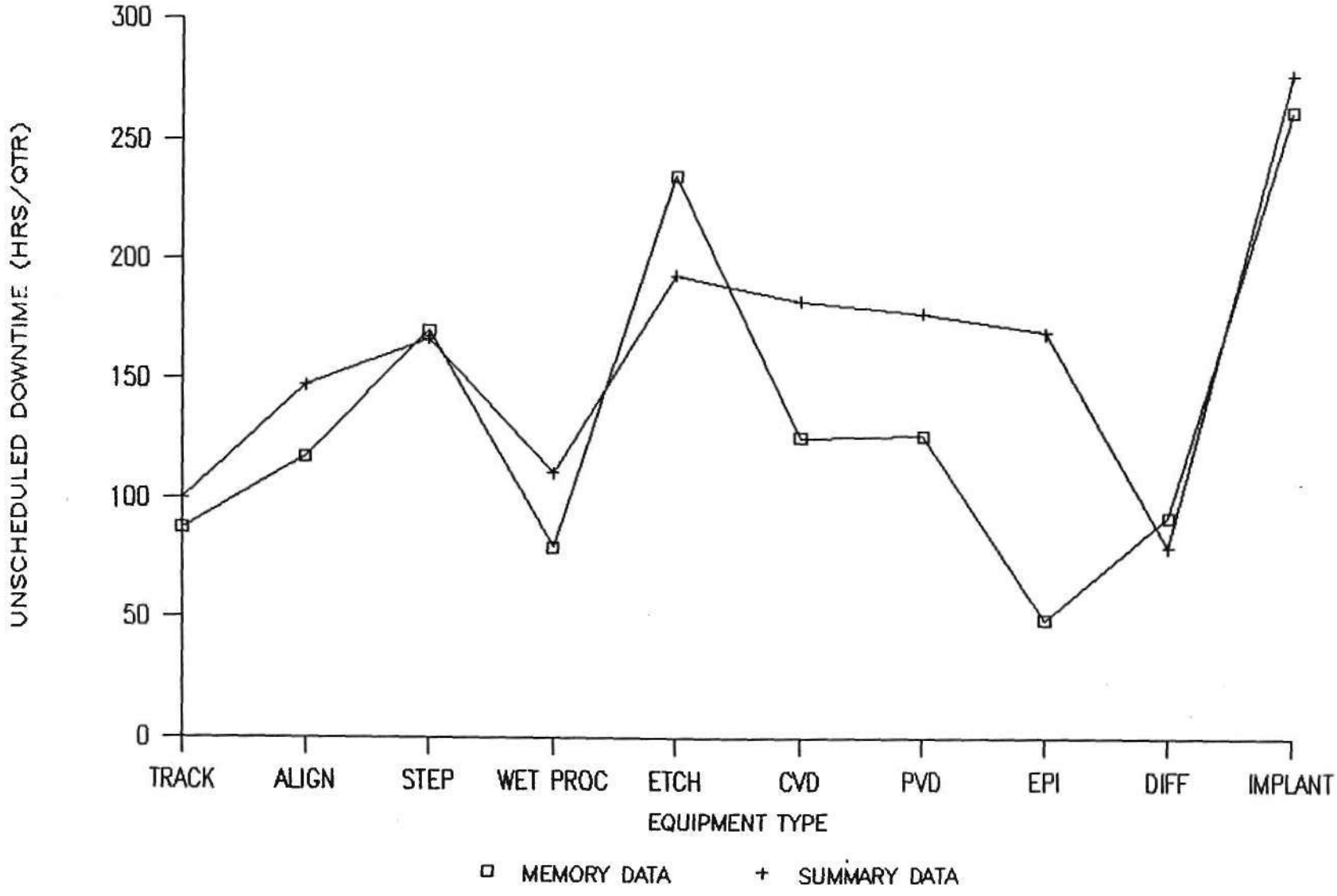
UNSCHEDULED DOWNTIME: ALL VENDORS

MEMORY DATA



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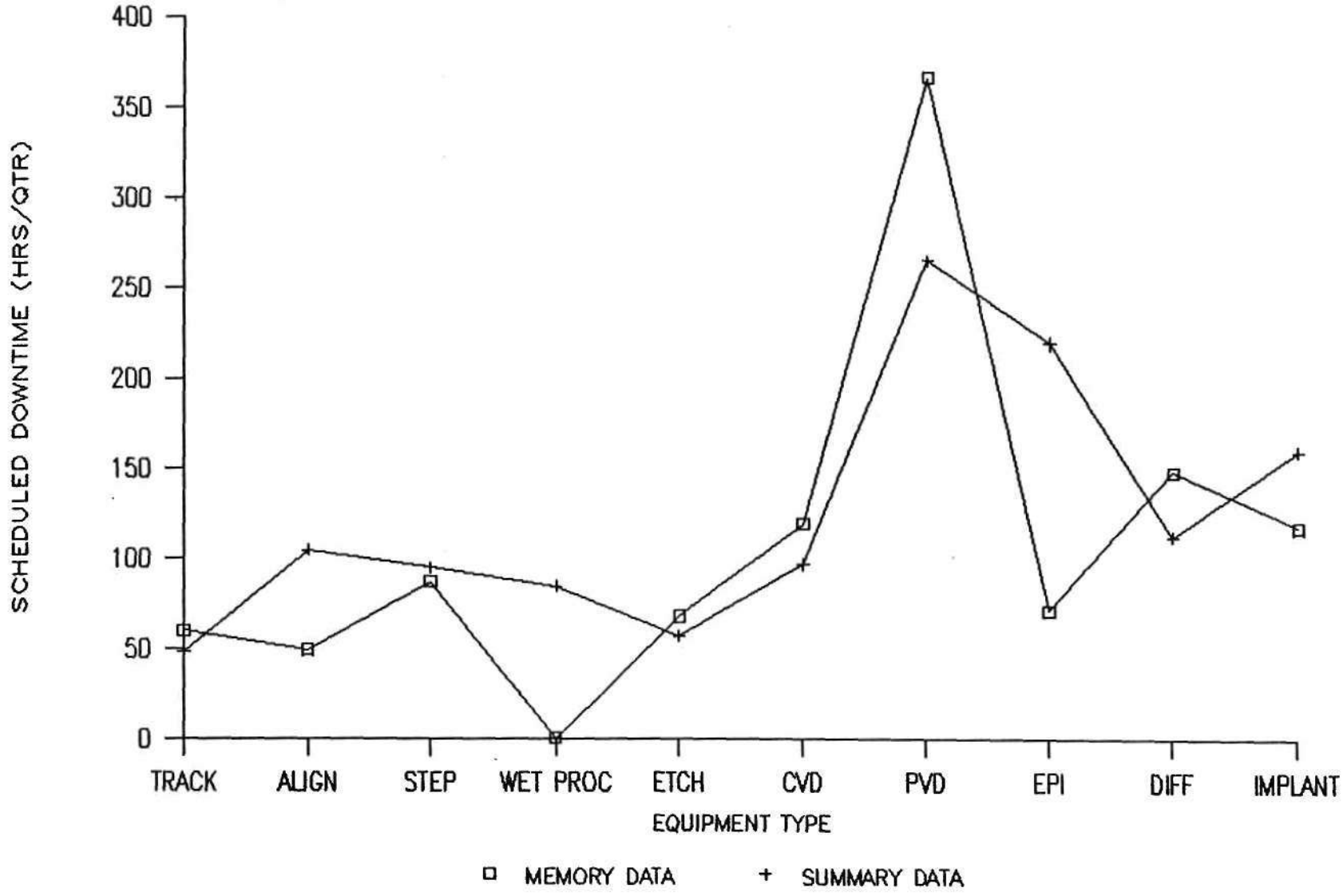
SCHEDULED DOWNTIME: ALL VENDORS

MEMORY DATA



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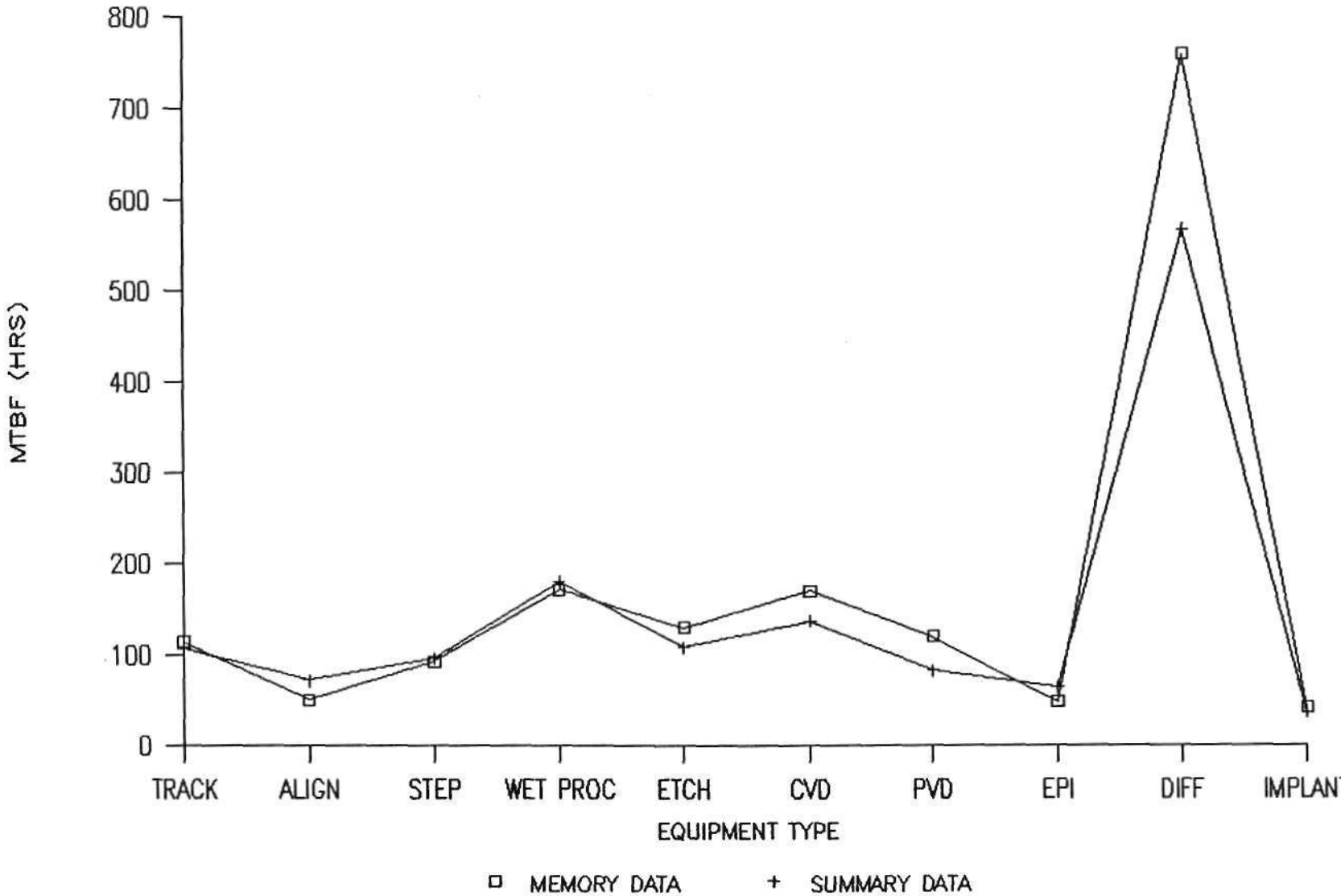
MEAN TIME BETWEEN FAILURE: ALL VENDORS

MEMORY DATA



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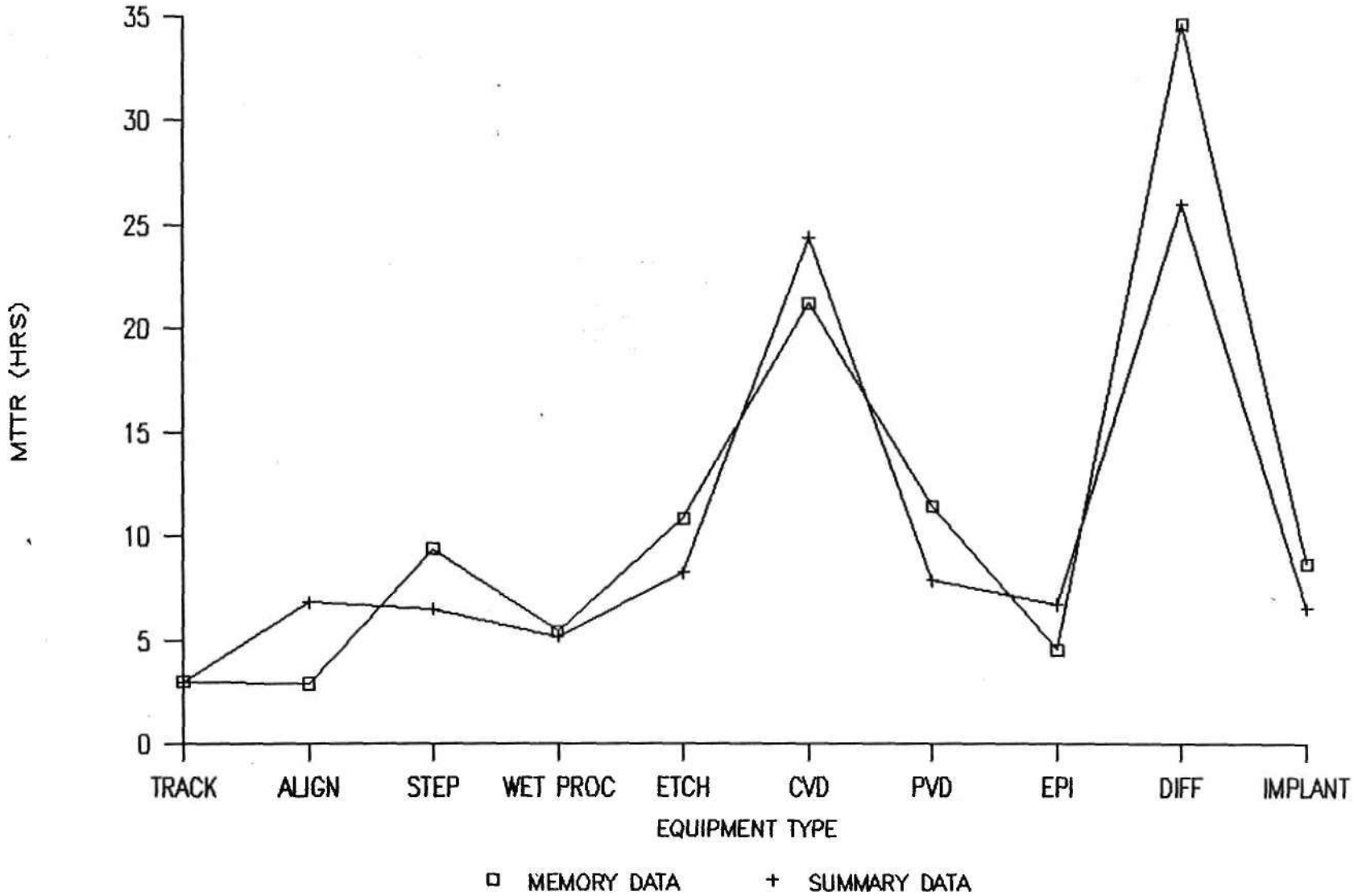
MEAN TIME TO REPAIR: ALL VENDORS

MEMORY DATA



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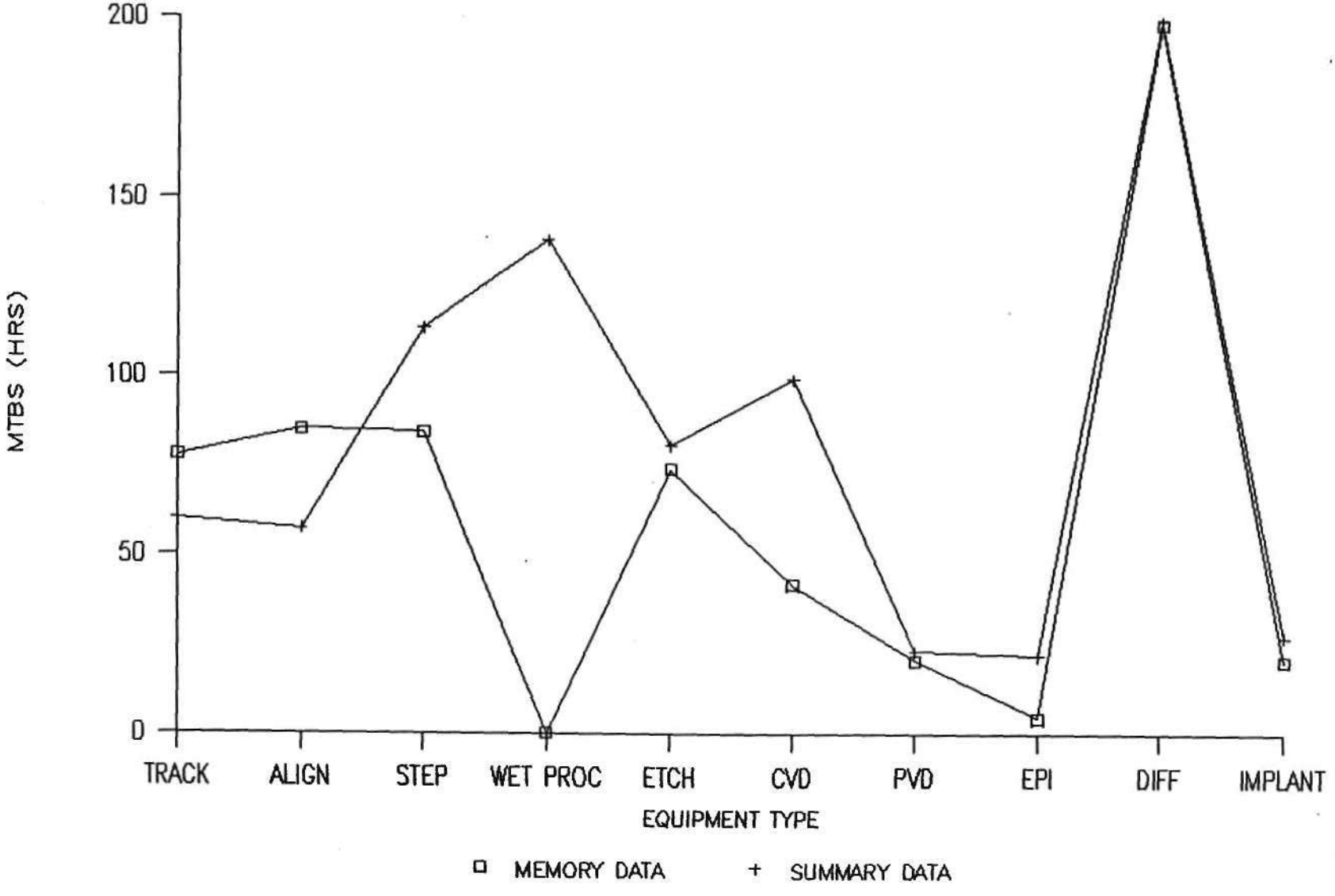
MEAN TIME BETWEEN SET-UPS: ALL VENDORS

MEMORY DATA



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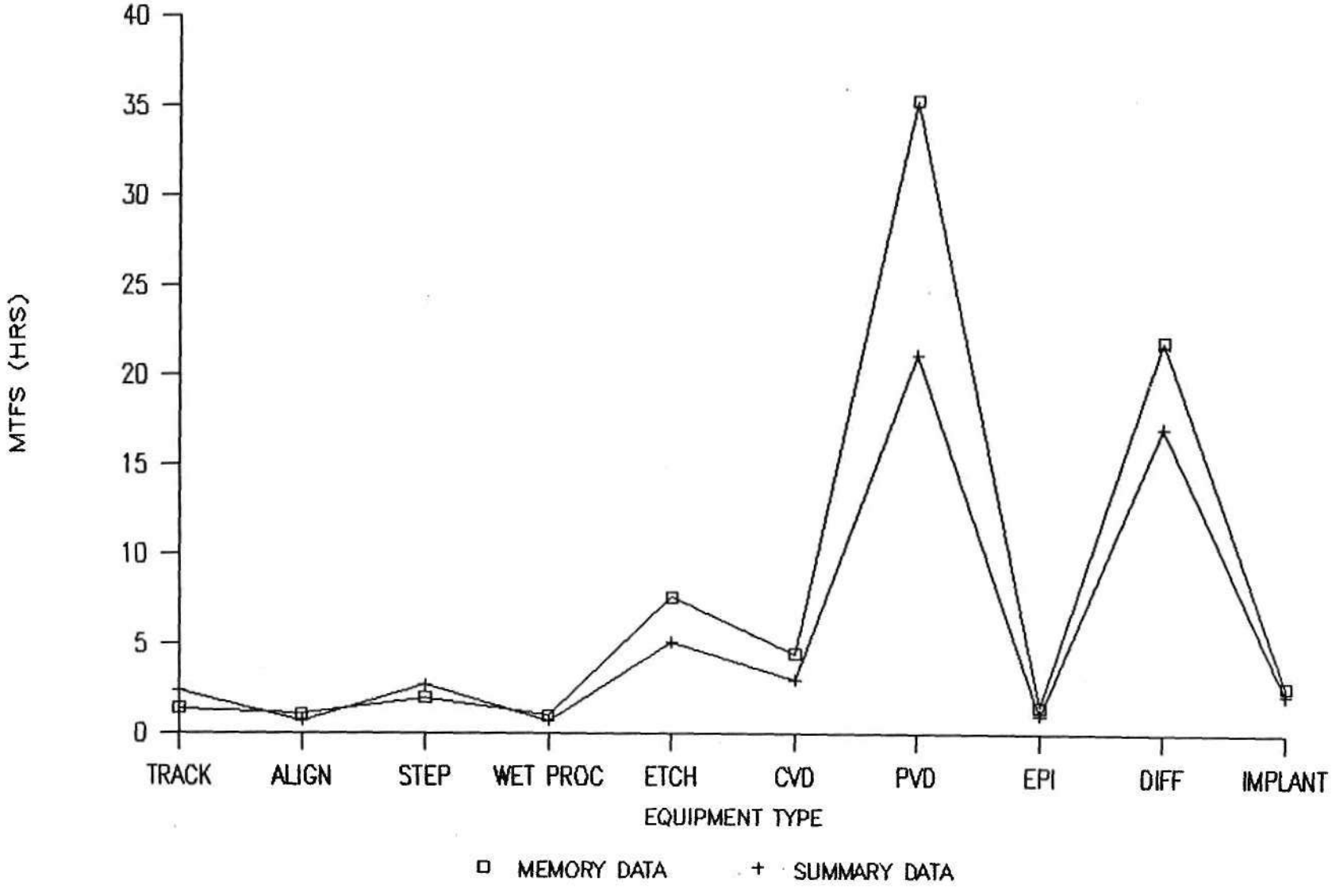
MEAN TIME FOR SET-UP: ALL VENDORS

MEMORY DATA



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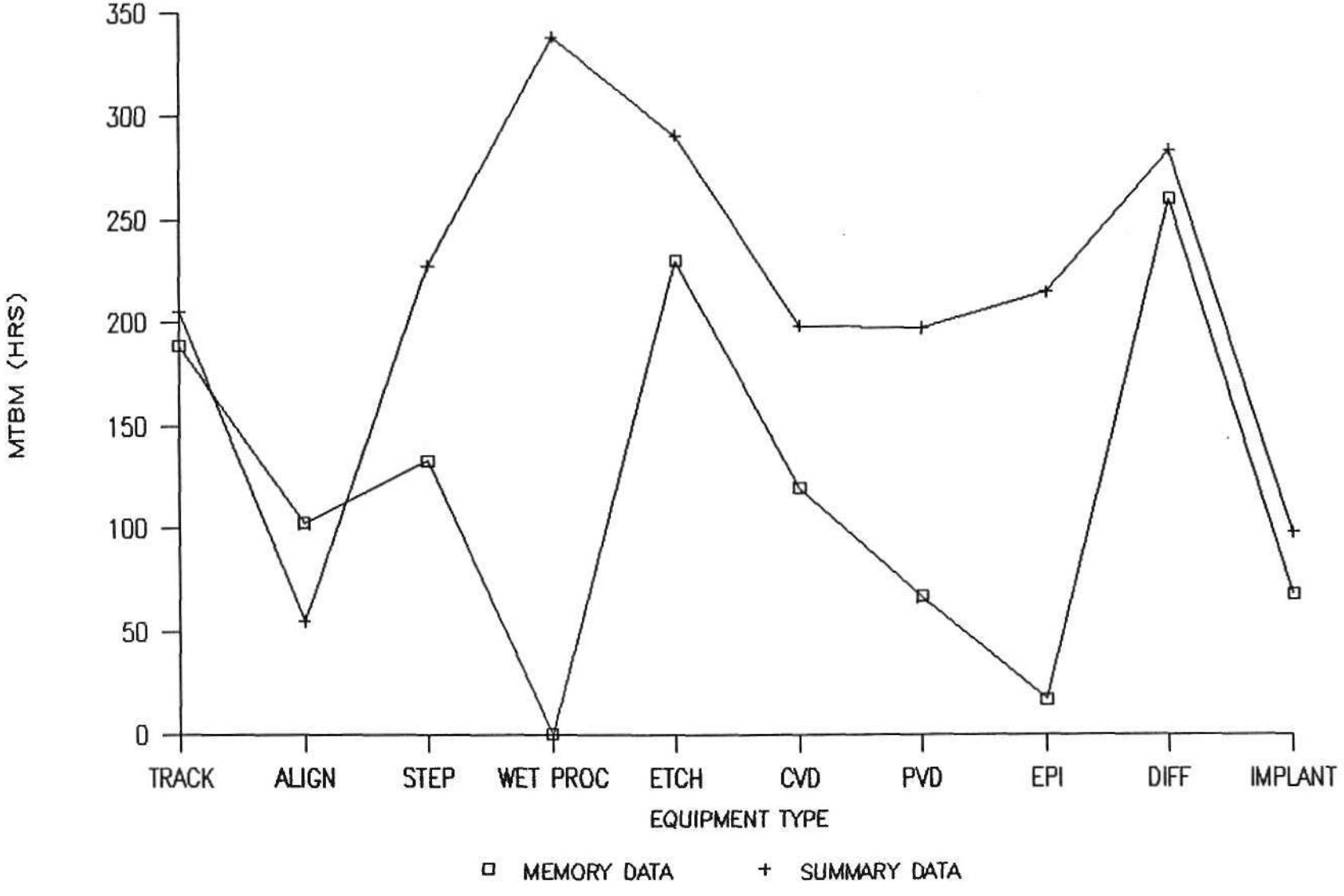
MEAN TIME BTW MAINTENANCE: ALL VENDORS

MEMORY DATA



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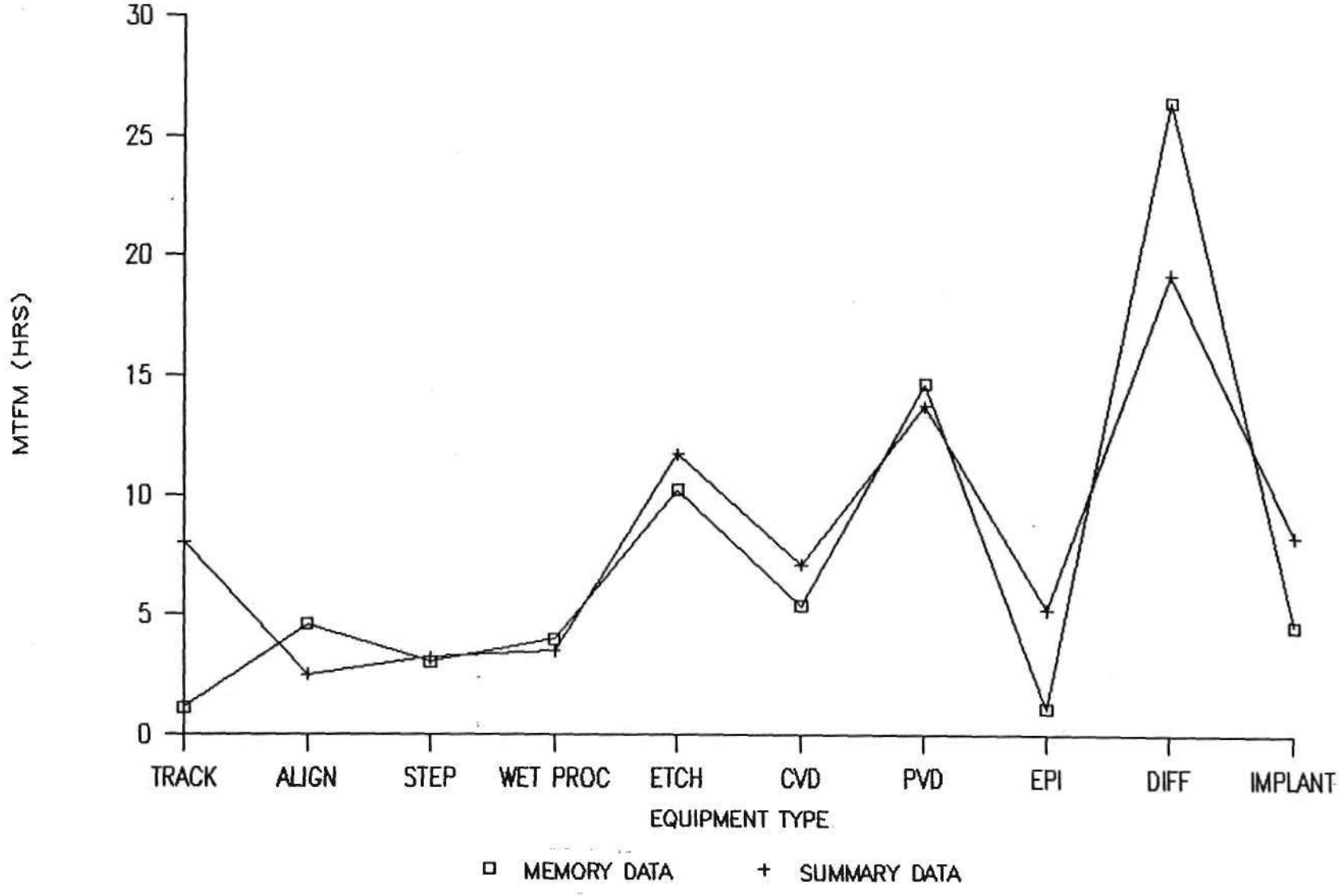
MEAN TIME FOR MAINTENANCE: ALL VENDORS

MEMORY DATA



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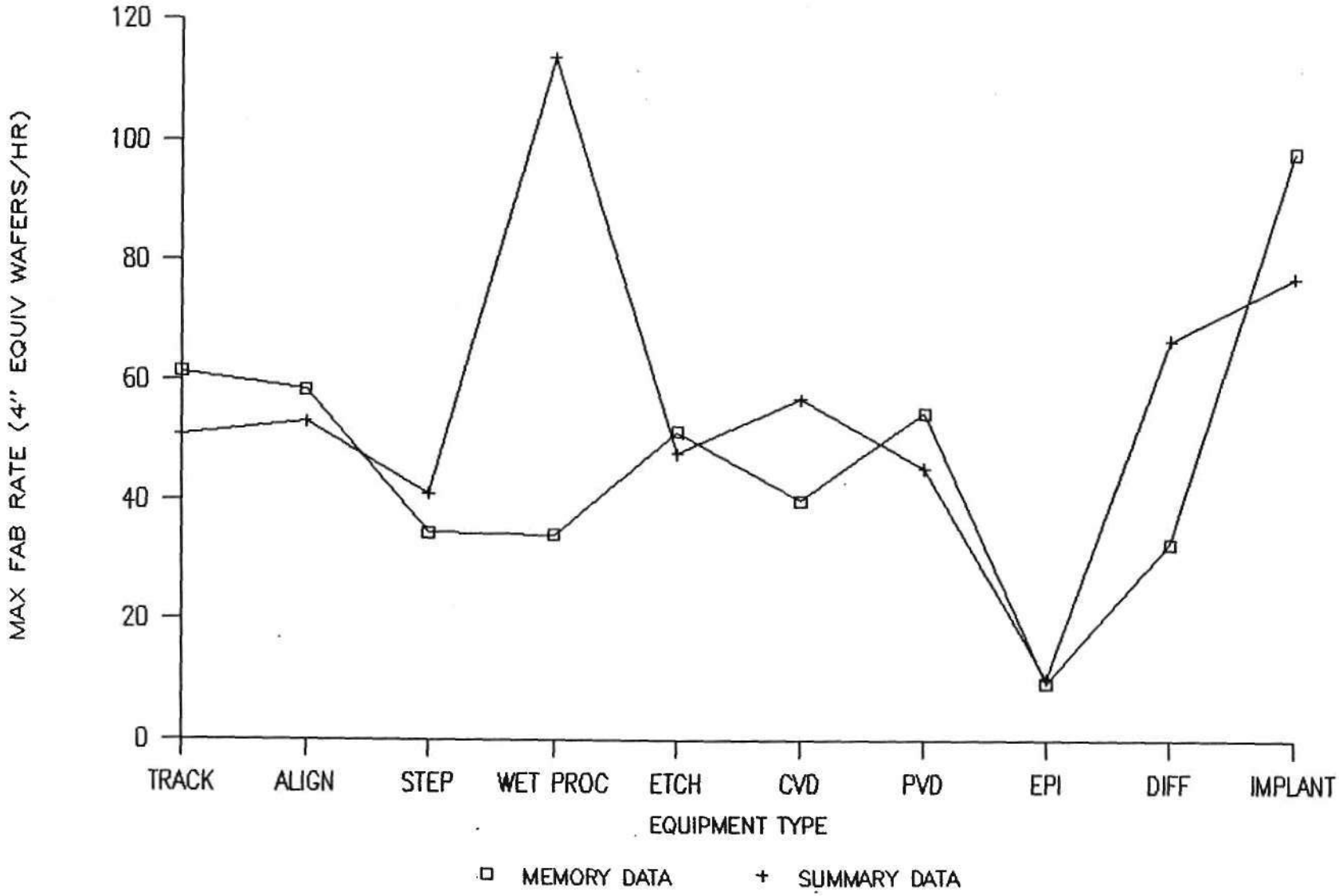
MAX FAB RATE: ALL VENDORS

MEMORY DATA



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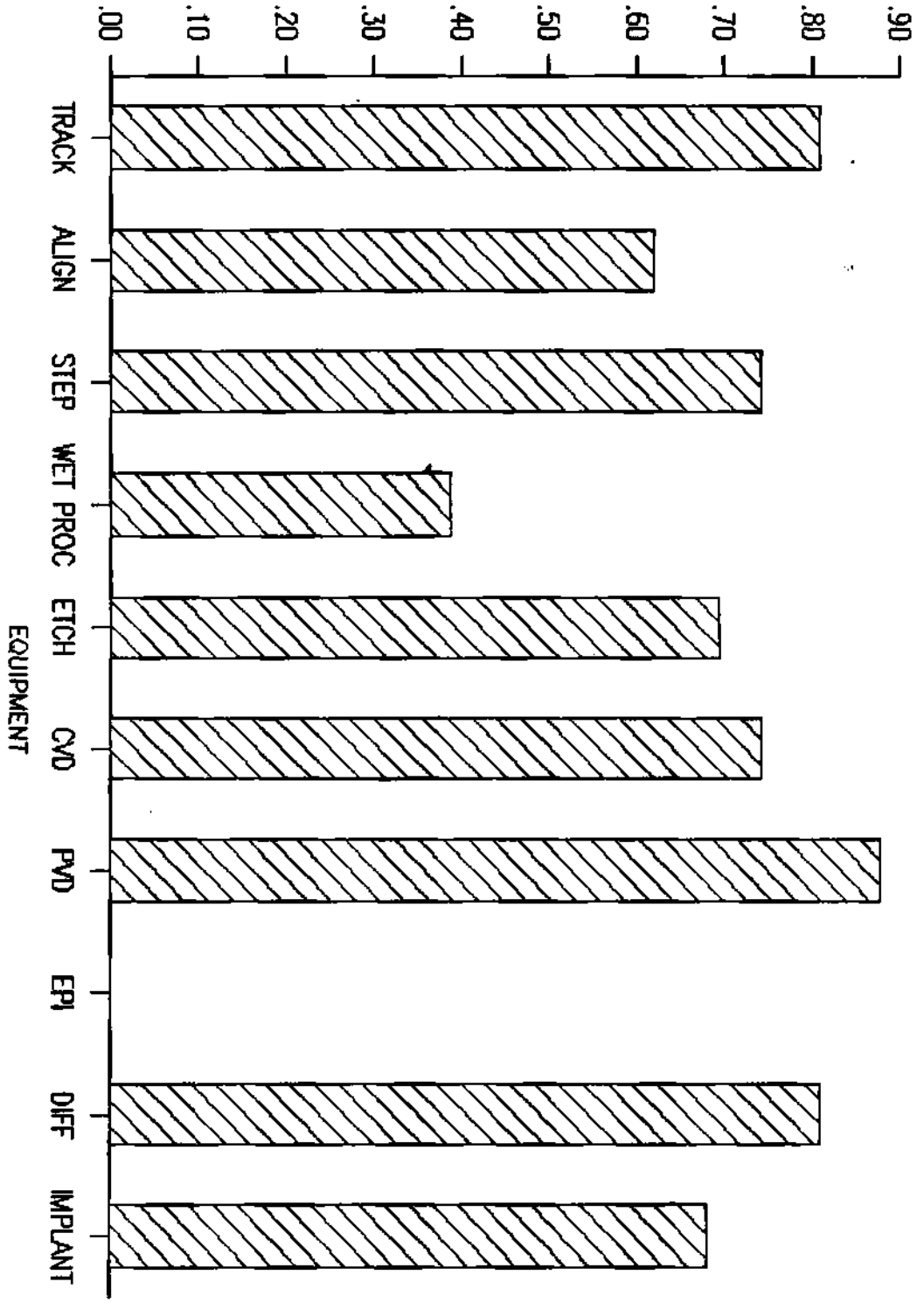
ACTUAL TO RATED THROUGHPUT

ACTUAL-TO-RATED THROUGHPUT: ALL VENDORS

MEMORY DATA



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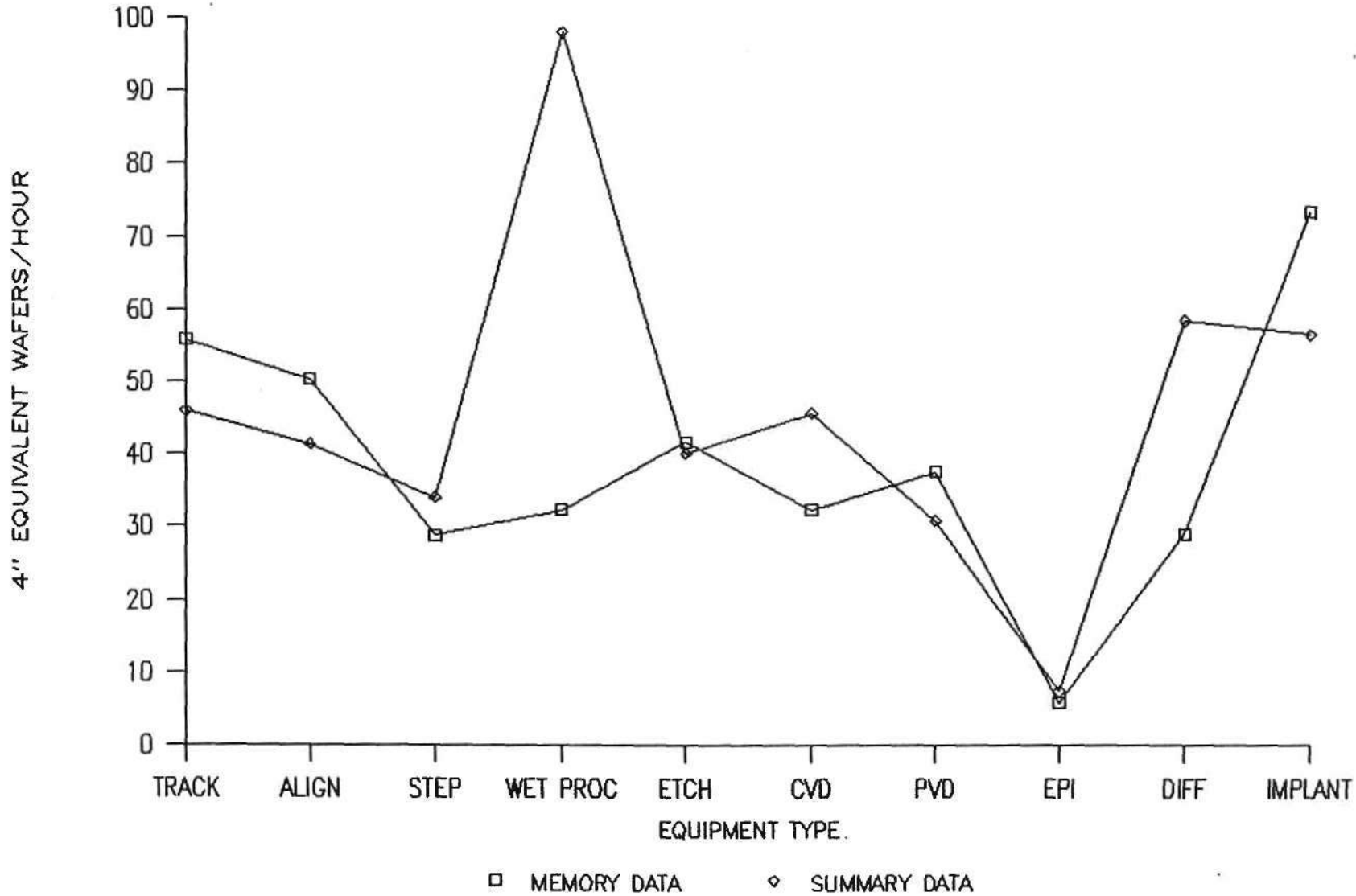
NET THROUGHPUT

ALL VENDORS: MEMORY DATA



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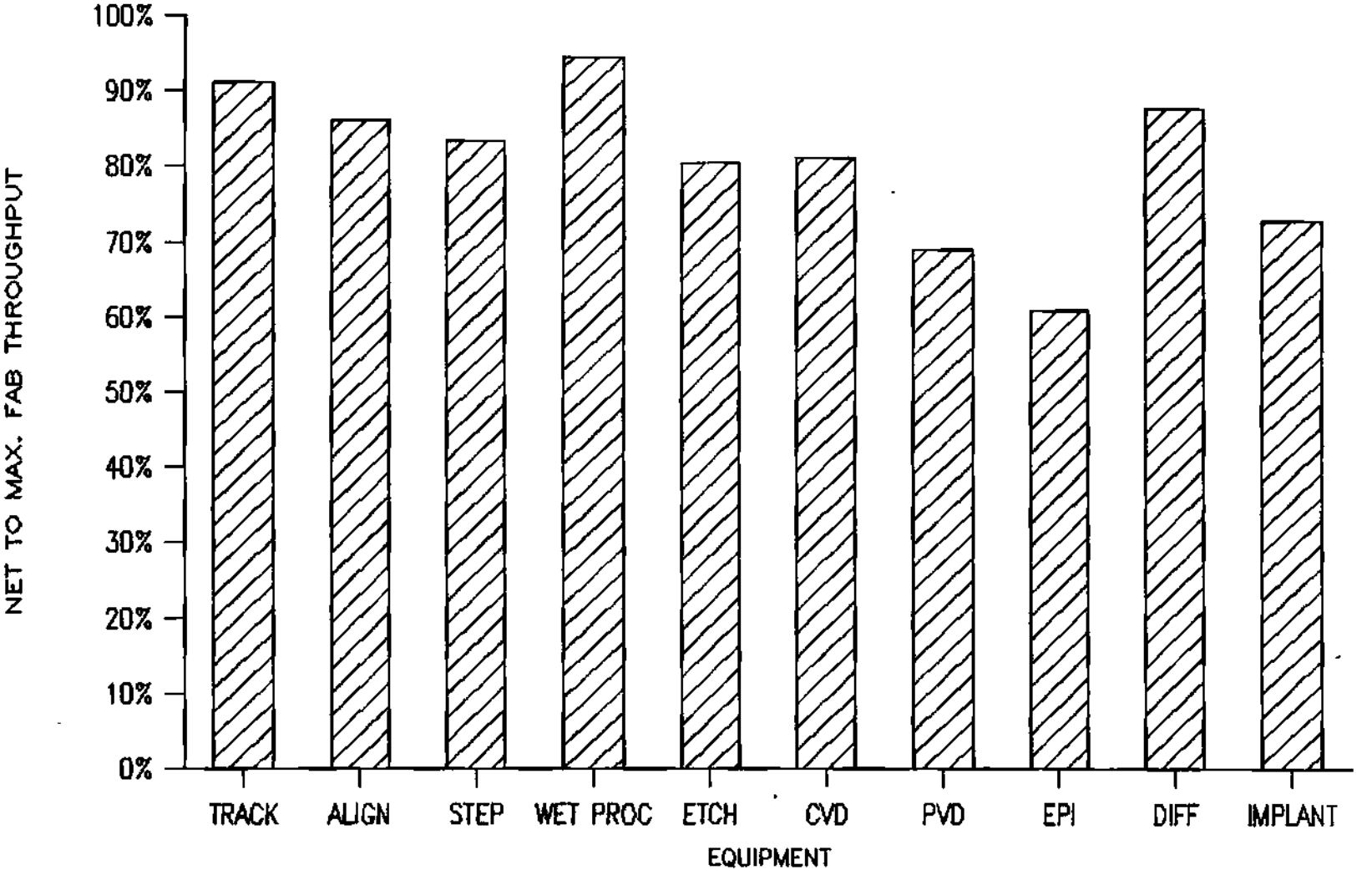
NET-TO-MAX. FAB THROUGHPUT: ALL VENDORS

MEMORY DATA



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MICRO-DEVICE EQUIPMENT PERFORMANCE

ITEM	PERFORMANCE PARAMETER	TRACK	ALIGN	STEP	WET PROC	ETCH	CVD	PVD	EPI	DIFF	IMPLANT
1	NUMBER	59	40	99	28	31	12	15	6	42	19
2	AVAILABLE TIME (% of total time)	92%	75%	78%	90%	89%	77%	72%	61%	87%	73%
3	PRODUCTIVE TIME (% of available time)	95%	93%	99%	94%	88%	100%	86%	98%	100%	77%
4	UNSCHEDULED DOWNTIME (hours/quarter)	57	145	183	89	112	128	137	99	50	221
5	SCHEDULED DOWNTIME (hours/quarter)	47	132	94	93	59	105	141	157	78	108
6	MTBF (hrs)	76	57	49	151	193	233	110	42	223	33
7	MTTR (hrs)	3	7	4	5	5	8	8	5	10	3
8	MTBS (hrs)	131	168	153	0	198	7	13	5	467	14
9	MTFS (hrs)	2	1	3	1	2	2	3	2	12	2
10	MTBM (hrs)	197	25	204	92	330	151	131	22	302	70
11	MTFM (hrs)	2	2	4	5	3	7	10	3	10	8
12	RATED THROUGHPUT (wafers/hr: 4" equiv)	60	67	56	362	115	55	60	0	0	102
13	MAX. FAB THROUGHPUT (wafers/hr: 4" equiv)	54	56	39	130	51	40	40	10	37	58
14	ACTUAL/RATED (item #13/item #12)	0.90	0.84	0.69	0.36	0.45	0.74	0.67	-	-	0.57
15	NET THROUGHPUT (wafers/hr: item #13 x item #2)	50	42	31	117	46	31	29	6	32	42
16	NET/MAX FAB T.P. (item # 15/item # 13)	92%	75%	78%	90%	89%	77%	72%	61%	87%	73%

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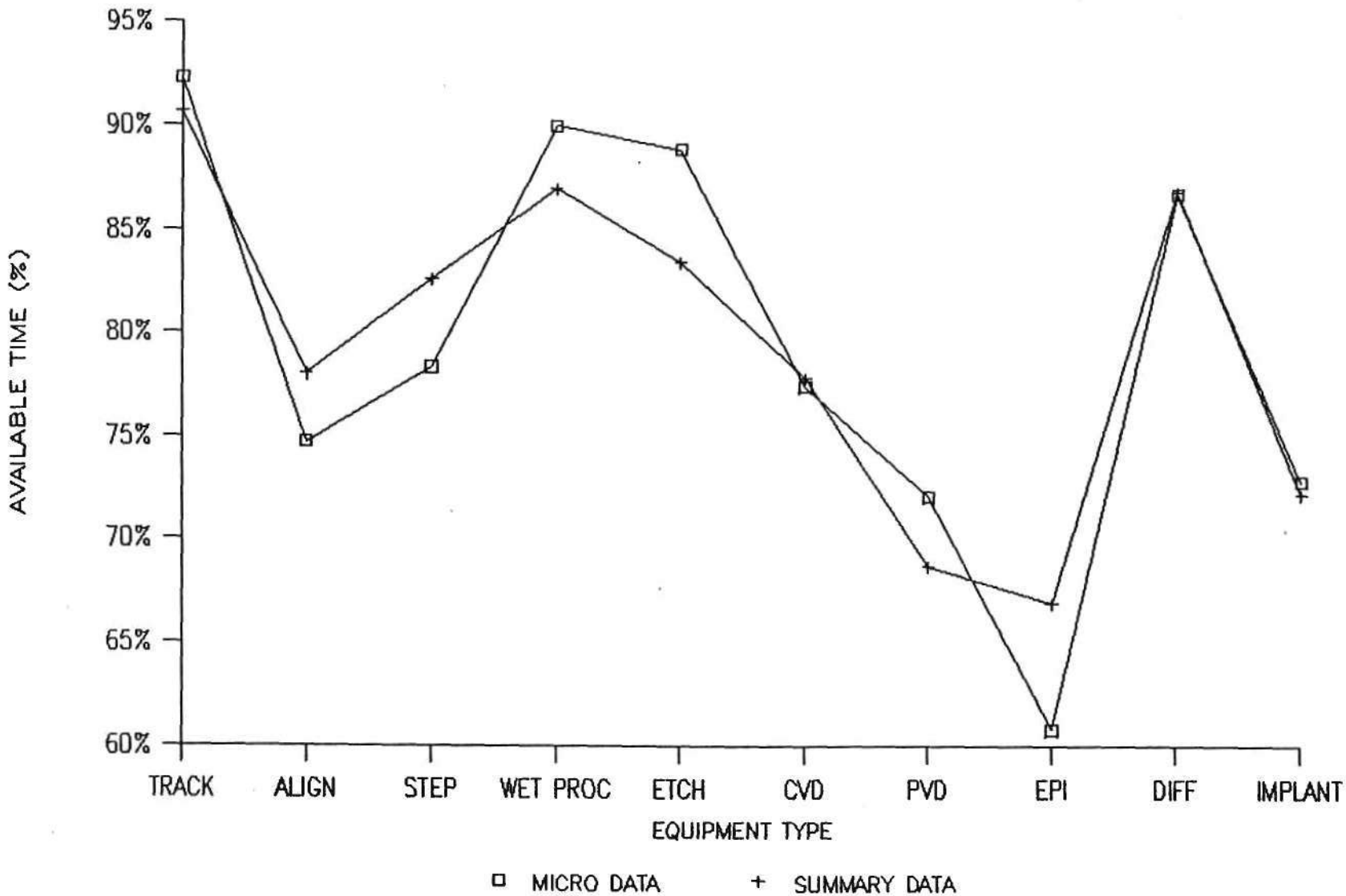
AVAILABLE TIME: ALL VENDORS

MICRO-DEVICE DATA



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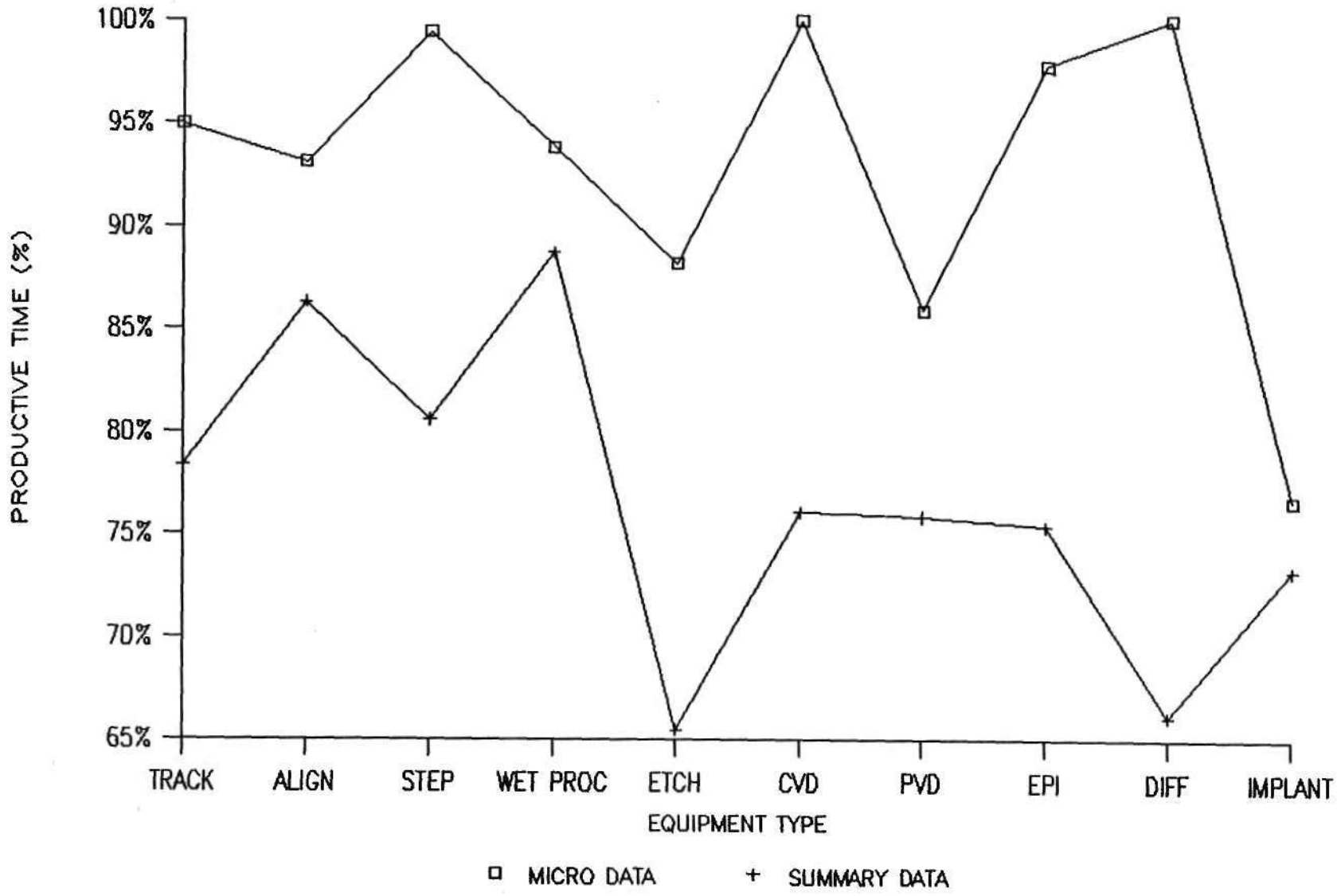
PRODUCTIVE TIME: ALL VENDORS

MICRO-DEVICE DATA



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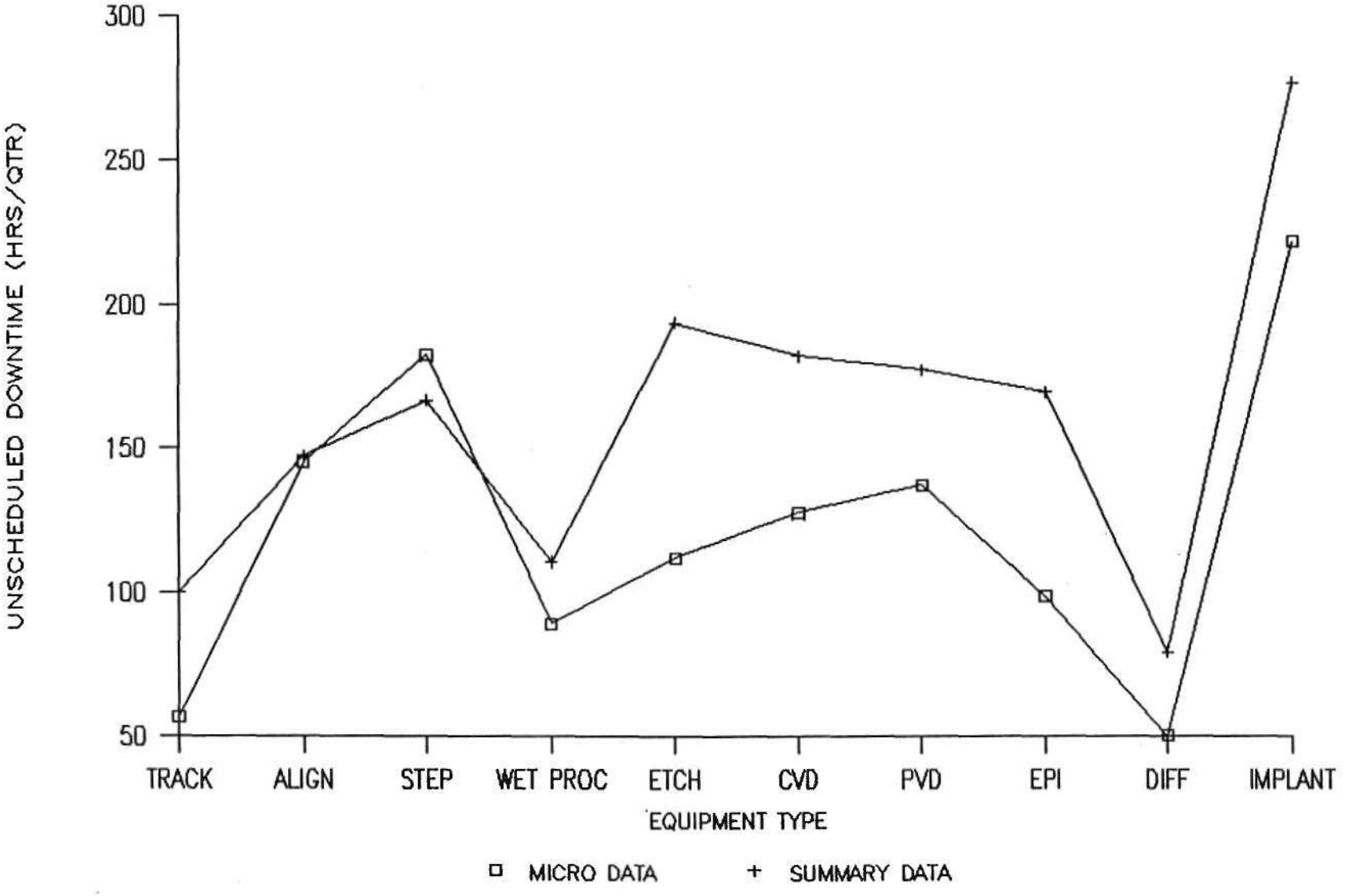
UNSCHEDULED DOWNTIME: ALL VENDORS

MICRO-DEVICE DATA



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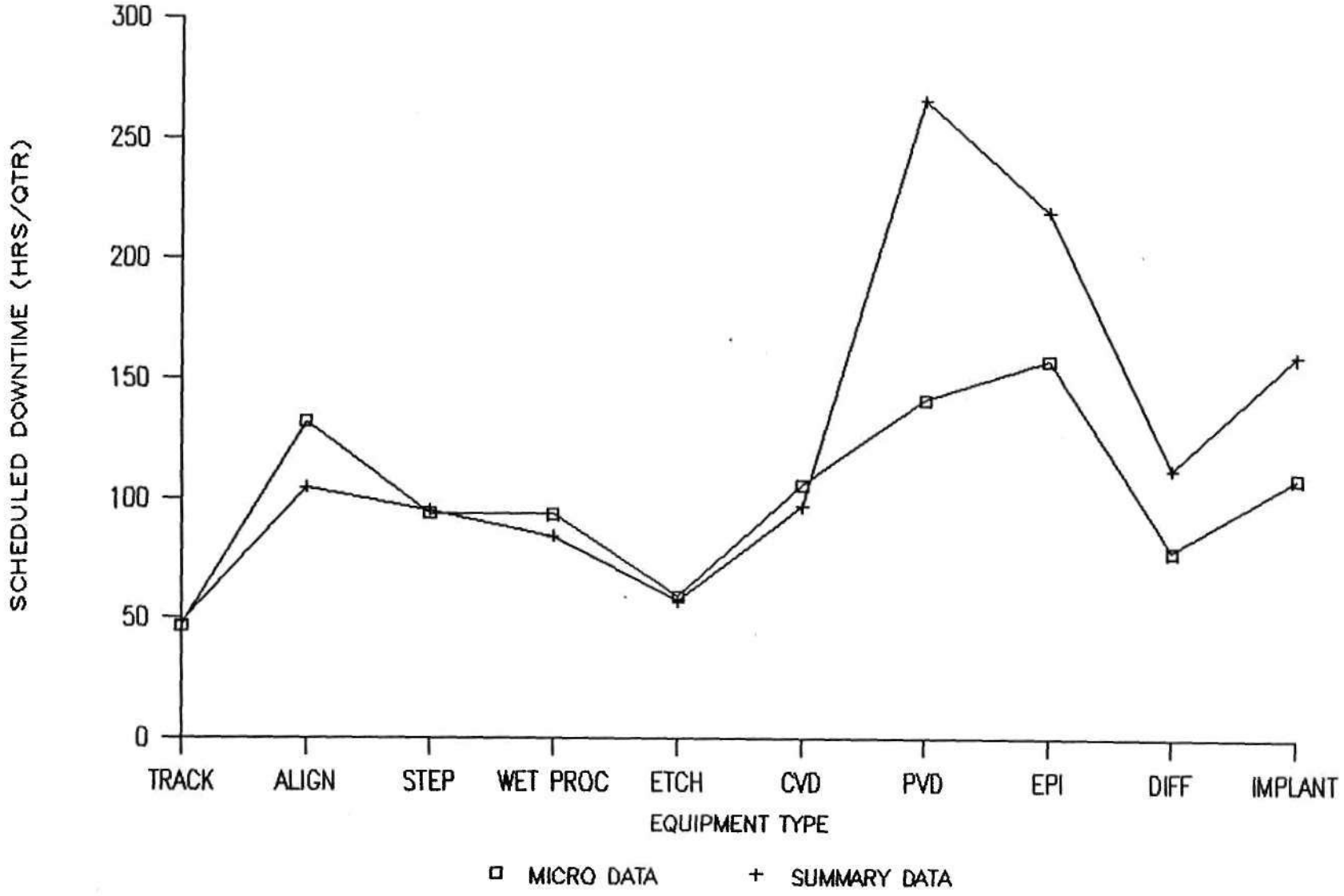
SCHEDULED DOWNTIME: ALL VENDORS

MICRO-DEVICE DATA



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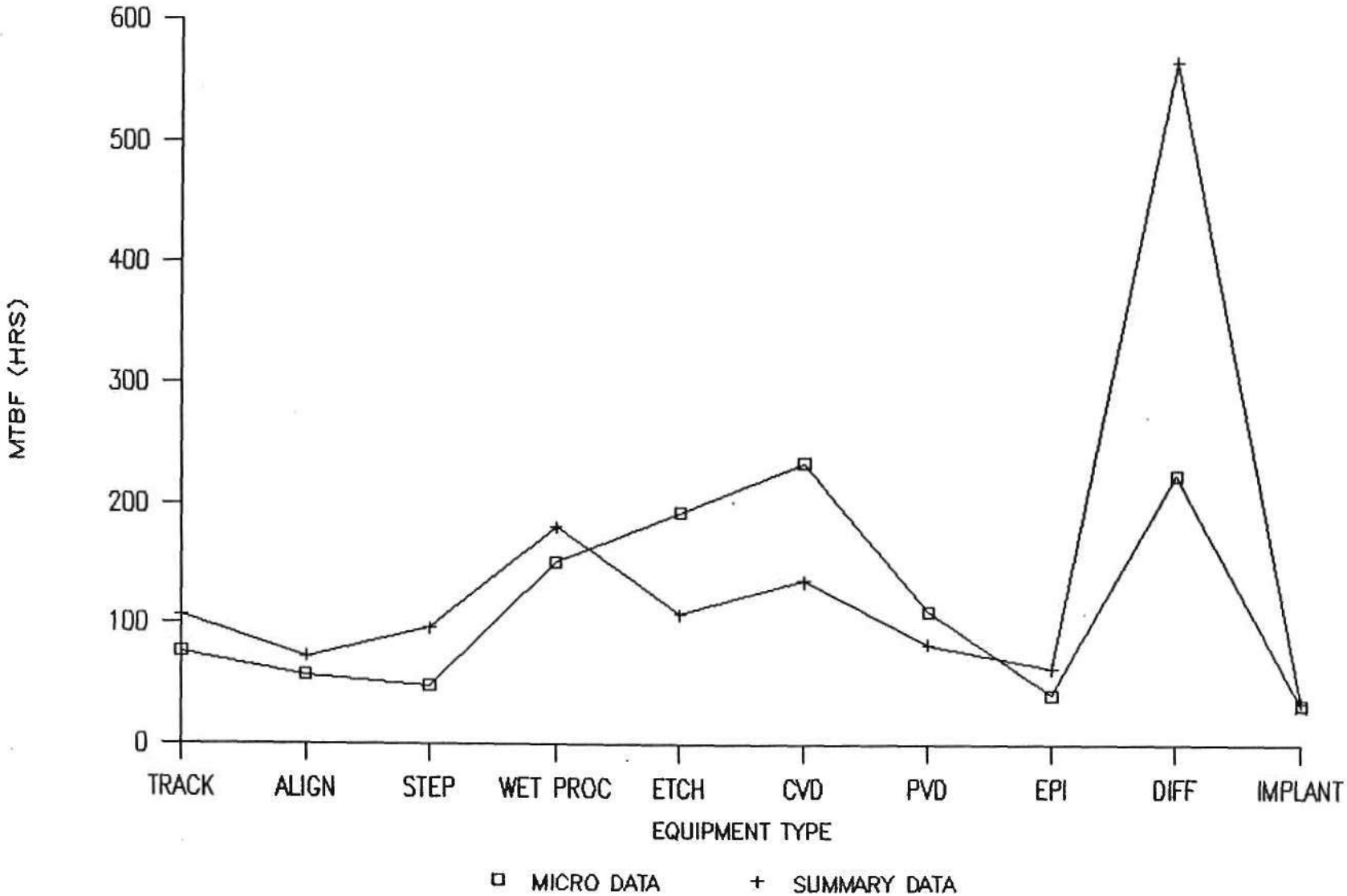
MEAN TIME BETWEEN FAILURE: ALL VENDORS

MICRO-DEVICE DATA



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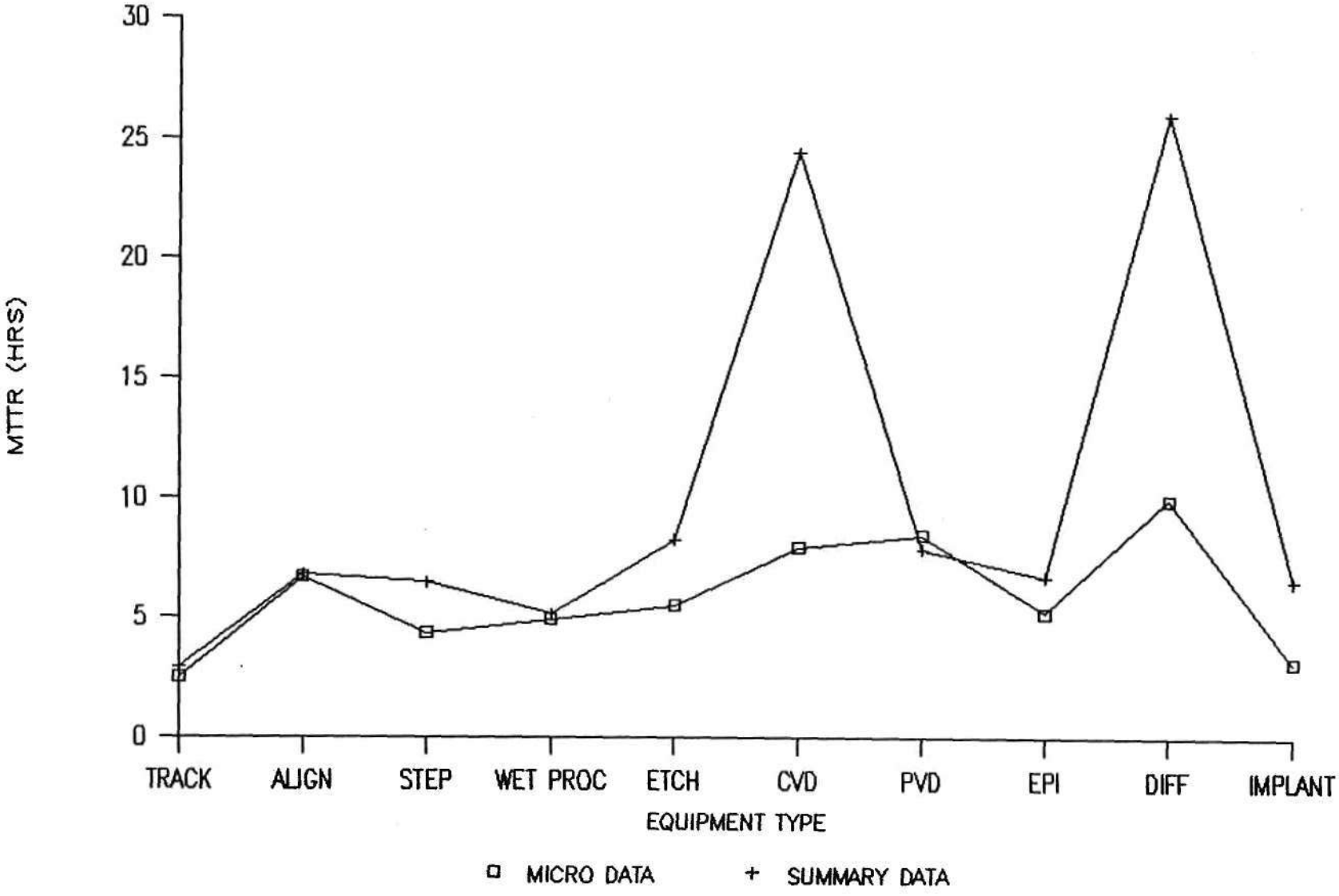
MEAN TIME TO REPAIR: ALL VENDORS

MICRO-DEVICE DATA



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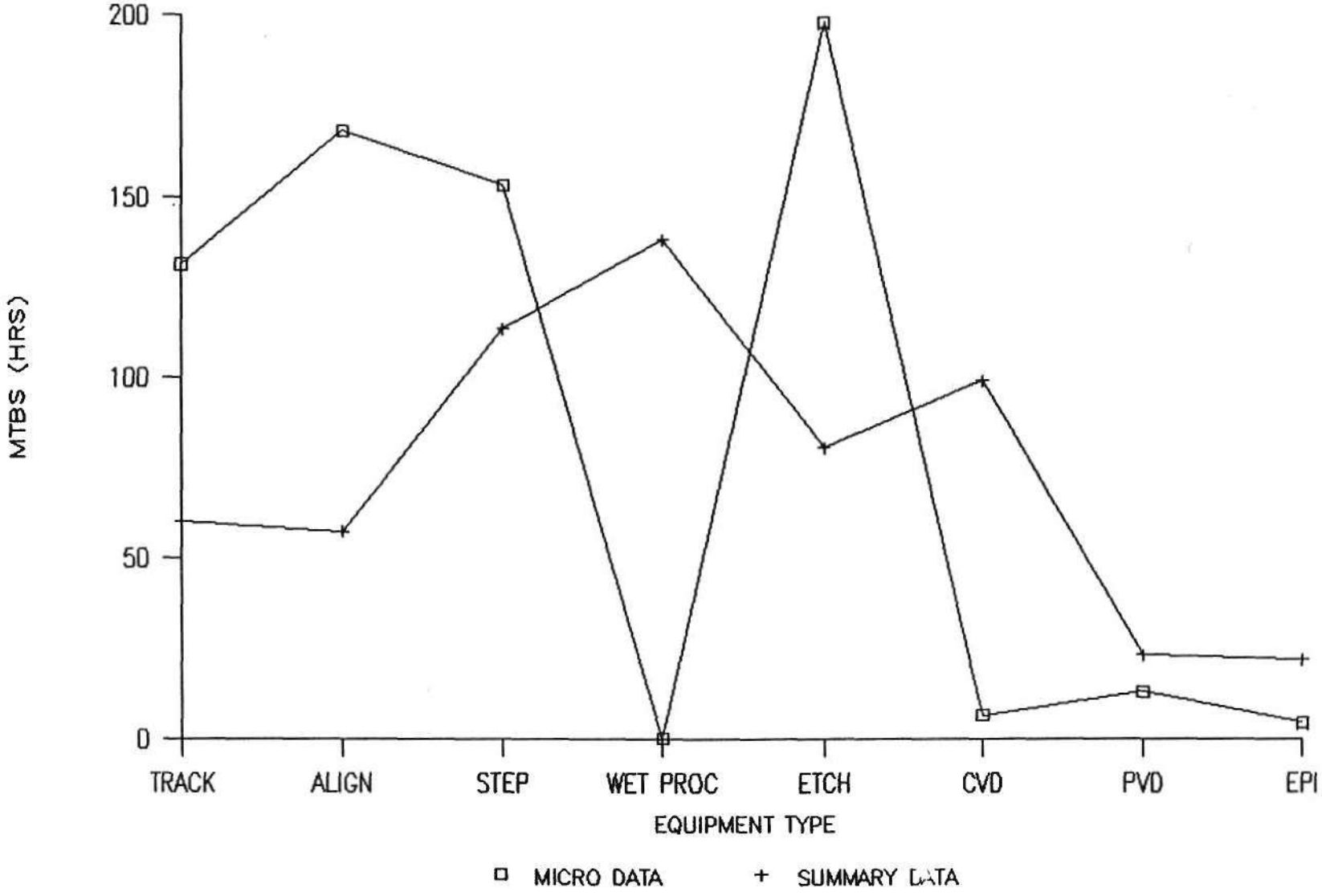
MEAN TIME BETWEEN SET-UPS: ALL VENDORS

MICRO-DEVICE DATA



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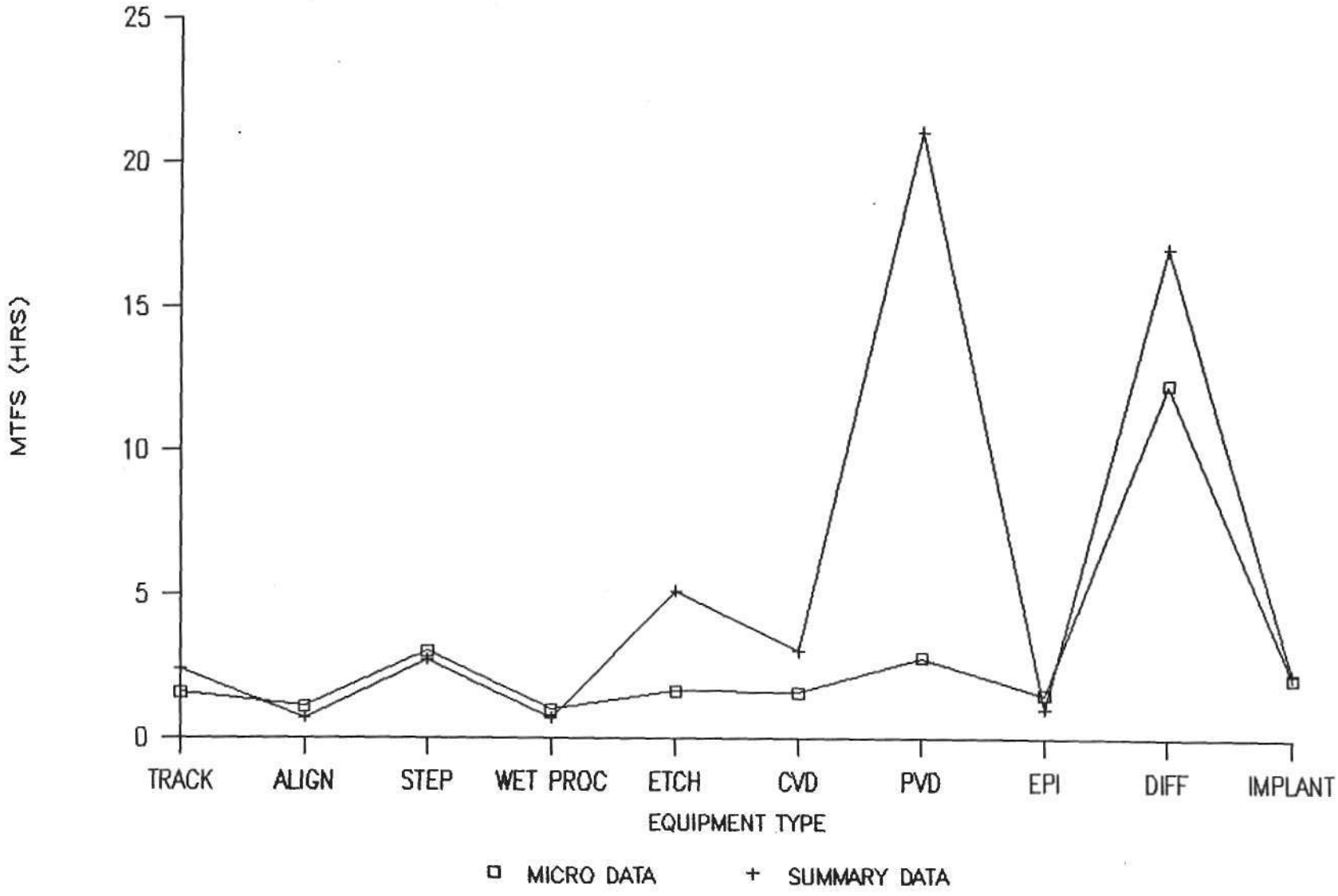
MEAN TIME FOR SET-UP: ALL VENDORS

MICRO-DEVICE DATA



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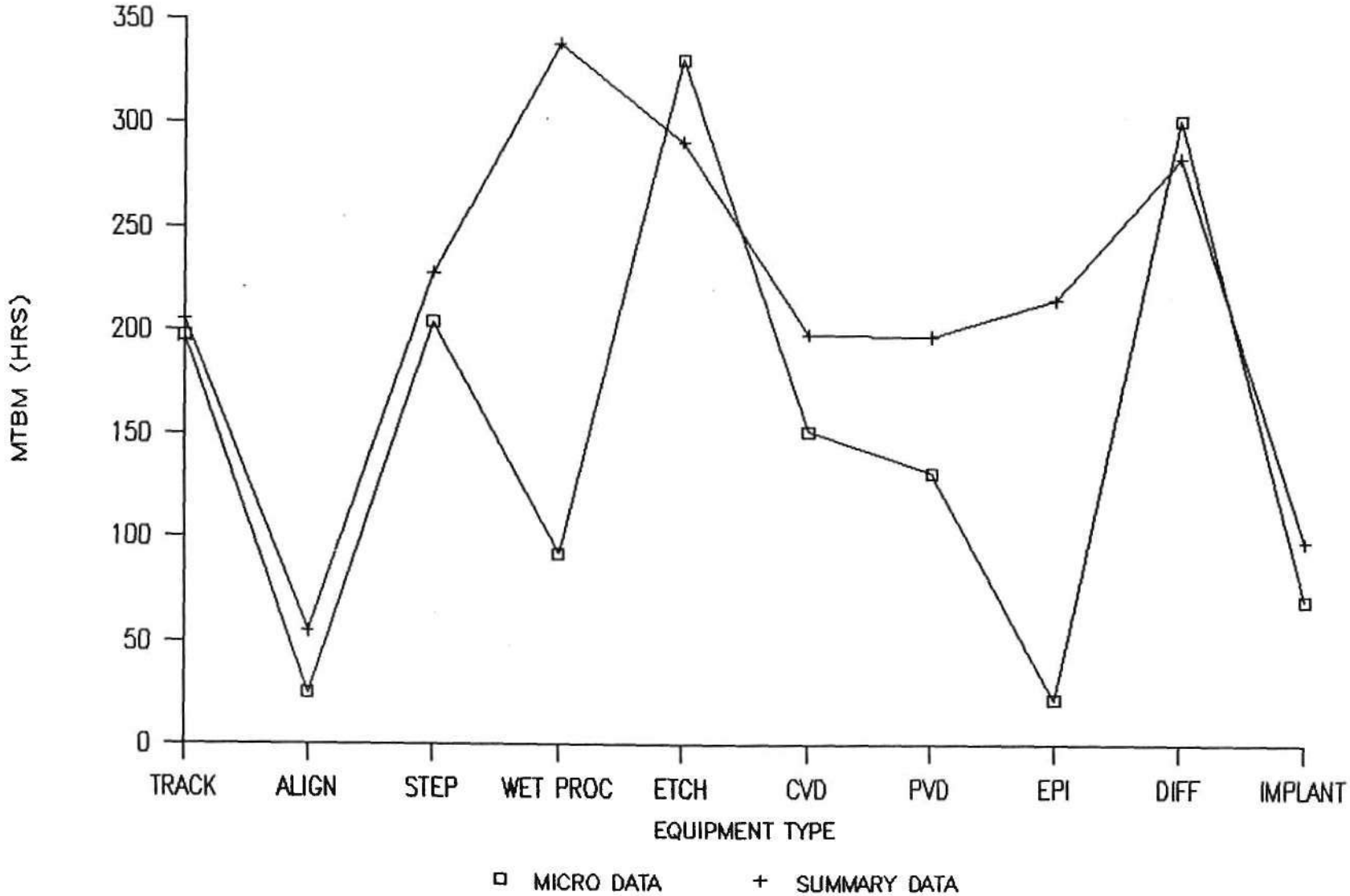
MEAN TIME BTW MAINTENANCE: ALL VENDORS

MICRO-DEVICE DATA



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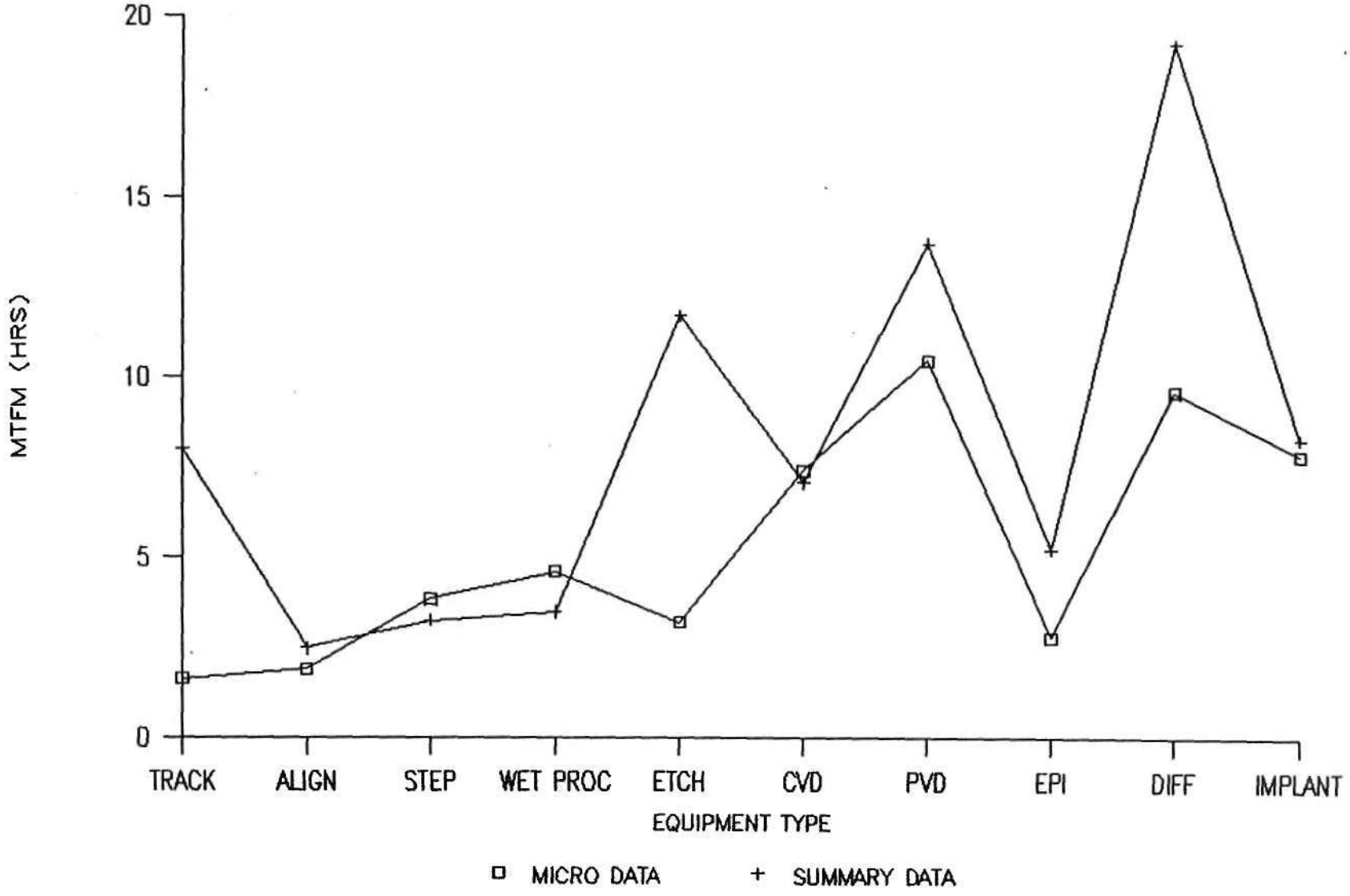
MEAN TIME FOR MAINTENANCE: ALL VENDORS

MICRO-DEVICE DATA



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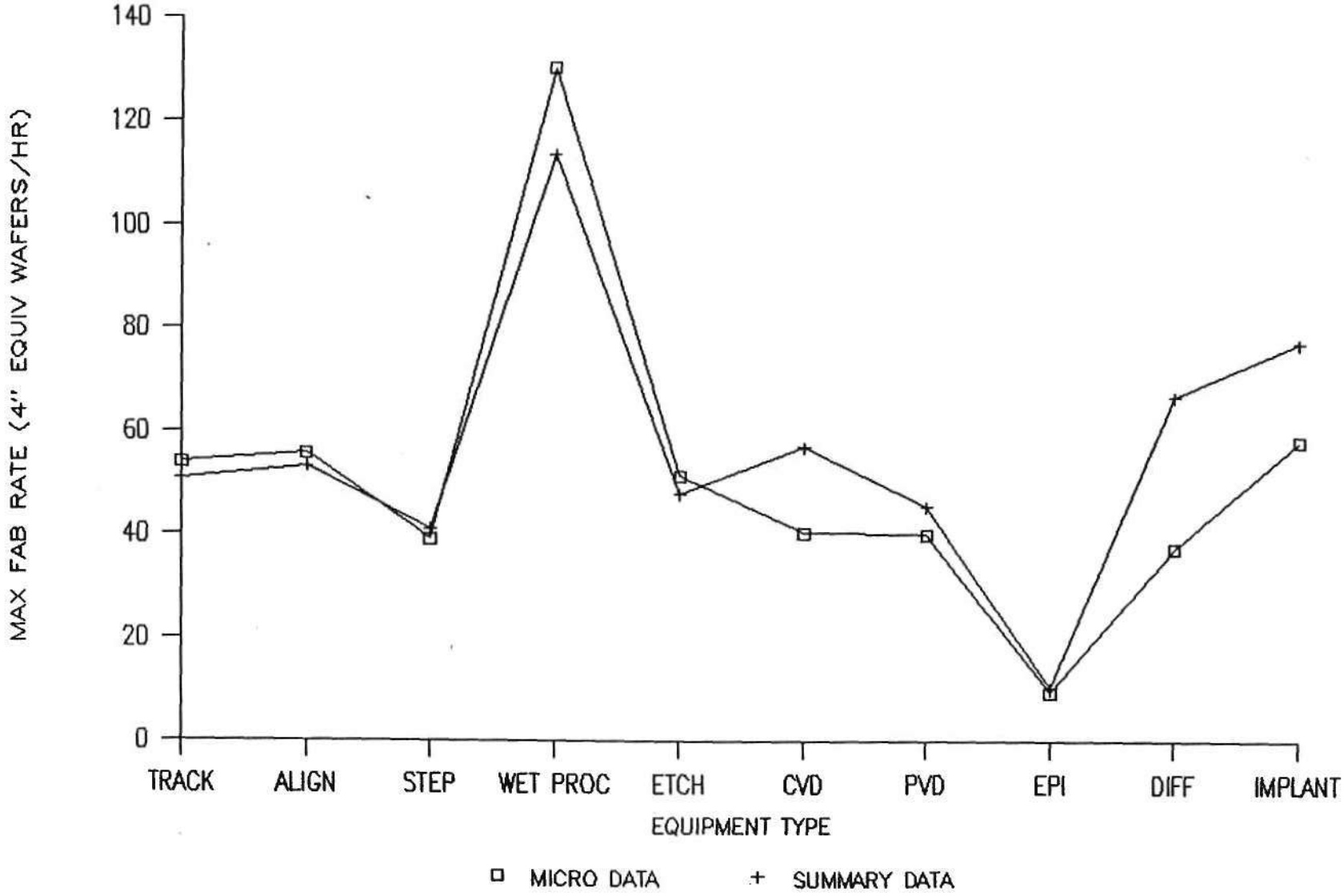
MAX FAB RATE: ALL VENDORS

MICRO-DEVICE DATA



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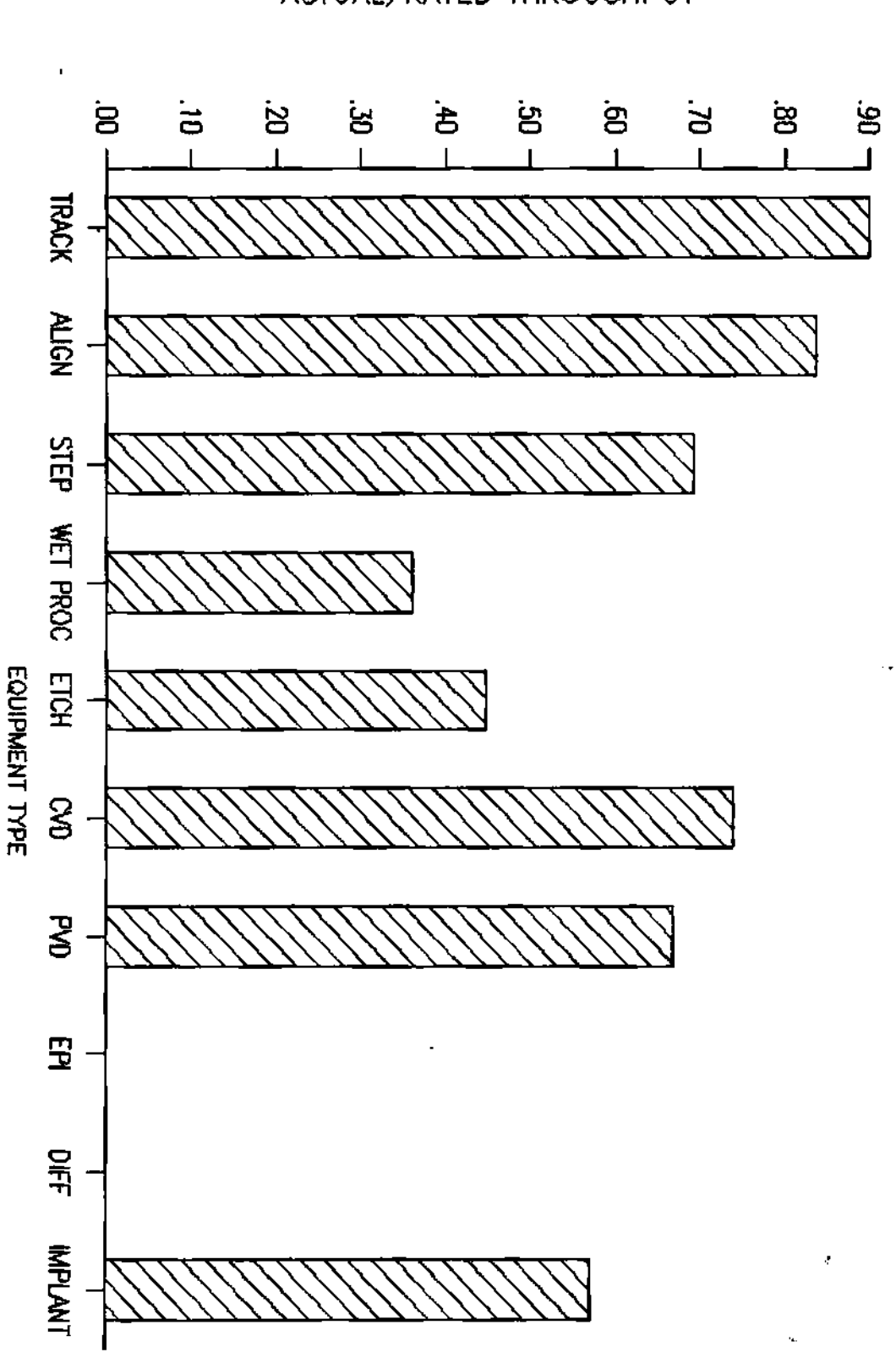
ACTUAL-TO-RATED THROUGHPUT: ALL VENDORS

MICRO-DEVICE DATA



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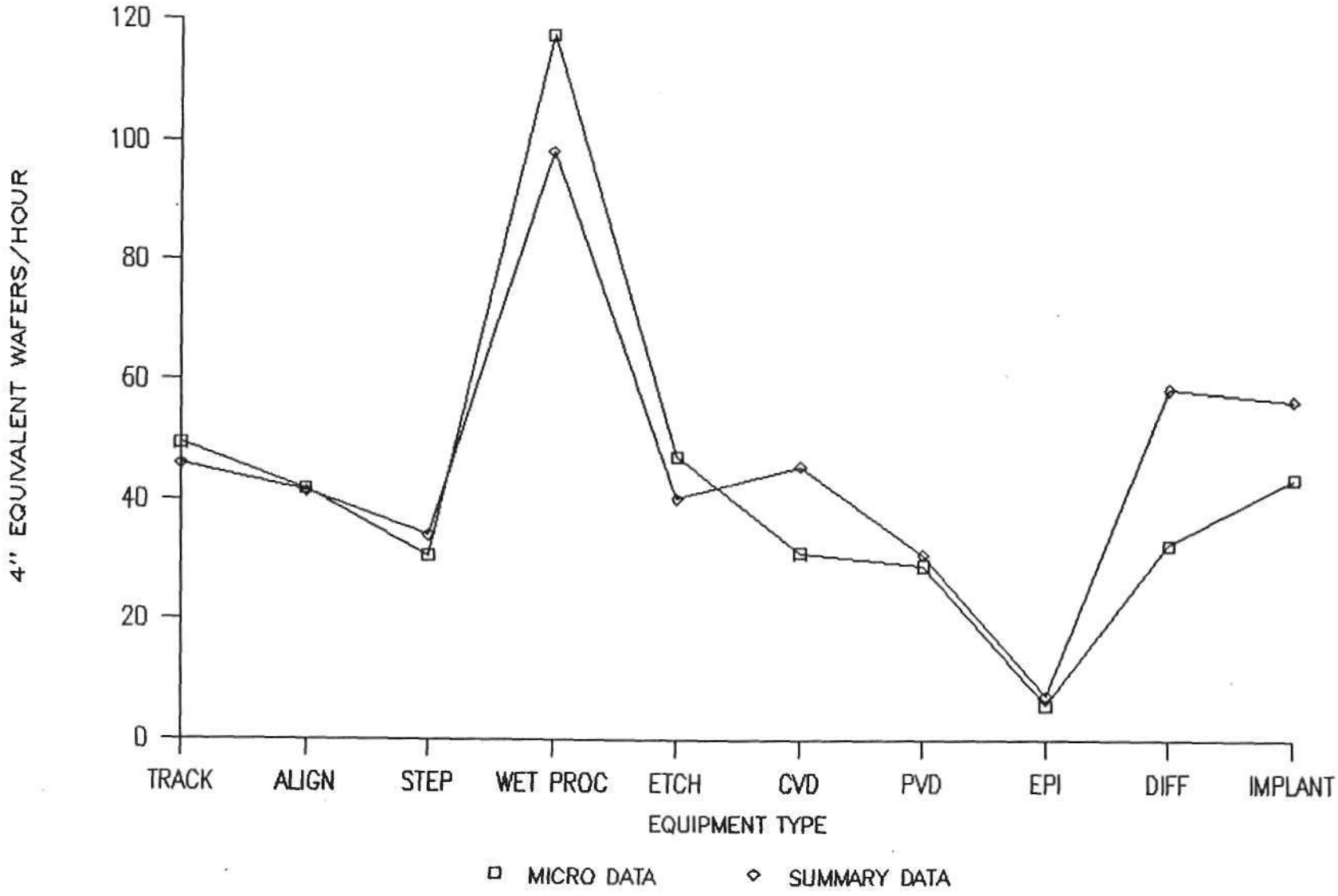
NET THROUGHPUT

ALL VENDORS: MICRO-DEVICE DATA



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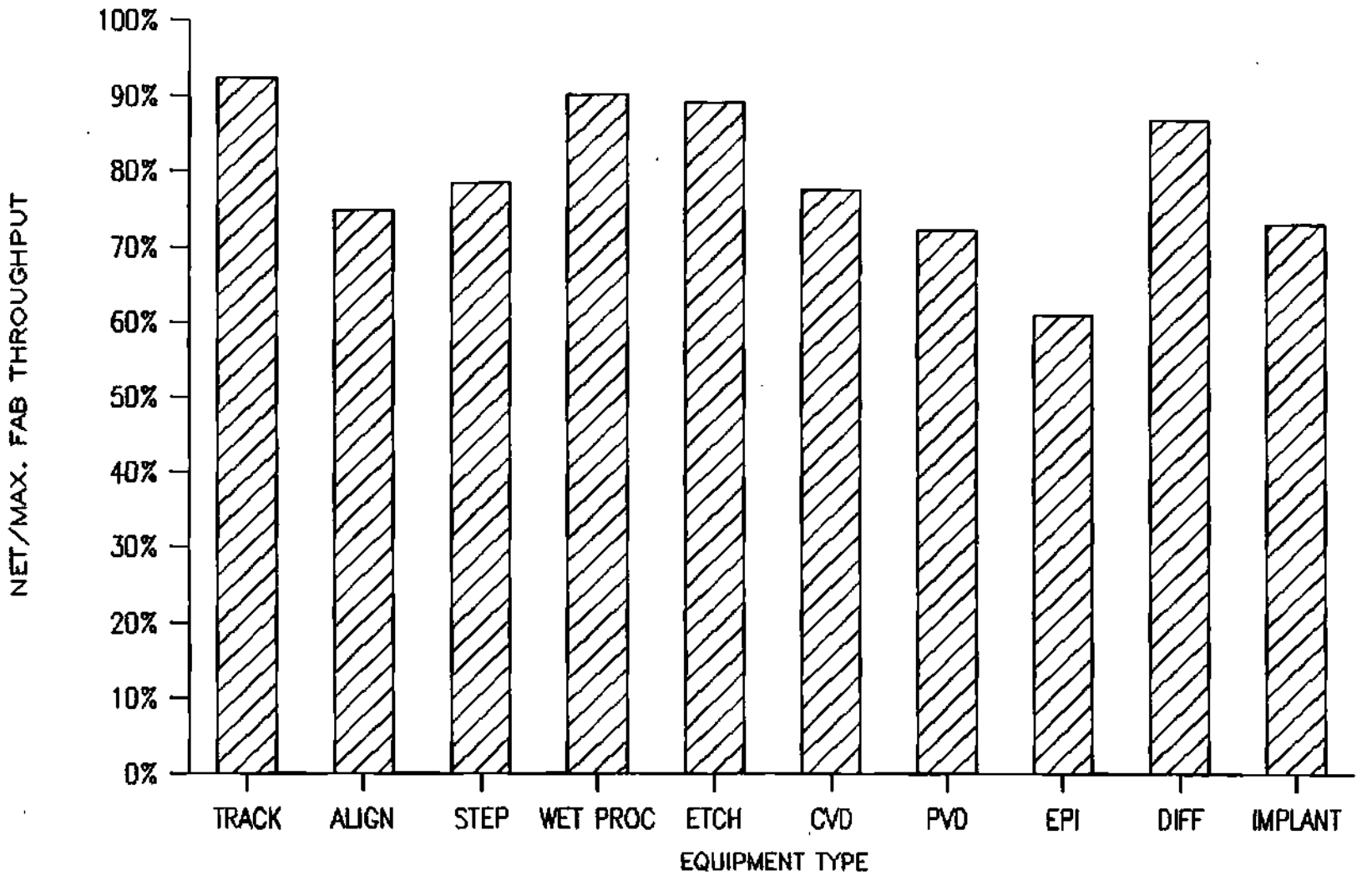
NET-TO-MAX. FAB THROUGHPUT: ALL VENDORS

MICRO-DEVICE DATA



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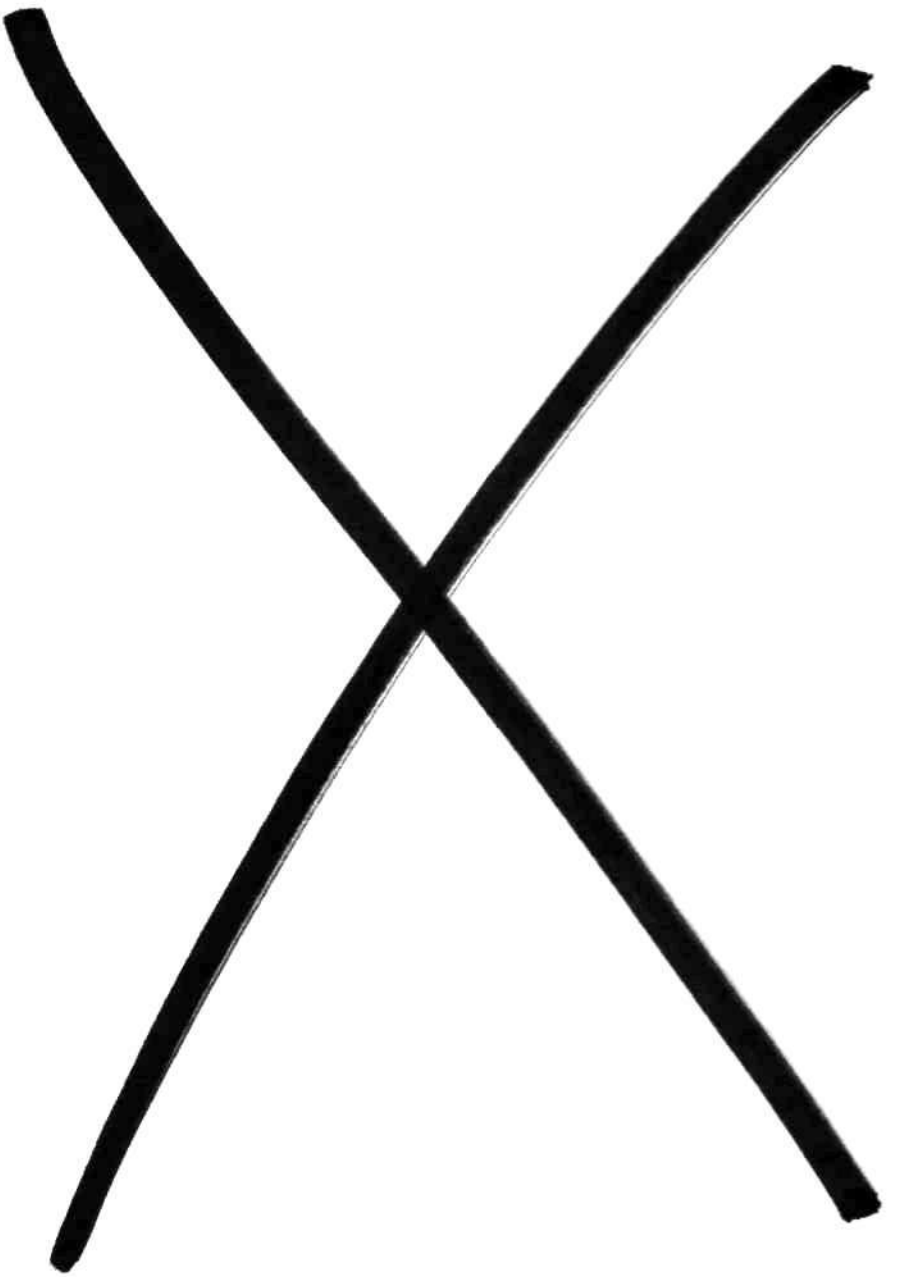
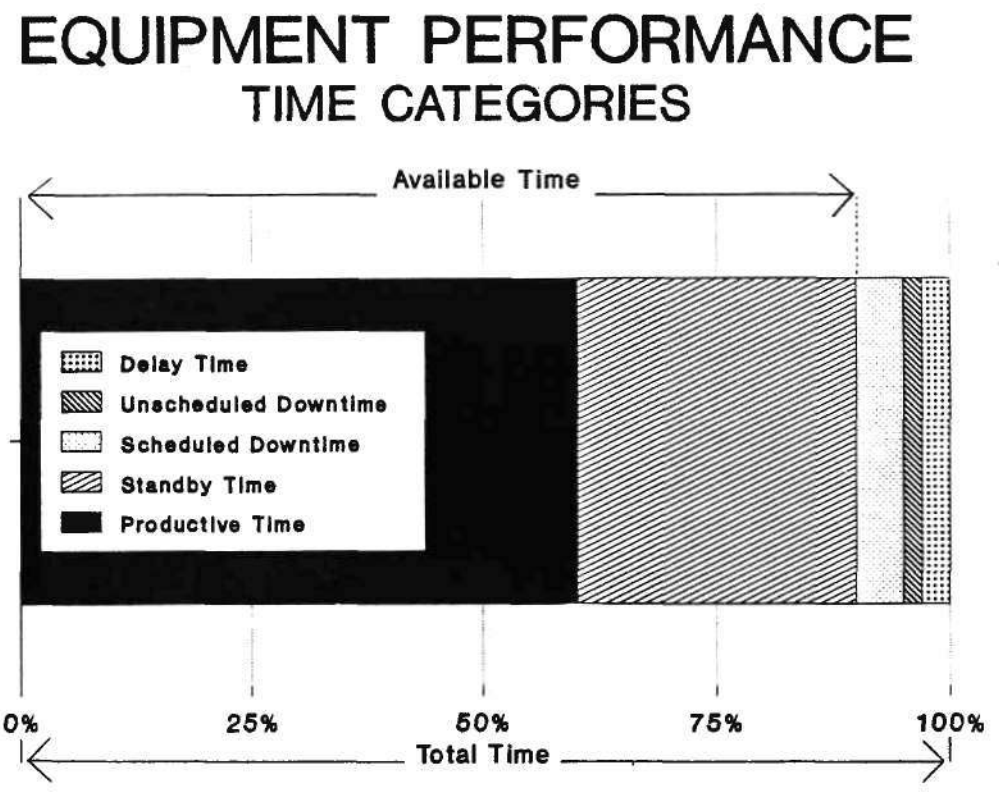


This chapter summarizes equipment performance by equipment type by the line geometries of the devices produced in the fab. These line geometries include: 1 to <1.5 micron, 1.5 to <2.0 microns, 2 to <2.5 microns, and 2.5 microns and up. The data is from all equipment vendors covered in our survey, and represents weighted averages for each equipment category. Raw data is available in the appendix of this report.

DEFINITIONS

Complete definitions of performance parameters are given in the appendix of this report. Shorter definitions of available time, productive time, rated throughput, maximum fab throughput, actual-to-rated throughput, net throughput, and net-to-maximum fab throughput are given in the accompanying tables. A pictorial view of the relationship between total time, available time, and productive time is shown in the following figure:



Please note that in the accompanying table and graphs that productive time is expressed as a percentage of available time, not as a percentage of total time. Productive time as a percentage of available time is a measure of scheduling efficiency.

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Rated throughput, expressed in 4-inch equivalents, is what respondents reported that equipment vendors claimed their throughput to be.

Maximum fab throughput, on the other hand, is a measure of how the equipment actually performs in the fab. The maximum fab throughput was calculated by dividing the total number of wafers out in a quarter by the total number of productive hours in that quarter.

The maximum fab throughput is a measure of equipment performance when the equipment is actually running wafers. However, because of scheduled and unscheduled downtime and delay time, net throughput is less than the maximum fab throughput.

In other words, to measure a piece of equipment's potential performance, one must take into account the non-available time of the equipment.

We do this in this report by multiplying the maximum fab throughput by the percentage of available time. This is termed "net throughput," and is a measure of equipment's potential output that does take into account the scheduled, unscheduled downtimes, and delay times. For example, assume the following:

Maximum fab throughput = 50 wafers per hour.
Available time = 80 percent.
Then the available hours per day would be:
0.80 x 24 hours = 19.2 hours.
The potential output per day, assuming no standby time, would be:
50 wafers per hour x 19.2 hours
= 960 wafers per day.

We get the same result by multiplying net throughput by 24 hours:
Maximum fab throughput = 50 wafers per hour.
Available time = 80 percent.
Therefore, net throughput is:
0.80 x 50 wafers per hour
= 40 wafers per hour;
and, wafers per day, assuming no standby time, would be:
40 wafers per hour x 24 hours per day:
= 960 wafers per day.

Net throughput measures those variables that are under the equipment vendor's control. These variables are scheduled downtime, unscheduled downtime, and delay time, which, when subtracted from total time, equal available time. Productive time, on the other hand, is not a variable that the equipment vendor can control; it is, rather, a variable under the control of the fab.

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1 TO <1.5 MICRON EQUIPMENT PERFORMANCE: ALL VENDORS

ITEM	PERFORMANCE PARAMETER	TRACK	ALIGN	STEP	WET PROC	ETCH	CVD	PVD	EPI	DIFF	IMPLANT
1	NUMBER	79	38	67	36	35	12	14	-	72	21
2	AVAILABLE TIME (% of total time)	94%	90%	87%	95%	74%	85%	65%	-	93%	75%
3	PRODUCTIVE TIME (% of available time)	79%	72%	67%	85%	58%	29%	85%	-	54%	71%
4	UNSCHEDULED DOWNTIME (hours/quarter)	61	71	148	90	256	241	129	-	82	344
5	SCHEDULED DOWNTIME (hours/quarter)	60	51	134	0	102	79	439	-	40	131
6	MTBF (hrs)	186	191	143	166	161	356	191	-	151	51
7	MTTR (hrs)	2	9	6	1	12	30	12	-	6	10
8	MTBS (hrs)	101	0	116	0	99	103	11	-	169	36
9	MTFS (hrs)	3	0	3	1	4	8	8	-	31	3
10	MTBM (hrs)	111	0	294	0	98	208	63	-	243	70
11	MTFM (hrs)	4	2	3	4	9	10	20	-	39	10
12	RATED THROUGHPUT (wafers/hr: 4" equiv)	52	65	52	217	43	34	58	-	38	109
13	MAX. FAB THROUGHPUT (wafers/hr: 4" equiv)	45	53	44	115	32	34	51	-	37	72
14	ACTUAL/RATED (item #13/item #12)	0.87	0.81	0.86	0.53	0.76	1.01	0.88	-	0.98	0.66
15	NET THROUGHPUT (wafers/hr: item #13 x item #2)	43	48	39	109	24	29	33	-	35	54
16	NET/MAX FAB T.P. (item # 15/item # 13)	94%	90%	87%	95%	74%	85%	65%	-	93%	75%

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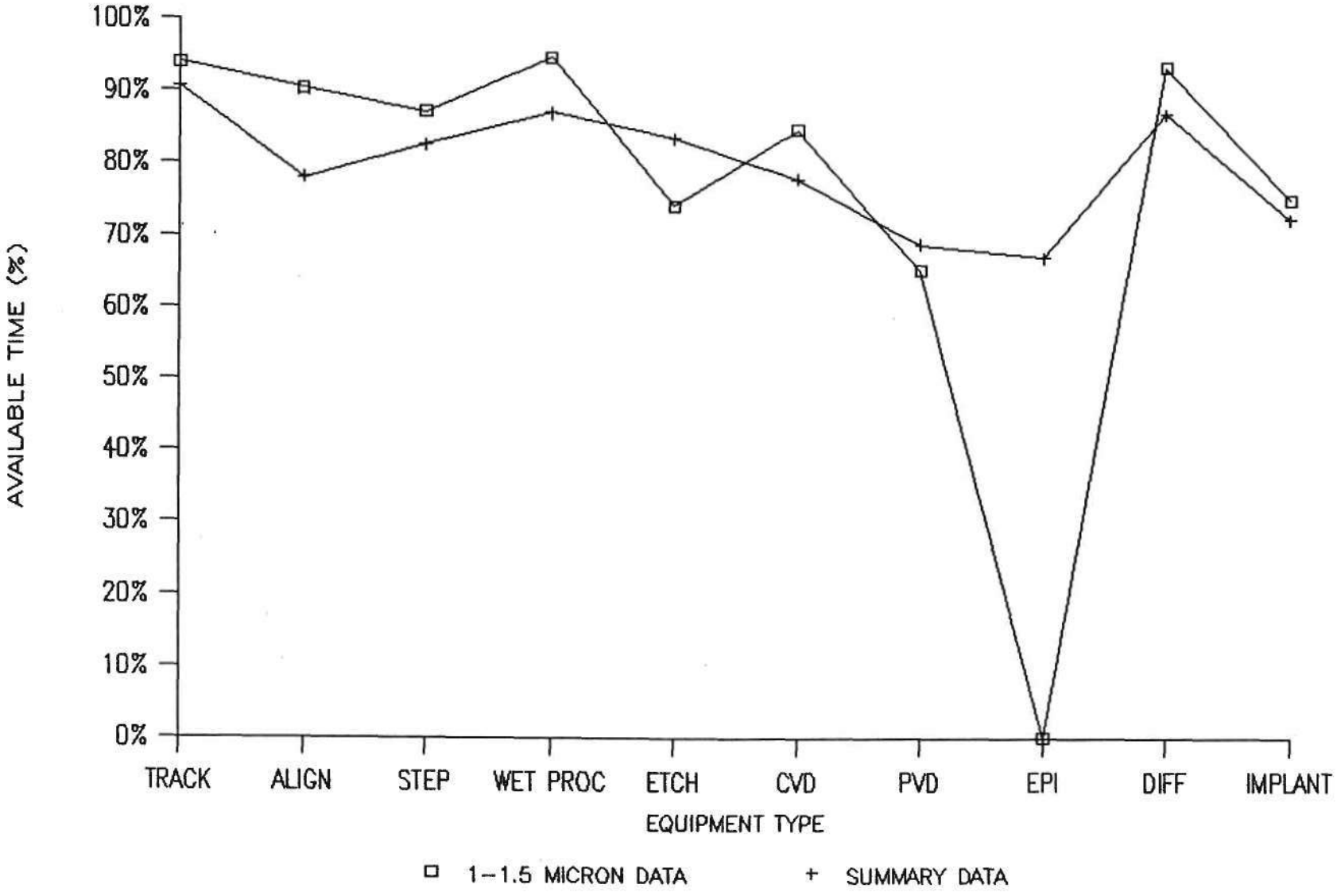
AVAILABLE TIME: ALL VENDORS

1-<1.5 MICRON DATA



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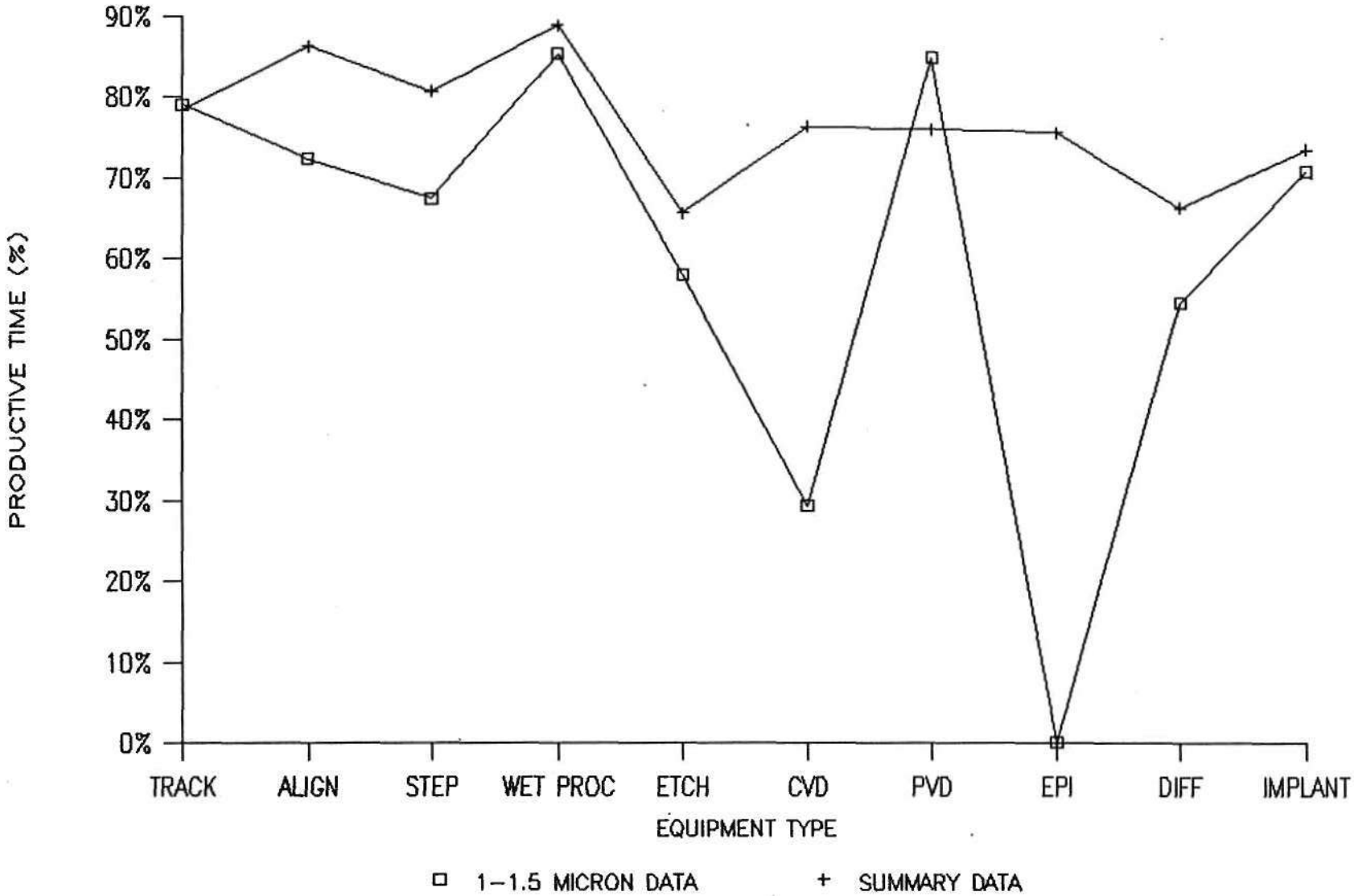
PRODUCTIVE TIME: ALL VENDORS

1-<1.5 MICRON DATA



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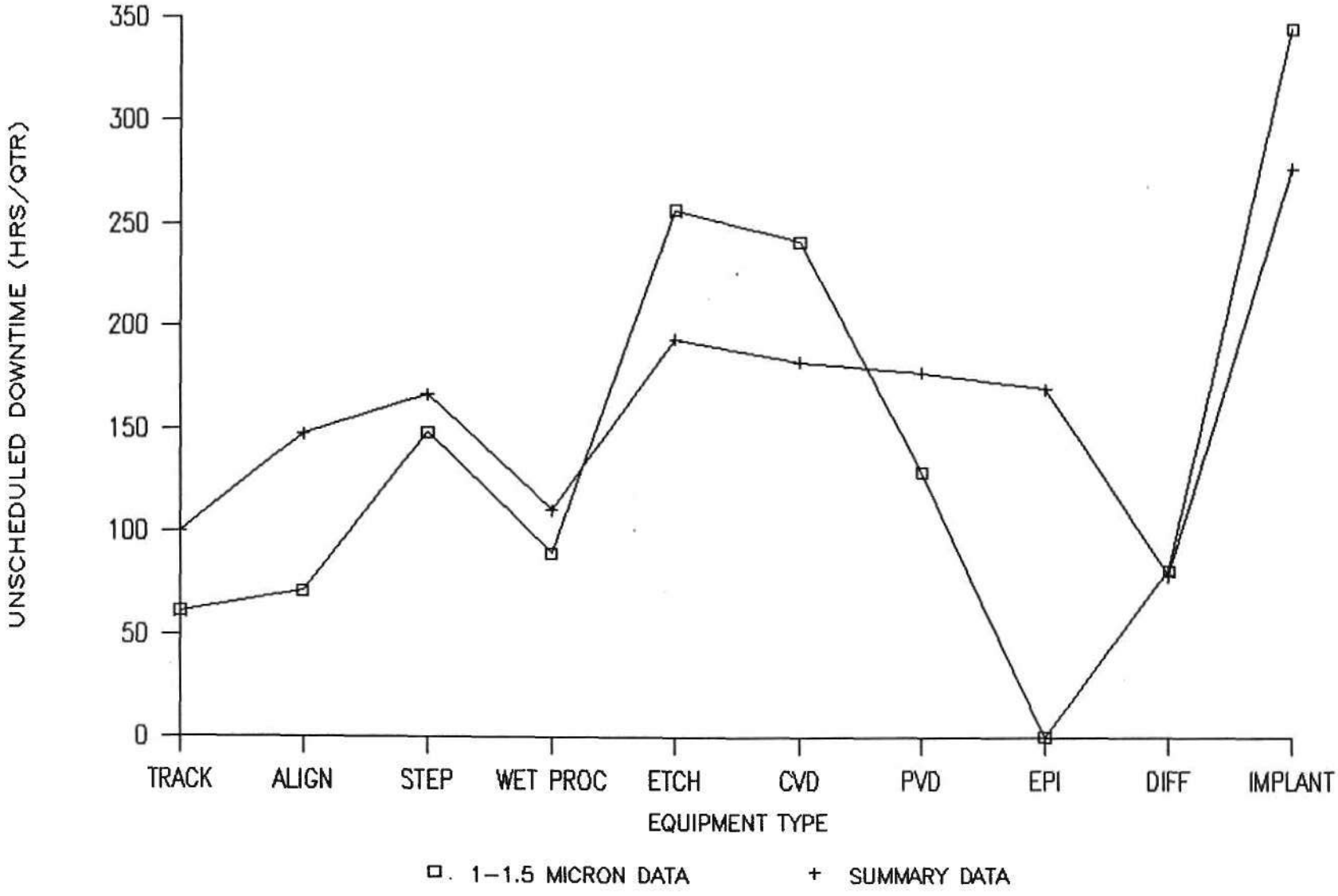
UNSCHEDULED DOWNTIME: ALL VENDORS

1-<1.5 MICRON DATA



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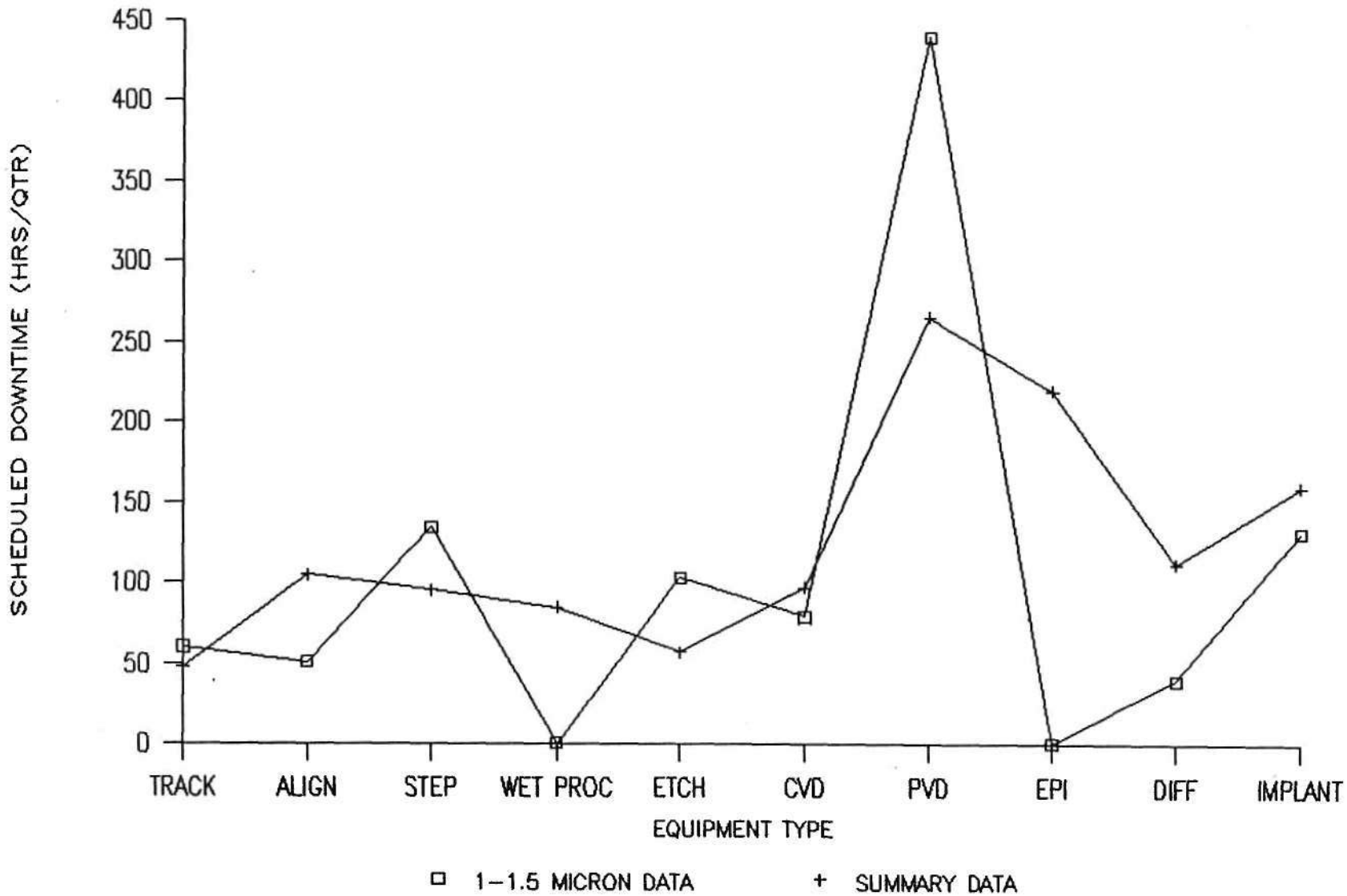
SCHEDULED DOWNTIME: ALL VENDORS

1-<1.5 MICRON DATA



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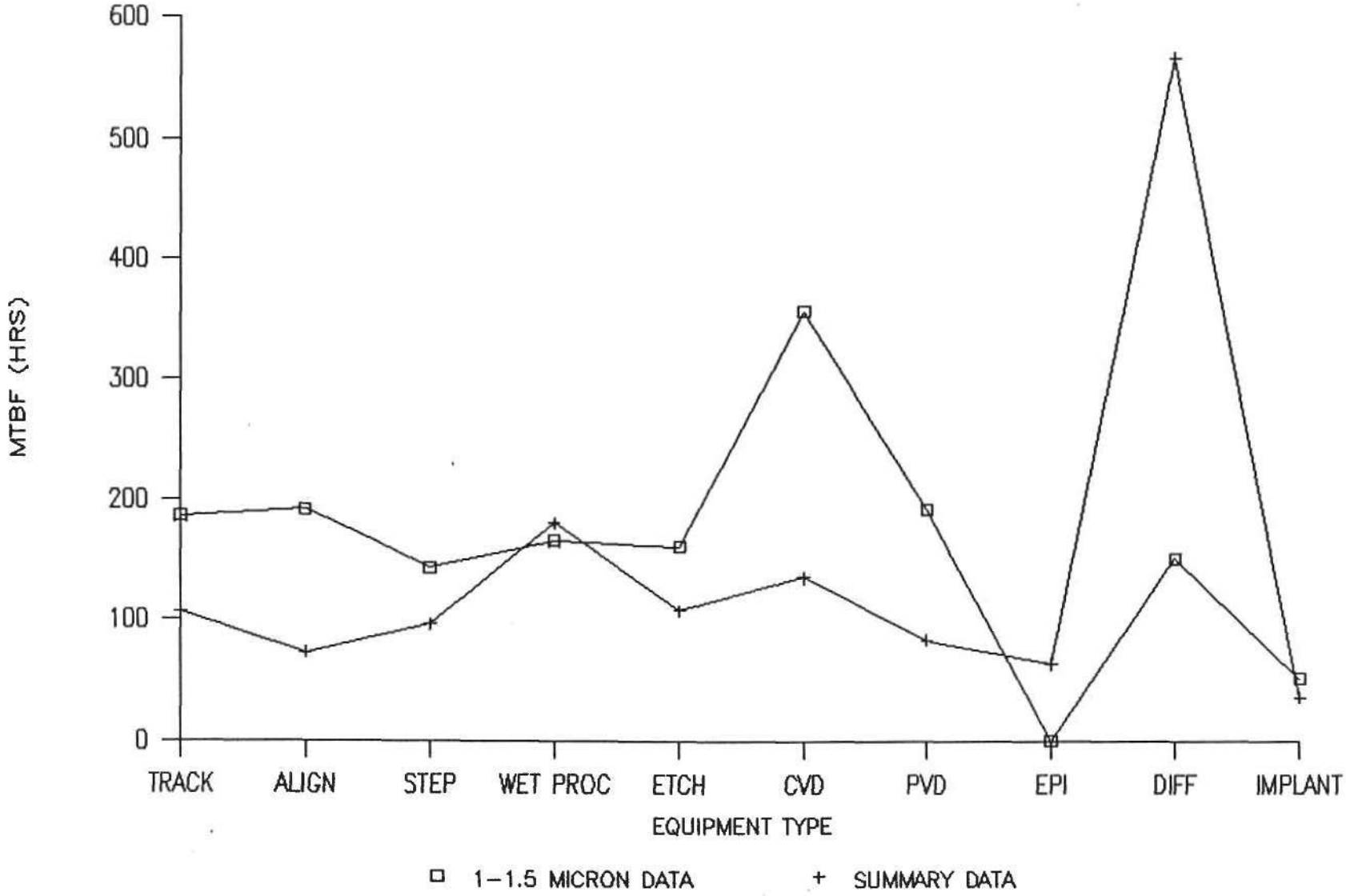
MEAN TIME BETWEEN FAILURE: ALL VENDORS

1-<1.5 MICRON DATA



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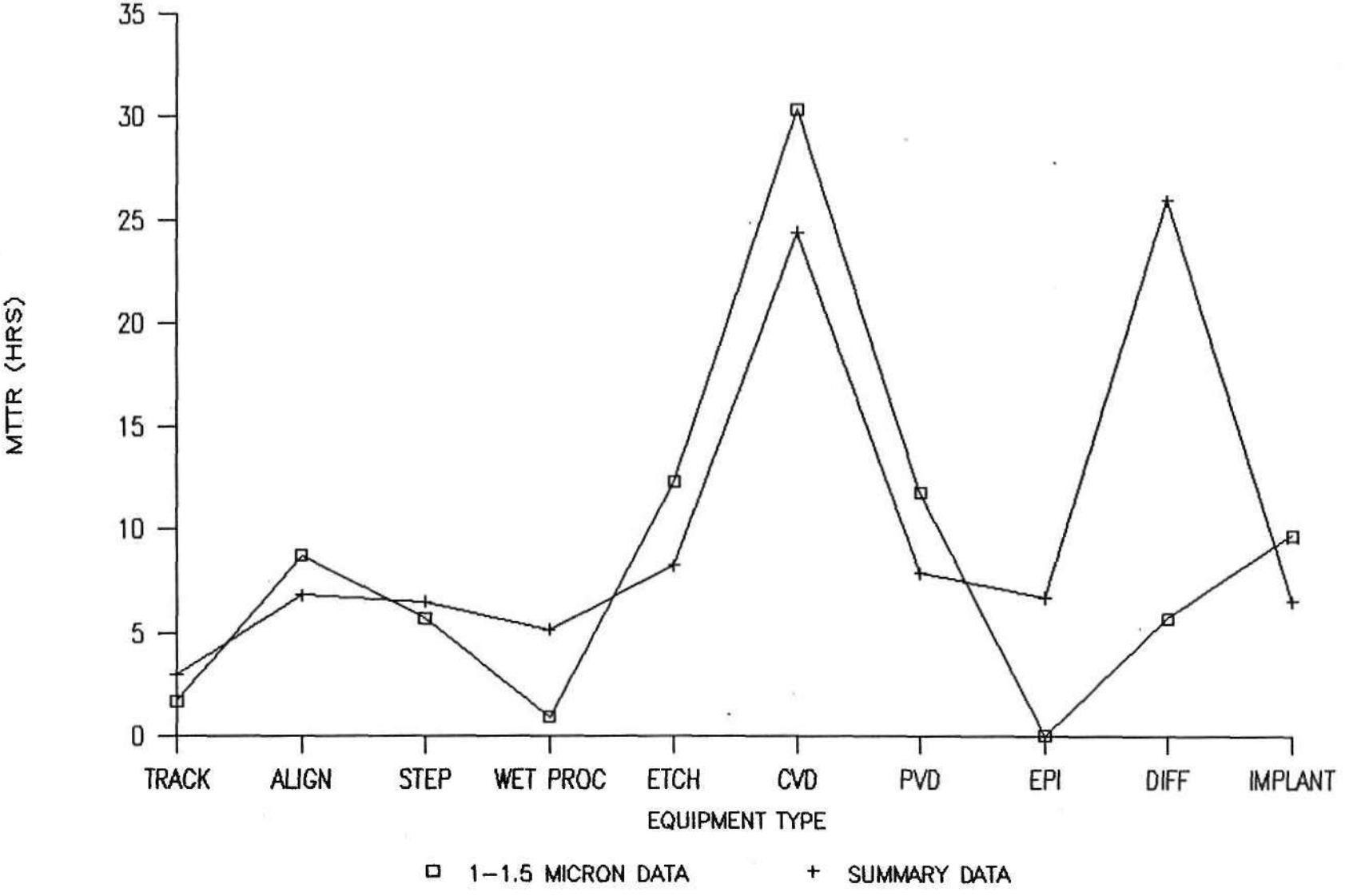
MEAN TIME TO REPAIR: ALL VENDORS

1-<1.5 MICRON DATA



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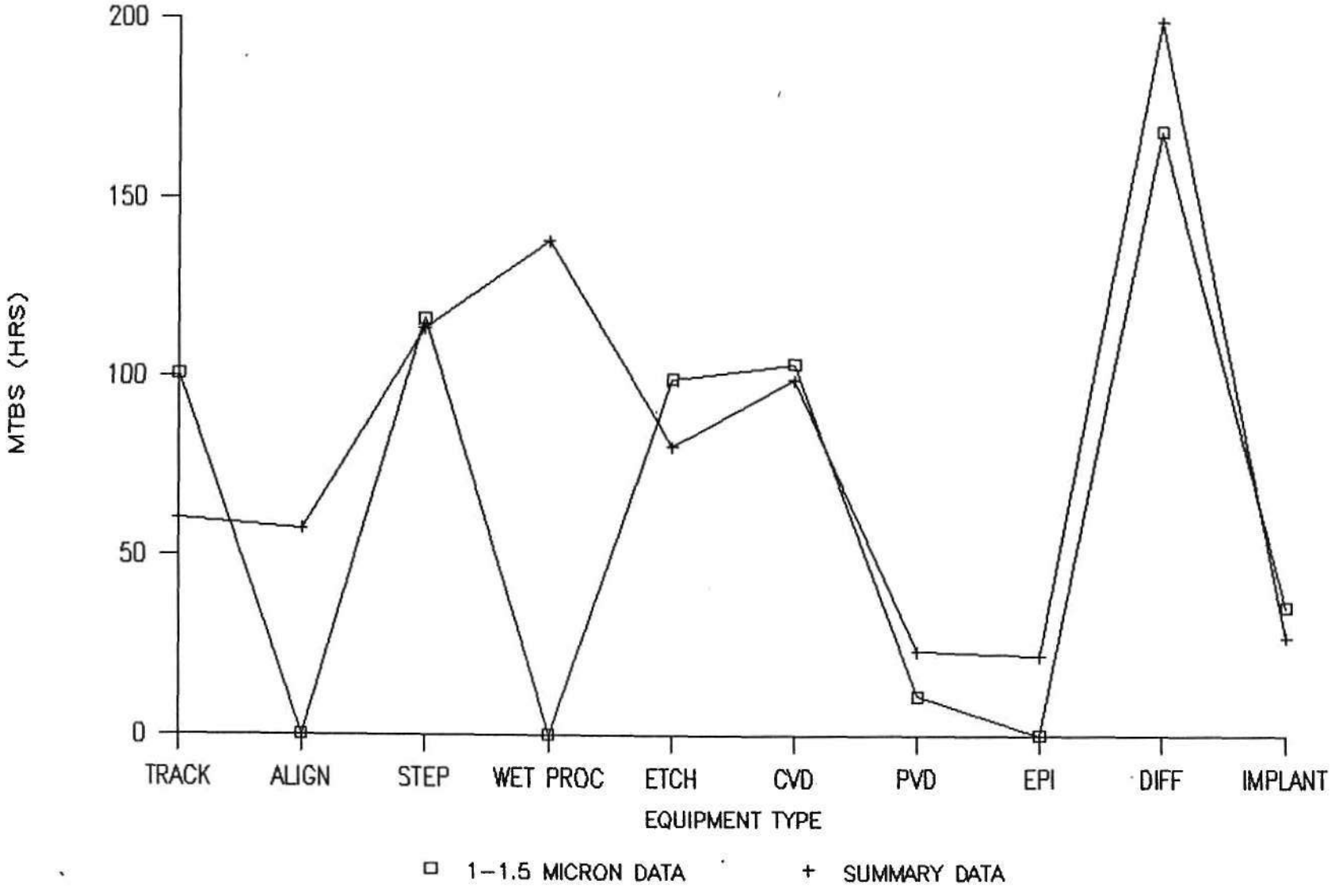
MEAN TIME BETWEEN SET-UPS: ALL VENDORS

1-<1.5 MICRON DATA



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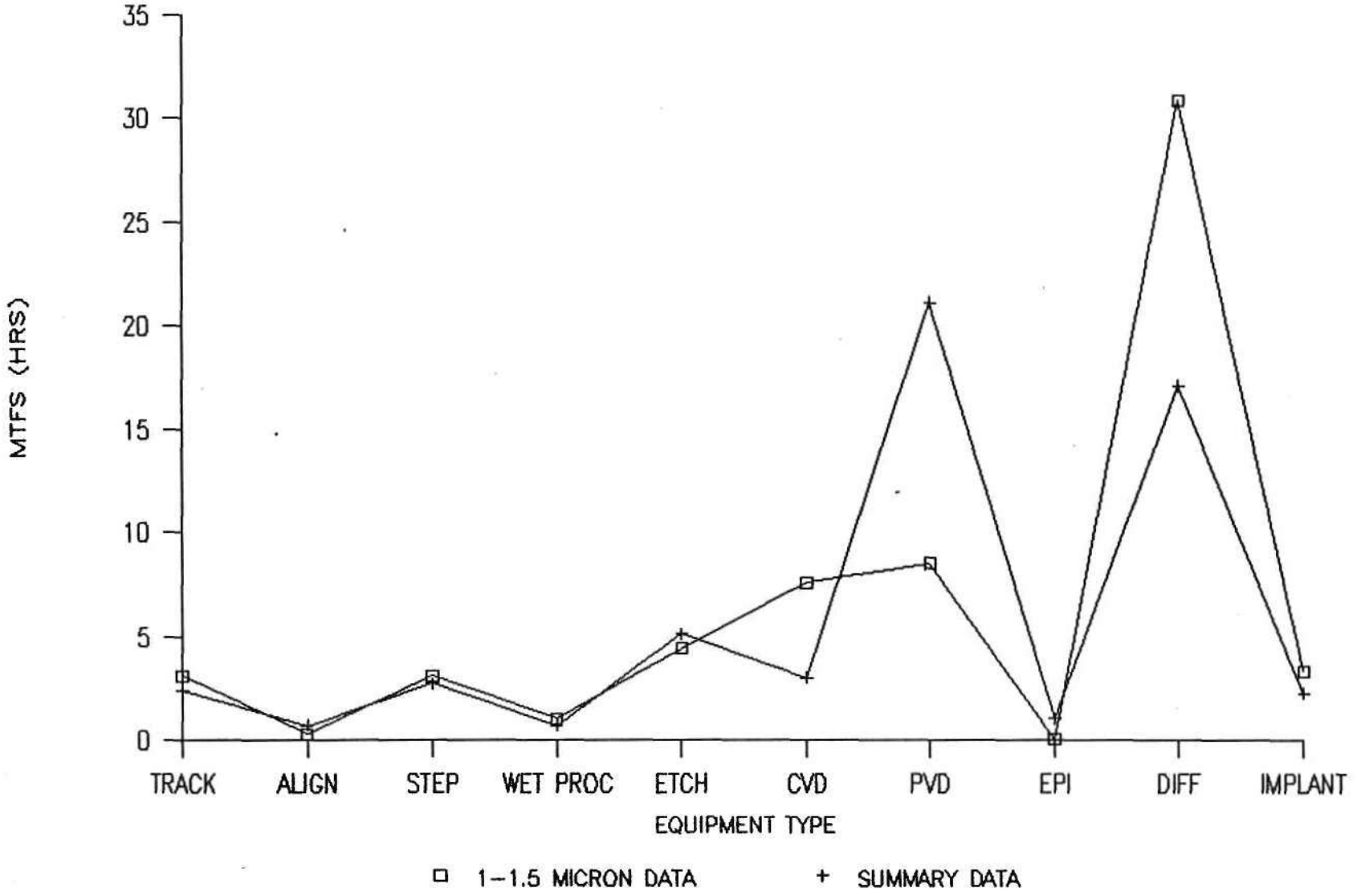
MEAN TIME FOR SET-UP: ALL VENDORS

1-<1.5 MICRON DATA



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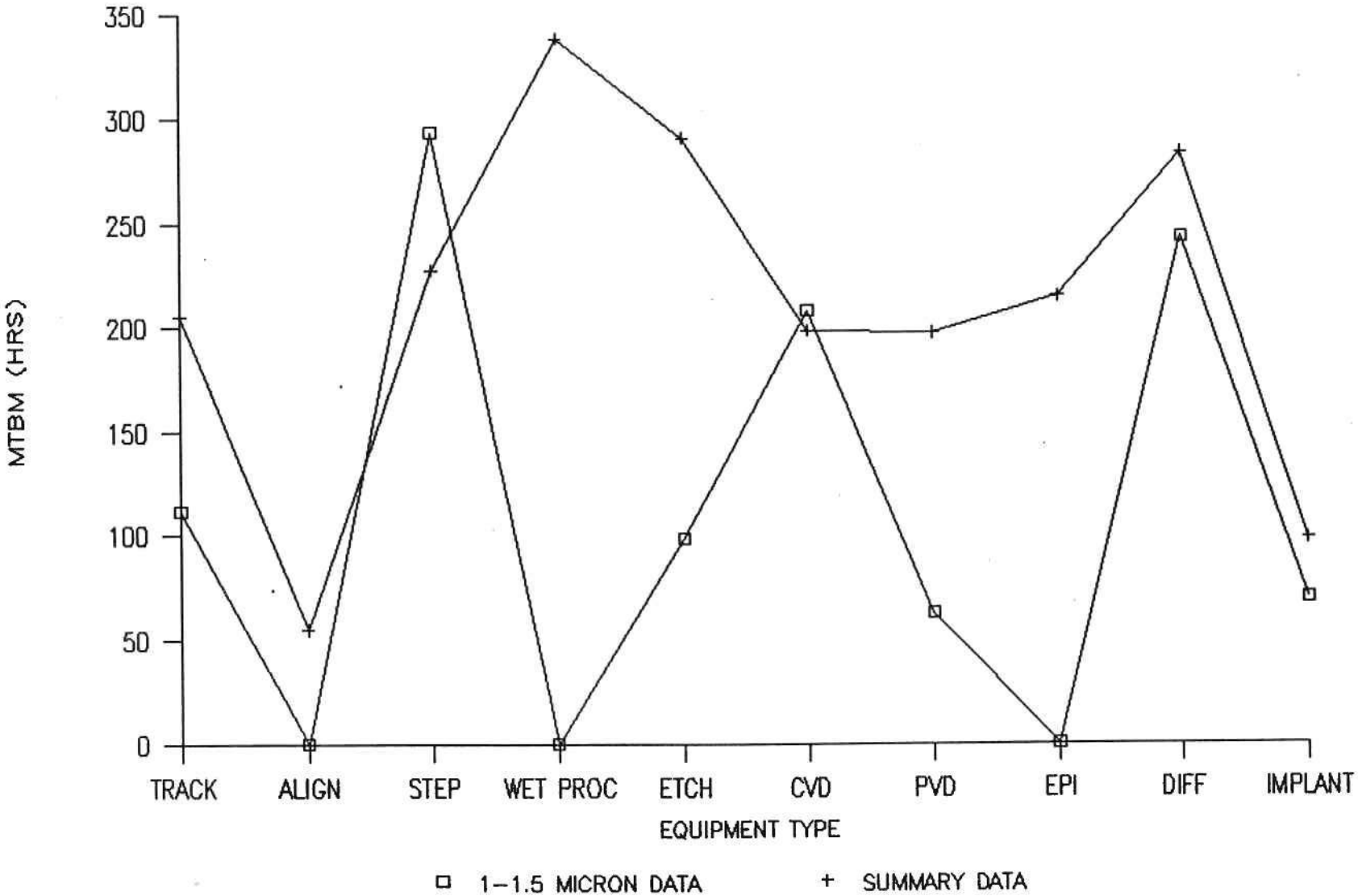
MEAN TIME BTW MAINTENANCE: ALL VENDORS

1-<1.5 MICRON DATA



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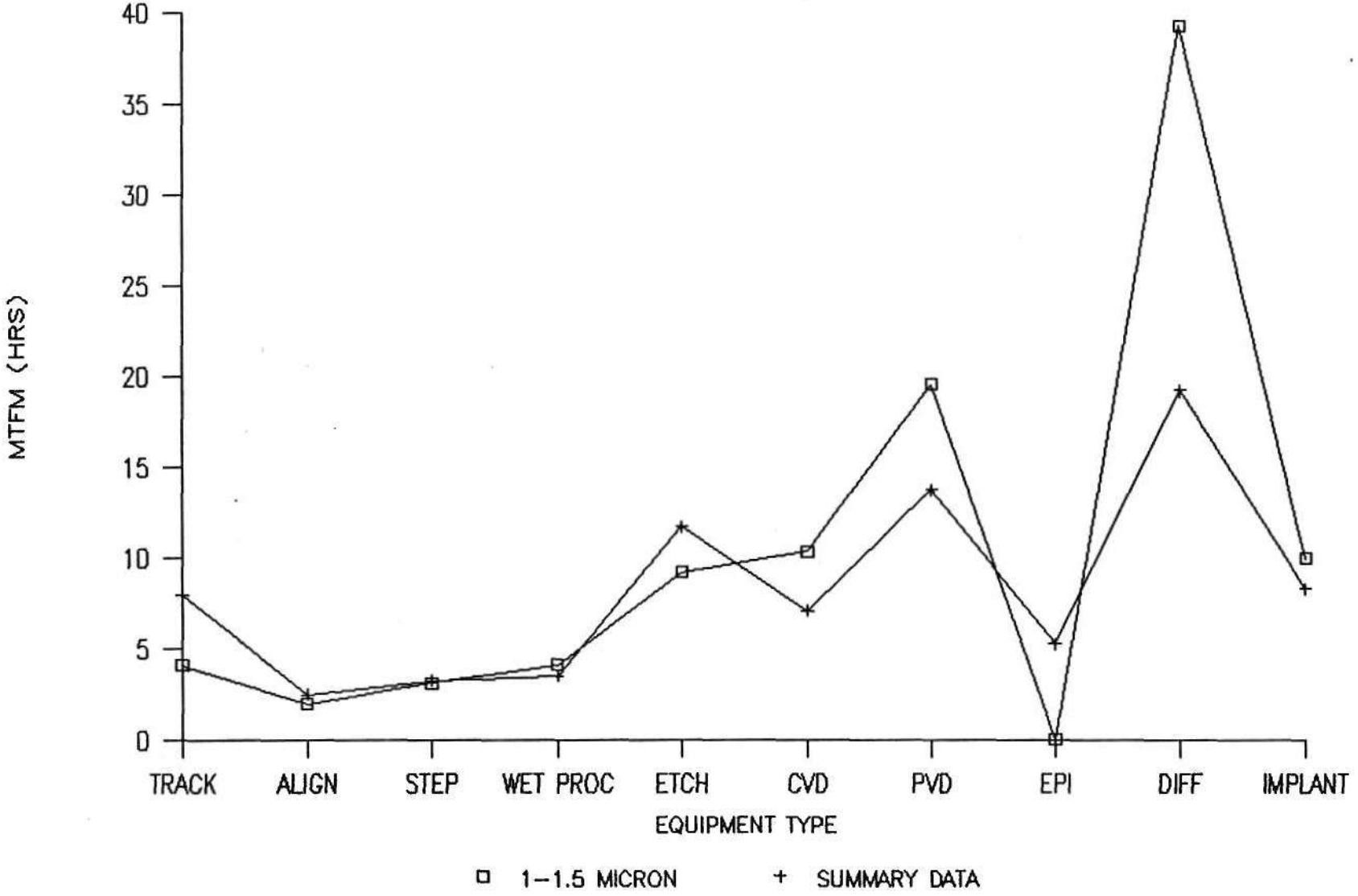
MEAN TIME FOR MAINTENANCE: ALL VENDORS

1-<1.5 MICRON



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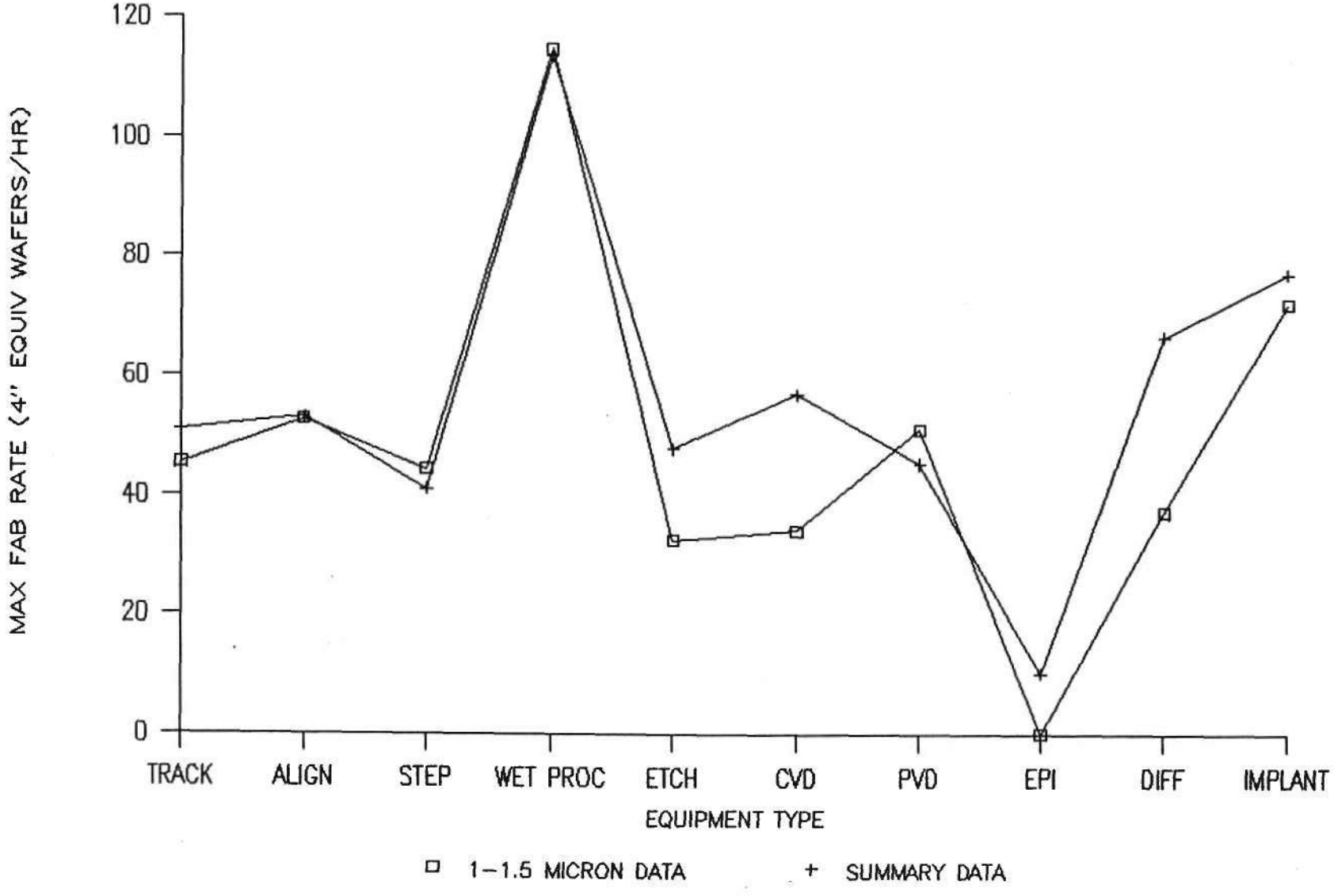
MAX FAB RATE: ALL VENDORS

1-<1.5 MICRON DATA



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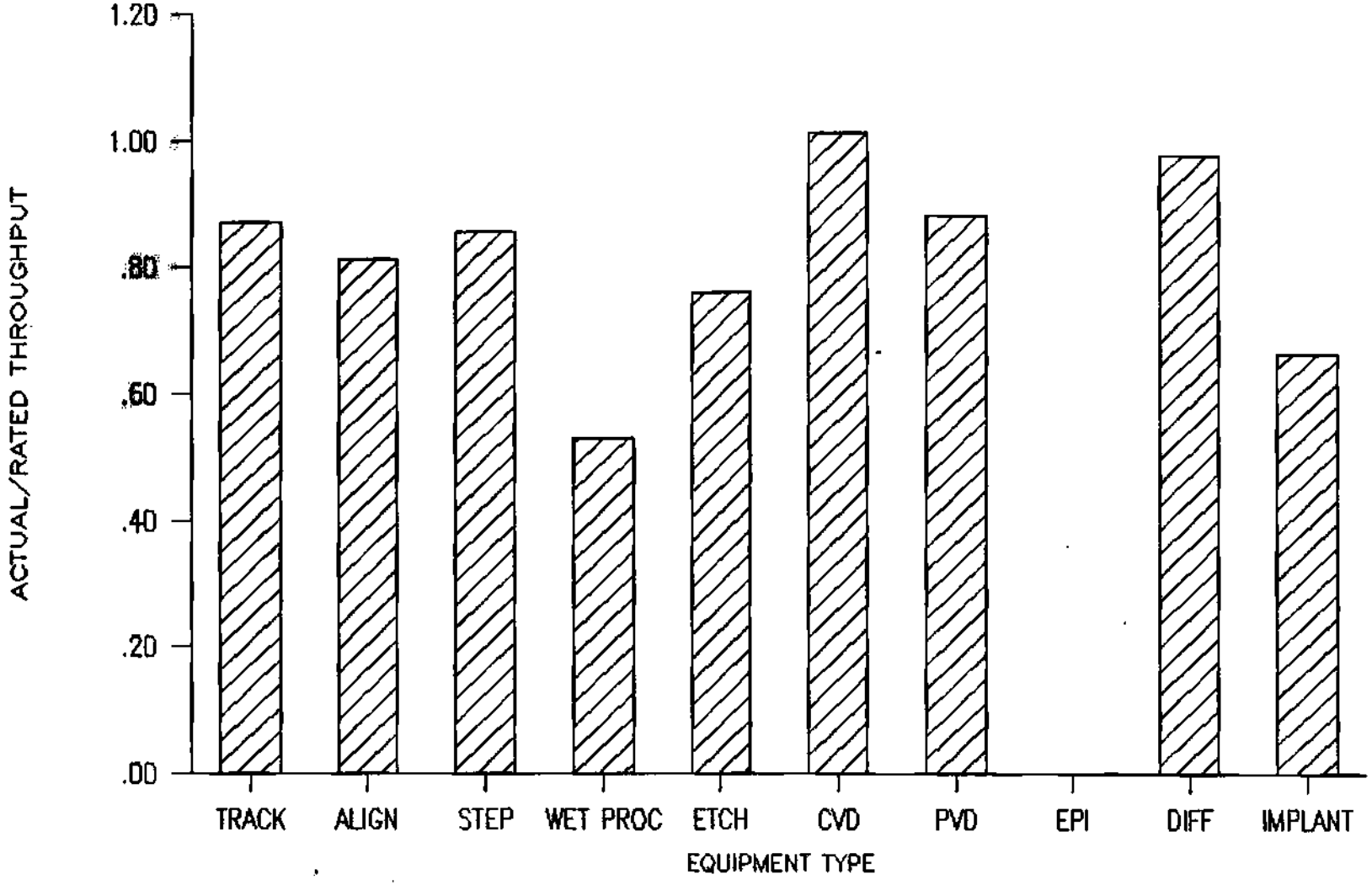
ACTUAL-TO-RATED THROUGHPUT: ALL VENDORS

1 TO <1.5 MICRON DATA



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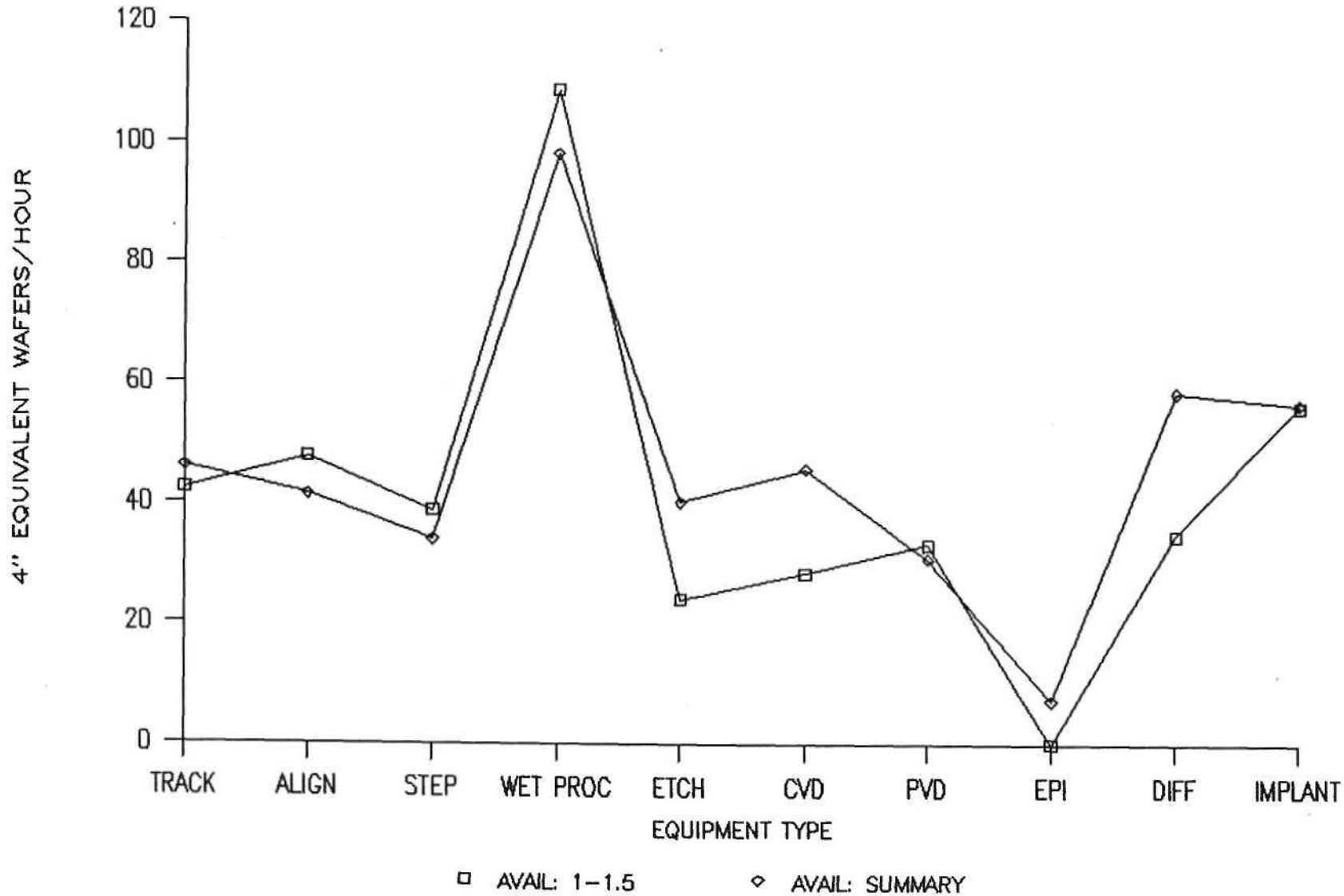
NET THROUGHPUT

ALL VENDORS: 1-<1.5 MICRON DATA



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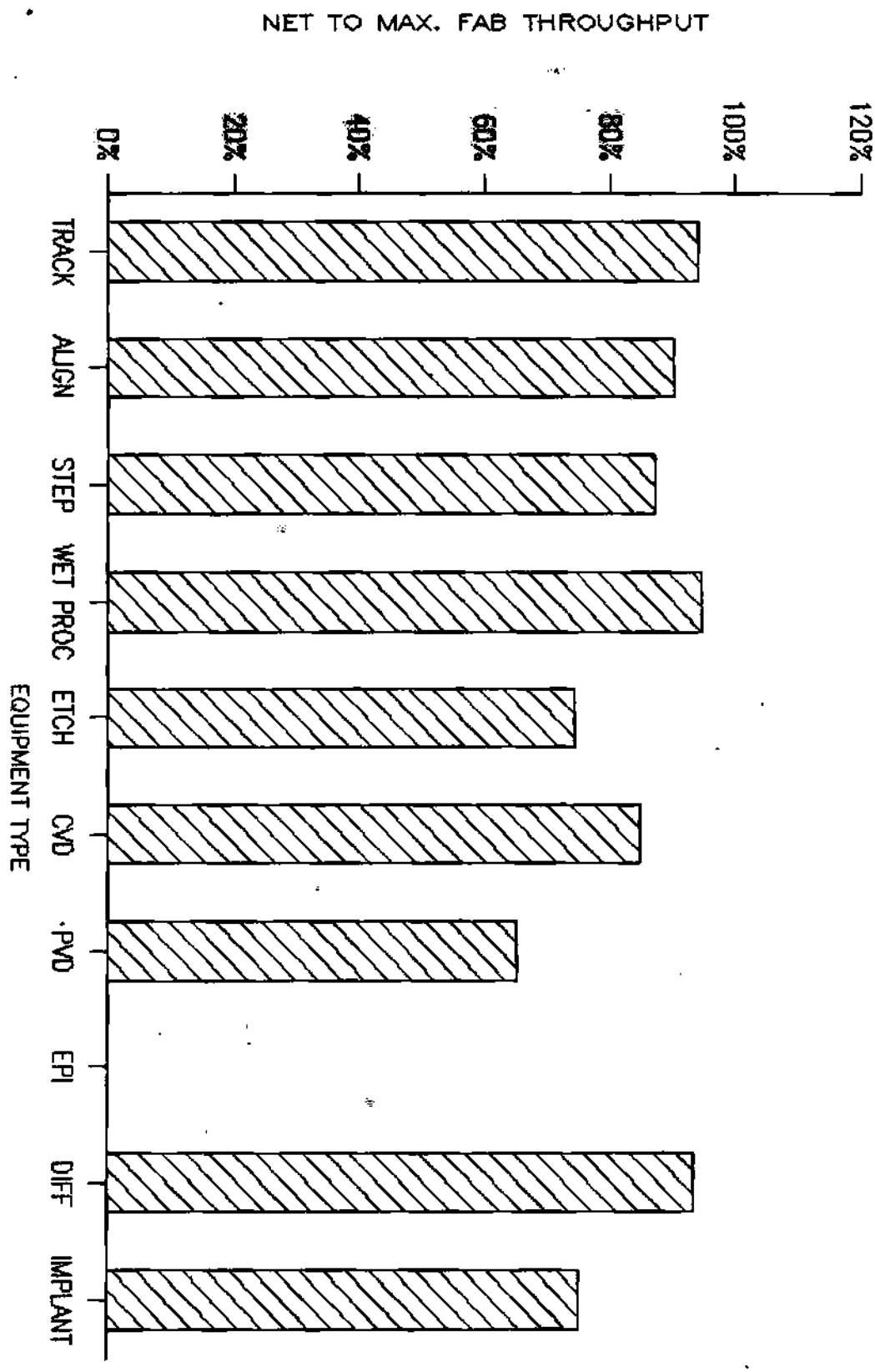
NET-TO-MAX. FAB THROUGHPUT: ALL VENDORS

1 TO <1.5 MICRON DATA



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1.5 TO <2 MICRONS EQUIPMENT PERFORMANCE

ITEM	PERFORMANCE PARAMETER	TRACK	ALIGN	STEP	WET PROC	ETCH	CVD	PVD	EPI	DIFF	IMPLANT
1	NUMBER	151	56	85	41	75	24	20	-	104	33
2	AVAILABLE TIME (% of total time)	92%	75%	84%	92%	78%	81%	64%	-	89%	75%
3	PRODUCTIVE TIME (% of available time)	86%	94%	85%	95%	61%	73%	88%	-	52%	76%
4	UNSCHEDULED DOWNTIME (hours/quarter)	77	155	163	92	259	180	174	-	92	304
5	SCHEDULED DOWNTIME (hours/quarter)	54	131	104	93	83	96	380	-	130	154
6	MTBF (hrs)	160	83	110	157	91	193	135	-	604	40
7	MTTR (hrs)	3	8	4	5	8	15	12	-	36	8
8	MTBS (hrs)	63	2	128	0	59	52	14	-	178	28
9	MTFS (hrs)	1	0	3	1	6	3	31	-	27	3
10	MTBM (hrs)	143	40	305	92	186	165	121	-	247	94
11	MTFM (hrs)	3	3	3	5	6	8	19	-	32	7
12	RATED THROUGHPUT (wafers/hr: 4" equiv)	69	88	61	217	59	59	54	-	39	117
13	MAX. FAB THROUGHPUT (wafers/hr: 4" equiv)	55	56	49	115	47	51	51	-	33	91
14	ACTUAL/RATED (item #13/item #12)	0.80	0.64	0.80	0.53	0.80	0.85	0.93	-	0.84	0.77
15	NET THROUGHPUT (wafers/hr: item #13 x item #2)	51	42	41	105	37	41	32	-	29	68
16	NET/MAX FAB T.P. (item # 15/item # 13)	92%	75%	84%	92%	78%	81%	64%	-	89%	75%

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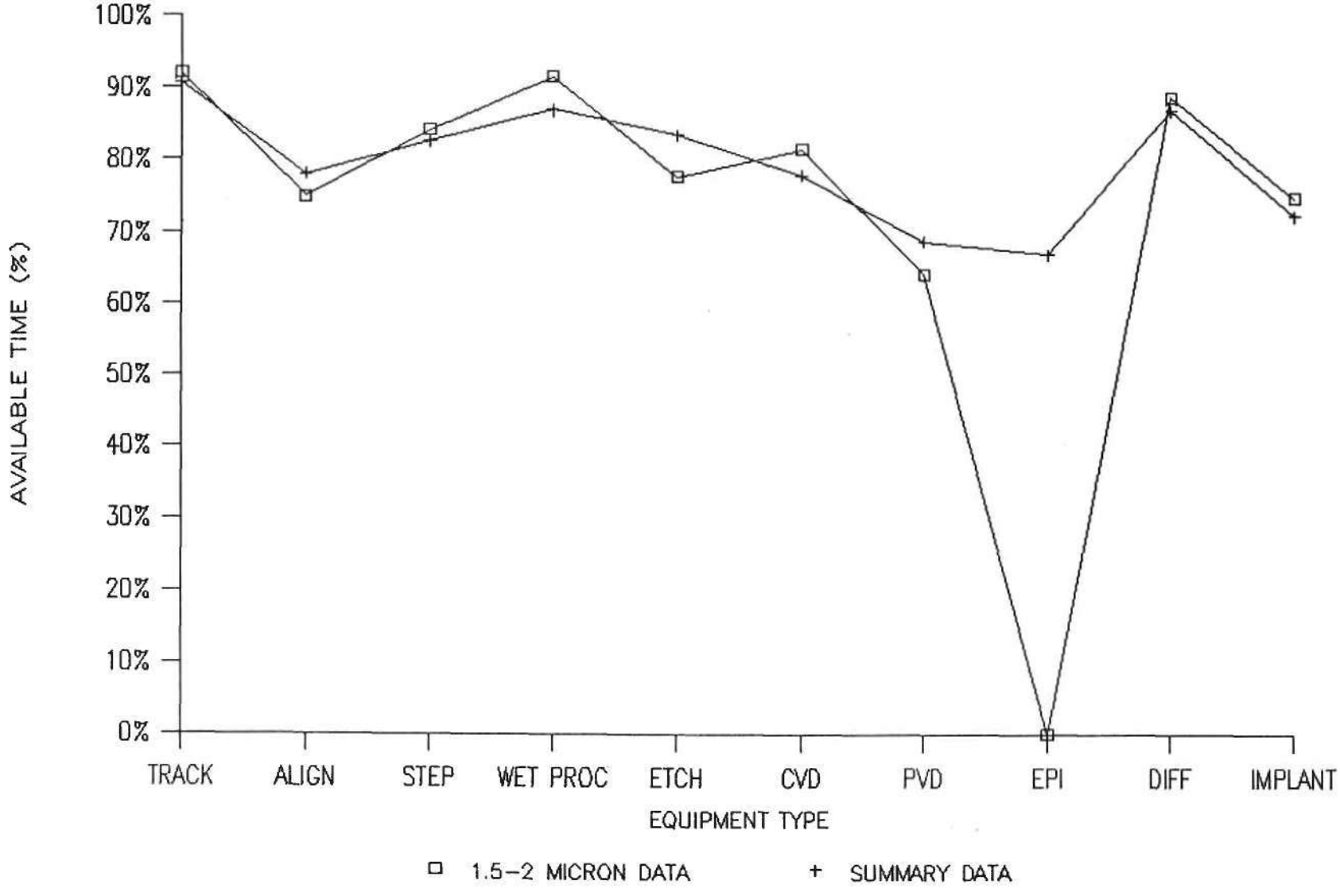
AVAILABLE TIME: ALL VENDORS

1.5-<2 MICRON DATA



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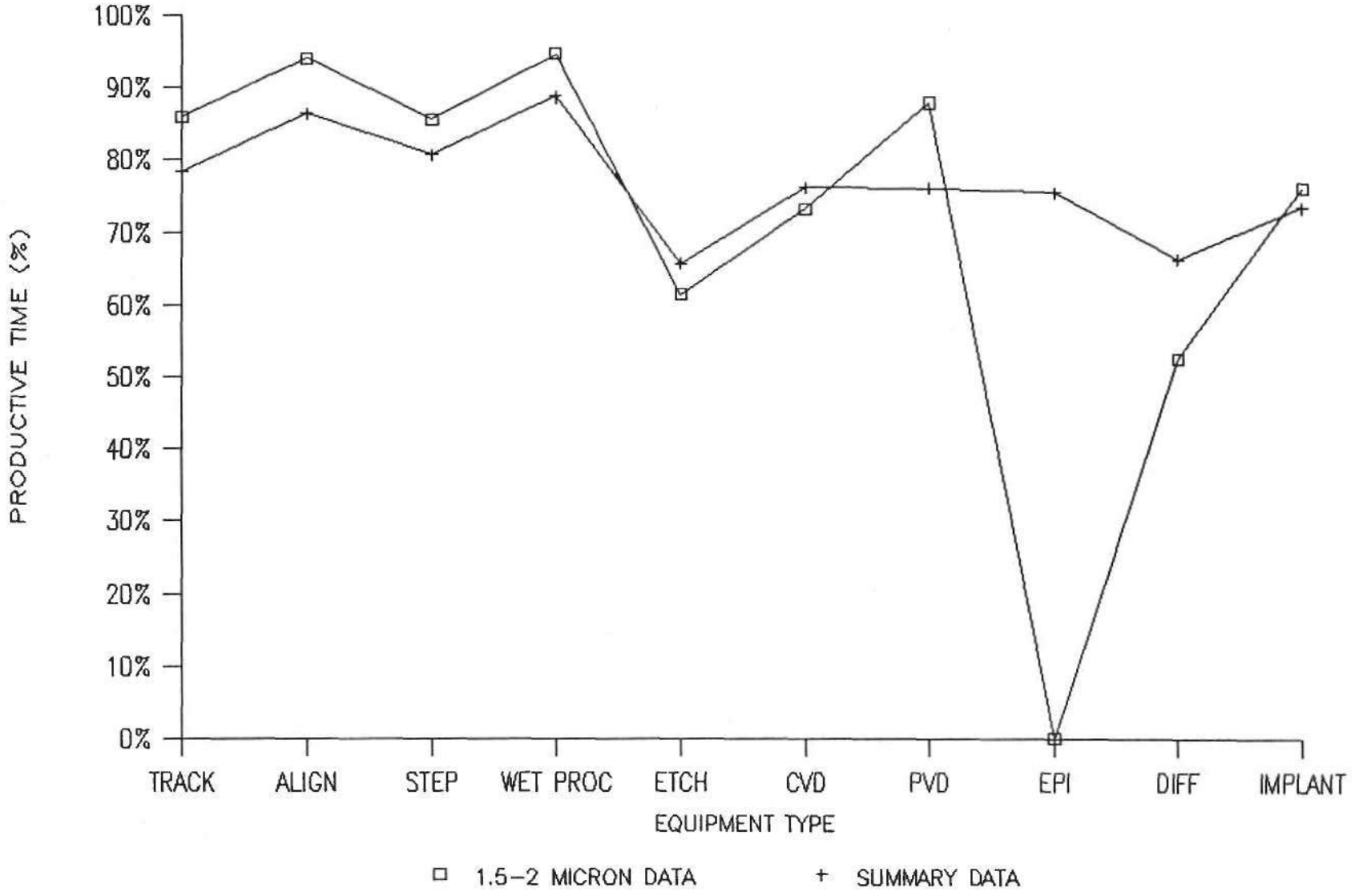
PRODUCTIVE TIME: ALL VENDORS

1.5-<2 MICRON DATA



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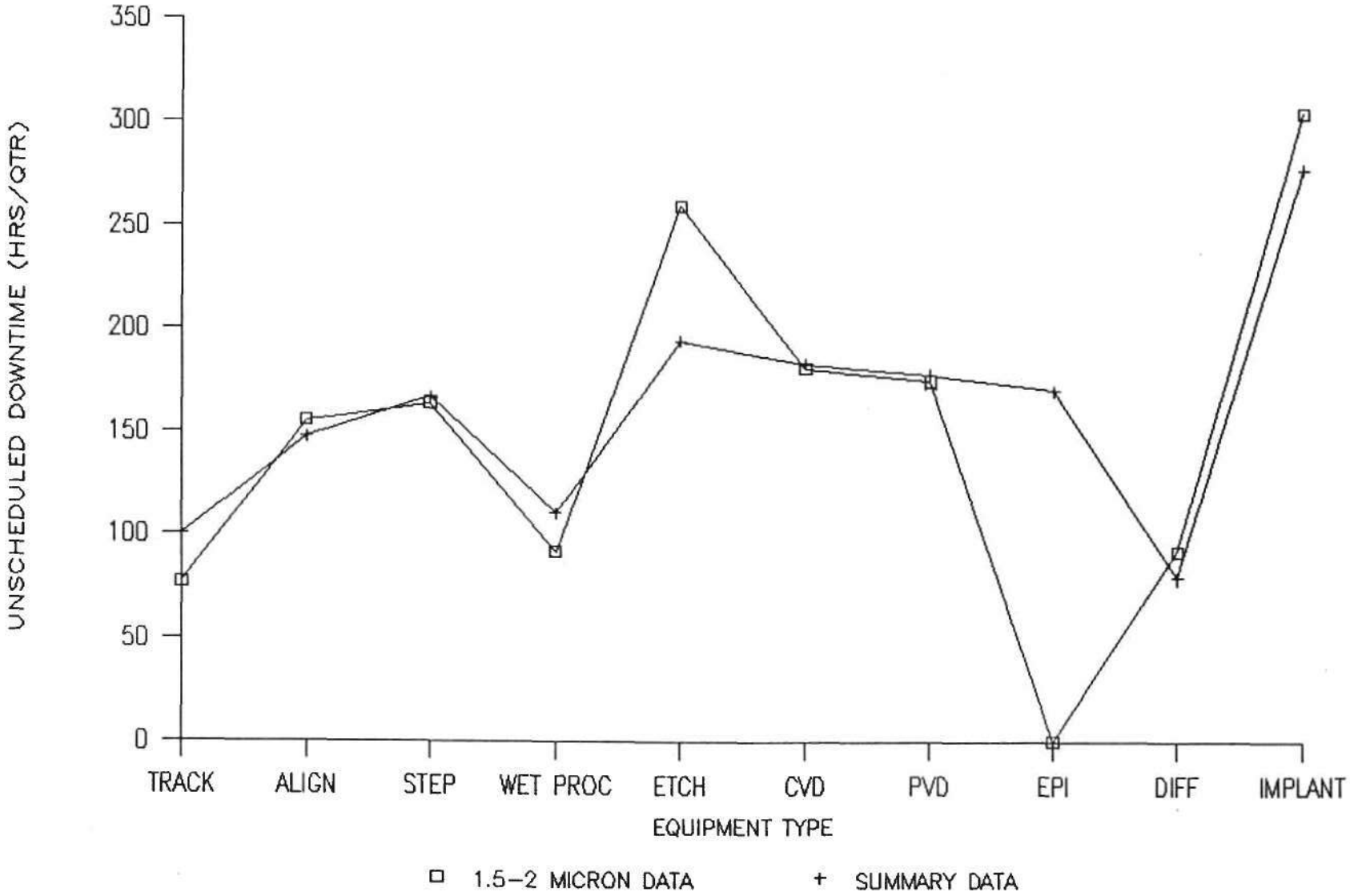
UNSCHEDULED DOWNTIME: ALL VENDORS

1.5-<2 MICRON DATA



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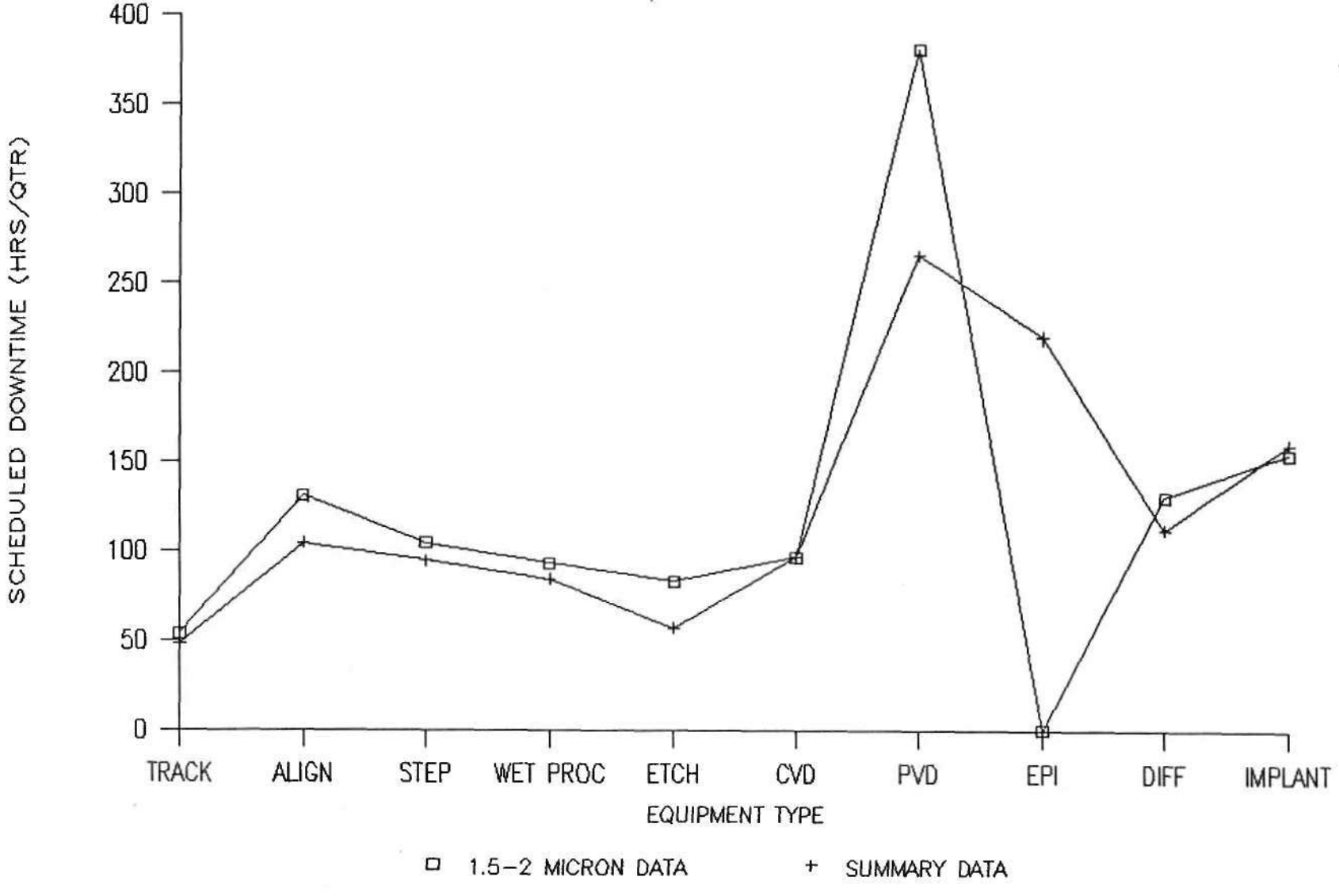
SCHEDULED DOWNTIME: ALL VENDORS

1.5<2 MICRON DATA



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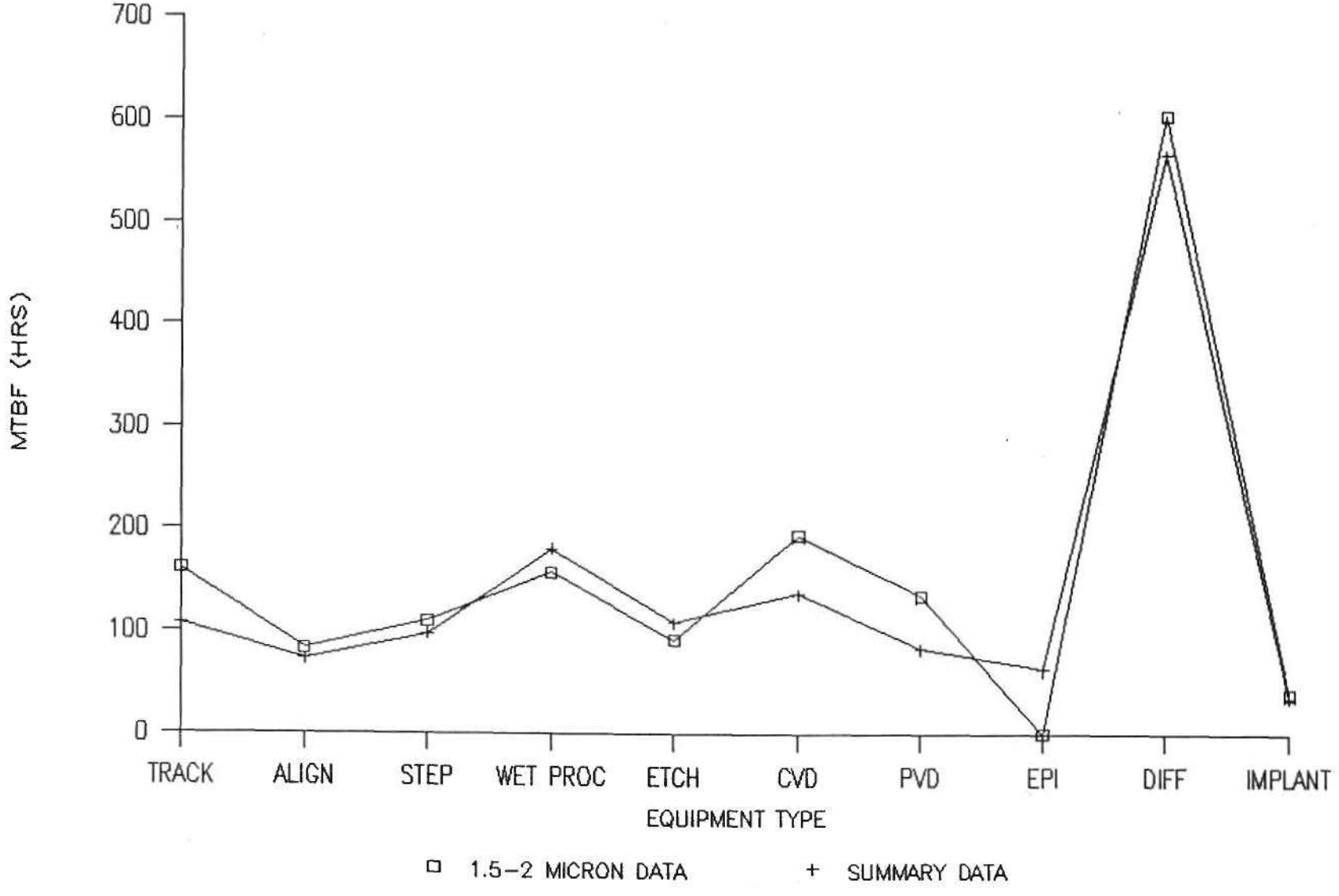
MEAN TIME BETWEEN FAILURE: ALL VENDORS

1.5-<2 MICRON DATA



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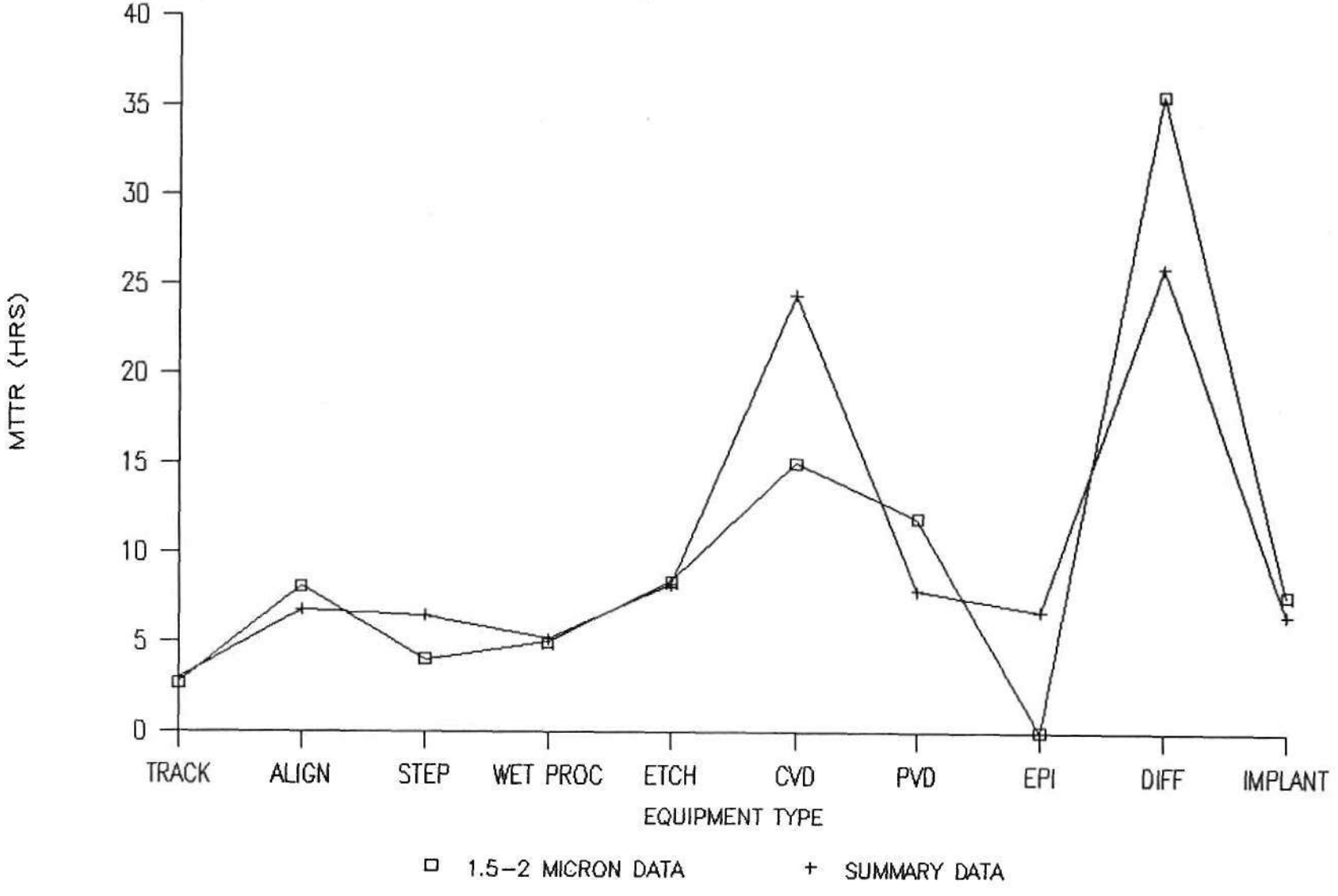
MEAN TIME TO REPAIR: ALL VENDORS

1.5<2 MICRON DATA



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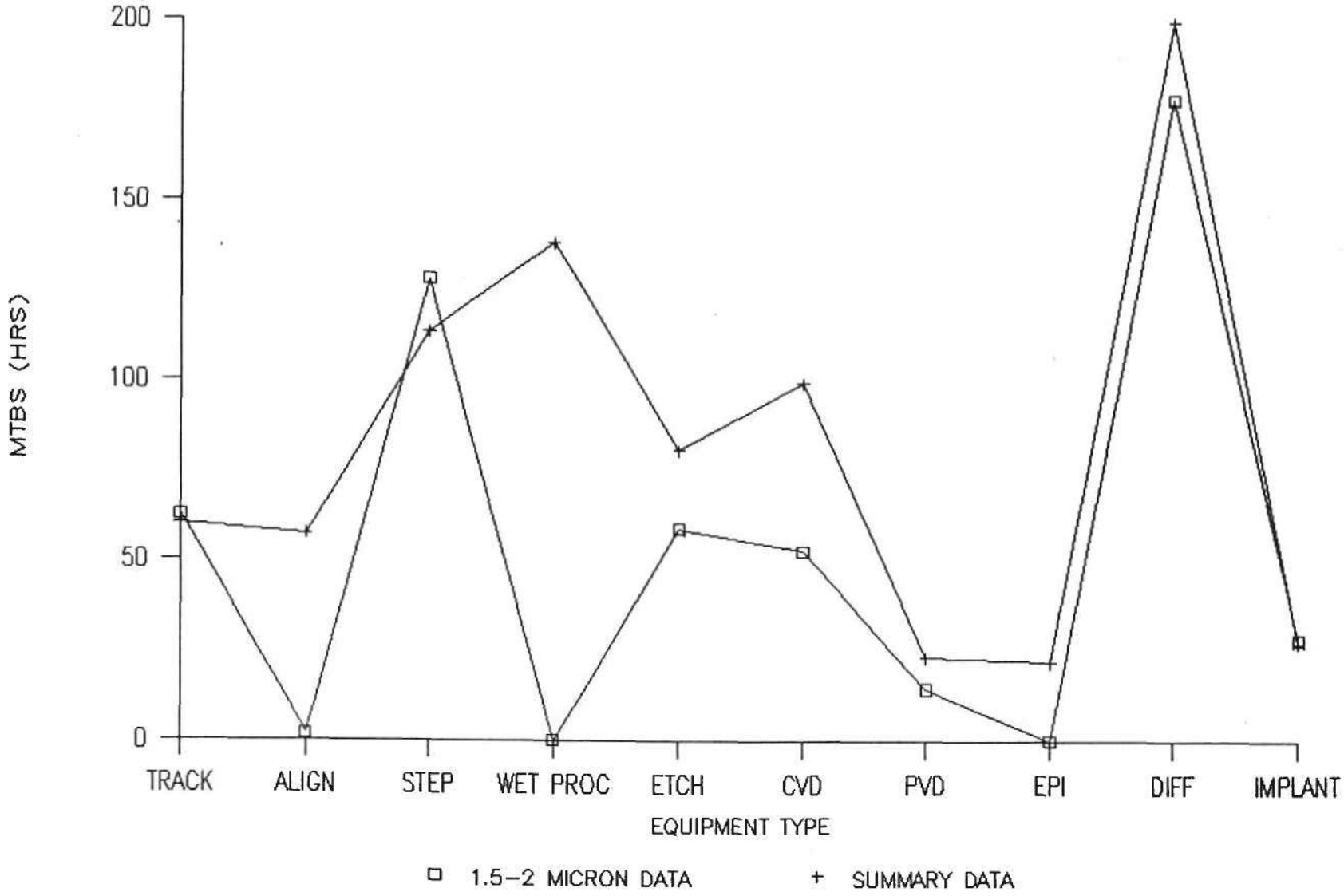
MEAN TIME BETWEEN SET-UPS: ALL VENDORS

1.5<2 MICRON DATA



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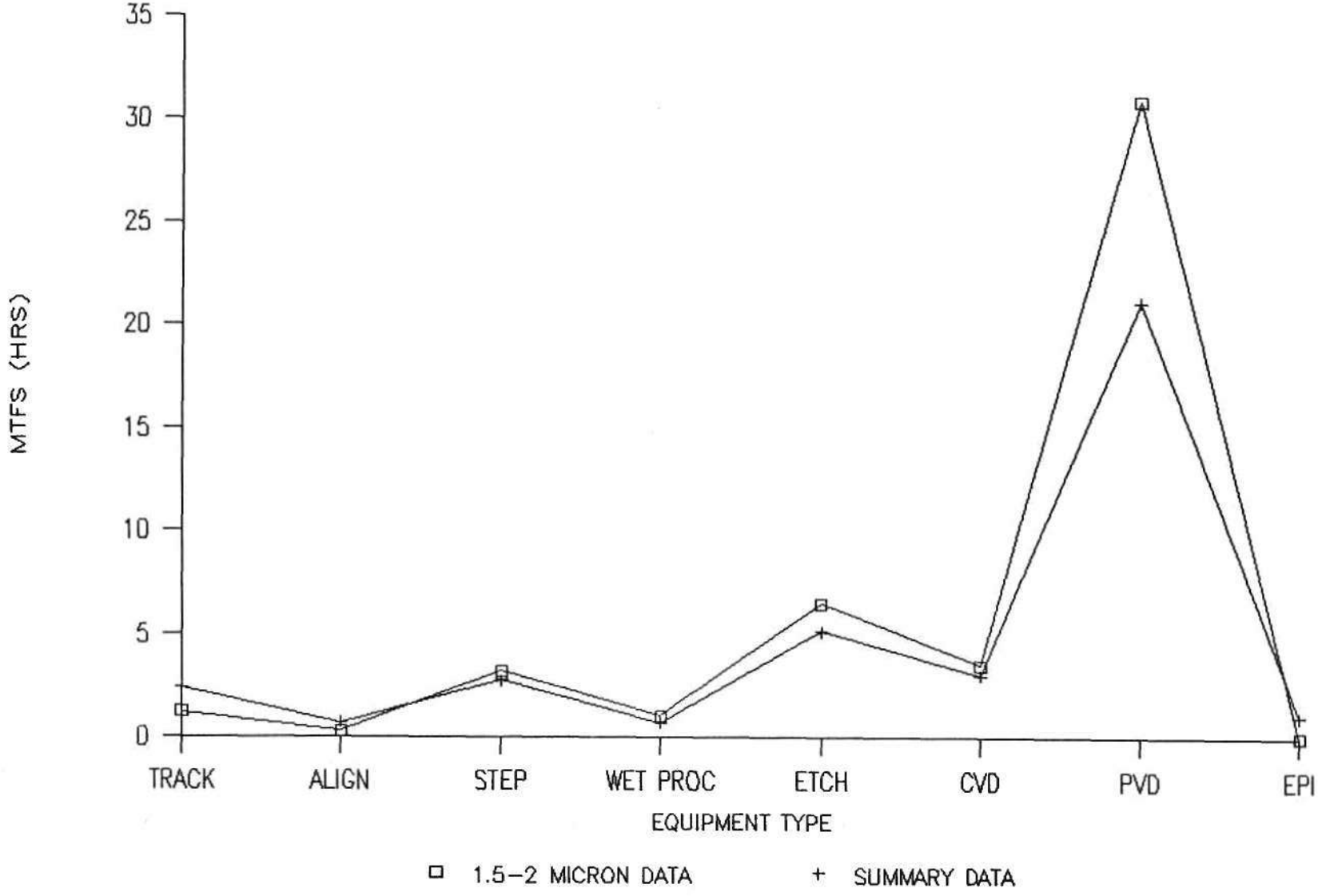
MEAN TIME FOR SET-UP: ALL VENDORS

1.5<2 MICRON DATA



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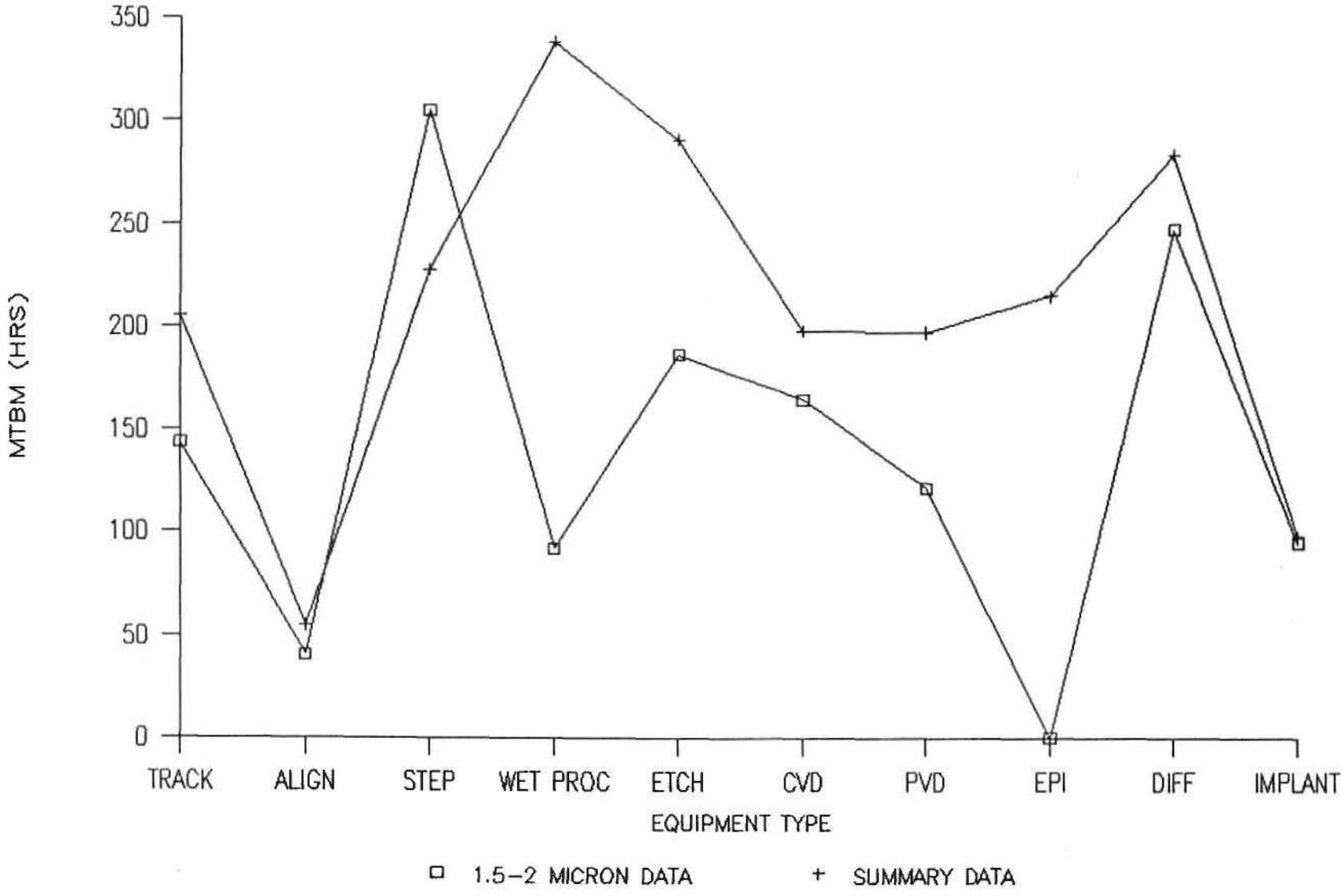
MEAN TIME BTW MAINTENANCE: ALL VENDORS

1.5<2 MICRON DATA



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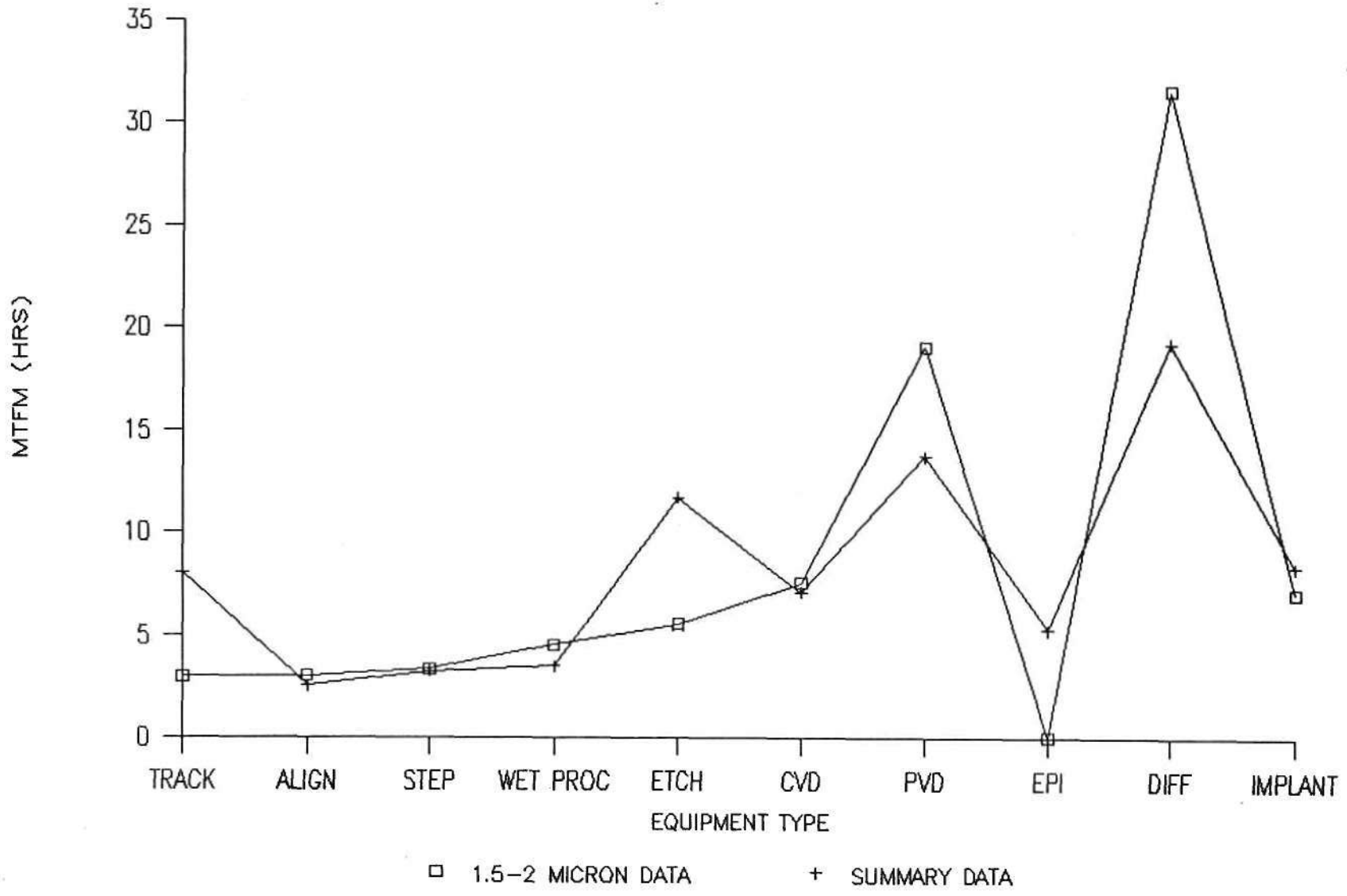
MEAN TIME FOR MAINTENANCE: ALL VENDORS

1.5-<2 MICRON DATA



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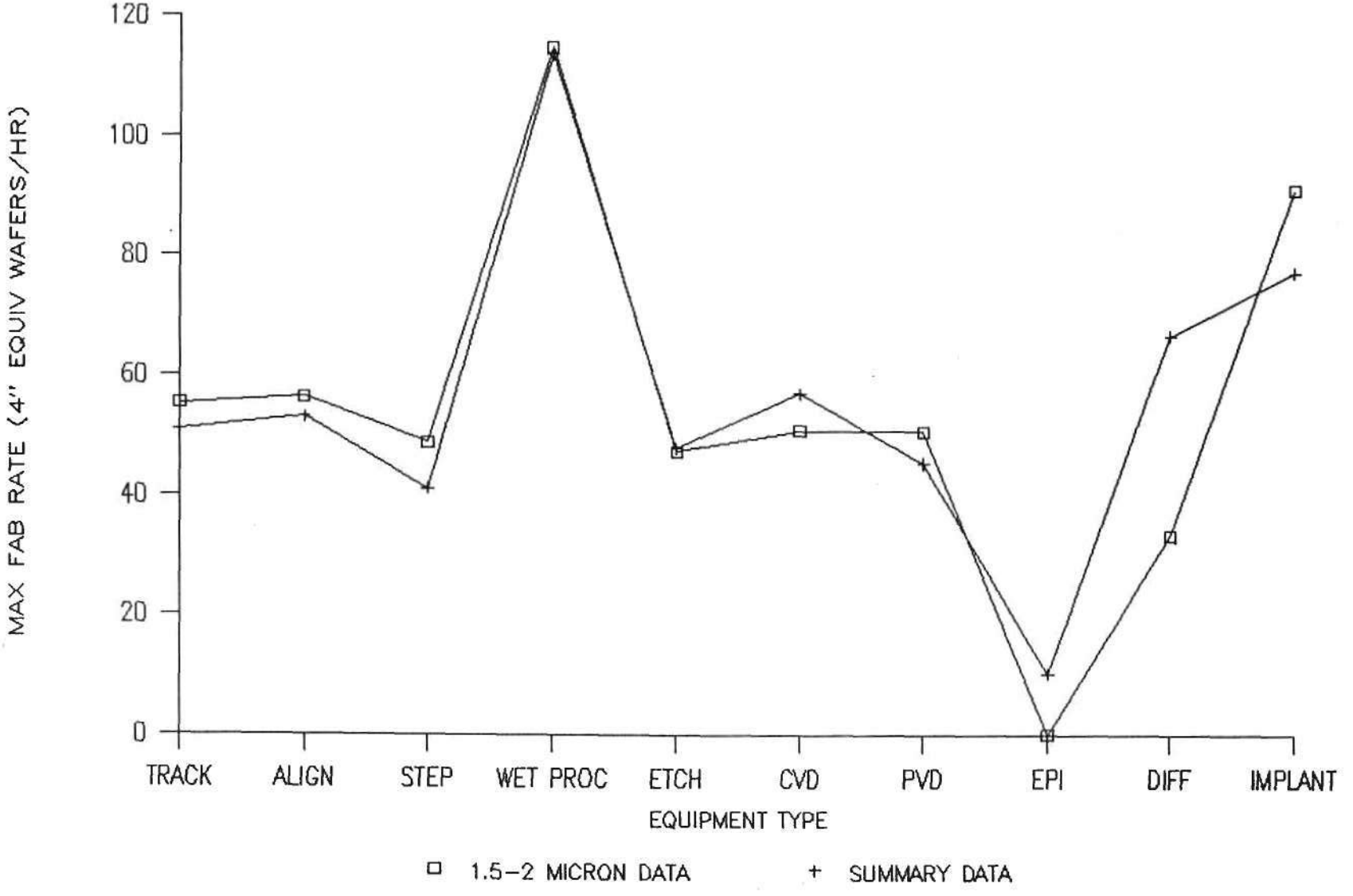
MAX FAB RATE: ALL VENDORS

1.5<2 MICRON DATA



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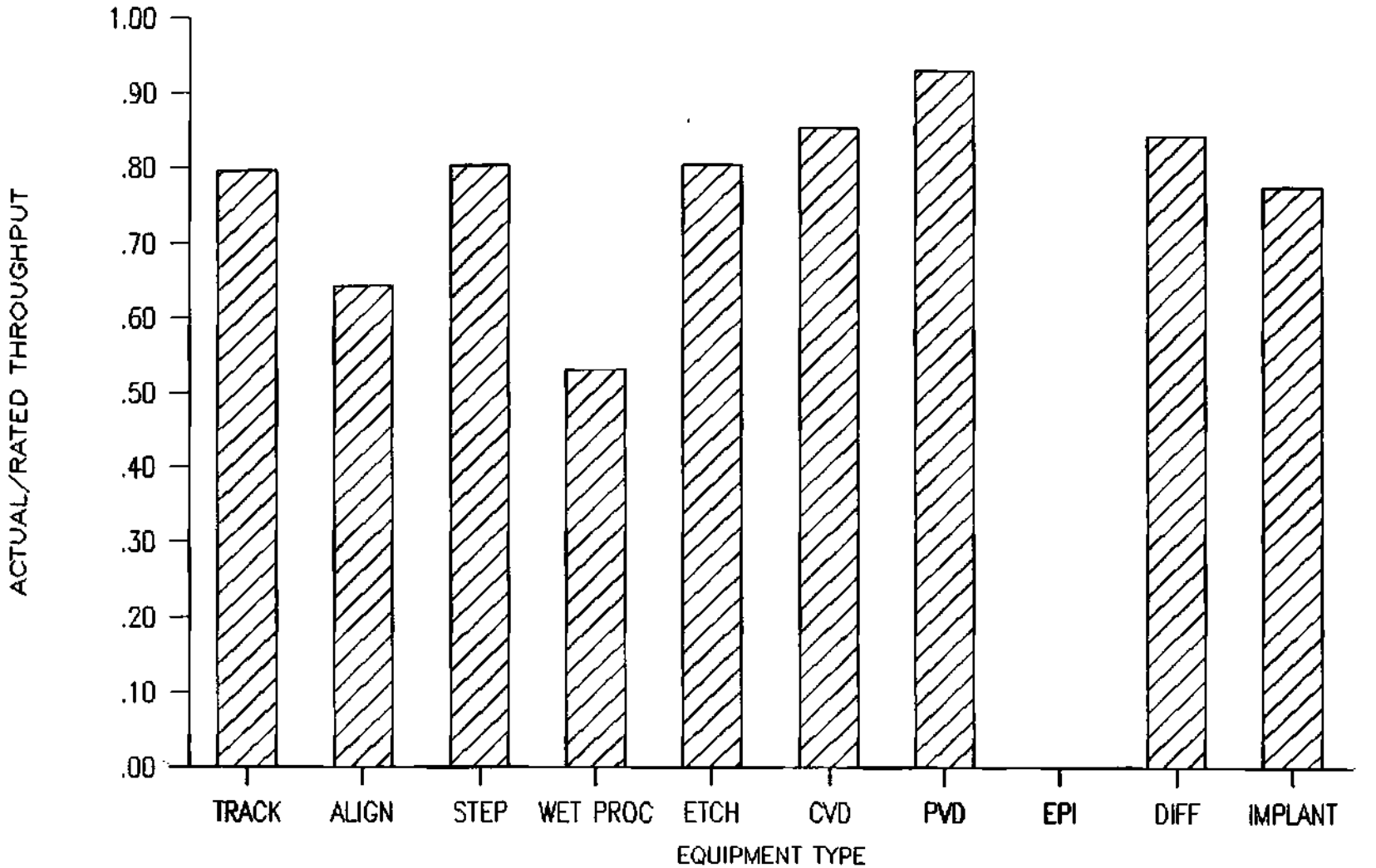
ACTUAL-TO-RATED THROUGHPUT: ALL VENDORS

1.5 TO <2 MICRON DATA



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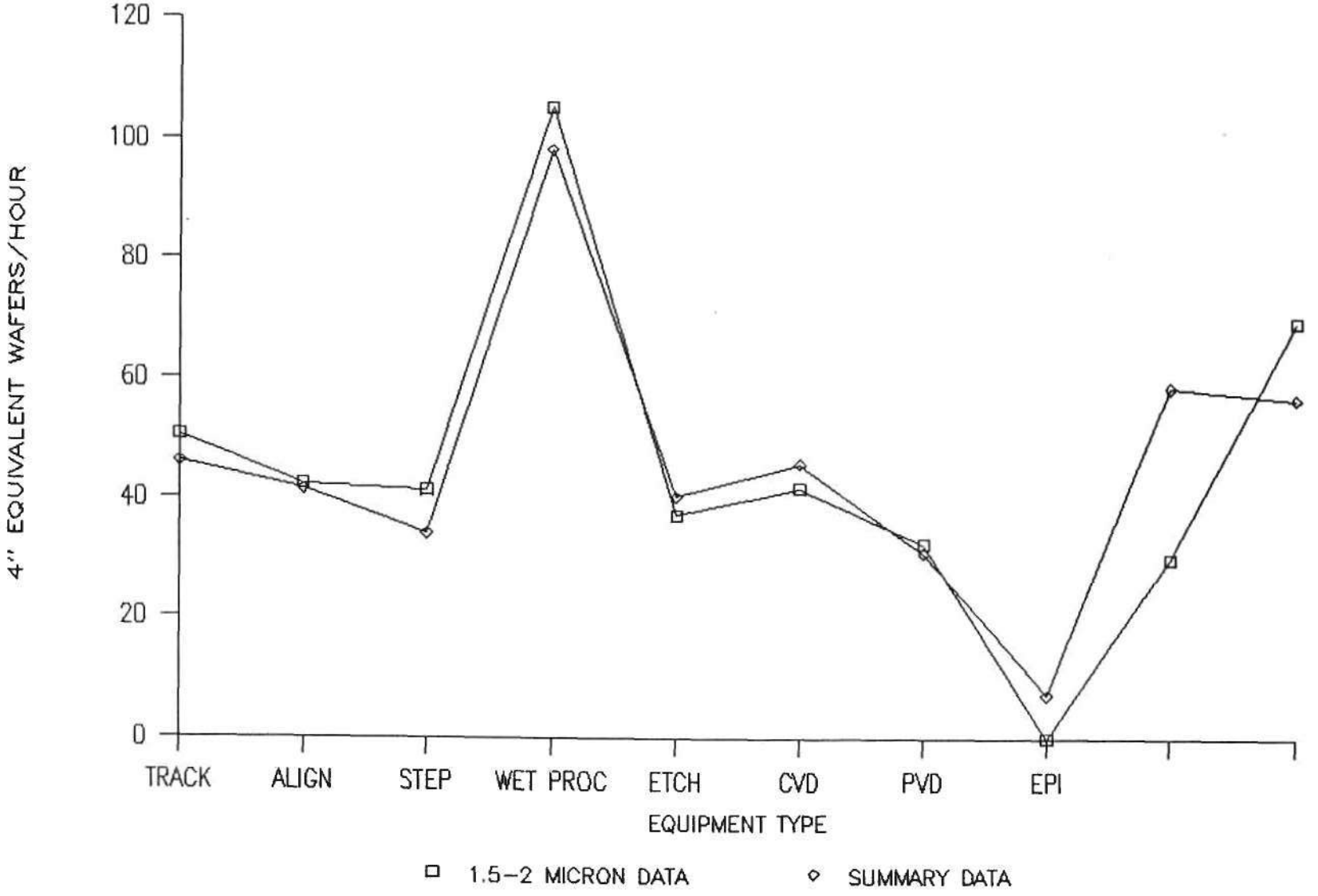
NET THROUGHPUT

ALL VENDORS: 1.5<2 MICRON DATA



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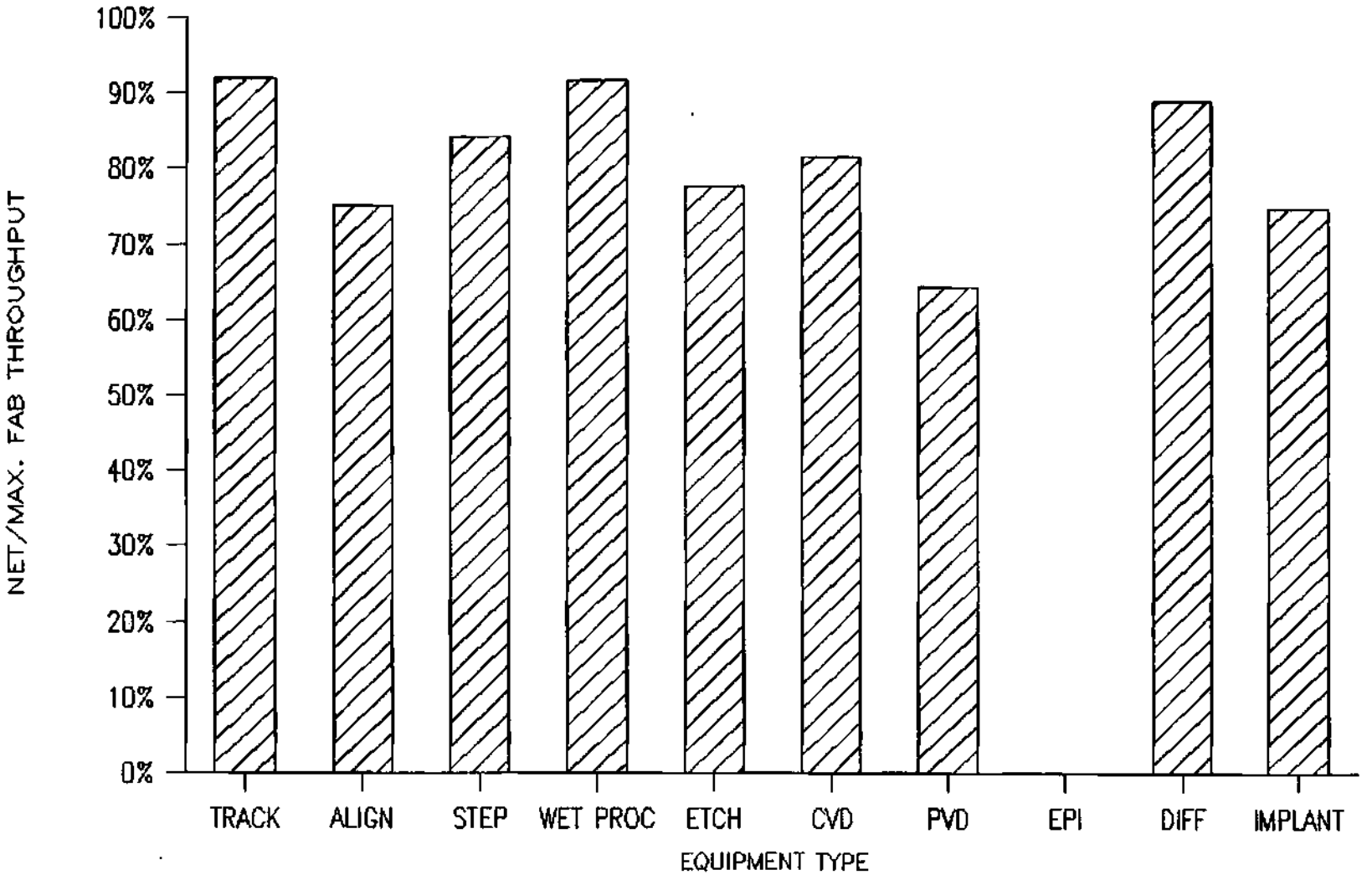
NET-TO-MAX. FAB THROUGHPUT: ALL VENDORS

1.5 TO <2 MICRON DATA



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2 TO <2.5 MICRONS EQUIPMENT PERFORMANCE

ITEM	PERFORMANCE PARAMETER	TRACK	ALIGN	STEP	WET PROC	ETCH	CVD	PVD	EPI	DIFF	IMPLANT
1	NUMBER	82	26	94	29	44	31	11	6	52	10
2	AVAILABLE TIME (% of total time)	87%	74%	75%	85%	86%	75%	62%	61%	85%	68%
3	PRODUCTIVE TIME (% of available time)	96%	94%	94%	100%	92%	99%	99%	98%	99%	94%
4	UNSCHEDULED DOWNTIME (hours/quarter)	113	172	173	156	141	106	210	99	60	191
5	SCHEDULED DOWNTIME (hours/quarter)	46	112	70	50	35	78	191	157	78	124
6	MTBF (hrs)	78	52	52	156	93	58	32	42	196	17
7	MTTR (hrs)	4	7	6	6	7	7	5	5	10	3
8	MTBS (hrs)	1	85	85	0	134	9	8	5	467	6
9	MTFS (hrs)	0	1	2	0	3	1	1	2	12	1
10	MTBM (hrs)	182	41	268	201	555	210	95	22	308	82
11	MTFM (hrs)	2	3	4	4	4	4	8	3	10	5
12	RATED THROUGHPUT (wafers/hr: 4" equiv)	109	108	42	48	60	125	47	0	0	112
13	MAX. FAB THROUGHPUT (wafers/hr: 4" equiv)	75	58	26	39	44	56	38	10	47	83
14	ACTUAL/RATED (item #13/item #12)	0.69	0.53	0.61	0.80	0.74	0.45	0.80	-	-	0.73
15	NET THROUGHPUT (wafers/hr: item #13 x item #2)	65	43	20	33	38	42	23	6	40	56
16	NET/MAX FAB T.P. (item # 15/item # 13)	87%	74%	75%	85%	86%	75%	62%	61%	85%	68%

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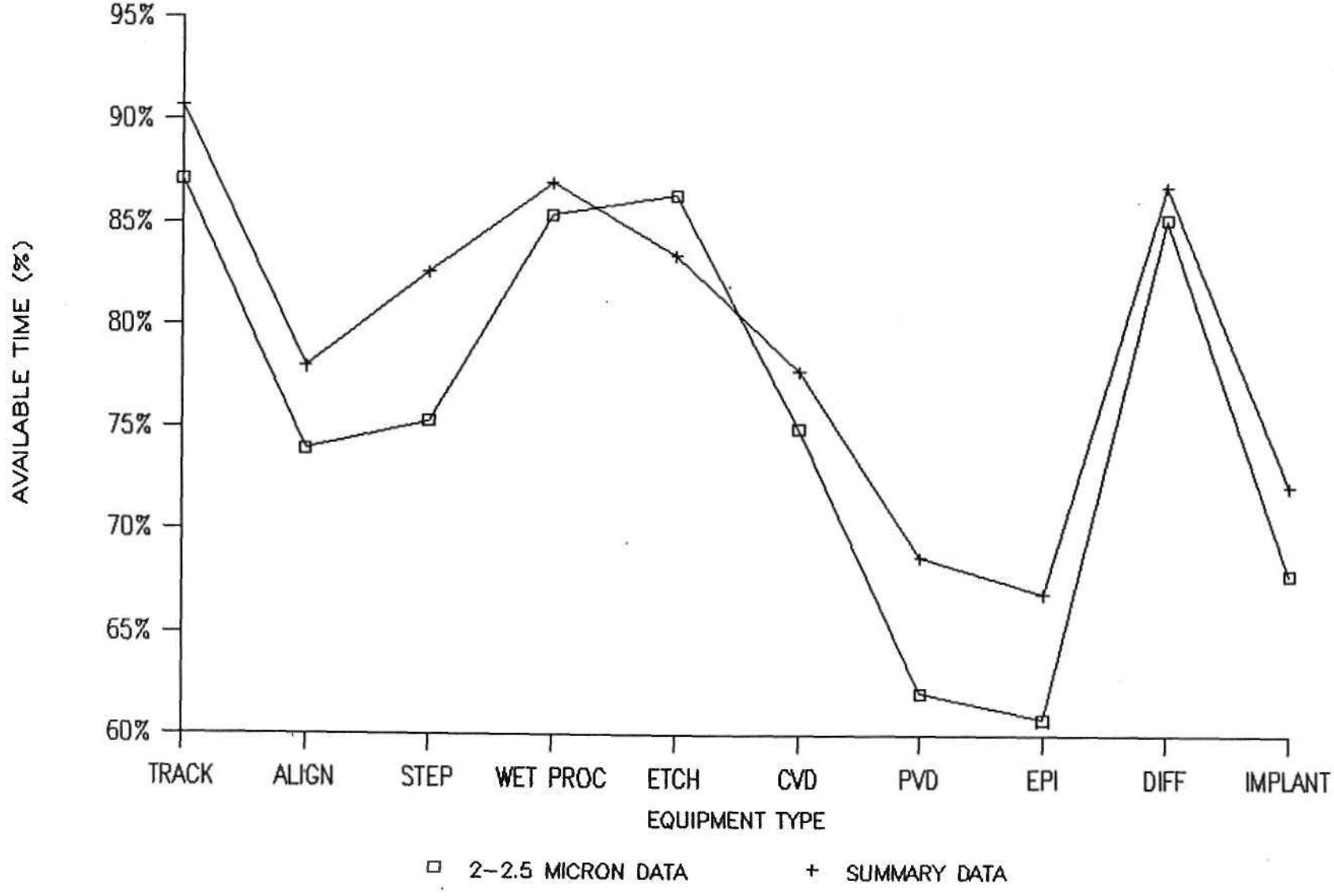
AVAILABLE TIME: ALL VENDORS

2-<2.5 MICRON DATA



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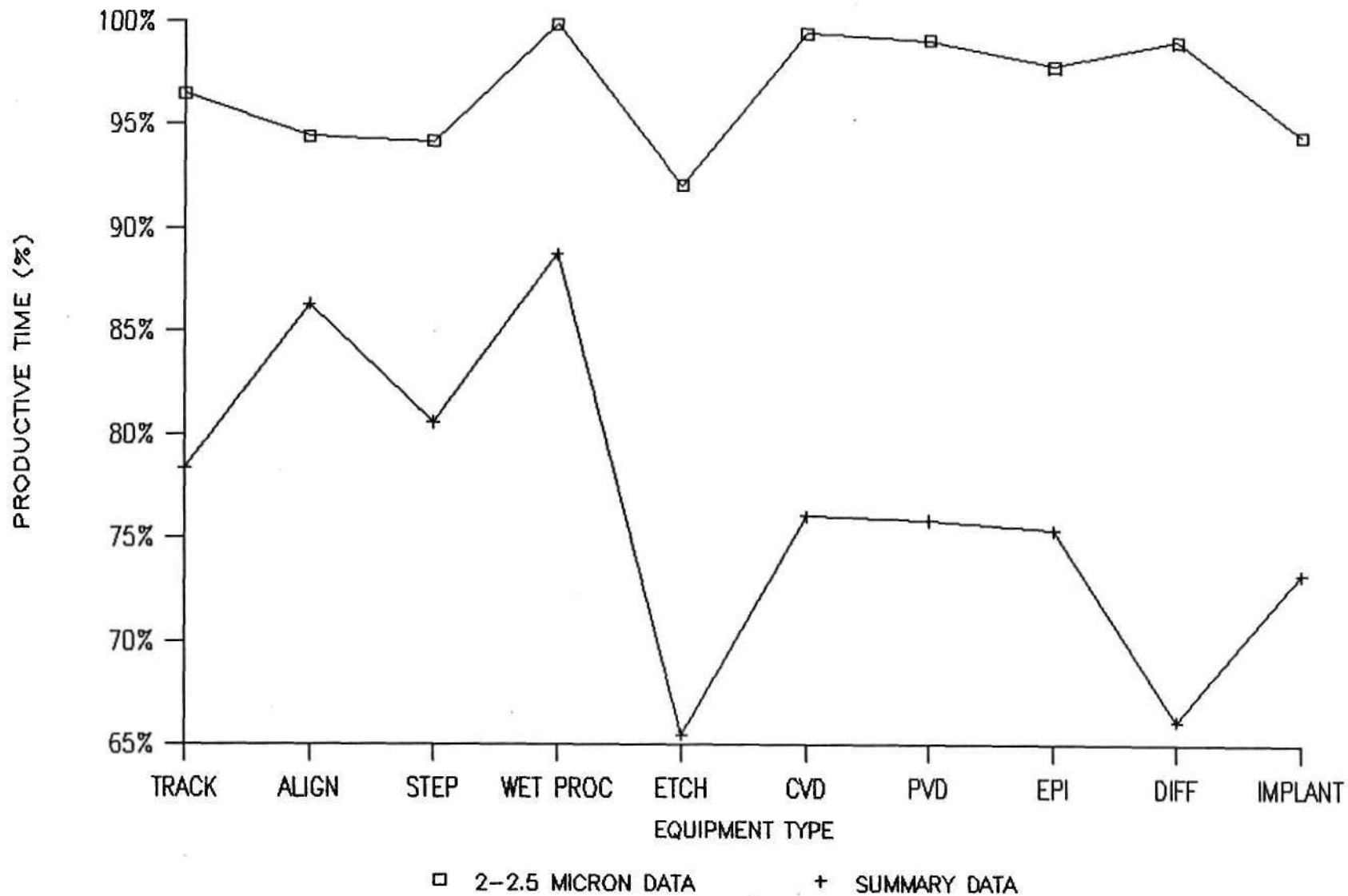
PRODUCTIVE TIME: ALL VENDORS

2-<2.5 MICRON DATA



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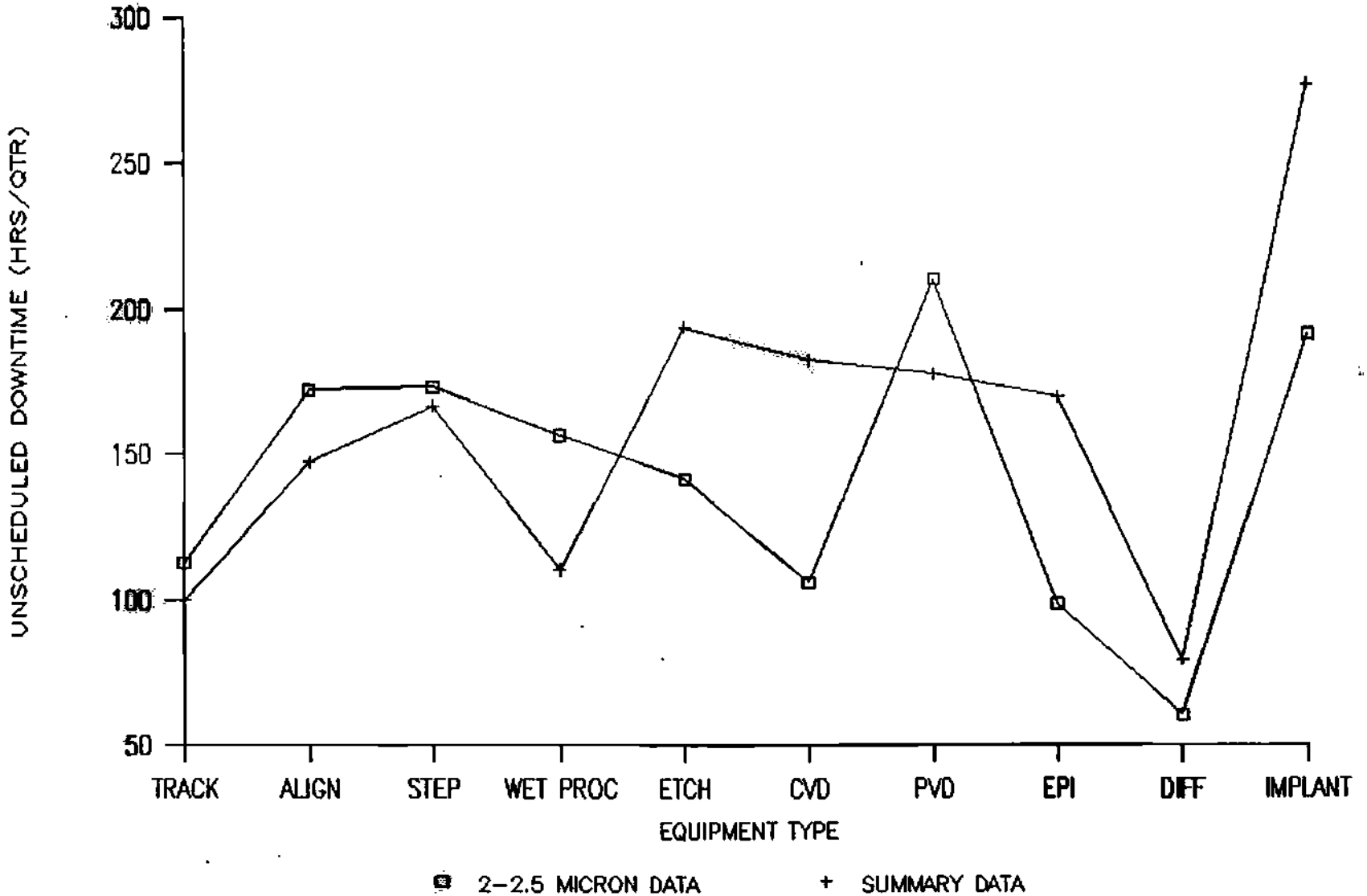
UNSCHEDULED DOWNTIME: ALL VENDORS

2-<2.5 MICRON DATA



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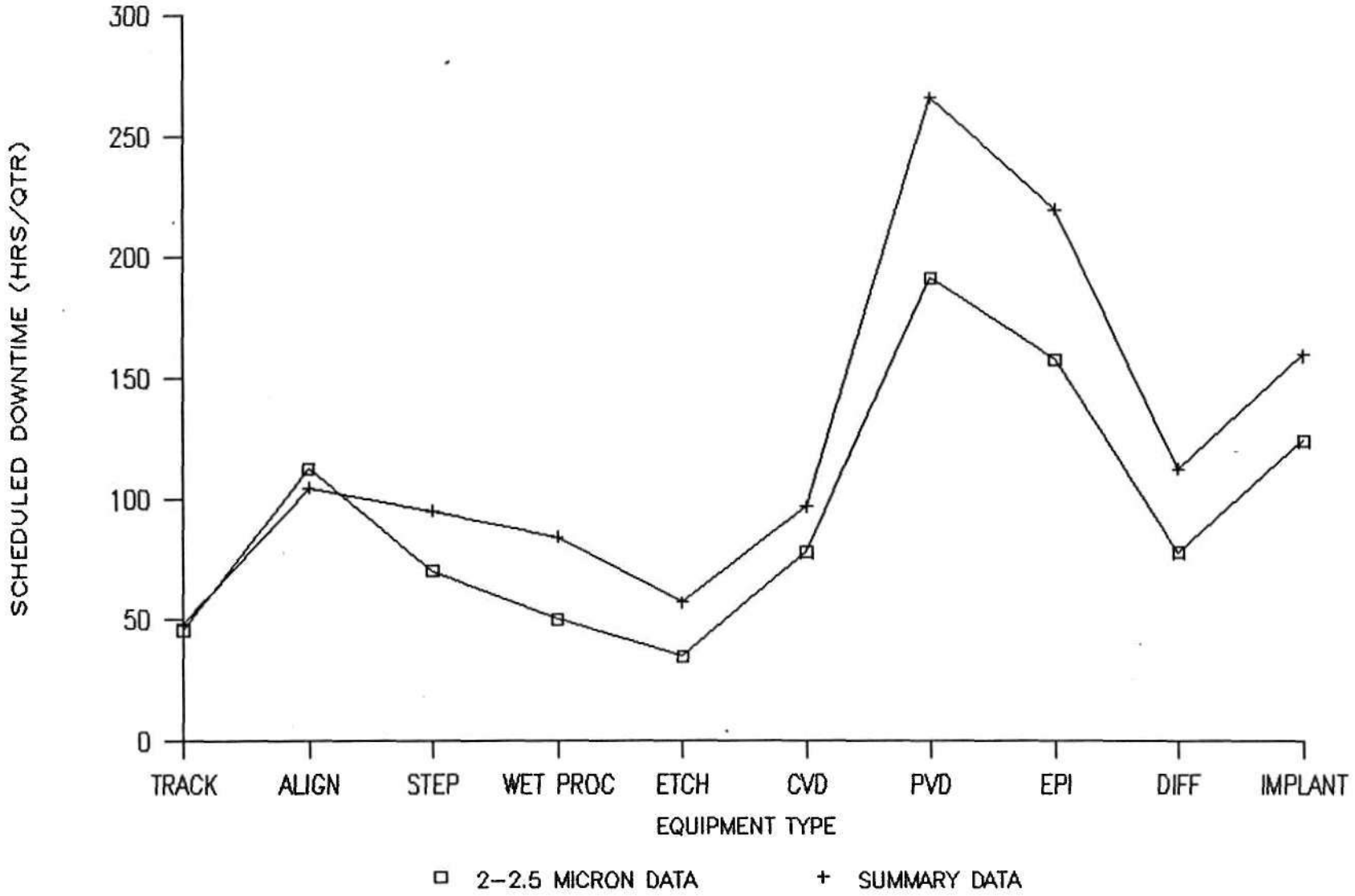
SCHEDULED DOWNTIME: ALL VENDORS

2-<2.5 MICRON DATA



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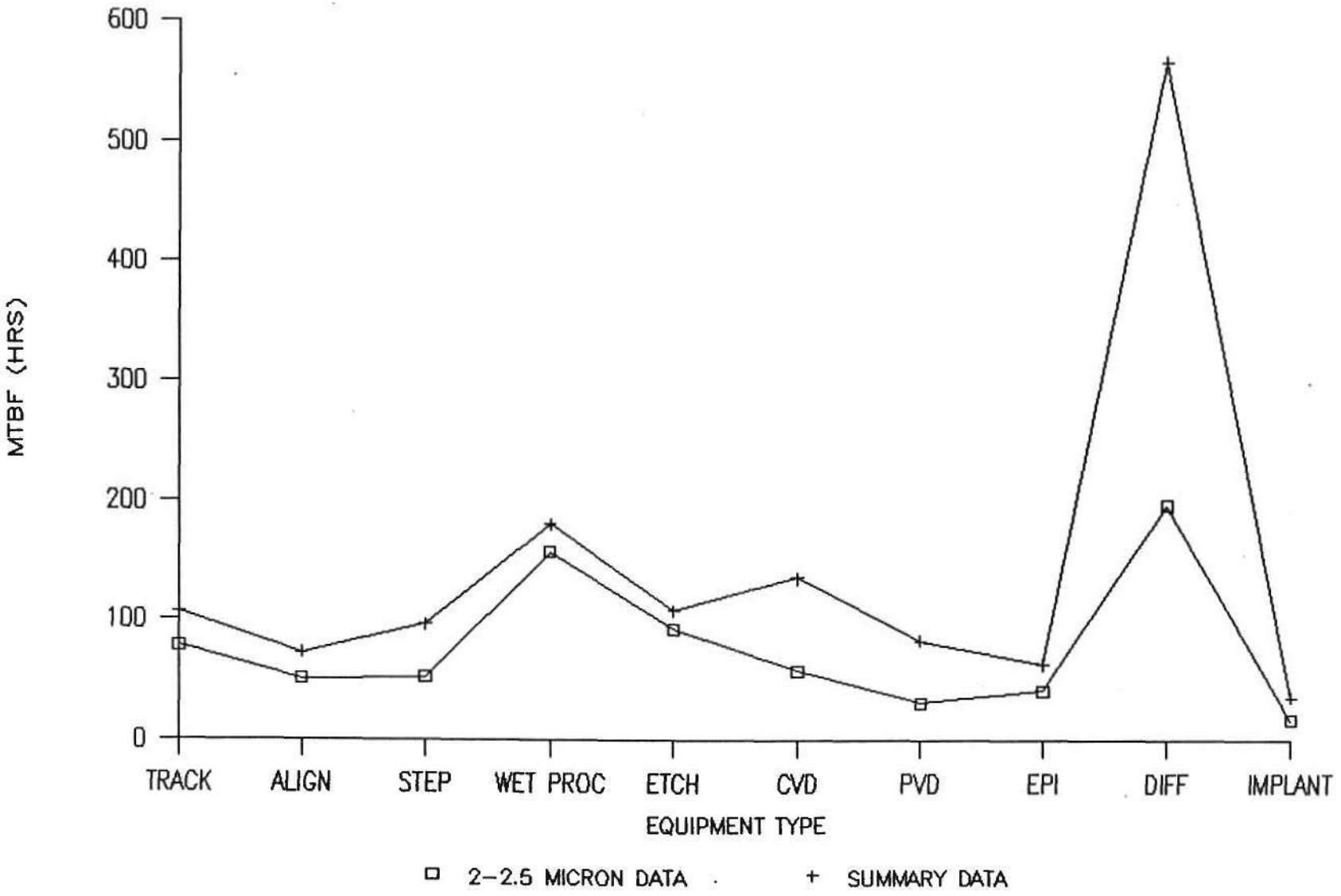
MEAN TIME BETWEEN FAILURE: ALL VENDORS

2-<2.5 MICRON DATA



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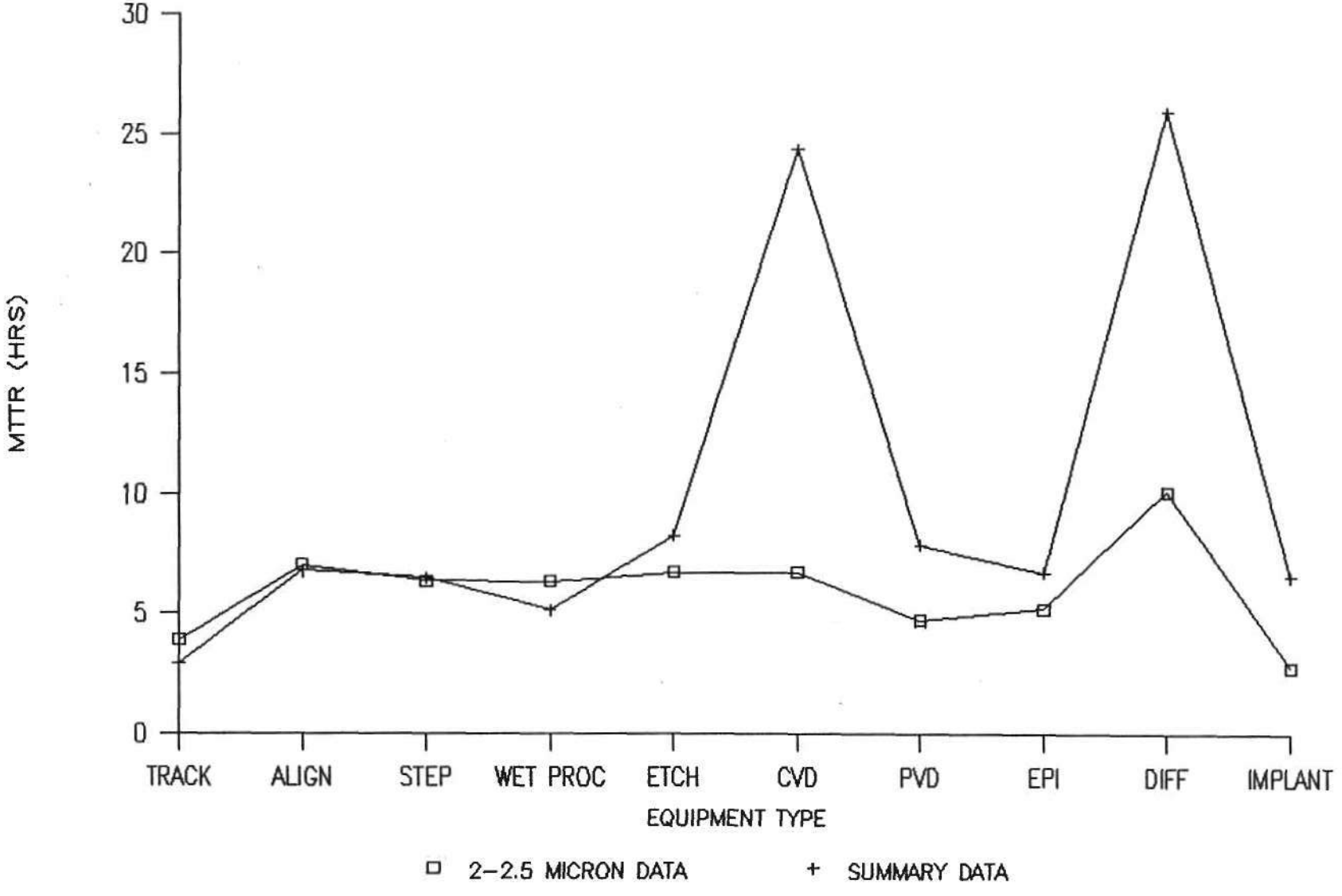
MEAN TIME TO REPAIR: ALL VENDORS

2-<2.5 MICRON DATA



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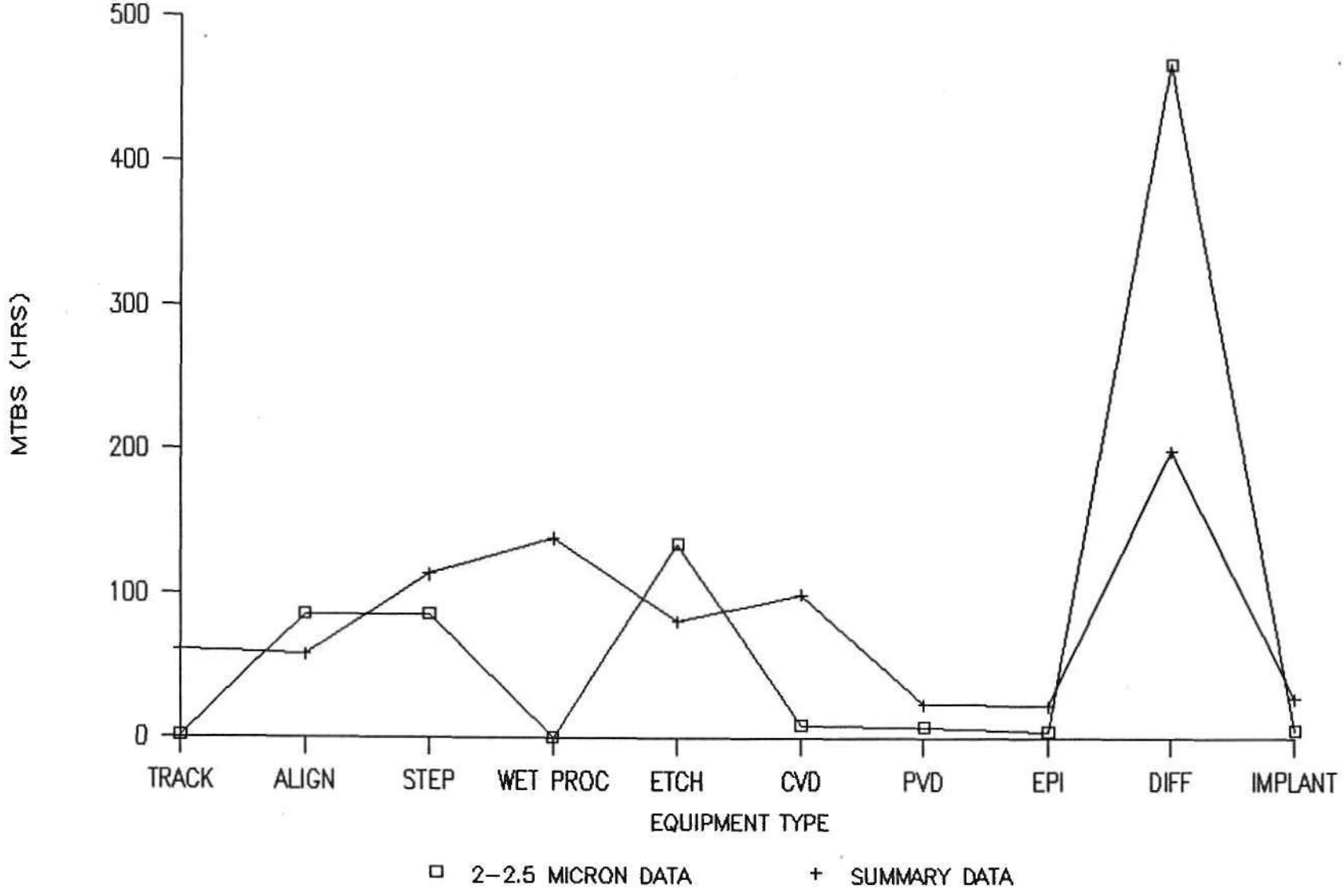
MEAN TIME BETWEEN SET-UPS: ALL VENDORS

2-<2.5 MICRON DATA



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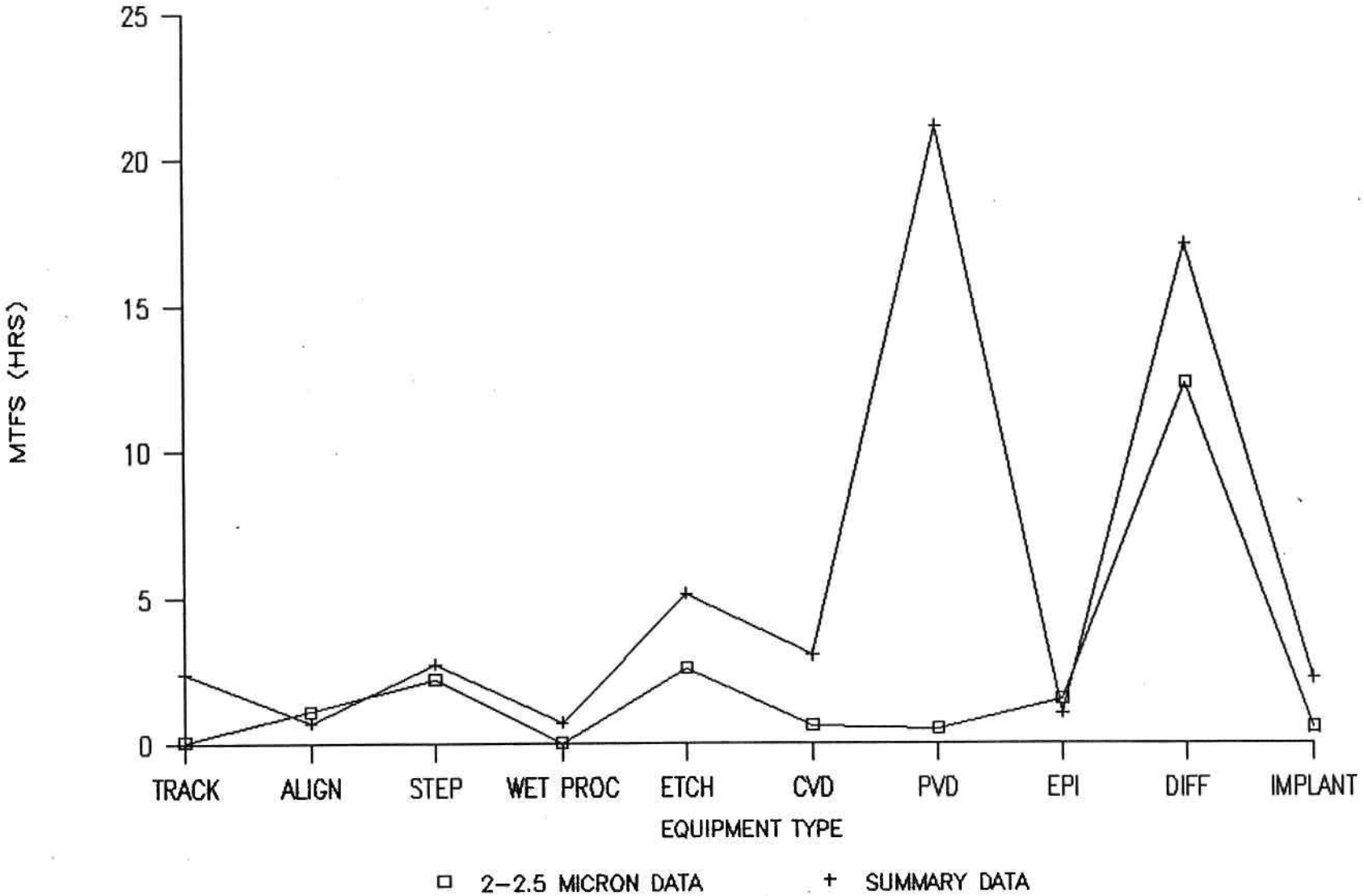
MEAN TIME FOR SET-UP: ALL VENDORS

2-<2.5 MICRON DATA



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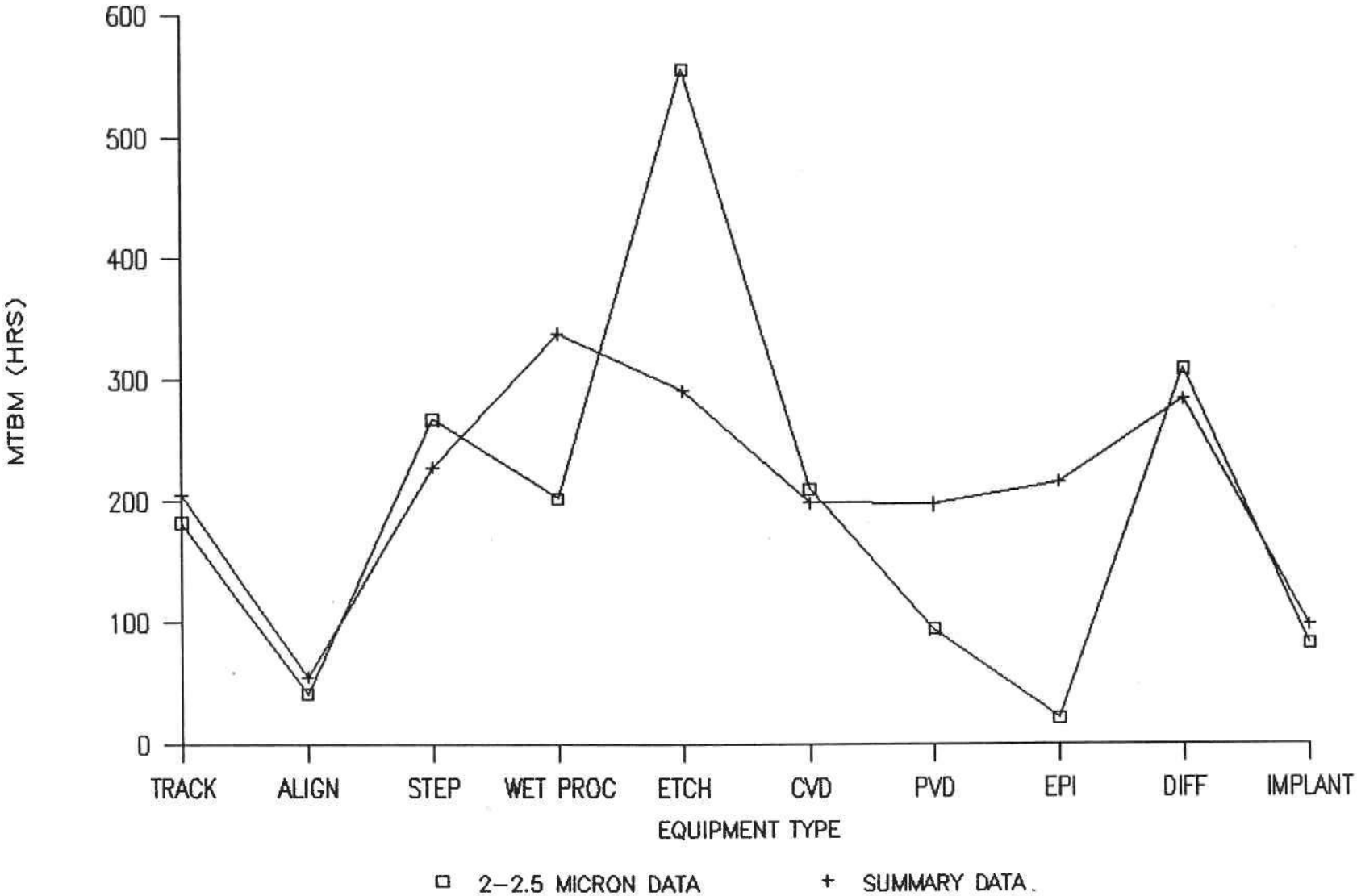
MEAN TIME BTW MAINTENANCE: ALL VENDORS

2<2.5 MICRON DATA



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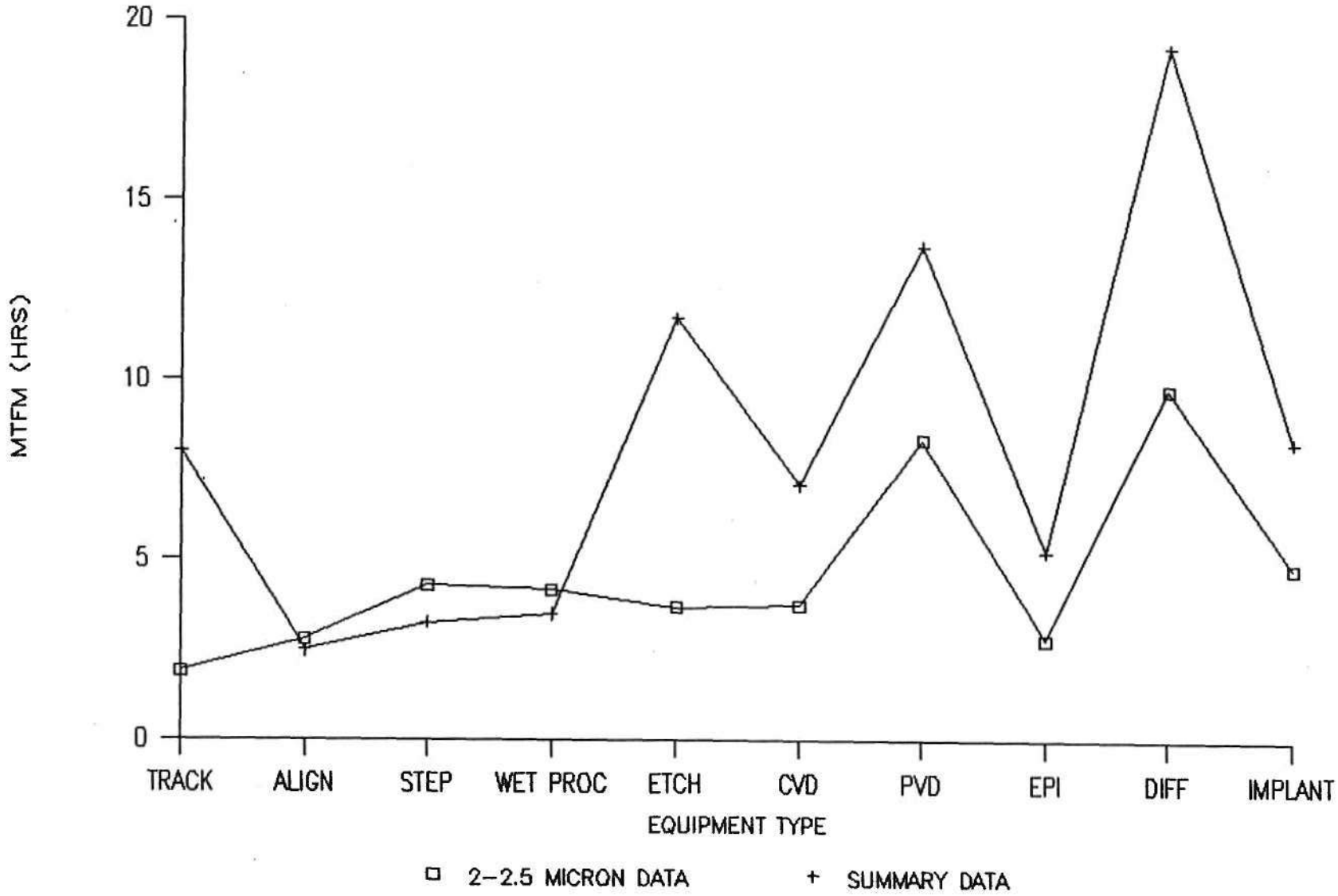
MEAN TIME FOR MAINTENANCE: ALL VENDORS

2<2.5 MICRON DATA



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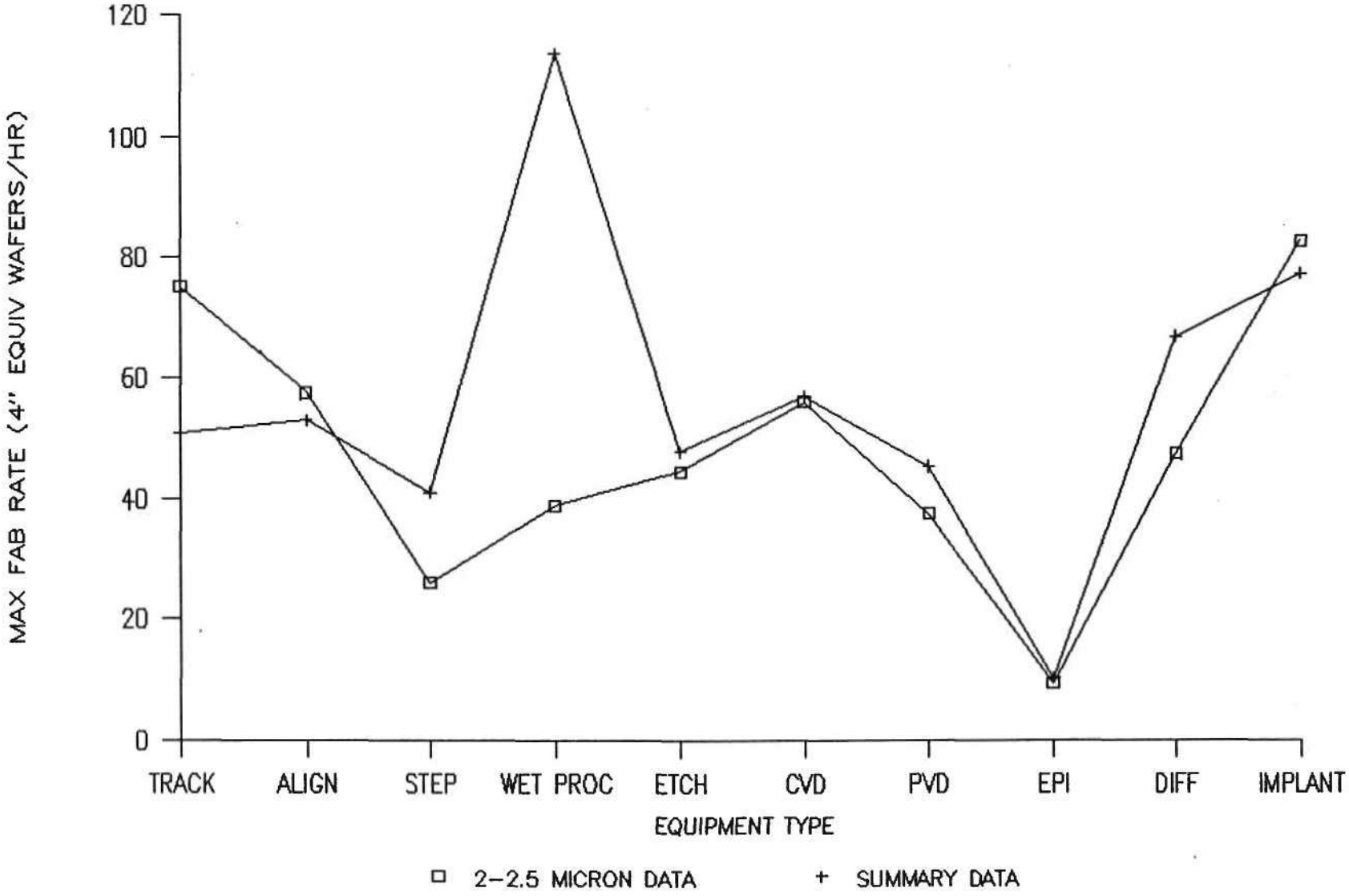
MAX FAB RATE: ALL VENDORS

2<2.5 MICRON DATA



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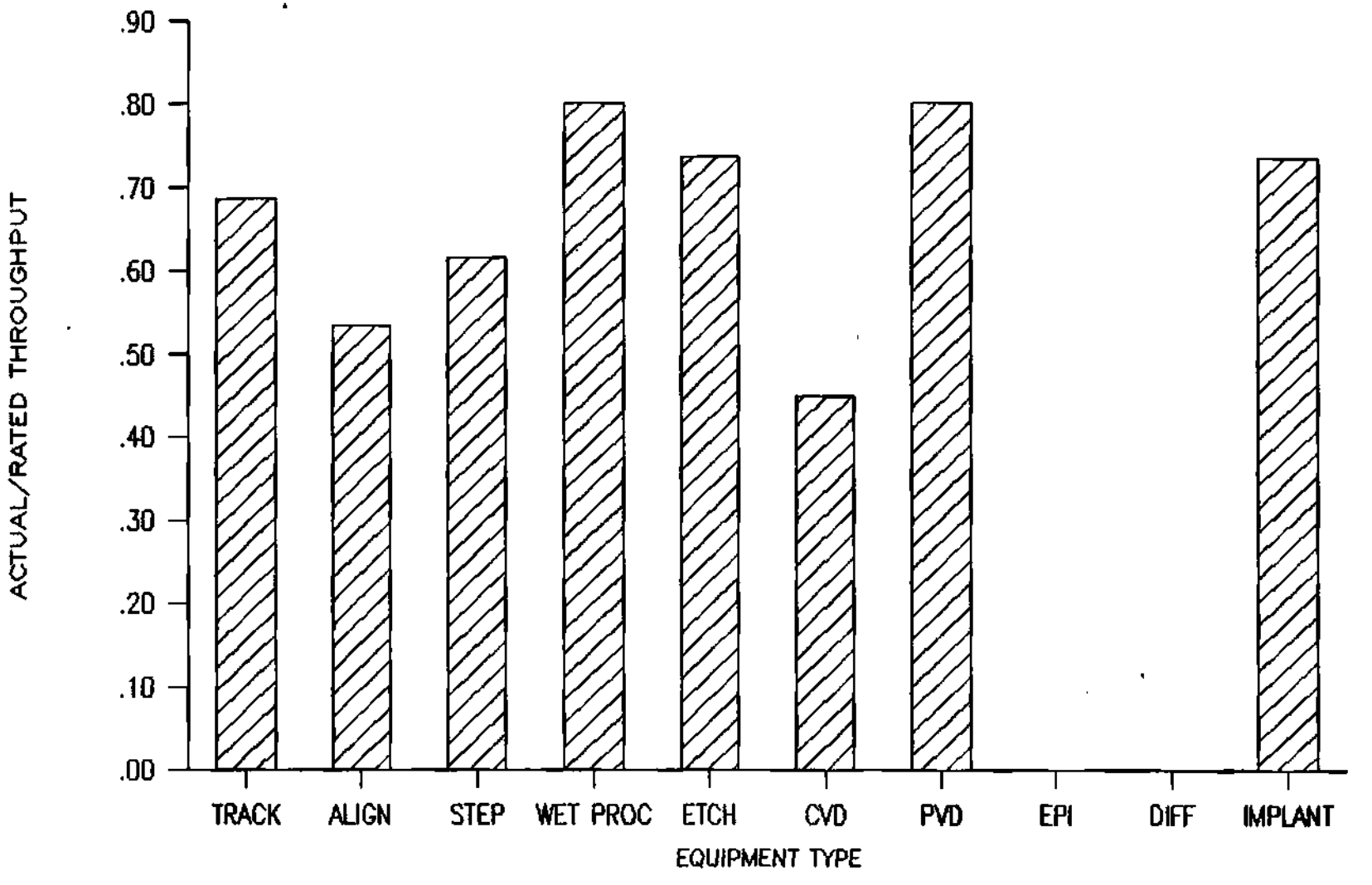
ACTUAL-TO-RATED THROUGHPUT: ALL VENDORS

2 TO <2.5 MICRONS DATA



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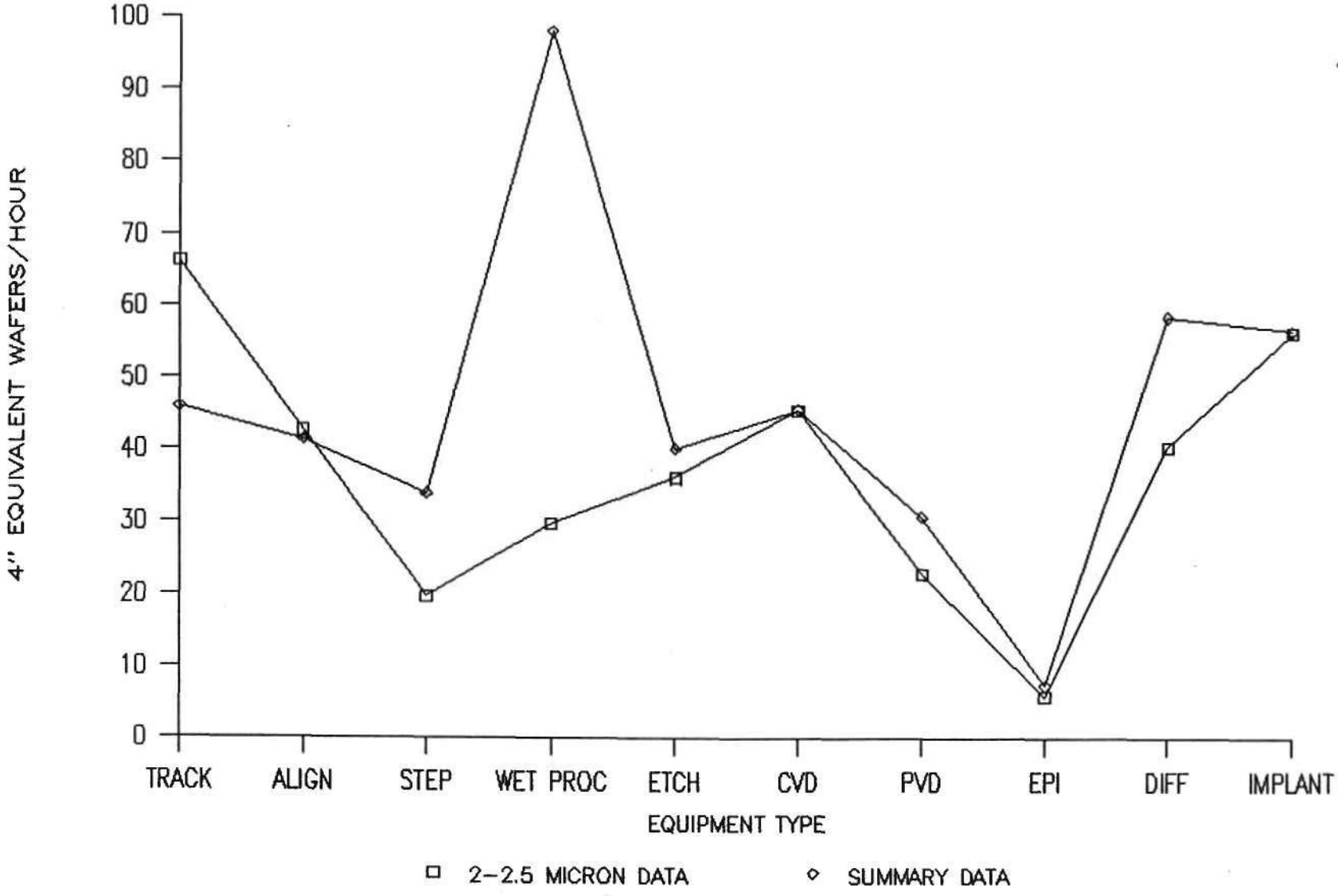
NET THROUGHPUT

ALL VENDORS: 2-<2.5 MICRON DATA



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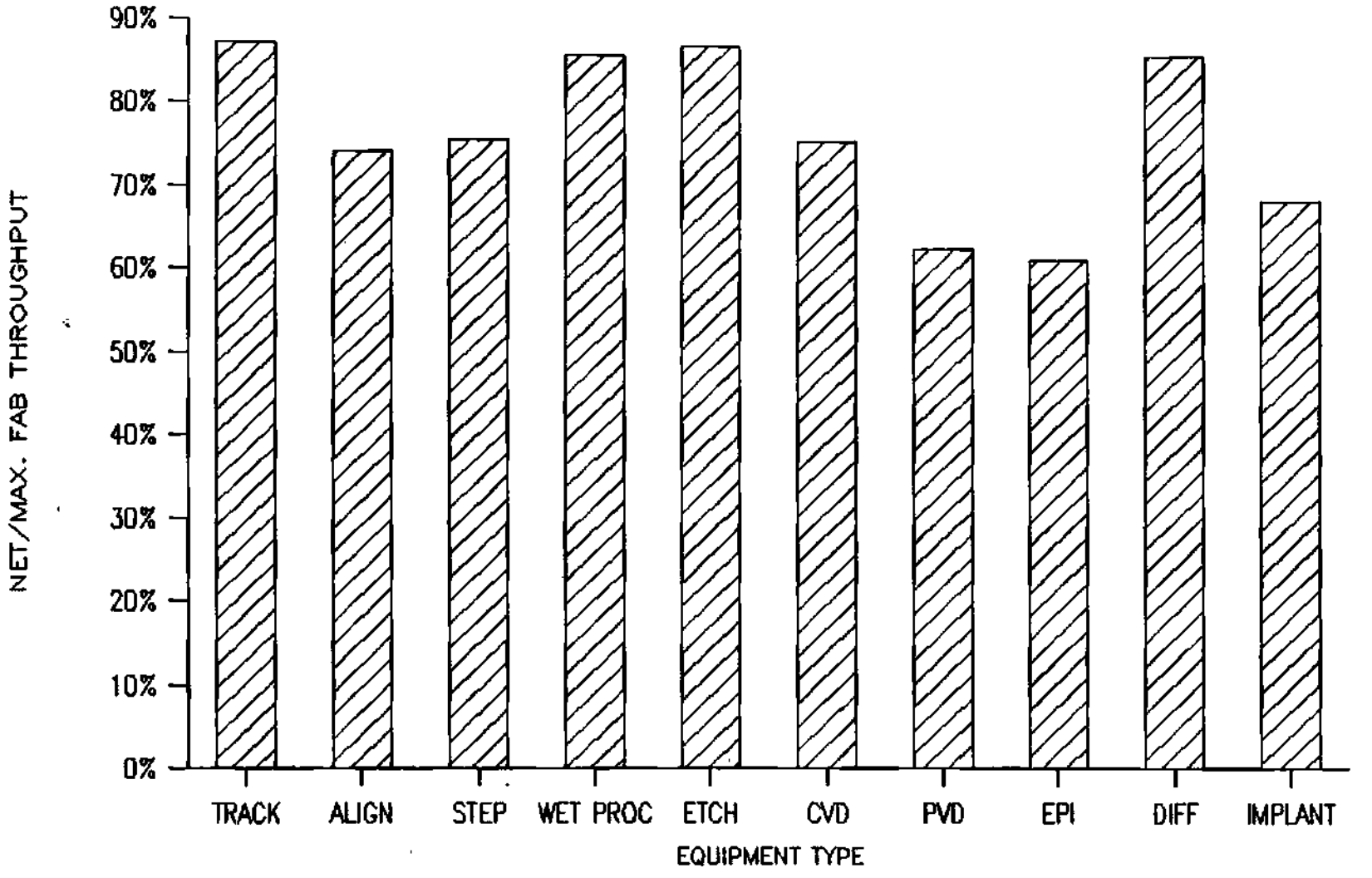
NET-TO-MAX. FAB THROUGHPUT: ALL VENDORS

2 TO <2.5 MICRONS DATA



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2.5+ MICRONS EQUIPMENT PERFORMANCE

ITEM	PERFORMANCE PARAMETER	TRACK	ALIGN	STEP	WET PROC	ETCH	CVD	PVD	EPI	DIFF	IMPLANT
1	NUMBER	174	88	96	31	94	49	31	18	100	34
2	AVAILABLE TIME (% of total time)	90%	78%	80%	88%	85%	80%	69%	67%	85%	72%
3	PRODUCTIVE TIME (% of available time)	81%	94%	96%	87%	68%	80%	80%	75%	72%	74%
4	UNSCHEDULED DOWNTIME (hours/quarter)	104	135	189	79	190	173	130	169	66	250
5	SCHEDULED DOWNTIME (hours/quarter)	49	115	72	116	58	76	259	220	134	175
6	MTBF (hrs)	68	80	60	193	106	119	97	64	650	34
7	MTTR (hrs)	3	7	7	7	6	21	7	7	39	5
8	MTBS (hrs)	60	57	111	138	78	114	23	22	207	31
9	MTFS (hrs)	2	1	2	0	4	2	22	1	10	2
10	MTBM (hrs)	205	55	150	314	281	199	188	215	307	102
11	MTFM (hrs)	8	3	3	3	11	8	13	5	8	8
12	RATED THROUGHPUT (wafers/hr: 4" equiv)	73	80	54	302	75	110	53	8	152	127
13	MAX. FAB THROUGHPUT (wafers/hr: 4" equiv)	54	52	37	119	53	75	43	10	94	82
14	ACTUAL/RATED (item #13/item #12)	0.75	0.65	0.69	0.39	0.71	0.68	0.82	1.35	0.62	0.64
15	NET THROUGHPUT (wafers/hr: item #13 x item #2)	49	40	30	104	45	60	30	7	80	59
16	NET/MAX FAB T.P. (item # 15/item # 13)	90%	78%	80%	88%	85%	80%	69%	67%	85%	72%

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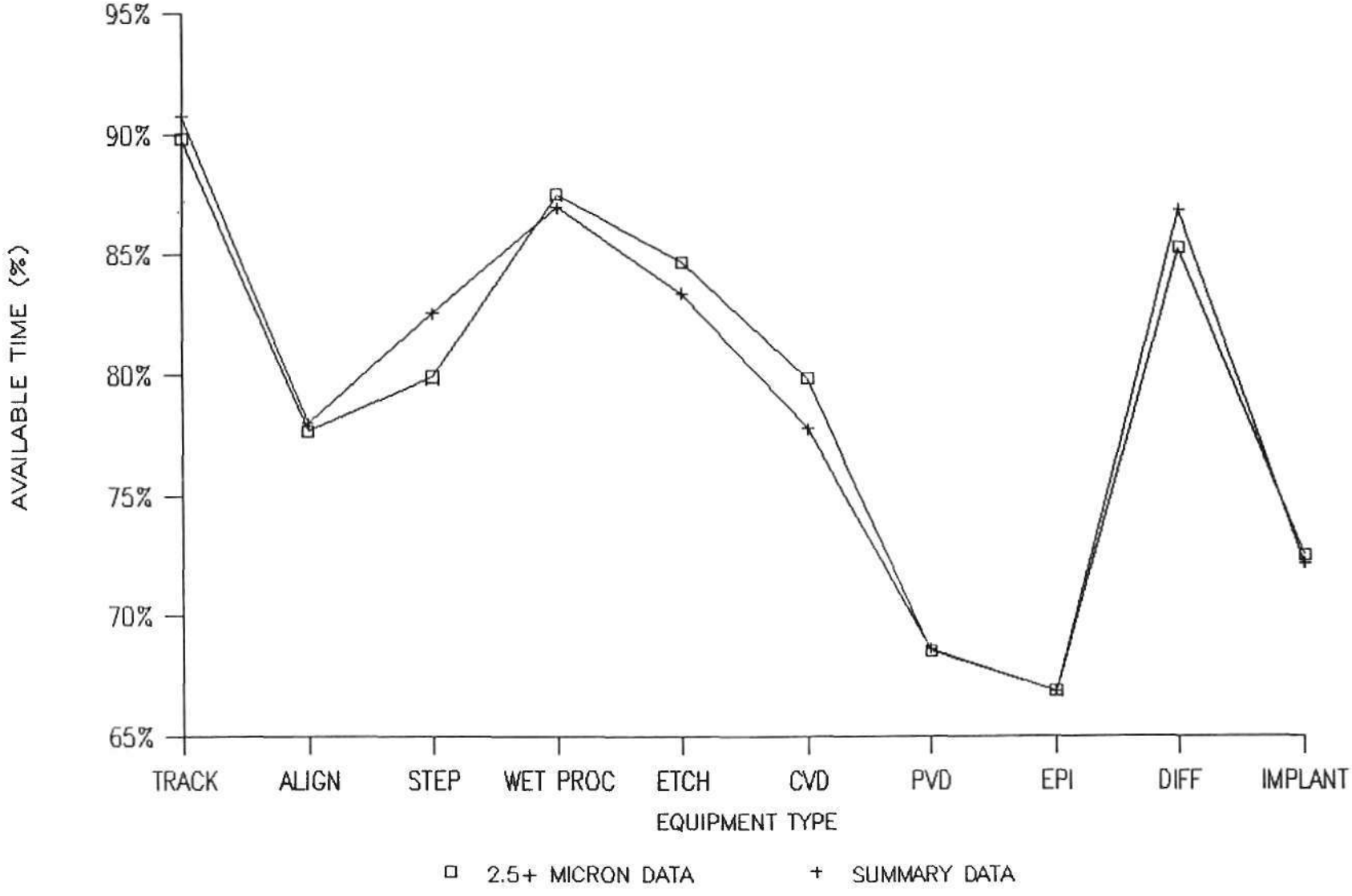
AVAILABLE TIME: ALL VENDORS

2.5+ MICRON DATA



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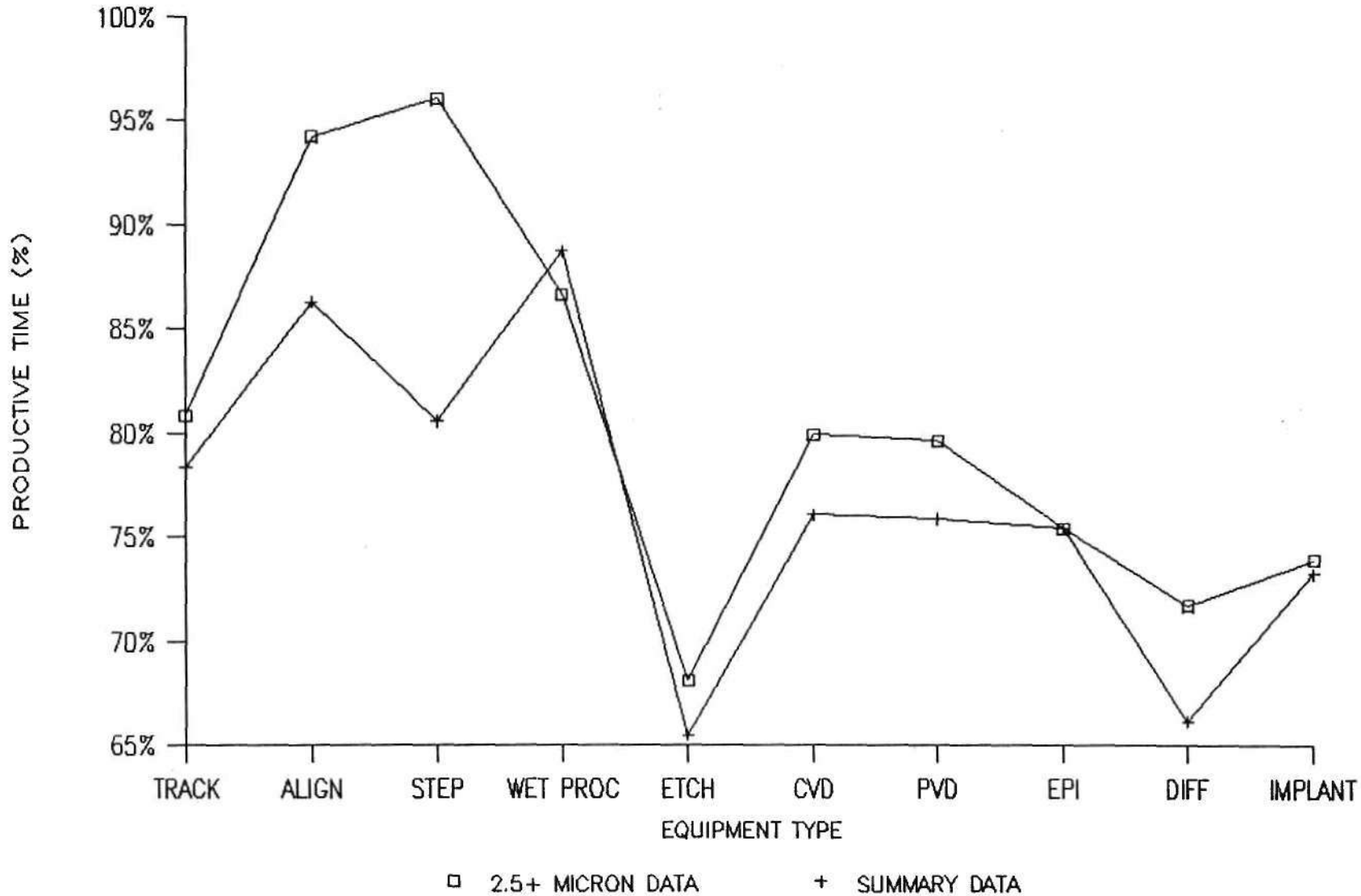
PRODUCTIVE TIME: ALL VENDORS

2.5+ MICRON DATA



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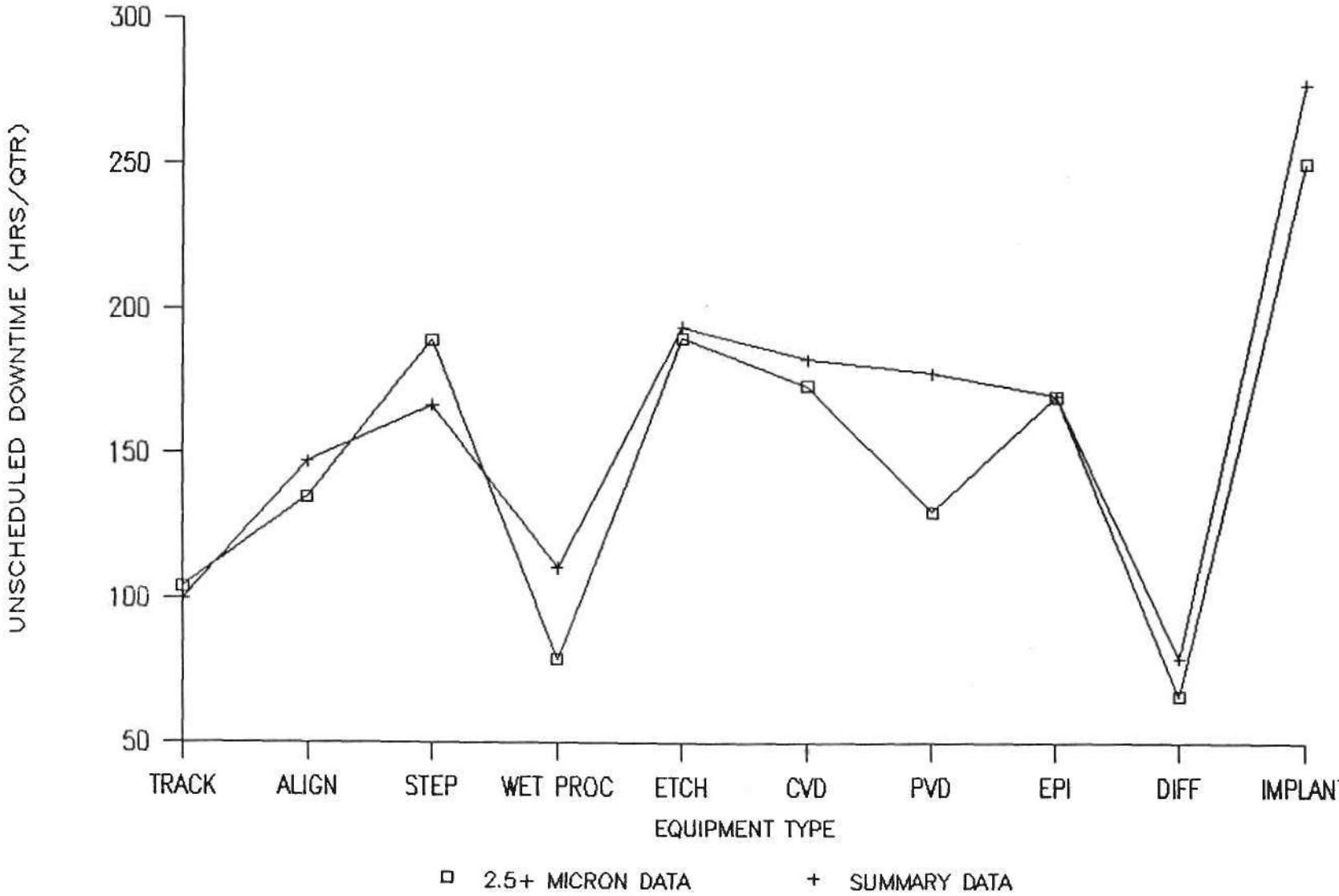
UNSCHEDULED DOWNTIME: ALL VENDORS

2.5+ MICRON DATA



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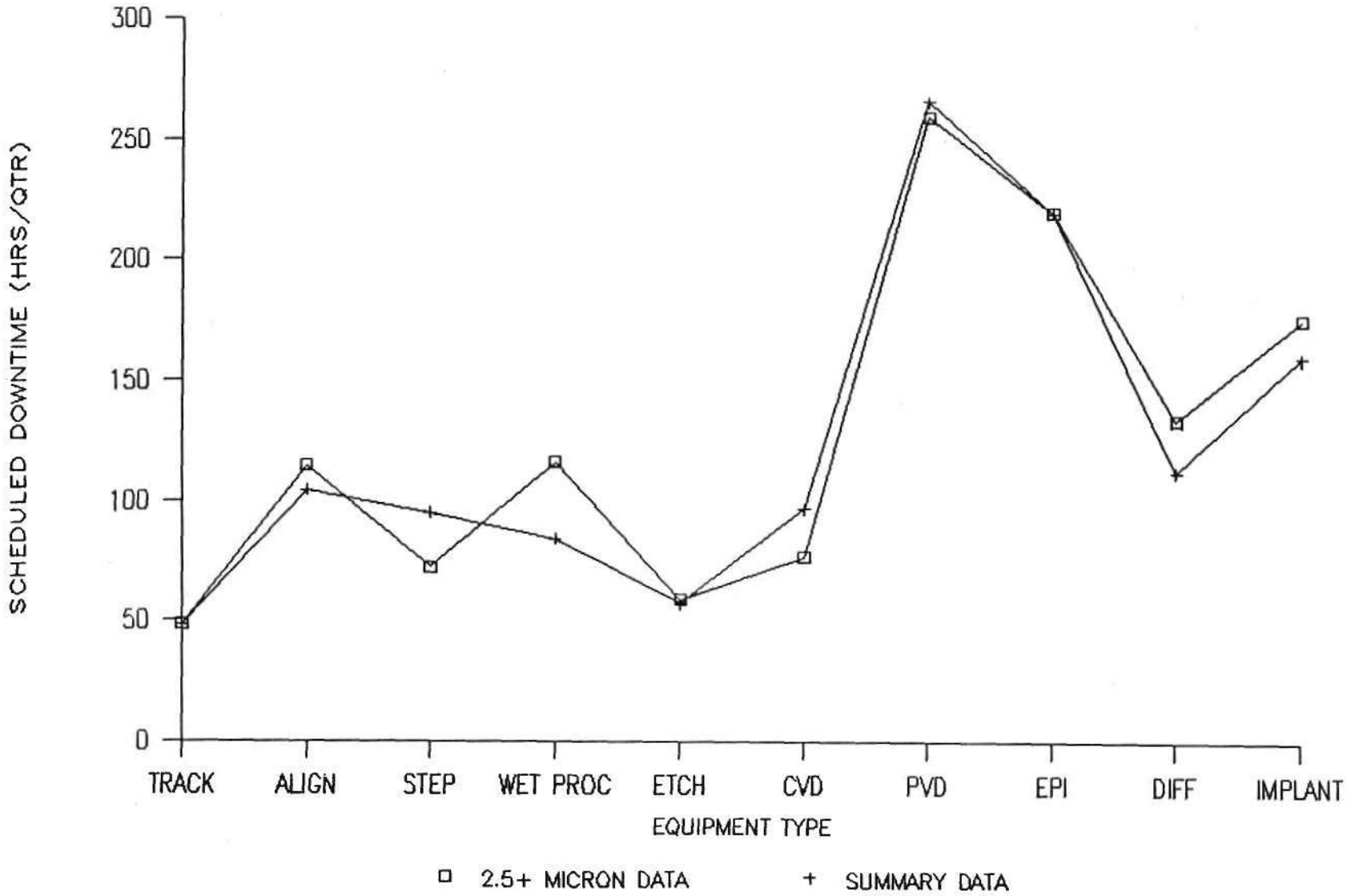
SCHEDULED DOWNTIME: ALL VENDORS

2.5+ MICRON DATA



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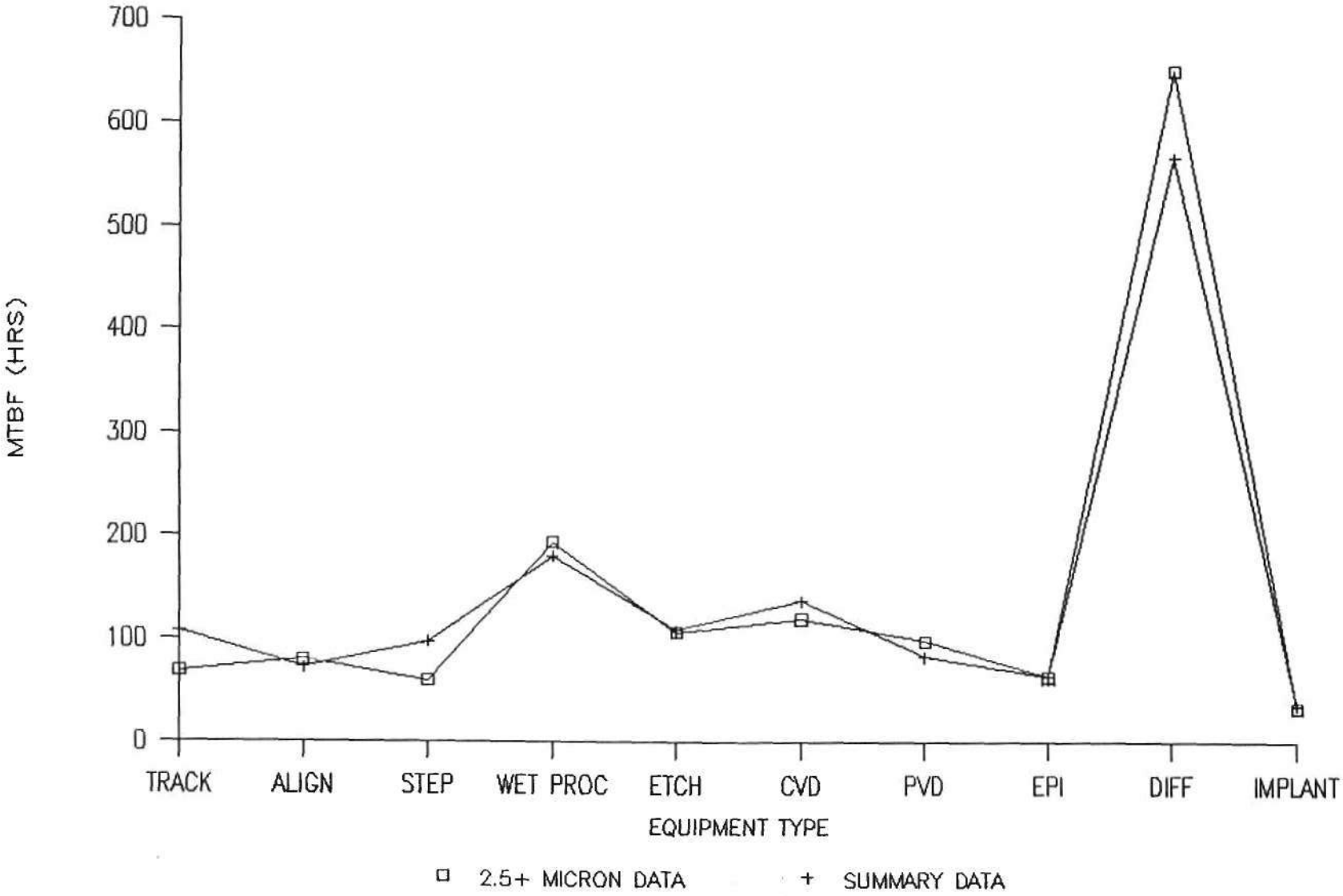
MEAN TIME BETWEEN FAILURE: ALL VENDORS

2.5+ MICRON DATA



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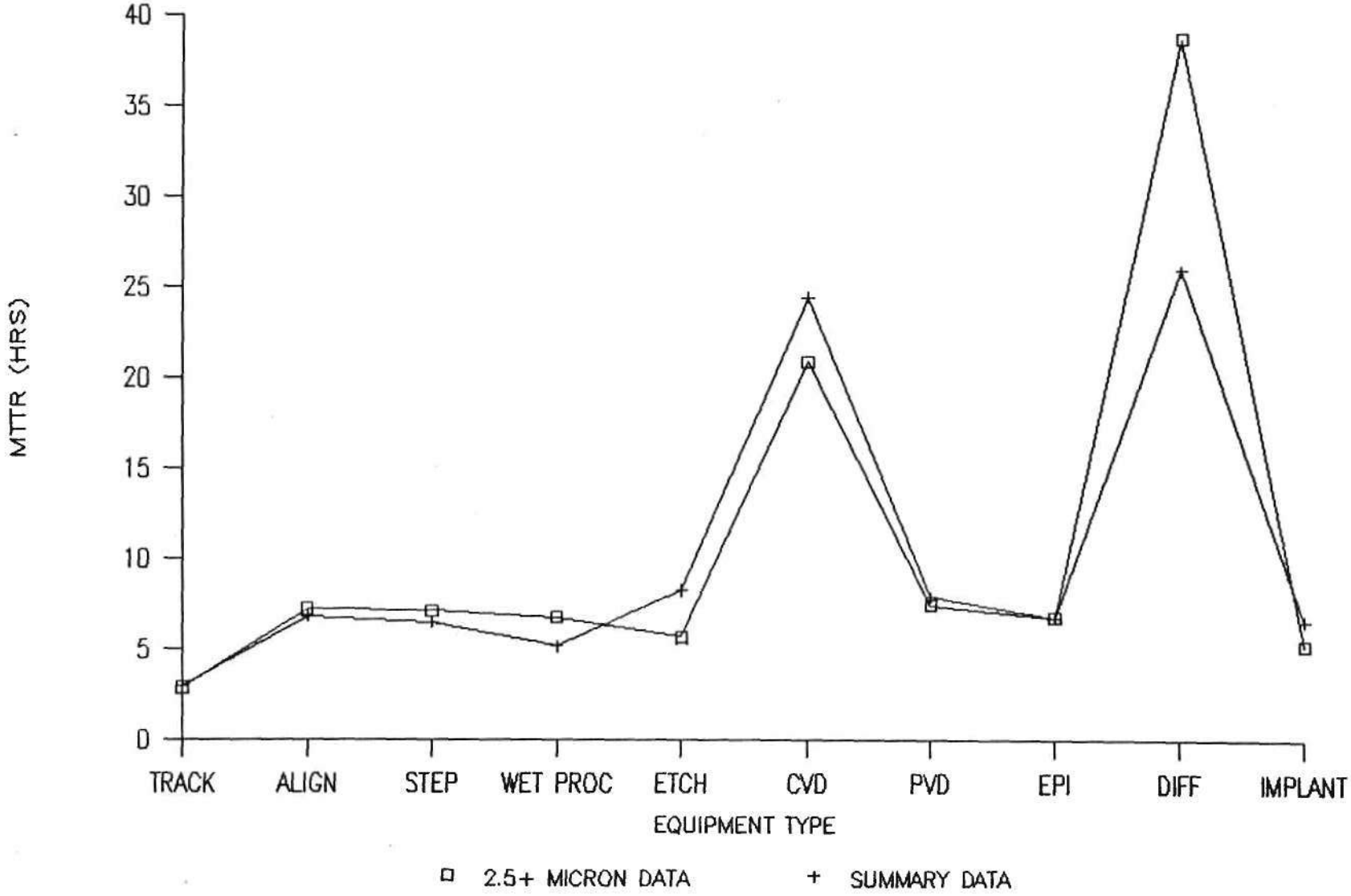
MEAN TIME TO REPAIR: ALL VENDORS

2.5+ MICRON DATA



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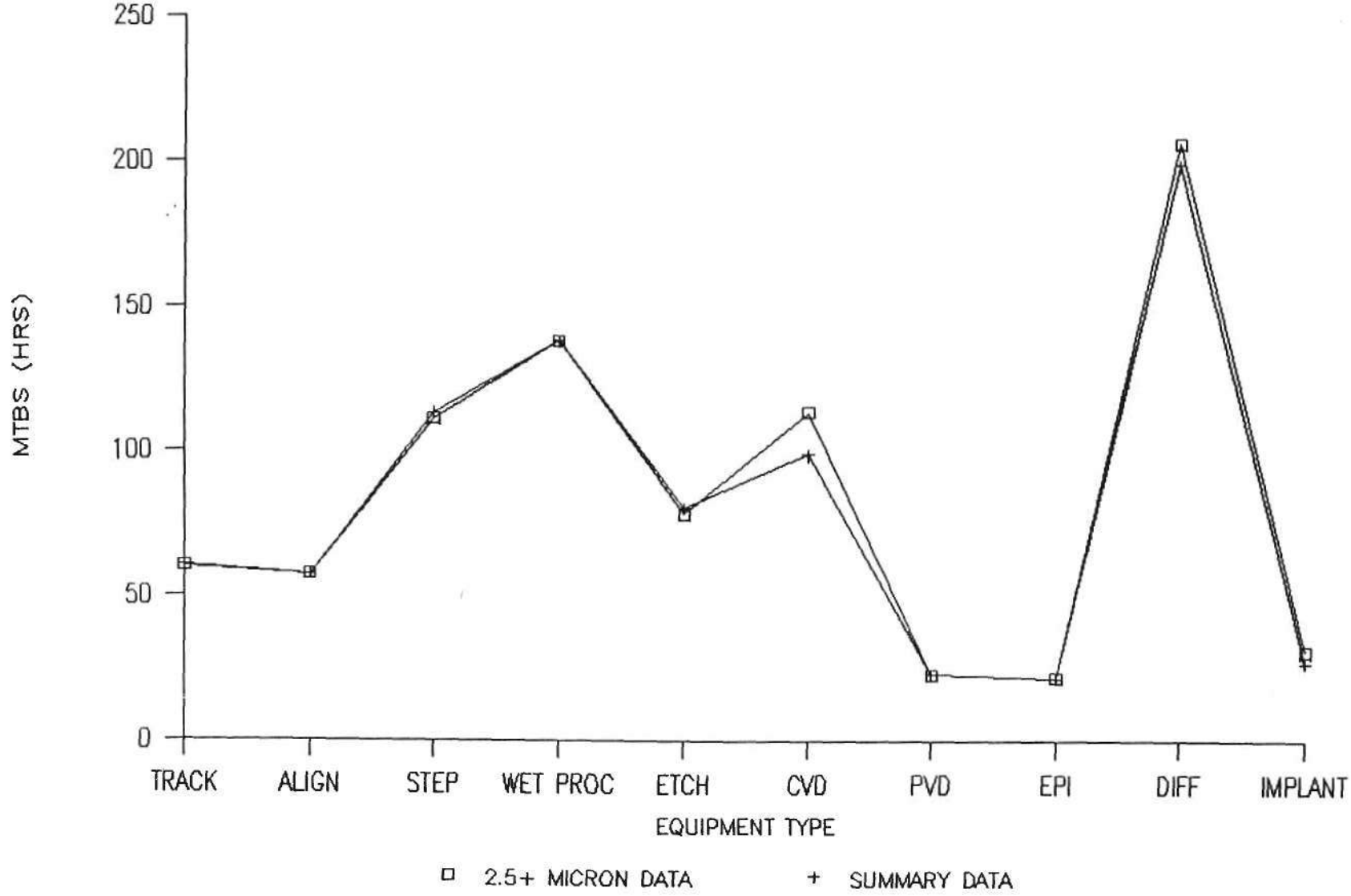
MEAN TIME BETWEEN SET-UPS: ALL VENDORS

2.5+ MICRON DATA



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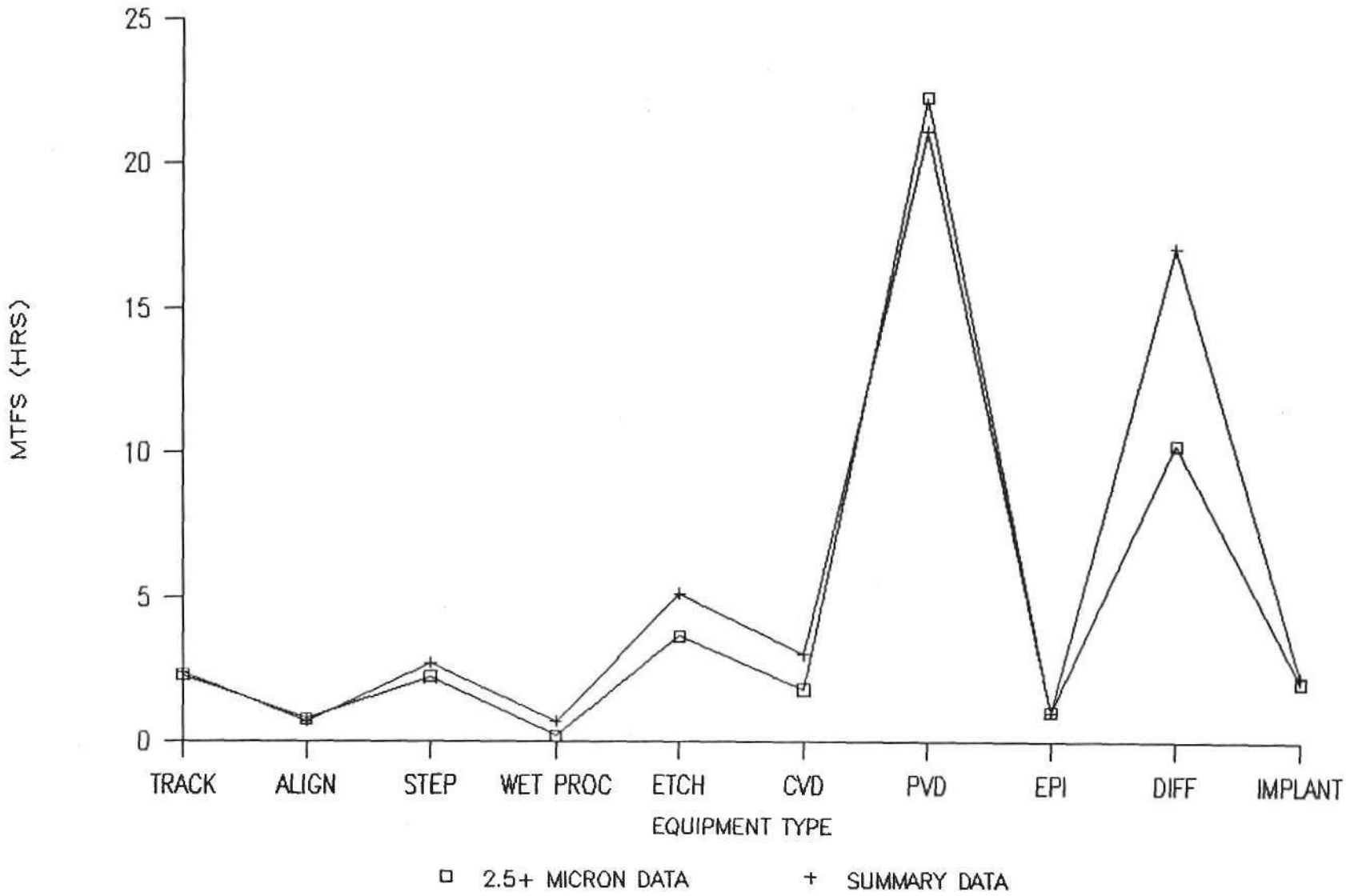
MEAN TIME FOR SET-UP: ALL VENDORS

2.5+ MICRON DATA



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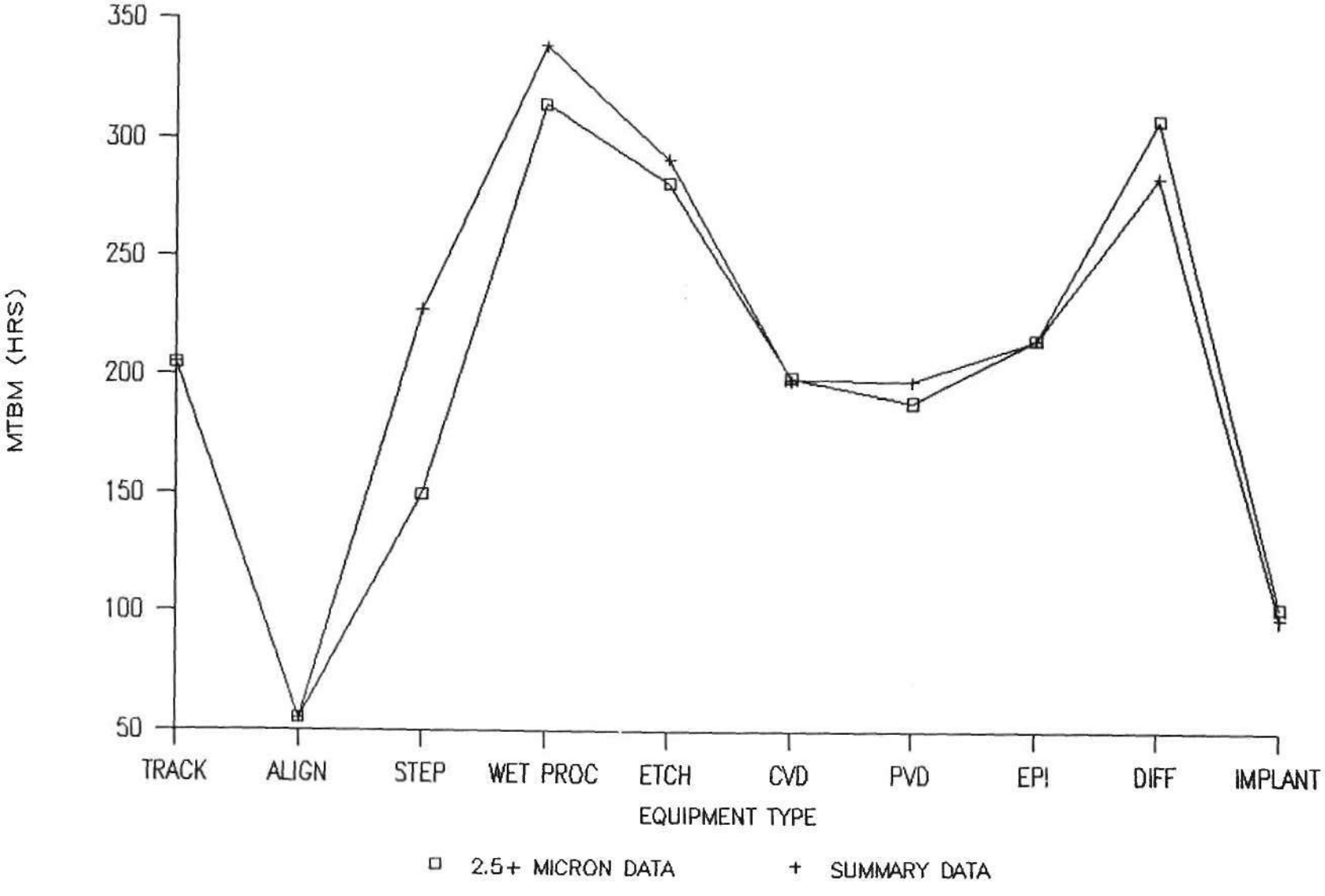
MEAN TIME BTW MAINTENANCE: ALL VENDORS

2.5+ MICRON DATA



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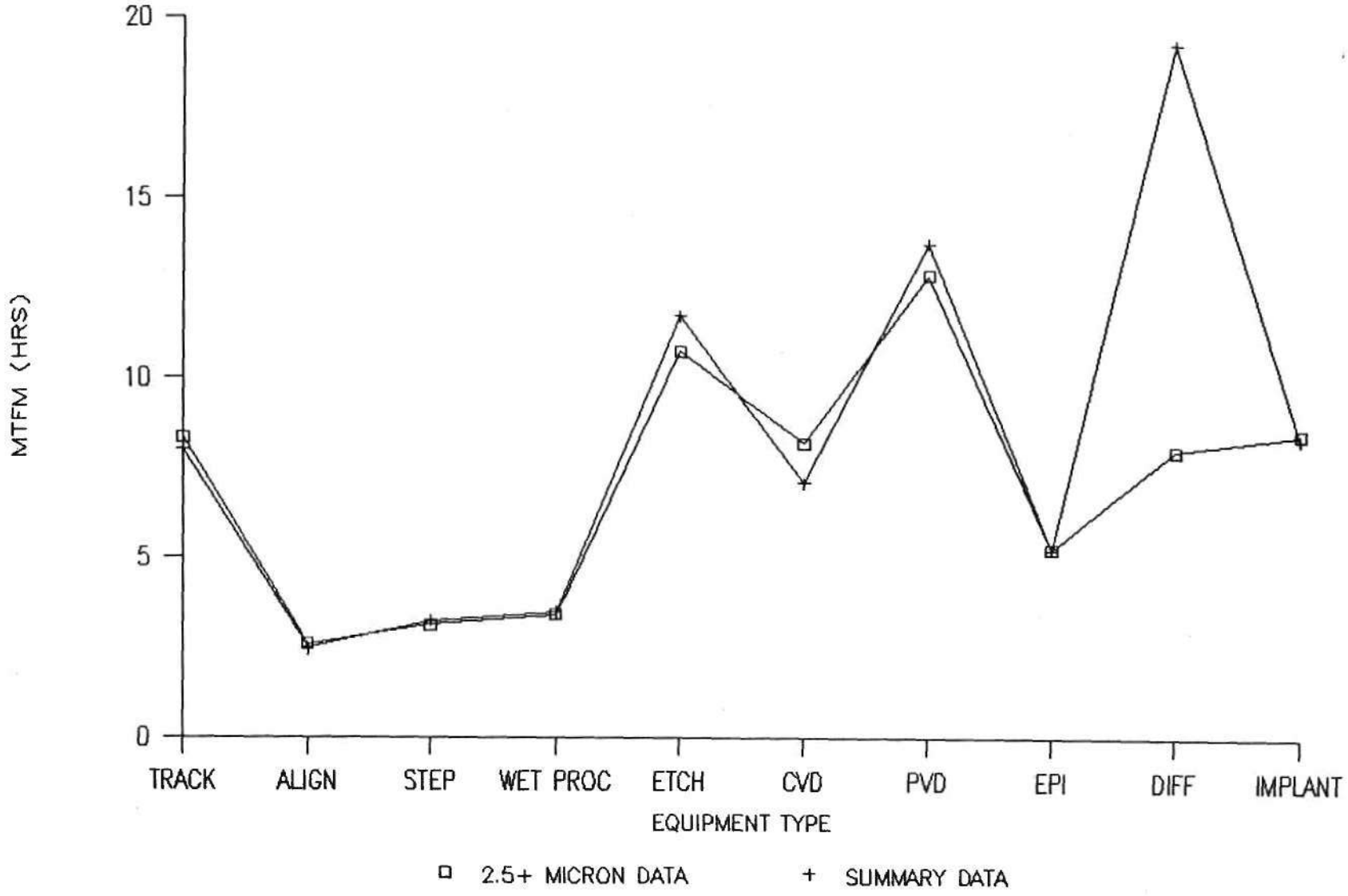
MEAN TIME FOR MAINTENANCE: ALL VENDORS

2.5+ MICRON DATA



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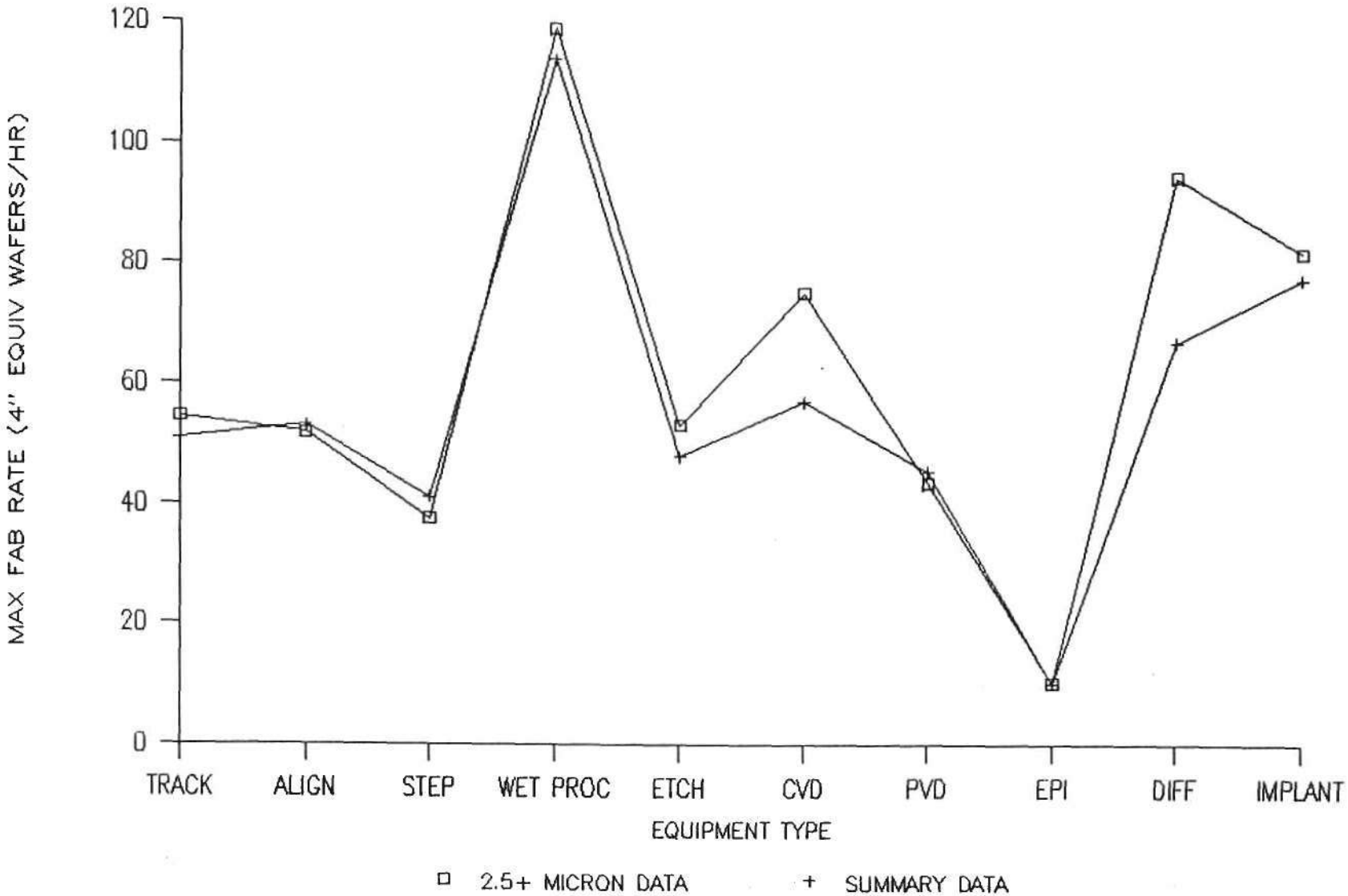
MAX FAB RATE: ALL VENDORS

2.5+ MICRON DATA



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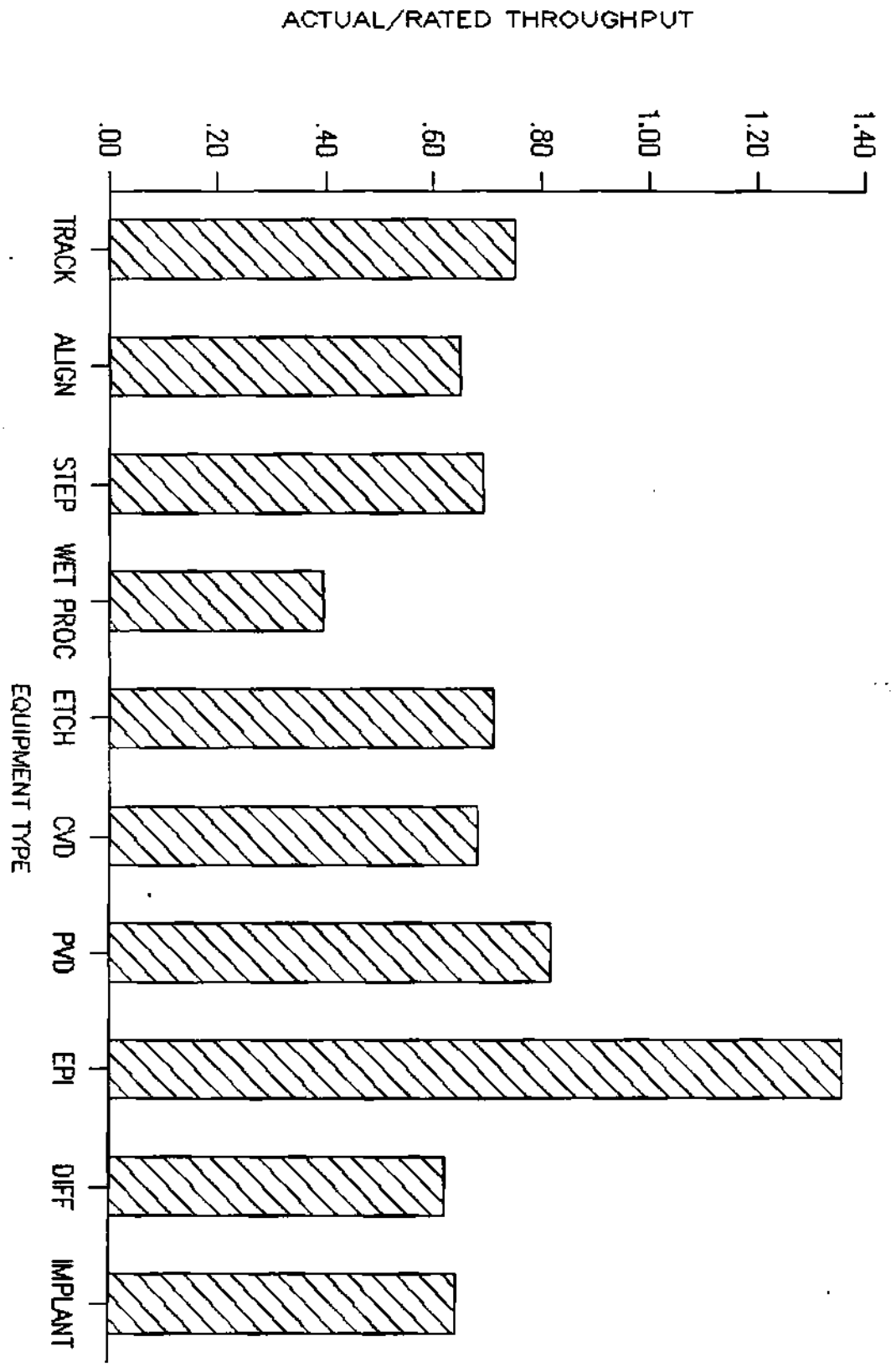
ACTUAL-TO-RATED THROUGHPUT: ALL VENDORS

2.5+ MICRONS DATA



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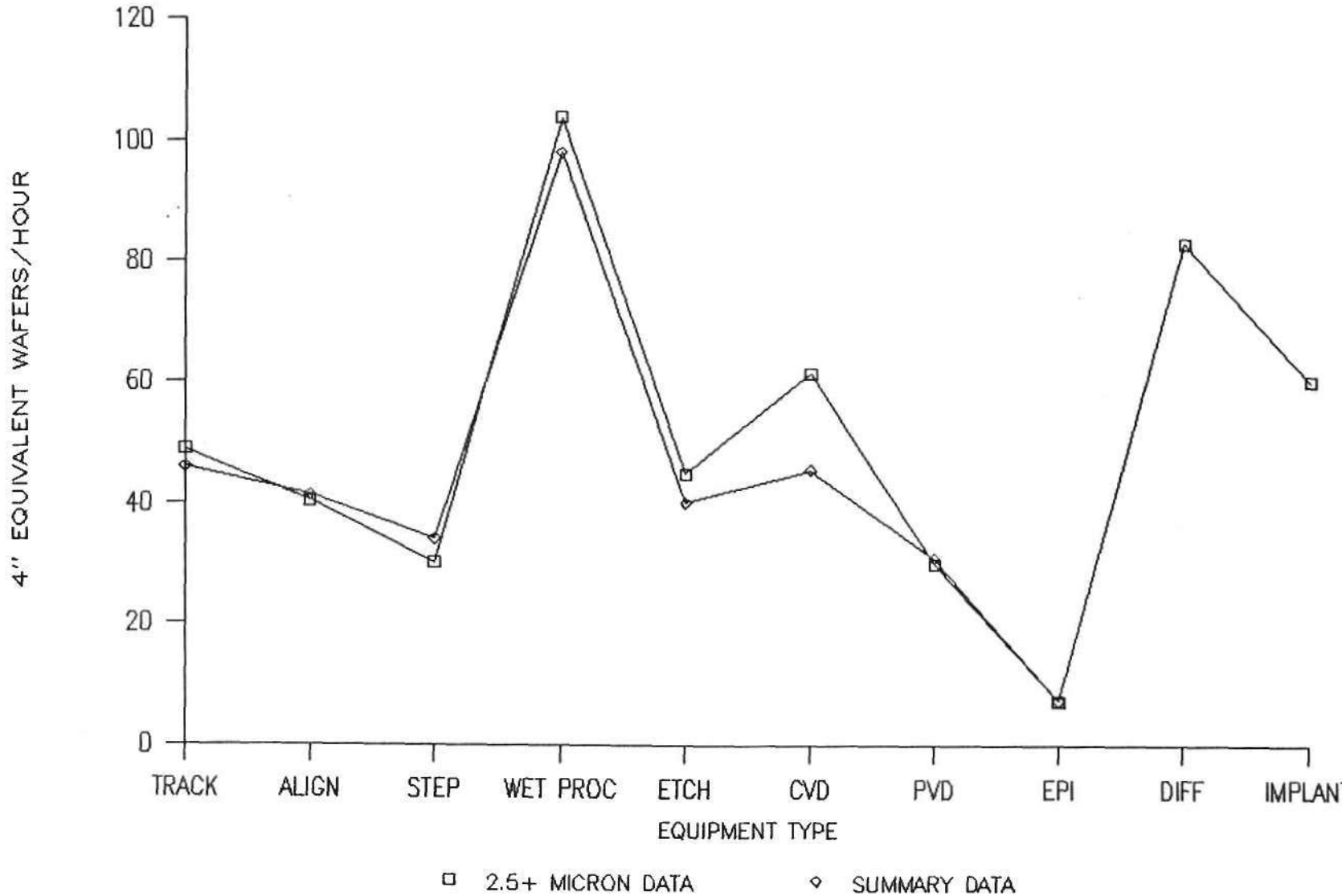
NET THROUGHPUT

ALL VENDORS: 2.5+ MICRON DATA



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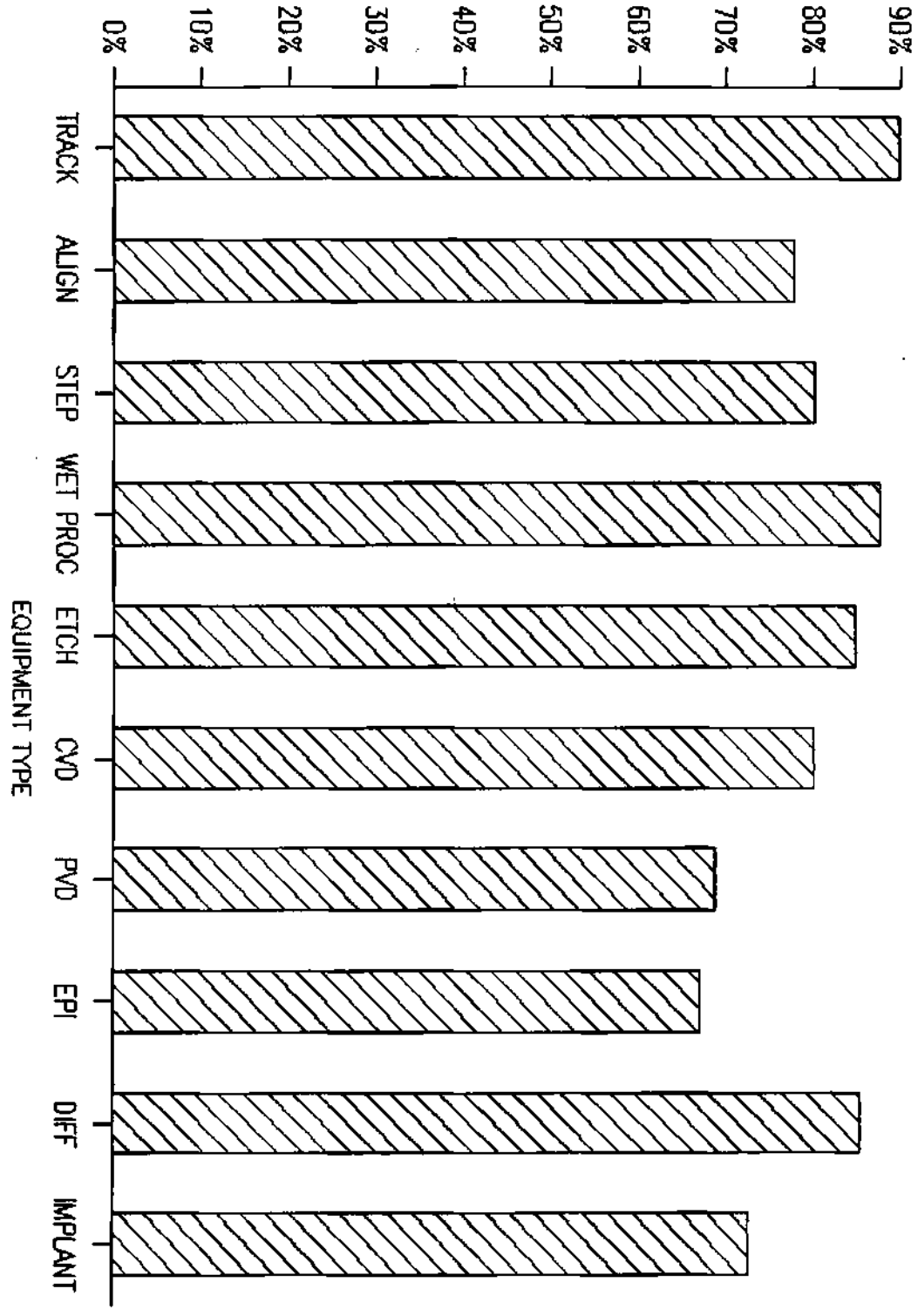
NET/MAX. FAB THROUGHPUT

NET-TO-MAX. FAB THROUGHPUT: ALL VENDORS

2.5+ MICRONS DATA



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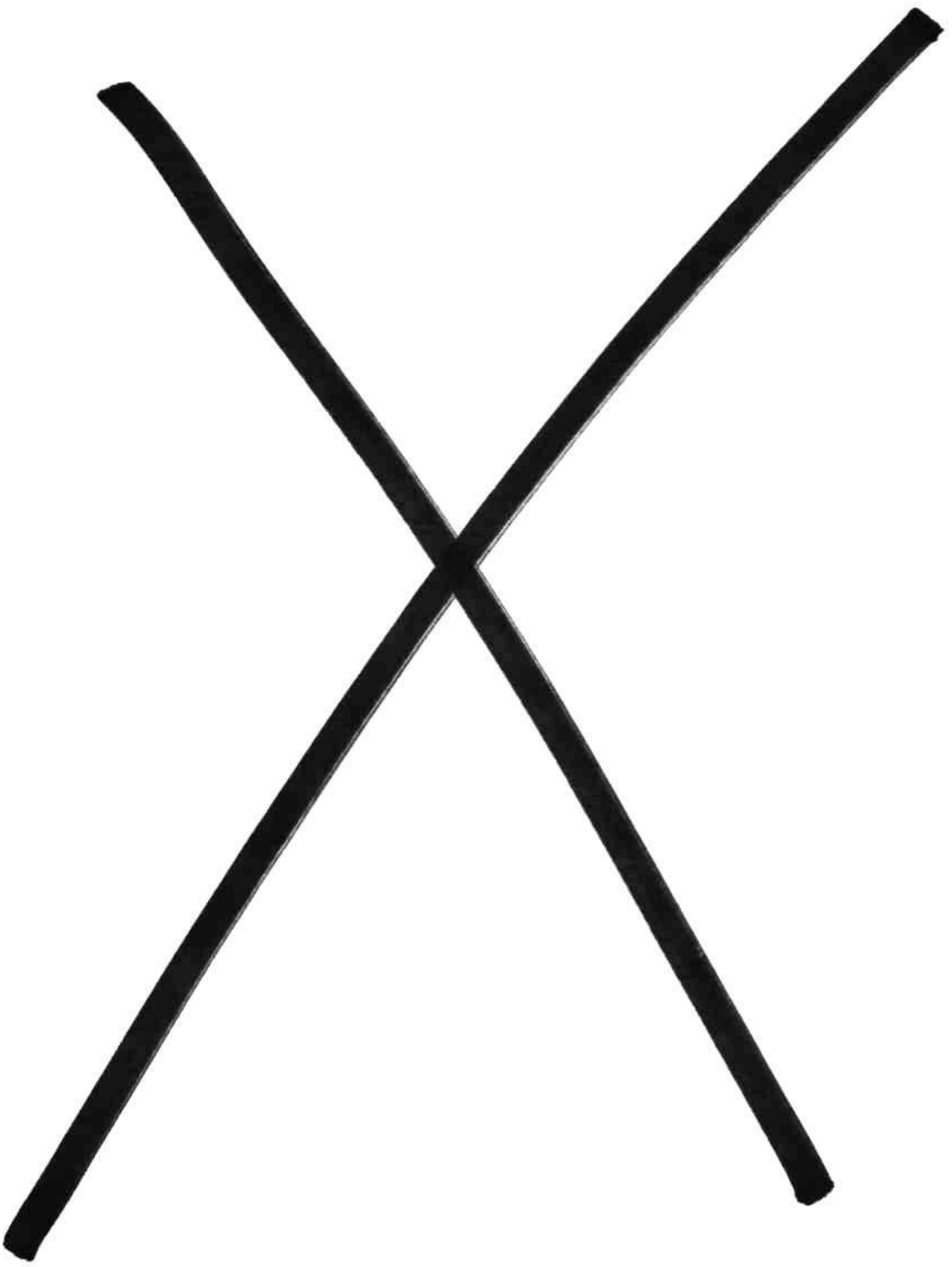
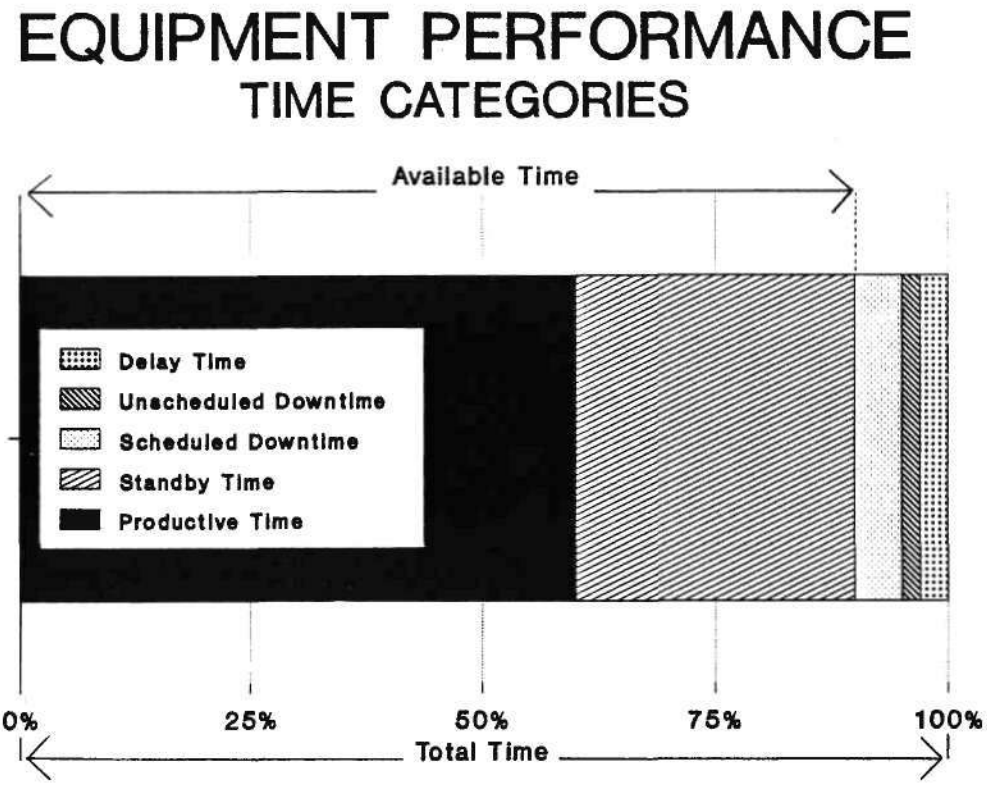


EQUIPMENT PERFORMANCE BY TECHNOLOGY

This chapter summarizes equipment performance by equipment type by the technology of the devices produced in the fab. These technologies include: bipolar devices, CMOS devices, and NMOS devices. We did not include any BiMOS data in this chapter because of a paucity of data. BiMOS data is, however, reported in the appendix. The data is from all equipment vendors covered in our survey, and represents weighted averages for each equipment category. Raw data is available in the appendix of this report.

DEFINITIONS

Complete definitions of performance parameters are given in the appendix of this report. Shorter definitions of available time, productive time, rated throughput, maximum fab throughput, actual-to-rated throughput, net throughput, and net-to-maximum fab throughput are given in the accompanying tables. A pictorial view of the relationship between total time, available time, and productive time is shown in the following figure:



Please note that in the accompanying table and graphs that productive time is expressed as a percentage of available time, not as a percentage of total time. Productive time as a percentage of available time is a measure of scheduling efficiency.

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Rated throughput, expressed in 4-inch equivalents, is what respondents reported that equipment vendors claimed their throughput to be.

Maximum fab throughput, on the other hand, is a measure of how the equipment actually performs in the fab. The maximum fab throughput was calculated by dividing the total number of wafers out in a quarter by the total number of productive hours in that quarter.

The maximum fab throughput is a measure of equipment performance when the equipment is actually running wafers. However, because of scheduled and unscheduled downtime and delay time, net throughput is less than the maximum fab throughput.

In other words, to measure a piece of equipment's potential performance, one must take into account the non-available time of the equipment.

We do this in this report by multiplying the maximum fab throughput by the percentage of available time. This is termed "net throughput," and is a measure of equipment's potential output that does take into account the scheduled, unscheduled downtimes, and delay times. For example, assume the following:

Maximum fab throughput = 50 wafers per hour.
Available time = 80 percent.
Then the available hours per day would be:
0.80 x 24 hours = 19.2 hours.
The potential output per day, assuming no standby time, would be:
50 wafers per hour x 19.2 hours
= 960 wafers per day.

We get the same result by multiplying net throughput by 24 hours:
Maximum fab throughput = 50 wafers per hour.
Available time = 80 percent.
Therefore, net throughput is:
0.80 x 50 wafers per hour
= 40 wafers per hour;
and, wafers per day, assuming no standby time, would be:
40 wafers per hour x 24 hours per day:
= 960 wafers per day.

Net throughput measures those variables that are under the equipment vendor's control. These variables are scheduled downtime, unscheduled downtime, and delay time, which, when subtracted from total time, equal available time. Productive time, on the other hand, is not a variable that the equipment vendor can control; it is, rather, a variable under the control of the fab.

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BIPOLAR EQUIPMENT PERFORMANCE

ITEM	PERFORMANCE PARAMETER	TRACK	ALIGN	STEP WET	PROC	ETCH	CVD	PVD	EPI	DIFF	IMPLANT
1	NUMBER	95	32	100	24	35	24	15	18	10	9
2	AVAILABLE TIME (% of total time)	89%	74%	76%	85%	94%	77%	67%	67%	87%	71%
3	PRODUCTIVE TIME (% of available time)	79%	100%	100%	83%	80%	78%	73%	75%	98%	77%
4	UNSCHEDULED DOWNTIME (hours/quarter)	86	148	211	75	64	219	151	169	26	191
5	SCHEDULED DOWNTIME (hours/quarter)	61	132	94	116	13	89	196	220	112	174
6	MTBF (hrs)	48	59	60	185	127	67	59	64	181	50
7	MTTR (hrs)	1	7	5	6	4	12	5	7	5	9
8	MTBS (hrs)	53	168	0	138	120	66	40	22	14	50
9	MTFS (hrs)	2	2	0	0	2	2	2	1	8	1
10	MTBM (hrs)	259	25	315	314	547	201	186	215	124	54
11	MTFM (hrs)	12	2	5	3	20	14	12	5	7	12
12	RATED THROUGHPUT (wafers/hr: 4" equiv)	72	60	0	335	55	191	88	8	200	117
13	MAX. FAB THROUGHPUT (wafers/hr: 4" equiv)	52	48	0	98	39	129	73	10	150	78
14	ACTUAL/RATED (item #13/item #12)	0.72	0.80	-	0.29	0.71	0.67	0.83	1.35	0.75	0.67
15	NET THROUGHPUT (wafers/hr: item #13 x item #2)	46	35	0	84	37	99	49	7	131	56
16	NET/MAX FAB T.P. (item # 15/item # 13)	89%	74%	-	85%	94%	77%	67%	67%	87%	71%

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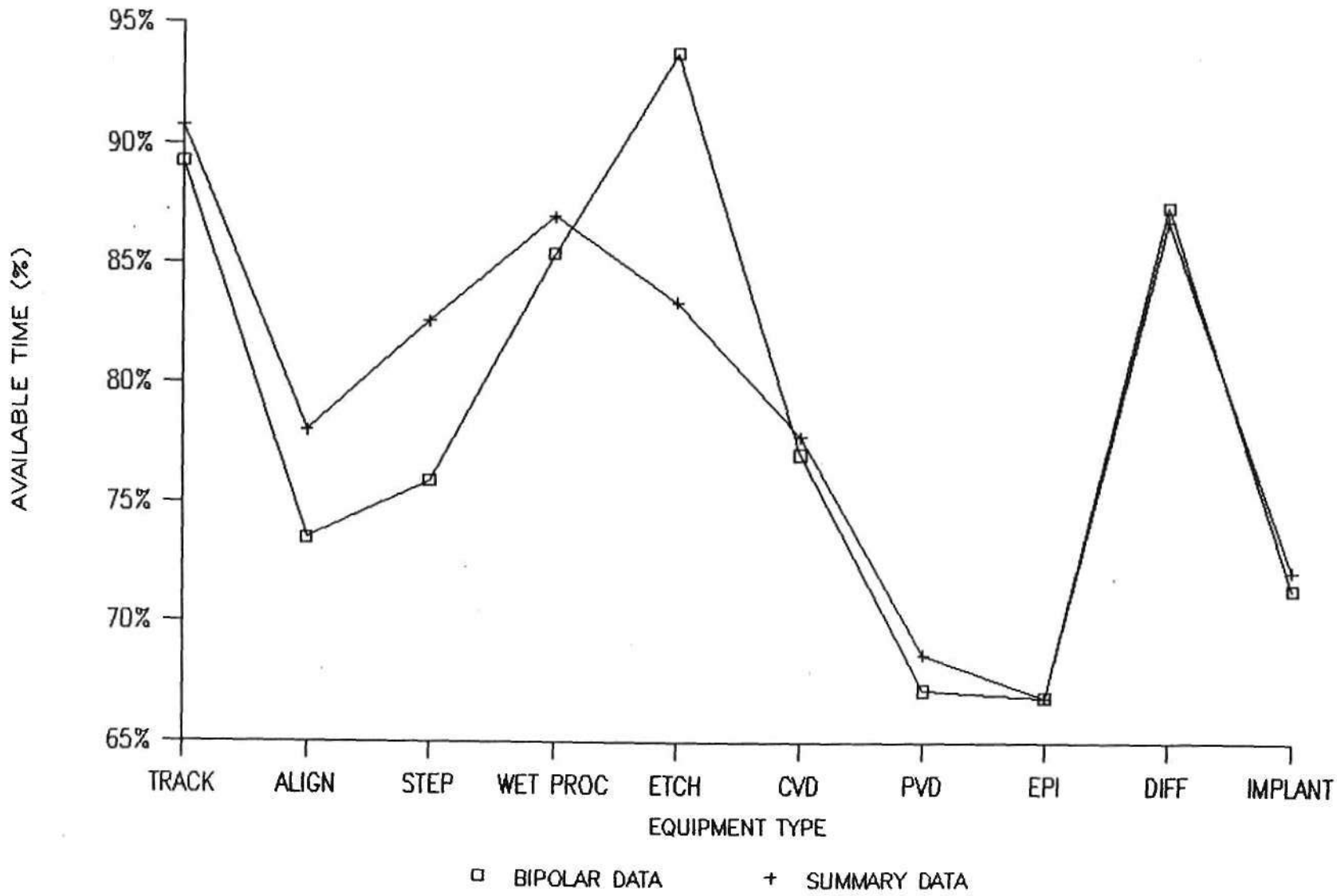
AVAILABLE TIME: ALL VENDORS

BIPOLAR DATA



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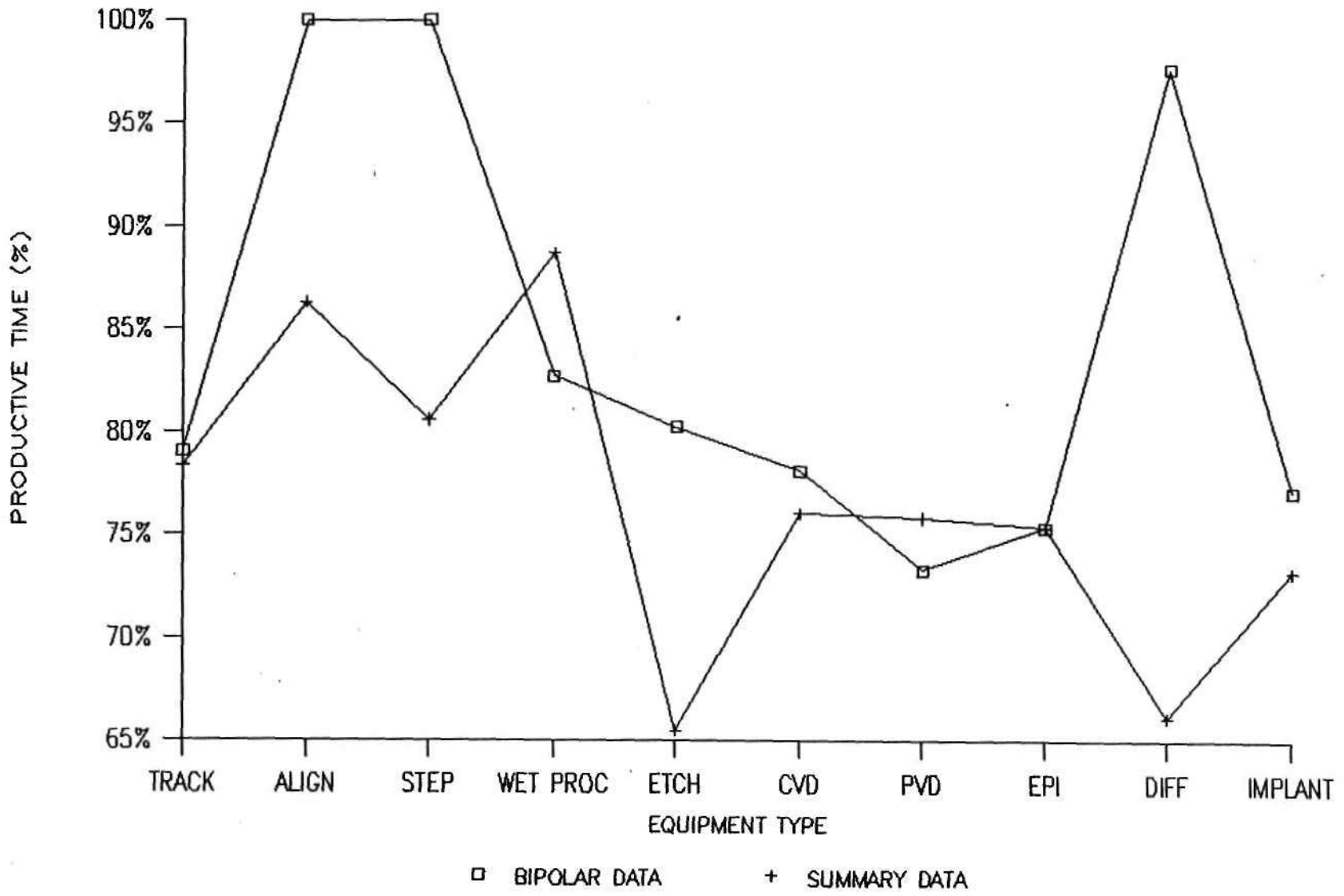
PRODUCTIVE TIME: ALL VENDORS

BIPOLAR DATA



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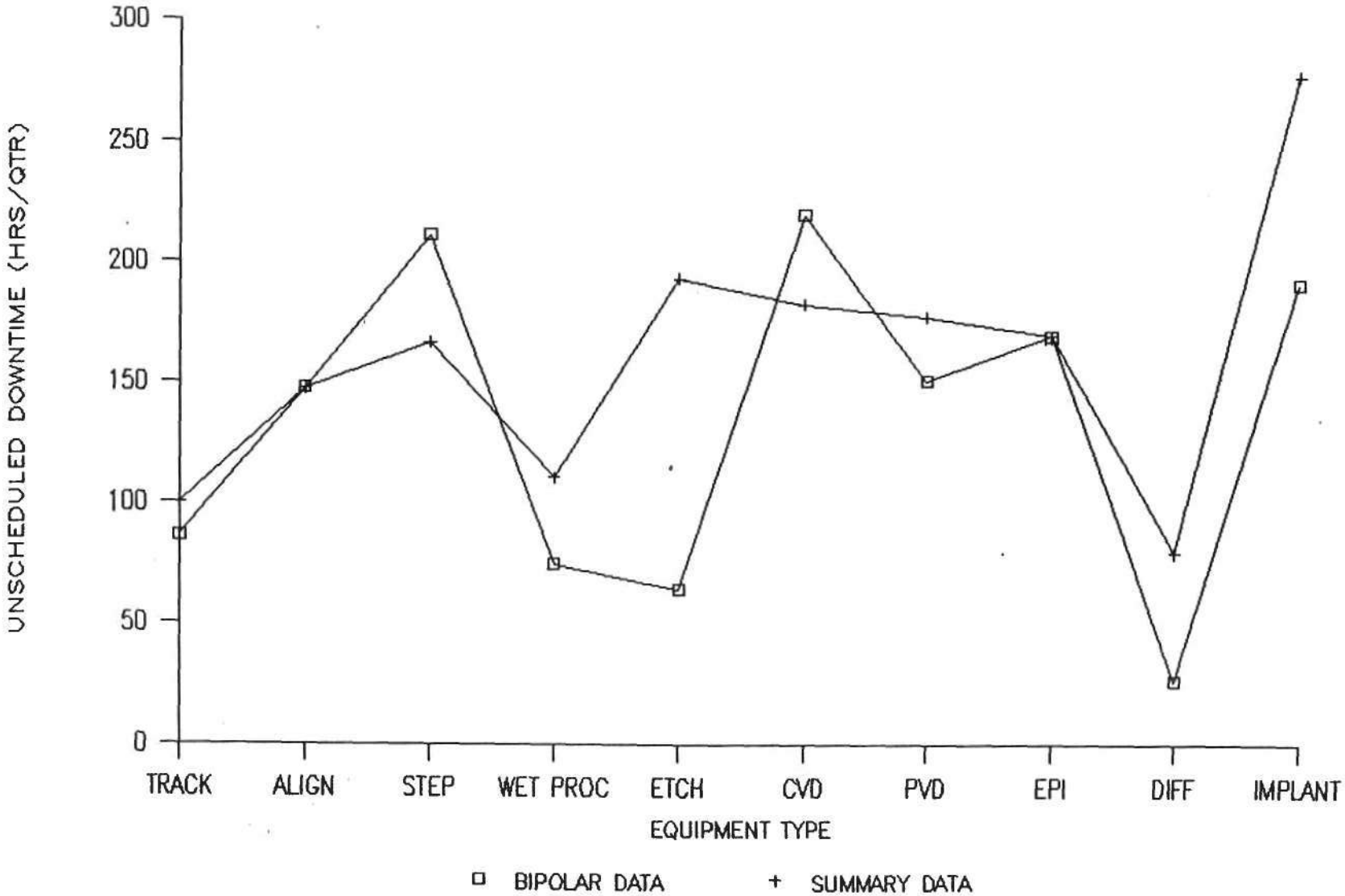
UNSCHEDULED DOWNTIME: ALL VENDORS

BIPOLAR DATA



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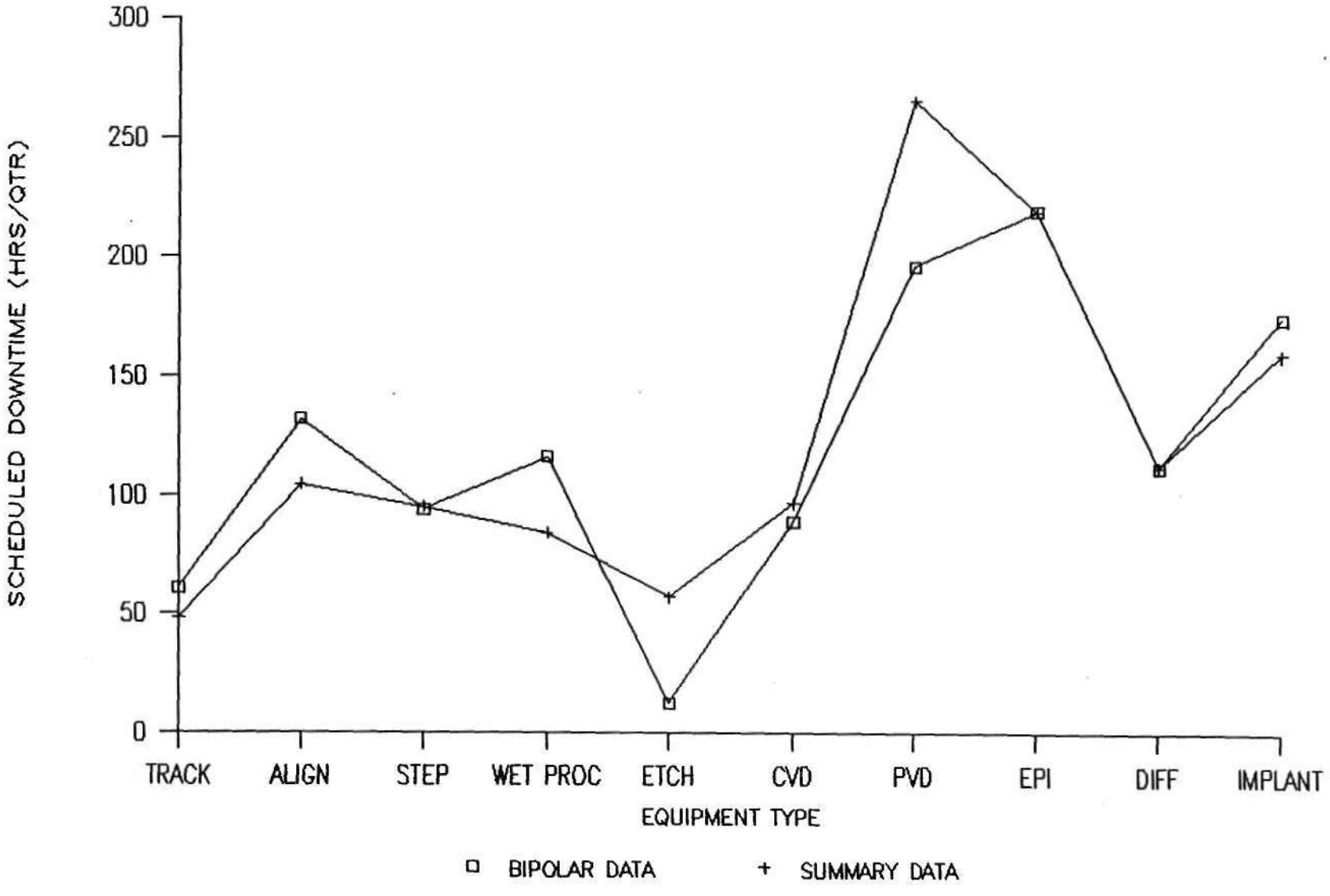
SCHEDULED DOWNTIME: ALL VENDORS

BIPOLAR DATA



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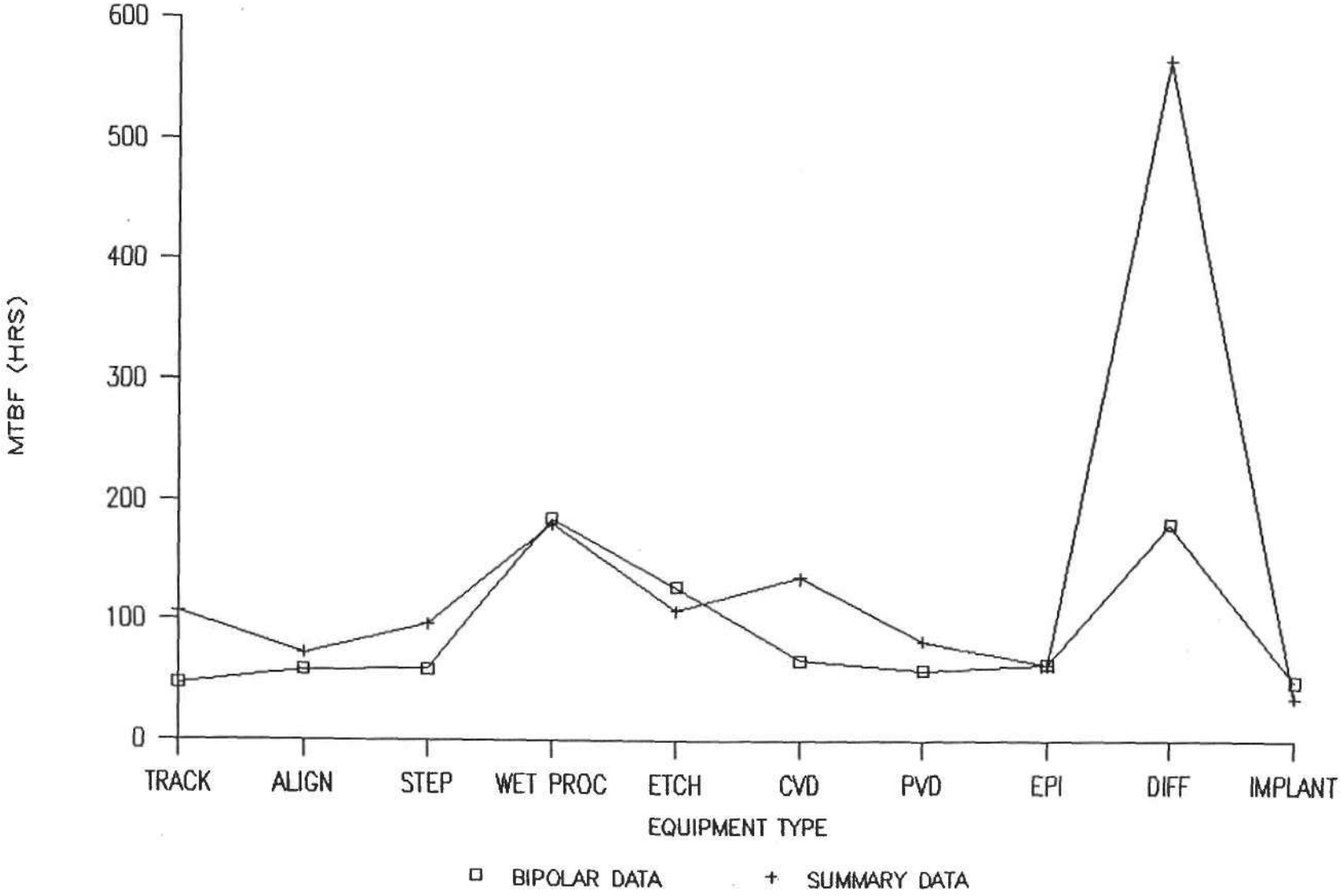
MEAN TIME BETWEEN FAILURE: ALL VENDORS

BIPOLAR DATA



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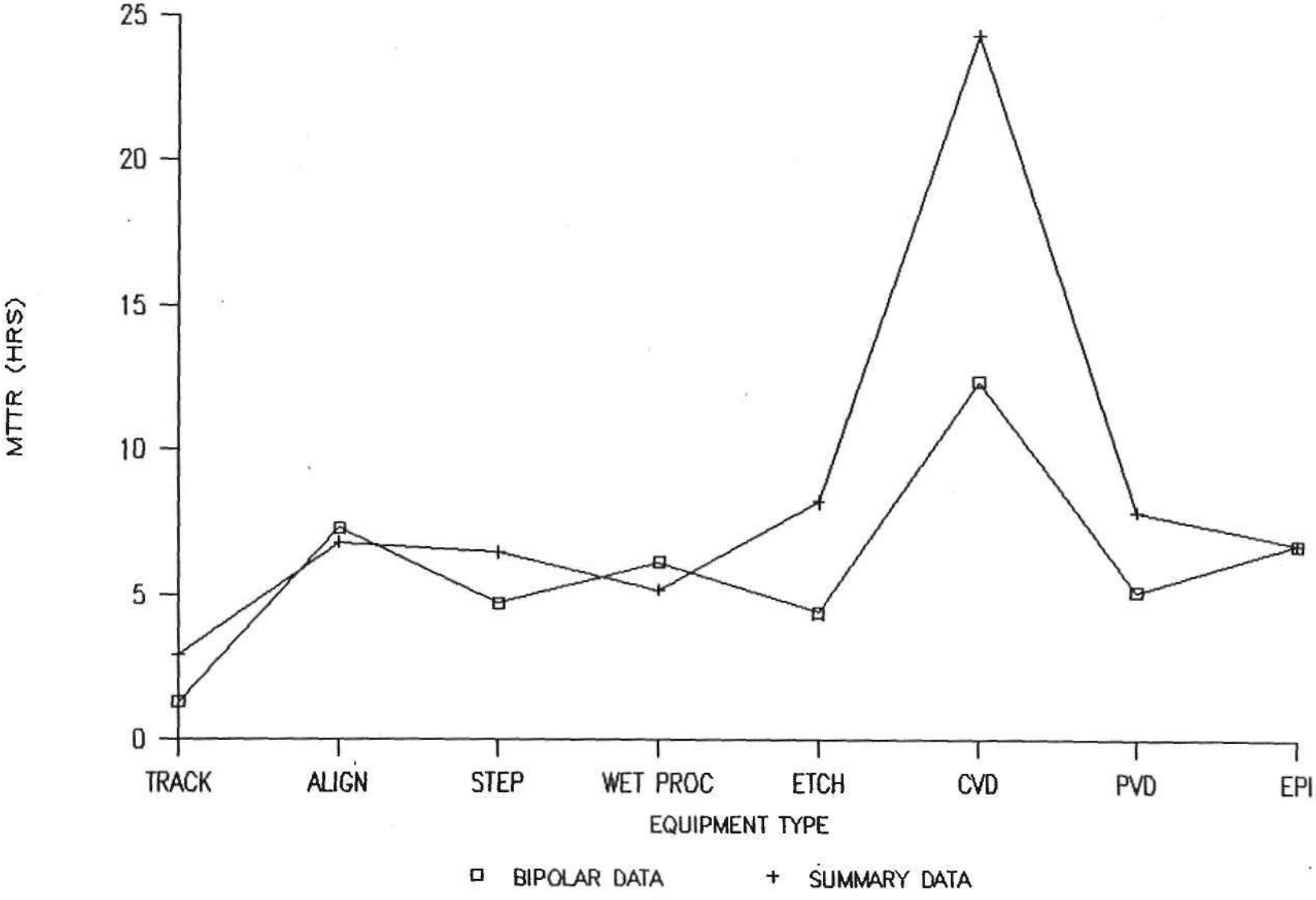
MEAN TIME TO REPAIR: ALL VENDORS

BIPOLAR DATA



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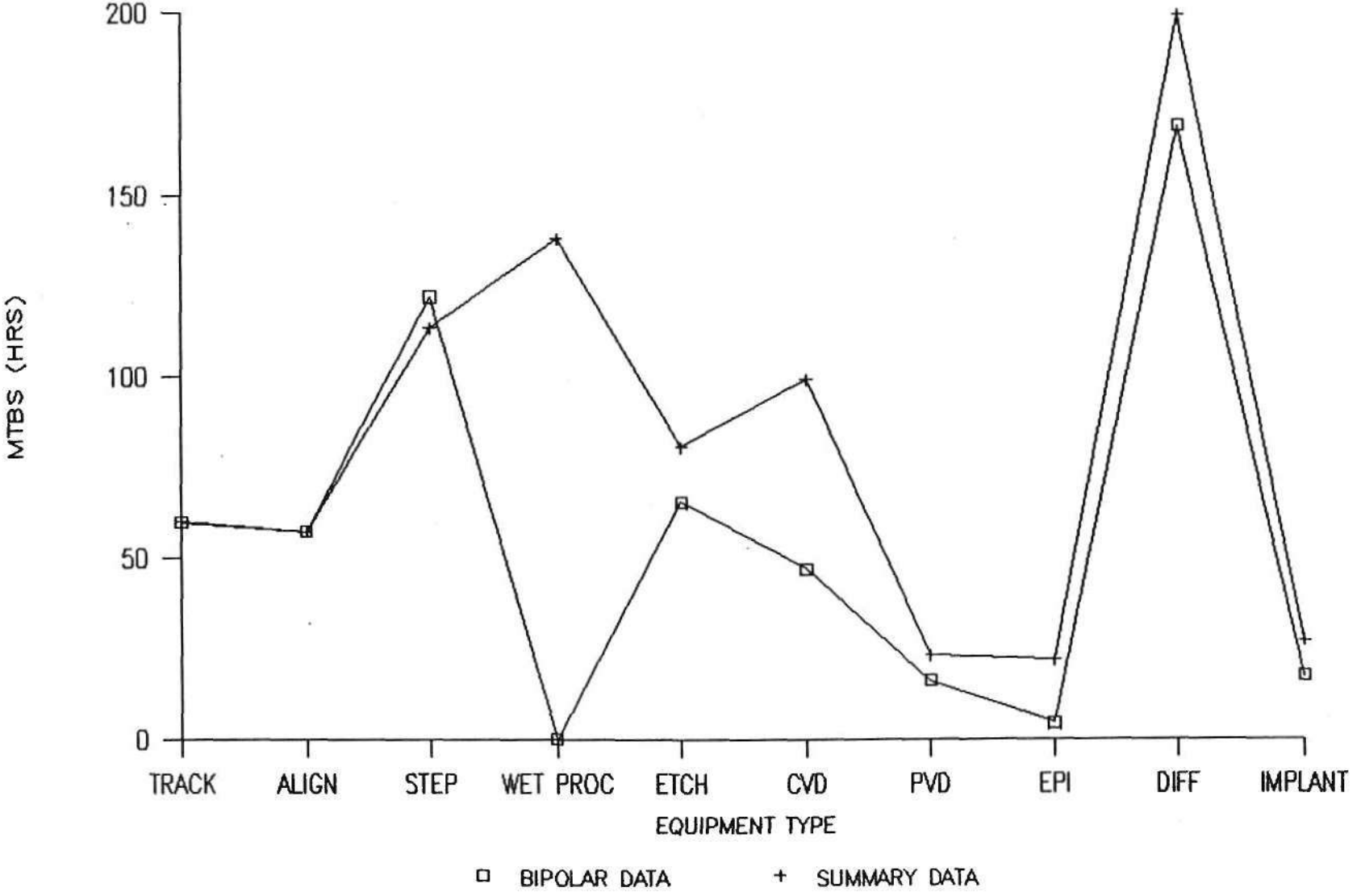
MEAN TIME BETWEEN SET-UPS: ALL VENDORS

BIPOLAR DATA



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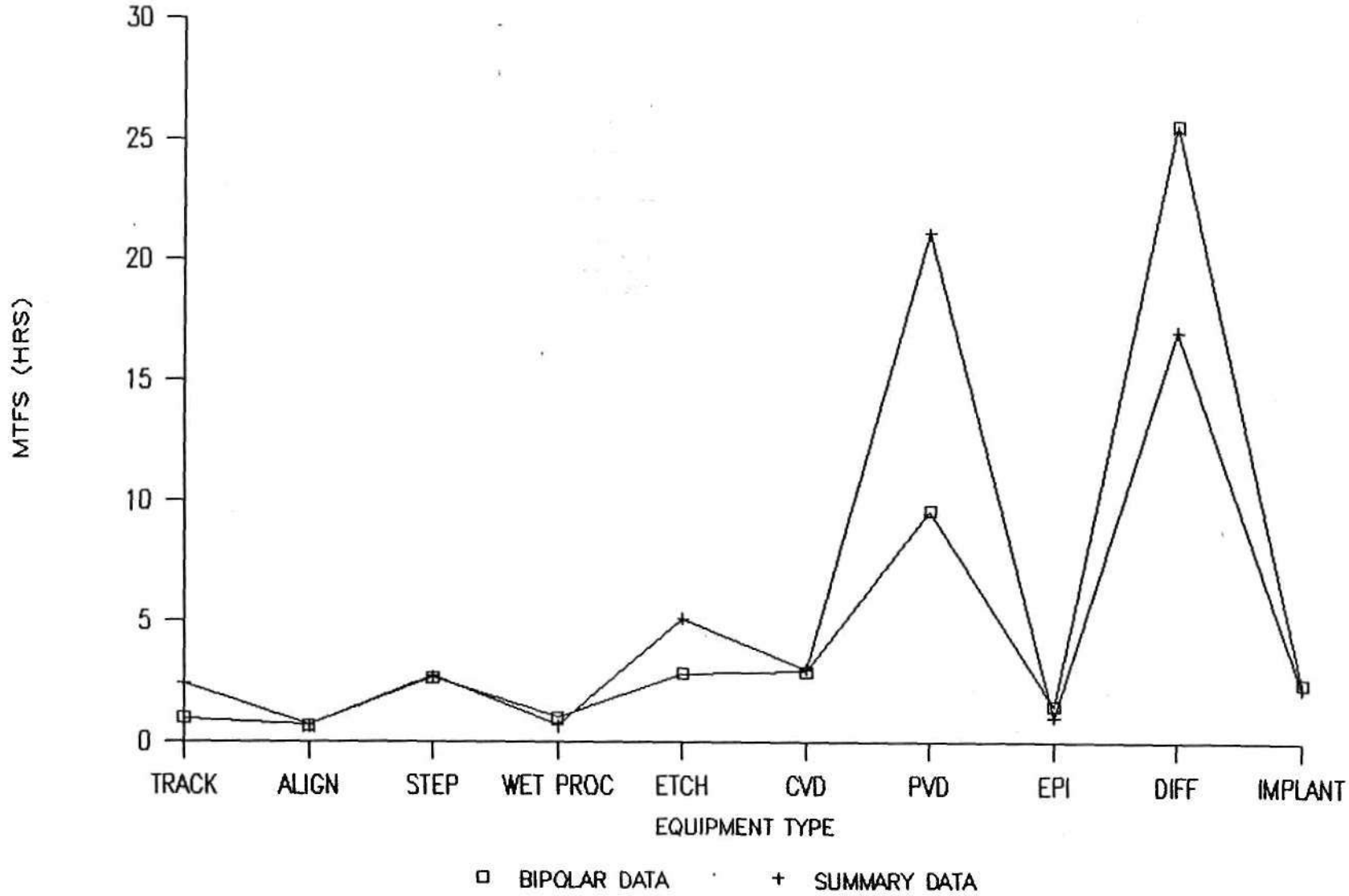
MEAN TIME FOR SET-UP: ALL VENDORS

BIPOLAR DATA



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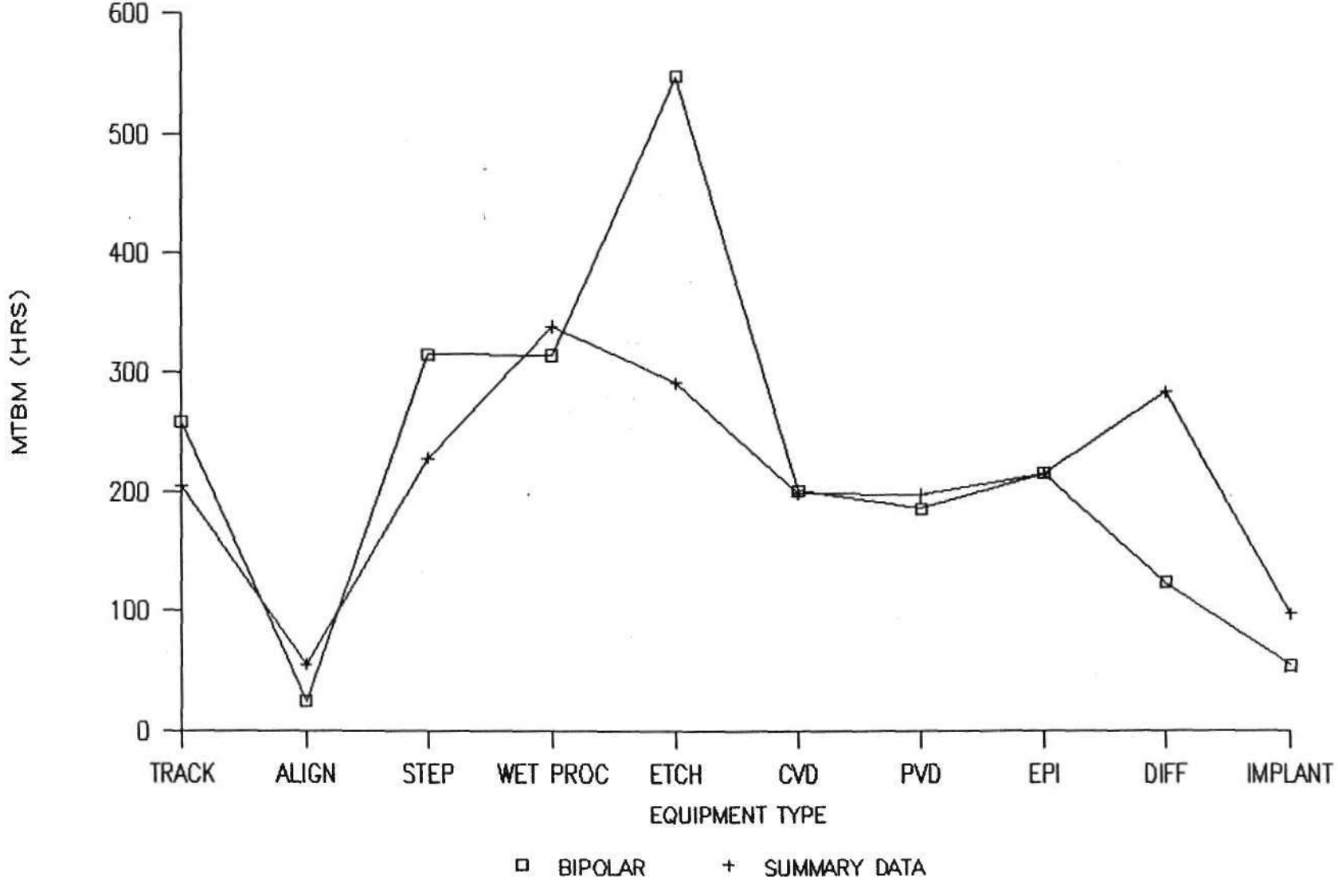
MEAN TIME BTW MAINTENANCE: ALL VENDORS

BIPOLAR



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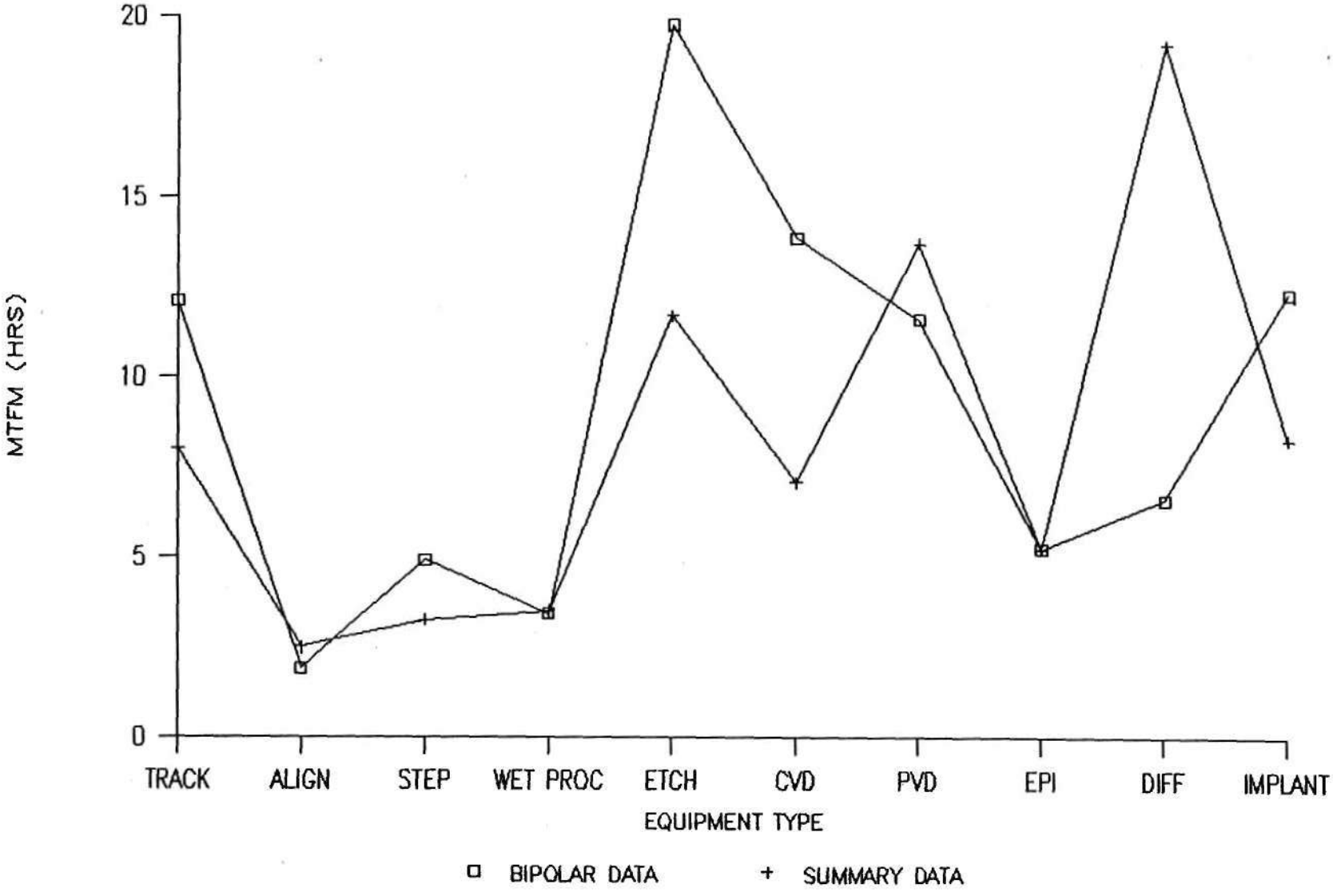
MEAN TIME FOR MAINTENANCE: ALL VENDORS

BIPOLAR DATA



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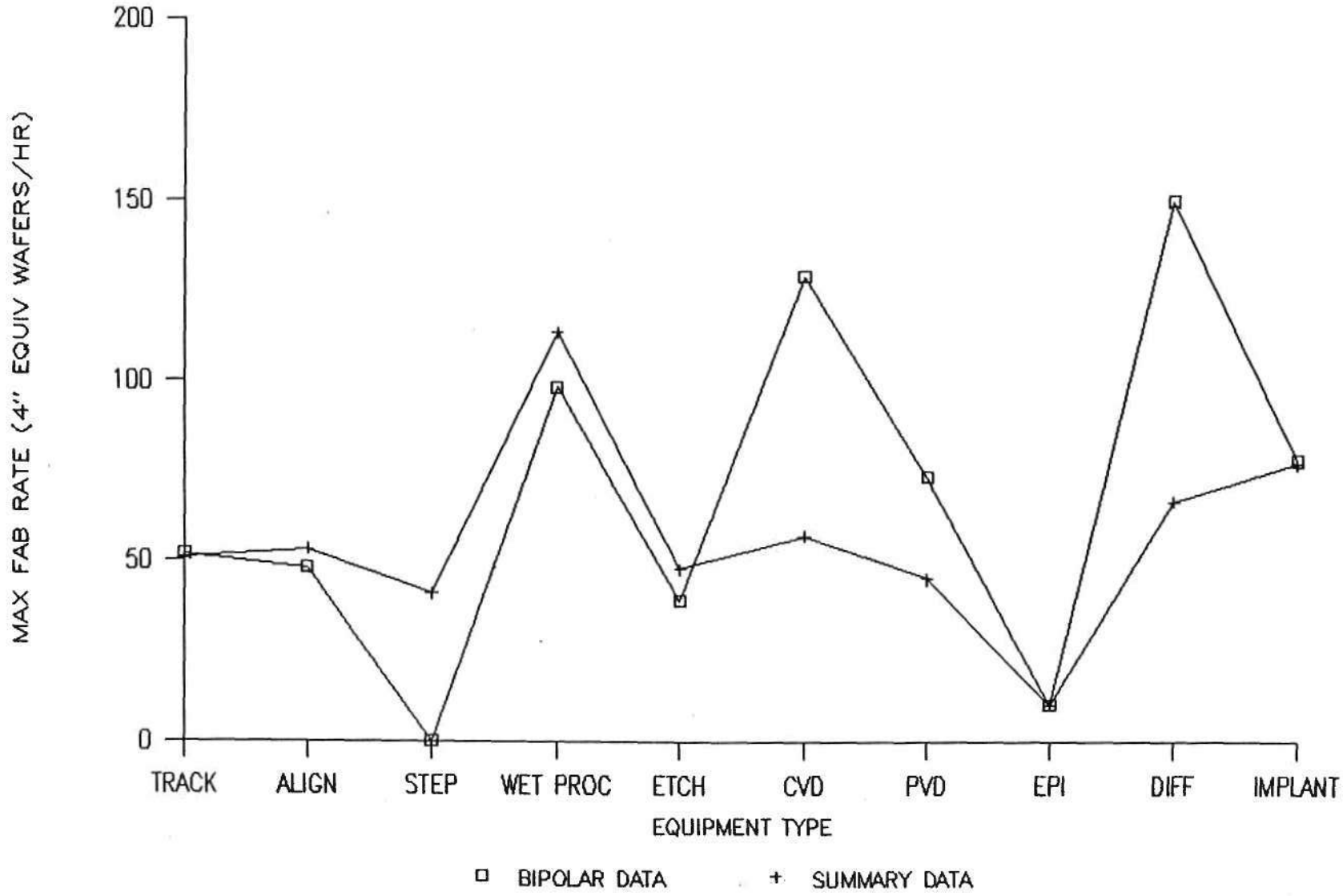
MAX FAB RATE: ALL VENDORS

BIPOLAR DATA



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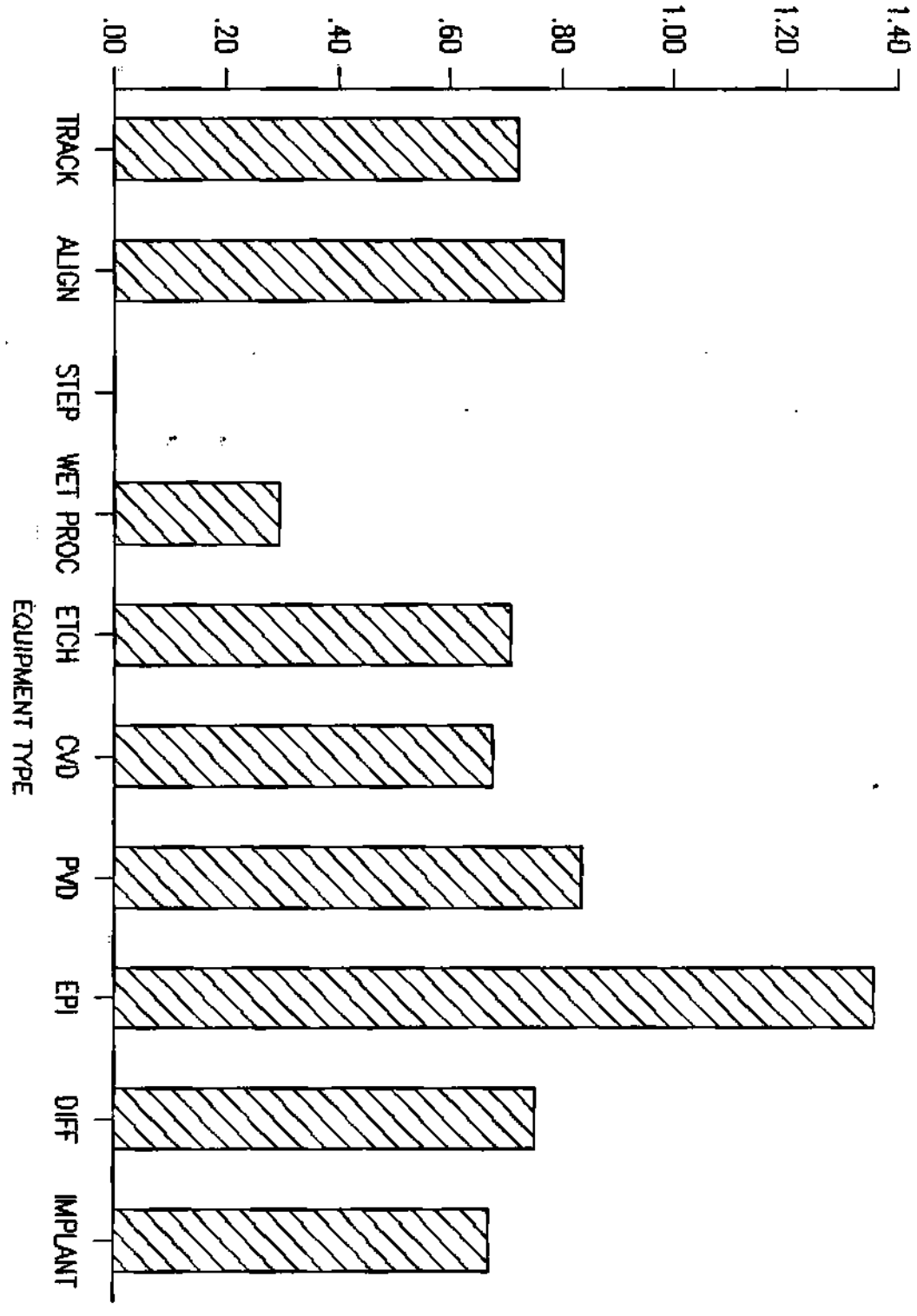
ACTUAL-TO-RATED THROUGHPUT: ALL VENDORS

BIPOLAR DATA



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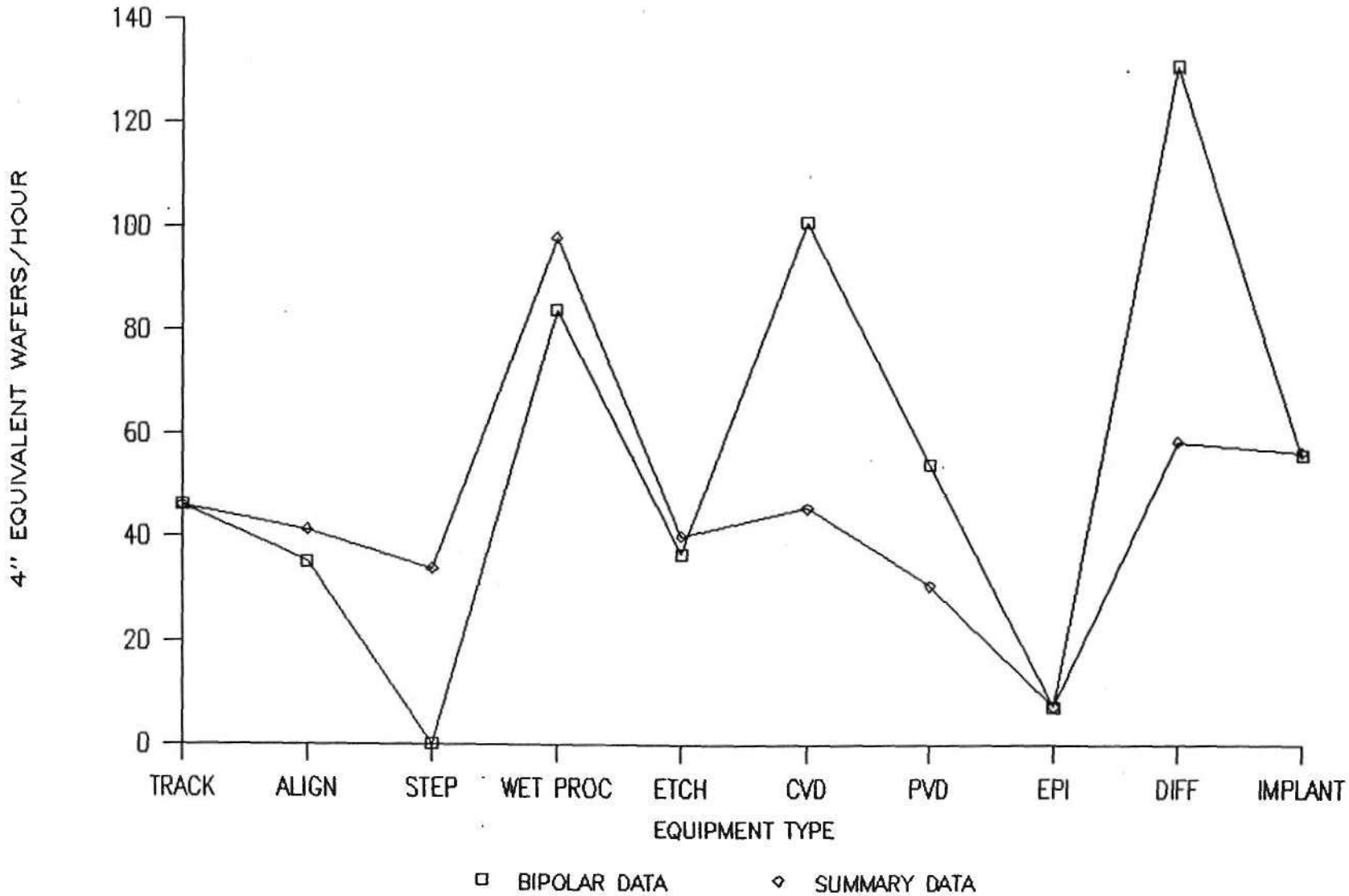
NET THROUGHPUT

ALL VENDORS: BIPOLAR DATA



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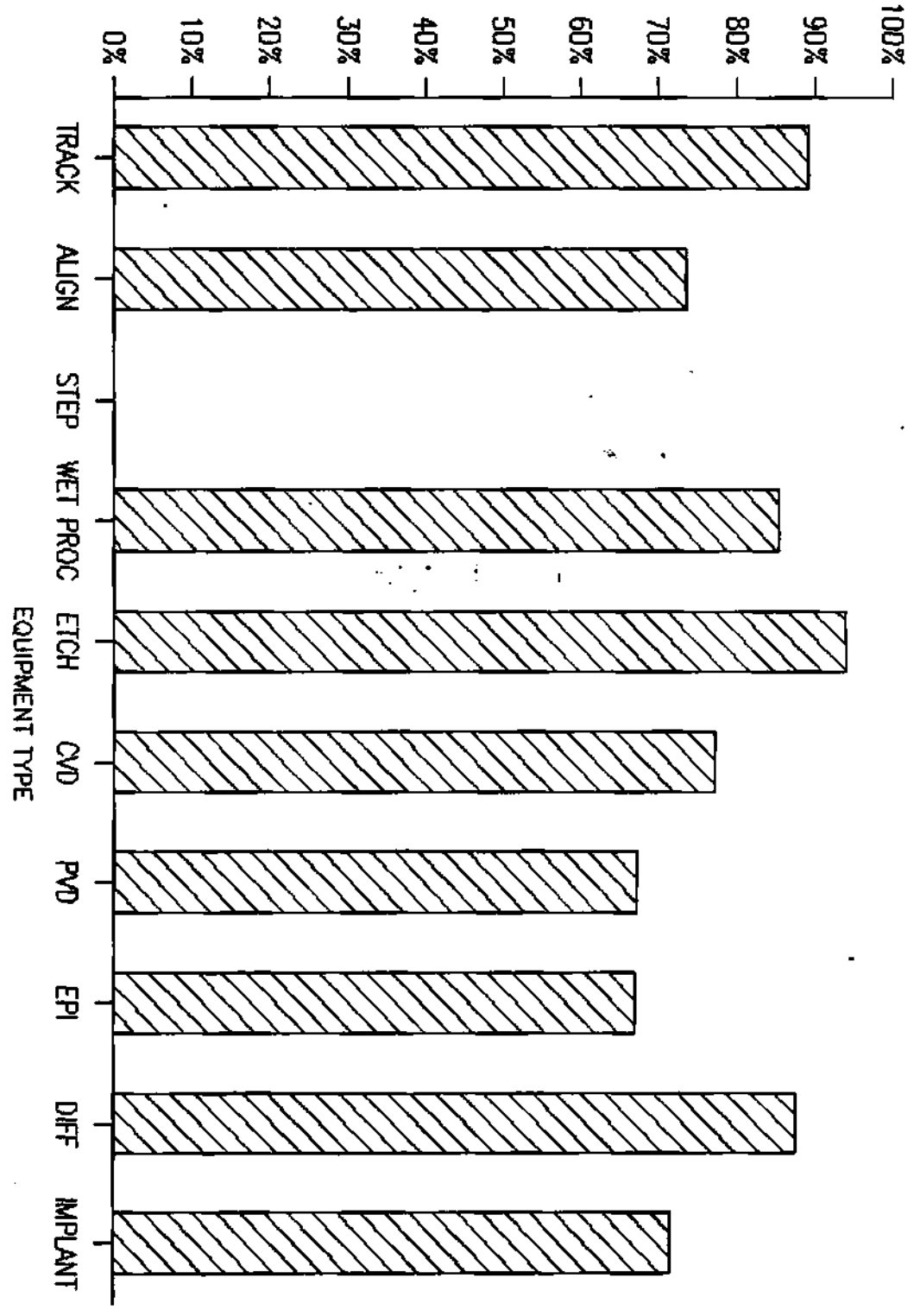
NET-TO-MAX. FAB THROUGHPUT: ALL VENDORS

BIPOLAR DATA



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CMOS EQUIPMENT PERFORMANCE

ITEM	PERFORMANCE PARAMETER	TRACK	ALIGN	STEP	WET PROC	ETCH	CVD	PVD	EPI	DIFF	IMPLANT
1	NUMBER	195	83	81	59	121	41	41	6	129	47
2	AVAILABLE TIME (% of total time)	90%	78%	82%	88%	82%	80%	70%	61%	84%	72%
3	PRODUCTIVE TIME (% of available time)	83%	86%	81%	97%	65%	66%	79%	98%	69%	77%
4	UNSCHEDULED DOWNTIME (hours/quarter)	115	147	174	132	210	148	158	99	78	271
5	SCHEDULED DOWNTIME (hours/quarter)	40	105	95	55	57	117	225	157	178	146
6	MTBF (hrs)	128	73	93	165	111	183	86	42	814	31
7	MTTR (hrs)	4	7	7	6	10	20	8	5	38	6
8	MTBS (hrs)	74	57	115	0	73	51	21	5	242	17
9	MTFS (hrs)	1	1	3	1	6	4	26	2	11	2
10	MTBM (hrs)	204	55	233	146	273	148	110	22	273	82
11	MTFM (hrs)	3	3	3	4	7	7	11	3	10	5
12	RATED THROUGHPUT (wafers/hr: 4" equiv)	64	79	55	281	94	58	57	0	130	120
13	MAX. FAB THROUGHPUT (wafers/hr: 4" equiv)	52	53	42	161	54	42	44	10	82	81
14	ACTUAL/RATED (item #13/item #12)	0.81	0.68	0.77	0.57	0.57	0.73	0.77	-	0.63	0.67
15	NET THROUGHPUT (wafers/hr: item #13 x item #2)	47	41	34	141	44	34	31	6	68	58
16	NET/MAX FAB T.P. (item # 15/item # 13)	90%	78%	82%	88%	82%	80%	70%	61%	84%	72%

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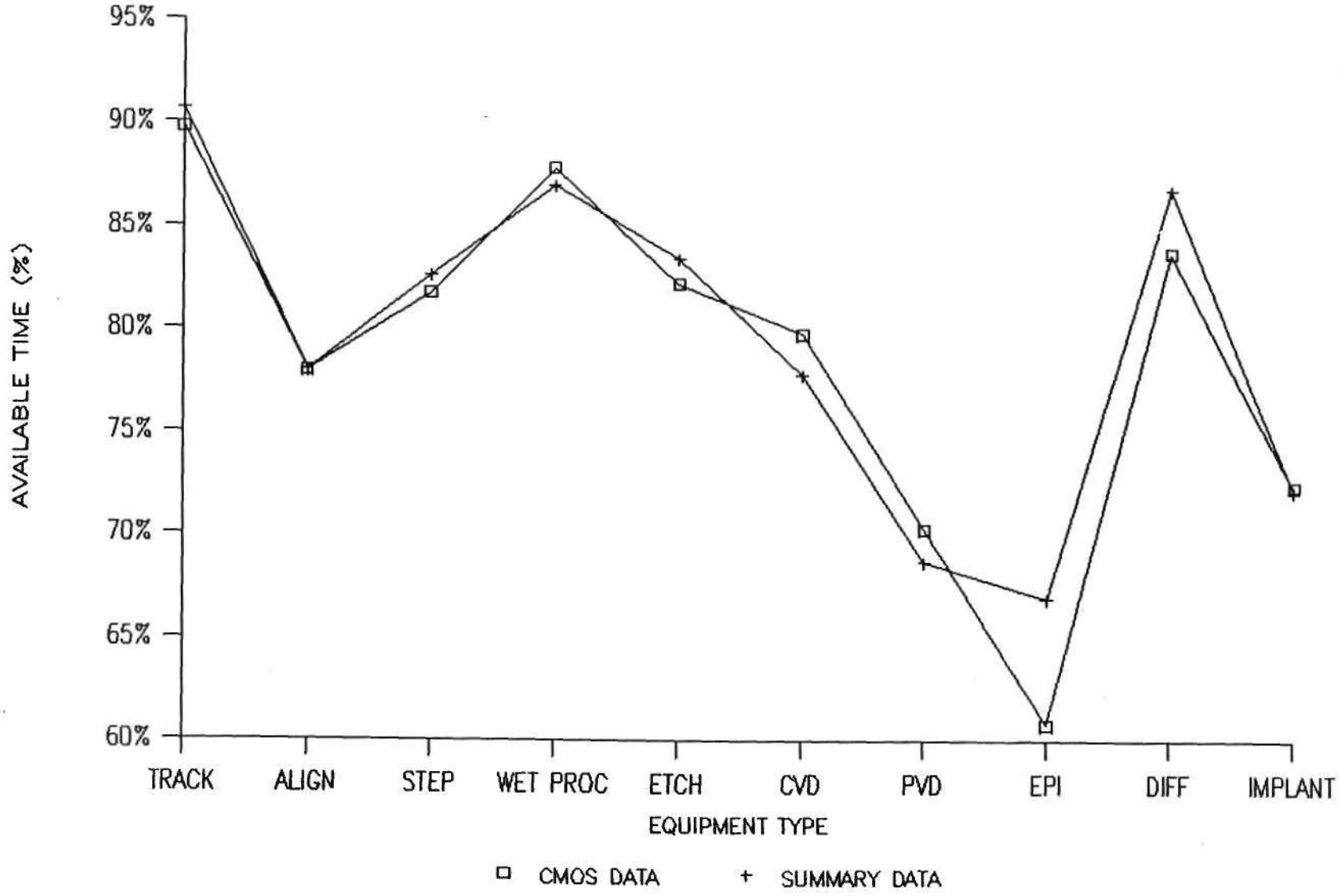
AVAILABLE TIME: ALL VENDORS

CMOS DATA



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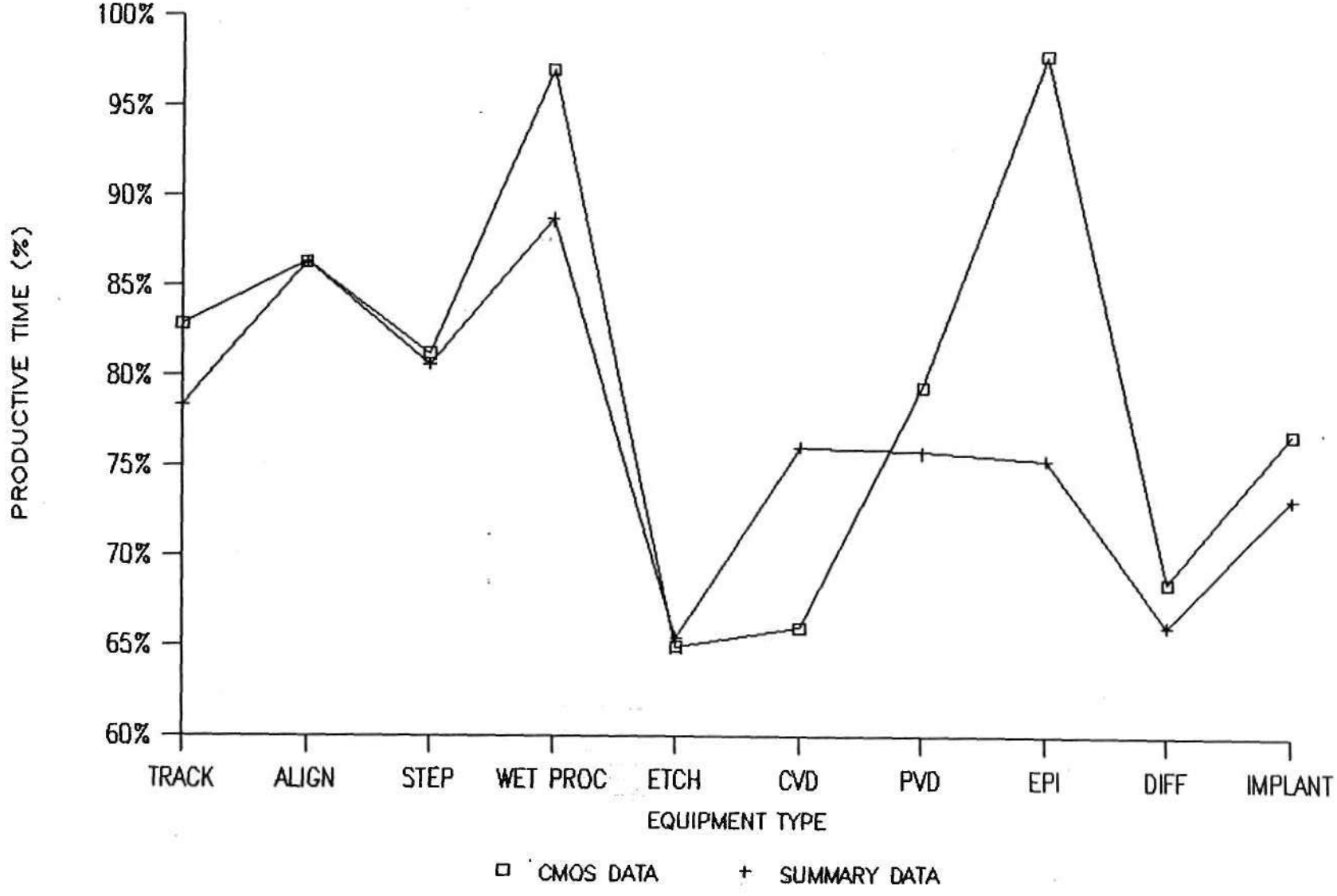
PRODUCTIVE TIME: ALL VENDORS

CMOS DATA



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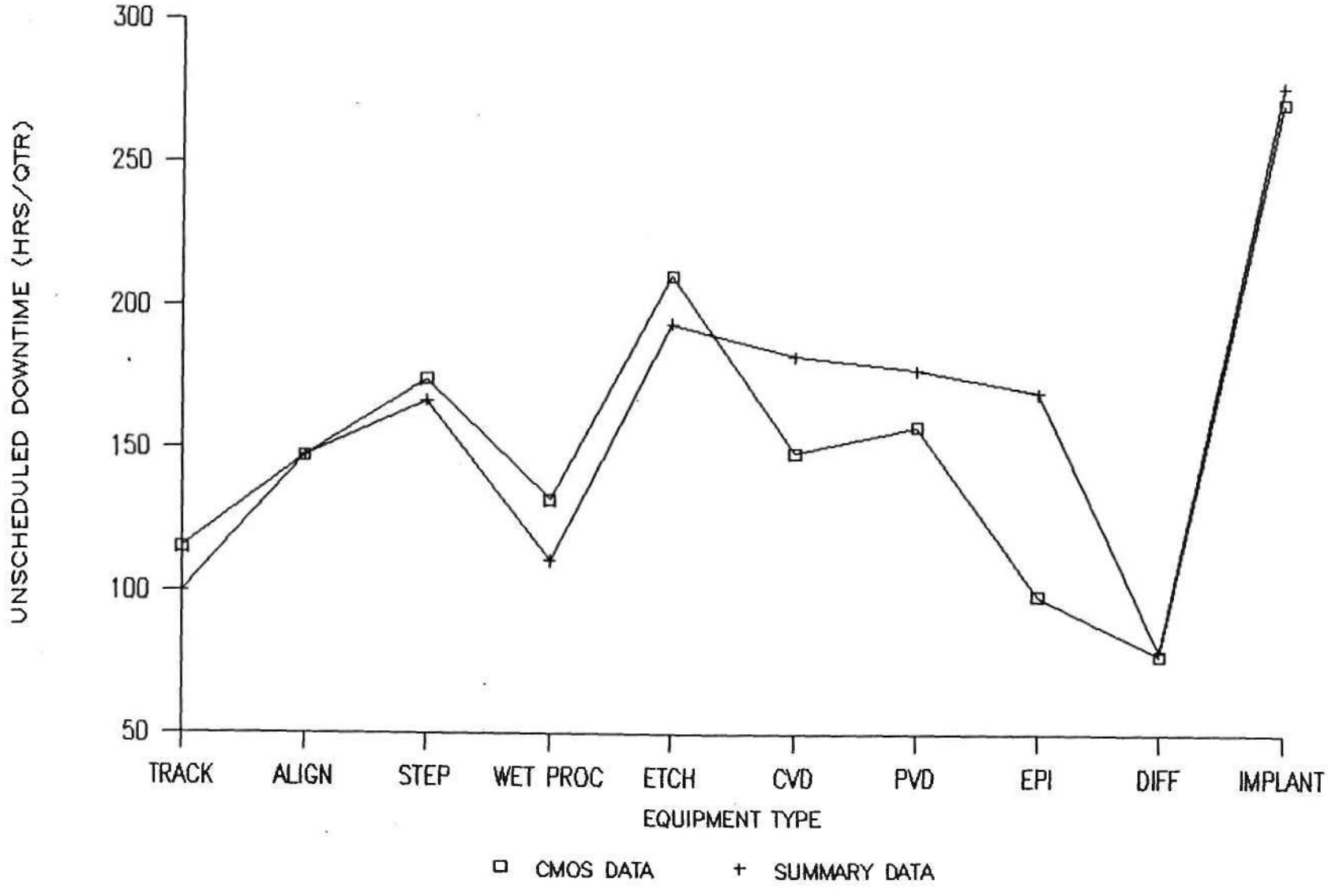
UNSCHEDULED DOWNTIME: ALL VENDORS

CMOS DATA



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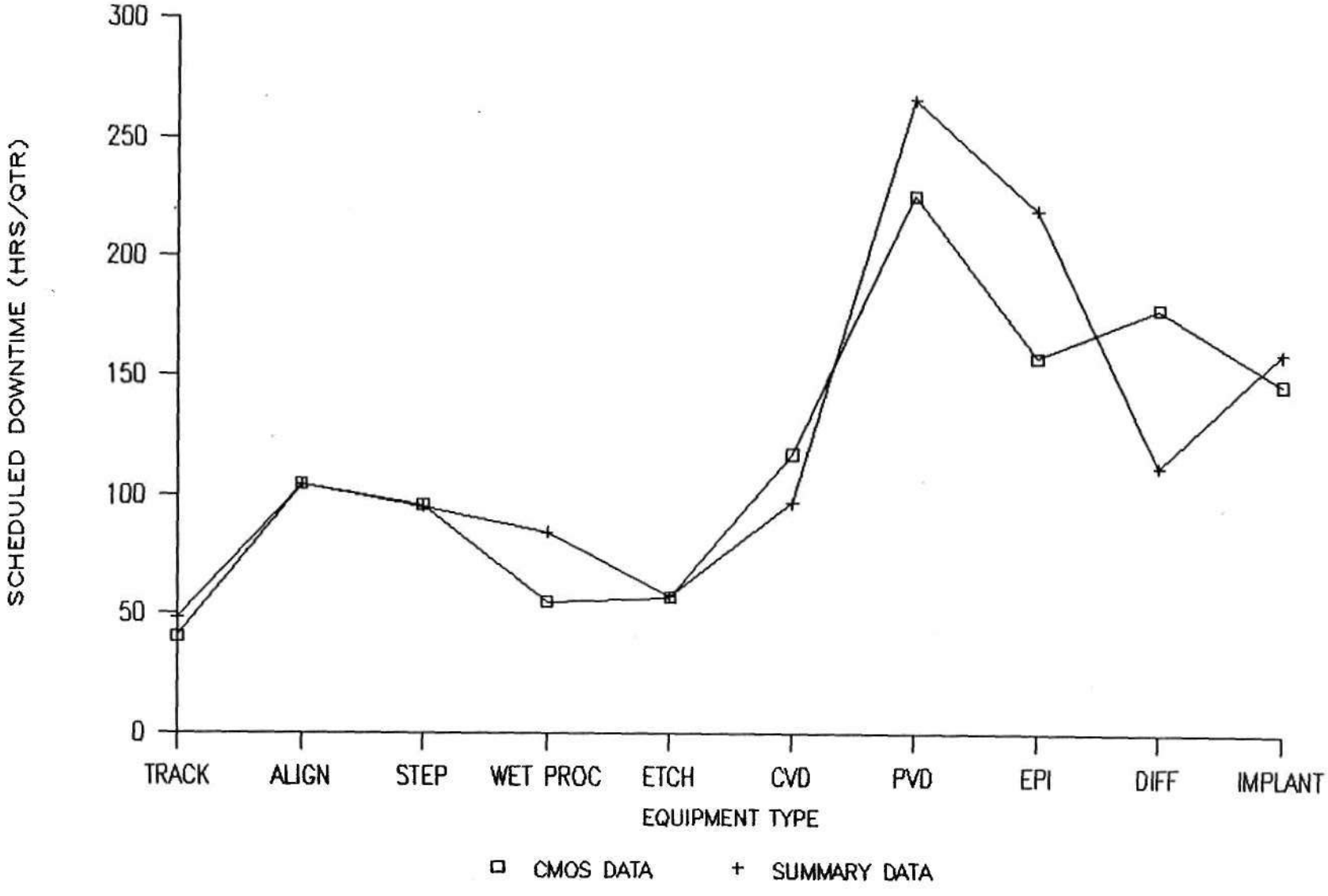
SCHEDULED DOWNTIME: ALL VENDORS

CMOS DATA



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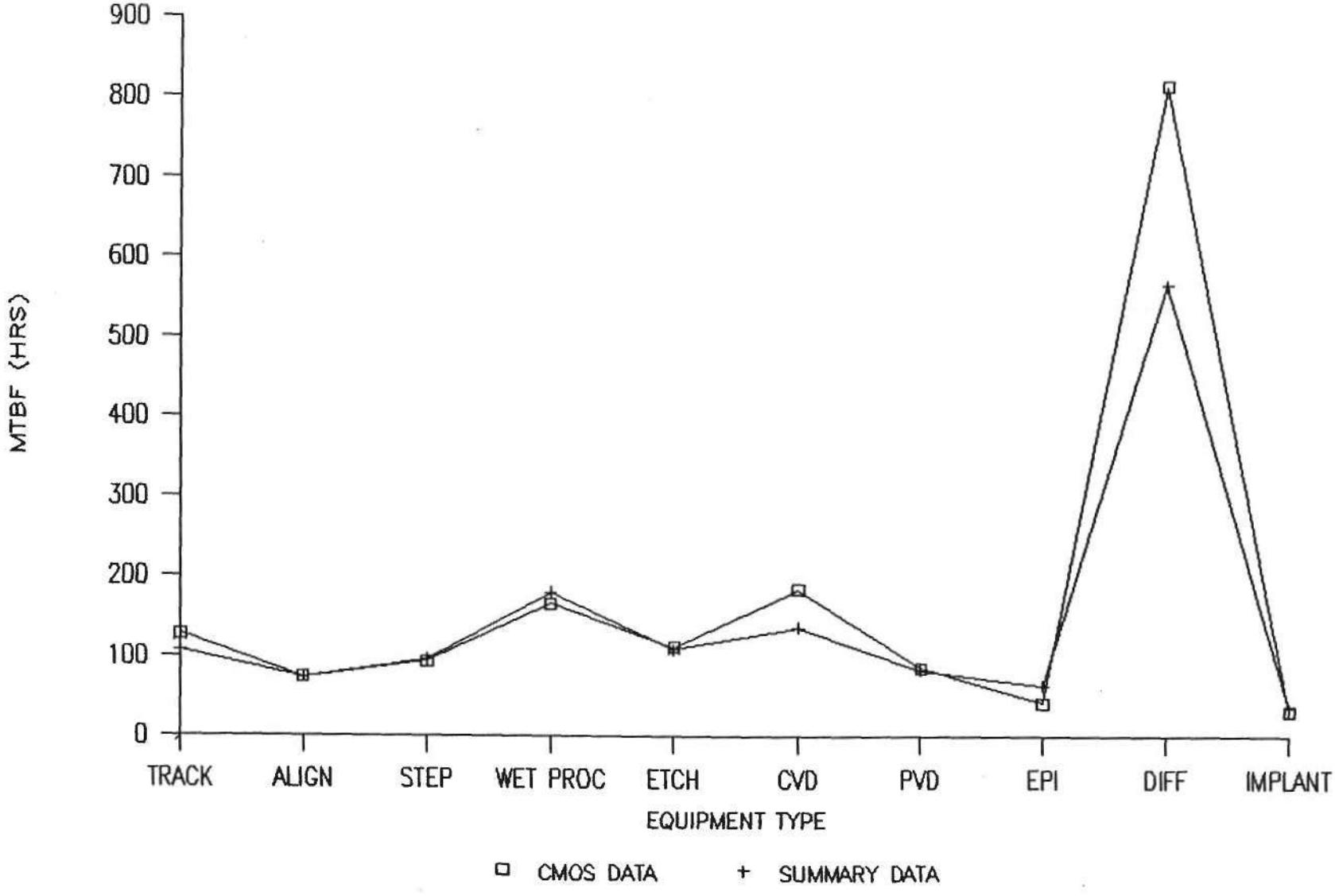
MEAN TIME BETWEEN FAILURE: ALL VENDORS

CMOS DATA



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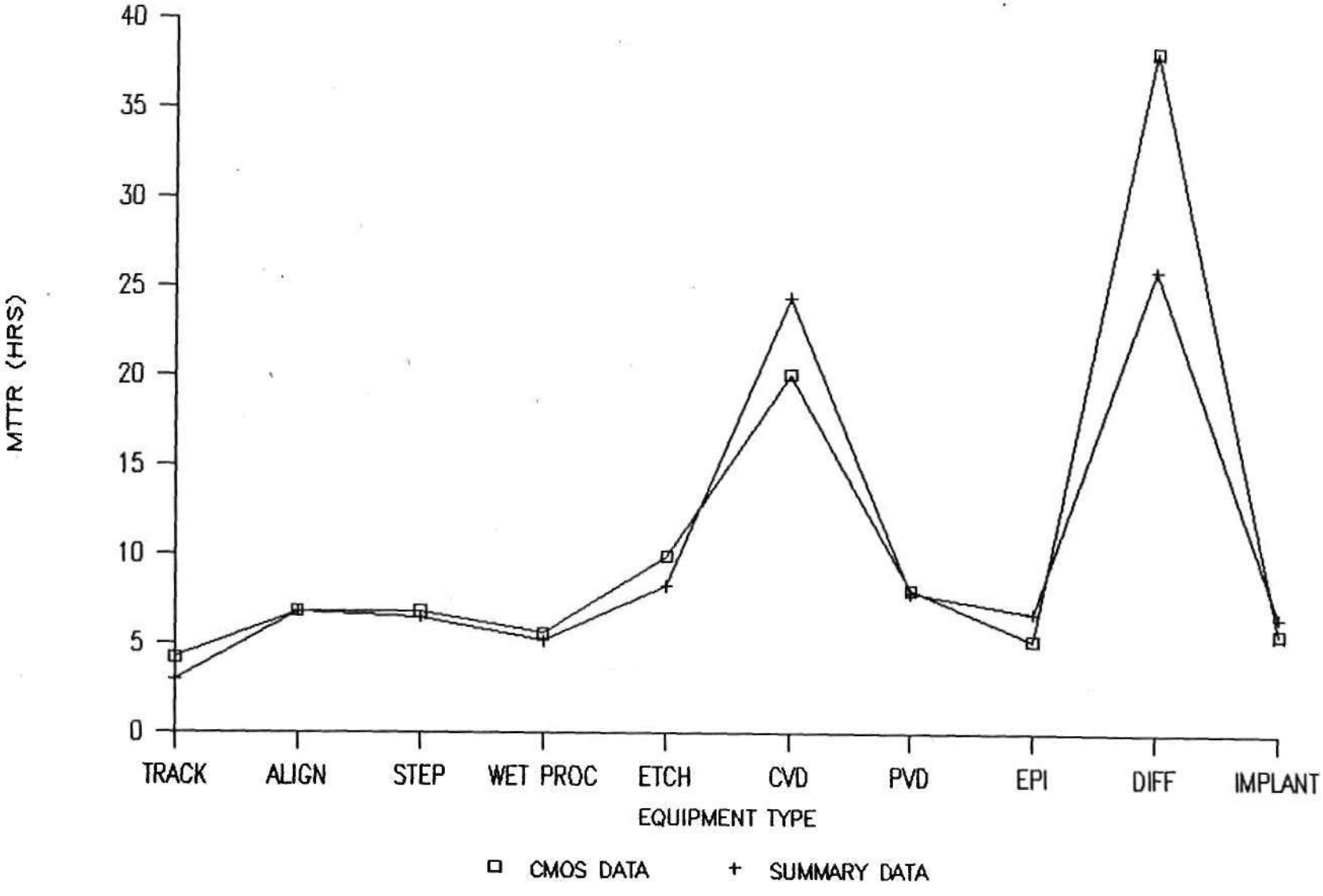
MEAN TIME TO REPAIR: ALL VENDORS

CMOS DATA



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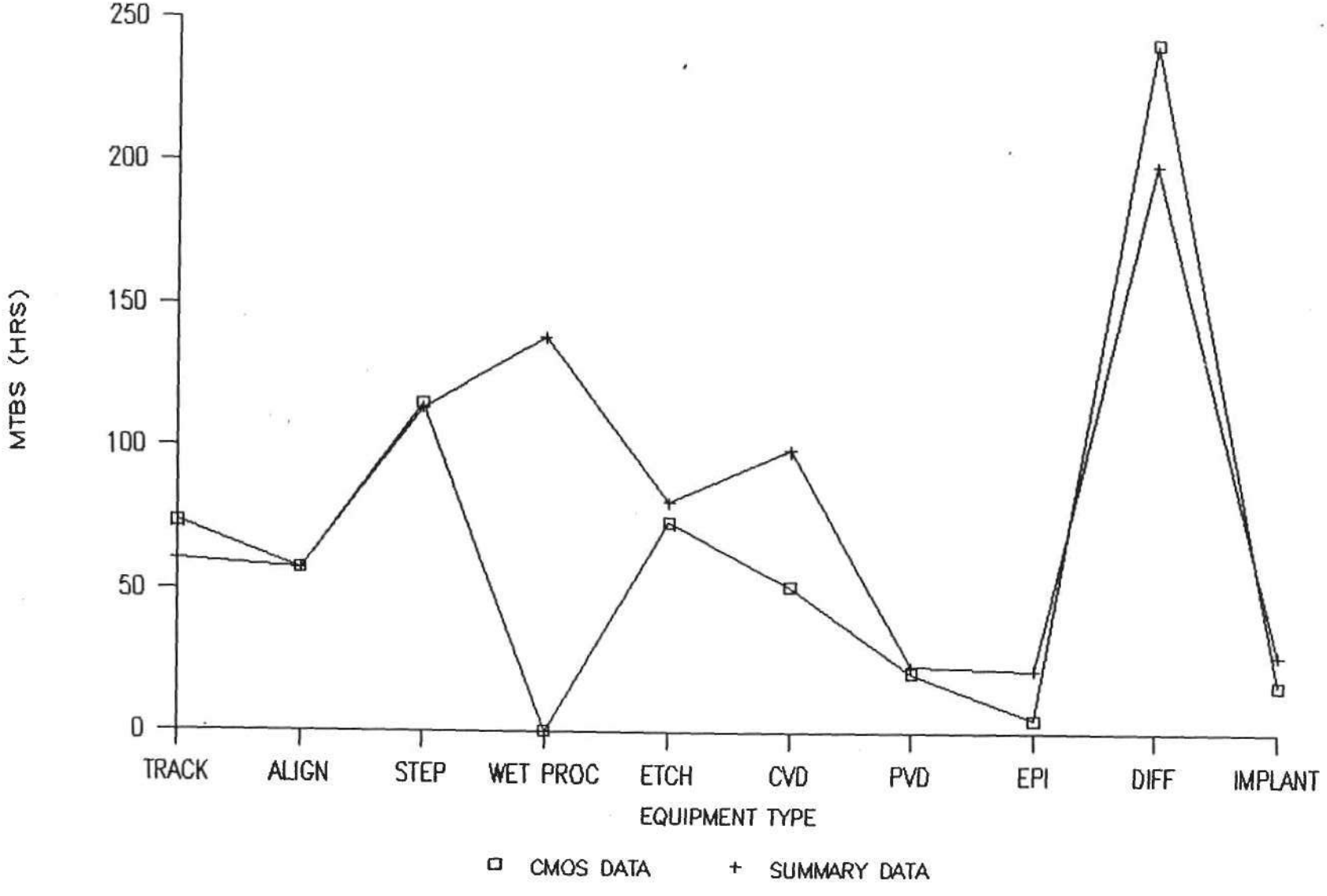
MEAN TIME BETWEEN SET-UPS: ALL VENDORS

CMOS DATA



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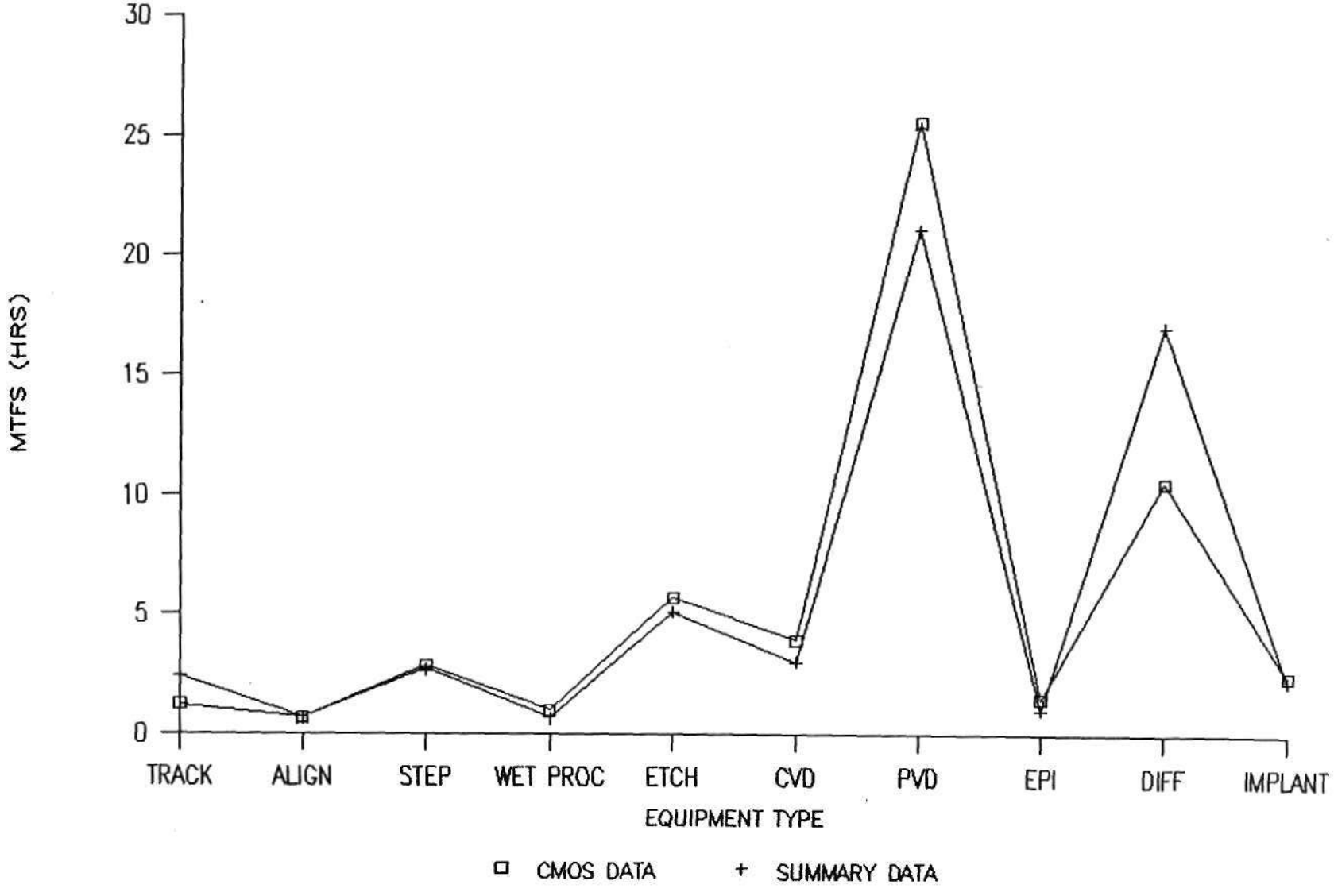
MEAN TIME FOR SET-UP: ALL VENDORS

CMOS DATA



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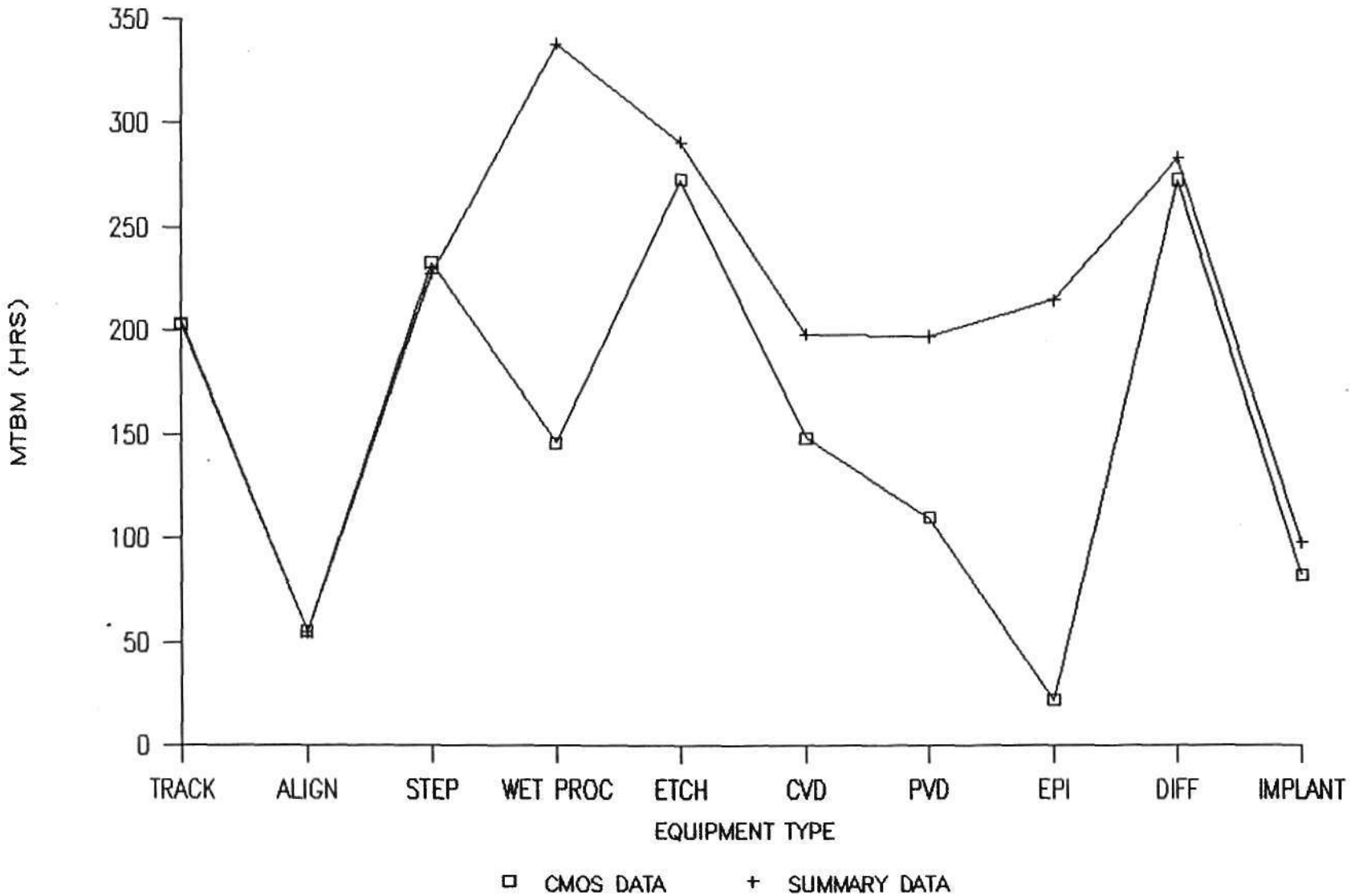
MEAN TIME BTW MAINTENANCE: ALL VENDORS

CMOS DATA



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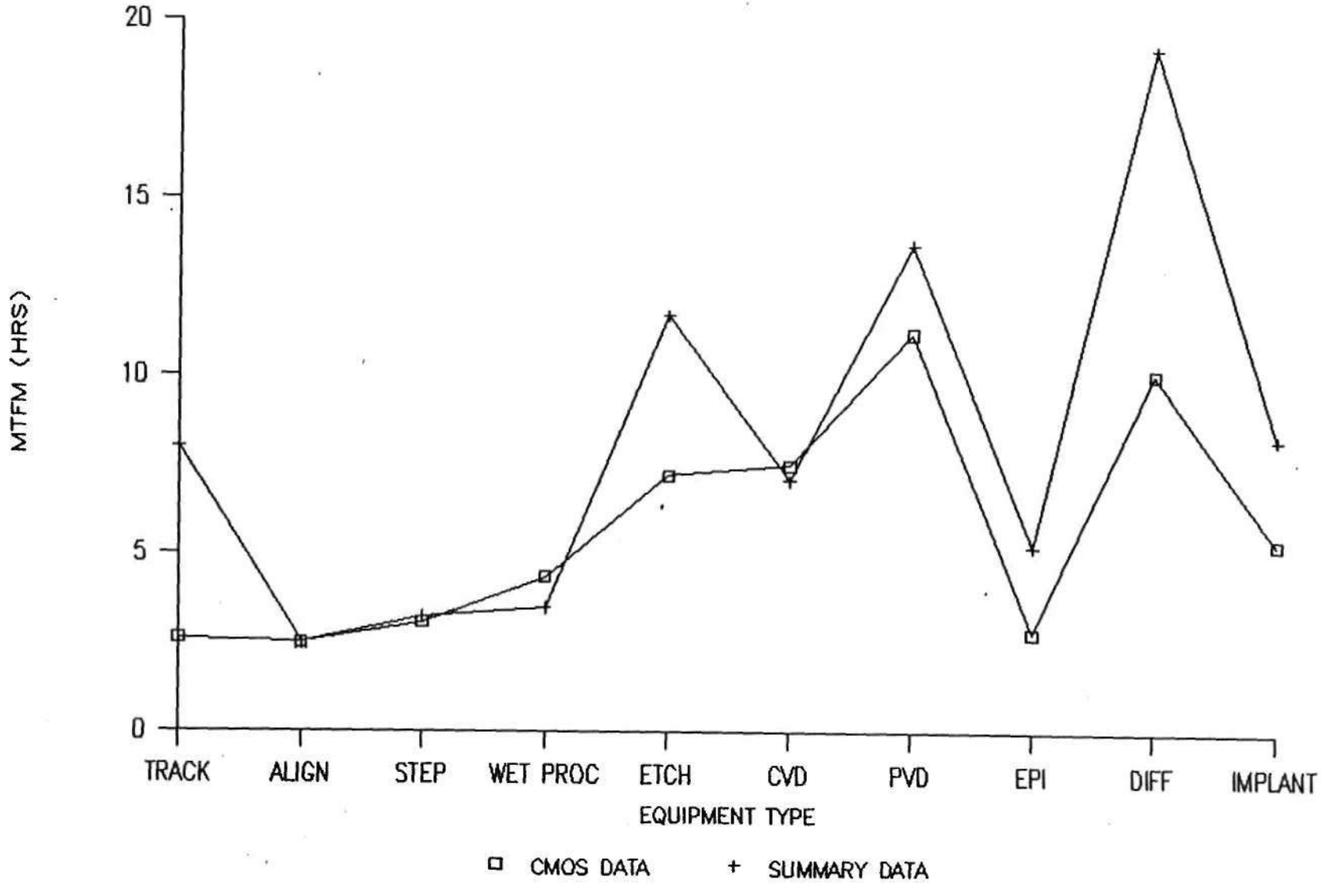
MEAN TIME FOR MAINTENANCE: ALL VENDORS

CMOS DATA



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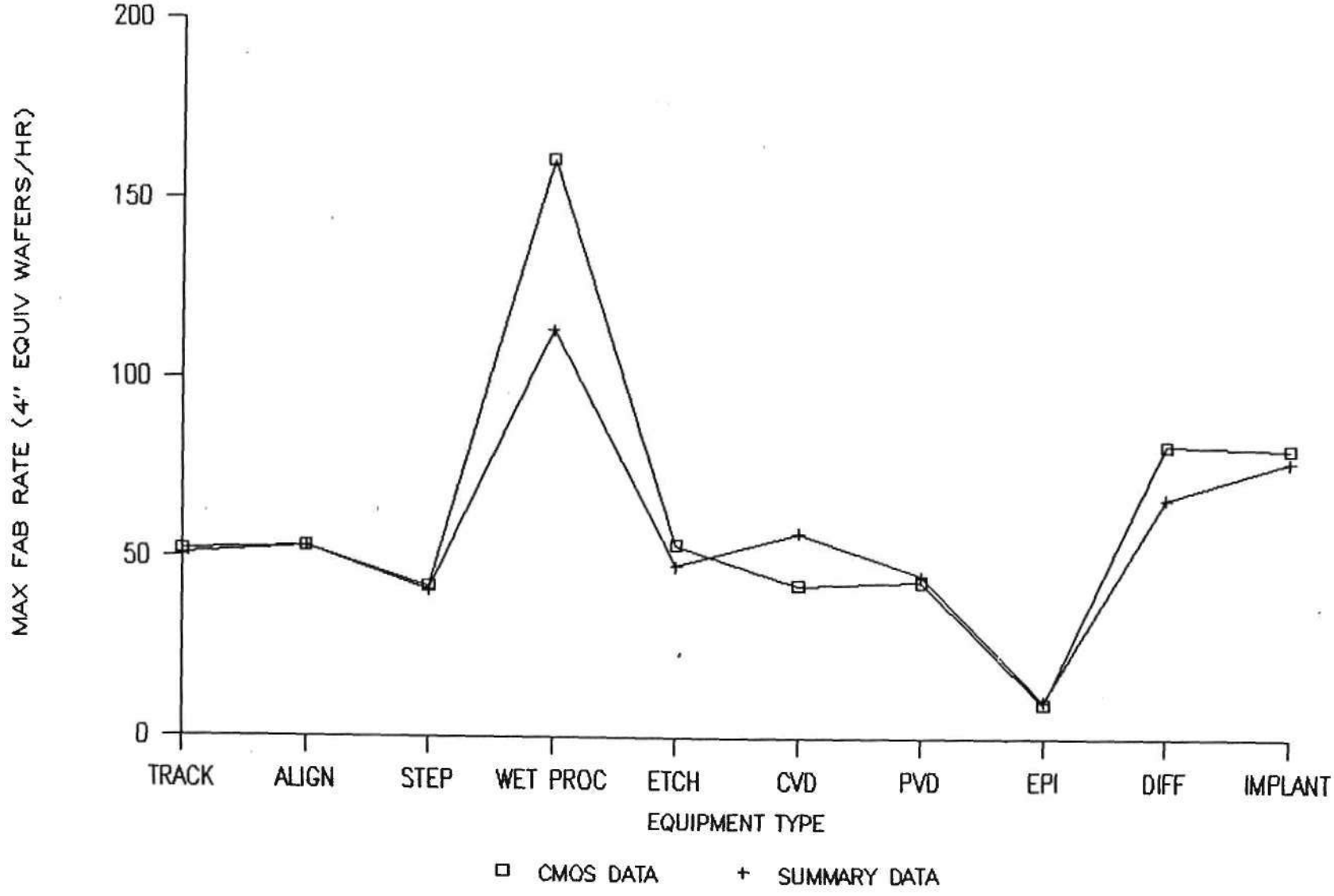
MAX FAB RATE: ALL VENDORS

CMOS DATA



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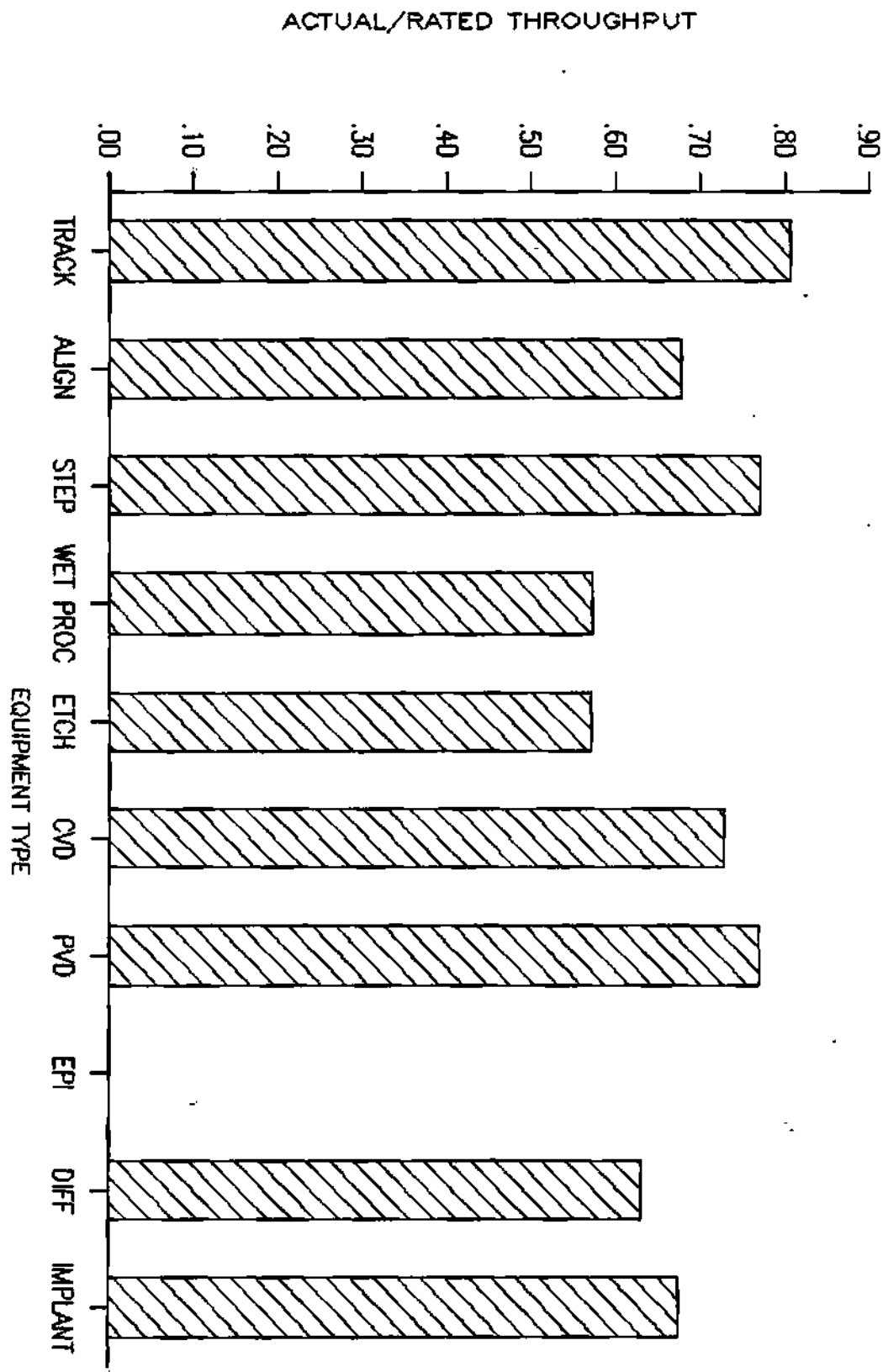
ACTUAL-TO-RATED THROUGHPUT: ALL VENDORS

CMOS DATA



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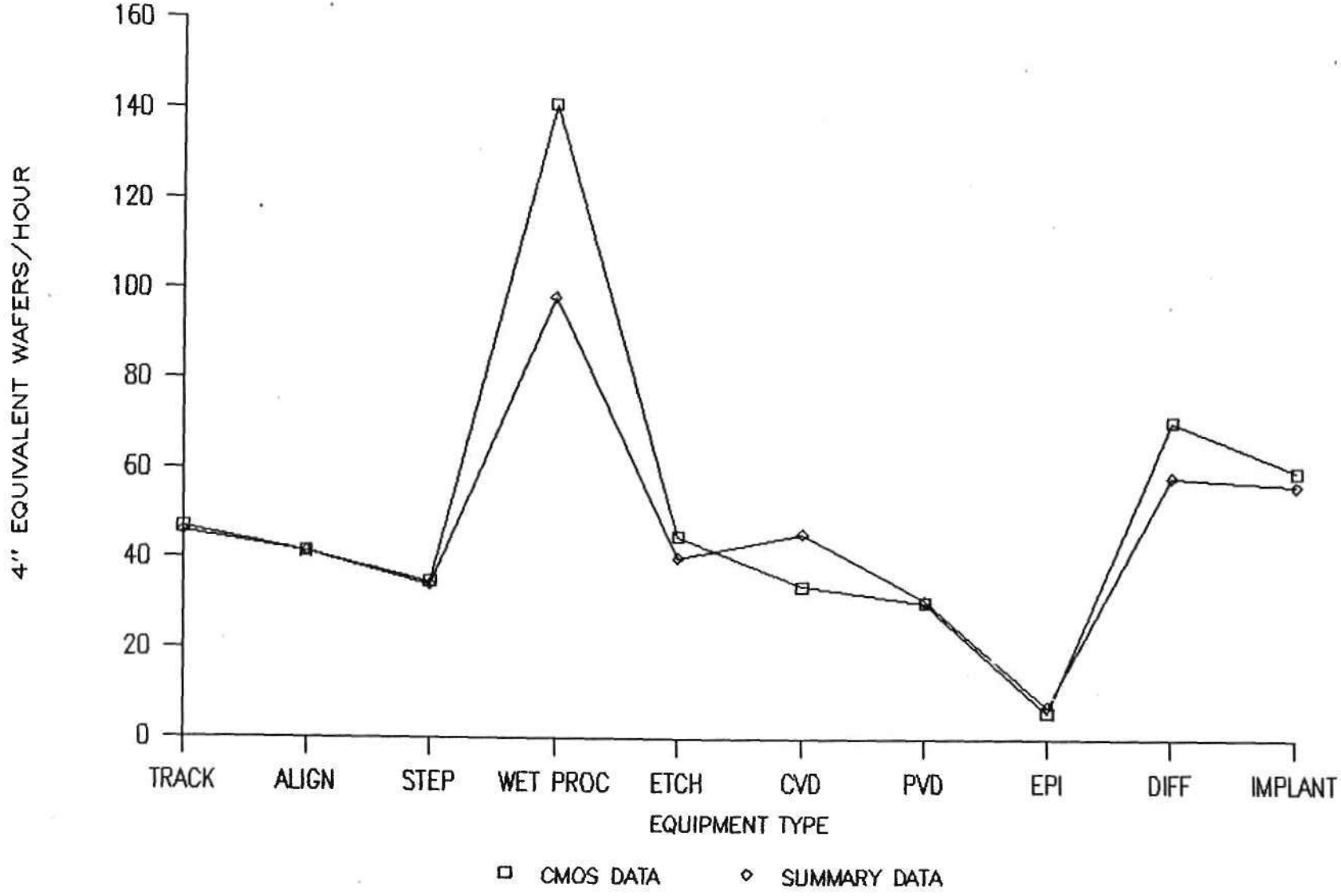
NET THROUGHPUT

ALL VENDORS: CMOS DATA



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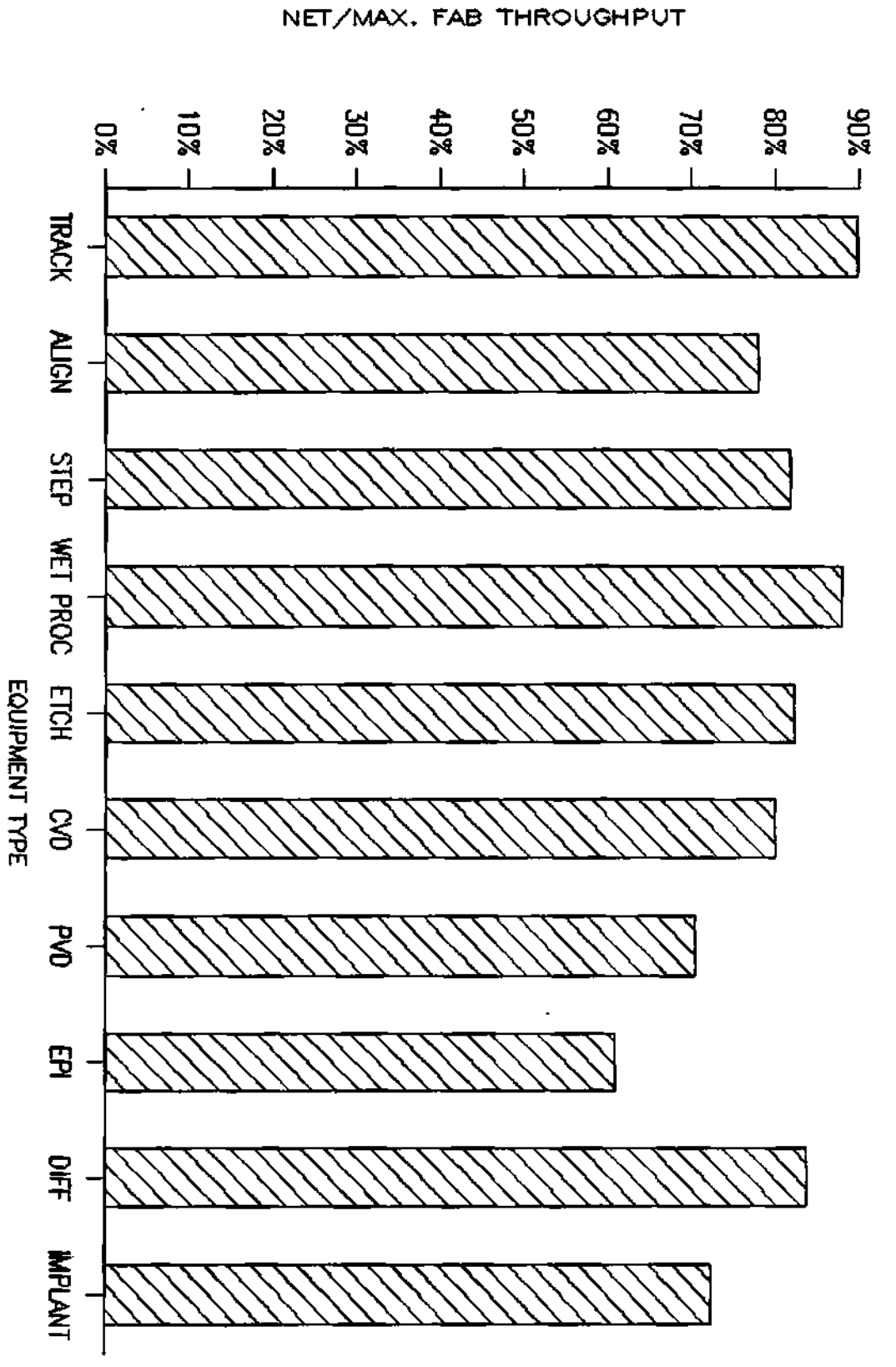
NET-TO-MAX. FAB THROUGHPUT: ALL VENDORS

CMOS DATA



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NMOS EQUIPMENT PERFORMANCE

ITEM	PERFORMANCE PARAMETER	TRACK	ALIGN	STEP WET	PROC	ETCH	CVD	PVD	EPI	DIFF	IMPLANT
1	NUMBER	115	68	81	35	74	34	23	6	87	36
2	AVAILABLE TIME (% of total time)	87%	76%	82%	91%	80%	81%	68%	61%	92%	72%
3	PRODUCTIVE TIME (% of available time)	92%	89%	81%	94%	73%	73%	82%	98%	60%	77%
4	UNSCHEDULED DOWNTIME (hours/quarter)	139	147	169	86	209	145	157	99	77	271
5	SCHEDULED DOWNTIME (hours/quarter)	57	122	126	93	88	96	261	157	56	162
6	MTBF (hrs)	74	51	114	157	116	154	83	42	163	34
7	MTTR (hrs)	5	6	6	5	6	12	8	5	6	6
8	MTBS (hrs)	60	57	122	0	66	47	16	5	169	18
9	MTFS (hrs)	1	1	3	1	3	3	10	2	26	2
10	MTBM (hrs)	186	55	246	92	231	158	112	22	232	82
11	MTFM (hrs)	2	3	4	5	4	8	13	3	34	7
12	RATED THROUGHPUT (wafers/hr: 4" equiv)	82	83	56	225	83	66	63	0	40	129
13	MAX. FAB THROUGHPUT (wafers/hr: 4" equiv)	62	56	43	82	48	47	47	10	35	76
14	ACTUAL/RATED (item #13/item #12)	0.76	0.67	0.76	0.36	0.58	0.71	0.75	-	0.88	0.59
15	NET THROUGHPUT (wafers/hr: item #13 x item #2)	54	43	35	75	38	38	32	6	33	55
16	NET/MAX FAB T.P. (item # 15/item # 13)	87%	76%	82%	91%	80%	81%	68%	61%	92%	72%

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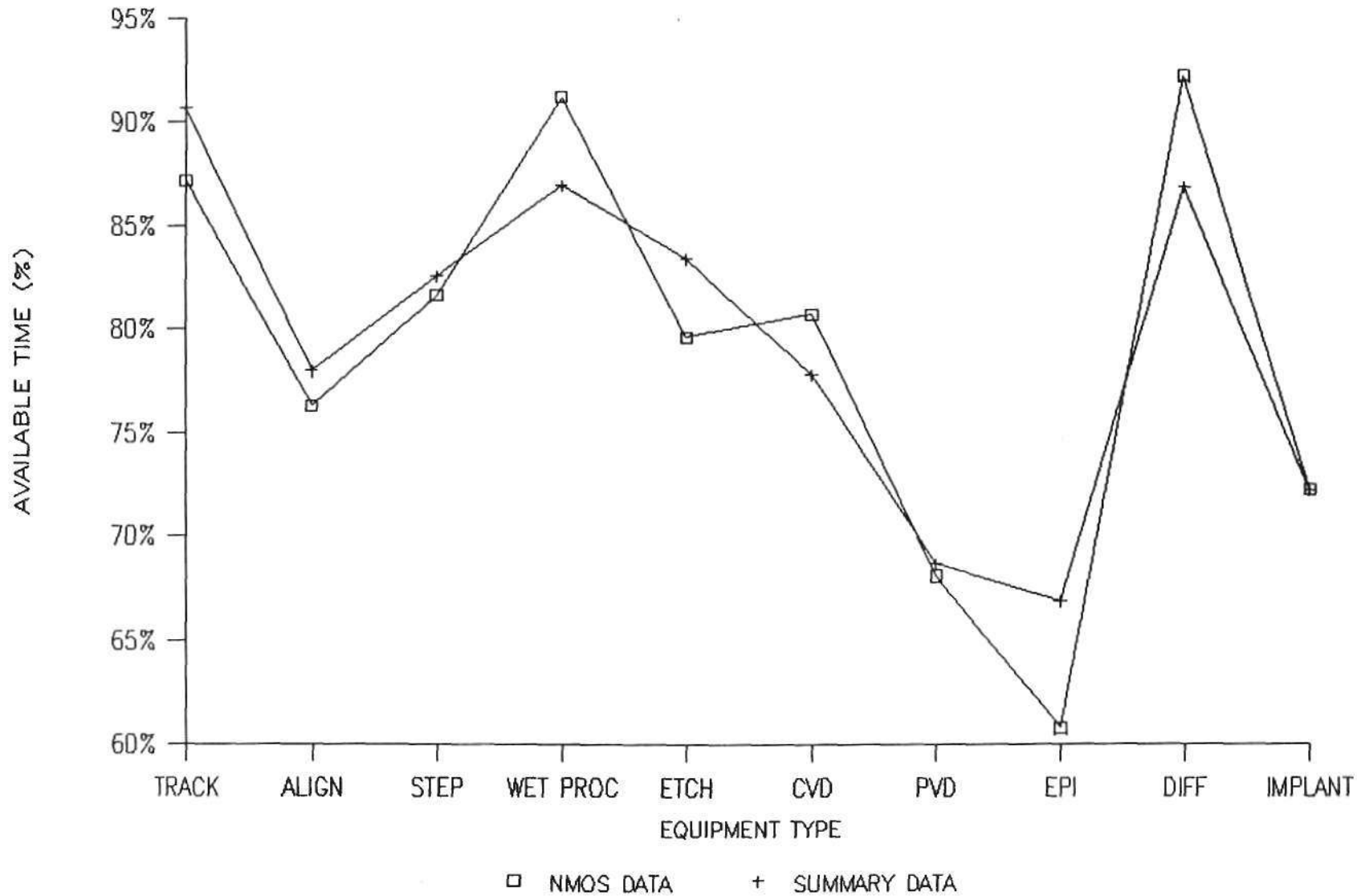
AVAILABLE TIME: ALL VENDORS

NMOS DATA



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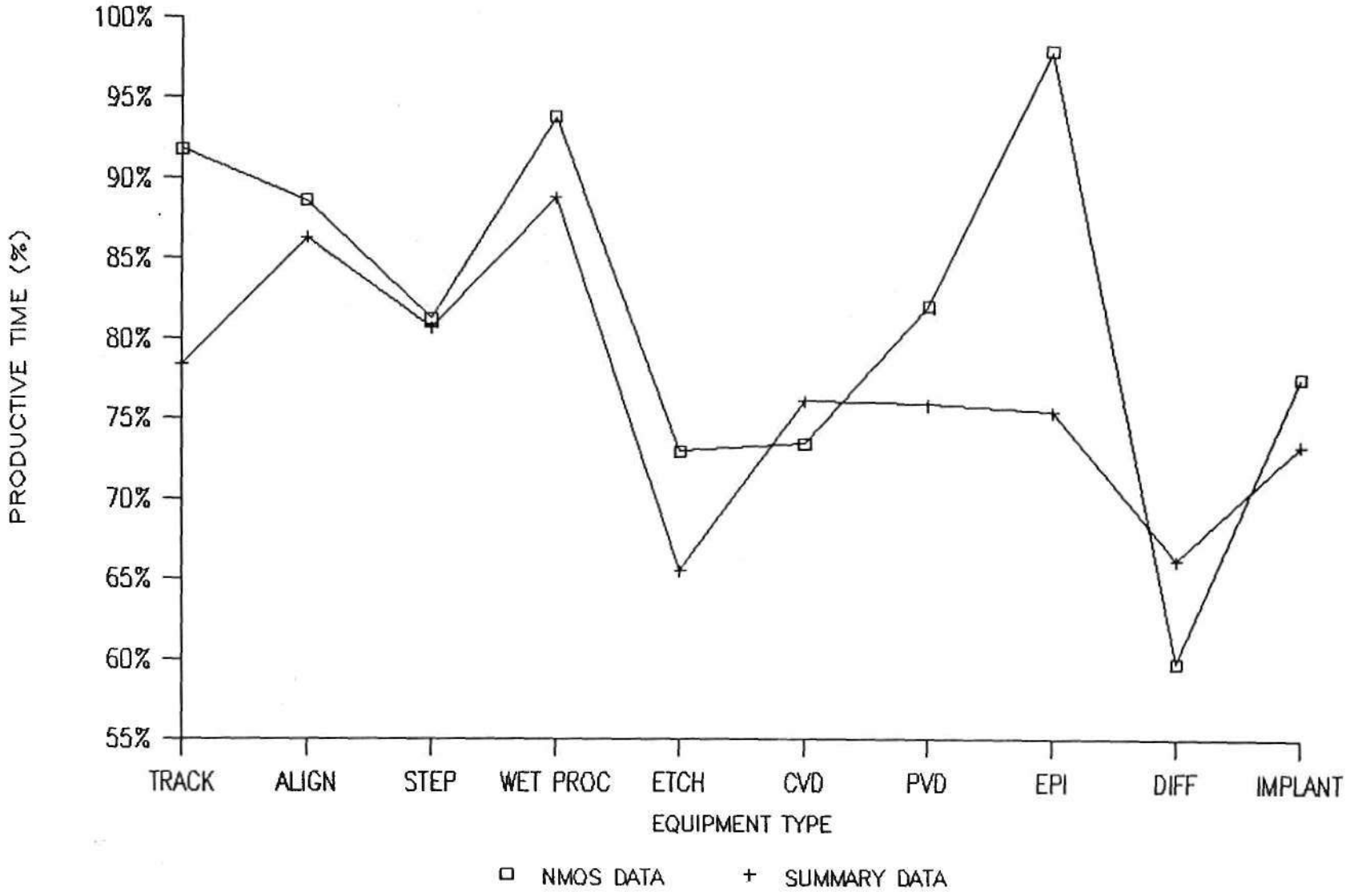
PRODUCTIVE TIME: ALL VENDORS

NMOS DATA



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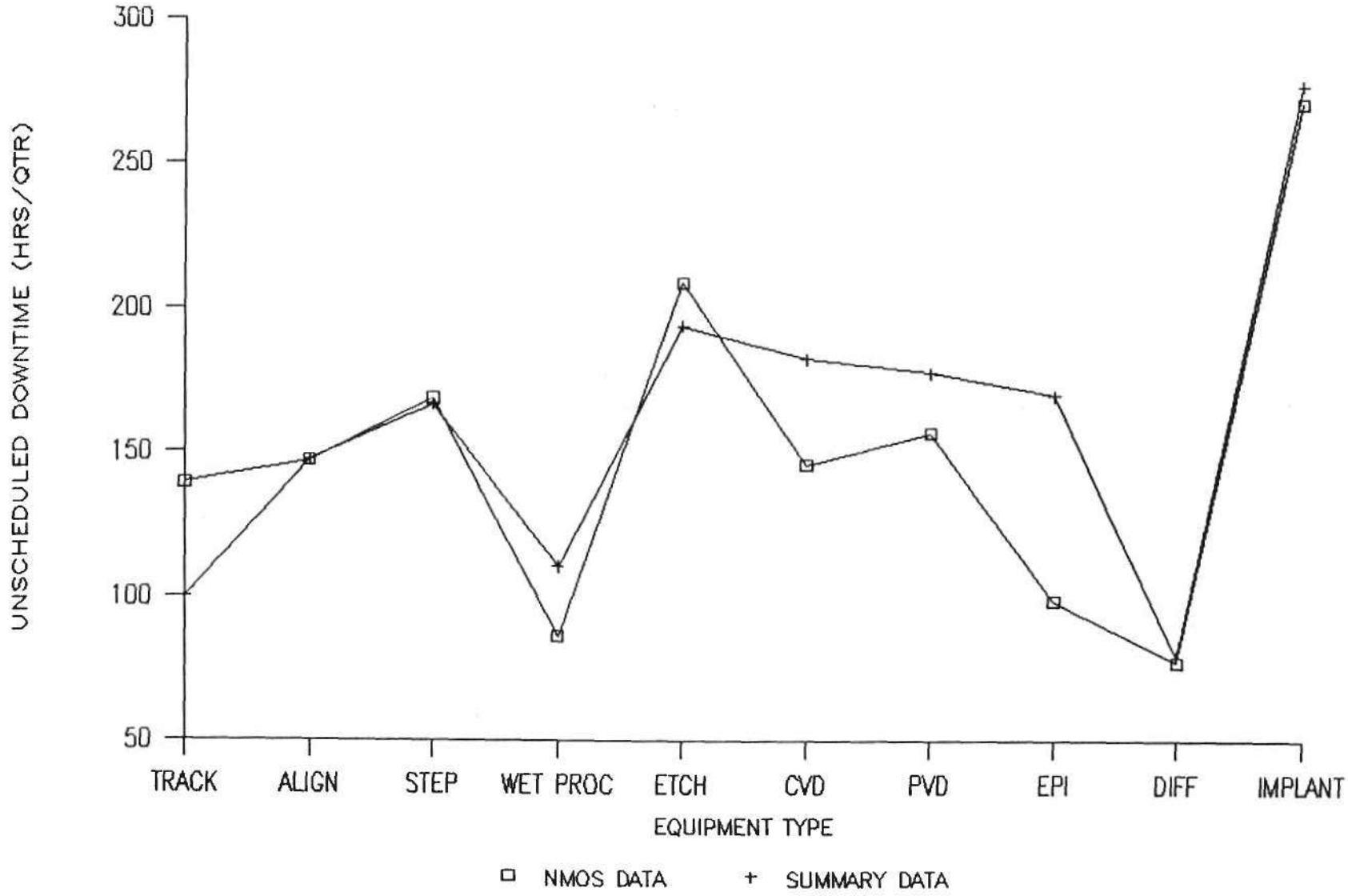
UNSCHEDULED DOWNTIME: ALL VENDORS

NMOS DATA



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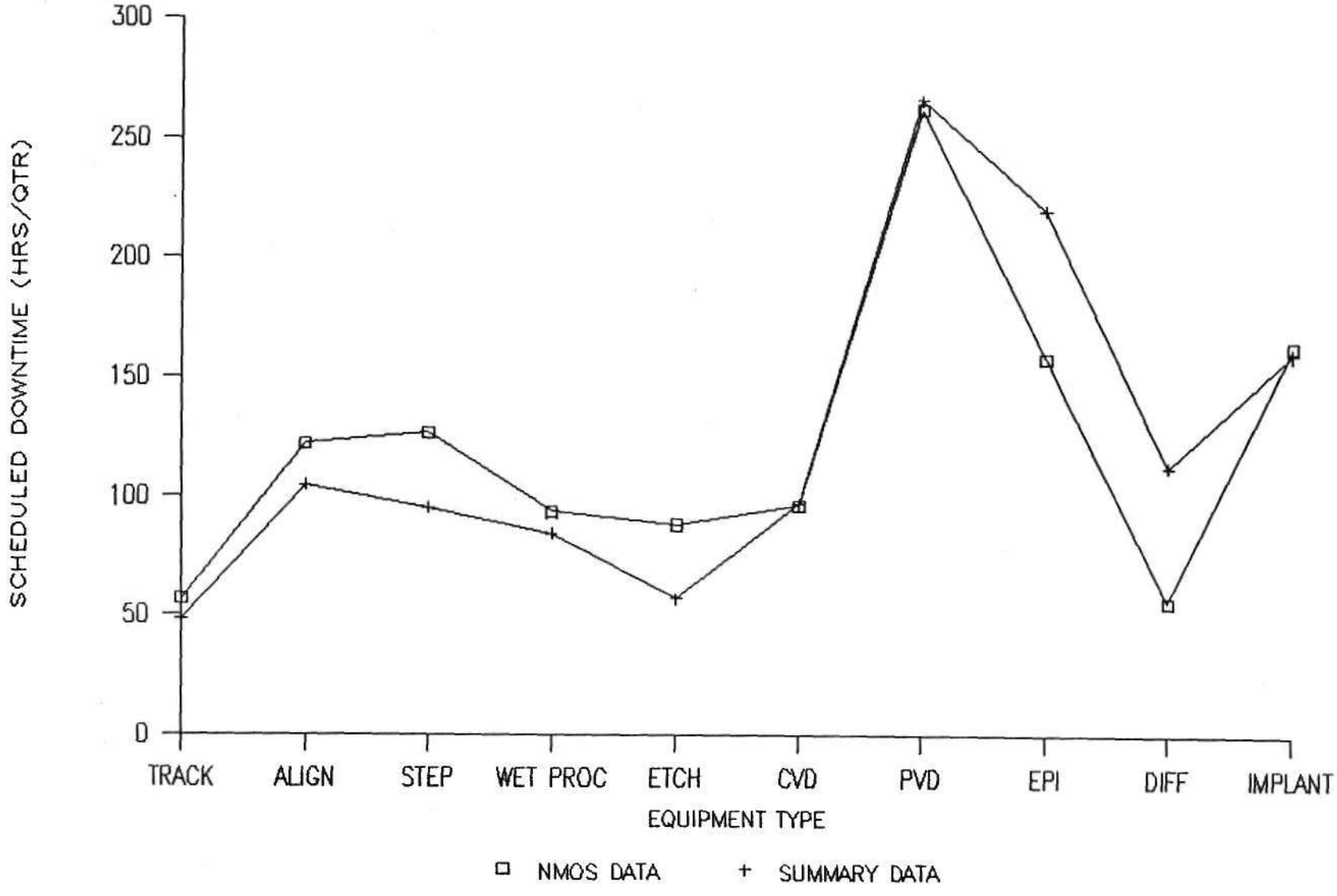
SCHEDULED DOWNTIME: ALL VENDORS

NMOS DATA



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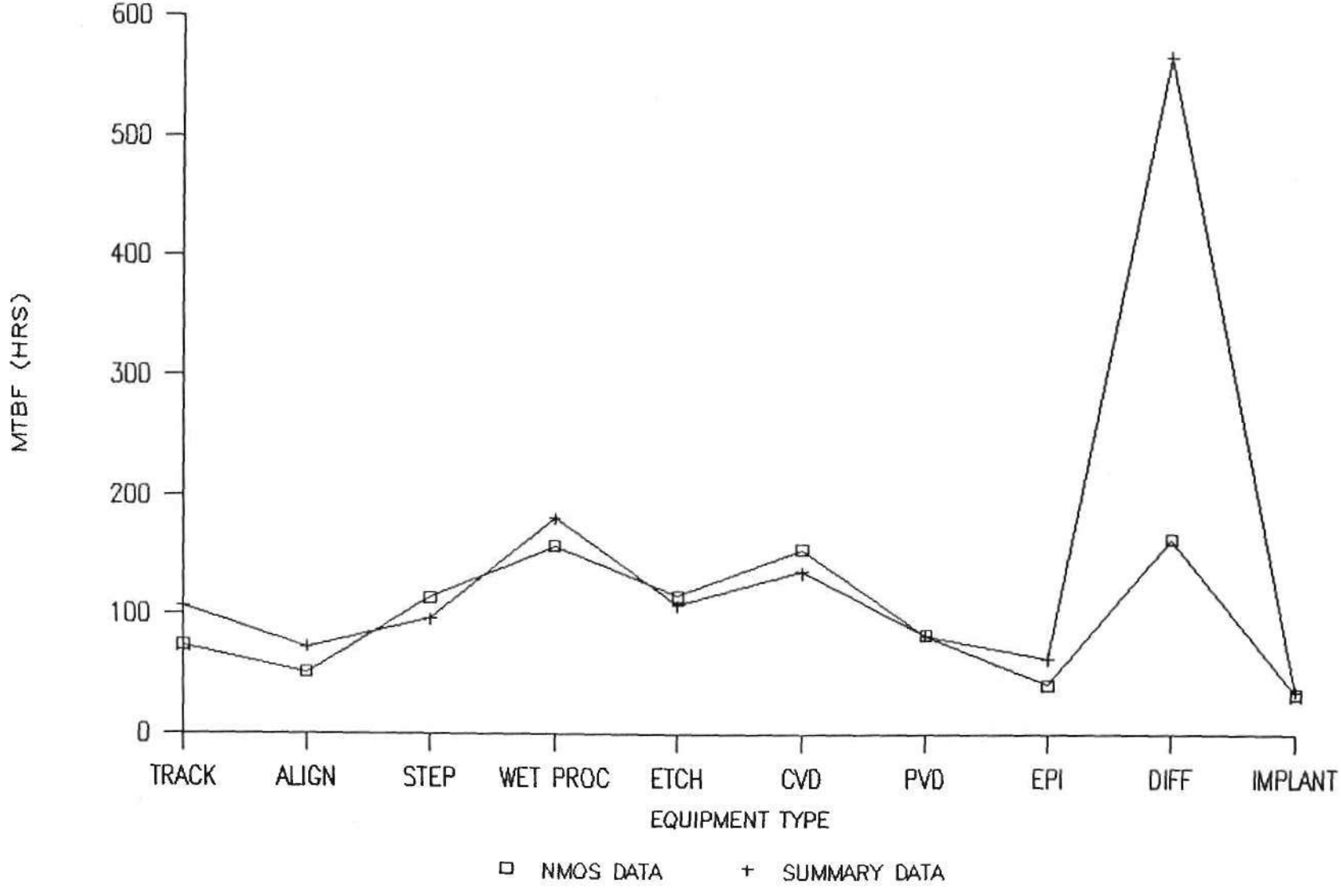
MEAN TIME BETWEEN FAILURE: ALL VENDORS

NMOS DATA



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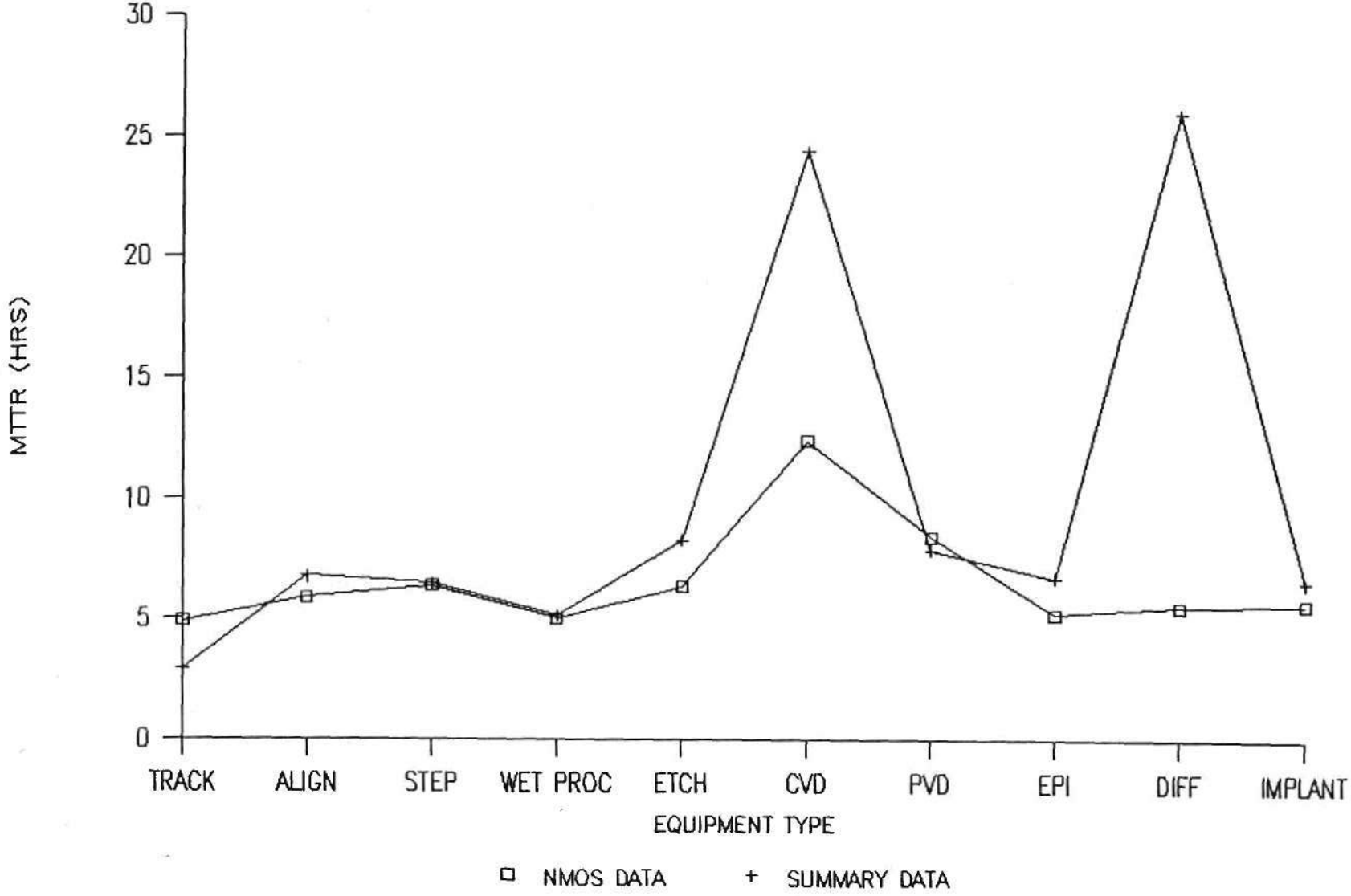
MEAN TIME TO REPAIR: ALL VENDORS

NMOS DATA



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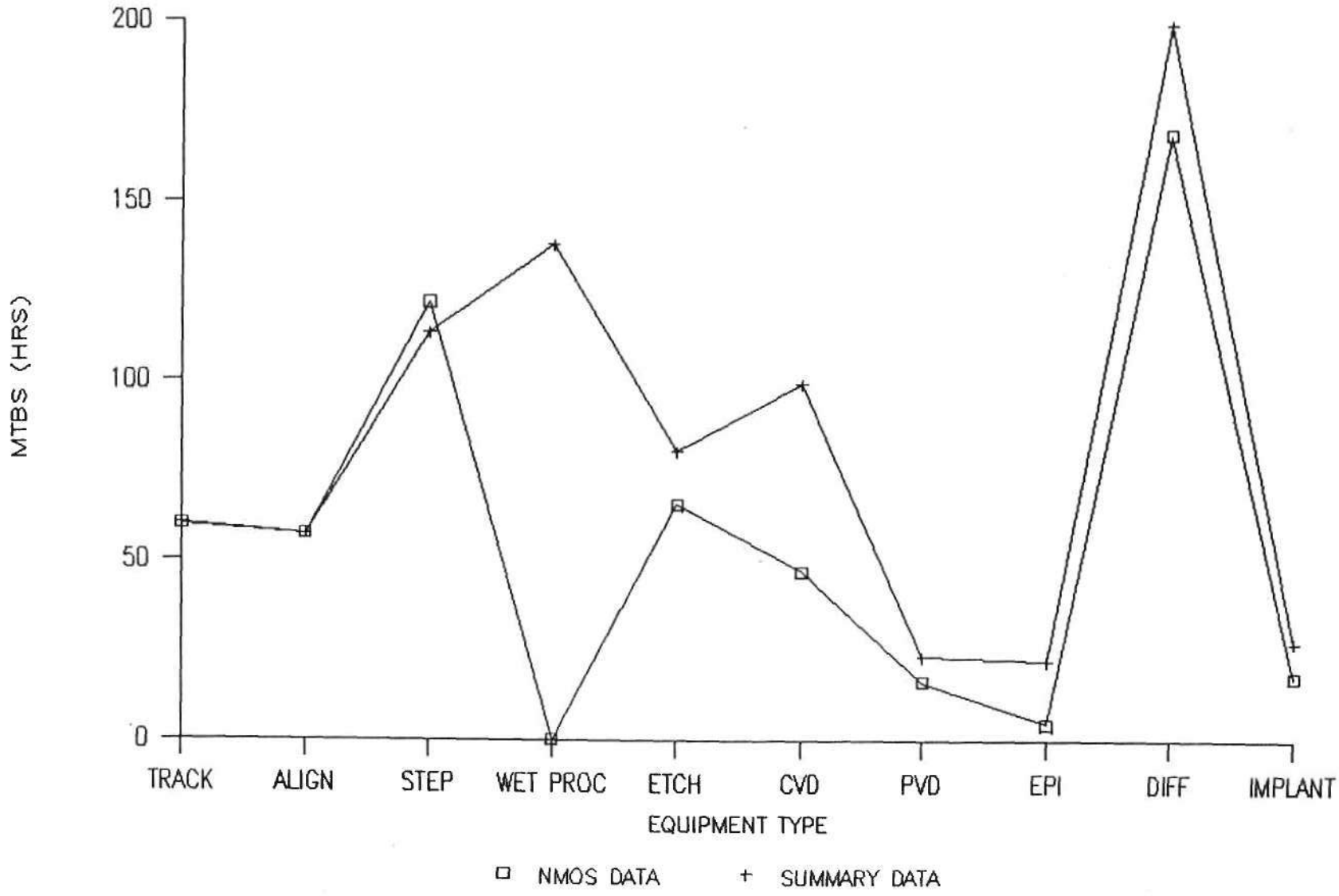
MEAN TIME BETWEEN SET-UPS: ALL VENDORS

NMOS DATA



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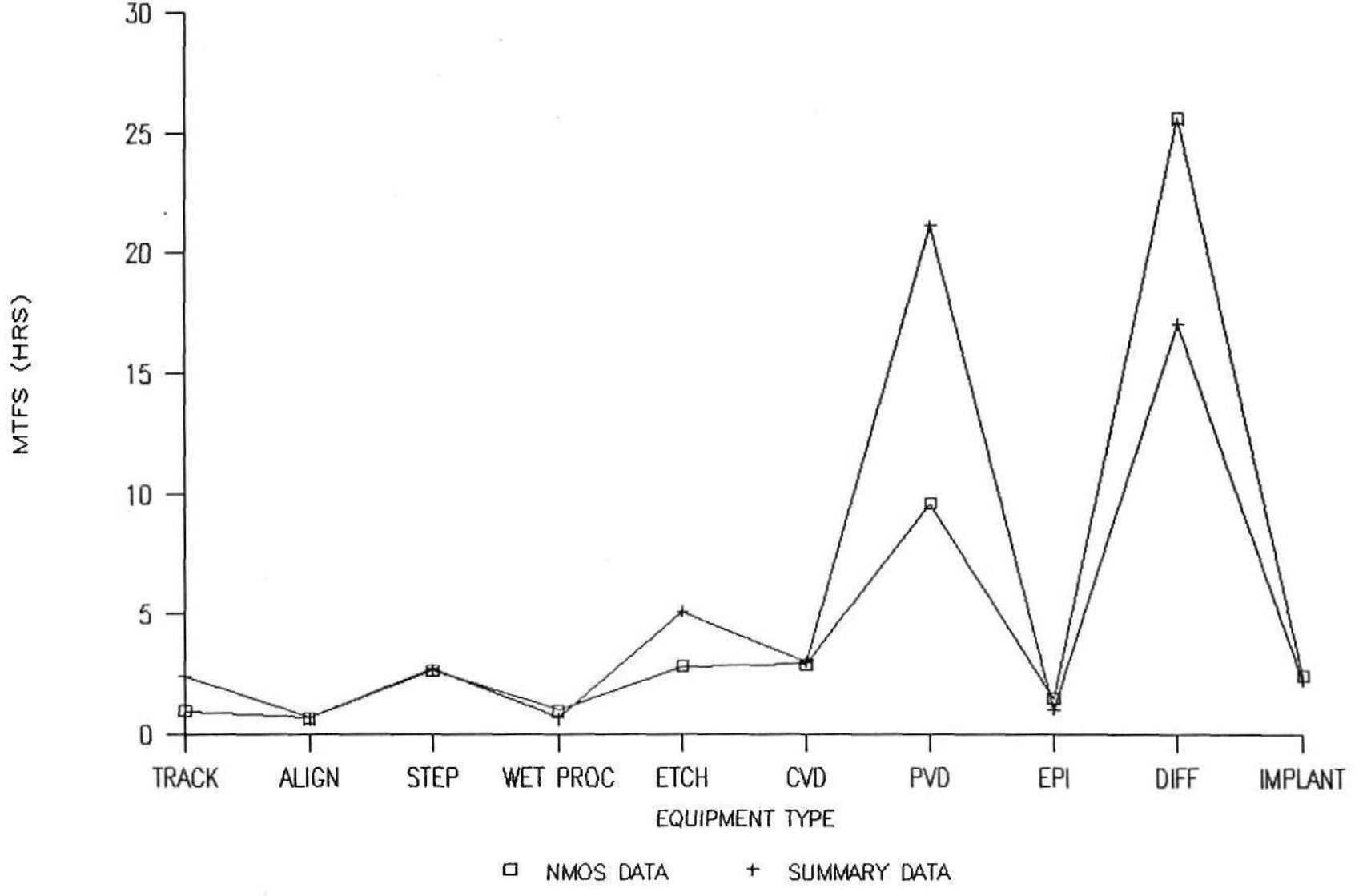
MEAN TIME FOR SET-UP: ALL VENDORS

NMOS DATA



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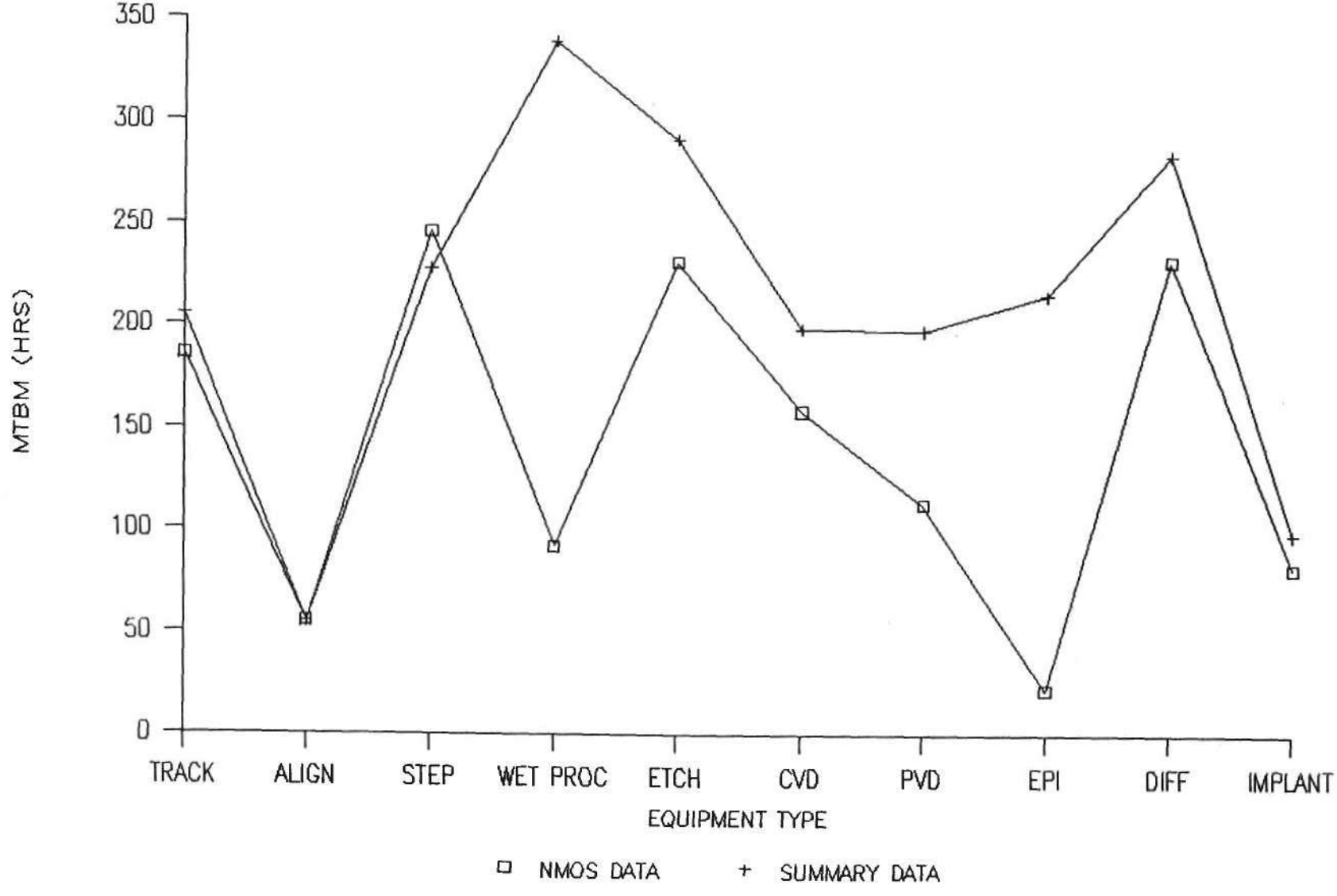
MEAN TIME BTW MAINTENANCE: ALL VENDORS

NMOS DATA



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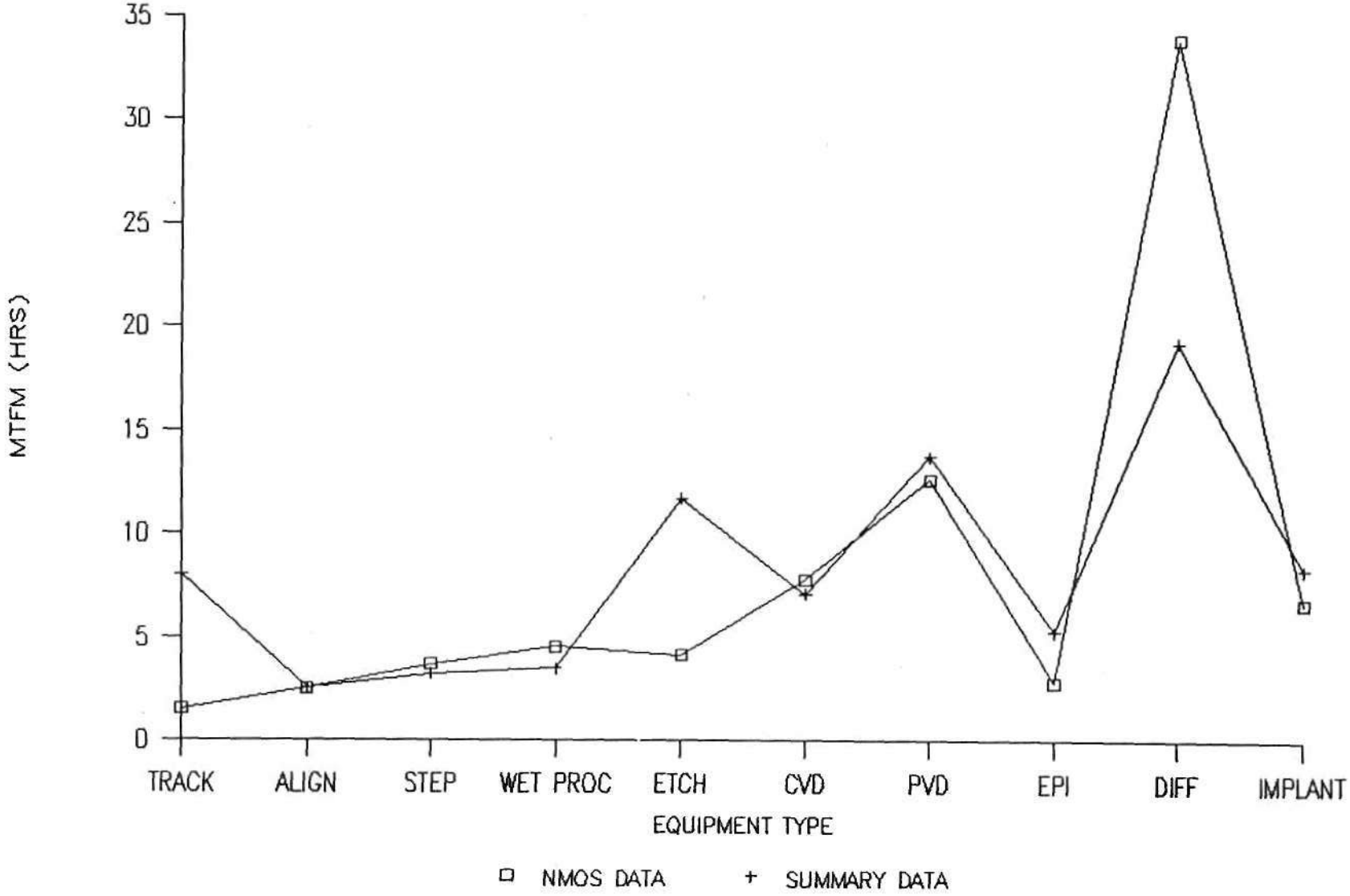
MEAN TIME FOR MAINTENANCE: ALL VENDORS

NMOS DATA



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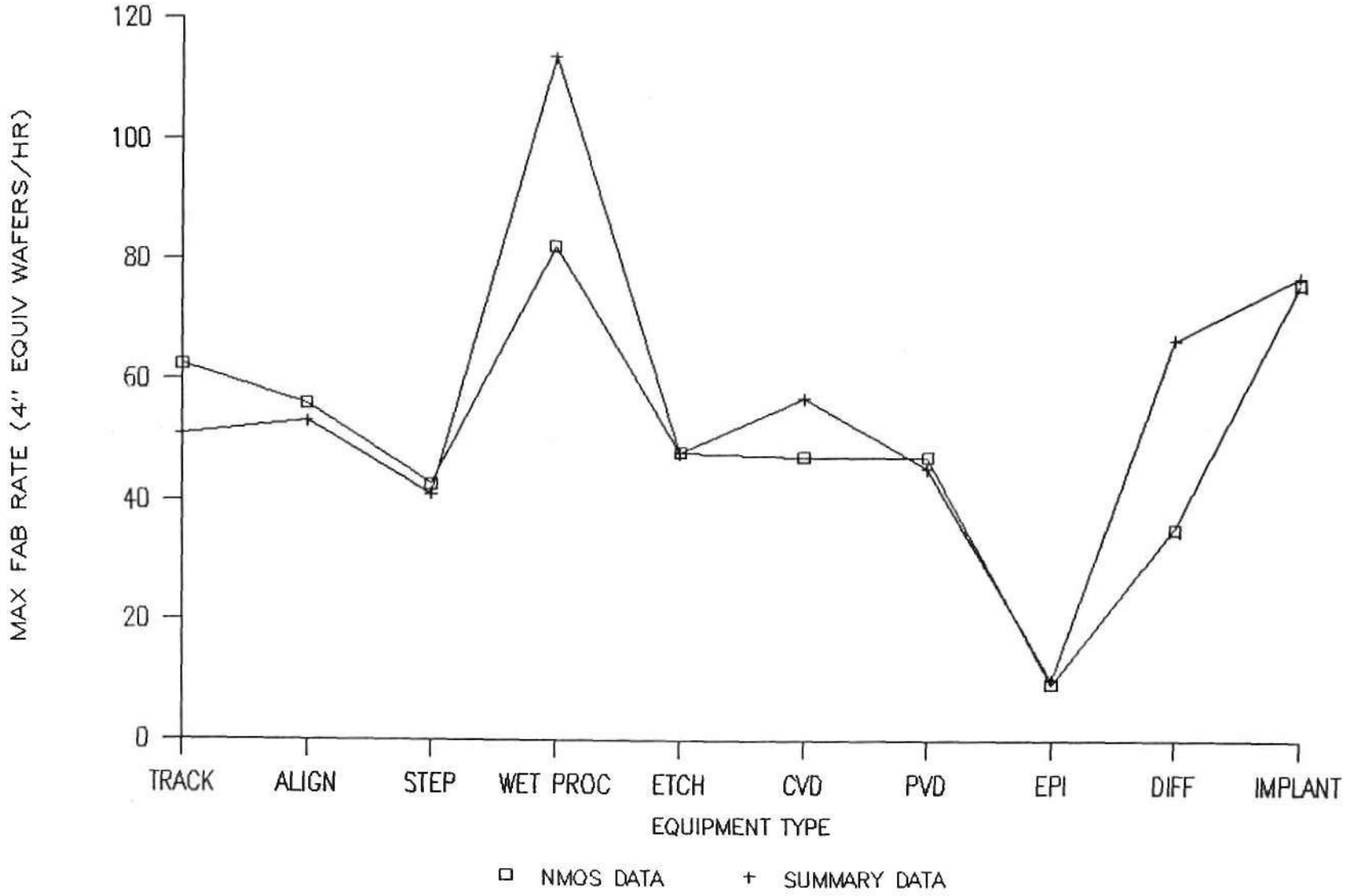
MAX FAB RATE: ALL VENDORS

NMOS DATA



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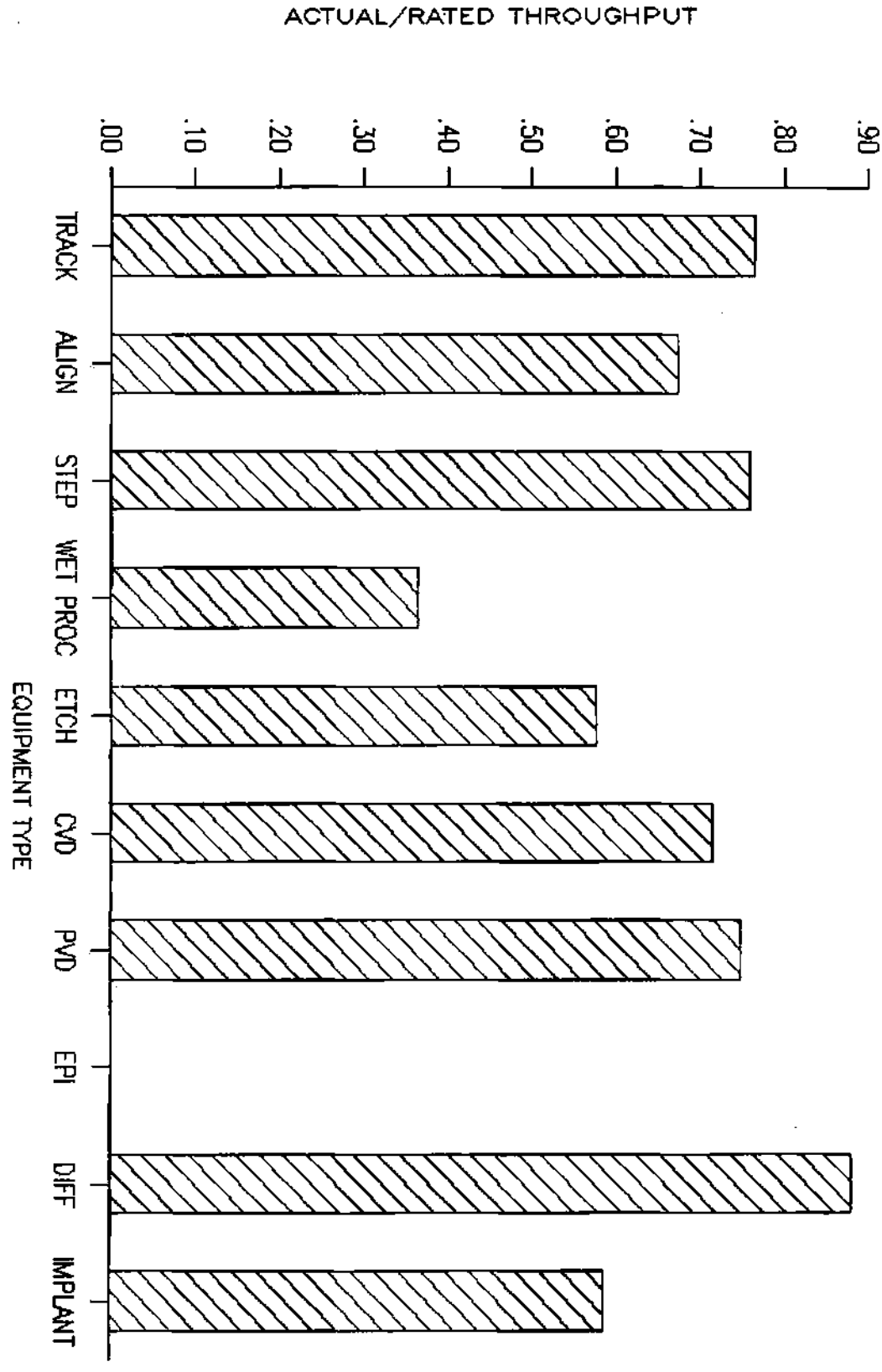
ACTUAL-TO-RATED THROUGHPUT: ALL VENDORS

NMOS DATA



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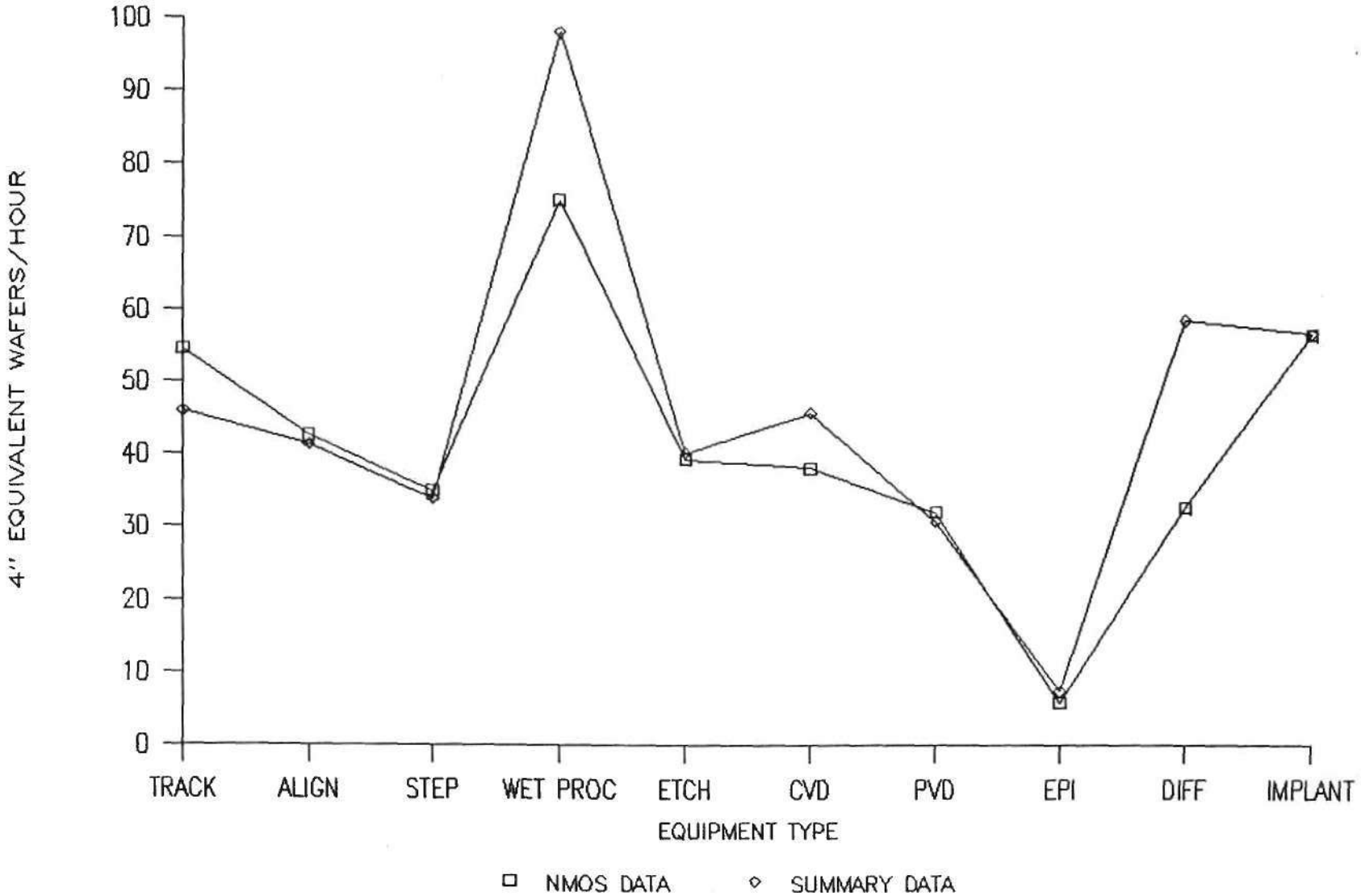
NET THROUGHPUT

ALL VENDORS: NMOS DATA



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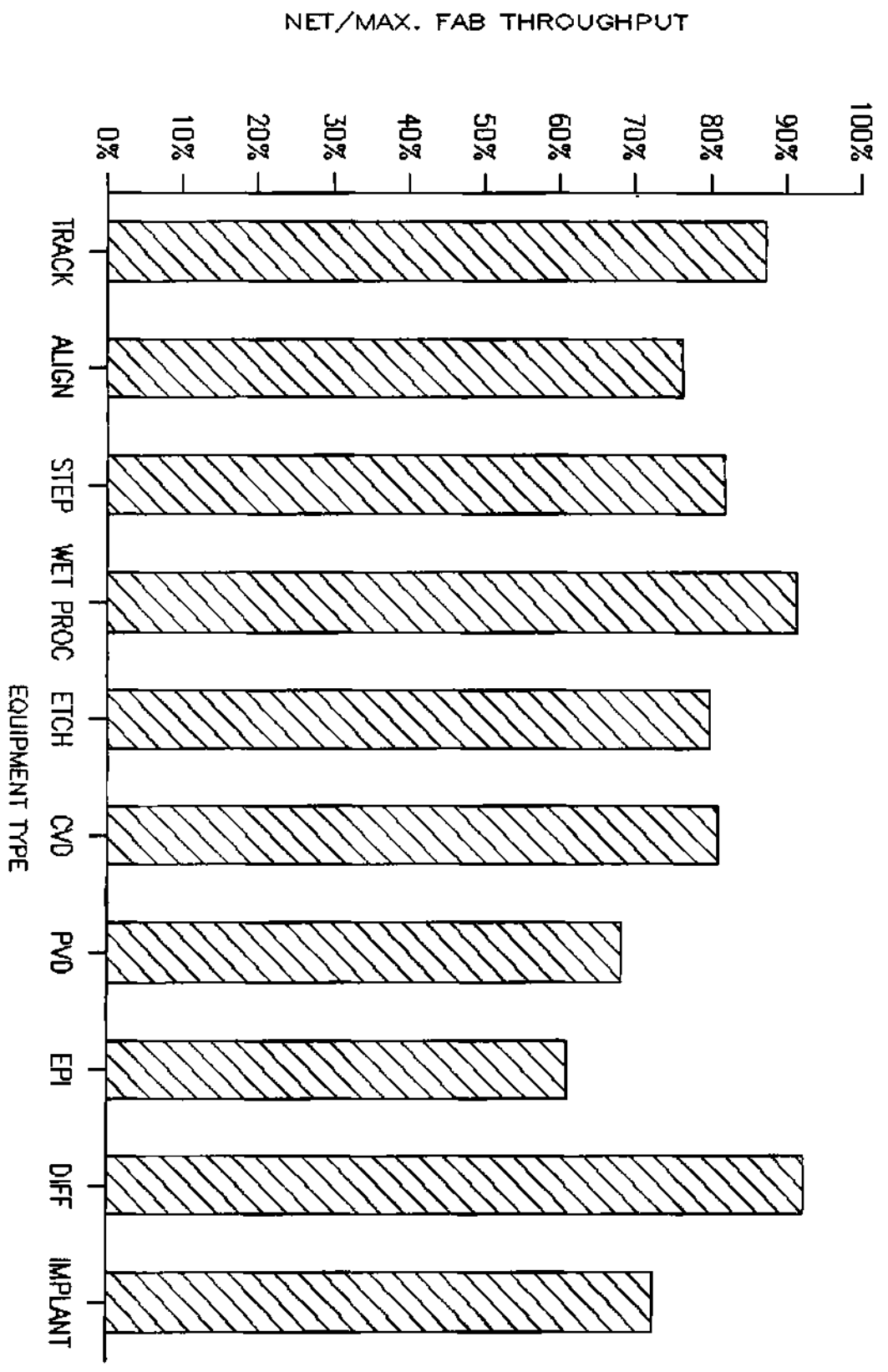
NET-TO-MAX. FAB THROUGHPUT: ALL VENDORS

NMOS DATA



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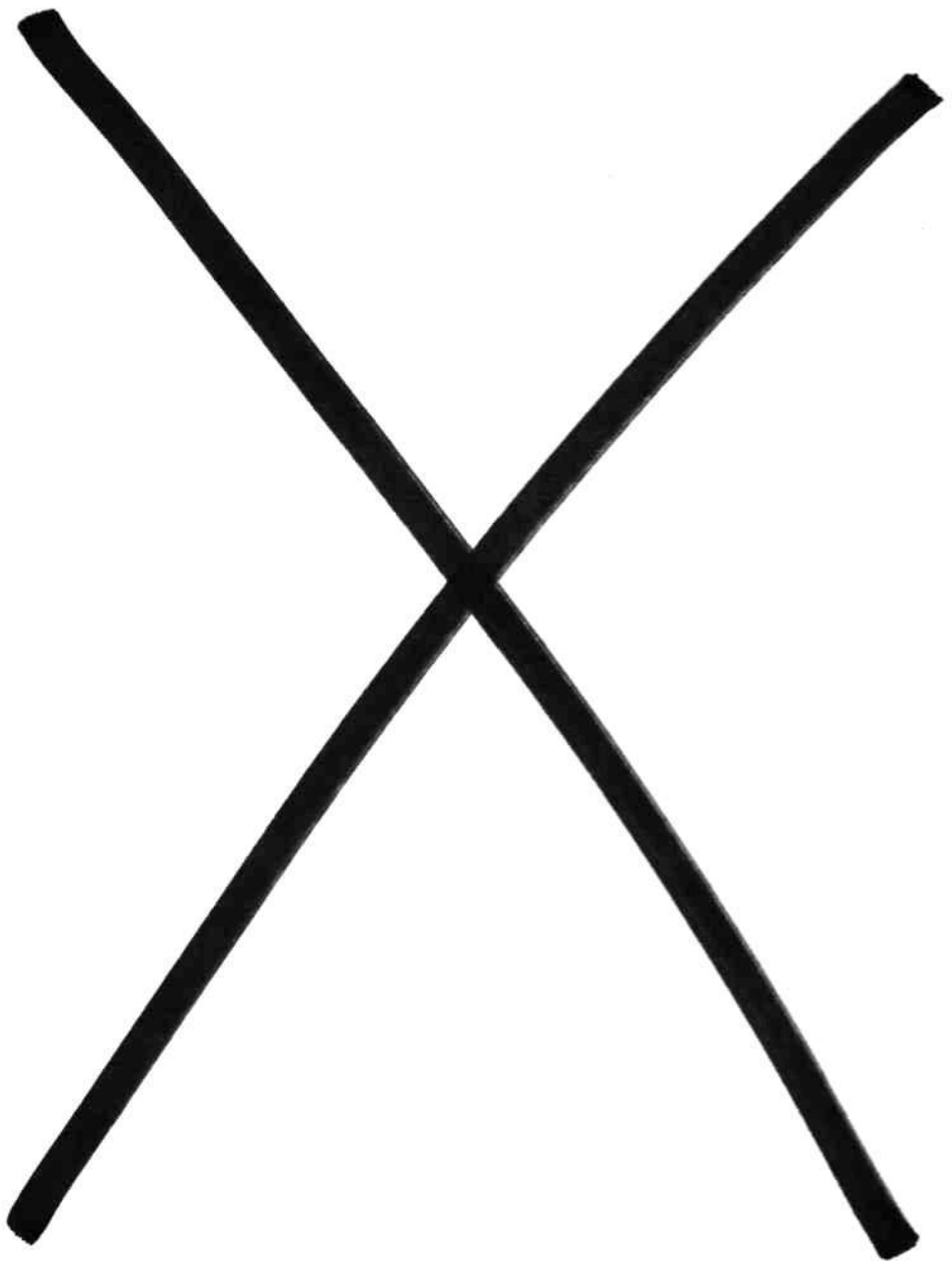

FAILURE ANALYSIS

Respondents were asked to list the major causes of equipment failure by model number. In addition to listing these major causes of individual equipment failure, respondents were also asked the number of such failures per 1,000 cycles of operation. This is reported in the following table under the heading, "Frequency."

The results of this data were tabulated and are presented herein by equipment category. Dataquest standardized the description of failure causes as reported so that failures could be tabulated using somewhat standardized terminology. Except for this change, the data in this section is presented as it was reported by respondents.

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ALIGNER FAILURE ANALYSIS

EQUIP COUNT	MODEL	FAILURE 1	FREQ	FAILURE 2	FREQ	FAILURE 3	FREQ	FAILURE 4	TOTAL ALL FAILURES
	CANON								
1	MPA500FA	NO AUTO-ALIGN	0.2	INDEX	0.1	DROP WAFER	0.1	PRE-ALIGN ADJ	0.90
9	MPA500FAB	PRE-ALIGN		AUTO-HANDLER		CHUCK		ELEVATOR, FOCUS	
1	MPA600FA	NO AUTO-ALIGN	0.2	INDEX	0.1	DROP WAFER	0.1	PRE-ALIGN ADJ	0.50
1	MPA-500	FOCUS	0.7	MIS-ALIGN	0.2				1.49
6	PLA501	GAP	0.5	INDEXER	0.4	PRE	0.4		1.40
6	PLA501	MECHANICAL	0.64	OPTICS	0.21	PNEUMATICS	0.28		1.13
1	PLA501F	PRE-ALIGN	3	GAP-UNIT	2	BELTS	1		6.00
1	PLA501FA	NO AUTO-ALIGN	0.2	VACUUM CHUCK	0.1	03 ERROR	0.1	2.2 ERROR, GAP	0.60
1	PLA501FA	PRE-ALIGN	3	GAP-UNIT	2	LASER	1	BELTS	7.00
7	PLA501F	DEFOCUS	0.4	ALIGNMENT	0.3				
	PERKIN-ELMER								
18	PKN-340	FOCUS 33	20	LOADER	25				60.00
1	PKN-340	OVEN		SPIN		RESIST DRIPS		RESIST DESPENSE, CHUCK VAC	

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WET PROCESSING FAILURE ANALYSIS

EQUIP COUNT	MODEL	FAILURE 1	FREQ	FAILURE 2	FREQ	OTHER FAILURES	ALL FAILURES
	FSI						
1	FSI2120	FLOW	1				1.00
1	FSI4331	ELECTRONIC	1	MECHANICAL	1		2.00
1	FSI8231	FLOW	1				1.00
1	FSI2130	LID		PARTICLES		LEAKS, LOST PROGRAM, DEVICE DISINTEGRATION	

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WET PROCESSING FAILURE ANALYSIS

EQUIP COUNT	MODEL	FAILURE 1	FREQ	FAILURE 2	FREQ	OTHER FAILURES	ALL FAILURES
	FSI						
1	FSI2120	FLOW	1				1.00
1	FSI4331	ELECTRONIC	1	MECHANICAL	1		2.00
1	FSI8231	FLOW	1				1.00
1	FSI2130	LID		PARTICLES		LEAKS, LOST PROGRAM, DEVICE DISINTEGRATION	

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CVD FAILURE ANALYSIS

EQUIP COUNT	MODEL	FAILURE 1	FREQ	FAILURE 2	FREQ	FAILURE 3	FREQ	FAILURE 4	FREQ	FAILURE 5	FREQ	TOTAL FAILURES
	APPLIED MATERIALS											
1	AMT-2100	TEMPERATURE	3	FLOW-CONTROL	1	FILTER	1	GAS	1	CHAIN	1	7.00
2	AMT-2000	ELECTRONIC	0.12	MECHANICAL	0.25							0.38
2	AMT-2100	EXHST UNSTABLE		TEMP ERR			0.1					
5	AMT-3300	ELECTRONIC	54.6	VACUUM	9	MECHANICAL	4.5					68.10
	ASM											
4	ASM-3	FLOW CONTROL	1	NUPRO	1	TEMP CONTROL	1	GAS	1	CONTAMINATION	2	6.00
1	ASM-3	LEAKS	1	CONTACTS	1							2.00
1	ASM-PRX	LOADER	6	CONTACTS	4	CONTROLLER	2					12.00
6	ASM-PRX	PARTICLES	23.2	VACUUM	17.5	RI	7.54	LOADER	6.91	RF	3.14	62.81
1	ASM-PRX	HAZE	16.8	PARTICLES	2.21	FINE LEAK	0.37	MKS	0.2			34.02
2	ASM-PRX	LEAK	3.14	PUMP	1.77	MFC	0.68	PARTICLES	0.2	RF	0.2	40.23
	BTU											
1	BTU-BDF4	AFC	0.9	VACUUM	0.2							1.35
1	BTU-BDF41	VACUUM LEAK	150	THERMOCOUPLE	30	GAS FLOW	20					200.00
	TEMESCAL											
1	TEM-232	PARTICLES	1.3	SENSOR	0.94	UNIFORMITY	0.22	SUSCEPTOR	0.14			18.03
4	TEM-232	EXHAUST	0.19	TEMPERATURE	0.19	PARTICLES	0.06	FLOW S/W	0.01			2.08

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DIFFUSION FAILURE ANALYSIS

EQUIP COUNT	MODEL	FAILURE 1	FREQ	FAILURE 2	FREQ	FAILURE 3	FREQ	FAILURE 4	FREQ	FAILURE 5	FREQ	ALL FAILURES
	BTU											
3	BTU-7351	TEMPERATURE	3	CONTACTS	4							7.00
21	BTU-BDF4/4	LEAK	0.8	VACUUM	0.35	HAZE	0.19	GAS FLOW	0.13			19.71
24	BTU-BDF4/4	CONTAMINATION	0.2	TEMPERATURE	0.13	THICKNESS	0.1	PROFILE	0.09	BOAT LOAD	0.06	3.18
1	BTU-BDF41	GAS FLOW	10	THERMOCOUPLE	8	CIRCUIT BREAKER	4	OTHER ELECT	2			24.00
1	BTU-BDF4/8	PULLER		UNIFORMITY		BROKEN QUARTZ		GAS CAL		COMPUTER LOCKUPS		
8	BTU-D4/4	LEAK	1.01	DIP RATE	0.75	MILKY	0.69	INJECTOR	0.52	TEMPERATURE	0.29	17.34
	THERMCO											
38	THE-MAXI	ELECTRONIC	1									1.00
30	THE-MAXI	TIMER	6	T/C	3	SWITCHES	3	ANALOG	1.5	MAINS	0.3	14.00
	TYLAN											
48	TYL903318	TEMPERATURE	10	GAS	9.25	PARTICLES	9.2	UNIFORMITY	7.6	ELECTRIC	5	49.99
1	TYL903318	QUARTZ	0.57	TEMPERATURE	0.24	TEMPERATURE	0.53					8.53
	TYL-MISC	VACCUUM	14.7	PARTICLES	11.9	TEMPERATURE	11.8	UNIFORMITY	10.5	GAS	9.83	66.86

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EPI FAILURE ANALYSIS

EQUIP COUNT	MODEL	FAILURE 1	FREQ	FAILURE 2	FREQ	FAILURE 3	FREQ	FAILURE 4	FREQ	FAILURE 5	FREQ	ALL FAILURES
	APPLIED MATERIALS											
2	AMT-7800	THICKNESS		GAS FLOW		LIFT PROBLEM		RESISTIVITY		WATER LEAKS		
6	AMT-7600	TEMPERATURE	4	GAS	2	HOIST	1.5	CONTROLLER	0.75	VALVES	0.75	12.00
	GEMINI											
3	GEM-1	PNEUMATIC	40	MECHANICAL	20	ELECTRONIC	14					74.00
1	GEM-2	PNEUMATIC	18	MECHANICAL	12							30.00
1	GEM-2	HCL PRESS	6	RF INTERLOCK	3	LOW CAB EXHAUST	2					11.00
1	GEM-1	HCL PRESS	8	RF INTERLOCK	4	LOW CAB EXHAUST	1					13.00

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ETCHERS FAILURE ANALYSIS

EQUIP COUNT	MODEL	FAILURE 1	FREQ	FAILURE 2	FREQ	FAILURE 3	FREQ	FAILURE 4	FREQ	FAILURE 5	FREQ	ALL FAILURES
	APPLIED MATERIALS											
1	AMT-8110	PM		UNIFORMITY								
2	AMT-8130	SYS ERROR		PARTICULATES								2.50
1	AMT-8300	RF	2.56	W.T.S	2.5	VACUUM	2.35	PARTICLES	0.03			7.43
2	AMT-8310	LOADER ARM		RF NTWK		SENSOR		PRESSURE		COMMUN		
	AMT-81XX	COLD TRAP		ETCH RATE		LIFTING		ENDPOINT DETECTION		GAS FLOW		
1	AMT-8130			SYSTEM ERROR		PARTICLES	0.2					
2	AMT-8300			WF TRANSFER		SENSOR FAIL						
8	AMT-8300	PARTICLE	0.64	W.T.S	0.14	VACUUM	0.03					0.82
	BRANSON/IPC											
3	BRN-6520	TRANSFER	2.28	GAS	0.44	PUMP	0.32	CONTROLLER	0.25			6.33
	BRN-6520	RF	1.38	TRANSFER	0.47	VACUUM	0.17	CONTROLLER	0.11			2.12
	BRN-6540	UNIFORMITY	1.3	ARM	0.53	DOOR	0.14	PARTICLES	0.13			2.51
3	BRN-6540	UNIFORMITY	2.75	DOOR	0.29	PRESSURE	0.2	L/L	0.09			4.39
1	BRN-2075	RF	0.05	EOP	0.02	EOP	0.25					0.31
1	BRN-3100	CLEAN	1	OIL	1	RFCAL	1	SEAL	1			4.00
1	BRN-2075	CLEAN	1	OIL	1	RFCAL	1	SEAL	1			4.00
1	BRN-2075	RF	0.25	VACUUM	0.11	PURGE	0.02	PURGE	0.05			0.56
1	BRN-3075	VACCUUM	1.52	AIR LEAK	0.76	RF	0.25					2.53
4	BRN-4005	QUARTZ	4	LEAKS	5							10.00
4	BRN-2000	ELECTRONIC	3	MECHNICAL	3	PNEUMATIC	3					9.00
1	BRN-2100	VACUUM	0.3									0.50
1	BRN-8231	HIGH BASE PRESS	0.1	HIGH LEAK	0.1	RF POWER	2	BROKEN BELL JAR	1			3.20
1	BRN-2100	HIGH BASE PRESS	4	HIGH LEAK	4	RF POWER	2	BROKEN BELL JAR	1			11.00
	DRYTEK											
3	DRIE100	TRANSFER	0.75	PUMP	0.05	LASER	0.02	PRESSURE	0.01			0.95
4	DRIE100	UNIFORMITY	3.99	TRANSFER	1.43	PARTICLES	0.51	PUMP	0.36	PRESSURE	0.36	8.67
2	DRIE102	LOADER	200	ETCH RATE	20	LEAKS	1					220.00
3	DRIE100	LOADER	200	RF POWER	20	PRESSURE	20					220.00
7	MISC											1.10
	MISC											90.14

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ETCHERS FAILURE ANALYSIS

EQUIP COUNT	MODEL	FAILURE 1	FREQ	FAILURE 2	FREQ	FAILURE 3	FREQ	FAILURE 4	FREQ	FAILURE 5	FREQ	ALL FAILURES
	LAM											
2	LAM-490	UNIFORMITY	0.53	VACUUM LEAK	0.1	CHAMBER	0.09	CATHODE	0.04	PRESSURE	0.03	0.89
1	LAM-690	RF	1.91	EOP	1.75	VACUUM	1.32	PARTICLES	0.42			5.79
8	LAM-490	W.T.S	0.25	UNIFORMITY	0.16	EOP	0.07	RF	0.04	PARTICLE	0.04	0.57
5	LAM-590	EOP	2.95	RF	1.35	GAP	1.17	UNIFORMITY	0.97	W.T.S	0.89	7.33
4	LAM490/590	GAP DRIVE		WAFER HANDLER		LEAKS		PUMP		COOLENT LEAKS		
2	LAM-590	GAP	12.2	LEAK	12.2	UNIFORMITY	10.8	R/F	6.17			82.31
	TEGAL											
1	TEG-415	OIL	1	CLEAN	1	RFCAL	1					3.00
2	TEG-411	PNEUMATIC	2									2.00
1	TEG-801	HIGH BASE PRESS	0.3	HIGH LEAK	0.3	RF POWER	0.2	BROKEN BELL JAR	0.2			1.00
1	TEG-901	OIL	1	LEAK	1	AUTOCLEAN	1	RF-PROB	1			4.00
1	TEG-901	OIL	1	AUTOCLEAN	1							2.00
	TEG-901	HIGH BASE PRESS	0.3	HIGH LEAK	0.3	RF POWER	0.2	BROKEN BELL JAR	0.2			1.00
	TEG-901	VACUUM	0.5									0.87
	VARIAN											
2	VR-20	CONTAMINATION	1000	LOADER	100	COMPUTER	10					1000.00

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IMPLANTERS FAILURE ANALYSIS

EQUIP COUNT	MODEL	FAILURE 1	FREQ	FAILURE 2	FREQ	FAILURE 3	FREQ	FAILURE 4	FREQ	FAILURE 5	FREQ	ALL FAILURES
	EATON											
1	EAT-3206	TRANSFER	2	SOURCE	1	BEAM	1					4.00
1	EAT-A4200	LOADER	20	ELECTRONICS	30	ARCING	20					70.00
1	EAT-MC200	LOADER	60	ELECTRONICS	60	ARCING	10					130.00
2	EAT-MC200	LOAD/UNLOAD		VACUUM			0.4					
1	EAT10-160	ELECTRIC	4.31	MECHANICAL	1.12	VACUUM	0.87					7.30
3	EAT10-160	CURRENT	1.6	VACUUM	0.3							2.42
1	EAT10-160	ARCS	20	ELECTRONICS	20	LOADER	999					50.00
1	EAT10-160	VACUUM		MACH CNTL		AT4		SOURCE		E/S ELECT		
8	EAT10-80	MECHANICAL	0.94	VACCUM	0.79	ELECTRIC	0.68					3.13
2	EAT10-80	VACCUM	0.69	CONTROL	0.57	E/S	0.46	E/S	0.51	H/V	0.02	4.00
1	EAT10-80	CONTROL	0.19	VACCUM	0.13	H/V	0.05	E/S	0.04	E/S	0.02	2.63
	VARIAN											
1	VR120-10	ES LD/UNLD		SOURCE								
	VR120-10	AUTO LOADER		ELEC/WIRING		LEAKS		BEAM DUMPS		POWER SUPPLY		
1	VR120-10	CURRENT	3.8	CURRENT	1.6	VACUUM	1.1					10.40
1	VR3500E	ES LD/UNLD		CONTROLLER								
1	VR-3500	LOAD LOCKS	1.2									2.50
1	VR-3500	ELECTRONIC	0.5	VACUUM	0.1							0.60
	VR3500BH	H/V	0.57	VACCUM	0.13	E/S	0.2	SCAN	0.16	CONTROL	0.14	2.60
2	VRCF3000	VACCUM	0.46	E/S	0.38	CONTROL	0.17	H/V	0.12	SCAN	0.11	1.38
2	VRCF3000	ELECTRIC	0.08	MECHANICAL	0.04	VACUUM	0.03					0.17
1	VR-CF4	SOURCE	2	BROKER SLICE	4	SENSOR	1					7.00
1	VR-CF5	VACUUM	0.7									1.80
	VRCDF3000	BROKEN WAF		STUCK WAFERS		LEAKS		POWER SUPPLY		COMPUTER FAILURE		
1	VR-DF4	WAYFLOW	2	VACUUM	0.1	PUMP	0.05	POWER	0.01	SCANNER	0.01	3.00
4	VR-DF4	E/S MECH		SCANNER		MACH CNTL		INTERNAL SUP		SOURCE		

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PVD FAILURE ANALYSIS

EQUIP COUNT	MODEL	FAILURE 1	FREQ	FAILURE 2	FREQ	FAILURE 3	FREQ	FAILURE 4	FREQ	FAILURE 5	FREQ	ALL FAILURES
	MATERIALS RESEARCH											
	MRC-1000	VACUUM	1.81	EMITTER	1.36	TEMPERATURE	0.91					4.54
	MRC603/43	BIAS	5	VACUUM LEAK	5	PALLET	3	OTHER ELECT	3			16.00
	TEMESCAL											
1	TMS-3200	FILAMENT	1	CRYSTAL	3	VALVES	3	OIL	1	CONTROLERS	2	9.00
1	TMS-3200	POT	8	GUN	8	OTHER ELECTR	4					20.00
2	TMS-2550	EB GUN	8	ROTATION	2	VACUUM	1	CRYSTAL	1	TEMPERATURE	1	15.00
	VARIAN	LEAKS		SOURCE OUT		CLIP CHANGES		PUMP PROB		POWER SUPPLY		
	VR3180/X	DEPOSITION	0.27	VACCUM	0.08	VACUUM	0.06	CONTROL	0.01	UTILITY		0.87
1	VR3180/X	DEPOSITION	6.27		4.79	VACCUM	0.63	UTILITY	0.2	CONTROL	0.07	18.02
2	VR3280	VACUUM	0.74	CASSETTE	0.29	SOUR-REGU	0.29					1.47
1	VR31XX	ION GAUGE		THICKNESS		LEAKS		RF ABORT		SCR FAILURES		
	VR31XX	VACUUM		CONTROLLER								
2	VR31XX	VACUUM	2									3.90
	VR31XX	VACUUM		CONTROLLER								
1	VR31XX	TRANSPORT	5	RF	4	IGNITION	10	LOCK-UP	5			21.00
1	VR-XM8	LEAKS		RF ABORT		TRANSFER PROB		CRYO PROB				
3	VR-XM8											2.60

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STEPPERS FAILURE ANALYSIS

EQUIP COUNT	MODEL	FAILURE 1	FREQ	FAILURE 2	FREQ	FAILURE 3	FREQ	FAILURE 4	FREQ	FAILURE 5	FREQ	ALL FAILURES
	CANON											
6	CAN-MKII	DEFOCUS		LOADER								
	GCA											
	GCA-6000	WF LOADER		RMS SYSTEM								
5	GCA-6300B	FOCUS	0.21	AWH	0.12	MAXIMUS	0.12	RMS	0.11	RDR		0.91
12	GCA-6300D	AWA	0.52	MAXIMUS	0.2	STAGE	0.11	AWH	0.02	FOCUS	0.02	0.90
11	GCA-6300B	RDR	0.13	AWH	0.11	A-FOCUS	0.07	RMS	0.05	AWA	0.05	0.53
	NIKON											
7	NIK1050G3A	CHUCK		MACH CNTL		STAGE		LD/UNLD		COMPUTER		
	ULTRATECH											
4	ULT-1000	FOCUS		PARTICLES								

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TRACK FAILURE ANALYSIS

COUNT	MODEL	FAILURE 1	FREQ	FAILURE 2	FREQ	FAILURE 3	FREQ	FAILURE 4	FREQ	FAILURE 5	FREQ	ALL FAILURES
	EATON											
1	EAT45/60	COMMUNICATION	0.5	WAFER NOT CENTERED	0.1	INDEX IN MOTION	0.3	CHUCK NO VACUUM	0.2	BELTS	1.2	2.30
1	EAT45/60	BELTS	0.9									1.53
	GCA											
3	GCA-1000	AIR BEARING		HOTPLATE	0.4		0.2					
1	GCA-1006	DRIPS	100	EBR	250		40	FIELD SERVICE				250.00
2	GCA-9000	TRANSPORT	33	PUMPS	33	OVER I/I	33		1			100.00
1	GCA-9000	HOTPLATE	1	AIRADJ	2	BOTTLE	1					4.00
12	GCA-9503	CHUCK VACUUM		BROKEN WAFER		SENSOR		PROGRAM		SHUTTLE		
	SOLITEC											
22	SOL-8200	SPIN UNIT		PARTICLES								
12	SOL-8160	HOT PLATE	0.7									
	SILICON VALLEY GROUP											
3	SVG-80	MECHANICAL	0.07	ELECTRONIC	0.1	MECHANICAL	0.41					0.58
4	SVG-81XX	SPINNER	0.26	SPINNER	0.05	INDEXER	0.05	OVEN	0.03	P/R PUMP	0.03	0.48
12	SVG-81XX	SPINNER	0.04	P/R PUMP	0.04	INDEXER	0.02	OVEN	0.01		0.02	0.21
	SVG-81XX	DEVELOP	0.56	COATER	0.34	OVEN	0.01	PUMP	0.01	ASC	0.01	0.94
22	SVG-8200	INDEXER	2	WAFER	1	CENTERING	0.5	IC HOLDER	0.1	DRIPS	0.1	4.0

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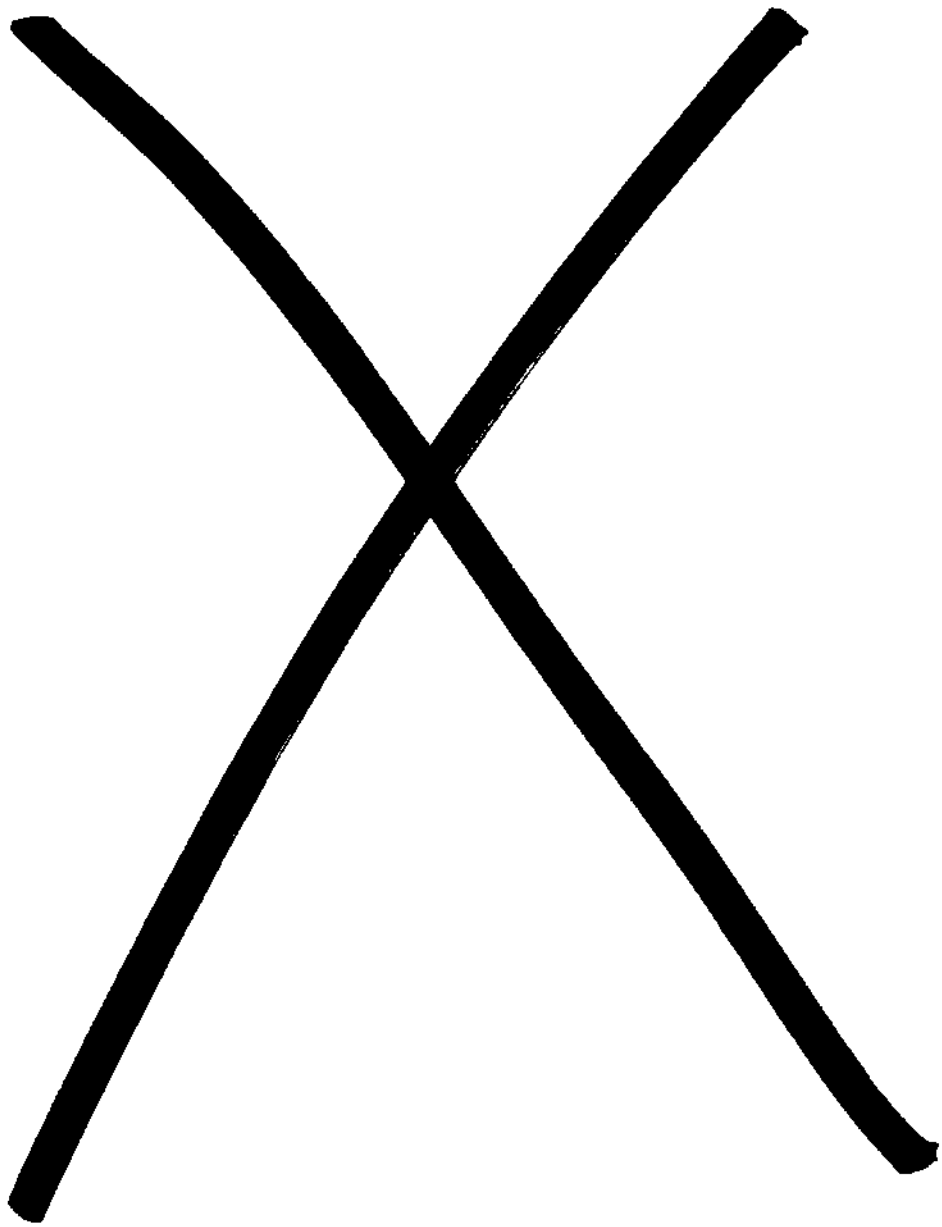

COST STRUCTURE

Respondents for each fab line were asked to list itemized wafer-out cost elements as a percent of total wafer costs. These cost elements include maintenance, facilities, silicon, direct labor, other materials, depreciation, and overhead. The results of this cost survey, summarized by product, technology, line geometry, capacity utilization, and plant size, are presented in this chapter in both graphical and tabular form.

COST STRUCTURE BY PRODUCT FAMILY

As can be seen from the graph, logic, MPUs and ASICs have similar cost structures. Memory products, however, have a smaller percentage of their costs devoted to maintenance and facilities, and have a much higher percentage of their costs allocated to depreciation than do logic, MPUs, or ASICs.

COST STRUCTURE BY TECHNOLOGY

CMOS and NMOS have similar cost structures, as can be seen from the graph of cost structure by technology. Bipolar, however, has a much higher facility cost (10 percent versus 5 percent for CMOS and NMOS). Depreciation as a percent of total wafer-out cost is also less for production of bipolar devices.

COST STRUCTURE BY LINE GEOMETRY

We have removed the 2 to 2.5 micron data from the graphical analysis because of the small sample size of this data, and also because the data is somewhat anomalous. The 2 to 2.5 micron data is, however, included in the tabular presentation..

Maintenance and facilities as percent of total cost tend to decrease as line geometries decrease. Depreciation and overhead tend to increase as as line geometries decrease.

COST STRUCTURE BY PLANT UTILIZATION

Maintenance, facilities, direct labor, and even silicon, decreased as a percent of total wafer cost as plant or capacity utilization increased. Depreciation and overhead, on the other hand, tended to increase with utilization rates.

COST STRUCTURE BY PLANT SIZE

Maintenance costs as a percent of total wafer-out cost increase proportional to plant size. Facility costs at first decreased as plant size increased from less than 12,000 square feet to between 12,000 and 20,000 square feet. Facility costs, however, for plants between 20,000 and 50,000 square feet increased sharply; costs for facilities between 20,000 and 50,000 square feet were 15 percent of total costs -- three times the facility percentage for facilities of less than 12,000 square feet.

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The percentage of cost devoted to direct labor also tended to increase as plant size increased. Depreciation costs and overhead costs, however, tended to decrease as plant size increased.

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WAFER-OUT COST STRUCTURE BY LINE GEOMETRIES (MICRONS)

	1 TO <1.5	1.5 TO <2	2 TO <2.5	2.5 +
TOTAL DIRECT LABOR	10.8%	11.6%	13.7%	12.5%
MATERIALS				
TOTAL SILICON	9.5%	9.1%	11.2%	10.8%
DOPANTS	0.4%	0.3%	0.0%	0.5%
PHOTORESIST	1.8%	1.8%	0.9%	1.6%
PROCESS CHEMICALS	5.4%	4.5%	2.1%	2.9%
SULFERIC ACID *	1.8%	1.5%	1.3%	0.6%
HYDROFLUORIC ACID *	0.9%	0.8%	0.2%	0.5%
NITRIC ACID *	0.6%	0.5%	0.2%	0.2%
OTHER PROCESS CHEMICALS *	2.1%	1.8%	0.4%	1.7%
BULK GASES	3.0%	2.4%	0.7%	1.2%
SPECIALTY GASES	0.6%	0.5%	0.3%	0.6%
CARBON TET **	0.1%	0.1%	0.0%	0.1%
SILANE **	0.1%	0.1%	0.0%	0.1%
OTHER SP. GAS **	0.4%	0.3%	0.0%	0.4%
DI WATER	0.8%	0.6%	0.5%	1.1%
CONSUMABLES	0.8%	1.5%	1.2%	3.1%
PHOTOMASKS	0.6%	0.9%	0.9%	2.6%
OTHER MATERIALS	2.0%	2.9%	3.8%	2.7%
TOTAL MATERIALS	25.0%	24.5%	21.5%	27.2%
OVERHEAD				
ELECTRICITY	2.3%	2.1%	3.0%	3.2%
WATER TREAT/SEWAGE	0.8%	0.7%	0.4%	0.9%
HAZARDOUS MATERIALS ***	0.1%	0.1%	0.1%	0.2%
FACILITIES	4.1%	5.3%	10.4%	7.0%
MAINTENANCE	2.6%	4.9%	10.8%	8.0%
EQ. DEP.	16.3%	16.9%	15.9%	13.2%
MFG OH	27.1%	26.3%	23.1%	22.3%
CORPORATE OH	10.9%	7.7%	1.1%	5.7%
TOTAL OVERHEAD	64.2%	63.8%	64.7%	60.3%
TOTAL WAFER-OUT COST	100%	100%	100%	100%

* = as percent of process chemicals
** = as percent of specialty gases
*** = as percent of water/sewage treatment

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WAFER-OUT COST STRUCTURE BY PRODUCT

	MEMORY	LOGIC	MICROS	ASIC
TOTAL DIRECT LABOR	10.3%	12.8%	13.2%	13.6%
MATERIALS				
TOTAL SILICON	9.3%	10.6%	9.6%	10.9%
DOPANTS	0.2%	0.4%	0.3%	0.3%
PHOTORESIST	2.2%	1.2%	0.8%	1.2%
PROCESS CHEMICALS	3.4%	3.4%	4.4%	2.8%
SULFERIC ACID *	1.1%	1.0%	1.4%	0.8%
HYDROFLUORIC ACID *	0.6%	0.6%	1.3%	0.4%
NITRIC ACID *	0.3%	0.3%	0.7%	0.2%
OTHER PROCESS CHEMICALS *	1.3%	1.5%	1.1%	1.4%
BULK GASES	1.4%	1.6%	2.2%	1.9%
SPECIALTY GASES	0.6%	0.5%	0.3%	0.4%
CARBON TET **	0.1%	0.1%	0.1%	0.2%
SILANE **	0.1%	0.1%	0.1%	0.1%
OTHER SP. GAS **	0.4%	0.3%	0.1%	0.3%
DI WATER	0.4%	1.3%	0.8%	0.8%
CONSUMABLES	1.6%	2.5%	1.2%	1.5%
PHOTOMASKS	0.5%	2.2%	1.6%	1.7%
OTHER MATERIALS	2.7%	2.4%	2.7%	2.2%
TOTAL MATERIALS	22.1%	26.0%	23.8%	23.7%
OVERHEAD				
ELECTRICITY	3.5%	3.0%	2.2%	2.4%
WATER TREAT/SEWAGE	0.8%	0.9%	1.1%	0.7%
HAZARDOUS MATERIALS ***	0.1%	0.2%	0.3%	0.1%
FACILITIES	5.8%	7.3%	8.2%	9.2%
MAINTENANCE	3.8%	8.3%	7.3%	8.1%
EQ. DEP.	20.6%	12.5%	11.8%	11.6%
MFG OH	23.3%	25.5%	27.7%	25.8%
CORPORATE OH	9.8%	3.7%	4.7%	5.1%
TOTAL OVERHEAD	67.6%	61.2%	62.9%	62.8%
TOTAL WAFER-OUT COST	100%	100%	100%	100%

* = as percent of process chemicals
** = as percent of specialty gases
*** = as percent of water/sewage treatment

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WAFER-OUT COST STRUCTURE BY SQUARE FOOT OF CLEAN ROOM

	<12000 FT2	12-20000 FT2	20-50000 FT2	>50000 FT2
TOTAL DIRECT LABOR	8.7%	10.7%	14.1%	17.4%
MATERIALS				
TOTAL SILICON	9.4%	10.7%	11.0%	12.8%
DOPANTS	0.2%	0.4%	0.4%	0.3%
PHOTORESIST	2.3%	1.9%	0.7%	0.7%
PROCESS CHEMICALS	2.5%	3.8%	2.3%	8.1%
SULFERIC ACID *	0.7%	1.1%	0.5%	1.9%
HYDROFLUORIC ACID *	0.3%	0.4%	0.8%	0.1%
NITRIC ACID *	0.1%	0.4%	0.1%	0.4%
OTHER PROCESS CHEMICALS *	1.4%	2.1%	1.0%	5.6%
BULK GASES	0.5%	0.9%	1.2%	5.9%
SPECIALTY GASES	0.7%	0.9%	0.2%	0.2%
CARBON TET **	0.0%	0.1%	0.0%	0.0%
SILANE **	0.2%	0.2%	0.0%	0.0%
OTHER SP. GAS **	0.5%	0.5%	0.1%	0.2%
DI WATER	1.1%	1.0%	0.5%	0.7%
CONSUMABLES	2.9%	3.1%	1.6%	0.5%
PHOTOMASKS	1.9%	2.4%	1.7%	0.6%
OTHER MATERIALS	4.0%	2.9%	2.6%	0.6%
TOTAL MATERIALS	25.4%	28.0%	22.1%	30.5%
OVERHEAD				
ELECTRICITY	4.4%	3.4%	2.4%	0.5%
WATER TREAT/SEWAGE	0.3%	1.3%	0.5%	0.1%
HAZARDOUS MATERIALS ***	0.0%	0.3%	0.1%	0.0%
FACILITIES	5.8%	2.9%	15.2%	0.8%
MAINTENANCE	5.8%	7.3%	8.8%	4.6%
EQ. DEP.	19.9%	18.1%	9.5%	8.3%
MFG OH	22.8%	17.7%	26.3%	35.4%
CORPORATE OH	7.1%	10.6%	1.0%	2.5%
TOTAL OVERHEAD	66.0%	61.3%	63.6%	52.2%
TOTAL WAFER-OUT COST	100%	100%	100%	100%

* = as percent of process chemicals
** = as percent of specialty gases
*** = as percent of water/sewage treatment

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WAFER-OUT COST STRUCTURE BY TECHNOLOGY

	CMOS	NMOS	BIPOLAR
TOTAL DIRECT LABOR	11.1%	13.2%	12.6%
MATERIALS			
TOTAL SILICON	10.5%	10.4%	10.4%
DOPANTS	0.2%	0.1%	0.7%
PHOTORESIST	1.8%	1.2%	1.0%
PROCESS CHEMICALS	3.7%	5.1%	2.9%
SULFERIC ACID *	1.2%	1.6%	0.6%
HYDROFLUORIC ACID *	0.3%	0.5%	0.6%
NITRIC ACID *	0.3%	0.6%	0.1%
OTHER PROCESS CHEMICALS *	2.0%	2.6%	1.6%
BULK GASES	1.4%	2.4%	1.0%
SPECIALTY GASES	0.6%	0.5%	0.5%
CARBON TET **	0.1%	0.1%	0.0%
SILANE **	0.1%	0.1%	0.2%
OTHER SP. GAS **	0.4%	0.3%	0.3%
DI WATER	0.7%	0.5%	1.3%
CONSUMABLES	1.6%	1.4%	3.9%
PHOTOMASKS	1.5%	1.8%	3.0%
OTHER MATERIALS	3.6%	2.7%	2.7%
TOTAL MATERIALS	25.5%	26.0%	27.3%
OVERHEAD			
ELECTRICITY	2.9%	2.2%	3.4%
WATER TREAT/SEWAGE	0.6%	0.7%	0.8%
HAZARDOUS MATERIALS ***	0.1%	0.2%	0.1%
FACILITIES	5.2%	4.5%	9.8%
MAINTENANCE	7.6%	6.9%	6.7%
EQ. DEP.	17.6%	14.4%	10.6%
MFG OH	22.0%	25.8%	25.6%
CORPORATE OH	7.6%	6.2%	3.1%
TOTAL OVERHEAD	63.4%	60.8%	60.0%
TOTAL WAFER-OUT COST	100%	100%	100%

* = as percent of process chemicals
** = as percent of specialty gases
*** = as percent of water/sewage treatment

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WAFER-OUT COST STRUCTURE BY CAPACITY UTILIZATION

	<50%	50-75%	75-90%	>90%
TOTAL DIRECT LABOR	14.4%	13.4%	12.9%	9.1%
MATERIALS				
TOTAL SILICON	13.2%	13.7%	8.2%	9.0%
DOPANTS	0.4%	0.0%	0.6%	0.3%
PHOTORESIST	1.1%	0.9%	1.6%	2.2%
PROCESS CHEMICALS	3.8%	5.9%	3.3%	2.5%
SULFERIC ACID *	0.6%	3.2%	0.8%	0.6%
HYDROFLUORIC ACID *	0.4%	0.4%	1.2%	0.2%
NITRIC ACID *	0.1%	0.3%	0.1%	0.3%
OTHER PROCESS CHEMICALS *	2.7%	1.9%	1.3%	1.4%
BULK GASES	1.3%	2.9%	1.4%	1.0%
SPECIALTY GASES	0.4%	0.4%	0.7%	0.7%
CARBON TET **	0.0%	0.0%	0.1%	0.1%
SILANE **	0.1%	0.1%	0.2%	0.1%
OTHER SP. GAS **	0.4%	0.3%	0.3%	0.5%
DI WATER	0.5%	0.4%	1.3%	1.1%
CONSUMABLES	3.1%	0.5%	3.5%	2.6%
PHOTOMASKS	3.2%	0.2%	2.5%	2.0%
OTHER MATERIALS	2.4%	2.5%	3.8%	2.7%
TOTAL MATERIALS	29.4%	27.4%	26.7%	24.1%
OVERHEAD				
ELECTRICITY	1.7%	2.8%	3.0%	3.8%
WATER TREAT/SEWAGE	0.4%	0.2%	0.8%	0.9%
HAZARDOUS MATERIALS ***	0.1%	0.0%	0.2%	0.2%
FACILITIES	6.9%	5.5%	10.5%	3.6%
MAINTENANCE	12.2%	4.7%	7.7%	5.1%
EQ. DEP.	13.2%	13.3%	14.4%	18.1%
MFG OH	17.8%	27.7%	21.7%	25.2%
CORPORATE OH	4.2%	5.0%	2.2%	10.2%
TOTAL OVERHEAD	56.3%	59.3%	60.3%	66.9%
TOTAL WAFER-OUT COST	100%	100%	100%	100%

* = as percent of process chemicals
** = as percent of specialty gases
*** = as percent of water/sewage treatment

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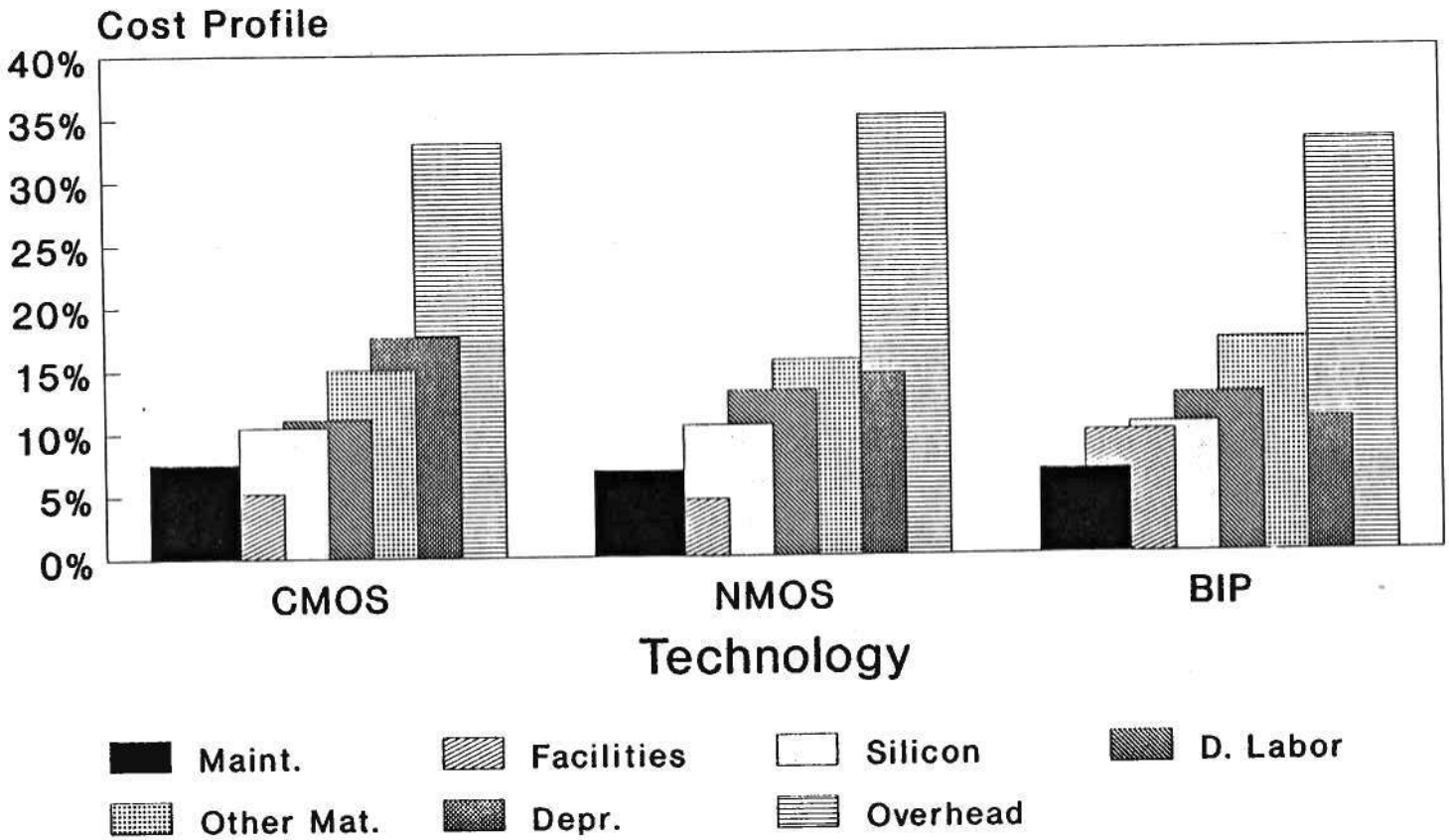
Cost Structure
By Technology



% Of Total Cost

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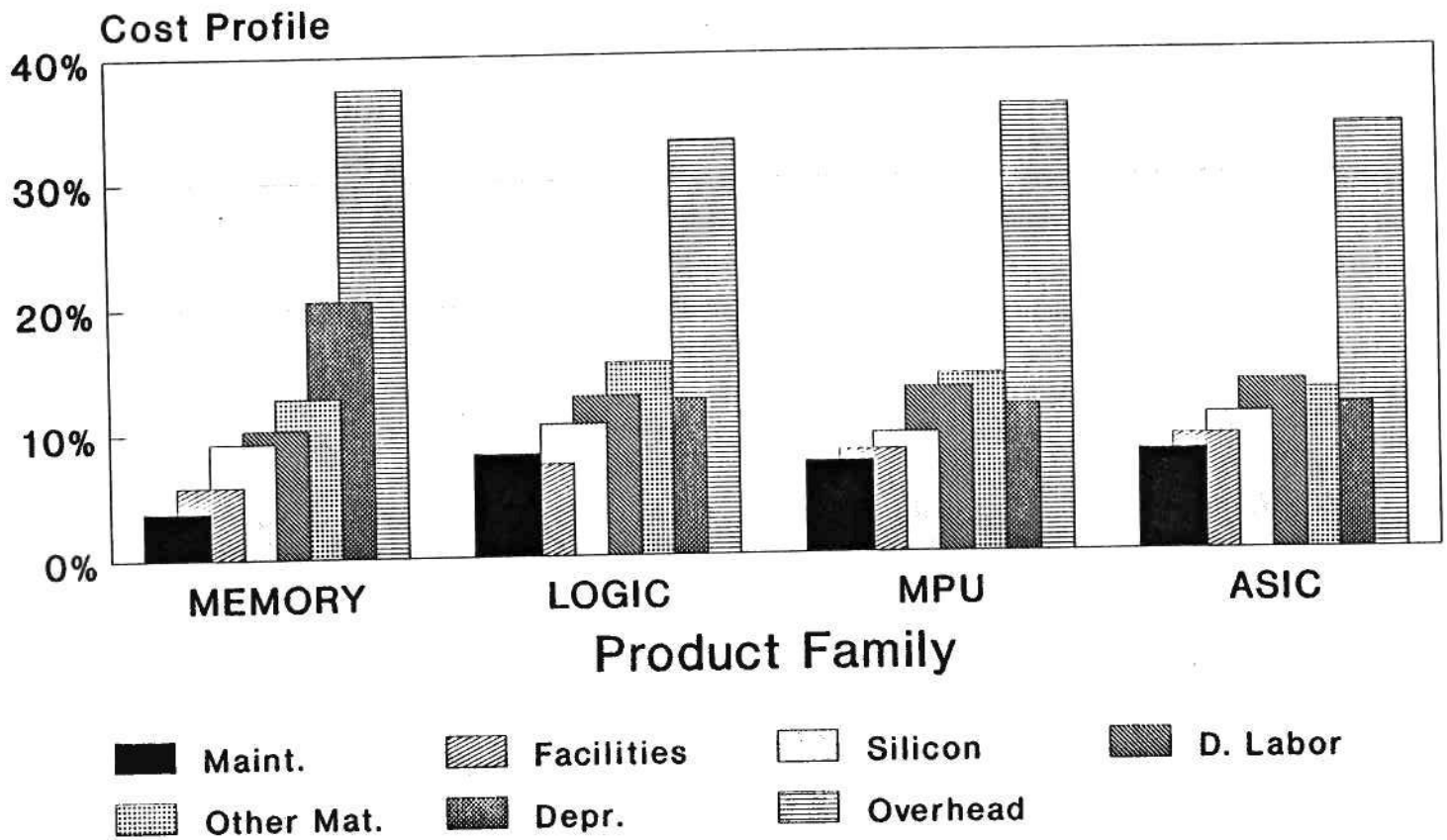
Cost Structure
By Product Family



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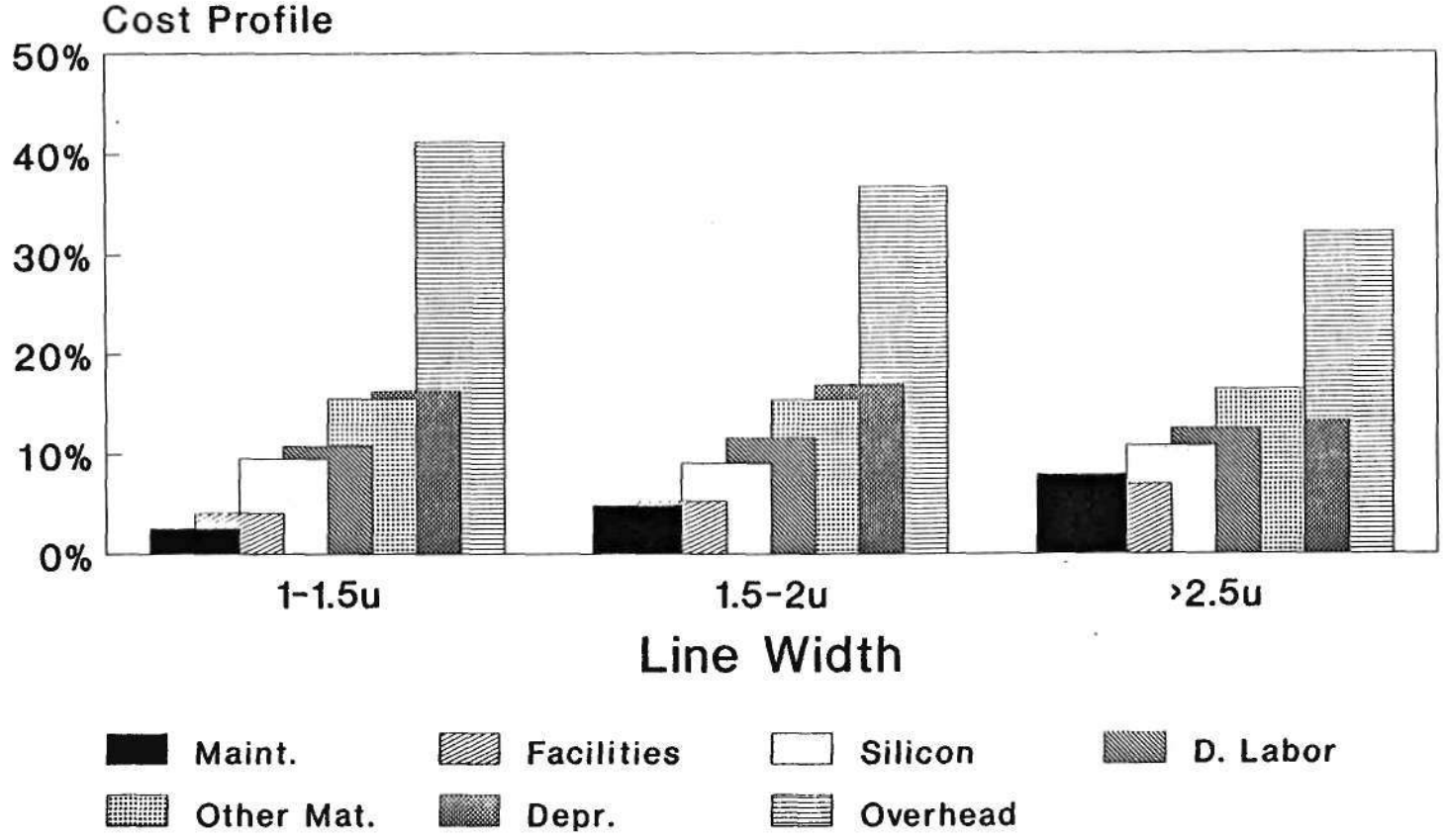
Cost Structure
By Line Width



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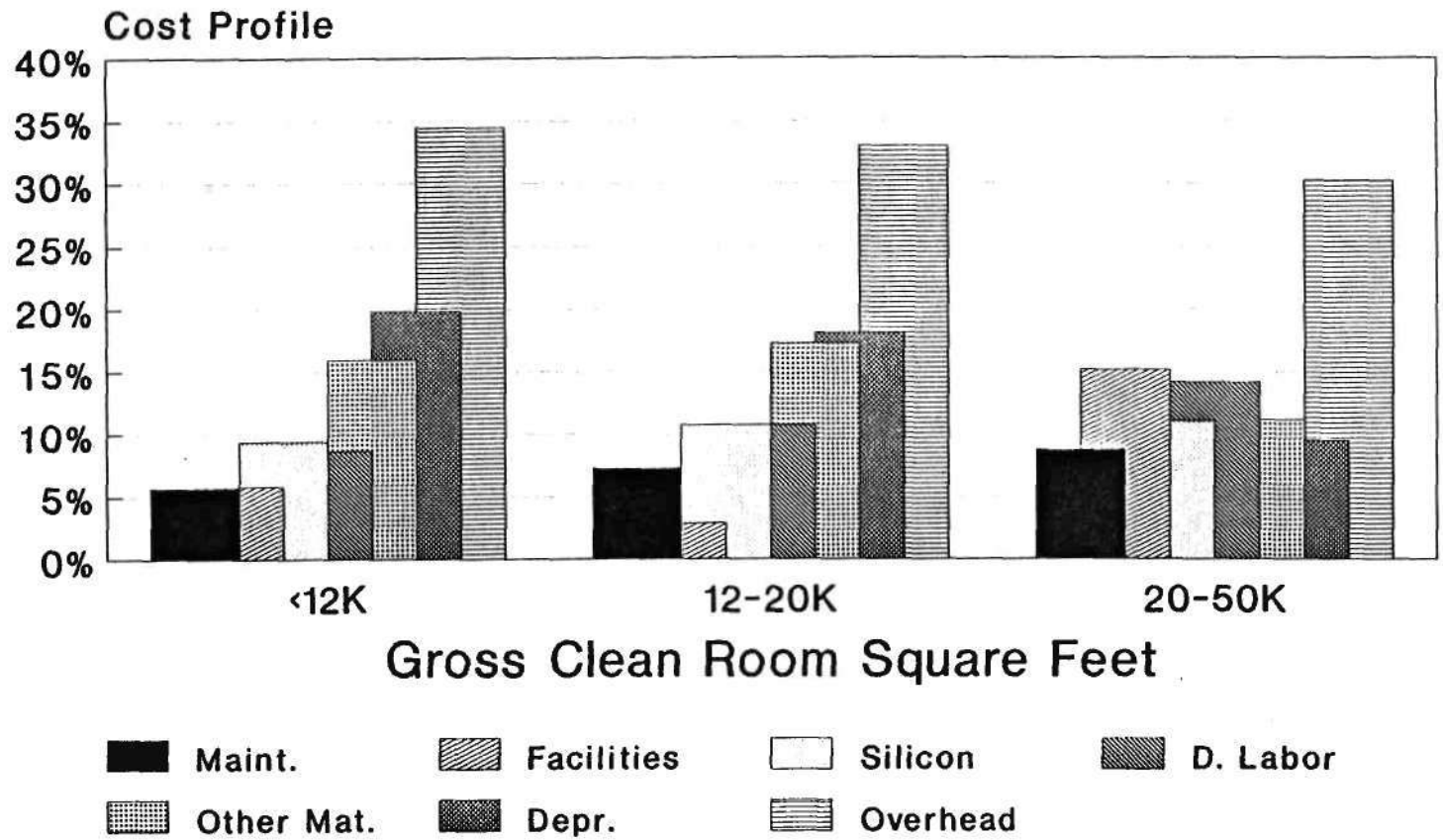
Cost Structure
By Plant Size



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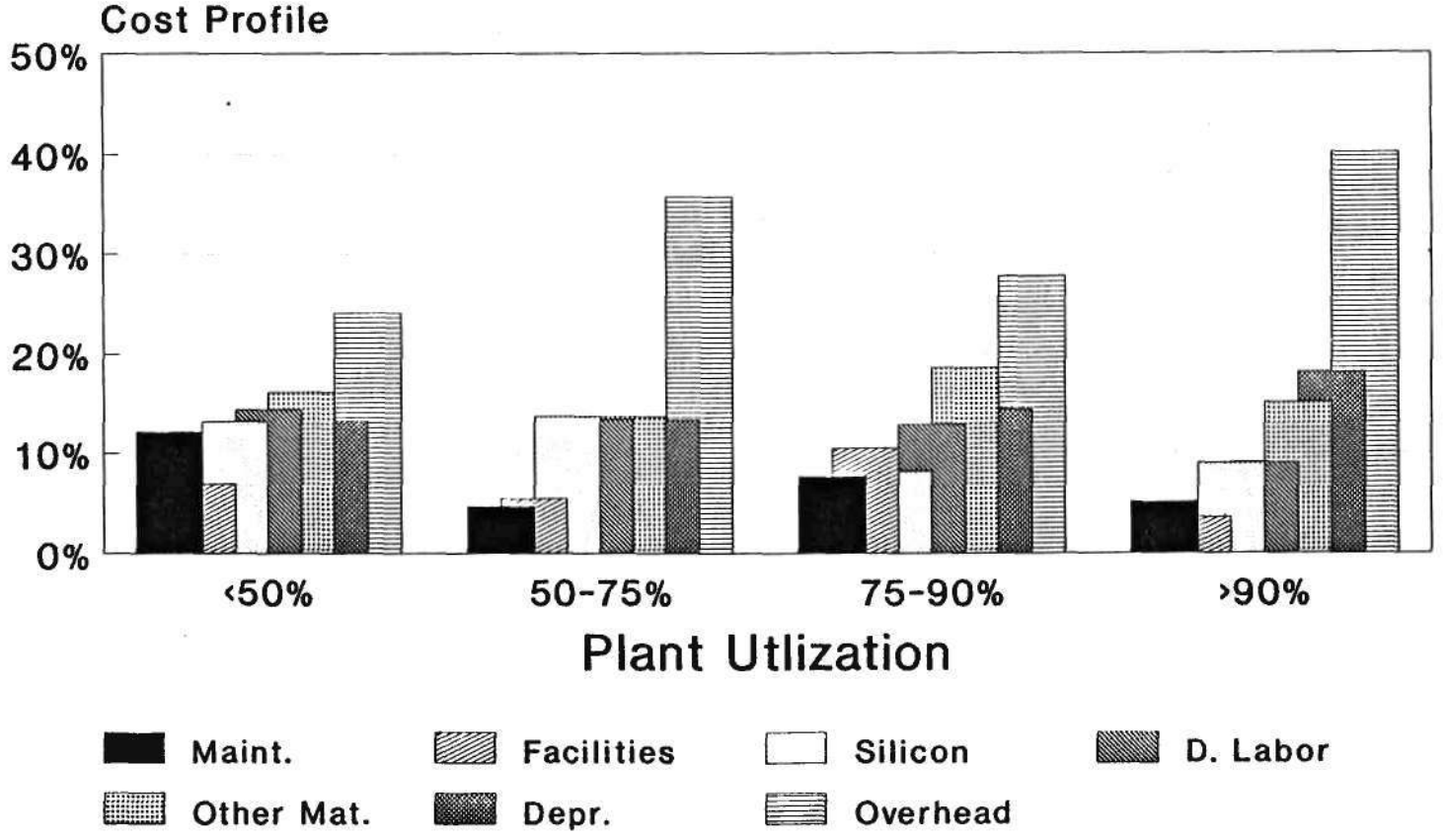
Cost Structure
By Plant Utilization



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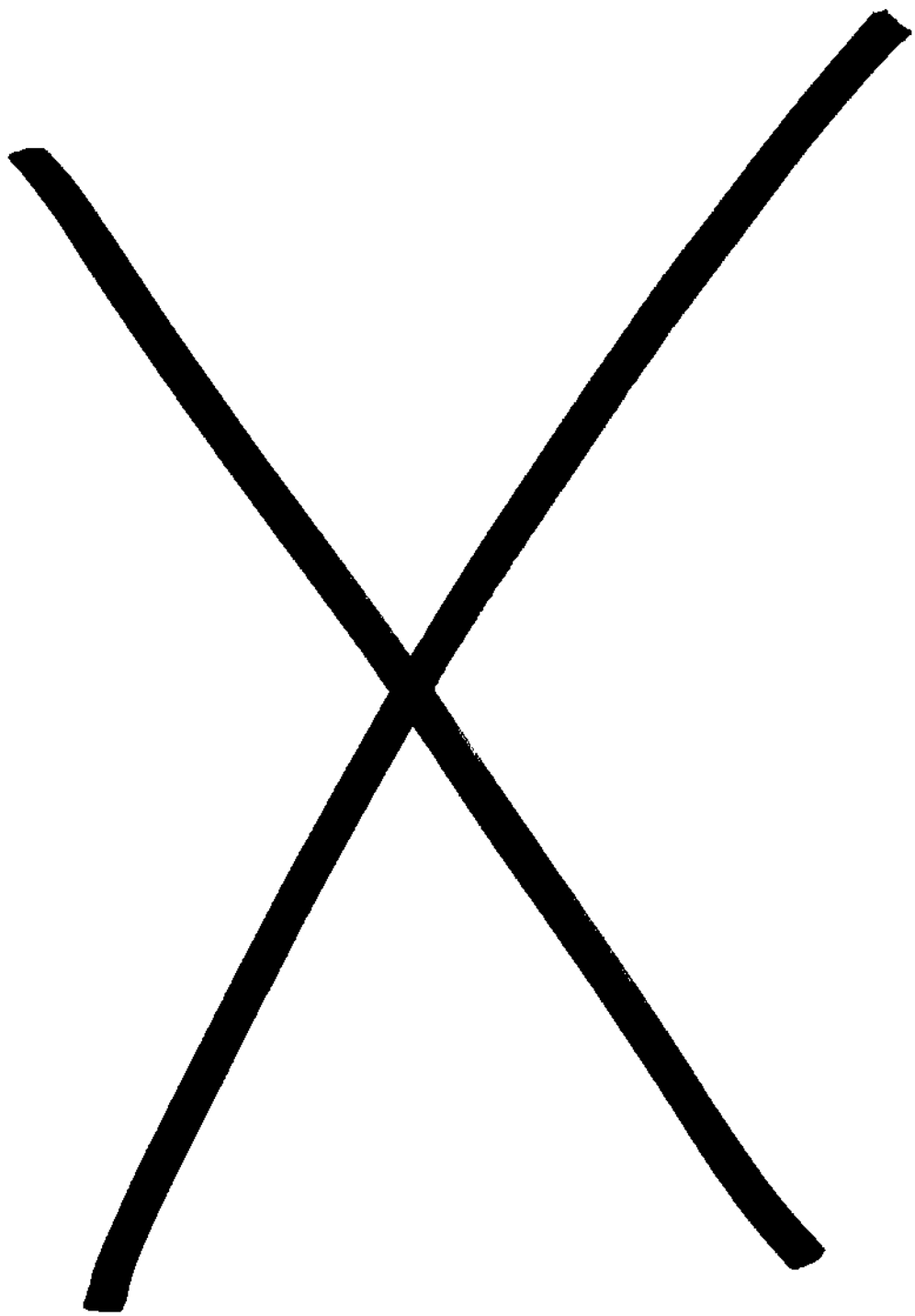

APPENDIX

This appendix contains survey raw data on equipment performance categorized by the following parameters: products, technology, capacity utilization, number of equipment engineers in the fab, minimum line geometry, the presence or absence of incentives in the equipment purchase contract, the presence or absence of modifications to the original equipment, maintenance cost as a percentage of total wafer out cost, the number of mask levels for a device, the number of process flows in the fab, the training level of the equipment operators, and the number of process engineers in the fab.

Please note, that in some tables there may be more than one entry for the same named equipment type and manufacturer. When this occurs, it reflects different groups of model numbers whose technological characteristics or whose age differences do not allow for aggregation into a single group.

This appendix also contains the definitions used in the survey, and a list and frequency of corporate overhead items as reported by survey respondents.

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DEFINITIONS

DEFINITIONS

ACTIVE FAB HOURS/WEEK	Total fab production hours excluding preventive maintenance shift hours.
ACTUAL THROUGHPUT	Total wafer throughput in three months divided by total productive time hours in that three month period.
ASSIST	Any interruption of operation correctable by operator intervention only.
CAPACITY UTILIZATION	3 month average actual wafer starts divided by monthly wafer start capacity. Rated monthly start capacity assumes full staff at 7 days, 24 hours operation, including preventive maintenance.
DELAY TIME	The period of time during which the equipment cannot perform its intended function because of delays attributed to either the user or vendor. 1) User Delays a) Waiting for user maintenance personnel after notification of equipment failure; b) Waiting for user replacement parts; c) User administrative delays; 2) Vendor Delays a) Waiting for vendor and/or third party maintenance personnel after notification of equipment failure; b) Waiting for vendor and/or third party replacement parts; c) Vendor and/or third party administrative delays.
FAILURE	Any interruption of operation, due to equipment malfunction, which requires maintenance intervention.
LINE YIELD:	Total number of wafers-in divided by the number of wafers-out.
MANUFACTURING SQ. FT.	Clean room, excluding chase and maintenance area.
MEAN-TIME BETWEEN FAILURE	Uptime divided by the number of failures during that time.
MEAN-TIME BETWEEN SCHEDULED MAINTENANCE	Uptime divided by total number of scheduled maintenances.
MEAN-TIME BETWEEN	Uptime divided by total number of set-ups.

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DEFINITIONS

SET UP

MEAN-TIME FOR SCHEDULED MAINTENANCE	Total hours spent on all scheduled maintenance, divided by total number of scheduled maintenances.
MEAN-TIME FOR SET UP	Total hours spent setting up, divided by total number of set-ups.
MEAN-TIME TO REPAIR	Total number of unscheduled downtime and delay time, divided by the number of failures.
MINIMUM LINE GEOMETRY	Minimum line width as drawn for the largest volume product within this family.
NON-PRIME TEST WAFERS	Any purchased wafer which is not a product wafer.
PRIME PRODUCT WAFERS	Wafers purchased primarily as product wafers.
PRIME TEST WAFERS	Prime wafers purchased specifically to be used as either test or requalification wafers.
PROCESS FLOW	Sequence of processing steps identified with a specific product cycle. For a single-wafer system, one cycle is completed for each processed wafer. For a batch system, one cycle is completed for each batched process actual throughput.
PRODUCTIVE TIME	The period of time during which the equipment performs its intended function. It includes: 1) Regular production, including loading and unloading of the machine; 2) Work for third parties; 3) Reworks; 4) Verification runs using production materials (production wafers) following scheduled down-time; 5) Verification runs of production wafers to test new applications Note - If the equipment has a defect not affecting the operation of the equipment during regular production, the time shall be recorded as production time.
QUANTITY OF WAFERS USED PER QUARTER	Includes production, test, and line re-qualification wafers.
RATED THROUGHPUT	Throughput as specified by equipment.

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DEFINITIONS

REQUALIFICATION WAFERS Prime wafers purchased specifically to be used as either test or requalification wafers.

SCHEDULED DOWNTIME The period of time during which the equipment cannot be used for production due to scheduled maintenance and set-up. It includes:

1) Periodic maintenance, checks, and adjustments as required or recommended by the user or vendor:
2) Standstill necessary for the change of consumables;
3) Cleaning;
4) Start-up and shutdown periods at the beginning and end of work-periods, if necessary for the function of the equipment;
5) Repair time for minor faults found during regular maintenance checks. These can include small repairs that were postponed until a regular check check;
6) Verification runs using non-production material;
7) Set-up time: Checks or changes necessary because of a change of process when this is part of a regular schedule.

SCHEDULED MAINTENANCE HOURS/WEEK Total number of scheduled preventive maintenance hours per week, excluding semi-annual and annual shut downs.

SILICON COST (%) Purchase price or transfer cost of all silicon wafers.

STANBY TIME The period of time during which the equipment is is in a condition to perform its intended function and is intended to be operated, but is not. It includes:

1) Scheduled breaks;
2) No operator / process engineer available;
3) No orders;
4) No products available to be processed (due to delays caused by preceding machines);
5) No facilities available (electrical, power, gases, vacuum, etc.);
6) No materials;
7) Start-up or shutdown periods beyond those recommended by vendor;
8) Initial time during which fault-finding checks are performed after suspicion of failure, but no faults are found.

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DEFINITIONS

TOTAL WAFER-OUT COST	(direct & indirect labor + direct & indirect material + overhead) divided by total wafers-out.
UNSCHEDULED DOWNTIME	The period of time during which the equipment cannot perform its intended function, excluding logistic time*. It includes: 1) Initial downtime during which maintenance performs fault-finding checks after a suspicion of and finds a fault; 2) Repair and debugging time; 3) Verification runs using non-production material. NOTE - Unscheduled downtime commences when user/vendor maintenance personnel are available following notification of equipment failure. *Logistic time - the period of time during which unscheduled time and delays would affect the measured equipment performance, if not subtracted from total time.
UNSCHEDULED TIME	Off shift hours, weekends, or holidays. Any maintenance done to the equipment during unscheduled time will be counted as downtime. Any production or process testing done on the equipment during unscheduled time will be counted as uptime. All other unscheduled time shall be counted as logistic time.

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EQUIPMENT PERFORMANCE DATA

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EQUIPMENT PERFORMANCE BY:

Summary Data
Products
Technology
Minimum Line Geometry
Number of Mask Levels
Presence or Absence of Financial Incentives
Presence or Absence of Equipment Modifications
Number of Process Flows
Maintenance Cost as a Percent of Total Wafer-Out Cost
Number of Process Engineers
Number of Equipment Engineers
Hours of Equipment Operator Training

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SUMMARY EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA500FA	17	82	13	83	15	178	155	56
ALIGN	CAN	PLA501FA	22	74	15	92	11	74	120	42
ALIGN	PKN	PKN340/1	68	86	25	78	14	147	140	105
CLEAN	FSI	SATURN	80	88	18	88	10	97	81	89
CLEAN	STL	ST-860	5	100	0	77	26	323	368	4
CVD	AMT	AMT-2100	19	83	31	80	11	203	275	78
CVD	ASM	ASM-3	7	69	48	85	21	59	90	109
CVD	ASM	ASM-PRX	18	53	32	79	13	209	107	111
CVD	BTU	BTU-BDF4	2	63	10	68	40	236	301	218
CVD	GEN	GE8301/6	5	69	44	70	11	395	22	99
CVD	TEM	TEM-232	5	44	9	67	18	179	33	272
CVD	THE	THE-9XXX	28	99	1	77	8	140	76	62
CVD	ACS	ACS-512	3	50	28	88	9	197	236	40
DIFF	BTU	BTU-7351	16	87	21	89	8	45	43	112
DIFF	BTU	BTUBDF41	54	58	18	77	6	118	23	269
DIFF	THE	THE-9XXX	67	81	37	88	6	54	46	62
DIFF	THE	THE-4704	36	98	1	91	1	39	0	104
DIFF	THE	THE-MAXI	68	51	14	86	0	72	83	228
DIFF	TYL	TYTAN-II	72	54	38	93	5	82	64	40
EPI	AMT	AMT-7800	12	85	26	62	8	97	73	287
EPI	GEM	GEM-2	6	56	12	77	4	315	191	85
ETCH	AMT	AMT-8330	26	80	31	75	12	270	135	138
ETCH	BRN	BRN-2100	17	74	23	93	4	68	31	12
ETCH	BRN	BRN-BAR	16	44	48	82	11	286	212	50
ETCH	BRN	BRN-4005	9	62	33	93	10	119	219	16
ETCH	DRY	DRIE100	19	48	33	84	11	214	119	63
ETCH	LAM	LAM-590	32	66	27	81	11	195	121	36
ETCH	TEG	TEG-901	21	76	25	93	6	72	77	9
ETCH	VAR	VR-20	4	53	67	52	11	555	63	234
ION	EAT	NV10-160	29	76	21	68	9	338	154	165
ION	EAT	EAT-3206	7	67	33	77	9	148	147	147
ION	VAR	VR120-10	2	81	26	80	4	233	146	150
ION	VAR	VR-3500	7	76	31	79	12	188	148	133
ION	VAR	VR-CF4	11	66	33	74	14	262	196	172
PVD	ASM	ASM-NA	5	81	17	86	7	150	50	31
PVD	BAZ	BAL-800	7	59	21	65	6	193	182	352
PVD	MRC	MR-662	11	86	19	62	9	214	152	218
PVD	TMS	TMS-2550	4	55	40	80	18	92	98	181
PVD	VAR	VR-3180	23	75	31	69	17	161	138	313
STEP	CAN	CAN-MKII	8	100	1	84	3	172	23	69
STEP	GCA	GCA-ALS	50	75	27	83	11	170	87	90
STEP	NIK	N1505G4D	29	72	27	88	6	146	105	119
STEP	ULT	GCA-1000	34	93	9	77	5	179	45	88
TRACK	EAT	EAT45/60	35	77	15	83	17	149	150	70
TRACK	GCA	GCA-9000	37	70	25	83	28	239	495	82
TRACK	MTI	MTI-TARG	34	77	32	97	1	48	26	17
TRACK	SSI	SVG-COAT	19	86	3	89	9	84	65	23
TRACK	SVG	SVG-SCRB	120	81	20	94	6	58	57	40

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SUMMARY EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	MPA500FA		34	51.9	29.6	3.5	2.9	42.3	79.1	1.6	2.3
ALIGN	CAN	PLA501FA		21	29.6	27.4	0.7	0.5	50.8	64.3	1.6	1.6
ALIGN	PKN	PKN340/1		66	72.7	85.3	6.8	6.9	57.3	95.8	0.7	0.9
CLEAN	FSI	SATURN		99	183.2	103.4	5.2	3.6	138.0	216.8	0.7	0.5
CLEAN	STL	ST-860		0	130.0	42.4	4.4	0.0	0.0	0.0	0.0	0.0
CVD	AMT	AMT-2100		81	112.1	124.1	12.8	25.1	80.4	108.3	1.5	1.3
CVD	ASM	ASM-3		145	61.0	37.7	5.6	8.1	41.2	20.9	3.2	1.1
CVD	ASM	ASM-PRX		90	101.5	120.2	10.3	8.7	46.7	47.6	4.6	4.8
CVD	BTU	BTU-BDF4		244	23.9	16.8	2.1	0.2	20.9	22.8	1.3	0.8
CVD	GEN	GE8301/6		60	420.7	514.3	32.9	26.4	120.0	0.0	4.3	4.4
CVD	TEM	TEM-232		61	276.5	235.5	68.7	78.2	13.8	5.2	3.1	0.7
CVD	THE	THE-9XXX		87	51.1	28.6	24.4	24.8	0.0	0.0	0.0	0.0
CVD	ACS	ACS-512		39	830.8	1143.0	150.9	210.8	823.7	1153.0	1.2	1.1
DIFF	BTU	BTU-7351		131	177.8	133.4	3.6	3.9	13.5	0.0	4.2	5.3
DIFF	BTU	BTUBDF41		163	1741.3	1224.3	82.3	77.8	237.0	78.5	15.4	3.0
DIFF	THE	THE-9XXX		35	157.1	78.1	7.5	7.6	245.3	313.0	6.7	8.0
DIFF	THE	THE-4704		0	22.0	2.8	0.9	0.2	252.0	118.8	6.0	2.8
DIFF	THE	THE-MAXI		4	2800.0	0.0	92.0	128.7	2800.0	0.0	2.0	0.0
DIFF	TYL	TYTAN-II		55	150.7	134.1	5.7	7.1	168.8	147.2	30.8	24.7
EPI	AMT	AMT-7800		287	61.3	40.2	4.4	1.9	11.0	11.4	1.3	0.3
EPI	GEM	GEM-2		53	68.4	36.9	11.3	12.4	44.0	55.4	0.5	0.6
ETCH	AMT	AMT-8330		60	150.1	201.9	4.9	2.4	83.8	143.5	3.0	4.5
ETCH	BRN	BRN-2100		7	137.1	91.8	4.3	3.6	63.7	103.3	0.2	0.3
ETCH	BRN	BRN-BAR		58	51.3	19.6	8.3	4.5	27.2	21.9	5.7	6.7
ETCH	BRN	BRN-4005		27	307.2	324.4	29.1	55.4	146.3	110.2	2.2	2.0
ETCH	DRY	DRIE100		48	77.4	94.0	5.5	3.8	70.3	83.3	10.2	12.9
ETCH	LAM	LAM-590		44	65.5	50.4	11.6	6.7	74.6	63.9	7.1	5.0
ETCH	TEG	TEG-901		6	95.1	115.4	4.3	4.5	124.6	130.8	1.2	1.1
ETCH	VAR	VR-20		134	37.3	23.6	5.3	2.5	54.0	0.0	2.5	0.0
ION	EAT	NV10-160		117	34.2	29.8	7.5	10.6	15.6	15.6	2.0	2.2
ION	EAT	EAT-3206		91	18.6	19.6	1.0	0.5	8.1	10.6	0.6	0.2
ION	VAR	VR120-10		64	30.7	37.8	1.9	1.2	96.0	0.0	15.0	0.0
ION	VAR	VR-3500		144	53.8	53.3	9.1	11.3	48.6	66.7	2.1	2.5
ION	VAR	VR-CF4		155	42.5	48.0	6.7	10.7	43.7	53.2	1.7	1.6
PVD	ASM	ASM-NA		30	27.3	10.2	5.1	5.2	18.0	0.0	0.3	0.0
PVD	BAZ	BAL-800		459	73.8	33.5	4.6	2.4	24.0	0.0	1.2	1.1
PVD	MRC	MR-662		176	166.7	276.4	9.8	9.0	16.4	16.1	8.1	1.6
PVD	TMS	TMS-2550		127	60.2	45.4	3.7	5.4	67.2	87.6	4.2	3.4
PVD	VAR	VR-3180		262	57.9	56.7	8.5	7.3	27.3	22.9	33.3	64.4
STEP	CAN	CAN-MKII		41	49.5	9.2	4.8	4.6	68.2	93.1	1.4	1.6
STEP	GCA	GCA-ALS		118	99.9	50.2	10.1	8.9	86.7	71.8	2.1	1.4
STEP	NIK	N1505G4D		75	171.7	93.1	4.1	4.5	128.0	0.0	3.8	4.8
STEP	ULT	GCA-1000		22	38.1	33.9	3.6	1.9	151.0	0.0	3.0	0.0
TRACK	EAT	EAT45/60		93	46.4	16.7	1.8	1.0	57.7	68.0	0.4	0.4
TRACK	GCA	GCA-9000		102	38.5	48.8	7.8	17.8	64.1	69.6	1.9	1.7
TRACK	NTI	NTI-TARG		0	328.0	342.2	1.8	1.3	0.0	0.0	0.4	0.0
TRACK	SSI	SVG-COAT		12	43.8	22.8	0.5	0.0	210.0	0.0	3.0	0.0
TRACK	SVG	SVG-SCRB		37	83.0	75.7	2.1	1.8	59.9	51.7	2.3	2.6

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SUMMARY EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA500FA	152.5	54.5	2.4	0.8	13.7	15.1	52.2	15.4
ALIGN	CAN	PLA501FA	58.4	54.8	6.1	7.6	22.2	10.8	54.9	27.8
ALIGN	PKN	PKN340/1	55.3	61.8	2.5	2.3	8.0	14.0	64.7	18.6
CLEAN	FSI	SATURN	314.0	316.1	3.6	3.1	52.6	10.3	206.8	136.5
CLEAN	STL	ST-860	727.0	0.0	1.5	0.0	0.0	25.6	180.0	0.0
CVD	AMT	AMT-2100	151.1	80.4	13.0	23.1	64.2	11.3	115.0	138.1
CVD	ASM	ASM-3	113.1	74.4	11.8	11.4	247.5	20.5	265.5	269.4
CVD	ASM	ASM-PRX	276.8	250.2	5.1	3.1	9.5	13.0	22.2	17.4
CVD	BTU	BTU-BDF4	384.0	475.2	1.9	0.9	11.9	39.7	49.0	1.4
CVD	GEN	GE8301/6	229.1	93.2	15.2	4.8	4.9	10.5	22.9	2.4
CVD	TEM	TEM-232	15.6	7.3	3.0	0.1	2.9	17.8	20.9	6.9
CVD	THE	THE-9XXX	224.0	0.0	3.4	0.0	0.0	8.2	34.0	0.0
CVD	ACS	ACS-512	108.0	84.8	1.0	0.0	12.0	9.4	99.0	72.1
DIFF	BTU	BTU-7351	123.6	130.9	7.5	5.0	94.2	7.7	116.1	118.7
DIFF	BTU	BTUBDF41	390.0	222.4	11.2	6.5	5.0	5.8	32.4	13.2
DIFF	THE	THE-9XXX	279.6	224.1	7.0	5.7	108.0	6.2	200.0	0.0
DIFF	THE	THE-4704	300.0	0.0	16.0	0.0	0.0	0.5	0.0	0.0
DIFF	THE	THE-MAXI	124.0	62.2	11.5	0.7	0.0	0.4	0.0	0.0
DIFF	TYL	TYTAN-II	242.7	148.5	39.2	23.3	0.2	4.8	16.9	0.2
EPI	AMT	AMT-7800	100.1	157.4	6.1	7.0	5.3	7.5	0.8	0.0
EPI	GEM	GEM-2	444.0	318.7	3.5	0.6	6.3	4.2	17.2	6.8
ETCH	AMT	AMT-8330	98.6	71.9	7.7	4.1	27.0	12.1	33.8	31.5
ETCH	BRN	BRN-2100	639.2	370.0	2.4	1.3	22.2	3.6	82.5	65.0
ETCH	BRN	BRN-BAR	275.5	391.4	6.1	7.0	39.5	11.2	58.3	53.5
ETCH	BRN	BRN-4005	213.8	146.8	47.9	58.9	42.6	10.0	81.8	40.5
ETCH	DRY	DRIE100	384.4	520.4	13.1	21.3	7.4	10.5	73.7	55.7
ETCH	LAM	LAM-590	226.5	410.4	2.2	1.1	5.1	11.0	23.6	7.3
ETCH	TEG	TEG-901	341.3	265.9	27.5	35.2	9.2	5.8	49.8	28.2
ETCH	VAR	VR-20	98.6	98.2	3.6	3.8	0.0	11.4	45.0	0.0
ION	EAT	NV10-160	69.5	48.6	7.2	5.8	16.5	8.5	56.3	18.3
ION	EAT	EAT-3206	283.5	294.1	5.0	5.0	45.3	9.4	127.0	41.8
ION	VAR	VR120-10	73.5	37.5	15.5	14.8	0.0	4.1	125.0	0.0
ION	VAR	VR-350D	80.4	36.4	8.4	11.7	63.3	12.4	176.0	69.3
ION	VAR	VR-CF4	68.8	44.8	11.8	14.5	29.8	14.0	107.5	34.5
PVD	ASM	ASM-NA	48.0	0.0	1.0	0.0	17.5	6.8	32.5	10.6
PVD	BAZ	BAL-800	168.0	0.0	11.4	6.3	21.7	6.2	47.1	11.1
PVD	MRC	MR-662	530.6	422.4	22.2	20.9	15.2	9.0	34.9	22.4
PVD	TMS	TMS-2550	72.1	83.1	6.9	5.4	189.1	18.3	162.0	220.0
PVD	VAR	VR-3180	79.0	43.9	13.1	14.2	17.4	17.2	50.4	21.4
STEP	CAN	CAN-MKII	99.5	71.4	3.9	2.0	16.8	3.1	59.0	15.6
STEP	GCA	GCA-ALS	138.6	120.4	2.9	2.2	6.6	10.8	30.3	12.9
STEP	NIK	N1505G4D	422.0	0.0	2.7	1.0	4.4	5.8	37.3	2.3
STEP	ULT	GCA-1000	222.4	172.9	4.0	1.7	0.0	5.1	59.0	0.0
TRACK	EAT	EAT45/60	406.1	294.3	4.1	3.6	13.8	16.7	59.0	20.1
TRACK	GCA	GCA-9000	138.1	60.8	14.9	30.8	13.3	27.7	57.5	18.2
TRACK	MTI	MTI-TARG	0.0	0.0	8.0	0.0	9.4	1.4	31.5	6.4
TRACK	SSI	SVG-COAT	236.8	0.0	46.6	0.0	0.0	9.0	65.0	0.0
TRACK	SVG	SVG-SCRB	167.5	115.0	7.0	9.8	20.7	5.5	59.7	27.9

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SUMMARY EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.)	S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA500FA	46.7	10.1	24.4		38.8	0.26	57	36.0
ALIGN	CAN	PLA501FA	50.3	29.0	39.5		46.2	0.40	22	28.9
ALIGN	PKN	PKN340/1	53.1	10.7	38.6		41.4	0.12	97	117.5
CLEAN	FSI	SATURN	106.5	49.8	204.3		93.3	0.25	61	61.9
CLEAN	STL	ST-860	225.0	0.0	0.0		172.9	0.00	12	6.6
CVD	AMT	AMT-2100	70.1	65.2	136.7		56.1	0.56	33	21.4
CVD	ASM	ASM-3	225.0	247.5	269.4		191.5	0.93	51	80.7
CVD	ASM	ASM-PRX	26.3	17.8	26.6		20.7	0.43	51	75.2
CVD	BTU	BTU-BDF4	36.6	18.6	2.2		24.9	0.24	57	57.9
CVD	GEN	GE8301/6	39.9	1.2	6.5		28.0	0.21	23	29.2
CVD	TEM	TEM-232	34.8	4.5	10.7		23.2	0.14	0	0.0
CVD	THE	THE-9XXX	33.0	0.0	0.0		25.3	0.00	31	7.8
CVD	ACS	ACS-512	64.5	34.7	131.8		56.9	0.12	20	8.3
DIFF	BTU	BTU-7351	88.1	87.5	105.9		78.1	0.81	20	13.7
DIFF	BTU	BTUBDF41	28.8	7.9	20.6		22.0	0.15	163	0.0
DIFF	THE	THE-9XXX	123.7	108.0	0.0		108.6	0.54	49	40.6
DIFF	THE	THE-4704	0.0	0.0	0.0		0.0		26	0.0
DIFF	THE	THE-MAXI	21.0	0.0	0.0		18.1		13	0.0
DIFF	TYL	TYTAN-II	37.2	0.5	0.5		34.7	0.01	12	12.5
EPI	AMT	AMT-7800	6.6	5.3	0.0		4.1	6.63	46	33.2
EPI	GEM	GEM-2	17.8	4.7	6.7		13.8	0.37	33	13.0
ETCH	AMT	AMT-8330	40.7	42.8	51.1		30.5	0.80	58	45.2
ETCH	BRN	BRN-2100	49.6	37.0	107.0		46.3	0.27	30	22.6
ETCH	BRN	BRN-BAR	74.5	61.7	83.5		60.8	0.68	14	0.0
ETCH	BRN	BRN-4005	75.9	35.9	28.8		70.6	0.52	2	1.0
ETCH	DRY	DRIE100	52.5	11.5	86.9		43.8	0.10	14	8.8
ETCH	LAM	LAM-590	31.5	11.4	15.1		25.3	0.22	51	51.7
ETCH	TEG	TEG-901	43.4	13.1	46.1		40.6	0.18	19	14.4
ETCH	VAR	VR-20	45.0	0.0	0.0		23.5	0.00	15	12.5
ION	EAT	NV10-160	57.5	25.2	30.9		39.2	0.29	83	87.7
ION	EAT	EAT-3206	99.7	37.0	50.7		76.8	0.36	88	88.3
ION	VAR	VR120-10	100.0	0.0	0.0		80.1	0.00	42	23.0
ION	VAR	VR-3500	113.0	78.7	42.9		89.0	0.36	29	23.1
ION	VAR	VR-CF4	87.2	38.9	41.2		64.2	0.28	67	109.6
PVD	ASM	ASM-NA	28.0	12.7	0.7		24.2	0.54	16	14.7
PVD	BAZ	BAL-800	40.1	14.0	4.5		25.9	0.46	34	29.4
PVD	MRC	MR-662	43.3	15.4	18.9		26.8	0.44	78	59.2
PVD	TMS	TMS-2550	136.7	185.1	214.1		109.0	1.17	61	88.3
PVD	VAR	VR-3180	51.5	18.9	15.0		35.6	0.35	39	28.3
STEP	CAN	CAN-MKII	51.9	4.4	3.5		43.6	0.28	29	13.1
STEP	GCA	GCA-ALS	31.8	7.7	11.7		26.4	0.22	33	19.1
STEP	NIK	N1505G4D	53.6	18.4	20.6		46.9	0.12	0	0.0
STEP	ULT	GCA-1000	41.0	0.0	0.0		31.7	0.00	78	48.5
TRACK	EAT	EAT45/60	54.2	21.2	29.6		45.1	0.23	43	32.1
TRACK	GCA	GCA-9000	53.7	8.3	11.7		44.6	0.23	14	13.8
TRACK	NTI	NTI-TARG	31.9	1.6	4.4		31.0	0.30	0	0.0
TRACK	SSI	SVG-COAT	50.0	0.0	0.0		44.3	0.00	66	54.9
TRACK	SVG	SVG-SCRB	54.3	22.2	31.9		50.8	0.35	12	10.2

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ASIC EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #		PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA500FA	16	86	12	79	15	219	161	72
ALIGN	CAN	PLA501	10	81	12	90	13	88	150	46
ALIGN	PKN	PKN-542	61	85	26	76	13	160	139	114
CLEAN	FSI	FSI-8231	56	92	14	86	11	103	86	98
CLEAN	STL	ST-860	5	100	0	77	26	323	368	4
CVD	AMT	AMT-2100	8	100	1	88	7	69	68	104
CVD	ASM	ASM-3	7	69	48	85	21	59	90	109
CVD	ASM	ASM-PRX	7	85	22	69	18	178	98	155
CVD	GEN	GE-8402	3	100	0	63	0	379	0	141
DIFF	BTU	BTU-7351	2	97	5	85	11	32	36	165
DIFF	THE	THE-NA	35	74	42	87	7	69	43	76
DIFF	THE	THE-4704	36	98	1	91	1	39	0	104
EPI	GEM	GEM-2	2	66	6	79	6	156	74	130
ETCH	AMT	AMT-8330	16	89	29	75	9	268	124	156
ETCH	BRN	BRN-8231	12	78	28	91	3	85	15	14
ETCH	BRN	BRN-3100	6	90	15	97	3	20	22	28
ETCH	DRY	DRIE100	12	66	31	77	8	270	121	97
ETCH	LAM	LAM-690	13	87	9	87	6	150	58	9
ETCH	TEG	TEG-901	15	76	29	92	6	87	86	11
ETCH	VAR	VR-20	4	53	67	52	11	555	63	234
ION	EAT	NV10-80	19	83	24	70	10	271	111	212
ION	EAT	EAT-3206	7	67	33	77	9	148	147	147
ION	VAR	VR-350DF	2	99	1	81	11	164	140	122
ION	VAR	VR-CF4	5	98	3	83	19	153	206	163
PVD	MRC	MR603/43	8	88	19	63	9	214	143	269
PVD	TMS	TMS-3200	2	60	56	77	25	106	135	155
PVD	VAR	VR-31XX	14	89	24	67	12	155	139	322
STEP	CAN	CAN-MKII	8	100	1	84	3	172	23	69
STEP	GCA	GCA-6000	13	100	1	84	3	166	60	92
STEP	NIK	N1505G4D	19	84	23	88	8	168	138	66
STEP	ULT	UT-1100	34	93	9	77	5	179	45	88
TRACK	EAT	EAT45/60	2	78	2	65	7	312	0	153
TRACK	GCA	GCA-9000	19	82	19	80	33	318	583	43
TRACK	MTI	MTI-TARG	34	77	32	97	1	48	26	17
TRACK	SVG	SVG-SCR8	79	93	9	92	6	64	68	40
TRACK	SSI	SSI-COAT	19	86	3	89	9	84	65	23

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ASIC EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	MPA500FA	10	49	33.1	3.5	3.4	54.9	91.9	1.9	2.7	
ALIGN	CAN	PLA501	25	35	33.5	0.8	0.6	58.4	71.6	1.9	1.6	
ALIGN	PKN	PKN-542	61	73	89.4	7.3	7.0	2.0	0.0	0.3	0.0	
CLEAN	FSI	FSI-8231	103	169	84.4	5.7	3.8	13.0	15.6	1.0	0.0	
CLEAN	STL	ST-860	0	130	42.4	4.4	0.0	0.0	0.0	0.0	0.0	
CVD	AMT	AMT-2100	110	127	147.2	5.4	6.6	79.7	93.5	2.2	1.8	
CVD	ASM	ASM-3	145	61	37.7	5.6	8.1	41.2	20.9	3.2	1.1	
CVD	ASM	ASM-PRX	158	23	5.0	5.2	1.6	10.5	13.4	0.9	1.0	
CVD	GEN	GE-8402	0	530	676.7	14.2	0.0	0.0	0.0	1.2	0.0	
DIFF	BTU	BTU-7351	131	204	223.5	4.5	5.6	13.5	0.0	8.0	0.0	
DIFF	THE	THE-NA	28	150	93.9	8.4	10.5	24.0	0.0	1.0	0.0	
DIFF	THE	THE-4704	0	22	2.8	0.9	0.2	252.0	118.8	6.0	2.8	
EPI	GEM	GEM-2	0	50	27.9	2.4	1.1	1.5	0.3	0.0	0.0	
ETCH	AMT	AMT-8330	50	180	226.9	4.1	1.6	113.7	192.6	0.8	0.3	
ETCH	BRN	BRN-8231	6	133	114.3	4.7	4.3	4.0	0.6	0.0	0.0	
ETCH	BRN	BRN-3100	38	33	5.5	0.5	0.4	160.4	2.6	1.0	0.0	
ETCH	DRY	DRIE100	10	25	9.0	3.3	2.7	16.3	13.3	0.8	0.4	
ETCH	LAM	LAM-690	3	45	40.4	5.9	0.0	0.0	0.0	0.0	0.0	
ETCH	TEG	TEG-901	6	44	21.4	3.7	5.3	84.1	71.2	1.2	1.1	
ETCH	VAR	VR-20	134	37	23.6	5.3	2.5	54.0	0.0	2.5	0.0	
ION	EAT	MV10-80	155	23	21.9	2.1	1.0	5.5	3.5	0.7	0.4	
ION	EAT	EAT-3206	91	19	19.6	1.0	0.5	8.1	10.6	0.6	0.2	
ION	VAR	VR-350DF	12	47	35.9	2.0	2.2	0.0	0.0	0.0	0.0	
ION	VAR	VR-CF4	213	12	2.2	1.2	1.5	53.2	0.0	2.0	0.0	
PVD	MRC	MR603/43	149	210	309.1	10.5	9.4	15.4	16.1	1.9	1.6	
PVD	TMS	TMS-3200	168	40	41.9	5.1	6.9	16.8	10.4	2.2	1.1	
PVD	VAR	VR-31XX	119	49	56.6	7.0	7.2	13.0	15.4	7.6	11.0	
STEP	CAN	CAN-MKII	41	50	9.2	4.8	0.0	68.2	93.1	1.4	1.6	
STEP	GCA	GCA-6000	53	49	13.4	0.0	2.5	81.2	111.4	1.2	1.1	
STEP	NIK	N1505G4D	0	166	130.8	1.5	0.1	0.0	0.0	0.4	0.0	
STEP	ULT	UT-1100	22	38	33.9	3.6	1.9	151.0	0.0	3.0	0.0	
TRACK	EAT	EAT45/60	106	38	29.0	1.0	0.0	1.6	0.5	0.2	0.1	
TRACK	GCA	GCA-9000	37	29	40.7	10.2	21.1	80.2	81.2	1.5	0.6	
TRACK	MTI	MTI-TARG	0	328	342.2	1.8	1.3	0.0	0.0	0.4	0.0	
TRACK	SVG	SVG-SCRB	30	73	42.7	2.2	1.9	52.6	51.2	3.4	3.0	
TRACK	SSI	SSI-COAT	12	44	22.8	0.5	0.0	210.0	0.0	3.0	0.0	

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ASIC EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #		MTBM S.D.		MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA500FA	136.7	54.3	2.7	0.6	41.5	11.0	59.0	2.7
ALIGN	CAN	PLA501	75.6	61.8	8.6	8.4	55.8	1.5	67.2	9.0
ALIGN	PKN	PKN-542	56.4	66.0	2.7	2.3	45.0	8.9	65.7	20.6
CLEAN	FSI	FSI-8231	343.1	344.3	3.8	3.6	99.9	54.7	221.0	142.8
CLEAN	STL	ST-860	727.0	0.0	1.5	0.0	144.0	0.0	180.0	0.0
CVD	AMT	AMT-2100	155.3	115.2	21.4	32.4	106.3	86.5	166.7	167.7
CVD	ASM	ASM-3	113.1	74.4	11.8	11.4	225.0	247.5	265.5	269.4
CVD	ASM	ASM-PRX	444.0	390.3	4.5	0.6	22.0	2.8	40.0	2.8
CVD	GEN	GE-8402	163.2	0.0	17.6	3.4	25.0	0.0	24.6	0.0
DIFF	BTU	BTU-7351	51.0	51.6	9.3	4.9	33.0	0.0	200.0	0.0
DIFF	THE	THE-NA	150.6	24.6	5.2	6.6	26.0	0.0	200.0	0.0
DIFF	THE	THE-4704	300.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0
EPI	GEM	GEM-2	720.0	0.0	4.0	0.0	11.0	1.4	14.5	3.5
ETCH	AMT	AMT-8330	76.8	63.5	6.3	2.4	32.5	32.6	38.4	36.4
ETCH	BRN	BRN-8231	812.3	159.9	2.9	0.8	22.0	14.1	50.0	0.0
ETCH	BRN	BRN-3100	164.9	3.9	46.8	40.1	95.0	42.7	122.5	24.8
ETCH	DRY	DRIE100	168.0	0.0	3.6	4.0	39.6	9.3	42.0	0.0
ETCH	LAM	LAM-690	1156.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0
ETCH	TEG	TEG-901	351.0	289.5	36.3	37.0	35.0	9.3	35.6	14.3
ETCH	VAR	VR-20	98.6	98.2	3.6	3.8	45.0	0.0	45.0	0.0
ION	EAT	NV10-80	92.8	67.1	9.4	7.5	47.0	19.6	60.9	20.4
ION	EAT	EAT-3206	283.5	294.1	5.0	5.0	94.3	45.3	127.0	41.8
ION	VAR	VR-3500F	91.0	21.2	5.0	0.1	180.0	0.0	225.0	0.0
ION	VAR	VR-CF4	55.8	0.0	35.0	0.0	95.0	7.1	126.5	43.1
PVD	MRC	MR603/43	480.9	480.6	29.8	18.1	30.3	18.6	34.7	22.4
PVD	TMS	TMS-3200	96.1	101.6	9.8	2.5	188.5	228.4	228.0	265.9
PVD	VAR	VR-31XX	87.9	52.4	10.4	6.3	50.0	15.0	62.0	21.7
STEP	CAN	CAN-NKII	99.5	71.4	3.9	2.0	43.1	16.8	59.0	15.6
STEP	GCA	GCA-6000	98.5	72.8	2.9	0.2	26.3	10.9	45.5	14.8
STEP	NIK	N1505G4D	0.0	0.0	2.0	0.0	34.7	6.1	38.0	2.9
STEP	ULT	UT-1100	222.4	172.9	4.0	1.7	41.0	0.0	59.0	0.0
TRACK	EAT	EAT45/60	720.0	0.0	8.0	0.0	45.5	17.7	65.0	21.2
TRACK	GCA	GCA-9000	143.9	68.6	18.5	34.3	52.4	9.8	63.4	14.1
TRACK	MTI	MTI-TARG	0.0	0.0	8.0	0.0	26.4	9.4	31.5	6.4
TRACK	SVG	SVG-SCRB	148.5	105.2	9.9	11.1	57.5	10.5	75.5	9.1
TRACK	SSI	SSI-COAT	236.8	0.0	46.6	0.0	0.0	0.0	65.0	0.0

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ASIC EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA500FA	50.8	5.0	20.8	39.9	0.70	78	0.0
ALIGN	CAN	PLA501	63.9	17.8	31.1	57.5	0.83	23	36.8
ALIGN	PKN	PKN-542	54.1	11.6	41.9	41.3	0.68	107	120.1
CLEAN	FSI	FSI-8231	130.7	37.5	235.3	112.9	0.45	67	63.1
CLEAN	STL	ST-860	225.0	0.0	0.0	172.9	0.80	12	6.6
CVD	AMT	AMT-2100	118.0	79.6	157.8	103.6	0.64	27	25.3
CVD	ASM	ASM-3	225.0	247.5	269.4	191.5	0.85	51	80.7
CVD	ASM	ASM-PRX	34.4	4.4	4.4	23.8	0.55	94	96.9
CVD	GEN	GE-8402	39.1	0.0	0.0	24.5	1.02	43	0.0
DIFF	BTU	BTU-7351	150.0	0.0	0.0	127.3	0.17	18	18.4
DIFF	THE	THE-NA	200.0	0.0	0.0	173.9	0.13	57	45.8
DIFF	THE	THE-4704	0.0	0.0	0.0	0.0		26	0.0
EPI	GEN	GEN-2	17.2	2.2	5.5	13.6	0.76	39	18.4
ETCH	AMT	AMT-8330	43.5	53.1	60.7	32.7	0.85	47	32.9
ETCH	BRN	BRN-8231	34.4	22.1	0.0	31.4	0.44	32	29.0
ETCH	BRN	BRN-3100	95.0	42.7	24.7	92.0	0.78	2	1.0
ETCH	DRY	DRIE100	45.0	0.0	0.0	34.7	0.94	15	10.5
ETCH	LAM	LAM-690	0.0	0.0	0.0	0.0		37	30.2
ETCH	TEG	TEG-901	40.6	2.5	8.2	37.3	0.98	17	15.8
ETCH	VAR	VR-20	45.0	0.0	0.0	23.5	1.00	15	12.5
ION	EAT	NV10-80	60.5	34.9	41.5	42.3	0.77	50	31.1
ION	EAT	EAT-3206	99.7	37.0	50.7	76.8	0.74	88	88.3
ION	VAR	VR-3500F	180.0	0.0	0.0	145.4	0.80	29	4.9
ION	VAR	VR-CF4	95.0	7.1	43.1	79.1	0.75	2	0.4
PVD	MRC	MR603/43	32.8	15.4	18.9	20.7	0.87	69	63.9
PVD	TMS	TMS-3200	196.1	217.7	250.0	150.5	0.83	85	110.3
PVD	VAR	VR-31XX	52.7	9.3	16.0	35.2	0.81	37	32.1
STEP	CAN	CAN-MKII	51.9	4.4	3.5	43.6	0.73	29	13.1
STEP	GCA	GCA-6000	31.5	3.5	0.9	26.5	0.58	22	5.4
STEP	NIK	N1505G4D	43.2	6.0	11.4	38.0	0.91	0	0.0
STEP	ULT	UT-1100	41.0	0.0	0.0	31.7	0.69	78	48.5
TRACK	EAT	EAT45/60	71.1	27.6	33.1	46.4	0.70	78	0.0
TRACK	GCA	GCA-9000	52.4	9.8	14.0	41.8	0.83	10	13.9
TRACK	MTI	MTI-TARG	31.9	1.6	4.4	31.0	0.84	0	0.0
TRACK	SVG	SVG-SCRB	66.5	10.0	18.0	61.5	0.76	10	10.1
TRACK	SSI	SSI-COAT	50.0	0.0	0.0	44.3	0.00	66	54.9

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LOGIC EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA-500	15	85	21	96	1	44	15	34
ALIGN	CAN	PLA501	19	72	23	95	2	39	34	39
ALIGN	PKN	PKN-542	61	85	26	76	13	160	139	114
CLEAN	FSI	SATURN	72	92	18	90	10	106	89	54
CLEAN	STL	ST-860	5	100	0	77	26	323	368	4
CVD	AMT	AMT-3300	14	73	37	77	10	308	309	113
CVD	ASM	ASM-3A	6	57	61	80	26	83	112	146
CVD	ASM	PLASMON	9	73	38	81	2	243	190	54
CVD	GEN	GE-8402	3	100	0	63	0	379	0	141
CVD	ACS	ACS-512	3	50	28	88	9	197	236	40
DIFF	THE	THE-4704	36	98	1	91	1	39	0	104
DIFF	THE	THE-MAXI	68	51	14	86	0	72	83	228
EPI	AMT	AMT-7800	8	73	38	63	2	144	75	503
EPI	GEM	GEM-1	4	47	6	75	2	475	46	39
ETCH	AMT	AMT-8330	16	89	29	75	9	268	124	156
ETCH	BRN	BRN-2100	15	80	17	95	4	54	30	7
ETCH	DRY	DRIE100	12	66	31	77	8	270	121	97
ETCH	LAM	LAM-690	13	87	9	87	6	150	58	9
ETCH	TEG	TEG-901	13	75	17	90	8	122	97	8
ETCH	VAR	VR-20	4	53	67	52	11	555	63	234
ION	EAT	NV10-160	20	78	25	68	11	312	149	199
ION	EAT	EAT-6200	6	80	18	77	11	154	169	164
ION	VAR	VR120-10	2	81	26	80	4	233	146	150
ION	VAR	VR-350D	4	72	37	79	15	200	155	171
ION	VAR	VR-CF5	7	59	32	65	6	394	122	273
PVD	ASM	ASM-NA	5	81	17	86	7	150	50	31
PVD	BAZ	BAL-800	5	48	10	66	8	281	140	676
PVD	MRC	MR-942	7	97	2	65	9	166	129	292
PVD	VAR	VR-3280	15	87	23	70	15	143	133	285
STEP	CAN	CAN-MKII	8	100	1	84	3	172	23	69
STEP	GCA	GCA-6000	13	100	1	84	3	166	60	92
STEP	NIK	N1505G4D	19	84	23	88	8	168	138	66
STEP	ULT	UT-1100	34	93	9	77	5	179	45	88
TRACK	EAT	EAT45/60	15	65	7	96	2	55	15	21
TRACK	GCA	GCA-1000	22	75	25	80	33	321	580	52
TRACK	MTI	MTI-TARG	34	77	32	97	1	48	26	17
TRACK	SSI	SSI-COAT	18	84	1	84	2	122	5	30
TRACK	SVG	SVG-8100	101	88	20	90	5	83	62	60

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LOGIC EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	MTBF S.D.	MTTR	MTTR S.D.	MTBS	MTBS S.D.	MTFS	MTFS S.D.
ALIGN	CAN	MPA-500	39		68.9	25.9	4.4	3.8	82.8	110.7	2.8	3.1
ALIGN	CAN	PLA501	13		40.5	38.6	0.8	0.6	91.8	100.7	2.0	2.8
ALIGN	PKN	PKN-542	61		72.6	89.4	7.3	7.0	2.0	0.0	0.3	0.0
CLEAN	FSI	SATURN	88		190.7	105.8	5.8	3.5	388.0	0.0	0.6	0.6
CLEAN	STL	ST-860	0		130.0	42.4	4.4	0.0	0.0	0.0	0.0	0.0
CVD	AMT	AMT-3300	85		160.7	137.8	19.3	31.0	107.9	143.5	1.8	1.7
CVD	ASM	ASM-3A	184		82.7	3.8	8.2	9.5	56.0	0.0	2.5	0.0
CVD	ASM	PLASMON	16		13.2	18.0	3.0	1.4	21.0	1.4	2.3	1.0
CVD	GEN	GE-8402	0		529.5	676.7	14.2	0.0	0.0	0.0	1.2	0.0
CVD	ACS	ACS-512	39		830.8	1143.0	150.9	210.8	823.7	1153.0	1.2	1.1
DIFF	THE	THE-4704	0		22.0	2.8	0.9	0.2	252.0	118.8	6.0	2.8
DIFF	THE	THE-MAXI	101		2800.0	0.0	92.0	128.7	2800.0	0.0	2.0	0.0
EPI	AMT	AMT-7800	245		74.5	64.3	4.3	3.2	24.0	0.0	1.0	0.0
EPI	GEM	GEM-1	0		86.5	44.6	20.3	11.7	86.5	44.6	1.0	0.0
ETCH	AMT	AMT-8330	50		180.2	226.9	4.1	1.6	113.7	192.6	0.8	0.3
ETCH	BRN	BRN-2100	4		158.2	110.7	5.8	4.3	183.0	0.0	0.6	0.0
ETCH	DRY	DRIE100	10		24.6	9.0	3.3	2.7	16.3	13.3	0.8	0.4
ETCH	LAM	LAM-690	3		44.6	40.4	5.9	0.0	0.0	0.0	0.0	0.0
ETCH	TEG	TEG-901	1		147.2	170.5	9.3	4.3	204.0	277.2	0.4	0.2
ETCH	VAR	VR-20	134		37.3	23.6	5.3	2.5	54.0	0.0	2.5	0.0
ION	EAT	NV10-160	142		25.7	21.7	2.9	2.2	4.7	2.9	0.6	0.3
ION	EAT	EAT-6200	95		18.6	19.6	1.0	0.5	2.0	0.0	0.5	0.0
ION	VAR	VR120-10	64		30.7	37.8	1.9	1.2	96.0	0.0	15.0	0.0
ION	VAR	VR-3500	169		60.3	63.6	10.4	13.6	75.9	97.7	1.2	1.1
ION	VAR	VR-CF5	124		56.0	61.6	10.0	13.7	58.0	75.9	1.2	0.8
PVD	ASM	ASM-NA	30		27.3	10.2	5.1	5.2	18.0	0.0	0.3	0.0
PVD	BAZ	BAL-800	0		54.7	7.5	3.2	1.1	24.0	0.0	1.2	1.1
PVD	MRC	MR-942	174		253.8	363.3	13.3	9.2	4.0	0.0	3.0	0.0
PVD	VAR	VR-3280	152		47.3	52.6	6.7	6.6	19.0	18.9	6.3	9.9
STEP	CAN	CAN-MKII	41		49.5	9.2	4.8	4.6	68.2	93.1	1.4	1.6
STEP	GCA	GCA-6000	53		48.5	13.4	3.2	2.5	81.2	111.4	1.2	1.1
STEP	NIK	N1505G4D	0		165.5	130.8	1.5	0.1	0.0	0.0	0.4	0.0
STEP	ULT	UT-1100	22		38.1	33.9	3.6	1.9	151.0	0.0	3.0	0.0
TRACK	EAT	EAT45/60	26		52.9	3.7	2.7	1.0	58.8	4.6	0.2	0.1
TRACK	GCA	GCA-1000	36		25.3	42.1	10.1	21.2	42.5	67.7	1.0	0.8
TRACK	MTI	MTI-TARG	0		328.0	342.2	1.8	1.3	0.0	0.0	0.4	0.0
TRACK	SSI	SSI-COAT	1		30.8	3.8	0.0	0.0	0.0	0.0	0.0	0.0
TRACK	SVG	SVG-8100	37		71.3	51.2	2.5	1.8	41.8	57.1	0.5	0.8

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LOGIC EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA-500	137.0	89.1	1.8	0.3	39.8	18.6	47.0	19.3
ALIGN	CAN	PLA501	29.3	9.2	1.1	0.9	33.8	29.4	39.8	34.2
ALIGN	PKN	PKN-542	56.4	66.0	2.7	2.3	45.0	8.9	65.7	20.6
CLEAN	FSI	SATURN	110.9	41.2	4.0	4.0	115.1	56.2	244.0	51.1
CLEAN	STL	ST-860	727.0	0.0	1.5	0.0	144.0	0.0	180.0	0.0
CVD	AMT	AMT-3300	161.8	99.8	5.5	1.6	44.8	16.1	53.8	20.6
CVD	ASM	ASM-3A	155.4	17.8	11.9	16.1	50.0	0.0	75.0	0.0
CVD	ASM	PLASMON	168.0	0.0	3.0	2.8	12.3	16.6	19.2	26.5
CVD	GEN	GE-8402	163.2	0.0	17.6	3.4	25.0	0.0	24.6	0.0
CVD	ACS	ACS-512	108.0	84.8	1.0	0.0	48.5	12.0	99.0	72.1
DIFF	THE	THE-4704	300.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0
DIFF	THE	THE-MAXI	124.0	62.2	11.5	0.7	21.0	0.0	0.0	0.0
EPI	AMT	AMT-7800	183.4	215.8	11.1	6.9	0.8	0.0	0.8	0.0
EPI	GEM	GEM-1	168.0	0.0	3.0	0.0	18.5	7.8	20.0	9.9
ETCH	AMT	AMT-8330	76.8	63.5	6.3	2.4	32.5	32.6	38.4	36.4
ETCH	BRN	BRN-2100	558.5	620.1	2.3	2.2	46.5	26.2	115.0	91.9
ETCH	DRY	DRIE100	168.0	0.0	3.6	4.0	39.6	9.3	42.0	0.0
ETCH	LAM	LAM-690	1156.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0
ETCH	TEG	TEG-901	184.7	91.5	1.7	1.4	37.5	13.4	80.0	42.4
ETCH	VAR	VR-20	98.6	98.2	3.6	3.8	45.0	0.0	45.0	0.0
ION	EAT	NV10-160	94.6	54.9	9.0	6.5	40.9	21.9	60.9	20.4
ION	EAT	EAT-6200	138.0	52.0	2.7	2.0	112.7	32.3	129.3	50.8
ION	VAR	VR120-10	73.5	37.5	15.5	14.8	100.0	0.0	125.0	0.0
ION	VAR	VR-350D	91.5	13.9	11.7	13.6	88.9	89.2	225.0	0.0
ION	VAR	VR-CF5	68.0	42.3	10.7	12.4	61.2	30.5	86.5	13.4
PVD	ASM	ASM-NA	48.0	0.0	1.0	0.0	24.6	17.5	32.5	10.6
PVD	BAZ	BAL-800	168.0	0.0	15.0	1.4	34.7	21.7	47.1	11.1
PVD	MRC	MR-942	217.4	212.7	19.7	6.7	39.0	15.6	44.5	20.5
PVD	VAR	VR-3280	90.0	47.2	9.6	6.0	43.5	20.9	56.7	23.4
STEP	CAN	CAN-MKII	99.5	71.4	3.9	2.0	43.1	16.8	59.0	15.6
STEP	GCA	GCA-6000	98.5	72.8	2.9	0.2	26.3	10.9	45.5	14.8
STEP	NIK	N1505G4D	0.0	0.0	2.0	0.0	34.7	6.1	38.0	2.9
STEP	ULT	UT-1100	222.4	172.9	4.0	1.7	41.0	0.0	59.0	0.0
TRACK	EAT	EAT45/60	144.0	33.9	1.9	1.6	33.1	14.1	52.5	31.8
TRACK	GCA	GCA-1000	126.3	72.2	1.3	0.6	51.8	9.3	60.4	12.5
TRACK	MTI	MTI-TARG	0.0	0.0	8.0	0.0	26.4	9.4	31.5	6.4
TRACK	SSI	SSI-COAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRACK	SVG	SVG-8100	167.3	109.5	1.9	0.8	40.3	22.9	55.6	31.3

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LOGIC EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.)	S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA-500	43.5	12.8	11.3		41.8	0.85	16	0.0
ALIGN	CAN	PLA501	33.8	29.4	34.2		32.2	0.85	17	7.5
ALIGN	PKN	PKN-542	54.1	11.6	41.9		41.3	0.68	107	120.1
CLEAN	FSI	SATURN	130.8	49.0	81.9		117.1	0.47	36	35.4
CLEAN	STL	ST-860	225.0	0.0	0.0		172.9	0.80	12	6.6
CVD	AMT	AMT-3300	53.5	31.0	41.4		41.2	0.83	32	16.8
CVD	ASM	ASM-3A	50.0	0.0	0.0		40.1	0.67	73	101.4
CVD	ASM	PLASMON	19.0	26.2	41.6		15.3	0.64	19	8.8
CVD	GEN	GE-8402	39.1	0.0	0.0		24.5	1.02	43	0.0
CVD	ACS	ACS-512	64.5	34.7	131.8		56.9	0.49	20	8.3
DIFF	THE	THE-4704	0.0	0.0	0.0		0.0		26	0.0
DIFF	THE	THE-MAXI	21.0	0.0	0.0		18.1		13	0.0
EPI	AMT	AMT-7800	0.8	0.0	0.0		0.5	0.94	39	37.2
EPI	GEM	GEM-1	18.5	7.8	9.9		13.9	0.93	26	0.0
ETCH	AMT	AMT-8330	43.5	53.1	60.7		32.7	0.85	47	32.9
ETCH	BRN	BRN-2100	64.8	52.0	163.5		61.2	0.40	32	28.4
ETCH	DRY	DRIE100	45.0	0.0	0.0		34.7	0.94	15	10.5
ETCH	LAM	LAM-690	0.0	0.0	0.0		0.0		37	30.2
ETCH	TEG	TEG-901	50.7	32.1	86.2		45.7	0.47	32	9.3
ETCH	VAR	VR-20	45.0	0.0	0.0		23.5	1.00	15	12.5
ION	EAT	MV10-160	53.5	34.0	41.5		36.4	0.67	87	95.4
ION	EAT	EAT-6200	112.7	32.3	50.8		86.8	0.87	69	89.8
ION	VAR	VR120-10	100.0	0.0	0.0		80.1	0.80	42	23.0
ION	VAR	VR-3500	89.2	88.7	0.0		70.8	0.40	28	20.4
ION	VAR	VR-CF5	63.8	25.7	13.4		41.4	0.71	88	133.4
PVD	ASM	ASM-NA	28.0	12.7	0.7		24.2	0.76	16	14.7
PVD	BAZ	BAL-800	40.1	14.0	4.5		26.4	0.74	13	0.0
PVD	MRC	MR-942	39.0	15.6	20.5		25.5	0.88	49	60.3
PVD	VAR	VR-3280	46.7	16.9	16.2		32.9	0.77	36	29.4
STEP	CAN	CAN-MKII	51.9	4.4	3.5		43.6	0.73	29	13.1
STEP	GCA	GCA-6000	31.5	3.5	0.9		26.5	0.58	22	5.4
STEP	NIK	N1505G4D	43.2	6.0	11.4		38.0	0.91	0	0.0
STEP	ULT	UT-1100	41.0	0.0	0.0		31.7	0.69	78	48.5
TRACK	EAT	EAT45/60	39.5	4.9	19.9		37.8	0.63	19	8.3
TRACK	GCA	GCA-1000	51.8	9.3	12.5		41.3	0.86	18	14.7
TRACK	MTI	MTI-TARG	31.9	1.6	4.4		31.0	0.84	0	0.0
TRACK	SSI	SSI-COAT	0.0	0.0	0.0		0.0		97	17.0
TRACK	SVG	SVG-8100	51.0	30.9	44.8		46.1	0.72	17	8.8

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MEMORY EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	PKN	PKN340/1	18	100	0	86	15	117	158	49
CLEAN	FSI	SATURN	7	94	9	94	2	79	29	0
CVD	AMT	AMT-3300	8	100	0	81	6	65	65	101
CVD	ASM	ASM-PRX	14	50	44	86	4	141	36	75
CVD	TEM	TEM-232	5	44	9	67	18	179	33	272
DIFF	BTU	BTU-7351	14	78	31	93	0	57	61	6
DIFF	BTU	BTU-BDF4	53	48	11	78	7	115	32	332
DIFF	THE	THE-4704	36	98	1	91	1	39	0	104
DIFF	TYL	TYTAN-II	72	54	38	93	5	82	64	40
EPI	AMT	AMT-7800	4	97	2	61	13	49	39	71
ETCH	AMT	AMT-8330	16	81	25	76	13	251	137	136
ETCH	BRN	BRN-BAR	16	44	48	82	11	286	212	50
ETCH	BRN	BRN-3075	3	34	16	89	14	219	299	5
ETCH	DRY	DRIE100	14	48	46	86	12	174	87	43
ETCH	LAM	LAM-590	19	52	26	76	12	226	146	54
ION	EAT	EAT200MC	12	78	17	68	5	339	173	147
ION	VAR	VR-350D	4	89	16	81	8	131	147	81
ION	VAR	VR-CF4	3	64	46	80	13	125	116	49
PVD	MRC	MR-942	2	96	0	73	0	21	7	196
PVD	VAR	VR-31XX	13	73	36	68	19	143	141	393
STEP	CAN	CAN-MKII	8	100	1	84	3	172	23	69
STEP	GCA	GCA-6300	50	75	27	83	11	170	87	90
TRACK	GCA	GCA-1000	17	70	42	86	2	100	61	185
TRACK	SVG	SVG-8100	64	82	24	93	8	84	73	27

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MEMORY EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	PKN	PKN340/1		54	50.8	32.2	2.9	3.0	85.0	117.4	1.1	1.2
CLEAN	FSI	SATURN		0	171.0	89.1	5.4	6.1	0.0	0.0	1.0	0.0
CVD	AMT	AMT-3300		110	112.6	149.0	3.2	1.1	8.9	4.4	1.4	1.7
CVD	ASM	ASM-PRX		30	162.7	121.6	14.5	9.1	70.2	48.6	6.7	5.4
CVD	TEM	TEM-232		61	276.5	235.5	68.7	78.2	13.8	5.2	3.1	0.7
DIFF	BTU	BTU-7351		0	151.2	23.8	2.6	3.1	0.0	0.0	0.5	0.0
DIFF	BTU	BTU-8DF4		171	1741.3	1224.3	82.3	77.8	237.0	78.5	15.4	3.0
DIFF	THE	THE-4704		0	22.0	2.8	0.9	0.2	252.0	118.8	6.0	2.8
DIFF	TYL	TYTAN-II		55	150.7	134.1	5.7	7.1	168.8	147.2	30.8	24.7
EPI	AMT	AMT-7800		23	48.0	0.0	4.5	0.1	4.5	2.1	1.5	0.0
ETCH	AMT	AMT-8330		61	195.8	234.8	5.0	2.7	83.8	143.5	3.4	4.9
ETCH	BRN	BRN-BAR		58	51.3	19.6	8.3	4.5	27.2	21.9	5.7	6.7
ETCH	BRN	BRN-3075		2	581.7	192.7	57.8	72.2	136.8	154.8	3.1	2.3
ETCH	DRY	DRIE100		56	115.7	110.2	8.0	2.1	101.2	101.5	16.3	13.9
ETCH	LAM	LAM-590		50	79.4	54.9	12.5	6.8	74.6	63.9	7.1	5.0
ION	EAT	EAT200MC		82	40.6	36.4	11.4	13.4	20.7	16.0	2.6	2.5
ION	VAR	VR-350D		42	51.2	33.2	4.4	6.4	21.4	28.8	3.0	3.9
ION	VAR	VR-CF4		27	31.4	20.6	3.3	2.7	17.6	23.4	2.4	3.0
PVD	MRC	MR-942		274	364.0	435.6	10.0	11.3	4.0	0.0	3.0	0.0
PVD	VAR	VR-31XX		314	81.4	65.2	11.6	7.4	23.3	25.5	40.2	74.3
STEP	CAN	CAN-MKII		41	49.5	9.2	4.8	4.6	68.2	93.1	1.4	1.6
STEP	GCA	GCA-6300		118	99.9	50.2	10.1	8.9	86.7	71.8	2.1	1.4
TRACK	GCA	GCA-1000		133	66.0	72.1	2.3	1.4	101.1	60.7	3.5	2.1
TRACK	SVG	SVG-8100		32	126.9	100.8	3.2	1.6	71.4	73.3	0.8	0.8

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MEMORY EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	PKN	PKN340/1	102.5	78.5	4.6	5.8	50.3	8.7	75.7	21.4
CLEAN	FSI	SATURN	0.0	0.0	4.0	0.0	21.9	0.0	56.6	0.0
CVD	AMT	AMT-3300	104.2	61.0	4.1	1.8	46.0	19.9	70.0	14.1
CVD	ASM	ASM-PRX	165.3	49.0	6.9	2.2	18.3	6.8	22.8	13.2
CVD	TEM	TEM-232	15.6	7.3	3.0	0.1	22.3	2.9	20.9	6.9
DIFF	BTU	BTU-7351	268.8	0.0	5.7	6.1	16.8	0.0	32.2	0.0
DIFF	BTU	BTU-BDF4	280.0	39.9	14.5	1.5	18.3	6.2	26.5	7.4
DIFF	THE	THE-4704	300.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0
DIFF	TYL	TYTAN-II	242.7	148.5	39.2	23.3	16.6	0.2	16.9	0.2
EPI	AMT	AMT-7800	16.8	0.0	1.1	0.3	9.5	2.1	0.0	0.0
ETCH	AMT	AMT-8330	105.4	74.7	7.5	4.5	30.5	27.0	38.3	36.5
ETCH	BRN	BRN-BAR	275.5	391.4	6.1	7.0	47.7	39.5	58.3	53.5
ETCH	BRN	BRN-3075	262.7	216.2	49.0	84.0	36.3	11.1	54.7	14.8
ETCH	DRY	DRIE100	528.7	680.9	21.0	25.9	36.8	8.4	73.7	55.7
ETCH	LAM	LAM-590	71.6	22.3	1.8	0.6	17.9	5.1	23.6	7.3
ION	EAT	EAT200MC	67.2	56.6	5.8	4.6	43.4	17.3	59.4	22.9
ION	VAR	VR-350D	64.2	48.8	3.0	2.2	122.6	50.1	176.0	69.3
ION	VAR	VR-CF4	76.5	78.5	1.7	0.6	99.6	0.6	100.0	0.0
PVD	MRC	MR-942	117.5	71.4	7.7	10.4	50.0	0.0	59.0	0.0
PVD	VAR	VR-31XX	59.3	30.2	15.7	16.1	39.2	13.8	45.7	16.9
STEP	CAN	CAN-MKII	99.5	71.4	3.9	2.0	43.1	16.8	59.0	15.6
STEP	GCA	GCA-6300	138.6	120.4	2.9	2.2	22.1	6.6	30.3	12.9
TRACK	GCA	GCA-1000	79.0	50.9	1.2	1.1	45.2	28.1	53.2	39.2
TRACK	SVG	SVG-8100	217.2	115.5	1.1	0.5	43.6	12.0	54.3	18.6

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MEMORY EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	PKN	PKN340/1	58.4	9.7	53.6	50.2	0.66	23	23.7
CLEAN	FSI	SATURN	34.2	0.0	0.0	32.2	0.39	5	0.0
CVD	AMT	AMT-3300	54.7	32.7	45.9	44.2	0.66	37	20.1
CVD	ASM	ASM-PRX	33.2	14.8	18.4	28.6	0.80	14	16.8
CVD	TEM	TEM-232	34.8	4.5	10.7	23.2	1.06	0	0.0
DIFF	BTU	BTU-7351	26.2	0.0	0.0	24.3	0.52	25	0.0
DIFF	BTU	BTU-8DF4	28.5	9.6	11.5	22.4	0.69	0	0.0
DIFF	THE	THE-4704	0.0	0.0	0.0	0.0		26	0.0
DIFF	TYL	TYTAN-II	37.2	0.5	0.5	34.7	0.98	12	12.5
EPI	AMT	AMT-7800	9.5	2.1	0.0	5.8		52	41.7
ETCH	AMT	AMT-8330	45.5	43.2	58.3	34.8	0.80	66	51.4
ETCH	BRN	BRN-BAR	74.5	61.7	83.5	60.8	0.82	14	0.0
ETCH	BRN	BRN-3075	56.7	17.3	23.1	50.6	0.66	0	0.0
ETCH	DRY	DRIE100	57.5	13.1	86.9	49.7	0.50	19	11.6
ETCH	LAM	LAM-590	31.5	11.4	15.1	24.0	0.76	64	69.5
ION	EAT	EAT200MC	70.0	24.8	26.2	47.5	0.73	65	7.3
ION	VAR	VR-350D	159.2	52.0	42.9	129.5	0.70	28	26.8
ION	VAR	VR-CF4	127.4	38.8	0.0				

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MICRO-DEVICE EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA-500	6	70	0	97	0	55	0	7
ALIGN	PKN	PKN340/1	34	93	20	75	15	145	154	132
CLEAN	FSI	SATURN	28	94	14	90	12	89	93	93
CVD	AMT	AMT-3300	9	100	0	82	7	44	24	93
CVD	GEN	GE-8402	3	100	0	63	0	379	0	141
DIFF	BTU	BTU-7351	9	100	0	85	11	36	31	131
DIFF	THE	THE-9XXX	33	100	0	87	5	54	63	64
DIFF	THE	THE-4704	36	98	1	91	1	39	0	104
EPI	AMT	AMT-7800	6	98	3	61	9	99	90	157
ETCH	AMT	AMT-8100	9	82	40	79	10	192	53	183
ETCH	BRN	BRN-2100	7	85	21	96	2	39	35	7
ETCH	LAM	LAM-590	5	100	0	92	3	70	93	16
ETCH	TEG	TEG-901	10	90	18	91	9	112	119	6
ION	EAT	MV10-160	11	71	32	70	15	245	216	116
ION	VAR	VR120-10	2	81	26	80	4	233	146	150
ION	VAR	VR-3500	4	92	15	82	11	110	105	82
ION	VAR	VR-CF4	2	74	33	64	10	303	368	79
PVD	BAZ	BAK550/1	5	68	19	67	7	198	257	27
PVD	MRC	MR603/43	3	98	3	71	4	108	150	161
PVD	VAR	VR-31XX	7	93	13	76	13	107	151	213
STEP	GCA	GCA-6300	4	100	1	73	12	175	47	75
STEP	ULT	UT-1100	21	99	1	79	6	184	63	97
TRACK	EAT	EAT45/60	19	85	21	95	2	29	22	3
TRACK	SVG	SVG-8100	40	100	1	91	2	70	23	68

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MICRO-DEVICE EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	MPA-500	0		55.1	14.3	6.1	3.4	82.8	110.7	2.8	3.1
ALIGN	PKN	PKN340/1	63		57.4	17.6	6.7	7.1	168.0	0.0	1.1	1.2
CLEAN	FSI	SATURN	120		151.3	92.2	4.9	3.6	0.0	0.0	1.0	0.0
CVD	AMT	AMT-3300	112		134.4	139.9	5.8	6.2	6.5	2.1	1.7	2.0
CVD	GEN	GE-8402	0		529.5	676.7	14.2	0.0	0.0	0.0	1.2	0.0
DIFF	BTU	BTU-7351	178		248.4	161.2	6.6	2.5	0.0	0.0	0.0	0.0
DIFF	THE	THE-9XXX	59		216.6	53.0	10.8	7.2	466.7	0.0	12.3	0.0
DIFF	THE	THE-4704	0		22.0	2.8	0.9	0.2	252.0	118.8	6.0	2.8
EPI	AMT	AMT-7800	151		41.7	10.9	5.2	1.2	4.5	2.1	1.5	0.0
ETCH	AMT	AMT-8100	48		306.9	240.4	4.0	2.2	336.0	0.0	0.9	0.0
ETCH	BRN	BRN-2100	6		204.4	134.8	5.4	6.0	0.0	0.0	0.0	0.0
ETCH	LAM	LAM-590	13		136.2	45.0	3.6	3.2	168.0	0.0	3.0	0.0
ETCH	TEG	TEG-901	2		110.0	50.5	7.8	6.0	88.0	113.1	1.6	1.9
ION	EAT	MV10-160	26		38.8	21.0	3.7	2.3	4.5	2.1	0.7	0.3
ION	VAR	VR120-10	64		30.7	37.8	1.9	1.2	96.0	0.0	15.0	0.0
ION	VAR	VR-350D	49		27.2	30.8	3.1	3.1	3.9	4.1	0.4	0.2
ION	VAR	VR-CF4	16		16.4	0.6	1.4	0.1	3.0	2.8	0.4	0.2
PVD	BAZ	BAK550/1	0		80.7	44.3	4.9	3.4	0.0	0.0	0.4	0.0
PVD	MRC	MR603/43	203		267.0	350.8	13.1	9.7	4.0	0.0	3.0	0.0
PVD	VAR	VR-31XX	180		64.1	61.5	8.9	6.6	17.0	22.5	2.4	1.1
STEP	GCA	GCA-6300	78		61.5	31.8	8.3	9.6	164.0	5.7	3.0	1.4
STEP	ULT	UT-1100	25		46.5	36.2	3.6	1.9	151.0	0.0	3.0	0.0
TRACK	EAT	EAT45/60	1		50.8	0.7	2.5	1.2	115.0	75.0	0.7	0.5
TRACK	SVG	SVG-8100	22		88.7	8.5	2.5	1.3	139.0	0.0	2.0	0.0

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MICRO-DEVICE EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA-500	137.0	89.1	1.8	0.3	37.8	25.8	43.0	25.5
ALIGN	PKN	PKN340/1	24.6	10.8	1.9	0.8	48.6	11.1	57.8	10.5
CLEAN	FSI	SATURN	91.9	19.2	4.6	4.4	83.4	0.0	232.0	0.0
CVD	AMT	AMT-3300	147.3	121.6	4.0	1.7	40.7	20.6	60.0	0.0
CVD	GEN	GE-8402	163.2	0.0	17.6	3.4	25.0	0.0	24.6	0.0
DIFF	BTU	BTU-7351	178.1	128.3	7.0	8.1	0.0	0.0	0.0	0.0
DIFF	THE	THE-9XXX	335.4	286.0	10.3	0.6	47.3	0.0	0.0	0.0
DIFF	THE	THE-4704	300.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0
EPI	AMT	AMT-7800	21.5	8.1	2.8	3.0	9.5	2.1	0.0	0.0
ETCH	AMT	AMT-8100	36.1	10.4	5.7	2.6	20.0	12.4	27.9	3.6
ETCH	BRN	BRN-2100	558.5	620.1	2.3	2.2	65.0	0.0	180.0	0.0
ETCH	LAM	LAM-590	620.0	758.0	3.1	1.7	23.0	0.0	30.0	0.0
ETCH	TEG	TEG-901	291.1	195.4	1.6	1.0	45.0	2.8	85.0	35.4
ION	EAT	NV10-160	69.2	50.2	8.9	8.0	28.1	14.3	45.4	0.0
ION	VAR	VR120-10	73.5	37.5	15.5	14.8	100.0	0.0	125.0	0.0
ION	VAR	VR-3500	73.1	43.7	3.8	2.2	93.9	89.3	225.0	0.0
ION	VAR	VR-CF4	60.5	55.9	2.2	1.3	59.4	57.4	0.0	0.0
PVD	BAZ	BAK550/1	168.0	0.0	9.1	6.9	19.3	0.0	39.3	0.0
PVD	MRC	MR603/43	200.9	153.1	13.3	12.1	50.0	0.0	59.0	0.0
PVD	VAR	VR-31XX	75.2	29.3	10.2	6.5	40.6	26.2	53.3	20.8
STEP	GCA	GCA-6300	107.5	85.6	3.0	0.0	28.5	7.8	43.0	18.4
STEP	ULT	ULT-1100	222.4	172.9	4.0	1.7	41.0	0.0	59.0	0.0
TRACK	EAT	EAT45/60	211.2	129.0	0.8	0.1	36.6	19.0	45.0	21.2
TRACK	SVG	SVG-8100	190.4	146.5	2.0	0.9	59.0	0.0	63.0	0.0

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MICRO-DEVICE EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA-500	43.2	18.1	15.5	41.7	0.88	16	0.0
ALIGN	PKN	PKN340/1	55.7	6.7	6.3	41.7	0.84	118	135.8
CLEAN	FSI	SATURN	130.3	0.0	0.0	117.3	0.36	16	3.8
CVD	AMT	AMT-3300	40.7	20.6	0.0	33.4	0.68	47	19.3
CVD	GEN	GE-8402	39.1	0.0	0.0	24.5	1.02	43	0.0
DIFF	BTU	BTU-7351	0.0	0.0	0.0	0.0		28	4.0
DIFF	THE	THE-9XXX	47.3	0.0	0.0	41.3		31	8.6
DIFF	THE	THE-4704	0.0	0.0	0.0	0.0		26	0.0
EPI	AMT	AMT-7800	9.5	2.1	0.0	5.8		57	30.5
ETCH	AMT	AMT-8100	20.2	11.9	5.4	16.0	0.72	37	22.6
ETCH	BRN	BRN-2100	101.5	0.0	0.0	97.9	0.36	15	17.3
ETCH	LAM	LAM-590	23.0	0.0	0.0	21.1	0.77	11	8.7
ETCH	TEG	TEG-901	58.2	21.5	79.1	53.0	0.53	37	11.8
ION	EAT	NV10-160	35.7	9.4	0.0	24.8	0.62	125	129.0
ION	VAR	VR120-10	100.0	0.0	0.0	80.1	0.80	42	23.0
ION	VAR	VR-3500	94.2	88.8	0.0	77.5	0.42	29	21.9
ION	VAR	VR-CF4	64.7	49.9	0.0	41.4		165	171.3
PVD	BAZ	BAK550/1	30.2	0.0	0.0	20.2	0.49	55	0.0
PVD	MRC	MR603/43	50.0	0.0	0.0	35.3	0.85	55	53.6
PVD	VAR	VR-31XX	42.6	22.8	11.6	32.5	0.76	28	18.4
STEP	GCA	GCA-6300	28.5	7.8	18.4	20.8	0.66	40	20.2
STEP	ULT	UT-1100	41.0	0.0	0.0	32.5	0.69	47	20.7
TRACK	EAT	EAT45/60	43.0	9.8	9.3	41.0	0.81	23	2.0
TRACK	SVG	SVG-8100	59.0	0.0	0.0	53.6	0.94	12	7.8

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BIMOS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
CVD	AMT	AMT-2100	4	100	0	78.4	9.4	35	7.7	26.8
EPI	AMT	AMT-7800	4	96.8	2.2	60.8	12.6	49.1	38.6	71

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BIMOS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
CVD	AMT	AMT-2100	7		39.7	3.3	3.1	0.8	6.5	2.1	0.6	0.1
EPI	AMT	AMT-7800	23.2		48	0	4.5	0.1	4.5	2.1	1.5	0

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BIMOS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
CVD	AMT	AMT-2100	126	59.4	3.3	2.3	35.5	26.2	0	0
EPI	AMT	AMT-7800	16.8	0	1.1	0.3	9.5	2.1	0	0

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BINOS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
CVD	AMT	AMT-2100	35.5	26.2	0	27.8		50.8	20.9
EPI	AMT	AMT-7800	9.5	2.1	0	5.8		52.4	41.7

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BIPOLAR EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA500FA	2	79	0	70	0	312	0	78
ALIGN	CAN	PLA501FA	15	69	10	91	12	83	131	39
ALIGN	PKN	PKN340/1	15	100	0	74	16	148	167	132
CLEAN	FSI	FSI-2120	24	83	23	85	13	75	80	116
CVD	AMT	AMT-3300	15	78	34	79	13	239	313	46
CVD	ASM	ASM-3	5	97	5	78	24	86	109	156
CVD	ASM	ASM-PRX	4	58	16	68	16	312	92	166
DIFF	BTU	BTU-7351	10	98	4	87	9	26	28	112
DIFF	THE	THE-NA	33	100	0	87	5	54	63	64
DIFF	THE	THE-MAXI	68	51	14	86	0	72	83	228
EPI	AMT	AMT-7800	12	85	26	62	8	97	73	287
EPI	GEM	GEM-2	6	56	12	77	4	315	191	85
ETCH	BRN	BRN-8231	12	72	28	93	3	76	22	17
ETCH	BRN	BRN-2075	2	98	1	98	0	7	1	6
ETCH	LAM	LAM-590	5	100	0	92	3	70	93	16
ETCH	TEG	TEG-901	16	78	29	94	6	61	82	10
ION	EAT	MV10-160	2	98	3	68	12	135	83	108
ION	VAR	VR-3500F	3	73	45	69	7	228	183	195
ION	VAR	VR-CF4	4	70	35	75	15	191	196	192
PVD	BAZ	BAK550/1	4	61	29	61	2	99	117	352
PVD	MRC	MR-662	3	80	29	62	8	218	179	98
PVD	TMS	TMS-3200	4	55	40	80	18	92	98	181
PVD	VAR	VR-31XX	4	99	2	65	9	210	234	129
STEP	ULT	UT-1100	17	100	0	76	3	211	59	94
TRACK	EAT	EAT45/60	34	79	16	80	17	176	159	87
TRACK	GCA	GCA-9000	5	62	25	98	1	18	12	6
TRACK	SVG	SVG-8100	56	81	18	94	4	39	39	50

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BIPOLAR EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	MPA500FA	0		26.5	2.1	2.2	0.0	1.9	0.0	0.3	0.0
ALIGN	CAN	PLA501FA	22		18.5	3.8	0.5	0.3	22.8	16.1	1.0	1.0
ALIGN	PKN	PKN340/1	63		58.9	18.4	7.3	7.4	168.0	0.0	2.0	0.0
CLEAN	FSI	FSI-2120	101		184.5	141.3	6.1	2.8	138.0	216.8	0.2	0.0
CVD	AMT	AMT-3300	35		87.6	98.2	16.1	28.8	93.8	115.4	1.1	0.8
CVD	ASM	ASM-3	170		51.5	47.9	7.6	10.3	26.5	0.0	4.0	0.0
CVD	ASM	ASM-PRX	143		9.8	13.1	4.2	3.0	11.5	14.8	1.6	2.0
DIFF	BTU	BTU-7351	131		181.0	163.1	4.6	4.0	13.5	0.0	8.0	0.0
DIFF	THE	THE-HA	59		216.6	53.0	10.8	7.2	466.7	0.0	12.3	0.0
DIFF	THE	THE-MAXI	101		2800.0	0.0	92.0	128.7	2800.0	0.0	2.0	0.0
EPI	AMT	AMT-7800	287		61.3	40.2	4.4	1.9	11.0	11.4	1.3	0.3
EPI	GEM	GEM-2	53		68.4	36.9	11.3	12.4	44.0	55.4	0.5	0.6
ETCH	BRN	BRN-8231	5		168.2	97.1	5.2	3.6	63.7	103.3	0.2	0.3
ETCH	BRN	BRN-2075	0		31.2	6.8	0.3	0.0	160.4	2.6	1.0	0.0
ETCH	LAM	LAM-590	13		136.2	45.0	3.6	3.2	168.0	0.0	3.0	0.0
ETCH	TEG	TEG-901	7		106.0	127.5	4.0	4.7	141.2	131.8	1.4	1.2
ION	EAT	MV10-160	32		22.3	1.8	3.1	0.7	6.0	0.0	0.5	0.0
ION	VAR	VR-350DF	193		59.7	74.0	11.7	16.3	73.0	101.8	1.1	1.2
ION	VAR	VR-CF4	178		55.5	62.2	9.5	14.2	55.8	63.2	1.3	0.8
PVD	BAZ	BAK550/1	459		86.0	36.8	5.6	2.3	24.0	0.0	2.0	0.0
PVD	MRC	MR-662	100		69.7	12.3	7.7	10.0	26.8	0.0	0.8	0.0
PVD	TMS	TMS-3200	127		60.2	45.4	3.7	5.4	67.2	87.6	4.2	3.4
PVD	VAR	VR-31XX	135		22.3	0.8	4.0	2.6	0.0	0.0	0.0	0.0
STEP	ULT	UT-1100	35		59.7	39.7	4.7	0.1	0.0	0.0	0.0	0.0
TRACK	EAT	EAT45/60	99		45.4	19.2	1.4	0.5	56.6	78.5	0.4	0.4
TRACK	GCA	GCA-9000	0		16.0	14.2	0.2	0.1	81.3	106.6	1.1	1.3
TRACK	SVG	SVG-8100	40		51.6	31.1	1.2	1.4	48.3	17.2	3.7	3.2

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BIPOLAR EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA500FA	168.0	0.0	3.0	0.0	33.0	0.0	60.0	0.0
ALIGN	CAN	PLA501FA	62.1	60.5	7.2	8.0	42.9	24.2	54.0	31.0
ALIGN	PKN	PKN340/1	24.6	10.8	1.9	0.9	48.0	0.0	60.0	0.0
CLEAN	FSI	FSI-2120	314.0	316.1	3.4	3.7	72.7	13.7	250.7	179.2
CVD	AMT	AMT-3300	174.0	73.4	15.7	26.7	68.6	78.2	145.0	186.2
CVD	ASM	ASM-3	85.6	80.8	17.4	8.2	400.0	0.0	456.0	0.0
CVD	ASM	ASM-PRX	444.0	390.3	2.5	2.1	10.3	13.8	21.2	29.3
DIFF	BTU	BTU-7351	123.6	130.9	6.6	5.7	150.0	0.0	200.0	0.0
DIFF	THE	THE-NA	335.4	286.0	10.3	0.6	47.3	0.0	0.0	0.0
DIFF	THE	THE-MAXI	124.0	62.2	11.5	0.7	21.0	0.0	0.0	0.0
EPI	AMT	AMT-7800	100.1	157.4	6.1	7.0	6.6	5.3	0.8	0.0
EPI	GEM	GEM-2	444.0	318.7	3.5	0.6	14.8	6.3	17.2	6.8
ETCH	BRN	BRN-8231	812.3	159.9	2.9	0.8	24.0	10.6	50.0	0.0
ETCH	BRN	BRN-2075	163.4	4.1	70.0	0.0	117.5	24.8	122.5	24.8
ETCH	LAM	LAM-590	620.0	758.0	3.1	1.7	23.0	0.0	30.0	0.0
ETCH	TEG	TEG-901	372.9	270.5	31.3	36.2	35.1	8.8	41.1	15.3
ION	EAT	NV10-160	53.7	60.1	4.1	4.5	44.0	0.0	0.0	0.0
ION	VAR	VR-3500F	66.8	50.0	12.5	17.0	92.5	10.6	0.0	0.0
ION	VAR	VR-CF4	45.2	30.8	16.3	16.4	84.0	19.1	117.0	56.6
PVD	BAZ	BAK550/1	168.0	0.0	10.1	8.3	50.0	0.0	55.0	0.0
PVD	MRC	MR-662	514.6	438.8	24.9	24.8	13.0	0.0	15.0	0.0
PVD	TMS	TMS-3200	72.1	83.1	6.9	5.4	131.7	189.1	162.0	220.0
PVD	VAR	VR-31XX	70.1	51.6	7.7	9.4	0.0	0.0	0.0	0.0
STEP	ULT	UT-1100	315.1	90.8	4.9	0.0	0.0	0.0	0.0	0.0
TRACK	EAT	EAT45/60	477.6	285.2	5.0	3.6	46.0	10.6	66.2	13.8
TRACK	GCA	GCA-9000	196.6	0.0	70.0	0.0	58.5	2.1	67.5	10.6
TRACK	SVG	SVG-8100	132.0	108.7	11.2	11.3	47.3	28.5	65.0	36.5

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BIPOLAR EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA500FA	51.6	0.0	0.0	36.1	0.55	78	0.0
ALIGN	CAN	PLA501FA	49.4	32.4	44.1	45.0	0.79	24	31.9
ALIGN	PKN	PKN340/1	48.0	0.0	0.0	35.3	0.80	118	135.8
CLEAN	FSI	FSI-2120	98.2	22.2	273.5	83.9	0.29	74	80.7
CVD	AMT	AMT-3300	68.6	78.2	186.2	54.2	0.47	36	24.3
CVD	ASM	ASM-3	400.0	0.0	0.0	313.2	0.88	77	95.9
CVD	ASM	ASM-PRX	15.9	21.7	46.0	10.8	0.48	88	105.7
DIFF	BTU	BTU-7351	150.0	0.0	0.0	131.1	0.75	20	13.7
DIFF	THE	THE-NA	47.3	0.0	0.0	41.3		31	8.6
DIFF	THE	THE-MAXI	21.0	0.0	0.0	18.1		13	0.0
EPI	AMT	AMT-7800	6.6	5.3	0.0	4.1	8.23	46	33.2
EPI	GEM	GEM-2	17.8	4.7	6.7	13.8	0.86	33	13.0
ETCH	BRN	BRN-8231	32.2	16.0	16.2	30.1	0.48	20	12.7
ETCH	BRN	BRN-2075	117.5	24.7	24.7	115.7	0.96	3	0.0
ETCH	LAM	LAM-590	23.0	0.0	0.0	21.1	0.77	11	8.7
ETCH	TEG	TEG-901	39.2	5.4	10.3	36.8	0.85	17	15.8
ION	EAT	NV10-160	44.0	0.0	0.0	29.8		50	14.0
ION	VAR	VR-350DF	92.5	10.6	0.0	63.5		47	12.3
ION	VAR	VR-CF4	84.0	19.1	56.6	63.1	0.72	28	24.0
PVD	BAZ	BAK550/1	50.0	0.0	0.0	30.5	0.91	34	29.4
PVD	MRC	MR-662	20.3	0.0	0.0	12.5	0.87	90	59.0
PVD	TMS	TMS-3200	136.7	185.1	214.1	109.0	0.81	61	88.3
PVD	VAR	VR-31XX	0.0	0.0	0.0	0.0		41	23.7
STEP	ULT	UT-1100	0.0	0.0	0.0	0.0		57	14.6
TRACK	EAT	EAT45/60	58.8	21.5	28.1	46.9	0.69	48	35.2
TRACK	GCA	GCA-9000	58.5	2.1	10.6	57.3	0.87	15	15.7
TRACK	SVG	SVG-8100	47.2	28.5	36.5	44.5	0.73	9	9.9

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CMOS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA-500	15	85	21	96	1	44	15	34
ALIGN	PKN	PKN340/1	68	86	25	78	14	147	140	105
CLEAN	FSI	SATURN	54	97	10	89	10	114	90	60
CLEAN	STL	ST-860	5	100	0	77	26	323	368	4
CVD	AMT	AMT-2100	11	100	0	82	6	67	57	93
CVD	ASM	ASM-3	6	57	61	80	26	83	112	146
CVD	ASM	ASM-PRX	14	50	44	86	4	141	36	75
CVD	GEN	GE8301/6	5	69	44	70	11	395	22	99
CVD	TEM	TEM-232	5	44	9	67	18	179	33	272
DIFF	BTU	BTU-7351	9	100	0	85	11	36	31	131
DIFF	BTU	BTU-BDF4	53	48	11	78	7	115	32	332
DIFF	THE	THE-9XXX	67	81	37	88	6	54	46	62
DIFF	THE	THE-4704	36	98	1	91	1	39	0	104
DIFF	LAM	LAM-590	0	0	38	0	5	0	64	0
EPI	AMT	AMT-7800	6	98	3	61	9	99	90	157
ETCH	AMT	AMT-8100	18	83	30	74	13	267	141	138
ETCH	BRN	BRN-3200	11	86	15	94	5	55	37	7
ETCH	BRN	BRN-6540	16	44	48	82	11	286	212	50
ETCH	BRN	BRN-4005	7	44	23	90	12	175	259	22
ETCH	DRY	DRIE100	19	48	33	84	11	214	119	63
ETCH	LAM	LAM-690	32	66	27	81	11	195	121	36
ETCH	TEG	TEG-901	14	84	18	90	8	121	99	7
ETCH	VAR	VR-20	4	53	67	52	11	555	63	234
ION	EAT	NV10-160	25	76	22	68	9	329	158	165
ION	EAT	EAT-6200	6	80	18	77	11	154	169	164
ION	VAR	VR120-10	2	81	26	80	4	233	146	150
ION	VAR	VR-350D	6	87	16	82	10	148	124	77
ION	VAR	VR-CF4	8	70	34	72	13	278	218	126
PVD	ASM	ASM-NA	5	81	17	86	7	150	50	31
PVD	BAZ	BAK550/1	5	68	19	67	7	198	257	27
PVD	MRC	MR603/43	8	97	2	65	9	128	129	220
PVD	VAR	VR-31XX	23	75	31	69	17	161	138	313
STEP	CAN	CAN-MKII	8	100	1	84	3	172	23	69
STEP	GCA	GCA-6300	43	75	29	81	10	190	76	90
STEP	NIK	N1505G4D	29	72	27	88	6	146	105	119
STEP	ULT	GCA-1000	34	93	9	77	5	179	45	88
TRACK	EAT	EAT45/60	19	85	21	95	2	29	22	3
TRACK	GCA	GCA-1006	32	74	26	77	32	327	577	97
TRACK	MTI	MTI-TARG	34	77	32	97	1	48	26	17
TRACK	SSI	SSI-COAT	18	84	1	84	2	122	5	30
TRACK	SVG	SVG-8100	92	87	22	92	6	82	60	39

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CMOS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	MTBF S.D.	MTTR	MTTR S.D.	MTBS	MTBS S.D.	MTFS	MTFS S.D.
ALIGN	CAN	MPA-500	39		68.9	25.9	4.4	3.8	82.8	110.7	2.8	3.1
ALIGN	PKN	PKN340/1	66		72.7	85.3	6.8	6.9	57.3	95.8	0.7	0.9
CLEAN	FSI	SATURN	97		168.6	84.4	5.7	3.8	0.0	0.0	1.0	0.0
CLEAN	STL	ST-860	0		130.0	42.4	4.4	0.0	0.0	0.0	0.0	0.0
CVD	ANT	AMT-2100	97		114.5	129.1	5.5	5.4	8.9	4.4	1.4	1.7
CVD	ASM	ASM-3	184		82.7	3.8	8.2	9.5	56.0	0.0	2.5	0.0
CVD	ASM	ASM-PRX	30		162.7	121.6	14.5	9.1	70.2	48.6	6.7	5.4
CVD	GEN	GE8301/6	60		420.7	514.3	32.9	26.4	120.0	0.0	4.3	4.4
CVD	TEM	TEM-232	61		276.5	235.5	68.7	78.2	13.8	5.2	3.1	0.7
DIFF	BTU	BTU-7351	178		248.4	161.2	6.6	2.5	0.0	0.0	0.0	0.0
DIFF	BTU	BTU-BDF4	171		1741.3	1224.3	82.3	77.8	237.0	78.5	15.4	3.0
DIFF	THE	THE-9XXX	35		157.1	78.1	7.5	7.6	245.3	313.0	6.7	8.0
DIFF	THE	THE-4704	0		22.0	2.8	0.9	0.2	252.0	118.8	6.0	2.8
DIFF	LAM	LAM-590	55		0.0	134.1	0.0	7.1	0.0	147.2	0.0	24.7
EPI	AMT	AMT-7800	151		41.7	10.9	5.2	1.2	4.5	2.1	1.5	0.0
ETCH	AMT	AMT-8100	60		157.5	210.0	4.9	2.5	83.8	143.5	3.5	4.9
ETCH	BRN	BRN-3200	4		149.9	134.1	5.4	6.0	0.0	0.0	0.0	0.0
ETCH	BRN	BRN-6540	58		51.3	19.6	8.3	4.5	27.2	21.9	5.7	6.7
ETCH	BRN	BRN-4005	34		445.2	314.9	43.6	65.4	136.8	154.8	3.1	2.3
ETCH	DRY	DRIE100	48		77.4	94.0	5.5	3.8	70.3	83.3	10.2	12.9
ETCH	LAM	LAM-690	44		65.5	50.4	11.6	6.7	74.6	63.9	7.1	5.0
ETCH	TEG	TEG-901	3		89.2	58.5	7.8	6.0	88.0	113.1	1.6	1.9
ETCH	VAR	VR-20	134		37.3	23.6	5.3	2.5	54.0	0.0	2.5	0.0
ION	EAT	NV10-160	117		36.3	30.3	8.2	10.9	15.6	15.6	2.2	2.3
ION	EAT	EAT-6200	95		18.6	19.6	1.0	0.5	2.0	0.0	0.5	0.0
ION	VAR	VR120-10	64		30.7	37.8	1.9	1.2	96.0	0.0	15.0	0.0
ION	VAR	VR-350D	44		35.5	32.4	4.8	4.7	16.5	22.0	2.1	3.1
ION	VAR	VR-CF4	128		23.0	15.4	2.6	1.8	13.4	18.1	1.8	2.4
PVD	ASM	ASM-NA	30		27.3	10.2	5.1	5.2	18.0	0.0	0.3	0.0
PVD	BAZ	BAK550/1	0		80.7	44.3	4.9	3.4	0.0	0.0	0.4	0.0
PVD	MRC	MR603/43	203		204.3	312.7	10.5	9.4	4.0	0.0	3.0	0.0
PVD	VAR	VR-31XX	262		57.9	56.7	8.5	7.3	27.3	22.9	33.3	64.4
STEP	CAN	CAN-MKII	41		49.5	9.2	4.8	4.6	68.2	93.1	1.4	1.6
STEP	GCA	GCA-6300	118		92.6	50.7	11.5	8.8	86.7	71.8	2.4	1.4
STEP	NIK	N1505G4D	75		171.7	93.1	4.1	4.5	128.0	0.0	3.8	4.8
STEP	ULT	GCA-1000	22		38.1	33.9	3.6	1.9	151.0	0.0	3.0	0.0
TRACK	EAT	EAT45/60	1		50.8	0.7	2.5	1.2	115.0	75.0	0.7	0.5
TRACK	GCA	GCA-1006	107		47.5	56.2	10.8	20.9	55.5	63.2	2.3	1.9
TRACK	MTI	MTI-TARG	0		328.0	342.2	1.8	1.3	0.0	0.0	0.4	0.0
TRACK	SSI	SSI-COAT	1		30.8	3.8	0.0	0.0	0.0	0.0	0.0	0.0
TRACK	SVG	SVG-8100	36		116.5	84.4	3.2	1.4	71.4	73.3	0.8	0.8

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CHOS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA-500	137.0	89.1	1.8	0.3	39.8	18.6	47.0	19.3
ALIGN	PKN	PKN340/1	55.3	61.8	2.5	2.3	45.5	8.0	64.7	18.6
CLEAN	FSI	SATURN	91.9	19.2	4.6	4.4	131.7	68.3	216.0	22.6
CLEAN	STL	ST-860	727.0	0.0	1.5	0.0	144.0	0.0	180.0	0.0
CVD	AMT	AMT-2100	145.1	105.4	4.4	1.7	46.0	19.9	70.0	14.1
CVD	ASM	ASM-3	155.4	17.8	11.9	16.1	50.0	0.0	75.0	0.0
CVD	ASM	ASM-PRX	165.3	49.0	6.9	2.2	18.3	6.8	22.8	13.2
CVD	GEN	GE8301/6	229.1	93.2	15.2	4.8	21.6	4.9	22.9	2.4
CVD	TEN	TEN-232	15.6	7.3	3.0	0.1	22.3	2.9	20.9	6.9
DIFF	BTU	BTU-7351	178.1	128.3	7.0	8.1	0.0	0.0	0.0	0.0
DIFF	BTU	BTU-BDF4	280.0	39.9	14.5	1.5	18.3	6.2	26.5	7.4
DIFF	THE	THE-9XXX	279.6	224.1	7.0	5.7	123.7	108.0	200.0	0.0
DIFF	THE	THE-4704	300.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0
DIFF	LAM	LAM-590	0.0	148.5	0.0	23.3	0.0	0.0	0.0	0.2
EPI	AMT	AMT-7800	21.5	8.1	2.8	3.0	9.5	2.1	0.0	0.0
ETCH	AMT	AMT-8100	98.6	71.9	7.4	4.2	29.2	28.2	35.1	32.9
ETCH	BRN	BRN-3200	558.5	620.1	2.3	2.2	65.0	0.0	180.0	0.0
ETCH	BRN	BRN-6540	275.5	391.4	6.1	7.0	47.7	39.5	58.3	53.5
ETCH	BRN	BRN-4005	239.0	182.7	36.9	72.8	39.7	11.3	54.7	14.8
ETCH	DRY	DRIE100	384.4	520.4	13.1	21.3	40.1	7.4	73.7	55.7
ETCH	LAM	LAM-690	226.5	410.4	2.2	1.1	17.9	5.1	23.6	7.3
ETCH	TEG	TEG-901	291.1	195.4	1.6	1.0	45.0	2.8	85.0	35.4
ETCH	VAR	VR-20	98.6	98.2	3.6	3.8	45.0	0.0	45.0	0.0
ION	EAT	NV10-160	69.5	48.6	6.5	5.6	39.7	17.4	53.3	17.5
ION	EAT	EAT-6200	138.0	52.0	2.7	2.0	112.7	32.3	129.3	50.8
ION	VAR	VR120-10	73.5	37.5	15.5	14.8	100.0	0.0	125.0	0.0
ION	VAR	VR-350D	79.7	40.6	3.7	1.9	92.4	73.0	176.0	69.3
ION	VAR	VR-CF4	84.3	57.1	2.2	0.9	77.0	39.0	98.0	2.8
PVD	ASM	ASM-NA	48.0	0.0	1.0	0.0	24.6	17.5	32.5	10.6
PVD	BAZ	BAK550/1	168.0	0.0	9.1	6.9	19.3	0.0	39.3	0.0
PVD	MRC	MR603/43	200.9	153.1	13.3	12.1	39.0	15.6	44.5	20.5
PVD	VAR	VR-31XX	79.0	43.9	13.1	14.2	40.1	17.4	50.4	21.4
STEP	CAN	CAN-MKII	99.5	71.4	3.9	2.0	43.1	16.8	59.0	15.6
STEP	GCA	GCA-6300	138.6	120.4	2.4	1.8	23.6	5.9	32.6	12.5
STEP	NIK	N1505G4D	422.0	0.0	2.7	1.0	34.1	4.4	37.3	2.3
STEP	ULT	GCA-1000	222.4	172.9	4.0	1.7	41.0	0.0	59.0	0.0
TRACK	EAT	EAT45/60	211.2	129.0	0.8	0.1	36.6	19.0	45.0	21.2
TRACK	GCA	GCA-1006	123.5	59.2	1.1	0.6	45.5	14.3	53.5	20.0
TRACK	NTI	NTI-TARG	0.0	0.0	8.0	0.0	26.4	9.4	31.5	6.4
TRACK	SSI	SSI-COAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRACK	SVG	SVG-8100	229.9	107.0	1.5	0.8	43.6	12.0	54.3	18.6

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CMOS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA-500	43.5	12.8	11.3	41.8	0.85	16	0.0
ALIGN	PKN	PKN340/1	53.1	10.7	38.6	41.4	0.70	97	117.5
CLEAN	FSI	SATURN	155.1	35.2	114.9	137.8	0.61	39	36.9
CLEAN	STL	ST-860	225.0	0.0	0.0	172.9	0.80	12	6.6
CVD	AMT	AMT-2100	54.7	32.7	45.9	44.9	0.66	42	20.6
CVD	ASM	ASM-3	50.0	0.0	0.0	40.1	0.67	73	101.4
CVD	ASM	ASM-PRX	33.2	14.8	18.4	28.6	0.80	14	16.8
CVD	GEN	GE8301/6	39.9	1.2	6.5	28.0	0.94	23	29.2
CVD	TEM	TEM-232	34.8	4.5	10.7	23.2	1.06	0	0.0
DIFF	BTU	BTU-7351	0.0	0.0	0.0	0.0		28	4.0
DIFF	BTU	BTU-BDF4	28.5	9.6	11.5	22.4	0.69	0	0.0
DIFF	THE	THE-9XXX	123.7	108.0	0.0	108.6	0.62	49	40.6
DIFF	THE	THE-4704	0.0	0.0	0.0	0.0		26	0.0
DIFF	LAM	LAM-590	0.0	0.5	0.5	0.0		0	12.5
EPI	AMT	AMT-7800	9.5	2.1	0.0	5.8		57	30.5
ETCH	AMT	AMT-8100	43.5	44.9	53.6	32.4	0.83	58	45.2
ETCH	BRN	BRN-3200	101.5	0.0	0.0	95.3	0.36	34	34.5
ETCH	BRN	BRN-6540	74.5	61.7	83.5	60.8	0.82	14	0.0
ETCH	BRN	BRN-4005	55.0	14.5	23.1	49.7	0.73	1	0.0
ETCH	DRY	DRIE100	52.5	11.5	86.9	43.8	0.54	14	8.8
ETCH	LAM	LAM-690	31.5	11.4	15.1	25.3	0.76	51	51.7
ETCH	TEG	TEG-901	58.2	21.5	79.1	52.5	0.53	33	10.4
ETCH	VAR	VR-20	45.0	0.0	0.0	23.5	1.00	15	12.5
ION	EAT	NV10-160	57.8	26.7	29.9	39.5	0.74	83	87.7
ION	EAT	EAT-6200	112.7	32.3	50.8	86.8	0.87	69	89.8
ION	VAR	VR120-10	100.0	0.0	0.0	80.1	0.80	42	23.0
ION	VAR	VR-3500	120.0	89.0	42.9	98.9	0.52	24	22.5
ION	VAR	VR-CF4	93.5	51.4	42.6	66.9	0.79	111	153.2
PVD	ASM	ASM-NA	28.0	12.7	0.7	24.2	0.76	16	14.7
PVD	BAZ	BAK550/1	30.2	0.0	0.0	20.2	0.49	55	0.0
PVD	MRC	MR603/43	39.0	15.6	20.5	25.5	0.88	42	51.0
PVD	VAR	VR-31XX	51.5	18.9	15.0	35.6	0.80	39	28.3
STEP	CAN	CAN-MKII	51.9	4.4	3.5	43.6	0.73	29	13.1
STEP	GCA	GCA-6300	33.5	6.7	10.0	27.1	0.72	33	19.1
STEP	NIK	N1505G4D	53.6	18.4	20.6	46.9	0.92	0	0.0
STEP	ULT	GCA-1000	41.0	0.0	0.0	31.7	0.69	78	48.5
TRACK	EAT	EAT45/60	43.0	9.8	9.3	41.0	0.81	23	2.0
TRACK	GCA	GCA-1006	51.8	9.3	12.5	39.9	0.85	13	18.0
TRACK	MTI	MTI-TARG	31.9	1.6	4.4	31.0	0.84	0	0.0
TRACK	SSI	SSI-COAT	0.0	0.0	0.0	0.0		97	17.0
TRACK	SVG	SVG-8100	61.4	13.1	29.2	56.3	0.80	16	9.4

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NMOS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA-500	6	70	0	97	0	55	0	7
ALIGN	PKN	PKN340/1	62	89	24	76	14	147	141	122
CLEAN	FSI	SATURN	35	94	12	91	10	86	77	93
CVD	AMT	AMT-2100	11	100	0	82	6	67	57	93
CVD	ASM	ASM-3A	6	57	61	80	26	83	112	146
CVD	ASM	ASM-PRX	12	59	58	84	3	144	50	72
CVD	GEN	GE8301/6	5	69	44	70	11	395	22	99
DIFF	BTU	BTU-7351	15	85	25	87	9	57	43	131
DIFF	THE	THE-NA	0	0	43	0	6	0	49	0
DIFF	THE	THE-4704	36	98	1	91	1	39	0	104
DIFF	TYL	TYTAN-II	0	0	38	0	5	0	64	0
EPI	AMT	AMT-7800	0	0	3	0	9	0	90	0
ETCH	AMT	AMT-8330	22	76	33	76	13	241	126	145
ETCH	BRN	BRN-2000	7	85	21	96	2	39	35	7
ETCH	DRY	DRIE100	12	66	31	77	8	270	121	97
ETCH	LAM	LAM-590	19	64	35	79	15	173	147	58
ETCH	TEG	TEG-901	10	90	18	91	9	112	119	6
ETCH	VAR	VR-20	4	53	67	52	11	555	63	234
ION	EAT	NV10-160	22	75	23	68	10	319	174	187
ION	EAT	EAT200MC	4	76	21	79	13	190	187	203
ION	VAR	VR120-10	2	81	26	80	4	233	146	150
ION	VAR	VR-3500	6	87	16	82	10	148	124	77
ION	VAR	VR-CF4	2	74	33	64	10	303	368	79
PVD	BAZ	BAK550/1	5	68	19	67	7	198	257	27
PVD	MRC	MR-942	3	98	3	71	4	108	150	161
PVD	VAR	VR-31XX	15	83	24	68	20	152	161	359
STEP	CAN	CAN-MKII	8	100	1	84	3	172	23	69
STEP	GCA	GCA-6300	34	81	29	81	12	149	70	129
STEP	NIK	N1505G4D	22	57	15	85	3	183	116	172
STEP	ULT	UT-1100	21	99	1	79	6	184	63	97
TRACK	EAT	EAT45/60	19	85	21	95	2	29	22	3
TRACK	GCA	GCA-1006	20	67	25	72	34	400	639	121
TRACK	SVG	SVG-8100	76	100	1	89	6	99	65	53

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NMOS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	MPA-500	0		55.1	14.3	6.1	3.4	82.8	110.7	2.8	3.1
ALIGN	PKN	PKN340/1	58		51.1	20.4	5.9	6.6	57.3	95.8	0.7	0.9
CLEAN	FSI	SATURN	120		156.9	84.1	5.0	3.8	0.0	0.0	1.0	0.0
CVD	AMT	AMT-2100	97		114.5	129.1	5.5	5.4	8.9	4.4	1.4	1.7
CVD	ASM	ASM-3A	184		82.7	3.8	8.2	9.5	56.0	0.0	2.5	0.0
CVD	ASM	ASM-PRX	42		114.5	125.2	12.1	11.4	46.8	37.8	3.9	3.2
CVD	GEN	GE8301/6	60		420.7	514.3	32.9	26.4	120.0	0.0	4.3	4.4
DIFF	BTU	BTU-7351	178		221.6	123.1	4.6	4.0	0.0	0.0	0.5	0.0
DIFF	THE	THE-NA	43		0.0	91.5	0.0	7.6	0.0	313.0	0.0	8.0
DIFF	THE	THE-4704	0		22.0	2.8	0.9	0.2	252.0	118.8	6.0	2.8
DIFF	TYL	TYTAN-II	55		0.0	134.1	0.0	7.1	0.0	147.2	0.0	24.7
EPI	AMT	AMT-7800	151		0.0	10.9	0.0	1.2	0.0	2.1	0.0	0.0
ETCH	AMT	AMT-8330	62		175.7	213.2	5.1	2.6	83.8	143.5	3.0	4.5
ETCH	BRN	BRN-2000	6		204.4	134.8	5.4	6.0	0.0	0.0	0.0	0.0
ETCH	DRY	DRIE100	10		24.6	9.0	3.3	2.7	16.3	13.3	0.8	0.4
ETCH	LAM	LAM-590	56		90.3	59.8	9.3	6.4	66.0	69.5	4.6	1.9
ETCH	TEG	TEG-901	2		110.0	50.5	7.8	6.0	88.0	113.1	1.6	1.9
ETCH	VAR	VR-20	134		37.3	23.6	5.3	2.5	54.0	0.0	2.5	0.0
ION	EAT	NV10-160	130		37.7	32.4	7.4	11.3	14.9	17.0	1.7	2.1
ION	EAT	EAT200MC	64		22.0	22.5	1.0	0.5	2.0	0.0	0.5	0.0
ION	VAR	VR120-10	64		30.7	37.8	1.9	1.2	96.0	0.0	15.0	0.0
ION	VAR	VR-3500	44		35.5	32.4	4.8	4.7	16.5	22.0	2.1	3.1
ION	VAR	VR-CF4	16		16.4	0.6	1.4	0.1	3.0	2.8	0.4	0.2
PVD	BAZ	BAK550/1	0		80.7	44.3	4.9	3.4	0.0	0.0	0.4	0.0
PVD	MRC	MR-942	203		267.0	350.8	13.1	9.7	4.0	0.0	3.0	0.0
PVD	VAR	VR-31XX	313		47.2	52.5	8.6	8.0	18.6	17.0	10.7	13.9
STEP	CAN	CAN-MKII	41		49.5	9.2	4.8	4.6	68.2	93.1	1.4	1.6
STEP	GCA	GCA-6300	130		101.6	60.3	9.0	9.1	112.8	76.4	2.0	1.4
STEP	NIK	N1505G4D	0		221.0	52.3	5.5	5.5	128.0	0.0	3.8	4.8
STEP	ULT	UT-1100	25		46.5	36.2	3.6	1.9	151.0	0.0	3.0	0.0
TRACK	EAT	EAT45/60	1		50.8	0.7	2.5	1.2	115.0	75.0	0.7	0.5
TRACK	GCA	GCA-1006	107		34.4	55.4	13.3	23.2	55.5	63.2	2.3	1.9
TRACK	SVG	SVG-8100	32		90.4	46.4	3.3	1.5	47.2	79.5	0.7	1.1

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NMOS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA-500	137.0	89.1	1.8	0.3	37.8	25.8	43.0	25.5
ALIGN	PKN	PKN340/1	55.3	61.8	2.5	2.3	46.8	8.2	66.7	20.1
CLEAN	FSI	SATURN	91.9	19.2	4.5	3.8	52.7	43.5	144.3	124.0
CVD	AMT	AMT-2100	145.1	105.4	4.4	1.7	46.0	19.9	70.0	14.1
CVD	ASM	ASM-3A	155.4	17.8	11.9	16.1	50.0	0.0	75.0	0.0
CVD	ASM	ASM-PRX	141.5	37.5	5.7	1.1	22.1	2.7	26.7	16.0
CVD	GEN	GE8301/6	229.1	93.2	15.2	4.8	21.6	4.9	22.9	2.4
DIFF	BTU	BTU-7351	178.1	128.3	8.0	5.9	16.8	0.0	32.2	0.0
DIFF	THE	THE-NA	0.0	224.1	0.0	5.7	123.7	108.0	0.0	0.0
DIFF	THE	THE-4704	300.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0
DIFF	TYL	TYTAN-II	0.0	148.5	0.0	23.3	16.6	0.2	0.0	0.2
EPI	AMT	AMT-7800	0.0	8.1	0.0	3.0	9.5	2.1	0.0	0.0
ETCH	AMT	AMT-8330	98.6	71.9	7.7	4.1	27.3	27.0	36.8	34.4
ETCH	BRN	BRN-2000	558.5	620.1	2.3	2.2	65.0	0.0	180.0	0.0
ETCH	DRY	DRIE100	168.0	0.0	3.6	4.0	39.6	9.3	42.0	0.0
ETCH	LAM	LAM-590	298.9	479.2	2.4	1.2	18.0	6.4	23.7	7.5
ETCH	TEG	TEG-901	291.1	195.4	1.6	1.0	45.0	2.8	85.0	35.4
ETCH	VAR	VR-20	98.6	98.2	3.6	3.8	45.0	0.0	45.0	0.0
ION	EAT	NV10-160	74.5	50.3	7.7	6.0	37.8	17.6	58.9	20.9
ION	EAT	EAT200MC	138.0	52.0	2.7	2.0	112.7	32.3	129.3	50.8
ION	VAR	VR120-10	73.5	37.5	15.5	14.8	100.0	0.0	125.0	0.0
ION	VAR	VR-3500	79.7	40.6	3.7	1.9	92.4	73.0	176.0	69.3
ION	VAR	VR-CF4	60.5	55.9	2.2	1.3	59.4	57.4	0.0	0.0
PVD	BAZ	BAK550/1	168.0	0.0	9.1	6.9	19.3	0.0	39.3	0.0
PVD	MRC	MR-942	200.9	153.1	13.3	12.1	50.0	0.0	59.0	0.0
PVD	VAR	VR-31XX	75.8	47.7	13.6	16.0	40.8	20.2	52.0	25.3
STEP	CAN	CAN-MKII	99.5	71.4	3.9	2.0	43.1	16.8	59.0	15.6
STEP	GCA	GCA-6300	181.0	130.1	4.0	1.5	21.4	7.8	31.7	15.4
STEP	NIK	N1505G4D	422.0	0.0	2.7	1.0	31.7	1.8	36.0	0.1
STEP	ULT	UT-1100	222.4	172.9	4.0	1.7	41.0	0.0	59.0	0.0
TRACK	EAT	EAT45/60	211.2	129.0	0.8	0.1	36.6	19.0	45.0	21.2
TRACK	GCA	GCA-1006	123.5	59.2	1.1	0.6	45.6	16.5	54.1	23.0
TRACK	SVG	SVG-8100	195.8	108.8	1.8	0.7	51.7	6.3	67.7	4.0

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NMOS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.)	S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA-500	43.2	18.1	15.5		41.7	0.88	16	0.0
ALIGN	PKN	PKN340/1	55.9	9.2	41.2		42.6	0.70	98	124.6
CLEAN	FSI	SATURN	82.2	67.9	193.8		75.0	0.36	13	7.1
CVD	AMT	AMT-2100	54.7	32.7	45.9		44.9	0.66	42	20.6
CVD	ASM	ASM-3A	50.0	0.0	0.0		40.1	0.67	73	101.4
CVD	ASM	ASM-PRX	41.5	5.6	17.5		34.9	0.83	14	16.8
CVD	GEN	GE8301/6	39.9	1.2	6.5		28.0	0.94	23	29.2
DIFF	BTU	BTU-7351	26.2	0.0	0.0		22.9	0.52	28	4.0
DIFF	THE	THE-NA	0.0	108.0	0.0		0.0		0	7.3
DIFF	THE	THE-4704	0.0	0.0	0.0		0.0		26	0.0
DIFF	TYL	TYTAN-II	0.0	0.5	0.5		0.0		0	12.5
EPI	AMT	AMT-7800	0.0	2.1	0.0		0.0		0	30.5
ETCH	AMT	AMT-8330	40.7	42.8	54.9		31.1	0.74	67	47.0
ETCH	BRN	BRN-2000	101.5	0.0	0.0		97.9	0.36	15	17.3
ETCH	DRY	DRIE100	45.0	0.0	0.0		34.7	0.94	15	10.5
ETCH	LAM	LAM-590	33.3	14.0	16.7		26.2	0.76	55	63.8
ETCH	TEG	TEG-901	58.2	21.5	79.1		53.0	0.53	37	11.8
ETCH	VAR	VR-20	45.0	0.0	0.0		23.5	1.00	15	12.5
ION	EAT	MV10-160	55.8	26.3	30.3		38.1	0.64	98	98.3
ION	EAT	EAT200MC	112.7	32.3	50.8		88.8	0.87	24	11.5
ION	VAR	VR120-10	100.0	0.0	0.0		80.1	0.80	42	23.0
ION	VAR	VR-350D	120.0	89.0	42.9		98.9	0.52	24	22.5
ION	VAR	VR-CF4	64.7	49.9	0.0		41.4		165	171.3
PVD	BAZ	BAK550/1	30.2	0.0	0.0		20.2	0.49	55	0.0
PVD	MRC	MR-942	50.0	0.0	0.0		35.3	0.85	55	53.6
PVD	VAR	VR-31XX	52.1	23.8	16.6		35.4	0.78	30	17.6
STEP	CAN	CAN-MKII	51.9	4.4	3.5		43.6	0.73	29	13.1
STEP	GCA	GCA-6300	29.5	7.8	13.9		23.8	0.68	33	19.1
STEP	NIK	N1505G4D	60.9	18.9	17.6		51.5	0.88	0	0.0
STEP	ULT	UT-1100	41.0	0.0	0.0		32.5	0.69	47	20.7
TRACK	EAT	EAT45/60	43.0	9.8	9.3		41.0	0.81	23	2.0
TRACK	GCA	GCA-1006	53.5	9.8	13.3		38.4	0.84	13	18.0
TRACK	SVG	SVG-8100	69.7	9.2	26.8		62.1	0.76	16	9.4

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1 TO <1.5 MICRON EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA500FA	14	100	0	96	0	34	0	61
ALIGN	PKN	PKN-542	24	72	39	90	10	71	84	51
CLEAN	FSI	SATURN	36	85	16	95	3	90	45	0
CVD	ASM	ASM-PRX	8	25	10	88	2	157	31	91
CVD	GEN	GE8301/6	4	38	0	78	0	410	0	56
DIFF	THE	THE-4704	36	98	1	91	1	39	0	104
DIFF	TYL	TYTAN-II	72	54	38	93	5	82	64	40
ETCH	AMT	AMT-8330	19	73	33	76	13	262	143	125
ETCH	BRN	BRN-2075	2	42	13	86	18	299	374	4
ETCH	LAM	LAM-690	14	40	18	70	12	242	145	86
ION	EAT	EAT200MC	18	68	22	73	8	372	135	137
ION	VAR	VR-3500E	3	84	21	86	4	182	166	93
PVD	NRC	NR603/43	6	96	0	64	13	108	116	393
PVD	VAR	VR-31XX	8	76	32	66	21	144	167	474
STEP	GCA	GCA-ALS	26	63	29	87	10	151	80	152
STEP	NIK	N1505G4D	29	72	27	88	6	146	105	119
TRACK	GCA	GCA-9503	29	80	34	90	7	80	56	125
TRACK	MTI	MTI-TARG	34	77	32	97	1	48	26	17
TRACK	SVG	SVG-8100	16	81	25	95	3	54	2	35

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1 TO <1.5 MICRON EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	MTBF S.D.	MTTR	MTTR S.D.	MTBS	MTBS S.D.	MTFS	MTFS S.D.
ALIGN	CAN	MPA500FA	0		70.8	36.4	4.8	5.3	161.0	0.0	5.0	0.0
ALIGN	PKN	PKN-542	0		191.3	204.6	8.7	9.8	0.0	0.0	0.3	0.0
CLEAN	FSI	SATURN	0		165.5	81.3	0.9	0.3	0.0	0.0	1.0	0.0
CVD	ASM	ASM-PRX	16		231.0	39.6	19.7	0.6	95.2	30.8	9.2	4.4
CVD	GEN	GE8301/6	0		605.5	569.2	51.5	0.0	120.0	0.0	4.3	4.4
DIFF	THE	THE-4704	0		22.0	2.8	0.9	0.2	252.0	118.8	6.0	2.8
DIFF	TYL	TYTAN-II	55		150.7	134.1	5.7	7.1	168.8	147.2	30.8	24.7
ETCH	ANT	ANT-8330	65		191.0	220.2	4.8	2.6	138.1	173.7	4.1	5.3
ETCH	BRN	BRN-2075	3		576.5	272.2	77.0	90.5	201.9	150.0	1.9	1.2
ETCH	LAM	LAM-690	56		59.8	51.3	13.1	4.8	32.0	17.4	5.2	1.9
ION	EAT	EAT200MC	51		47.9	40.6	10.3	15.2	34.6	15.9	2.9	2.6
ION	VAR	VR-3500E	52		70.3	2.4	6.2	8.0	41.7	0.0	5.7	0.0
PVD	MRC	MR603/43	4		344.1	463.6	10.3	10.8	4.0	0.0	3.0	0.0
PVD	VAR	VR-31XX	304		76.7	58.9	12.8	7.7	16.0	16.6	12.6	13.9
STEP	GCA	GCA-ALS	150		111.4	64.4	7.5	9.7	103.5	66.9	2.3	1.2
STEP	NIK	N1505G4D	75		171.7	93.1	4.1	4.5	128.0	0.0	3.8	4.8
TRACK	GCA	GCA-9503	141		77.3	54.6	1.7	1.3	101.1	60.7	3.5	2.1
TRACK	MTI	MTI-TARG	0		328.0	342.2	1.8	1.3	0.0	0.0	0.4	0.0
TRACK	SVG	SVG-8100	43		80.7	6.1	1.5	0.8	99.8	55.5	1.5	0.7

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1 TO <1.5 MICRON EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA500FA	74.0	0.0	2.0	0.0	50.0	8.5	58.0	4.2
ALIGN	PKN	PKN-542	0.0	0.0	2.0	0.0	45.6	12.4	56.1	10.3
CLEAN	FSI	SATURN	0.0	0.0	4.1	0.1	95.1	79.7	162.9	93.4
CVD	ASM	ASM-PRX	164.0	69.3	7.9	2.0	15.5	6.7	15.2	0.3
CVD	GEN	GE8301/6	295.0	0.0	15.2	6.8	21.6	4.9	22.9	2.4
DIFF	THE	THE-4704	300.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0
DIFF	TYL	TYTAN-II	242.7	148.5	39.2	23.3	16.6	0.2	16.9	0.2
ETCH	AMT	AMT-8330	84.4	80.3	7.8	4.9	18.6	9.3	23.9	4.4
ETCH	BRN	BRN-2075	320.0	271.5	73.2	102.9	35.4	15.5	60.6	15.1
ETCH	LAM	LAM-690	84.8	11.2	1.9	0.8	16.3	6.6	21.6	7.5
ION	EAT	EAT200MC	66.0	19.4	10.9	7.5	32.0	8.6	50.2	15.6
ION	VAR	VR-3500E	91.0	21.2	4.2	1.1	133.9	65.2	176.0	69.3
PVD	MRC	MR603/43	67.0	0.0	15.0	0.0	39.0	15.6	44.5	20.5
PVD	VAR	VR-31XX	59.5	17.4	22.9	18.5	46.9	12.4	54.4	14.4
STEP	GCA	GCA-ALS	151.0	180.1	3.6	2.5	22.9	9.0	30.8	17.7
STEP	NIK	N1505G4D	422.0	0.0	2.7	1.0	34.1	4.4	37.3	2.3
TRACK	GCA	GCA-9503	79.0	50.9	1.2	1.1	45.1	19.9	52.5	27.8
TRACK	MTI	MTI-TARG	0.0	0.0	8.0	0.0	26.4	9.4	31.5	6.4
TRACK	SVG	SVG-8100	170.0	172.5	1.1	0.6	46.0	18.5	49.5	19.1

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1 TO <1.5 MICRON EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA500FA	50.0	8.5	4.2	47.8	0.86	0	0.0
ALIGN	PKN	PKN-542	52.7	11.9	8.9	47.6	0.81	0	0.0
CLEAN	FSI	SATURN	114.8	74.1	137.8	108.6	0.58	12	0.0
CVD	ASM	ASM-PRX	31.1	20.3	7.9	27.3	1.02	2	0.0
CVD	GEN	GE8301/6	39.9	1.2	6.5	30.9	0.94	2	0.0
DIFF	THE	THE-4704	0.0	0.0	0.0	0.0		26	0.0
DIFF	TYL	TYTAN-II	37.2	0.5	0.5	34.7	0.98	12	12.5
ETCH	AMT	AMT-8330	26.7	14.5	10.7	20.3	0.78	46	50.1
ETCH	BRN	BRN-2075	55.2	24.2	23.5	47.3	0.58	0	0.0
ETCH	LAM	LAM-690	36.7	14.9	17.0	25.6	0.76	85	69.5
ION	EAT	EAT200MC	52.5	11.9	27.0	38.4	0.64	4	0.0
ION	VAR	VR-3500E	188.7	12.4	42.9	162.0	0.76	14	16.7
PVD	MRC	MR603/43	39.0	15.6	20.5	25.1	0.88	14	16.6
PVD	VAR	VR-31XX	60.0	16.1	7.9	39.4	0.86	13	0.0
STEP	GCA	GCA-ALS	34.0	9.0	12.6	29.4	0.74	26	0.0
STEP	NIK	N1505G4D	53.6	18.4	20.6	46.9	0.92	0	0.0
TRACK	GCA	GCA-9503	55.6	10.1	15.8	49.9	0.86	26	0.0
TRACK	MTI	MTI-TARG	31.9	1.6	4.4	31.0	0.84	0	0.0
TRACK	SVG	SVG-8100	55.2	5.4	4.8	52.6	0.93	13	0.0

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1.5 TO <2 MICRON EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA500FA	14	100	0	96	0	34	0	61
ALIGN	PKN	PKN-542	42	94	18	75	14	155	146	131
CLEAN	FSI	SATURN	41	95	11	92	9	92	73	93
CVD	AMT	AMT-2100	7	100	0	84	3	89	69	136
CVD	ASM	ASM-PRX	12	59	58	84	3	144	50	72
CVD	GEN	GE8301/6	5	69	44	70	11	395	22	99
DIFF	BTU	BTU-8DF4	32	48	11	78	7	115	32	332
DIFF	THE	THE-4704	36	98	1	91	1	39	0	104
DIFF	TYL	TYTAN-II	72	54	38	93	5	82	64	40
ETCH	AMT	AMT-8330	26	80	31	75	12	270	135	138
ETCH	BRN	BRN-6540	16	44	48	82	11	286	212	50
ETCH	DRY	DRIE100	11	62	54	82	12	218	57	63
ETCH	LAM	LAM-590	22	52	26	76	11	247	112	51
ION	EAT	EAT200MC	23	76	22	72	7	333	141	159
ION	VAR	VR-350DF	4	90	17	82	8	209	126	100
ION	VAR	VR-CF3	6	66	48	79	13	253	65	172
PVD	MRC	MR603/43	7	97	2	65	9	166	129	292
PVD	VAR	VR-3180	13	82	30	63	19	179	162	427
STEP	CAN	CAN-MKII	8	100	1	84	3	172	23	69
STEP	GCA	GCA-6000	43	75	27	85	8	185	102	126
STEP	NIK	N1505G4D	29	72	27	88	6	146	105	119
STEP	ULT	UT-1100	21	99	1	79	6	184	63	97
TRACK	GCA	GCA-9503	29	80	34	90	7	80	56	125
TRACK	MTI	MTI-TARG	34	77	32	97	1	48	26	17
TRACK	SVG	SVG-8100	88	91	21	91	6	87	65	45

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1.5 TO <2 MICRON EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	MPA500FA	0		70.8	36.4	4.8	5.3	161.0	0.0	5.0	0.0
ALIGN	PKN	PKN-542	51		83.3	96.4	8.1	6.9	2.0	0.0	0.3	0.0
CLEAN	FSI	SATURN	120		156.9	84.1	5.0	3.8	0.0	0.0	1.0	0.0
CVD	AMT	AMT-2100	108		164.4	154.9	7.2	6.9	13.6	0.0	2.2	2.5
CVD	ASM	ASM-PRX	42		114.5	125.2	12.1	11.4	46.8	37.8	3.9	3.2
CVD	GEN	GE8301/6	60		420.7	514.3	32.9	26.4	120.0	0.0	4.3	4.4
DIFF	BTU	BTU-BDF4	171		1624.5	1707.7	102.7	98.0	198.0	56.6	17.1	0.6
DIFF	THE	THE-4704	0		22.0	2.8	0.9	0.2	252.0	118.8	6.0	2.8
DIFF	TYL	TYTAN-II	55		150.7	134.1	5.7	7.1	168.8	147.2	30.8	24.7
ETCH	AMT	AMT-8330	60		150.1	201.9	4.9	2.4	83.8	143.5	3.0	4.5
ETCH	BRN	BRN-6540	58		51.3	19.6	8.3	4.5	27.2	21.9	5.7	6.7
ETCH	DRY	DRIE100	63		53.1	27.1	6.8	0.6	49.8	68.9	12.7	17.6
ETCH	LAM	LAM-590	52		68.8	37.9	13.3	5.5	55.9	49.9	7.9	5.1
ION	EAT	EAT200MC	68		40.5	33.8	9.1	12.2	24.4	15.8	2.7	2.4
ION	VAR	VR-350DF	39		54.0	28.4	5.3	5.8	41.7	0.0	5.7	0.0
ION	VAR	VR-CF3	201		29.6	23.2	3.7	2.1	34.1	0.0	4.5	0.0
PVD	MRC	MR603/43	174		253.8	363.3	13.3	9.2	4.0	0.0	3.0	0.0
PVD	VAR	VR-3180	281		70.7	69.2	11.1	7.8	20.1	27.1	45.8	81.7
STEP	CAN	CAN-MKII	41		49.5	9.2	4.8	4.6	68.2	93.1	1.4	1.6
STEP	GCA	GCA-6000	133		107.2	59.6	10.1	10.3	80.7	72.5	1.4	0.9
STEP	NIK	N150SG4D	75		171.7	93.1	4.1	4.5	128.0	0.0	3.8	4.8
STEP	ULT	UT-1100	25		46.5	36.2	3.6	1.9	151.0	0.0	3.0	0.0
TRACK	GCA	GCA-9503	141		77.3	54.6	1.7	1.3	101.1	60.7	3.5	2.1
TRACK	NTI	NTI-TARG	0		328.0	342.2	1.8	1.3	0.0	0.0	0.4	0.0
TRACK	SVG	SVG-8100	35		123.2	90.4	3.4	1.4	74.2	84.3	0.8	0.9

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1.5 TO <2 MICRON EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA500FA	74.0	0.0	2.0	0.0	50.0	8.5	58.0	4.2
ALIGN	PKN	PKN-542	40.4	52.0	3.0	2.4	45.0	10.2	67.1	23.5
CLEAN	FSI	SATURN	91.9	19.2	4.5	3.8	95.1	79.7	162.9	93.4
CVD	AMT	AMT-2100	157.8	140.9	5.1	1.0	56.5	7.8	70.0	14.1
CVD	ASM	ASM-PRX	141.5	37.5	5.7	1.1	22.1	2.7	26.7	16.0
CVD	GEN	GE8301/6	229.1	93.2	15.2	4.8	21.6	4.9	22.9	2.4
DIFF	BTU	BTU-BDF4	257.0	2.8	14.2	2.0	15.3	4.6	26.9	10.4
DIFF	THE	THE-4704	300.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0
DIFF	TYL	TYTAN-II	242.7	148.5	39.2	23.3	16.6	0.2	16.9	0.2
ETCH	AMT	AMT-8330	98.6	71.9	7.7	4.1	27.3	27.0	33.8	31.5
ETCH	BRN	BRN-6540	275.5	391.4	6.1	7.0	47.7	39.5	58.3	53.5
ETCH	DRY	DRIE100	136.0	45.2	6.1	3.0	32.5	5.2	41.6	0.6
ETCH	LAM	LAM-590	250.3	444.2	2.2	1.2	16.9	5.0	22.3	7.3
ION	EAT	EAT200MC	84.2	47.7	8.8	6.1	40.8	17.4	55.7	19.7
ION	VAR	VR-350DF	96.0	17.3	4.4	0.9	133.9	65.2	176.0	69.3
ION	VAR	VR-CF3	132.0	0.0	2.1	0.0	94.6	6.4	98.0	2.8
PVD	MRC	MR603/43	217.4	212.7	19.7	6.7	39.0	15.6	44.5	20.5
PVD	VAR	VR-3180	69.8	35.4	18.7	15.9	43.4	14.2	47.3	17.9
STEP	CAN	CAN-MKII	99.5	71.4	3.9	2.0	43.1	16.8	59.0	15.6
STEP	GCA	GCA-6000	154.1	144.1	3.4	2.2	21.2	7.8	30.5	15.8
STEP	NIK	N1505G4D	422.0	0.0	2.7	1.0	34.1	4.4	37.3	2.3
STEP	ULT	UT-1100	222.4	172.9	4.0	1.7	41.0	0.0	59.0	0.0
TRACK	GCA	GCA-9503	79.0	50.9	1.2	1.1	45.1	19.9	52.5	27.8
TRACK	MTI	MTI-TARG	0.0	0.0	8.0	0.0	26.4	9.4	31.5	6.4
TRACK	SVG	SVG-8100	219.5	113.3	1.6	0.8	46.3	12.0	58.9	17.9

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1.5 TO <2 MICRON EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA500FA	50.0	8.5	4.2	47.8	0.86	0	0.0
ALIGN	PKN	PKN-542	56.3	12.1	46.3	42.2	0.67	123	131.7
CLEAN	FSI	SATURN	114.8	74.1	137.8	105.1	0.58	12	5.8
CVD	AMT	AMT-2100	73.9	32.4	45.9	62.4	0.81	36	22.4
CVD	ASM	ASM-PRX	41.5	5.6	17.5	34.9	0.83	14	16.8
CVD	GEN	GE8301/6	39.9	1.2	6.5	28.0	0.94	23	29.2
DIFF	BTU	BTU-BDF4	23.8	7.2	16.2	18.7	0.57	0	0.0
DIFF	THE	THE-4704	0.0	0.0	0.0	0.0		26	0.0
DIFF	TYL	TYTAN-II	37.2	0.5	0.5	34.7	0.98	12	12.5
ETCH	AMT	AMT-8330	40.7	42.8	51.1	30.5	0.81	58	45.2
ETCH	BRN	BRN-6540	74.5	61.7	83.5	60.8	0.82	14	0.0
ETCH	DRY	DRIE100	50.8	8.2	0.9	41.5	0.78	19	11.6
ETCH	LAM	LAM-590	33.2	11.9	15.7	25.1	0.76	68	66.1
ION	EAT	EAT200MC	65.5	25.6	31.1	47.3	0.73	38	33.3
ION	VAR	VR-3500F	188.7	12.4	42.9	153.9	0.76	20	16.0
ION	VAR	VR-CF3	122.4	45.8	42.6	96.8	0.96	3	0.0
PVD	MRC	MR603/43	39.0	15.6	20.5	25.5	0.88	49	60.3
PVD	VAR	VR-3180	56.7	16.7	10.2	36.0	0.92	25	17.8
STEP	CAN	CAN-MKII	51.9	4.4	3.5	43.6	0.73	29	13.1
STEP	GCA	GCA-6000	31.7	7.0	12.5	26.8	0.70	22	5.4
STEP	NIK	N1505G4D	53.6	18.4	20.6	46.9	0.92	0	0.0
STEP	ULT	UT-1100	41.0	0.0	0.0	32.5	0.69	47	20.7
TRACK	GCA	GCA-9503	55.6	10.1	15.8	49.9	0.86	26	0.0
TRACK	MTI	MTI-TARG	31.9	1.6	4.4	31.0	0.84	0	0.0
TRACK	SVG	SVG-8100	64.0	13.7	30.8	58.0	0.79	16	9.4

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2 TO <2.5 MICRON EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	PKN	PKN340/1	26	94	17	74	14	172	153	112
CLEAN	FSI	FSI-SRD	24	100	1	87	11	122	98	60
CLEAN	STL	ST-860	5	100	0	77	26	323	368	4
CVD	AMT	AMT-2100	9	100	0	81	7	78	60	51
CVD	THE	THE-9XXX	22	99	1	72	5	118	92	89
DIFF	BTU	BTU-7351	9	100	0	85	11	36	31	131
DIFF	THE	THE-9XXX	43	99	2	85	5	66	48	66
EPI	AMT	AMT-7800	6	98	3	61	9	99	90	157
ETCH	AMT	AMT-8100	7	100	0	71	8	293	128	169
ETCH	BRN	BRN-2000	10	94	9	92	4	76	16	9
ETCH	LAM	LAM-590	14	89	10	88	6	121	82	12
ETCH	TEG	TEG-901	13	89	19	89	9	133	117	7
ION	EAT	NV10-160	8	93	11	67	7	202	122	134
ION	VAR	VR-350DF	2	99	2	73	0	146	165	85
PVD	MRC	MR603/43	2	100	0	68	0	149	187	47
PVD	VAR	VR3180/X	9	99	1	61	8	224	150	223
STEP	GCA	GCA-6300	13	100	0	76	16	133	13	37
STEP	ULT	UT-1100	30	92	10	75	2	191	41	85
TRACK	SSI	SSI-COAT	18	84	1	84	2	122	5	30
TRACK	SVG	SVG-8100	64	100	0	88	6	110	69	50

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2 TO <2.5 MICRON EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	PKN	PKN340/1	70		51.7	21.4	7.0	6.9	85.0	117.4	1.1	1.2
CLEAN	FSI	FSI-SRD	97		161.8	87.5	6.7	3.2	0.0	0.0	0.0	0.0
CLEAN	STL	ST-860	0		130.0	42.4	4.4	0.0	0.0	0.0	0.0	0.0
CVD	AMT	AMT-2100	30		59.1	42.2	6.4	5.8	8.9	4.4	0.6	0.1
CVD	THE	THE-9XXX	103		58.0	36.8	6.8	0.0	0.0	0.0	0.0	0.0
DIFF	BTU	BTU-7351	178		248.4	161.2	6.6	2.5	0.0	0.0	0.0	0.0
DIFF	THE	THE-9XXX	42		185.4	65.8	10.8	7.2	466.7	0.0	12.3	0.0
EPI	AMT	AMT-7800	151		41.7	10.9	5.2	1.2	4.5	2.1	1.5	0.0
ETCH	AMT	AMT-8100	37		27.3	12.2	5.5	2.1	2.5	2.1	0.8	0.3
ETCH	BRN	BRN-2000	2		170.3	182.9	9.6	0.0	0.0	0.0	0.0	0.0
ETCH	LAM	LAM-590	8		69.3	65.3	3.6	3.2	168.0	0.0	3.0	0.0
ETCH	TEG	TEG-901	3		93.7	70.8	8.4	8.3	168.0	0.0	3.0	0.0
ION	EAT	NV10-160	106		17.0	6.2	2.9	0.6	7.0	1.4	0.5	0.1
ION	VAR	VR-350DF	40		17.1	5.9	2.3	1.8	1.0	0.0	0.2	0.0
PVD	MRC	MR603/43	63		64.5	12.1	10.6	12.2	0.0	0.0	0.0	0.0
PVD	VAR	VR3180/X	200		24.4	10.6	3.4	2.1	8.0	0.0	0.5	0.0
STEP	GCA	GCA-6300	25		71.0	18.4	10.1	7.2	85.2	117.1	2.2	2.5
STEP	ULT	UT-1100	23		44.2	38.8	4.7	0.1	0.0	0.0	0.0	0.0
TRACK	SSI	SSI-COAT	1		30.8	3.8	0.0	0.0	0.0	0.0	0.0	0.0
TRACK	SVG	SVG-8100	36		91.7	53.5	3.9	0.9	1.4	0.2	0.1	0.0

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2 TO <2.5 MICRON EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	PKN	PKN340/1	41.3	48.2	2.8	2.5	45.5	3.5	80.0	28.3
CLEAN	FSI	FSI-SRD	91.9	19.2	4.7	5.3	0.0	0.0	0.0	0.0
CLEAN	STL	ST-860	727.0	0.0	1.5	0.0	144.0	0.0	180.0	0.0
CVD	AMT	AMT-2100	174.1	95.9	4.5	1.9	44.3	24.0	80.0	0.0
CVD	THE	THE-9XXX	224.0	0.0	3.4	0.0	0.0	0.0	0.0	0.0
DIFF	BTU	BTU-7351	178.1	128.3	7.0	8.1	0.0	0.0	0.0	0.0
DIFF	THE	THE-9XXX	335.4	286.0	10.3	0.6	47.3	0.0	0.0	0.0
EPI	AMT	AMT-7800	21.5	8.1	2.8	3.0	9.5	2.1	0.0	0.0
ETCH	AMT	AMT-8100	122.2	62.1	7.4	1.2	57.6	54.3	78.0	70.7
ETCH	BRN	BRN-2000	997.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0
ETCH	LAM	LAM-590	620.0	758.0	3.1	1.7	23.0	0.0	30.0	0.0
ETCH	TEG	TEG-901	376.7	180.1	2.1	0.8	43.0	0.0	60.0	0.0
ION	EAT	NV10-160	88.5	73.7	5.3	3.8	58.0	19.8	90.0	0.0
ION	VAR	VR-350DF	58.3	67.5	2.7	3.1	100.0	0.0	0.0	0.0
PVD	MRC	MR603/43	267.9	141.3	12.4	17.0	0.0	0.0	0.0	0.0
PVD	VAR	VR3180/X	56.4	43.4	7.4	6.7	24.0	0.0	30.0	0.0
STEP	GCA	GCA-6300	159.0	12.7	2.8	0.2	20.8	3.1	32.5	3.5
STEP	ULT	UT-1100	315.1	90.8	4.9	0.0	0.0	0.0	0.0	0.0
TRACK	SSI	SSI-COAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRACK	SVG	SVG-8100	232.8	81.8	1.9	0.8	48.0	0.0	70.0	0.0

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2 TO <2.5 MICRON EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	PKN	PKN340/1	57.6	13.6	68.0	42.6	0.57	106	120.6
CLEAN	FSI	FSI-SRD	0.0	0.0	0.0	0.0		44	38.2
CLEAN	STL	ST-860	225.0	0.0	0.0	172.9	0.80	12	6.6
CVD	AMT	AMT-2100	56.0	40.0	0.0	45.5	0.55	46	21.4
CVD	THE	THE-9XXX	0.0	0.0	0.0	0.0		31	7.8
DIFF	BTU	BTU-7351	0.0	0.0	0.0	0.0		28	4.0
DIFF	THE	THE-9XXX	47.3	0.0	0.0	40.4		57	45.4
EPI	AMT	AMT-7800	9.5	2.1	0.0	5.8		57	30.5
ETCH	AMT	AMT-8100	90.0	84.8	110.5	63.8	0.74	81	26.5
ETCH	BRN	BRN-2000	0.0	0.0	0.0	0.0		37	48.2
ETCH	LAM	LAM-590	23.0	0.0	0.0	20.3	0.77	31	30.0
ETCH	TEG	TEG-901	43.0	0.0	0.0	38.2	0.72	36	13.6
ION	EAT	MV10-160	78.2	48.4	0.0	52.1	0.64	64	18.8
ION	VAR	VR-350DF	100.0	0.0	0.0	72.7		44	16.2
PVD	MRC	MR603/43	0.0	0.0	0.0	0.0		69	67.1
PVD	VAR	VR3180/X	37.5	0.0	0.0	22.8	0.80	57	29.6
STEP	GCA	GCA-6300	26.0	4.3	17.4	19.6	0.64	37	25.6
STEP	ULT	UT-1100	0.0	0.0	0.0	0.0		91	44.7
TRACK	SSI	SSI-COAT	0.0	0.0	0.0	0.0		97	17.0
TRACK	SVG	SVG-8100	75.0	0.0	0.0	66.1	0.69	16	10.7

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2.5+ MICRON EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA500FA	17	82	13	83	15	178	155	56
ALIGN	CAN	PLA501FA	22	74	15	92	11	74	120	42
ALIGN	PKN	PKN340/1	49	94	19	78	15	135	147	115
CLEAN	FSI	FSI-8231	31	87	21	88	12	79	72	116
CVD	AMT	AMT-2100	19	83	31	80	11	203	275	78
CVD	ASM	ASM-3	7	69	48	85	21	59	90	109
CVD	ASM	ASM-PRX	10	72	27	73	14	244	134	125
CVD	BTU	BTUBDF41	2	63	10	68	40	236	301	218
CVD	THE	THE-4300	10	99	2	81	7	118	93	12
CVD	ACS	ACS-512	3	50	28	88	9	197	236	40
DIFF	BTU	BTU-7351	10	98	4	87	9	26	28	112
DIFF	BTU	BTUBDF41	33	58	18	77	6	118	23	269
DIFF	THE	THE-9XXX	57	75	43	90	6	43	49	59
DIFF	THE	THE-4704	36	98	1	91	1	39	0	104
DIFF	THE	THE-MAXI	68	51	14	86	0	72	83	228
EPI	AMT	AMT-7800	12	85	26	62	8	97	73	287
EPI	GEM	GEM-2	6	56	12	77	4	315	191	85
ETCH	AMT	AMT-8330	12	99	1	75	8	272	128	157
ETCH	BRN	BRN-2000	13	72	24	94	3	64	33	13
ETCH	BRN	BRN-BAR	16	44	48	82	11	286	212	50
ETCH	BRN	BRN-4005	7	72	37	97	2	29	26	23
ETCH	DRY	DRIE100	16	56	33	80	9	247	109	77
ETCH	LAM	LAM-590	9	72	32	85	8	191	150	19
ETCH	TEG	TEG-901	17	77	27	94	6	63	77	9
ETCH	VAR	VR-20	4	53	67	52	11	555	63	234
ION	EAT	NV10-160	11	85	20	65	7	313	172	196
ION	EAT	EAT-3206	5	61	35	78	10	174	156	172
ION	VAR	VR120-10	2	81	26	80	4	233	146	150
ION	VAR	VR-3500	5	77	34	78	14	166	154	148
ION	VAR	VR-CF4	11	66	33	74	14	262	196	172
PVD	ASM	ASM-200	5	81	17	86	7	150	50	31
PVD	BAZ	BAL-800	4	61	29	61	2	99	117	352
PVD	MRC	MR603/43	9	88	19	63	9	174	152	216
PVD	TMS	TMS-2550	4	55	40	80	18	92	98	181
PVD	VAR	VR-31XX	18	80	31	73	14	114	110	260
STEP	CAN	CAN-MKII	8	100	1	84	3	172	23	69
STEP	GCA	GCA-6300	26	92	15	79	10	198	88	53
STEP	ULT	UT-1100	21	99	1	79	6	184	63	97
TRACK	EAT	EAT45/60	35	77	15	83	17	149	150	70
TRACK	GCA	GCA-9000	23	75	23	83	30	269	535	43
TRACK	SVG	SVG-8100	116	83	20	93	6	58	60	44

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2.5+ MICRON EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	MPA500FA		34	51.9	29.6	3.5	2.9	42.3	79.1	1.6	2.3
ALIGN	CAN	PLA501FA		21	29.6	27.4	0.7	0.5	50.8	64.3	1.6	1.6
ALIGN	PKN	PKN340/1		59	80.0	92.2	7.2	7.0	57.3	95.8	0.8	1.0
CLEAN	FSI	FSI-8231		101	192.8	128.0	6.7	2.9	138.0	216.8	0.2	0.0
CVD	AMT	AMT-2100		81	112.1	124.1	12.8	25.1	80.4	108.3	1.5	1.3
CVD	ASM	ASM-3		145	61.0	37.7	5.6	8.1	41.2	20.9	3.2	1.1
CVD	ASM	ASM-PRX		123	15.2	13.2	4.1	2.1	14.3	11.6	1.6	1.4
CVD	BTU	BTUBDF41		244	23.9	16.8	2.1	0.2	20.9	22.8	1.3	0.8
CVD	THE	THE-4300		6	60.6	33.0	24.4	24.8	0.0	0.0	0.0	0.0
CVD	ACS	ACS-512		39	830.8	1143.0	150.9	210.8	823.7	1153.0	1.2	1.1
DIFF	BTU	BTU-7351		131	181.0	163.1	4.6	4.0	13.5	0.0	8.0	0.0
DIFF	BTU	BTUBDF41		163	1624.5	1707.7	102.7	98.0	198.0	56.6	17.1	0.6
DIFF	THE	THE-9XXX		43	168.4	91.5	7.5	7.6	245.3	313.0	6.7	8.0
DIFF	THE	THE-4704		0	22.0	2.8	0.9	0.2	252.0	118.8	6.0	2.8
DIFF	THE	THE-MAXI		101	2800.0	0.0	92.0	128.7	2800.0	0.0	2.0	0.0
EPI	AMT	AMT-7800		287	61.3	40.2	4.4	1.9	11.0	11.4	1.3	0.3
EPI	GEN	GEM-2		53	68.4	36.9	11.3	12.4	44.0	55.4	0.5	0.6
ETCH	AMT	AMT-8330		53	207.2	251.6	4.3	1.8	113.7	192.6	0.8	0.3
ETCH	BRN	BRN-2000		8	156.3	88.1	4.3	3.6	63.7	103.3	0.2	0.3
ETCH	BRN	BRN-BAR		58	51.3	19.6	8.3	4.5	27.2	21.9	5.7	6.7
ETCH	BRN	BRN-4005		33	172.6	279.6	5.2	9.4	109.1	88.8	2.5	2.6
ETCH	DRY	DRIE100		40	36.5	24.9	4.2	3.0	36.9	42.5	6.9	12.2
ETCH	LAM	LAM-590		9	100.4	50.1	10.4	8.4	117.2	66.7	9.0	6.9
ETCH	TEG	TEG-901		6	102.6	119.7	4.3	4.5	124.6	130.8	1.2	1.1
ETCH	VAR	VR-20		134	37.3	23.6	5.3	2.5	54.0	0.0	2.5	0.0
ION	EAT	NV10-160		124	24.6	15.8	4.7	4.8	8.0	7.1	1.3	1.8
ION	EAT	EAT-3206		81	22.0	22.5	1.0	0.5	8.1	10.6	0.6	0.2
ION	VAR	VR120-10		64	30.7	37.8	1.9	1.2	96.0	0.0	15.0	0.0
ION	VAR	VR-3500		155	50.8	59.0	8.5	12.5	50.9	81.5	0.9	0.9
ION	VAR	VR-CF4		155	42.5	48.0	6.7	10.7	43.7	53.2	1.7	1.6
PVD	ASM	ASM-200		30	27.3	10.2	5.1	5.2	18.0	0.0	0.3	0.0
PVD	BAZ	BAL-800		459	86.0	36.8	5.6	2.3	24.0	0.0	2.0	0.0
PVD	MRC	MR603/43		176	179.5	276.4	8.8	9.0	15.4	16.1	1.9	1.6
PVD	TMS	TMS-2550		127	60.2	45.4	3.7	5.4	67.2	87.6	4.2	3.4
PVD	VAR	VR-31XX		163	58.9	64.5	7.1	6.6	27.1	26.1	36.9	75.5
STEP	CAN	CAN-MKII		41	49.5	9.2	4.8	4.6	68.2	93.1	1.4	1.6
STEP	GCA	GCA-6300		55	73.2	31.7	10.6	8.9	92.4	84.1	1.9	1.5
STEP	ULT	UT-1100		25	46.5	36.2	3.6	1.9	151.0	0.0	3.0	0.0
TRACK	EAT	EAT45/60		93	46.4	16.7	1.8	1.0	57.7	68.0	0.4	0.4
TRACK	GCA	GCA-9000		37	25.4	37.6	8.5	19.4	65.3	77.8	1.2	0.8
TRACK	SVG	SVG-8100		37	83.6	79.3	2.1	1.8	59.8	54.8	2.4	2.8

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2.5+ MICRON EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA500FA	152.5	54.5	2.4	0.8	37.1	13.7	52.2	15.4
ALIGN	CAN	PLA501FA	58.4	54.8	6.1	7.6	44.9	22.2	54.9	27.8
ALIGN	PKN	PKN340/1	55.3	61.8	2.6	2.4	47.0	8.0	68.4	18.2
CLEAN	FSI	FSI-8231	314.0	316.1	3.4	3.7	99.5	54.8	238.0	148.5
CVD	AMT	AMT-2100	151.1	80.4	13.0	23.1	65.1	64.2	115.0	138.1
CVD	ASM	ASM-3	113.1	74.4	11.8	11.4	225.0	247.5	265.5	269.4
CVD	ASM	ASM-PRX	352.0	318.7	3.3	2.0	14.8	12.6	26.8	22.9
CVD	BTU	BTU8DF41	384.0	475.2	1.9	0.9	23.4	11.9	49.0	1.4
CVD	THE	THE-4300	224.0	0.0	3.4	0.0	33.0	0.0	34.0	0.0
CVD	ACS	ACS-512	108.0	84.8	1.0	0.0	48.5	12.0	99.0	72.1
DIFF	BTU	BTU-7351	123.6	130.9	6.6	5.7	150.0	0.0	200.0	0.0
DIFF	BTU	BTU8DF41	411.3	267.3	10.0	7.5	16.5	3.9	34.6	15.2
DIFF	THE	THE-9XXX	279.6	224.1	7.0	5.7	123.7	108.0	200.0	0.0
DIFF	THE	THE-4704	300.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0
DIFF	THE	THE-MAXI	124.0	62.2	11.5	0.7	21.0	0.0	0.0	0.0
EPI	AMT	AMT-7800	100.1	157.4	6.1	7.0	6.6	5.3	0.8	0.0
EPI	GEM	GEM-2	444.0	318.7	3.5	0.6	14.8	6.3	17.2	6.8
ETCH	AMT	AMT-8330	76.8	63.5	5.7	2.0	38.6	32.3	43.8	41.4
ETCH	BRN	BRN-2000	639.2	370.0	2.4	1.3	34.3	22.2	82.5	65.0
ETCH	BRN	BRN-BAR	275.5	391.4	6.1	7.0	47.7	39.5	58.3	53.5
ETCH	BRN	BRN-4005	160.7	9.1	35.2	40.1	80.8	45.0	96.0	49.2
ETCH	DRY	DRIE100	152.0	32.0	3.7	3.3	38.8	7.8	41.6	0.6
ETCH	LAM	LAM-590	332.8	549.2	2.4	1.3	19.5	3.7	25.6	7.9
ETCH	TEG	TEG-901	341.3	265.9	27.5	35.2	36.6	9.2	49.8	28.2
ETCH	VAR	VR-20	98.6	98.2	3.6	3.8	45.0	0.0	45.0	0.0
ION	EAT	NV10-160	70.7	56.8	4.8	3.0	46.3	18.0	61.8	19.6
ION	EAT	EAT-3206	283.5	294.1	5.0	5.0	94.3	45.3	127.0	41.8
ION	VAR	VR120-10	73.5	37.5	15.5	14.8	100.0	0.0	125.0	0.0
ION	VAR	VR-350D	75.3	38.2	9.4	12.8	91.7	73.0	225.0	0.0
ION	VAR	VR-CF4	68.8	44.8	11.8	14.5	77.7	29.8	107.5	34.5
PVD	ASM	ASM-200	48.0	0.0	1.0	0.0	24.6	17.5	32.5	10.6
PVD	BAZ	BAL-800	168.0	0.0	10.1	8.3	50.0	0.0	55.0	0.0
PVD	MRC	MR603/43	402.7	422.4	22.4	20.9	30.3	18.6	34.7	22.4
PVD	TMS	TMS-2550	72.1	83.1	6.9	5.4	131.7	189.1	162.0	220.0
PVD	VAR	VR-31XX	85.9	45.9	8.6	5.9	41.8	19.6	53.1	23.3
STEP	CAN	CAN-MKII	99.5	71.4	3.9	2.0	43.1	16.8	59.0	15.6
STEP	GCA	GCA-6300	106.3	61.5	2.2	1.3	24.4	6.7	36.2	13.9
STEP	ULT	UT-1100	222.4	172.9	4.0	1.7	41.0	0.0	59.0	0.0
TRACK	EAT	EAT45/60	406.1	294.3	4.1	3.6	41.4	13.8	59.0	20.1
TRACK	GCA	GCA-9000	143.9	68.6	18.5	34.3	53.2	9.0	62.8	12.6
TRACK	SVG	SVG-8100	156.2	113.4	7.6	10.1	46.8	21.5	62.3	28.2

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2.5+ MICRON EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.)	S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA500FA	46.7	10.1	24.4		38.8	0.71	57	36.0
ALIGN	CAN	PLA501FA	50.3	29.0	39.5		46.2	0.82	22	28.9
ALIGN	PKN	PKN340/1	51.8	11.5	43.0		40.3	0.69	98	124.6
CLEAN	FSI	FSI-8231	118.6	44.7	233.4		103.8	0.42	55	73.3
CVD	AMT	AMT-2100	70.1	65.2	136.7		56.1	0.57	33	21.4
CVD	ASM	ASM-3	225.0	247.5	269.4		191.5	0.85	51	80.7
CVD	ASM	ASM-PRX	23.1	19.8	35.9		16.7	0.55	67	82.9
CVD	BTU	BTUBDF41	36.6	18.6	2.2		24.9	0.48	57	57.9
CVD	THE	THE-4300	33.0	0.0	0.0		26.6	0.97	36	0.0
CVD	ACS	ACS-512	64.5	34.7	131.8		56.9	0.49	20	8.3
DIFF	BTU	BTU-7351	150.0	0.0	0.0		131.1	0.75	20	13.7
DIFF	BTU	BTUBDF41	25.8	6.1	23.7		19.7	0.48	163	0.0
DIFF	THE	THE-9XXX	123.7	108.0	0.0		111.2	0.62	29	7.3
DIFF	THE	THE-4704	0.0	0.0	0.0		0.0		26	0.0
DIFF	THE	THE-MAXI	21.0	0.0	0.0		18.1		13	0.0
EPI	AMT	AMT-7800	6.6	5.3	0.0		4.1	8.23	46	33.2
EPI	GEM	GEM-2	17.8	4.7	6.7		13.8	0.86	33	13.0
ETCH	AMT	AMT-8330	51.6	55.1	69.8		38.5	0.88	52	31.5
ETCH	BRN	BRN-2000	49.6	37.0	107.0		46.7	0.42	22	11.5
ETCH	BRN	BRN-BAR	74.5	61.7	83.5		60.8	0.82	14	0.0
ETCH	BRN	BRN-4005	86.2	39.1	36.5		83.4	0.84	2	1.0
ETCH	DRY	DRIE100	47.9	5.8	0.9		38.5	0.93	14	8.8
ETCH	LAM	LAM-590	26.2	4.4	11.5		22.2	0.76	11	8.7
ETCH	TEG	TEG-901	43.4	13.1	46.1		40.9	0.74	19	15.2
ETCH	VAR	VR-20	45.0	0.0	0.0		23.5	1.00	15	12.5
ION	EAT	NV10-160	59.6	32.1	41.2		38.6	0.75	83	96.0
ION	EAT	EAT-3206	99.7	37.0	50.7		78.1	0.74	59	69.7
ION	VAR	VR120-10	100.0	0.0	0.0		80.1	0.80	42	23.0
ION	VAR	VR-350D	91.9	72.7	0.0		71.6	0.41	34	21.5
ION	VAR	VR-CF4	87.2	38.9	41.2		64.2	0.72	67	109.6
PVD	ASM	ASM-200	28.0	12.7	0.7		24.2	0.76	16	14.7
PVD	BAZ	BAL-800	50.0	0.0	0.0		30.5	0.91	34	29.4
PVD	MRC	MR603/43	32.8	15.4	18.9		20.7	0.87	59	59.2
PVD	TMS	TMS-2550	136.7	185.1	214.1		109.0	0.81	61	88.3
PVD	VAR	VR-31XX	47.1	15.4	15.5		34.4	0.79	30	17.6
STEP	CAN	CAN-MKII	51.9	4.4	3.5		43.6	0.73	29	13.1
STEP	GCA	GCA-6300	30.1	5.3	12.8		23.8	0.67	33	19.1
STEP	ULT	UT-1100	41.0	0.0	0.0		32.5	0.69	47	20.7
TRACK	EAT	EAT45/60	54.2	21.2	29.6		45.1	0.70	43	32.1
TRACK	GCA	GCA-9000	53.2	9.0	12.6		44.0	0.85	14	13.8
TRACK	SVG	SVG-8100	54.7	23.5	33.3		50.9	0.75	12	10.2

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<11 MASK LEVELS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA-500	6	70	0	97	0	55	0	7
ALIGN	CAN	PLA501FA	15	77	15	96	2	29	34	36
ALIGN	PKN	PKN-240	29	71	41	83	10	153	108	87
CVD	AMT	AMT-2100	5	99	1	88	9	66	83	118
CVD	ASM	ASM-3	3	53	56	97	3	7	4	26
CVD	ASM	ASM-PRX	15	55	42	83	4	222	139	70
DIFF	THE	THE-4704	36	98	1	91	1	39	0	104
DIFF	TYL	TYTAN-II	72	54	38	93	5	82	64	40
ETCH	AMT	AMT-8330	8	87	22	76	14	245	147	136
ETCH	BRN	BRN-3100	6	90	15	97	3	20	22	28
ETCH	DRY	DRIE100	12	66	31	77	8	270	121	97
ETCH	LAM	LAM-590	14	40	18	70	12	242	145	86
ETCH	TEG	TEG-901	4	90	14	97	2	31	37	6
ION	EAT	NV10-160	8	72	21	65	8	404	151	218
ION	EAT	EAT200MC	4	76	21	79	13	190	187	203
ION	VAR	VR120-10	2	81	26	80	4	233	146	150
ION	VAR	VR-350D	4	80	17	89	6	149	130	71
ION	VAR	VR-CF4	3	70	23	74	21	294	278	156
PVD	TMS	TMS-3200	3	72	39	90	6	38	39	135
PVD	VAR	VR-3180	11	78	26	69	23	133	153	436
STEP	CAN	CAN-MKII	8	100	1	84	3	172	23	69
STEP	GCA	GCA-6000	25	78	37	81	6	185	53	165
TRACK	GCA	GCA-9000	21	70	23	77	32	321	581	98
TRACK	SVG	SVG-SCRB	73	87	14	93	7	62	73	43

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<11 MASK LEVELS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	MPA-500	0		55.1	14.3	6.1	3.4	82.8	110.7	2.8	3.1
ALIGN	CAN	PLA501FA	12		33.2	34.6	0.6	0.6	77.4	74.2	2.5	1.3
ALIGN	PKN	PKN-240	0		26.0	2.8	2.8	3.2	2.0	0.0	0.2	0.0
CVD	AMT	AMT-2100	130		128.3	180.2	2.2	2.2	79.7	93.5	2.2	1.8
CVD	ASM	ASM-3	14		48.8	44.1	0.9	0.8	41.2	20.9	3.2	1.1
CVD	ASM	ASM-PRX	30		76.5	110.3	8.7	9.9	38.5	30.3	3.6	2.3
DIFF	THE	THE-4704	0		22.0	2.8	0.9	0.2	252.0	118.8	6.0	2.8
DIFF	TYL	TYTAN-II	55		150.7	134.1	5.7	7.1	168.8	147.2	30.8	24.7
ETCH	AMT	AMT-8330	61		214.1	247.5	4.8	2.9	83.8	143.5	4.1	5.4
ETCH	BRN	BRN-3100	38		32.8	5.5	0.5	0.4	160.4	2.6	1.0	0.0
ETCH	DRY	DRIE100	10		24.6	9.0	3.3	2.7	16.3	13.3	0.8	0.4
ETCH	LAM	LAM-590	56		59.8	51.3	13.1	4.8	32.0	17.4	5.2	1.9
ETCH	TEG	TEG-901	0		42.4	23.1	2.1	3.0	102.5	66.9	1.6	0.9
ION	EAT	NV10-160	145		43.5	39.5	11.6	14.4	16.7	18.4	2.3	2.6
ION	EAT	EAT200MC	64		22.0	22.5	1.0	0.5	2.0	0.0	0.5	0.0
ION	VAR	VR120-10	64		30.7	37.8	1.9	1.2	96.0	0.0	15.0	0.0
ION	VAR	VR-3500	54		47.8	39.0	6.5	5.7	24.2	24.7	3.1	3.7
ION	VAR	VR-CF4	185		25.4	21.5	2.5	3.1	27.4	24.3	1.2	0.8
PVD	TMS	TMS-3200	140		55.4	63.1	0.6	0.6	96.1	101.7	5.5	3.5
PVD	VAR	VR-3180	324		55.5	59.4	10.1	8.7	18.6	17.0	10.7	13.9
STEP	CAN	CAN-MKII	41		49.5	9.2	4.8	4.6	68.2	93.1	1.4	1.6
STEP	GCA	GCA-6000	132		93.3	78.2	9.5	10.9	94.5	82.1	1.7	1.1
TRACK	GCA	GCA-9000	106		32.7	48.1	10.7	20.9	75.8	71.0	2.2	1.7
TRACK	SVG	SVG-SCRB	40		58.3	50.5	1.6	2.0	48.5	48.0	2.9	3.0

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<11 MASK LEVELS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA-500	137.0	89.1	1.8	0.3	37.8	25.8	43.0	25.5
ALIGN	CAN	PLA501FA	39.6	11.8	8.2	8.8	41.3	27.4	47.3	31.5
ALIGN	PKN	PKN-240	163.0	7.1	4.8	5.4	49.3	9.3	75.7	21.4
CVD	AMT	AMT-2100	104.3	65.5	26.6	37.6	106.3	86.5	166.7	167.7
CVD	ASM	ASM-3	98.2	98.7	6.0	7.8	225.0	247.5	265.5	269.4
CVD	ASM	ASM-PRX	150.3	30.6	4.1	2.8	14.9	12.6	18.0	18.9
DIFF	THE	THE-4704	300.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0
DIFF	TYL	TYTAN-II	242.7	148.5	39.2	23.3	16.6	0.2	16.9	0.2
ETCH	AMT	AMT-8330	105.4	74.7	7.2	4.8	33.2	28.0	40.9	38.6
ETCH	BRN	BRN-3100	164.9	3.9	46.8	40.1	95.0	42.7	122.5	24.8
ETCH	DRY	DRIE100	168.0	0.0	3.6	4.0	39.6	9.3	42.0	0.0
ETCH	LAM	LAM-590	84.8	11.2	1.9	0.8	16.3	6.6	21.6	7.5
ETCH	TEG	TEG-901	134.2	24.2	52.7	34.6	43.0	3.6	62.0	32.0
ION	EAT	MV10-160	82.8	50.9	5.4	2.2	38.2	22.0	57.6	23.5
ION	EAT	EAT200MC	138.0	52.0	2.7	2.0	112.7	32.3	129.3	50.8
ION	VAR	VR120-10	73.5	37.5	15.5	14.8	100.0	0.0	125.0	0.0
ION	VAR	VR-350D	94.0	15.9	4.4	0.9	89.8	89.2	176.0	69.3
ION	VAR	VR-CF4	58.6	40.1	14.1	18.1	60.3	40.6	117.0	56.6
PVD	TMS	TMS-3200	24.1	0.2	6.3	7.5	184.0	234.8	223.0	272.9
PVD	VAR	VR-3180	77.8	51.3	15.6	18.0	40.8	20.2	52.0	25.3
STEP	CAN	CAN-MKII	99.5	71.4	3.9	2.0	43.1	16.8	59.0	15.6
STEP	GCA	GCA-6000	185.3	159.0	3.6	1.3	23.5	9.1	37.2	17.8
TRACK	GCA	GCA-9000	138.1	60.8	14.9	30.8	48.5	15.7	58.3	22.0
TRACK	SVG	SVG-SCRB	98.4	78.8	10.8	11.7	49.3	23.7	64.8	29.6

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<11 MASK LEVELS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA-500	43.2	18.1	15.5	41.7	0.88	16	0.0
ALIGN	CAN	PLA501FA	41.3	27.4	31.5	39.6	0.87	7	6.7
ALIGN	PKN	PKN-240	57.4	11.3	53.6	47.4	0.65	26	19.9
CVD	AMT	AMT-2100	118.0	79.6	157.8	104.0	0.64	16	13.0
CVD	ASM	ASM-3	225.0	247.5	269.4	218.0	0.85	5	5.5
CVD	ASM	ASM-PRX	27.8	24.0	29.6	23.0	0.83	13	11.9
DIFF	THE	THE-4704	0.0	0.0	0.0	0.0		26	0.0
DIFF	TYL	TYTAN-II	37.2	0.5	0.5	34.7	0.98	12	12.5
ETCH	AMT	AMT-8330	49.4	45.1	61.9	37.6	0.81	66	51.4
ETCH	BRN	BRN-3100	95.0	42.7	24.7	92.0	0.78	2	1.0
ETCH	DRY	DRIE100	45.0	0.0	0.0	34.7	0.94	15	10.5
ETCH	LAM	LAM-590	36.7	14.9	17.0	25.6	0.76	85	69.5
ETCH	TEG	TEG-901	49.6	16.1	62.9	47.9	0.69	10	13.1
ION	EAT	NV10-160	62.0	32.4	33.4	40.3	0.66	130	124.0
ION	EAT	EAT200MC	112.7	32.3	50.8	88.8	0.87	24	11.5
ION	VAR	VR120-10	100.0	0.0	0.0	80.1	0.80	42	23.0
ION	VAR	VR-350D	126.7	107.8	42.9	112.6	0.51	10	13.6
ION	VAR	VR-CF4	63.8	35.3	56.6	47.3	0.52	100	160.9
PVD	TMS	TMS-3200	184.0	234.8	272.9	165.6	0.83	10	4.6
PVD	VAR	VR-3180	52.1	23.8	16.6	36.0	0.78	26	15.5
STEP	CAN	CAN-MKII	51.9	4.4	3.5	43.6	0.73	29	13.1
STEP	GCA	GCA-6000	34.4	5.5	5.2	27.8	0.63	22	5.4
TRACK	GCA	GCA-9000	54.8	9.0	12.9	42.2	0.83	10	13.9
TRACK	SVG	SVG-SCRB	57.0	26.6	37.2	53.0	0.76	11	10.0

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11 TO 12 MASK LEVELS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	PKN	PKN340/1	57	85	26	78	15	140	145	106
CLEAN	FSI	SATURN	59	95	10	89	10	119	88	60
CVD	AMT	AMT-2100	7	100	0	81	8	50	26	38
CVD	GEN	GE8301/6	3	100	0	63	0	379	0	141
DIFF	BTU	BTU-7351	15	85	25	87	9	57	43	131
DIFF	THE	THE-NA	67	81	37	88	6	54	46	62
EPI	AMT	AMT-7800	6	98	3	61	9	99	90	157
ETCH	AMT	AMT-8100	18	70	40	73	10	306	121	143
ETCH	BRN	BRN-2000	10	94	9	92	4	76	16	9
ETCH	DRY	DRIE100	5	50	15	79	10	275	171	92
ETCH	LAM	LAM-590	14	89	10	88	6	121	82	12
ETCH	TEG	TEG-901	13	89	19	89	9	133	117	7
ETCH	VAR	VR-20	4	53	67	52	11	555	63	234
ION	EAT	EAT200MC	21	82	21	69	10	280	137	173
ION	EAT	EAT-6200	4	73	16	72	6	197	178	175
ION	VAR	VR-350DF	2	99	2	73	0	146	165	85
ION	VAR	VR-CF4	5	98	2	70	1	171	181	191
PVD	BAZ	BAK550/1	5	68	19	67	7	198	257	27
PVD	MRC	MR603/43	7	98	3	62	9	162	134	163
PVD	VAR	VR-31XX	12	85	28	66	9	184	151	202
STEP	GCA	GCA-6300	9	86	21	80	22	96	65	19
STEP	NIK	N1505G4D	19	84	23	88	8	168	138	66
STEP	ULT	UT-1100	30	92	10	75	2	191	41	85
TRACK	GCA	GCA-1006	15	77	22	71	43	479	760	39
TRACK	MTI	MTI-TARG	34	77	32	97	1	48	26	17
TRACK	SSI	SSI-COAT	18	84	1	84	2	122	5	30
TRACK	SVG	SVG-8100	28	100	0	90	0	79	25	69

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11 TO 12 MASK LEVELS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN S.D.	MTBF	MTBF S.D.	MTTR	MTTR S.D.	MTBS	MTBS S.D.	MTFS	MTFS S.D.
ALIGN	PKN	PKN340/1	69	76.8	88.2	6.9	7.2	85.0	117.4	0.8	1.0
CLEAN	FSI	SATURN	97	154.6	82.6	4.2	3.6	0.0	0.0	1.0	0.0
CVD	AMT	AMT-2100	20	67.2	47.7	7.0	6.9	6.5	2.1	0.6	0.1
CVD	GEN	GE8301/6	0	529.5	676.7	14.2	0.0	0.0	0.0	1.2	0.0
DIFF	BTU	BTU-7351	178	221.6	123.1	4.6	4.0	0.0	0.0	0.5	0.0
DIFF	THE	THE-NA	35	157.1	78.1	7.5	7.6	245.3	313.0	6.7	8.0
EPI	AMT	AMT-7800	151	41.7	10.9	5.2	1.2	4.5	2.1	1.5	0.0
ETCH	AMT	AMT-8100	70	60.4	55.1	5.0	1.8	0.0	0.0	0.8	0.1
ETCH	BRN	BRN-2000	2	170.3	182.9	9.6	0.0	0.0	0.0	0.0	0.0
ETCH	DRY	DRIE100	6	20.0	5.7	1.8	1.1	24.0	0.0	1.0	0.0
ETCH	LAM	LAM-590	8	69.3	65.3	3.6	3.2	168.0	0.0	3.0	0.0
ETCH	TEG	TEG-901	3	93.7	70.8	8.4	8.3	168.0	0.0	3.0	0.0
ETCH	VAR	VR-20	134	37.3	23.6	5.3	2.5	54.0	0.0	2.5	0.0
ION	EAT	EAT200MC	158	22.1	20.1	1.9	1.0	4.5	2.1	0.7	0.3
ION	EAT	EAT-6200	113	8.7	1.1	1.2	0.3	2.0	0.0	0.5	0.0
ION	VAR	VR-350DF	40	17.1	5.9	2.3	1.8	1.0	0.0	0.2	0.0
ION	VAR	VR-CF4	174	15.0	2.5	1.8	0.6	1.0	0.0	0.2	0.0
PVD	BAZ	BAK550/1	0	80.7	44.3	4.9	3.4	0.0	0.0	0.4	0.0
PVD	MRC	MR603/43	206	48.5	29.1	8.0	9.8	0.0	0.0	0.0	0.0
PVD	VAR	VR-31XX	118	22.4	10.6	2.5	2.4	36.0	0.0	24.0	0.0
STEP	GCA	GCA-6300	0	114.0	42.4	8.4	9.6	168.0	0.0	2.4	2.3
STEP	NIK	N1505G4D	0	165.5	130.8	1.5	0.1	0.0	0.0	0.4	0.0
STEP	ULT	UT-1100	23	44.2	38.8	4.7	0.1	0.0	0.0	0.0	0.0
TRACK	GCA	GCA-1006	30	35.2	56.1	16.4	27.4	10.0	0.0	1.0	0.0
TRACK	MTI	MTI-TARG	0	328.0	342.2	1.8	1.3	0.0	0.0	0.4	0.0
TRACK	SSI	SSI-COAT	1	30.8	3.8	0.0	0.0	0.0	0.0	0.0	0.0
TRACK	SVG	SVG-8100	31	90.5	11.2	3.2	0.5	0.0	0.0	0.0	0.0

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11 TO 12 MASK LEVELS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	PKN	PKN340/1	42.5	51.7	1.8	0.8	42.5	4.8	55.4	6.4
CLEAN	FSI	SATURN	91.9	19.2	4.5	3.8	95.1	79.7	162.9	93.4
CVD	AMT	AMT-2100	186.8	113.3	4.0	2.1	35.5	26.2	0.0	0.0
CVD	GEN	GE8301/6	163.2	0.0	17.6	3.4	25.0	0.0	24.6	0.0
DIFF	BTU	BTU-7351	178.1	128.3	8.0	5.9	16.8	0.0	32.2	0.0
DIFF	THE	THE-NA	279.6	224.1	7.0	5.7	123.7	108.0	200.0	0.0
EPI	AMT	AMT-7800	21.5	8.1	2.8	3.0	9.5	2.1	0.0	0.0
ETCH	AMT	AMT-8100	50.5	0.0	8.8	2.0	6.8	7.1	21.2	2.2
ETCH	BRN	BRN-2000	997.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0
ETCH	DRY	DRIE100	168.0	0.0	1.2	0.3	45.0	0.0	0.0	0.0
ETCH	LAM	LAM-590	620.0	758.0	3.1	1.7	23.0	0.0	30.0	0.0
ETCH	TEG	TEG-901	376.7	180.1	2.1	0.8	43.0	0.0	60.0	0.0
ETCH	VAR	VR-20	98.6	98.2	3.6	3.8	45.0	0.0	45.0	0.0
ION	EAT	EAT200MC	43.8	45.9	8.9	8.0	39.1	9.5	57.7	14.6
ION	EAT	EAT-6200	168.0	0.0	1.5	0.0	94.0	0.0	100.0	0.0
ION	VAR	VR-3500F	58.3	67.5	2.7	3.1	100.0	0.0	0.0	0.0
ION	VAR	VR-CF4	21.0	0.0	1.3	0.0	95.0	7.1	96.0	0.0
PVD	BAZ	BAK550/1	168.0	0.0	9.1	6.9	19.3	0.0	39.3	0.0
PVD	MRC	MR603/43	267.9	141.3	12.4	17.0	28.0	0.0	30.0	0.0
PVD	VAR	VR-31XX	102.7	67.3	5.5	7.7	57.5	3.5	75.0	21.2
STEP	GCA	GCA-6300	168.0	0.0	4.5	2.2	18.3	6.7	23.4	9.4
STEP	NIK	N1505G4D	0.0	0.0	2.0	0.0	34.7	6.1	38.0	2.9
STEP	ULT	UT-1100	315.1	90.8	4.9	0.0	0.0	0.0	0.0	0.0
TRACK	GCA	GCA-1006	168.0	0.0	1.0	0.0	45.7	4.0	53.7	5.5
TRACK	MTI	MTI-TARG	0.0	0.0	8.0	0.0	26.4	9.4	31.5	6.4
TRACK	SSI	SSI-COAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRACK	SVG	SVG-8100	261.6	111.9	2.3	1.1	0.0	0.0	0.0	0.0

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11 TO 12 MASK LEVELS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	PKN	PKN340/1	47.8	8.5	7.5	37.4	0.77	103	122.9
CLEAN	FSI	SATURN	114.8	74.1	137.8	101.7	0.58	45	36.9
CVD	AMT	AMT-2100	35.5	26.2	0.0	28.8		54	16.1
CVD	GEN	GE8301/6	39.1	0.0	0.0	24.5	1.02	43	0.0
DIFF	BTU	BTU-7351	26.2	0.0	0.0	22.9	0.52	28	4.0
DIFF	THE	THE-NA	123.7	108.0	0.0	108.6	0.62	49	40.6
EPI	AMT	AMT-7800	9.5	2.1	0.0	5.8		57	30.5
ETCH	AMT	AMT-8100	10.6	11.0	9.1	7.8	0.32	41	31.1
ETCH	BRN	BRN-2000	0.0	0.0	0.0	0.0		37	48.2
ETCH	DRY	DRIE100	45.0	0.0	0.0	35.6		9	1.4
ETCH	LAM	LAM-590	23.0	0.0	0.0	20.3	0.77	31	30.0
ETCH	TEG	TEG-901	43.0	0.0	0.0	38.2	0.72	36	13.6
ETCH	VAR	VR-20	45.0	0.0	0.0	23.5	1.00	15	12.5
ION	EAT	EAT200MC	45.7	6.4	32.0	31.5	0.68	48	29.6
ION	EAT	EAT-6200	94.0	0.0	0.0	68.0	0.94	88	100.1
ION	VAR	VR-350DF	100.0	0.0	0.0	72.7		44	16.2
ION	VAR	VR-CF4	95.0	7.1	0.0	66.8	0.99	23	29.1
PVD	BAZ	BAK550/1	30.2	0.0	0.0	20.2	0.49	55	0.0
PVD	MRC	MR603/43	28.0	0.0	0.0	17.2	0.93	47	61.1
PVD	VAR	VR-31XX	57.5	3.5	21.2	38.0	0.77	51	34.2
STEP	GCA	GCA-6300	22.1	1.2	2.8	17.7	0.78	55	0.0
STEP	NIK	N1505G4D	43.2	6.0	11.4	38.0	0.91	0	0.0
STEP	ULT	UT-1100	0.0	0.0	0.0	0.0		91	44.7
TRACK	GCA	GCA-1006	45.7	4.0	5.5	32.6	0.85	1	0.0
TRACK	MTI	MTI-TARG	31.9	1.6	4.4	31.0	0.84	0	0.0
TRACK	SSI	SSI-COAT	0.0	0.0	0.0	0.0		97	17.0
TRACK	SVG	SVG-8100	0.0	0.0	0.0	0.0		11	10.9

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>12 MASK LEVELS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	PKN	PKN340/1	43	94	18	75	14	155	147	126
CLEAN	FSI	SATURN	29	95	13	91	11	84	84	93
CVD	AMT	AMT-2100	9	100	0	81	7	78	60	51
CVD	ASM	ASM-PRX	12	59	58	84	3	144	50	72
CVD	GEN	GE-8402	5	69	44	70	11	395	22	99
DIFF	BTU	BTU-7351	9	100	0	85	11	36	31	131
DIFF	BTU	BTU-BDF4	32	48	11	78	7	115	32	332
DIFF	THE	THE-NA	33	100	0	87	5	54	63	64
DIFF	TYL	T903318	64	32	1	95	5	83	91	8
EPI	AMT	AMT-7800	6	98	3	61	9	99	90	157
ETCH	AMT	AMT-8100	11	70	37	74	16	259	158	129
ETCH	BRN	BRN-6540	16	44	48	82	11	286	212	50
ETCH	DRY	DRIE100	11	62	54	82	12	218	57	63
ETCH	LAM	LAM-590	23	59	30	78	12	213	138	47
ETCH	TEG	TEG-901	9	100	0	89	12	125	165	6
ION	EAT	NV10-160	17	75	24	72	9	278	170	144
ION	VAR	VR-350DF	4	89	17	76	6	198	147	76
ION	VAR	VR-CF4	3	64	46	80	13	125	116	49
PVD	BAZ	BAK550/1	5	68	19	67	7	198	257	27
PVD	MRC	MR-662	2	100	0	68	0	149	187	47
PVD	VAR	VR-31XX	11	77	34	60	20	232	162	386
STEP	GCA	GCA-6300	36	76	31	77	10	202	89	99
STEP	NIK	N1505G4C	22	57	15	85	3	183	116	172
STEP	ULT	GCA-1000	17	100	0	76	3	211	59	94
TRACK	SVG	SVG-8100	76	90	23	90	7	94	70	41

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>12 MASK LEVELS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	MTBF S.D.	MTTR	MTTR S.D.	MTBS	MTBS S.D.	MTFS	MTFS S.D.
ALIGN	PKN	PKN340/1	61		54.1	19.1	6.5	6.7	85.0	117.4	0.8	1.0
CLEAN	FSI	SATURN	120		165.1	89.1	5.7	3.8	0.0	0.0	1.0	0.0
CVD	AMT	AMT-2100	30		59.1	42.2	6.4	5.8	8.9	4.4	0.6	0.1
CVD	ASM	ASM-PRX	42		114.5	125.2	12.1	11.4	46.8	37.8	3.9	3.2
CVD	GEN	GE-8402	60		420.7	514.3	32.9	26.4	120.0	0.0	4.3	4.4
DIFF	BTU	BTU-7351	178		248.4	161.2	6.6	2.5	0.0	0.0	0.0	0.0
DIFF	BTU	BTU-8DF4	171		1624.5	1707.7	102.7	98.0	198.0	56.6	17.1	0.6
DIFF	THE	THE-NA	59		216.6	53.0	10.8	7.2	466.7	0.0	12.3	0.0
DIFF	TYL	T903318	4		221.0	79.2	8.3	7.8	85.2	37.8	44.2	12.0
EPI	AMT	AMT-7800	151		41.7	10.9	5.2	1.2	4.5	2.1	1.5	0.0
ETCH	AMT	AMT-8100	66		57.5	56.3	6.0	2.8	20.8	31.1	3.5	4.9
ETCH	BRN	BRN-6540	58		51.3	19.6	8.3	4.5	27.2	21.9	5.7	6.7
ETCH	DRY	DRIE100	63		53.1	27.1	6.8	0.6	49.8	68.9	12.7	17.6
ETCH	LAM	LAM-590	49		83.0	51.0	11.6	6.7	74.6	63.9	7.1	5.0
ETCH	TEG	TEG-901	3		127.1	57.9	8.4	8.3	168.0	0.0	3.0	0.0
ION	EAT	NV10-160	74		46.0	32.9	10.4	12.5	20.7	16.0	2.7	2.4
ION	VAR	VR-350DF	33		34.2	30.0	5.5	5.6	21.4	28.8	3.0	3.9
ION	VAR	VR-CF4	27		31.4	20.6	3.3	2.7	17.6	23.4	2.4	3.0
PVD	BAZ	BAK550/1	0		80.7	44.3	4.9	3.4	0.0	0.0	0.4	0.0
PVD	MRC	MR-662	63		64.5	12.1	10.6	12.2	0.0	0.0	0.0	0.0
PVD	VAR	VR-31XX	389		52.0	65.2	9.3	8.5	30.8	32.2	74.3	101.4
STEP	GCA	GCA-6300	143		109.2	53.9	15.7	7.7	82.7	75.5	2.1	1.5
STEP	NIK	N1505G4C	0		221.0	52.3	5.5	5.5	128.0	0.0	3.8	4.8
STEP	ULT	GCA-1000	35		59.7	39.7	4.7	0.1	0.0	0.0	0.0	0.0
TRACK	SVG	SVG-8100	38		130.8	98.8	3.9	0.8	52.6	88.7	0.4	0.6

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>12 MASK LEVELS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	PKN	PKN340/1	41.3	48.2	2.7	2.4	43.0	5.0	68.8	27.9
CLEAN	FSI	SATURN	91.9	19.2	4.6	4.4	83.4	0.0	232.0	0.0
CVD	AMT	AMT-2100	174.1	95.9	4.5	1.9	44.3	24.0	80.0	0.0
CVD	ASM	ASM-PRX	141.5	37.5	5.7	1.1	22.1	2.7	26.7	16.0
CVD	GEN	GE-8402	229.1	93.2	15.2	4.8	21.6	4.9	22.9	2.4
DIFF	BTU	BTU-7351	178.1	128.3	7.0	8.1	0.0	0.0	0.0	0.0
DIFF	BTU	BTU-BDF4	257.0	2.8	14.2	2.0	12.3	4.6	26.9	10.4
DIFF	THE	THE-NA	335.4	286.0	10.3	0.6	47.3	0.0	0.0	0.0
DIFF	TYL	T903318	214.1	197.9	50.8	16.7	16.6	0.2	16.9	0.2
EPI	AMT	AMT-7800	21.5	8.1	2.8	3.0	9.5	2.1	0.0	0.0
ETCH	AMT	AMT-8100	138.9	60.0	9.2	4.3	31.2	37.0	44.7	46.6
ETCH	BRN	BRN-6540	275.5	391.4	6.1	7.0	47.7	39.5	58.3	53.5
ETCH	DRY	DRIE100	136.0	45.2	6.1	3.0	32.5	5.2	41.6	0.6
ETCH	LAM	LAM-590	226.5	410.4	2.2	1.1	17.9	5.1	23.6	7.3
ETCH	TEG	TEG-901	376.7	180.1	2.1	0.8	43.0	0.0	60.0	0.0
ION	EAT	NV10-160	72.0	52.0	6.9	6.2	41.5	18.9	53.0	21.0
ION	VAR	VR-350DF	74.2	55.1	3.0	2.2	93.9	8.6	127.0	0.0
ION	VAR	VR-CF4	76.5	78.5	1.7	0.6	99.6	0.6	100.0	0.0
PVD	BAZ	BAK550/1	168.0	0.0	9.1	6.9	19.3	0.0	39.3	0.0
PVD	MRC	MR-662	267.9	141.3	12.4	17.0	0.0	0.0	0.0	0.0
PVD	VAR	VR-31XX	63.3	42.9	16.6	19.6	31.5	7.4	31.3	1.1
STEP	GCA	GCA-6300	184.3	125.6	2.8	2.0	20.4	2.5	27.4	6.4
STEP	NIK	N1505G4C	422.0	0.0	2.7	1.0	31.7	1.8	36.0	0.1
STEP	ULT	GCA-1000	315.1	90.8	4.9	0.0	0.0	0.0	0.0	0.0
TRACK	SVG	SVG-8100	253.8	85.0	1.6	0.9	42.0	10.4	57.5	21.7

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>12 MASK LEVELS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	PKN	PKN340/1	58.1	9.6	52.3	43.5	0.62	109	128.7
CLEAN	FSI	SATURN	130.3	0.0	0.0	118.5	0.36	13	7.1
CVD	AMT	AMT-2100	56.0	40.0	0.0	45.5	0.55	46	21.4
CVD	ASM	ASM-PRX	41.5	5.6	17.5	34.9	0.83	14	16.8
CVD	GEN	GE-8402	39.9	1.2	6.5	28.0	0.94	23	29.2
DIFF	BTU	BTU-7351	0.0	0.0	0.0	0.0		28	4.0
DIFF	BTU	BTU-BDF4	23.8	7.2	16.2	18.7	0.46	0	0.0
DIFF	THE	THE-NA	47.3	0.0	0.0	41.3		31	8.6
DIFF	TYL	T903318	37.2	0.5	0.5	35.5	0.98	5	4.4
EPI	AMT	AMT-7800	9.5	2.1	0.0	5.8		57	30.5
ETCH	AMT	AMT-8100	54.1	56.2	69.5	39.9	0.70	97	39.2
ETCH	BRN	BRN-6540	74.5	61.7	83.5	60.8	0.82	14	0.0
ETCH	DRY	DRIE100	50.8	8.2	0.9	41.5	0.78	19	11.6
ETCH	LAM	LAM-590	31.5	11.4	15.1	24.6	0.76	55	63.8
ETCH	TEG	TEG-901	43.0	0.0	0.0	38.4	0.72	45	0.0
ION	EAT	NV10-160	67.1	27.8	27.5	48.3	0.78	57	15.3
ION	VAR	VR-350DF	148.7	68.9	0.0	113.2	0.74	30	26.8
ION	VAR	VR-CF4	127.4	38.8	0.0	101.6	1.00	44	0.0
PVD	BAZ	BAK550/1	30.2	0.0	0.0	20.2	0.49	55	0.0
PVD	MRC	MR-662	0.0	0.0	0.0	0.0		69	67.1
PVD	VAR	VR-31XX	58.1	26.0	13.7	34.6	1.01	44	17.7
STEP	GCA	GCA-6300	31.6	7.3	10.7	24.5	0.74	37	25.6
STEP	NIK	N1505G4C	60.9	18.9	17.6	51.5	0.88	0	0.0
STEP	ULT	GCA-1000	0.0	0.0	0.0	0.0		57	14.6
TRACK	SVG	SVG-8100	65.6	16.2	33.9	59.2	0.73	16	10.7

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<=50% CAPACITY UTILIZATION EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA-500	3	76	5	79	15	226	149	54
ALIGN	CAN	PLA501FA	3	75	3	88	16	108	176	44
CLEAN	FSI	FSI-2120	2	67	0	74	0	46	0	195
CVD	BTU	BTU-BDF4	2	63	10	68	40	236	301	218
EPI	GEM	GEM-2	2	66	6	79	6	156	74	130
ETCH	BRN	BRN-2100	3	65	26	93	4	68	46	14
ETCH	BRN	BRN-3100	2	98	1	98	0	7	1	6
ETCH	TEG	TEG-901	6	72	30	95	3	51	42	11
ION	VAR	VR-CF4	2	73	32	77	28	285	393	52
PVD	TMS	TMS-3200	2	60	56	77	25	106	135	155
TRACK	EAT	EAT45/60	3	75	4	76	19	223	155	103
TRACK	SVG	SVG-SCRB	3	83	6	98	0	7	1	18

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<=50% CAPACITY UTILIZATION EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	MPA-500	41		39.4	22.4	2.7	0.9	2.8	1.5	0.4	0.2
ALIGN	CAN	PLA501FA	30		18.6	4.9	0.5	0.5	23.5	19.7	1.3	0.9
CLEAN	FSI	FSI-2120	0		0.0	0.0	0.0	0.0	13.0	15.6	0.0	0.0
CVD	BTU	BTU-BDF4	244		23.9	16.8	2.1	0.2	20.9	22.8	1.3	0.8
EPI	GEM	GEM-2	0		50.3	27.9	2.4	1.1	1.5	0.3	0.0	0.0
ETCH	BRN	BRN-2100	10		99.7	9.6	1.9	0.7	4.0	0.6	0.0	0.0
ETCH	BRN	BRN-3100	0		31.2	6.8	0.3	0.0	160.4	2.6	1.0	0.0
ETCH	TEG	TEG-901	7		44.9	18.4	2.4	2.4	71.4	70.8	1.1	1.1
ION	VAR	VR-CF4	56		13.1	4.1	0.8	1.0	29.1	34.1	1.2	1.1
PVD	TMS	TMS-3200	168		40.4	41.9	5.1	6.9	16.8	10.4	2.2	1.1
TRACK	EAT	EAT45/60	115		41.8	21.8	1.8	1.4	21.7	34.9	0.3	0.1
TRACK	SVG	SVG-SCRB	0		44.4	9.3	0.4	0.1	58.0	12.1	6.0	0.0

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<=50% CAPACITY UTILIZATION EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA-500	178.7	18.5	2.5	0.9	28.5	7.8	48.3	20.2
ALIGN	CAN	PLA501FA	87.5	69.9	11.2	8.1	56.0	1.7	70.0	8.7
CLEAN	FSI	FSI-2120	720.0	0.0	2.2	1.1	68.0	15.6	226.0	246.1
CVD	BTU	BTU-BDF4	384.0	475.2	1.9	0.9	23.4	11.9	49.0	1.4
EPI	GEM	GEM-2	720.0	0.0	4.0	0.0	11.0	1.4	14.5	3.5
ETCH	BRN	BRN-2100	520.0	346.4	1.9	1.0	36.3	26.8	93.3	75.1
ETCH	BRN	BRN-3100	163.4	4.1	70.0	0.0	117.5	24.8	122.5	24.8
ETCH	TEG	TEG-901	329.4	303.1	36.0	37.3	37.0	9.7	48.0	33.0
ION	VAR	VR-CF4	77.9	31.3	19.1	22.5	59.4	57.4	157.0	0.0
PVD	TMS	TMS-3200	96.1	101.6	9.8	2.5	188.5	228.4	228.0	265.9
TRACK	EAT	EAT45/60	520.0	346.4	5.6	4.2	38.0	18.0	53.3	25.2
TRACK	SVG	SVG-SCRB	69.5	9.0	23.3	0.0	63.3	11.6	83.3	2.9

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<=50% CAPACITY UTILIZATION EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.)	S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA-500	44.5	12.2	31.6		35.1	0.59	57	36.0
ALIGN	CAN	PLA501FA	66.9	20.6	34.6		59.0	0.80	27	44.2
CLEAN	FSI	FSI-2120	106.2	24.3	384.4		78.8	0.30	163	0.0
CVD	BTU	BTU-BDF4	36.6	18.6	2.2		24.9	0.48	57	57.9
EPI	GEM	GEM-2	17.2	2.2	5.5		13.6	0.76	39	18.4
ETCH	BRN	BRN-2100	56.8	41.8	117.3		53.0	0.39	26	6.5
ETCH	BRN	BRN-3100	117.5	24.7	24.7		115.7	0.96	3	0.0
ETCH	TEG	TEG-901	46.1	13.6	54.3		43.8	0.77	13	11.4
ION	VAR	VR-CF4	64.7	49.9	0.0		49.8	0.38	144	200.8
PVD	TMS	TMS-3200	196.1	217.7	250.0		150.5	0.83	85	110.3
TRACK	EAT	EAT45/60	59.4	28.1	39.3		45.0	0.71	60	30.8
TRACK	SVG	SVG-SCRB	63.3	11.5	2.9		62.0	0.76	2	0.3

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>50% AND <=75% CAPACITY UTILIZATION EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	PKN	PKN-542	19	47	3	80	6	209	111	3
CLEAN	FSI	SATURN	49	91	13	88	9	130	95	9
CVD	GEN	GE8301/6	4	38	0	78	0	410	0	56
ETCH	AMT	AMT-8330	12	41	21	77	19	243	173	68
ETCH	LAM	LAM-690	23	61	26	78	12	199	113	48
ION	EAT	EAT200MC	18	64	17	73	9	372	135	92
PVD	VAR	VR-3280	4	81	24	47	22	371	79	573
STEP	GCA	GCA-ALS	19	53	26	85	15	136	122	312
STEP	NIK	N1505G4D	22	57	15	85	3	183	116	172
STEP	ULT	UT-1100	13	83	3	75	2	171	6	75
TRACK	SSI	SSI-COAT	18	84	1	84	2	122	5	30

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>50% AND <=75% CAPACITY UTILIZATION EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN S.D.	MTBF	MTBF S.D.	MTTR	MTTR S.D.	MTBS	MTBS S.D.	MTFS	MTFS S.D.
ALIGN	PKN	PKN-542	0	36.0	15.2	1.8	0.0	0.0	0.0	0.3	0.0
CLEAN	FSI	SATURN	9	171.6	77.1	0.9	0.3	0.0	0.0	1.0	0.0
CVD	GEN	GE8301/6	0	605.5	569.2	51.5	0.0	120.0	0.0	4.3	4.4
ETCH	AMT	AMT-8330	50	82.8	58.7	6.3	3.2	39.1	39.5	4.1	5.3
ETCH	LAM	LAM-690	55	42.2	38.0	13.1	4.8	32.0	17.4	5.2	1.9
ION	EAT	EAT200MC	63	47.7	40.9	12.5	16.6	34.6	15.9	2.9	2.6
PVD	VAR	VR-3280	618	36.2	4.0	21.4	0.0	16.7	0.0	32.5	0.0
STEP	GCA	GCA-ALS	0	163.5	27.6	11.8	14.3	121.0	0.0	1.7	1.3
STEP	NIK	N1505G4D	0	221.0	52.3	5.5	5.5	128.0	0.0	3.8	4.8
STEP	ULT	UT-1100	4	13.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRACK	SSI	SSI-COAT	1	30.8	3.8	0.0	0.0	0.0	0.0	0.0	0.0

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>50% AND <=75% CAPACITY UTILIZATION EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	PKN	PKN-542	0.0	0.0	2.0	0.0	37.9	0.0	46.4	0.0
CLEAN	FSI	SATURN	0.0	0.0	4.1	0.1	52.7	43.5	144.3	124.0
CVD	GEN	GE8301/6	295.0	0.0	15.2	6.8	21.6	4.9	22.9	2.4
ETCH	AMT	AMT-8330	164.0	67.9	10.7	4.8	13.1	8.4	22.1	1.7
ETCH	LAM	LAM-690	84.8	11.2	1.9	0.8	16.3	6.6	21.6	7.5
ION	EAT	EAT200MC	66.0	19.4	10.9	7.5	28.7	5.3	50.8	17.9
PVD	VAR	VR-3280	33.4	0.0	50.5	0.0	38.8	0.0	32.0	0.0
STEP	GCA	GCA-ALS	359.0	0.0	5.6	0.6	15.7	3.0	18.6	2.8
STEP	NIK	N1505G4D	422.0	0.0	2.7	1.0	31.7	1.8	36.0	0.1
STEP	ULT	UT-1100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRACK	SSI	SSI-COAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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>50% AND <=75% CAPACITY UTILIZATION EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.)	S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	PKN	PKN-542	59.2	0.0	0.0		47.1	0.82	86	0.0
CLEAN	FSI	SATURN	82.2	67.9	193.8		72.2	0.36	75	26.4
CVD	GEN	GE8301/6	39.9	1.2	6.5		30.9	0.94	2	0.0
ETCH	AMT	AMT-8330	27.2	20.2	8.2		21.0	0.59	146	0.0
ETCH	LAM	LAM-690	36.7	14.9	17.0		28.6	0.76	64	53.5
ION	EAT	EAT200MC	54.4	12.9	20.7		39.7	0.56	85	0.0
PVD	VAR	VR-3280	87.3	0.0	0.0		40.9	1.21	96	0.0
STEP	GCA	GCA-ALS	30.6	13.3	14.3		26.1	0.84	0	0.0
STEP	NIK	N1505G4D	60.9	18.9	17.6		51.5	0.88	0	0.0
STEP	ULT	UT-1100	0.0	0.0	0.0		0.0		126	33.2
TRACK	SSI	SSI-COAT	0.0	0.0	0.0		0.0		97	17.0

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>75% AND <=90% CAPACITY UTILIZATION EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	PKN	PKN-240	25	100	0	74	14	158	157	126
CLEAN	FSI	SATURN	23	91	23	91	11	82	86	76
CVD	AMT	AMT-2100	16	78	35	76	10	264	297	60
DIFF	BTU	BTU-7351	9	100	0	85	11	36	31	131
DIFF	THE	THE-NA	33	100	0	87	5	54	63	64
EPI	AMT	AMT-7800	6	98	3	61	9	99	90	157
EPI	GEN	GEM-1	4	47	6	75	2	475	46	39
ETCH	AMT	AMT-8100	7	100	0	71	8	293	128	169
ETCH	BRN	BRN-2000	10	82	26	96	1	58	9	11
ETCH	LAM	LAM-590	5	100	0	92	3	70	93	16
ETCH	TEG	TEG-901	11	88	21	92	10	88	133	6
ION	EAT	NV10-160	5	99	2	67	9	147	62	166
ION	VAR	VR-3500F	3	73	45	69	7	228	183	195
ION	VAR	VR-CF4	2	60	53	68	5	223	255	196
PVD	MRC	MR603/43	2	100	0	68	0	149	187	47
PVD	VAR	VR-31XX	7	99	1	60	10	193	168	252
STEP	GCA	GCA-6300	13	100	0	76	16	133	13	37
STEP	ULT	UT-1100	17	100	0	76	3	211	59	94
TRACK	EAT	EAT45/60	32	80	28	94	1	39	37	21
TRACK	SVG	SVG-8100	67	91	20	90	6	91	74	48

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>75% AND <=90% CAPACITY UTILIZATION EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	PKN	PKN-240	61		55.0	20.2	7.0	6.9	85.0	117.4	1.1	1.2
CLEAN	FSI	SATURN	104		192.8	128.0	6.7	2.9	388.0	0.0	0.2	0.0
CVD	AMT	AMT-2100	32		91.1	95.3	16.8	28.4	67.3	115.7	0.8	0.7
DIFF	BTU	BTU-7351	178		248.4	161.2	6.6	2.5	0.0	0.0	0.0	0.0
DIFF	THE	THE-NA	59		216.6	53.0	10.8	7.2	466.7	0.0	12.3	0.0
EPI	AMT	AMT-7800	151		41.7	10.9	5.2	1.2	4.5	2.1	1.5	0.0
EPI	GEM	GEM-1	0		86.5	44.6	20.3	11.7	86.5	44.6	1.0	0.0
ETCH	AMT	AMT-8100	37		27.3	12.2	5.5	2.1	2.5	2.1	0.8	0.3
ETCH	BRN	BRN-2000	0		241.3	82.5	8.1	2.2	183.0	0.0	0.6	0.0
ETCH	LAM	LAM-590	13		136.2	45.0	3.6	3.2	168.0	0.0	3.0	0.0
ETCH	TEG	TEG-901	3		218.0	162.8	8.0	5.9	284.0	164.1	1.8	1.7
ION	EAT	NV10-160	103		19.1	5.8	2.9	0.6	7.0	1.4	0.5	0.1
ION	VAR	VR-350DF	193		59.7	74.0	11.7	16.3	73.0	101.8	1.1	1.2
ION	VAR	VR-CF4	182		80.9	90.7	15.9	20.6	73.0	101.8	1.1	1.2
PVD	MRC	MR603/43	63		64.5	12.1	10.6	12.2	0.0	0.0	0.0	0.0
PVD	VAR	VR-31XX	235		19.5	5.0	3.4	2.1	8.0	0.0	0.5	0.0
STEP	GCA	GCA-6300	25		71.0	18.4	10.1	7.2	85.2	117.1	2.2	2.5
STEP	ULT	ULT-1100	35		59.7	39.7	4.7	0.1	0.0	0.0	0.0	0.0
TRACK	EAT	EAT45/60	25		53.4	3.0	1.8	0.2	111.8	79.5	0.6	0.6
TRACK	SVG	SVG-8100	32		82.1	51.1	3.2	1.6	15.4	24.3	0.1	0.0

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>75% AND <=90% CAPACITY UTILIZATION EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	PKN	PKN-240	41.3	48.2	2.8	2.5	45.5	3.5	80.0	28.3
CLEAN	FSI	SATURN	110.9	41.2	4.0	4.6	82.0	0.0	300.0	0.0
CVD	AMT	AMT-2100	172.0	74.4	5.0	2.1	39.8	19.2	51.7	24.7
DIFF	BTU	BTU-7351	178.1	128.3	7.0	8.1	0.0	0.0	0.0	0.0
DIFF	THE	THE-NA	335.4	286.0	10.3	0.6	47.3	0.0	0.0	0.0
EPI	AMT	AMT-7800	21.5	8.1	2.8	3.0	9.5	2.1	0.0	0.0
EPI	GEM	GEM-1	168.0	0.0	3.0	0.0	18.5	7.8	20.0	9.9
ETCH	AMT	AMT-8100	122.2	62.1	7.4	1.2	57.6	54.3	78.0	70.7
ETCH	BRN	BRN-2000	997.0	0.0	3.8	0.0	28.0	0.0	50.0	0.0
ETCH	LAM	LAM-590	620.0	758.0	3.1	1.7	23.0	0.0	30.0	0.0
ETCH	TEG	TEG-901	376.7	180.1	2.1	0.8	35.5	10.6	55.0	7.1
ION	EAT	NV10-160	88.5	73.7	5.3	3.8	58.0	19.8	90.0	0.0
ION	VAR	VR-3500F	66.8	50.0	12.5	17.0	92.5	10.6	0.0	0.0
ION	VAR	VR-CF4	52.5	44.5	13.2	16.8	87.0	18.4	0.0	0.0
PVD	MRC	MR603/43	267.9	141.3	12.4	17.0	0.0	0.0	0.0	0.0
PVD	VAR	VR-31XX	56.4	43.4	7.4	6.7	24.0	0.0	30.0	0.0
STEP	GCA	GCA-6300	159.0	12.7	2.8	0.2	20.8	3.1	32.5	3.5
STEP	ULT	UT-1100	315.1	90.8	4.9	0.0	0.0	0.0	0.0	0.0
TRACK	EAT	EAT45/60	235.2	95.0	2.0	1.5	46.5	5.0	67.5	10.6
TRACK	SVG	SVG-8100	219.8	76.5	2.1	0.8	47.3	1.1	71.7	2.9

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>75% AND <=90% CAPACITY UTILIZATION EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	PKN	PKN-240	57.6	13.6	68.0	42.5	0.57	109	128.7
CLEAN	FSI	SATURN	82.0	0.0	0.0	74.5	0.27	13	5.8
CVD	AMT	AMT-2100	46.8	31.6	50.6	35.6	0.77	39	19.5
DIFF	BTU	BTU-7351	0.0	0.0	0.0	0.0		28	4.0
DIFF	THE	THE-NA	47.3	0.0	0.0	41.3		31	8.6
EPI	AMT	AMT-7800	9.5	2.1	0.0	5.8		57	30.5
EPI	GEM	GEM-1	18.5	7.8	9.9	13.9	0.93	26	0.0
ETCH	AMT	AMT-8100	90.0	84.8	110.5	63.8	0.74	81	26.5
ETCH	BRN	BRN-2000	28.0	0.0	0.0	26.8	0.56	14	16.4
ETCH	LAM	LAM-590	23.0	0.0	0.0	21.1	0.77	11	8.7
ETCH	TEG	TEG-901	35.5	10.6	7.1	32.8	0.65	36	13.6
ION	EAT	MV10-160	78.2	48.4	0.0	52.1	0.64	57	15.3
ION	VAR	VR-350DF	92.5	10.6	0.0	63.5		47	12.3
ION	VAR	VR-CF4	87.0	18.4	0.0	58.8		48	5.9
PVD	MRC	MR603/43	0.0	0.0	0.0	0.0		69	67.1
PVD	VAR	VR-31XX	37.5	0.0	0.0	22.6	0.80	44	17.7
STEP	GCA	GCA-6300	26.0	4.3	17.4	19.6	0.64	37	25.6
STEP	ULT	UT-1100	0.0	0.0	0.0	0.0		57	14.6
TRACK	EAT	EAT45/60	46.5	4.9	10.6	43.8	0.69	17	6.2
TRACK	SVG	SVG-8100	65.3	16.7	19.8	58.6	0.66	18	10.3

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>90% CAPACITY UTILIZATION EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA500FA	14	100	0	96	0	34	0	61
ALIGN	CAN	PLA501FA	13	81	25	95	1	52	37	46
ALIGN	PKN	PKN-240	24	71	41	93	5	44	46	69
CVD	ASM	ASM-PRX	5	39	10	84	7	256	171	72
CVD	TEM	TEM-232	5	44	9	67	18	179	33	272
DIFF	BTU	BTU-BDF4	53	48	11	78	7	115	32	332
DIFF	THE	THE-4704	36	98	1	91	1	39	0	104
ETCH	AMT	AMT-8330	7	98	2	75	9	278	134	148
ETCH	BRN	BRN-6540	6	17	2	77	10	402	92	65
ETCH	BRN	BRN-2075	7	44	23	90	12	175	259	22
ETCH	DRY	DRIE100	12	35	19	86	10	203	134	51
ETCH	LAM	LAM-590	4	45	4	78	1	311	20	21
ION	EAT	NV10-160	5	83	14	66	6	397	42	248
ION	EAT	EAT200MC	4	76	21	79	13	190	187	203
ION	VAR	VR-CF3	7	66	34	76	11	273	57	236
PVD	MRC	MR603/43	6	96	0	64	13	108	116	393
PVD	VAR	VR-3180	11	62	38	77	9	92	59	304
STEP	GCA	GCA6300B	18	72	27	87	6	217	98	51
TRACK	GCA	GCA-1006	18	82	21	75	36	395	643	52
TRACK	SVG	SVG-8100	50	68	21	95	4	54	20	47

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>90% CAPACITY UTILIZATION EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN S.D.	MTBF	MTBF S.D.	MTTR	MTTR S.D.	MTBS	MTBS S.D.	MTFS	MTFS S.D.
ALIGN	CAN	MPA500FA	0	70.8	36.4	4.8	5.3	161.0	0.0	5.0	0.0
ALIGN	CAN	PLA501FA	9	50.5	48.8	1.0	0.7	163.0	0.0	4.0	0.0
ALIGN	PKN	PKN-240	26	180.0	220.6	8.1	10.7	2.0	0.0	0.2	0.0
CVD	ASM	ASM-PRX	10	129.8	182.8	10.7	12.2	69.5	67.2	7.7	6.6
CVD	TEM	TEM-232	61	276.5	235.5	68.7	78.2	13.8	5.2	3.1	0.7
DIFF	BTU	BTU-BDF4	171	1741.3	1224.3	82.3	77.8	237.0	78.5	15.4	3.0
DIFF	THE	THE-4704	0	22.0	2.8	0.9	0.2	252.0	118.8	6.0	2.8
ETCH	AMT	AMT-8330	58	277.5	270.8	3.5	1.0	336.0	0.0	0.0	0.0
ETCH	BRN	BRN-6540	73	44.7	22.5	10.9	1.3	36.9	20.1	8.4	6.8
ETCH	BRN	BRN-2075	34	445.2	314.9	43.6	65.4	136.8	154.8	3.1	2.3
ETCH	DRY	DRIE100	47	88.3	104.8	5.3	4.3	87.6	85.2	12.7	13.5
ETCH	LAM	LAM-590	2	64.5	19.4	17.2	4.4	91.8	70.9	11.9	6.4
ION	EAT	NV10-160	168	23.4	21.6	5.8	7.8	11.6	12.2	2.5	2.8
ION	EAT	EAT200MC	64	22.0	22.5	1.0	0.5	2.0	0.0	0.5	0.0
ION	VAR	VR-CF3	180	36.4	20.2	4.5	2.0	29.1	7.1	2.8	2.5
PVD	NRC	NR603/43	4	344.1	463.6	10.3	10.8	4.0	0.0	3.0	0.0
PVD	VAR	VR-3180	86	88.0	69.3	9.6	7.2	30.2	26.9	46.4	80.7
STEP	GCA	GCA6300B	68	76.9	36.6	9.1	10.2	76.3	72.7	2.3	1.2
TRACK	GCA	GCA-1006	36	30.1	46.9	12.6	23.6	54.7	77.4	1.3	0.6
TRACK	SVG	SVG-8100	55	113.1	121.5	1.8	1.6	94.6	62.6	1.1	0.7

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>90% CAPACITY UTILIZATION EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA500FA	74.0	0.0	2.0	0.0	50.0	8.5	58.0	4.2
ALIGN	CAN	PLA501FA	32.0	11.3	0.6	0.5	27.6	38.7	29.6	41.5
ALIGN	PKN	PKN-240	168.0	0.0	1.0	0.0	48.0	10.8	60.7	6.0
CVD	ASM	ASM-PRX	190.5	31.8	5.2	5.9	5.6	7.2	7.8	10.2
CVD	TEM	TEM-232	15.6	7.3	3.0	0.1	22.3	2.9	20.9	6.9
DIFF	BTU	BTU-BDF4	280.0	39.9	14.5	1.5	18.3	6.2	26.5	7.4
DIFF	THE	THE-4704	300.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0
ETCH	AMT	AMT-8330	31.3	4.9	4.0	0.0	26.0	3.5	25.4	5.5
ETCH	BRN	BRN-6540	49.8	26.6	7.8	8.9	25.5	13.0	27.5	3.5
ETCH	BRN	BRN-2075	239.0	182.7	36.9	72.8	39.7	11.3	54.7	14.8
ETCH	DRY	DRIE100	438.5	584.5	14.3	24.4	42.9	4.5	89.6	68.5
ETCH	LAM	LAM-590	45.6	14.1	1.7	0.5	17.8	3.1	23.4	9.8
ION	EAT	NV10-160	29.3	7.5	2.8	0.3	48.5	4.4	52.3	6.7
ION	EAT	EAT200MC	138.0	52.0	2.7	2.0	112.7	32.3	129.3	50.8
ION	VAR	VR-CF3	76.0	79.2	3.0	1.3	83.7	19.3	91.0	12.3
PVD	MRC	MR603/43	67.0	0.0	15.0	0.0	39.0	15.6	44.5	20.5
PVD	VAR	VR-3180	97.4	44.2	10.5	5.7	47.9	13.7	60.3	19.4
STEP	GCA	GCA63008	51.4	7.7	1.2	1.5	27.3	6.1	36.7	17.0
TRACK	GCA	GCA-1006	126.3	72.2	1.3	0.6	50.5	10.2	60.5	14.4
TRACK	SVG	SVG-8100	175.5	162.5	0.9	0.4	30.5	24.0	32.9	25.7

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>90% CAPACITY UTILIZATION EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.)	S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA500FA	50.0	8.5	4.2		47.8	0.86	0	0.0
ALIGN	CAN	PLA501FA	27.6	38.7	41.5		26.1	0.93	13	0.0
ALIGN	PKN	PKN-240	48.0	10.8	6.0		44.8	0.79	12	0.0
CVD	ASM	ASM-PRX	8.6	11.5	16.2		7.3	0.72	13	0.0
CVD	TEM	TEM-232	34.8	4.5	10.7		23.2	1.06	0	0.0
DIFF	BTU	BTU-BDF4	28.5	9.6	11.5		22.4	0.69	0	0.0
DIFF	THE	THE-4704	0.0	0.0	0.0		0.0		26	0.0
ETCH	AMT	AMT-8330	26.0	3.5	5.5		19.6	1.02	26	11.9
ETCH	BRN	BRN-6540	39.8	20.3	5.5		30.5	0.93	0	0.0
ETCH	BRN	BRN-2075	55.0	14.5	23.1		49.7	0.73	1	0.0
ETCH	DRY	DRIE100	54.4	12.4	106.9		46.8	0.48	10	1.4
ETCH	LAM	LAM-590	27.8	4.9	15.4		21.6	0.76	0	0.0
ION	EAT	NV10-160	58.5	21.7	14.3		38.6	0.93	26	31.2
ION	EAT	EAT200MC	112.7	32.3	50.8		88.8	0.87	24	11.5
ION	VAR	VR-CF3	102.3	47.6	41.4		77.3	0.92	8	7.3
PVD	MRC	MR603/43	39.0	15.6	20.5		25.1	0.88	14	16.6
PVD	VAR	VR-3180	53.7	5.6	14.4		41.2	0.79	17	6.3
STEP	GCA	GCA6300B	36.3	3.7	9.3		31.4	0.74	26	0.0
TRACK	GCA	GCA-1006	50.5	10.2	14.4		38.0	0.83	13	18.0
TRACK	SVG	SVG-8100	39.4	26.6	28.6		37.4	0.93	13	0.0

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FINANCIAL INCENTIVES EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	NPA500FA	12	82	13	83	15	178	155	56
ALIGN	CAN	PLA501FA	7	71	11	82	17	195	166	59
ALIGN	PKN	PKN340/1	14	100	0	79	21	63	69	93
CLEAN	FSI	SATURN	33	78	15	82	13	94	85	207
CVD	AMT	AMT-2100	7	100	0	81	8	50	26	38
CVD	ASM	ASM-PRX	4	58	16	68	16	312	92	166
CVD	BTU	BTUBDF41	2	63	10	68	40	236	301	218
CVD	THE	THE-9XXX	10	99	2	81	7	118	93	12
DIFF	BTU	BTU-7351	9	100	0	85	11	36	31	131
DIFF	THE	THE-NA	33	100	0	87	5	54	63	64
EPI	AMT	AMT-7800	12	85	26	62	8	97	73	287
EPI	GEM	GEM-2	2	66	6	79	6	156	74	130
ETCH	AMT	AMT-8330	4	96	1	67	0	415	72	109
ETCH	BRN	BRN-2100	3	65	26	93	4	68	46	14
ETCH	LAM	LAM-590	5	100	0	92	3	70	93	16
ETCH	TEG	TEG-901	6	61	31	94	3	69	40	12
ION	EAT	NV10-160	6	85	24	65	9	299	211	130
ION	VAR	VR-3500	3	89	17	80	13	125	123	65
ION	VAR	VR-CF4	7	78	24	67	6	304	213	209
PVD	BAZ	BAK550/1	4	61	29	61	2	99	117	352
PVD	MRC	MR603/43	7	77	26	56	1	188	171	200
PVD	TMS	TMS-3200	3	33	17	72	19	133	97	254
PVD	VAR	VR-31XX	8	90	14	71	17	141	157	150
STEP	ULT	UT-1100	17	100	0	76	3	211	59	94
TRACK	EAT	EAT45/60	21	81	13	80	18	170	164	78
TRACK	GCA	GCA-1006	13	87	18	60	54	698	931	30
TRACK	MTI	MTI-TARG	34	77	32	97	1	48	26	17
TRACK	SVG	SVG-8100	50	87	22	90	1	79	18	85

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FINANCIAL INCENTIVES EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	MPA500FA	34		53.7	33.9	2.3	1.1	2.8	1.5	0.4	0.2
ALIGN	CAN	PLA501FA	28		20.0	5.7	0.8	0.3	1.2	0.0	0.2	0.0
ALIGN	PKN	PKN340/1	76		126.5	140.8	7.3	7.0	168.0	0.0	2.0	0.0
CLEAN	FSI	SATURN	21		128.5	86.1	3.6	4.6	13.0	15.6	1.0	0.0
CVD	AMT	AMT-2100	20		67.2	47.7	7.0	6.9	6.5	2.1	0.6	0.1
CVD	ASM	ASM-PRX	143		9.8	13.1	4.2	3.0	11.5	14.8	1.6	2.0
CVD	BTU	BTUBDF41	244		23.9	16.8	2.1	0.2	20.9	22.8	1.3	0.8
CVD	THE	THE-9XXX	6		60.6	33.0	24.4	24.8	0.0	0.0	0.0	0.0
DIFF	BTU	BTU-7351	178		248.4	161.2	6.6	2.5	0.0	0.0	0.0	0.0
DIFF	THE	THE-NA	59		216.6	53.0	10.8	7.2	466.7	0.0	12.3	0.0
EPI	AMT	AMT-7800	287		61.3	40.2	4.4	1.9	11.0	11.4	1.3	0.3
EPI	GEM	GEM-2	0		50.3	27.9	2.4	1.1	1.5	0.3	0.0	0.0
ETCH	AMT	AMT-8330	53		21.7	4.2	4.2	0.7	0.0	0.0	0.0	0.0
ETCH	BRN	BRN-2100	10		99.7	9.6	1.9	0.7	4.0	0.6	0.0	0.0
ETCH	LAM	LAM-590	13		136.2	45.0	3.6	3.2	168.0	0.0	3.0	0.0
ETCH	TEG	TEG-901	9		86.0	56.0	3.8	1.9	48.6	79.6	0.8	1.5
ION	EAT	NV10-160	36		25.3	13.8	3.7	2.3	4.5	2.1	0.5	0.0
ION	VAR	VR-3500	44		12.3	9.2	3.9	3.1	3.9	4.1	0.4	0.2
ION	VAR	VR-CF4	151		24.0	17.4	2.8	2.2	10.0	12.3	0.6	0.4
PVD	BAZ	BAK550/1	459		86.0	36.8	5.6	2.3	24.0	0.0	2.0	0.0
PVD	MRC	MR603/43	197		50.8	32.2	2.2	0.4	26.8	0.0	0.8	0.0
PVD	TMS	TMS-3200	28		85.0	21.2	5.5	6.4	88.8	112.1	4.8	4.6
PVD	VAR	VR-31XX	144		24.7	7.7	3.5	2.1	43.0	0.0	1.1	0.0
STEP	ULT	UT-1100	35		59.7	39.7	4.7	0.1	0.0	0.0	0.0	0.0
TRACK	EAT	EAT45/60	106		44.1	18.4	1.8	1.1	58.3	78.5	0.5	0.4
TRACK	GCA	GCA-1006	37		51.0	69.3	24.3	33.5	10.0	0.0	1.0	0.0
TRACK	MTI	MTI-TARG	0		328.0	342.2	1.8	1.3	0.0	0.0	0.4	0.0
TRACK	SVG	SVG-8100	35		61.6	50.5	2.2	1.8	24.0	0.0	0.2	0.0

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FINANCIAL INCENTIVES EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA500FA	178.7	18.5	2.5	0.9	32.4	10.0	50.0	16.8
ALIGN	CAN	PLA501FA	96.0	101.8	1.1	1.2	29.1	40.8	40.1	56.4
ALIGN	PKN	PKN340/1	30.3	15.8	1.9	1.4	43.5	6.4	57.5	3.5
CLEAN	FSI	SATURN	503.6	374.7	4.7	3.6	60.3	28.1	185.2	165.9
CVD	AMT	AMT-2100	186.8	113.3	4.0	2.1	35.5	26.2	0.0	0.0
CVD	ASM	ASM-PRX	444.0	390.3	2.5	2.1	10.3	13.8	21.2	29.3
CVD	BTU	BTUBDF41	384.0	475.2	1.9	0.9	23.4	11.9	49.0	1.4
CVD	THE	THE-9XXX	224.0	0.0	3.4	0.0	33.0	0.0	34.0	0.0
DIFF	BTU	BTU-7351	178.1	128.3	7.0	8.1	0.0	0.0	0.0	0.0
DIFF	THE	THE-NA	335.4	286.0	10.3	0.6	47.3	0.0	0.0	0.0
EPI	AMT	AMT-7800	100.1	157.4	6.1	7.0	6.6	5.3	0.8	0.0
EPI	GEM	GEM-2	720.0	0.0	4.0	0.0	11.0	1.4	14.5	3.5
ETCH	AMT	AMT-8330	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0
ETCH	BRN	BRN-2100	520.0	346.4	1.9	1.0	36.3	26.8	93.3	75.1
ETCH	LAM	LAM-590	620.0	758.0	3.1	1.7	23.0	0.0	30.0	0.0
ETCH	TEG	TEG-901	516.0	283.0	1.8	0.9	35.0	11.7	52.5	42.7
ION	EAT	NV10-160	69.2	50.2	5.2	3.8	35.1	16.3	48.0	0.0
ION	VAR	VR-3500	72.2	53.5	3.4	2.5	50.9	69.5	0.0	0.0
ION	VAR	VR-CF4	47.0	45.9	2.8	1.4	67.7	36.4	86.5	13.4
PVD	BAZ	BAK550/1	168.0	0.0	10.1	8.3	50.0	0.0	55.0	0.0
PVD	MRC	MR603/43	588.0	594.0	25.2	35.1	20.5	10.6	22.5	10.6
PVD	TNS	TNS-3200	96.0	101.8	4.5	5.0	22.5	6.4	35.0	7.1
PVD	VAR	VR-31XX	80.0	40.4	7.0	6.8	32.9	31.3	45.0	21.2
STEP	ULT	UT-1100	315.1	90.8	4.9	0.0	0.0	0.0	0.0	0.0
TRACK	EAT	EAT45/60	465.6	303.1	4.4	4.2	41.0	15.9	55.0	20.8
TRACK	GCA	GCA-1006	168.0	0.0	1.0	0.0	43.5	2.1	55.5	6.4
TRACK	MTI	MTI-TARG	0.0	0.0	8.0	0.0	26.4	9.4	31.5	6.4
TRACK	SVG	SVG-8100	182.4	158.3	1.9	1.1	0.3	0.0	0.2	0.0

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FINANCIAL INCENTIVES EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA500FA	44.4	9.9	27.7	36.9	0.65	57	36.0
ALIGN	CAN	PLA501FA	45.4	63.9	88.2	37.3	0.73	46	46.0
ALIGN	PKN	PKN340/1	43.5	6.4	3.5	34.5	0.76	203	180.2
CLEAN	FSI	SATURN	94.2	43.9	259.2	76.8	0.33	163	0.0
CVD	AMT	AMT-2100	35.5	26.2	0.0	28.8		54	16.1
CVD	ASM	ASM-PRX	15.9	21.7	46.0	10.8	0.48	88	105.7
CVD	BTU	BTUBDF41	36.6	18.6	2.2	24.9	0.48	57	57.9
CVD	THE	THE-9XXX	33.0	0.0	0.0	26.6	0.97	36	0.0
DIFF	BTU	BTU-7351	0.0	0.0	0.0	0.0		28	4.0
DIFF	THE	THE-NA	47.3	0.0	0.0	41.3		31	8.6
EPI	AMT	AMT-7800	6.6	5.3	0.0	4.1	8.23	46	33.2
EPI	GEM	GEM-2	17.2	2.2	5.5	13.6	0.76	39	18.4
ETCH	AMT	AMT-8330	0.0	0.0	0.0	0.0	0.00	26	23.9
ETCH	BRN	BRN-2100	56.8	41.8	117.3	53.0	0.39	26	6.5
ETCH	LAM	LAM-590	23.0	0.0	0.0	21.1	0.77	11	8.7
ETCH	TEG	TEG-901	48.6	16.6	66.9	45.7	0.67	23	5.2
ION	EAT	MV10-160	38.2	11.0	0.0	24.6	0.73	94	121.4
ION	VAR	VR-350D	51.3	68.8	0.0	41.1		30	26.7
ION	VAR	VR-CF4	70.3	31.7	13.4	46.8	0.78	86	134.3
PVD	BAZ	BAK550/1	50.0	0.0	0.0	30.5	0.91	34	29.4
PVD	MRC	MR603/43	24.2	5.4	4.6	13.4	0.91	52	68.7
PVD	TNS	TNS-3200	30.1	17.1	23.0	21.8	0.64	88	105.7
PVD	VAR	VR-31XX	35.9	27.1	9.3	25.5	0.73	37	18.0
STEP	ULT	UT-1100	0.0	0.0	0.0	0.0		57	14.6
TRACK	EAT	EAT45/60	57.1	23.4	34.2	45.8	0.75	51	31.6
TRACK	GCA	GCA-1006	43.5	2.1	6.4	26.0	0.78	0	0.0
TRACK	MTI	MTI-TARG	31.9	1.6	4.4	31.0	0.84	0	0.0
TRACK	SVG	SVG-8100	0.2	0.0	0.0	0.2	1.25	12	7.8

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WITHOUT INCENTIVES EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	PLA501FA	15	75	18	97	1	13	9	33

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WITHOUT INCENTIVES EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	PLA501FA	13		34.3	33.9	0.6	0.6	63.2	66.9	1.9	1.6

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EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	PLA501FA	39.6	11.8	8.6	8.4	52.8	4.5	62.2	3.2

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EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.)	S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	PLA501FA	52.8	4.5		3.2	51.0	0.85	10	11.7

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WITH MODIFICATIONS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA-500	3	76	5	79	15	226	149	54
CLEAN	FSI	FSI-8231	19	56	16	86	16	36	14	111
CVD	AMT	AMT-3300	7	33	3	66	3	637	110	78
CVD	BTU	BTU-BDF4	2	63	10	68	40	236	301	218
CVD	ACS	ACS-512	3	50	28	88	9	197	236	40
EPI	GEM	GEM-2	2	66	6	79	6	156	74	130
ETCH	AMT	AMT-8100	3	100	0	74	8	310	176	148
ETCH	BRN	BRN-2100	7	64	21	94	4	64	39	14
ETCH	DRY	DRIE100	5	50	15	79	10	275	171	92
ETCH	TEG	TEG-901	3	48	19	93	2	89	3	15
ION	EAT	EAT-3206	2	44	41	78	2	138	20	159
ION	VAR	VR-CF5	2	36	20	61	5	483	113	208
TRACK	EAT	EAT45/60	3	75	4	76	19	223	155	103
TRACK	SVG	SVG-8100	36	100	0	87	10	142	98	31

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WITH MODIFICATIONS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	MPA-500	41		39.4	22.4	2.7	0.9	2.8	1.5	0.4	0.2
CLEAN	FSI	FSI-8231	120		389.0	0.0	6.8	0.0	195.0	272.9	0.2	0.0
CVD	AMT	AMT-3300	37		155.1	166.8	37.5	51.3	155.1	166.8	1.2	1.1
CVD	BTU	BTU-BDF4	244		23.9	16.8	2.1	0.2	20.9	22.8	1.3	0.8
CVD	ACS	ACS-512	39		830.8	1143.0	150.9	210.8	823.7	1153.0	1.2	1.1
EPI	GEN	GEM-2	0		50.3	27.9	2.4	1.1	1.5	0.3	0.0	0.0
ETCH	AMT	AMT-8100	3		22.1	11.7	4.2	0.3	2.5	2.1	0.8	0.3
ETCH	BRN	BRN-2100	10		120.5	42.4	3.0	2.4	63.7	103.3	0.2	0.3
ETCH	DRY	DRIE100	6		20.0	5.7	1.8	1.1	24.0	0.0	1.0	0.0
ETCH	TEG	TEG-901	8		58.6	14.9	4.2	2.1	8.8	2.0	0.1	0.1
ION	EAT	EAT-3206	115		10.0	0.0	1.0	0.0	11.2	13.0	0.7	0.2
ION	VAR	VR-CF5	166		80.5	91.2	15.9	20.4	75.0	99.0	1.2	1.1
TRACK	EAT	EAT45/60	115		41.8	21.8	1.8	1.4	21.7	34.9	0.3	0.1
TRACK	SVG	SVG-8100	39		93.0	91.9	4.5	0.7	1.4	0.2	0.1	0.0

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WITH MODIFICATIONS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA-500	178.7	18.5	2.5	0.9	28.5	7.8	48.3	20.2
CLEAN	FSI	FSI-8231	444.0	390.3	2.5	0.7	69.5	17.7	350.0	70.7
CVD	AMT	AMT-3300	168.0	0.0	6.0	2.8	33.0	12.7	37.5	3.5
CVD	BTU	BTU-BDF4	384.0	475.2	1.9	0.9	23.4	11.9	49.0	1.4
CVD	ACS	ACS-512	108.0	84.8	1.0	0.0	48.5	12.0	99.0	72.1
EPI	GEN	GEN-2	720.0	0.0	4.0	0.0	11.0	1.4	14.5	3.5
ETCH	AMT	AMT-8100	158.0	0.0	7.8	1.2	57.6	54.3	78.0	70.7
ETCH	BRN	BRN-2100	520.0	346.4	1.9	1.0	34.3	22.2	82.5	65.0
ETCH	DRY	DRIE100	168.0	0.0	1.2	0.3	45.0	0.0	0.0	0.0
ETCH	TEG	TEG-901	520.0	346.4	1.9	1.0	32.3	12.7	50.0	52.0
ION	EAT	EAT-3206	444.0	390.3	6.8	7.4	66.5	38.9	110.0	14.1
ION	VAR	VR-CF5	92.0	11.3	14.1	15.4	46.4	39.0	0.0	0.0
TRACK	EAT	EAT45/60	520.0	346.4	5.6	4.2	38.0	18.0	53.3	25.2
TRACK	SVG	SVG-8100	204.0	65.0	1.5	0.0	48.0	0.0	70.0	0.0

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WITH MODIFICATIONS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.)	S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA-500	44.5	12.2	31.6		35.1	0.59	57	36.0
CLEAN	FSI	FSI-8231	85.5	5.0	229.7		73.2	0.20	88	105.7
CVD	AMT	AMT-3300	33.0	12.7	3.5		21.8	0.88	26	0.0
CVD	BTU	BTU-BDF4	36.6	18.6	2.2		24.9	0.48	57	57.9
CVD	ACS	ACS-512	64.5	34.7	131.8		56.9	0.49	20	8.3
EPI	GEM	GEM-2	17.2	2.2	5.5		13.6	0.76	39	18.4
ETCH	AMT	AMT-8100	90.0	84.8	110.5		66.7	0.74	85	35.7
ETCH	BRN	BRN-2100	49.6	37.0	107.0		46.7	0.42	26	5.3
ETCH	DRY	DRIE100	45.0	0.0	0.0		35.6		9	1.4
ETCH	TEG	TEG-901	50.5	19.8	81.2		46.8	0.65	23	5.2
ION	EAT	EAT-3206	77.5	23.4	61.8		60.3	0.60	93	97.9
ION	VAR	VR-CF5	51.7	31.6	0.0		31.4		169	165.5
TRACK	EAT	EAT45/60	59.4	28.1	39.3		45.0	0.71	60	30.8
TRACK	SVG	SVG-8100	75.0	0.0	0.0		65.0	0.69	22	10.2

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WITHOUT MODIFICATIONS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	PLA501FA	21	73	16	96	2	26	30	34
ALIGN	PKN	PKN-542	47	59	28	81	7	181	95	59
CLEAN	FSI	FSI-2120	57	90	14	88	9	111	80	71
CLEAN	STL	ST-860	5	100	0	77	26	323	368	4
CVD	AMT	AMT-2100	5	99	1	88	9	66	83	118
CVD	ASM	ASM-3	3	53	56	97	3	7	4	26
CVD	ASM	ASM-PRX	17	49	36	84	5	200	122	72
CVD	GEN	GE8301/6	4	38	0	78	0	410	0	56
CVD	TEM	TEM-232	5	44	9	67	18	179	33	272
DIFF	BTU	BTU-7351	7	75	26	93	0	54	66	72
DIFF	BTU	BTU-BDF4	53	48	11	78	7	115	32	332
DIFF	THE	THE-4704	36	98	1	91	1	39	0	104
DIFF	THE	THE-MAXI	68	51	14	86	0	72	83	228
DIFF	TYL	TYTAN-II	72	54	38	93	5	82	64	40
EPI	GEM	GEM-1	4	47	6	75	2	475	46	39
ETCH	AMT	AMT-8330	15	66	34	79	14	219	129	131
ETCH	BRN	BRN-6540	16	44	48	82	11	286	212	50
ETCH	BRN	BRN-3100	9	62	33	93	10	119	219	16
ETCH	DRY	DRIE100	14	48	46	86	12	174	87	43
ETCH	LAM	LAM-690	27	57	23	78	10	227	109	41
ETCH	TEG	TEG-901	9	84	17	96	5	40	60	7
ION	EAT	EAT200MC	22	70	19	72	8	354	139	138
ION	EAT	EAT-6200	5	82	22	76	13	155	206	138
ION	VAR	VR-3500E	4	63	40	78	15	252	168	201
ION	VAR	VR-CF4	4	64	32	85	15	175	155	135
PVD	BAZ	BAL-800	5	48	10	66	8	281	140	676
PVD	TMS	TMS-2550	4	55	40	80	18	92	98	181
PVD	VAR	VR-3280	15	68	36	68	19	171	138	394
STEP	CAN	CAN-MKII	8	100	1	84	3	172	23	69
STEP	GCA	GCA-6000	48	70	27	86	8	174	95	104
STEP	NIK	N1505G4C	22	57	15	85	3	183	116	172
STEP	ULT	UT-1100	17	88	9	78	7	157	24	85
TRACK	GCA	GCA-9000	20	69	26	91	7	63	57	108
TRACK	SSI	SSI-COAT	19	86	3	89	9	84	65	23
TRACK	SVG	SVG-SCRB	56	72	18	96	3	31	27	35

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EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	PLA501FA	12		30.7	30.4	0.6	0.5	63.2	66.9	1.9	1.6
ALIGN	PKN	PKN-542	49		31.0	10.6	2.4	2.3	2.0	0.0	0.3	0.0
CLEAN	FSI	FSI-2120	108		182.0	73.5	3.8	5.1	24.0	0.0	1.0	0.0
CLEAN	STL	ST-860	0		130.0	42.4	4.4	0.0	0.0	0.0	0.0	0.0
CVD	AMT	AMT-2100	130		128.3	180.2	2.2	2.2	79.7	93.5	2.2	1.8
CVD	ASM	ASM-3	14		48.8	44.1	0.9	0.8	41.2	20.9	3.2	1.1
CVD	ASM	ASM-PRX	25		122.1	128.2	11.3	9.7	58.1	46.4	5.8	4.8
CVD	GEN	GE8301/6	0		605.5	569.2	51.5	0.0	120.0	0.0	4.3	4.4
CVD	TEM	TEM-232	61		276.5	235.5	68.7	78.2	13.8	5.2	3.1	0.7
DIFF	BTU	BTU-7351	0		107.2	86.0	0.5	0.1	13.5	0.0	4.2	5.3
DIFF	BTU	BTU-BDF4	171		1741.3	1224.3	82.3	77.8	237.0	78.5	15.4	3.0
DIFF	THE	THE-4704	0		22.0	2.8	0.9	0.2	252.0	118.8	6.0	2.8
DIFF	THE	THE-MAXI	101		2800.0	0.0	92.0	128.7	2800.0	0.0	2.0	0.0
DIFF	TYL	TYTAN-II	55		150.7	134.1	5.7	7.1	168.8	147.2	30.8	24.7
EPI	GEM	GEM-1	0		86.5	44.6	20.3	11.7	86.5	44.6	1.0	0.0
ETCH	AMT	AMT-8330	73		239.3	228.8	4.9	2.9	138.1	173.7	4.1	5.3
ETCH	BRN	BRN-6540	58		51.3	19.6	8.3	4.5	27.2	21.9	5.7	6.7
ETCH	BRN	BRN-3100	27		307.2	324.4	29.1	55.4	146.3	110.2	2.2	2.0
ETCH	DRY	DRIE100	56		115.7	110.2	8.0	2.1	101.2	101.5	16.3	13.9
ETCH	LAM	LAM-690	48		47.8	34.5	14.8	4.6	55.9	49.9	7.9	5.1
ETCH	TEG	TEG-901	2		104.2	165.5	2.3	3.3	200.5	134.9	1.6	0.7
ION	EAT	EAT200MC	94		42.8	36.0	11.2	13.6	24.4	15.8	2.7	2.4
ION	EAT	EAT-6200	98		21.4	23.0	1.0	0.7	2.0	0.0	0.5	0.0
ION	VAR	VR-3500E	190		95.2	43.2	14.2	15.1	93.3	73.0	3.9	2.6
ION	VAR	VR-CF4	198		35.4	21.9	3.8	3.2	37.1	14.9	2.5	1.8
PVD	BAZ	BAL-800	0		54.7	7.5	3.2	1.1	24.0	0.0	1.2	1.1
PVD	TMS	TMS-2550	127		60.2	45.4	3.7	5.4	67.2	87.6	4.2	3.4
PVD	VAR	VR-3280	277		74.5	63.9	11.4	7.8	25.1	23.8	37.9	68.1
STEP	CAN	CAN-MKII	41		49.5	9.2	4.8	4.6	68.2	93.1	1.4	1.6
STEP	GCA	GCA-6000	126		102.6	54.5	9.3	9.4	70.4	66.8	1.8	1.2
STEP	NIK	N1505G4C	0		221.0	52.3	5.5	5.5	128.0	0.0	3.8	4.8
STEP	ULT	UT-1100	17		16.6	4.8	1.4	0.0	151.0	0.0	3.0	0.0
TRACK	GCA	GCA-9000	120		40.4	51.9	1.4	1.3	92.2	70.1	2.5	1.8
TRACK	SSI	SSI-COAT	12		43.8	22.8	0.5	0.0	210.0	0.0	3.0	0.0
TRACK	SVG	SVG-SCRB	39		78.6	87.8	1.1	1.3	74.5	47.0	2.8	2.7

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EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	PLA501FA	36.5	12.3	7.0	8.2	42.3	23.8	49.9	27.9
ALIGN	PKN	PKN-542	163.0	7.1	3.9	4.2	42.0	3.7	68.8	27.9
CLEAN	FSI	FSI-2120	720.0	0.0	3.2	1.5	91.1	65.6	135.2	94.3
CLEAN	STL	ST-860	727.0	0.0	1.5	0.0	144.0	0.0	180.0	0.0
CVD	AMT	AMT-2100	104.3	65.5	26.6	37.6	106.3	86.5	166.7	167.7
CVD	ASM	ASM-3	98.2	98.7	6.0	7.8	225.0	247.5	265.5	269.4
CVD	ASM	ASM-PRX	166.0	40.1	5.4	3.5	13.9	10.5	17.2	15.5
CVD	GEN	GE8301/6	295.0	0.0	15.2	6.8	21.6	4.9	22.9	2.4
CVD	TEM	TEM-232	15.6	7.3	3.0	0.1	22.3	2.9	20.9	6.9
DIFF	BTU	BTU-7351	14.5	0.0	7.9	3.0	83.4	94.2	116.1	118.7
DIFF	BTU	BTU-BDF4	280.0	39.9	14.5	1.5	18.3	6.2	26.5	7.4
DIFF	THE	THE-4704	300.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0
DIFF	THE	THE-MAXI	124.0	62.2	11.5	0.7	21.0	0.0	0.0	0.0
DIFF	TYL	TYTAN-II	242.7	148.5	39.2	23.3	16.6	0.2	16.9	0.2
EPI	GEM	GEM-1	168.0	0.0	3.0	0.0	18.5	7.8	20.0	9.9
ETCH	AMT	AMT-8330	84.4	80.3	7.8	4.9	18.6	9.3	25.0	4.4
ETCH	BRN	BRN-6540	275.5	391.4	6.1	7.0	47.7	39.5	58.3	53.5
ETCH	BRN	BRN-3100	213.8	146.8	47.9	58.9	65.7	42.6	81.8	40.5
ETCH	DRY	DRIE100	528.7	680.9	21.0	25.9	36.8	8.4	73.7	55.7
ETCH	LAM	LAM-690	69.1	23.9	1.8	0.6	16.9	5.0	22.3	7.3
ETCH	TEG	TEG-901	138.9	27.2	70.0	0.0	38.3	7.2	47.0	2.5
ION	EAT	EAT200MC	81.2	54.5	9.0	6.6	40.1	19.0	57.0	21.3
ION	EAT	EAT-6200	123.0	63.6	3.2	2.5	122.0	39.6	144.0	62.2
ION	VAR	VR-3500E	88.7	15.5	13.5	16.1	117.6	54.1	176.0	69.3
ION	VAR	VR-CF4	69.2	57.2	13.7	18.5	87.0	21.7	111.3	41.2
PVD	BAZ	BAL-800	168.0	0.0	15.0	1.4	34.7	21.7	47.1	11.1
PVD	TMS	TMS-2550	72.1	83.1	6.9	5.4	131.7	189.1	162.0	220.0
PVD	VAR	VR-3280	78.5	48.4	15.7	16.1	42.2	14.8	52.0	22.8
STEP	CAN	CAN-MKII	99.5	71.4	3.9	2.0	43.1	16.8	59.0	15.6
STEP	GCA	GCA-6000	132.7	133.6	2.9	2.4	22.0	7.2	30.4	14.2
STEP	NIK	N1505G4C	422.0	0.0	2.7	1.0	31.7	1.8	36.0	0.1
STEP	ULT	UT-1100	37.0	0.0	2.0	0.0	41.0	0.0	59.0	0.0
TRACK	GCA	GCA-9000	130.7	67.5	18.4	34.4	50.1	17.6	57.9	25.4
TRACK	SSI	SSI-COAT	236.8	0.0	46.6	0.0	50.0	0.0	65.0	0.0
TRACK	SVG	SVG-SCRB	134.8	119.4	9.6	11.4	44.8	23.4	57.1	31.0

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EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.)	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	PLA501FA	42.2	23.8	49.9	27.9	40.6	0.85	11	10.2
ALIGN	PKN	PKN-542	57.1	11.2	96.2	52.3	46.3	0.61	46	37.4
CLEAN	FSI	FSI-2120	117.0	60.7	183.0	131.4	102.7	0.67	67	59.3
CLEAN	STL	ST-860	225.0	0.0	281.2	0.0	172.9	0.80	12	6.6
CVD	AMT	AMT-2100	118.0	79.6	181.7	157.8	104.0	0.64	16	13.0
CVD	ASM	ASM-3	225.0	247.5	265.5	269.4	218.0	0.85	5	5.5
CVD	ASM	ASM-PRX	25.0	20.4	29.5	24.5	21.1	0.81	13	11.9
CVD	GEN	GE8301/6	39.9	1.2	43.1	6.5	30.9	0.94	2	0.0
CVD	TEM	TEM-232	34.8	4.5	32.6	10.7	23.2	1.06	0	0.0
DIFF	BTU	BTU-7351	88.1	87.5	125.2	105.9	81.6	0.72	5	0.0
DIFF	BTU	BTU-BDF4	28.5	9.6	41.4	11.5	22.4	0.69	0	0.0
DIFF	THE	THE-4704	0.0	0.0	0.0	0.0	0.0		26	0.0
DIFF	THE	THE-MAXI	21.0	0.0	0.0	0.0	18.1		13	0.0
DIFF	TYL	TYTAN-II	37.2	0.5	38.1	0.5	34.7	0.98	12	12.5
EPI	GEN	GEM-1	18.5	7.8	20.0	9.9	13.9	0.93	26	0.0
ETCH	AMT	AMT-8330	26.7	14.5	36.4	9.2	21.0	0.75	56	60.0
ETCH	BRN	BRN-6540	74.5	61.7	91.1	83.5	60.8	0.82	14	0.0
ETCH	BRN	BRN-3100	75.9	35.9	100.3	28.8	70.6	0.80	2	1.0
ETCH	DRY	DRIE100	57.5	13.1	115.2	86.9	49.7	0.50	19	11.6
ETCH	LAM	LAM-690	33.2	11.9	43.7	15.7	25.8	0.76	64	53.5
ETCH	TEG	TEG-901	38.2	7.2	47.0	2.4	36.5	0.81	12	12.8
ION	EAT	EAT200MC	68.9	26.3	98.3	27.0	49.4	0.70	78	10.4
ION	EAT	EAT-6200	122.0	39.6	144.0	62.2	93.2	0.85	84	103.7
ION	VAR	VR-3500E	154.2	60.5	255.3	42.9	119.4	0.67	27	24.8
ION	VAR	VR-CF4	105.6	46.7	130.1	46.0	89.4	0.78	8	7.8
PVD	BAZ	BAL-800	40.1	14.0	58.2	4.5	26.4	0.74	13	0.0
PVD	TMS	TMS-2550	136.7	185.1	169.5	214.1	109.0	0.81	61	88.3
PVD	VAR	VR-3280	56.0	15.9	66.7	15.4	38.2	0.81	39	35.2
STEP	CAN	CAN-MKII	51.9	4.4	72.5	3.5	43.6	0.73	29	13.1
STEP	GCA	GCA-6000	33.2	7.3	44.6	11.3	28.6	0.72	22	5.4
STEP	NIK	N1505G4C	60.9	18.9	68.5	17.6	51.5	0.88	0	0.0
STEP	ULT	UT-1100	41.0	0.0	59.0	0.0	32.1	0.69	92	62.1
TRACK	GCA	GCA-9000	58.0	6.3	65.8	14.6	52.7	0.86	10	13.9
TRACK	SSI	SSI-COAT	50.0	0.0	65.0	0.0	44.3	0.77	66	54.9
TRACK	SVG	SVG-SCRB	49.2	22.0	61.9	28.1	47.3	0.78	10	9.8

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<=3 PROCESS FLOWS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	PKN	PKN-240	36	93	21	73	13	167	149	136
CLEAN	FSI	SATURN	5	100	0	90	12	93	91	93
CVD	AMT	AMT-2100	5	100	0	84	4	120	59	75
CVD	ASM	ASM-3A	6	57	61	80	26	83	112	146
CVD	ASM	ASM-PRX	14	50	44	86	4	141	36	75
CVD	GEN	GE-8402	3	69	44	70	11	395	22	99
DIFF	TYL	T903318	64	32	1	95	5	83	91	8
ETCH	AMT	AMT-8100	9	82	25	71	16	282	165	129
ETCH	BRN	BRN-2100	7	85	21	96	2	39	35	7
ETCH	BRN	BRN-2075	6	52	20	88	14	214	302	27
ETCH	DRY	DRIE100	15	55	35	82	11	223	135	74
ETCH	LAM	LAM-690	18	55	33	75	14	216	130	66
ETCH	TEG	TEG-901	7	85	21	88	10	164	110	7
ETCH	VAR	VR-20	4	53	67	52	11	555	63	234
ION	EAT	NV10-160	9	76	22	67	8	369	160	204
ION	EAT	EAT200HC	2	65	10	73	9	273	170	240
ION	VAR	VR-350D	4	80	17	84	11	215	116	65
PVD	VAR	VR-31XX	11	66	0	66	0	214	0	388
STEP	GCA	GCA6300B	28	60	35	85	10	157	57	127
STEP	ULT	UT-1100	17	100	0	76	0	211	0	94
TRACK	GCA	GCA-1006	17	57	17	67	40	485	754	131
TRACK	SVG	SVG-8100	68	93	16	90	7	99	65	41

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<=3 PROCESS FLOWS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	MTBF S.D.	MTTR	MTTR S.D.	MTBS	MTBS S.D.	MTFS	MTFS S.D.
ALIGN	PKN	PKN-240	43		48.9	21.3	7.0	6.9	2.0	0.0	0.2	0.0
CLEAN	FSI	SATURN	120		153.5	94.4	6.7	3.2	0.0	0.0	0.0	0.0
CVD	AMT	AMT-2100	21		78.6	61.7	9.7	7.4	13.6	0.0	0.5	0.0
CVD	ASM	ASM-3A	184		82.7	3.8	8.2	9.5	56.0	0.0	2.5	0.0
CVD	ASM	ASM-PRX	30		162.7	121.6	14.5	9.1	70.2	48.6	6.7	5.4
CVD	GEN	GE-8402	60		127.0	107.5	32.9	26.4	120.0	0.0	7.4	0.0
DIFF	TYL	T903318	4		221.0	79.2	8.3	7.8	85.2	37.8	44.2	12.0
ETCH	AMT	AMT-8100	66		38.4	35.0	6.5	2.8	20.8	31.1	4.1	5.4
ETCH	BRN	BRN-2100	6		204.4	134.8	5.4	6.0	0.0	0.0	0.0	0.0
ETCH	BRN	BRN-2075	39		396.3	366.7	51.7	77.6	201.9	150.0	1.9	1.2
ETCH	DRY	DRIE100	47		78.7	108.4	5.0	4.2	63.2	94.5	6.4	11.3
ETCH	LAM	LAM-690	61		70.9	47.5	11.3	5.3	32.0	17.4	5.2	1.9
ETCH	TEG	TEG-901	1		81.0	7.3	10.4	5.4	8.0	0.0	0.2	0.0
ETCH	VAR	VR-20	134		37.3	23.6	5.3	2.5	54.0	0.0	2.5	0.0
ION	EAT	NV10-160	134		40.2	36.2	10.2	13.3	16.7	18.4	2.3	2.6
ION	EAT	EAT200MC	0		9.0	1.4	1.2	0.3	2.0	0.0	0.5	0.0
ION	VAR	VR-3500	44		30.9	33.9	7.5	4.1	24.2	24.7	3.1	3.7
PVD	VAR	VR-31XX	0		34.4	0.0	7.3	0.0	28.6	0.0	14.0	0.0
STEP	GCA	GCA6300B	162		106.9	66.8	10.6	9.8	51.0	62.1	2.3	1.6
STEP	ULT	UT-1100	0		59.7	0.0	4.7	0.0	0.0	0.0	0.0	0.0
TRACK	GCA	GCA-1006	129		40.8	66.0	17.2	26.7	26.1	27.8	2.3	2.3
TRACK	SVG	SVG-8100	37		88.7	46.8	3.5	1.1	21.1	34.1	0.4	0.5

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<=3 PROCESS FLOWS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	PKN	PKN-240	56.4	66.0	2.8	2.5	44.0	1.4	80.0	28.3
CLEAN	FSI	SATURN	91.9	19.2	4.7	5.3	0.0	0.0	0.0	0.0
CVD	AMT	AMT-2100	222.1	121.8	5.7	0.1	62.0	0.0	80.0	0.0
CVD	ASM	ASM-3A	155.4	17.8	11.9	16.1	50.0	0.0	75.0	0.0
CVD	ASM	ASM-PRX	165.3	49.0	6.9	2.2	18.3	6.8	22.8	13.2
CVD	GEN	GE-8402	229.1	93.2	12.8	3.4	18.1	0.0	21.2	0.0
DIFF	TYL	T903318	214.1	197.9	50.8	16.7	16.6	0.2	16.9	0.2
ETCH	AMT	AMT-8100	138.9	60.0	9.0	4.7	38.5	38.3	49.8	52.2
ETCH	BRN	BRN-2100	558.5	620.1	2.3	2.2	65.0	0.0	180.0	0.0
ETCH	BRN	BRN-2075	269.3	211.1	49.0	84.0	40.2	13.8	60.6	15.1
ETCH	DRY	DRIE100	454.5	573.0	15.4	23.9	41.1	8.2	90.0	67.9
ETCH	LAM	LAM-690	352.6	535.7	2.5	1.4	16.3	6.6	21.6	7.5
ETCH	TEG	TEG-901	184.7	91.5	1.7	1.4	47.0	0.0	110.0	0.0
ETCH	VAR	VR-20	98.6	98.2	3.6	3.8	45.0	0.0	45.0	0.0
ION	EAT	NV10-160	85.1	45.8	5.7	2.1	38.2	22.0	57.6	23.5
ION	EAT	EAT200MC	168.0	0.0	1.5	0.0	94.0	0.0	100.0	0.0
ION	VAR	VR-350D	104.0	3.5	4.4	0.8	44.8	60.9	127.0	0.0
PVD	VAR	VR-31XX	84.3	0.0	14.8	0.0	32.7	18.4	46.4	0.0
STEP	GCA	GCA6300B	185.3	159.0	2.7	2.4	20.8	4.5	28.5	7.3
STEP	ULT	UT-1100	315.1	0.0	4.9	0.0	0.0	0.0	0.0	0.0
TRACK	GCA	GCA-1006	150.3	30.6	0.8	0.3	39.1	12.6	45.2	17.8
TRACK	SVG	SVG-8100	244.6	75.6	1.7	0.9	43.0	8.7	58.7	19.6

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<=3 PROCESS FLOWS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	PKN	PKN-240	56.1	15.7	68.0	40.9	0.55	109	128.1
CLEAN	FSI	SATURN	0.0	0.0	0.0	0.0		13	7.1
CVD	AMT	AMT-2100	96.9	0.0	0.0	81.5	0.78	41	29.2
CVD	ASM	ASM-3A	50.0	0.0	0.0	40.1	0.67	73	101.4
CVD	ASM	ASM-PRX	33.2	14.8	18.4	28.6	0.80	14	16.8
CVD	GEN	GE-8402	40.7	0.0	0.0	28.6	0.85	23	29.2
DIFF	TYL	T903318	37.2	0.5	0.5	35.5	0.98	5	4.4
ETCH	AMT	AMT-8100	66.9	55.8	76.5	47.4	0.77	97	39.2
ETCH	BRN	BRN-2100	101.5	0.0	0.0	97.9	0.36	15	17.3
ETCH	BRN	BRN-2075	53.5	17.4	23.5	47.2	0.66	1	0.0
ETCH	DRY	DRIE100	51.5	13.0	106.0	42.1	0.46	15	10.5
ETCH	LAM	LAM-690	36.7	14.9	17.0	27.4	0.76	68	66.1
ETCH	TEG	TEG-901	73.4	0.0	0.0	64.2	0.43	37	11.8
ETCH	VAR	VR-20	45.0	0.0	0.0	23.5	1.00	15	12.5
ION	EAT	NV10-160	62.0	32.4	33.4	41.4	0.66	108	110.8
ION	EAT	EAT200MC	94.0	0.0	0.0	68.2	0.94	30	8.5
ION	VAR	VR-3500	100.1	137.8	0.0	83.7	0.35	13	17.6
PVD	VAR	VR-31XX	49.6	0.0	0.0	32.6	0.70	32	0.0
STEP	GCA	GCA6300B	36.6	6.5	4.7	31.1	0.73	18	0.0
STEP	ULT	UT-1100	0.0	0.0	0.0	0.0		57	0.0
TRACK	GCA	GCA-1006	49.6	7.5	5.2	33.1	0.87	1	0.0
TRACK	SVG	SVG-8100	67.1	13.6	30.7	60.4	0.73	16	10.7

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4 OR 5 PROCESS FLOWS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	PKN	PKN340/1	16	94	18	74	14	165	162	116
CLEAN	FSI	FSI-SRD	23	100	1	86	11	131	102	60
CVD	AMT	AMT-3300	7	100	0	81	8	50	26	38
CVD	THE	THE-9XXX	22	99	1	72	5	118	92	89
DIFF	BTU	BTU-7351	9	100	0	85	11	36	31	131
DIFF	BTU	BTU-BDF4	32	48	11	78	7	115	32	332
DIFF	THE	THE-9XXX	43	99	2	85	5	66	48	66
EPI	AMT	AMT-7800	6	98	3	61	9	99	90	157
ETCH	BRN	BRN-3200	10	94	9	92	4	76	16	9
ETCH	BRN	BRN-6540	6	17	2	77	10	402	92	65
ETCH	LAM	LAM-590	18	77	23	85	7	175	115	15
ETCH	TEG	TEG-901	13	89	19	89	9	133	117	7
ION	EAT	NV10-160	6	85	15	68	7	271	167	96
ION	VAR	VR-350DF	2	99	2	73	0	146	165	85
ION	VAR	VR-CF4	3	64	46	80	13	125	116	49
PVD	MRC	MR-662	2	100	0	68	0	149	187	47
PVD	VAR	VR-31XX	8	79	38	69	12	222	151	139
STEP	GCA	GCA63008	13	85	21	74	14	230	125	14
STEP	ULT	UT-1100	30	92	10	75	2	191	41	85
TRACK	SSI	SVG-COAT	18	84	1	84	2	122	5	30
TRACK	SVG	SVG-8100	40	83	30	93	5	62	34	47

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4 OR 5 PROCESS FLOWS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	PKN	PKN340/1	74		54.7	20.8	7.3	7.4	168.0	0.0	2.0	0.0
CLEAN	FSI	FSI-SRD	97		151.5	89.1	5.9	3.1	0.0	0.0	0.0	0.0
CVD	AMT	AMT-3300	20		67.2	47.7	7.0	6.9	6.5	2.1	0.6	0.1
CVD	THE	THE-9XXX	103		58.0	36.8	6.8	0.0	0.0	0.0	0.0	0.0
DIFF	BTU	BTU-7351	178		248.4	161.2	6.6	2.5	0.0	0.0	0.0	0.0
DIFF	BTU	BTU-BDF4	171		1624.5	1707.7	102.7	98.0	198.0	56.6	17.1	0.6
DIFF	THE	THE-9XXX	42		185.4	65.8	10.8	7.2	466.7	0.0	12.3	0.0
EPI	AMT	AMT-7800	151		41.7	10.9	5.2	1.2	4.5	2.1	1.5	0.0
ETCH	BRN	BRN-3200	2		170.3	182.9	9.6	0.0	0.0	0.0	0.0	0.0
ETCH	BRN	BRN-6540	73		44.7	22.5	10.9	1.3	36.9	20.1	8.4	6.8
ETCH	LAM	LAM-590	8		67.9	54.0	10.4	8.4	117.2	66.7	9.0	6.9
ETCH	TEG	TEG-901	3		93.7	70.8	8.4	8.3	168.0	0.0	3.0	0.0
ION	EAT	NV10-160	44		25.9	15.9	7.0	6.8	13.1	10.0	2.5	2.8
ION	VAR	VR-350DF	40		17.1	5.9	2.3	1.8	1.0	0.0	0.2	0.0
ION	VAR	VR-CF4	27		31.4	20.6	3.3	2.7	17.6	23.4	2.4	3.0
PVD	MRC	MR-662	63		64.5	12.1	10.6	12.2	0.0	0.0	0.0	0.0
PVD	VAR	VR-31XX	80		62.9	70.5	7.6	6.4	67.7	0.0	190.0	0.0
STEP	GCA	GCA63008	7		98.0	19.8	17.9	4.0	103.6	91.1	2.6	1.9
STEP	ULT	UT-1100	23		44.2	38.8	4.7	0.1	0.0	0.0	0.0	0.0
TRACK	SSI	SVG-COAT	1		30.8	3.8	0.0	0.0	0.0	0.0	0.0	0.0
TRACK	SVG	SVG-8100	44		156.0	113.7	3.5	0.6	155.0	0.0	1.1	0.0

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4 OR 5 PROCESS FLOWS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	PKN	PKN340/1	24.6	10.8	1.9	0.9	48.0	0.0	60.0	0.0
CLEAN	FSI	FSI-SRD	91.9	19.2	4.7	5.3	0.0	0.0	0.0	0.0
CVD	AMT	AMT-3300	186.8	113.3	4.0	2.1	35.5	26.2	0.0	0.0
CVD	THE	THE-9XXX	224.0	0.0	3.4	0.0	0.0	0.0	0.0	0.0
DIFF	BTU	BTU-7351	178.1	128.3	7.0	8.1	0.0	0.0	0.0	0.0
DIFF	BTU	BTU-BDF4	257.0	2.8	14.2	2.0	15.3	4.6	26.9	10.4
DIFF	THE	THE-9XXX	335.4	286.0	10.3	0.6	47.3	0.0	0.0	0.0
EPI	AMT	AMT-7800	21.5	8.1	2.8	3.0	9.5	2.1	0.0	0.0
ETCH	BRN	BRN-3200	997.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0
ETCH	BRN	BRN-6540	49.8	26.6	7.8	8.9	25.5	13.0	27.5	3.5
ETCH	LAM	LAM-590	332.8	549.2	2.4	1.3	19.5	3.7	25.6	7.9
ETCH	TEG	TEG-901	376.7	180.1	2.1	0.8	43.0	0.0	60.0	0.0
ION	EAT	NV10-160	47.4	43.9	3.7	3.2	48.8	6.7	49.0	0.0
ION	VAR	VR-350DF	58.3	67.5	2.7	3.1	100.0	0.0	0.0	0.0
ION	VAR	VR-CF4	76.5	78.5	1.7	0.6	99.6	0.6	100.0	0.0
PVD	MRC	MR-662	267.9	141.3	12.4	17.0	0.0	0.0	0.0	0.0
PVD	VAR	VR-31XX	84.7	44.4	8.6	6.9	31.7	0.0	32.0	0.0
STEP	GCA	GCA6300B	114.2	76.2	1.6	1.9	22.5	0.7	27.0	4.2
STEP	ULT	UT-1100	315.1	90.8	4.9	0.0	0.0	0.0	0.0	0.0
TRACK	SSI	SVG-COAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRACK	SVG	SVG-8100	287.1	90.6	1.7	1.3	30.0	0.0	32.4	0.0

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4 OR 5 PROCESS FLOWS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	PKN	PKN340/1	48.0	0.0	0.0	35.4	0.80	114	126.2
CLEAN	FSI	FSI-SRD	0.0	0.0	0.0	0.0		51	37.1
CVD	AMT	AMT-3300	35.5	26.2	0.0	28.8		54	16.1
CVD	THE	THE-9XXX	0.0	0.0	0.0	0.0		31	7.8
DIFF	BTU	BTU-7351	0.0	0.0	0.0	0.0		28	4.0
DIFF	BTU	BTU-80F4	23.8	7.2	16.2	18.7	0.57	0	0.0
DIFF	THE	THE-9XXX	47.3	0.0	0.0	40.4		57	45.4
EPI	AMT	AMT-7800	9.5	2.1	0.0	5.8		57	30.5
ETCH	BRN	BRN-3200	0.0	0.0	0.0	0.0		37	48.2
ETCH	BRN	BRN-6540	39.8	20.3	5.5	30.5	0.93	0	0.0
ETCH	LAM	LAM-590	26.2	4.4	11.5	22.3	0.76	31	30.0
ETCH	TEG	TEG-901	43.0	0.0	0.0	38.2	0.72	36	13.6
ION	EAT	NV10-160	63.8	28.0	0.0	43.6	0.99	62	22.4
ION	VAR	VR-350DF	100.0	0.0	0.0	72.7		44	16.2
ION	VAR	VR-CF4	127.4	38.8	0.0	101.6	1.00	44	0.0
PVD	MRC	MR-662	0.0	0.0	0.0	0.0		69	67.1
PVD	VAR	VR-31XX	49.5	0.0	0.0	34.2	0.99	59	35.9
STEP	GCA	GCA6300B	28.7	8.0	5.3	21.3	0.83	55	0.0
STEP	ULT	UT-1100	0.0	0.0	0.0	0.0		91	44.7
TRACK	SSI	SVG-COAT	0.0	0.0	0.0	0.0		97	17.0
TRACK	SVG	SVG-8100	46.9	0.0	0.0	43.4	0.93	11	10.9

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6 TO <15 PROCESS FLOWS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA-500	6	70.4	0	96.5	0	54.6	0	6.5
ALIGN	CAN	PLA501FA	9	81.7	14.6	96.6	1.3	12.9	11.3	35.3
ALIGN	PKN	PKN-240	29	70.7	41.4	82.7	10	153.2	107.8	87.3
CVD	AMT	AMT-2100	5	99.4	0.7	88.2	8.7	66.1	83.4	118.3
CVD	ASM	ASM-3	3	53.2	56.2	96.9	2.7	6.7	3.8	26
DIFF	THE	THE-4704	36	97.9	0.7	90.5	0.5	39	0	104
ETCH	AMT	AMT-8330	6	99.5	0.6	78.2	6.7	235.9	115.9	163.1
ETCH	BRN	BRN-3100	6	89.5	15.1	96.8	2.8	19.5	22.1	28
ETCH	DRY	DRIE100	12	66.4	31	77.2	8	269.5	121.4	96.6
ETCH	TEG	TEG-901	4	89.7	13.5	96.6	1.7	31.2	36.9	6.1
ION	EAT	NV10-160	5	77.8	26.1	60	4.3	370	195.5	284.3
ION	EAT	EAT200MC	4	76.2	20.9	78.8	12.6	190.3	186.5	203.3
ION	VAR	VR120-10	2	81.2	25.8	80.1	4.1	233.3	146.2	149.5
ION	VAR	VR-350D	2	84.4	20.4	91.8	4.4	74.1	12.9	78
ION	VAR	VR-CF4	2	72.8	32.2	77	28.2	285.1	392.9	51.5
PVD	VAR	VR-3180	9	80.8	28.2	76.5	15.6	74.3	56.6	321.4
STEP	CAN	CAN-MKII	8	99.5	0.7	84	3.1	172	22.6	68.8
STEP	GCA	GCA-6000	13	99.5	0.6	84.2	3.3	165.8	59.6	92.3
TRACK	GCA	GCA-9000	7	77.2	17.9	75.3	36.2	387.5	648.2	52.2
TRACK	SVG	SVG-SCRB	51	91.2	10	93.4	7.1	59.5	79.2	30.2

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6 TO <15 PROCESS FLOWS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	MPA-500	0		55.1	14.3	6.1	3.4	82.8	110.7	2.8	3.1
ALIGN	CAN	PLA501FA	14.7		38.9	39.9	0.7	0.7	77.4	74.2	2.5	1.3
ALIGN	PKN	PKN-240	0.4		26	2.8	2.8	3.2	2	0	0.2	0
CVD	AMT	AMT-2100	129.5		128.3	180.2	2.2	2.2	79.7	93.5	2.2	1.8
CVD	ASM	ASM-3	14.1		48.8	44.1	0.9	0.8	41.2	20.9	3.2	1.1
DIFF	THE	THE-4704	0		22	2.8	0.9	0.2	252	118.8	6	2.8
ETCH	AMT	AMT-8330	40.8		277.6	270.7	3.5	1	113.7	192.6	0.8	0.3
ETCH	BRN	BRN-3100	38.1		32.8	5.5	0.5	0.4	160.4	2.6	1	0
ETCH	DRY	DRIE100	9.9		24.6	9	3.3	2.7	16.3	13.3	0.8	0.4
ETCH	TEG	TEG-901	0.2		42.4	23.1	2.1	3	102.5	66.9	1.6	0.9
ION	EAT	MV10-160	154.4		22.4	19.3	3.5	3.1	4.7	2.9	0.5	0.1
ION	EAT	EAT200MC	63.5		22	22.5	1	0.5	2	0	0.5	0
ION	VAR	VR120-10	64.3		30.7	37.8	1.9	1.2	96	0	15	0
ION	VAR	VR-3500	73.5		37.4	48.9	3.9	4.7	6.8	0	0.5	0
ION	VAR	VR-CF4	55.9		13.1	4.1	0.8	1	29.1	34.1	1.2	1.1
PVD	VAR	VR-3180	179		59.9	65.2	7.9	7.5	19	18.9	6.3	9.9
STEP	CAN	CAN-MKII	40.7		49.5	9.2	4.8	4.6	68.2	93.1	1.4	1.6
STEP	GCA	GCA-6000	53.4		48.5	13.4	3.2	2.5	81.2	111.4	1.2	1.1
TRACK	GCA	GCA-9000	35		11.7	11.2	12.5	23.6	80.2	81.2	1.5	0.6
TRACK	SVG	SVG-SCRB	25.3		67.3	48.7	1.9	2.1	52.6	51.2	3.4	3

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6 TO <15 PROCESS FLOWS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA-500	137	89.1	1.8	0.3	37.75	25.8	43	25.5
ALIGN	CAN	PLA501FA	44.8	6.7	10.8	8.7	55	0	63	3.5
ALIGN	PKN	PKN-240	163	7.1	4.8	5.4	49.33	9.3	75.7	21.4
CVD	AMT	AMT-2100	104.3	65.5	26.6	37.6	106.33	86.5	166.7	167.7
CVD	ASM	ASM-3	98.2	98.7	6	7.8	225	247.5	265.5	269.4
DIFF	THE	THE-4704	300	0	16	0	0	0	0	0
ETCH	AMT	AMT-8330	82	69.5	5.5	2.2	38.64	32.3	48.6	44.5
ETCH	BRN	BRN-3100	164.9	3.9	46.8	40.1	95	42.7	122.5	24.8
ETCH	DRY	DRIE100	168	0	3.6	4	39.6	9.3	42	0
ETCH	TEG	TEG-901	134.2	24.2	52.7	34.6	43	3.6	62	32
ION	EAT	MV10-160	94	67.2	5.9	3	45.1	27.9	75	21.2
ION	EAT	EAT200MC	138	52	2.7	2	112.67	32.3	129.3	50.8
ION	VAR	VR120-10	73.5	37.5	15.5	14.8	100	0	125	0
ION	VAR	VR-350D	88	17	4.9	0.1	90.85	126.1	225	0
ION	VAR	VR-CF4	77.9	31.3	19.1	22.5	59.4	57.4	157	0
PVD	VAR	VR-3180	86.6	51.9	8.6	6.2	41.14	22.5	56	26.1
STEP	CAN	CAN-MKII	99.5	71.4	3.9	2	43.1	16.8	59	15.6
STEP	GCA	GCA-6000	98.5	72.8	2.9	0.2	36.3	10.9	45.5	14.8
TRACK	GCA	GCA-9000	143.9	68.6	18.5	34.3	54.25	10.3	66.5	14.1
TRACK	SVG	SVG-SCRB	110.8	78.5	12.4	11.9	57.5	10.5	75.5	9.1

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6 TO <15 PROCESS FLOWS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA-500	43.2	18.1	15.5	41.7	0.88	15.6	0
ALIGN	CAN	PLA501FA	55	0	3.5	53.1	0.87	5.3	6.7
ALIGN	PKN	PKN-240	57.4	11.3	53.6	47.4	0.65	26.1	19.9
CVD	AMT	AMT-2100	118	79.6	157.8	104	0.64	15.9	13
CVD	ASM	ASM-3	225	247.5	269.4	218	0.85	4.9	5.5
DIFF	THE	THE-4704	0	0	0	0		26	0
ETCH	AMT	AMT-8330	51.6	55.1	75.1	40.3	0.80	49.7	37
ETCH	BRN	BRN-3100	95	42.7	24.7	92	0.78	2.2	1
ETCH	DRY	DRIE100	45	0	0	34.7	0.94	15.1	10.5
ETCH	TEG	TEG-901	49.6	16.1	62.9	47.9	0.69	9.5	13.1
ION	EAT	NV10-160	61.6	45.3	57	37	0.60	130.4	124
ION	EAT	EAT200MC	112.7	32.3	50.8	88.8	0.87	24.3	11.5
ION	VAR	VR120-10	100	0	0	80.1	0.80	42.2	23
ION	VAR	VR-3500	91.3	125.4	0	83.8	0.40	14.3	16.6
ION	VAR	VR-CF4	64.7	49.9	0	49.8	0.38	144	200.8
PVD	VAR	VR-3180	45	18.3	18.1	34.5	0.73	26.1	15.5
STEP	CAN	CAN-MKII	51.9	4.4	3.5	43.6	0.73	28.8	13.1
STEP	GCA	GCA-6000	31.5	3.5	0.9	26.5	0.80	22.2	5.4
TRACK	GCA	GCA-9000	54.2	10.3	14.1	40.8	0.82	10.1	13.9
TRACK	SVG	SVG-SCRB	66.5	10	18	62.1	0.76	10.2	10.9

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15+ PROCESS FLOWS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA500FA	14	100	0	96	0	34	0	61
ALIGN	CAN	PLA501	19	72	23	95	2	39	34	39
ALIGN	PKN	PKN340/1	31	82	32	92	8	49	70	31
CLEAN	FSI	SATURN	54	75	24	95	2	74	49	26
CVD	AMT	AMT-2100	13	73	37	75	10	274	336	94
CVD	THE	THE-9XXX	10	99	2	81	7	118	93	12
DIFF	BTU	BTU-7351	14	78	31	93	0	57	61	6
DIFF	THE	THE-4704	36	98	1	91	1	39	0	104
DIFF	THE	THE-MAXI	68	51	14	86	0	72	83	228
EPI	AMT	AMT-7800	10	80	29	62	9	63	37	273
EPI	GEM	GEM-1	4	47	6	75	2	475	46	39
ETCH	AMT	AMT-8100	17	78	36	78	9	261	122	148
ETCH	TEG	TEG-901	5	82	26	98	0	11	3	3
ION	EAT	EAT200MC	16	78	27	70	12	255	169	129
ION	VAR	VR-3500	3	72	45	74	14	162	199	201
ION	VAR	VR-CF4	7	71	36	68	3	264	155	268
PVD	BAZ	BAK550/1	7	59	21	65	6	193	182	352
PVD	MRC	MR-662	7	96	0	64	13	77	98	263
PVD	VAR	VR-31XX	8	97	3	72	9	45	27	282
STEP	GCA	GCA-6300	11	90	17	81	16	133	79	75
STEP	NIK	N1505G4D	19	84	23	88	8	168	138	66
TRACK	EAT	EAT-UNI	32	80	28	94	1	39	37	21
TRACK	GCA	GCA-9503	19	81	32	94	6	69	64	48
TRACK	MTI	MTI-TARG	34	77	32	97	1	48	26	17
TRACK	SVG	SVG-8100	37	72	24	93	3	48	33	74

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15+ PROCESS FLOWS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	MPA500FA	0		70.8	36.4	4.8	5.3	161.0	0.0	5.0	0.0
ALIGN	CAN	PLA501	13		40.5	38.6	0.8	0.6	91.8	100.7	2.0	2.8
ALIGN	PKN	PKN340/1	28		152.1	159.8	6.1	8.3	168.0	0.0	1.1	1.2
CLEAN	FSI	SATURN	0		240.0	141.3	2.9	3.4	388.0	0.0	0.7	0.5
CVD	AMT	AMT-2100	98		145.1	147.2	16.6	32.0	80.8	129.0	1.5	1.5
CVD	THE	THE-9XXX	6		60.6	33.0	24.4	24.8	0.0	0.0	0.0	0.0
DIFF	BTU	BTU-7351	0		151.2	23.8	2.6	3.1	0.0	0.0	0.5	0.0
DIFF	THE	THE-4704	0		22.0	2.8	0.9	0.2	252.0	118.8	6.0	2.8
DIFF	THE	THE-MAXI	101		2800.0	0.0	92.0	128.7	2800.0	0.0	2.0	0.0
EPI	AMT	AMT-7800	350		72.0	41.6	3.6	1.4	11.0	11.4	1.3	0.3
EPI	GEM	GEM-1	0		86.5	44.6	20.3	11.7	86.5	44.6	1.0	0.0
ETCH	AMT	AMT-8100	58		229.8	236.9	3.8	1.2	336.0	0.0	0.8	0.1
ETCH	TEG	TEG-901	0		284.0	164.1	4.8	3.3	284.0	164.1	1.8	1.7
ION	EAT	EAT200MC	62		27.6	26.1	1.7	0.7	6.0	0.0	0.7	0.3
ION	VAR	VR-3500	190		76.6	66.2	10.6	17.1	73.0	101.8	1.1	1.2
ION	VAR	VR-CF4	135		56.2	61.4	10.0	13.8	56.7	77.4	1.1	0.9
PVD	BAZ	BAK550/1	459		73.8	33.5	4.6	2.4	24.0	0.0	1.2	1.1
PVD	MRC	MR-662	225		248.1	367.6	7.5	9.1	4.0	0.0	3.0	0.0
PVD	VAR	VR-31XX	170		70.3	69.5	8.9	8.2	4.0	0.0	3.0	0.0
STEP	GCA	GCA-6300	78		89.0	52.7	6.1	7.8	164.0	5.7	2.3	1.6
STEP	NIK	N1505G4D	0		165.5	130.8	1.5	0.1	0.0	0.0	0.4	0.0
TRACK	EAT	EAT-UNI	25		53.4	3.0	1.8	0.2	111.8	79.5	0.6	0.6
TRACK	GCA	GCA-9503	62		40.3	51.9	0.7	0.6	75.0	97.7	1.1	1.3
TRACK	MTI	MTI-TARG	0		328.0	342.2	1.8	1.3	0.0	0.0	0.4	0.0
TRACK	SVG	SVG-8100	40		44.1	40.5	0.7	0.4	68.8	61.6	0.8	1.1

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15+ PROCESS FLOWS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA500FA	74.0	0.0	2.0	0.0	50.0	8.5	58.0	4.2
ALIGN	CAN	PLA501	29.3	9.2	1.1	0.9	33.8	29.4	39.8	34.2
ALIGN	PKN	PKN340/1	47.0	0.0	1.2	1.1	46.2	10.2	57.1	8.7
CLEAN	FSI	SATURN	168.0	0.0	3.4	1.2	91.8	65.4	197.2	102.6
CVD	AMT	AMT-2100	123.4	64.1	4.5	2.3	37.6	16.4	45.0	13.2
CVD	THE	THE-9XXX	224.0	0.0	3.4	0.0	33.0	0.0	34.0	0.0
DIFF	BTU	BTU-7351	268.8	0.0	5.7	6.1	16.8	0.0	32.2	0.0
DIFF	THE	THE-4704	300.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0
DIFF	THE	THE-MAXI	124.0	62.2	11.5	0.7	21.0	0.0	0.0	0.0
EPI	AMT	AMT-7800	123.2	184.3	6.1	8.6	6.6	5.3	0.8	0.0
EPI	GEM	GEM-1	168.0	0.0	3.0	0.0	18.5	7.8	20.0	9.9
ETCH	AMT	AMT-8100	31.3	4.9	6.4	3.3	18.3	11.4	24.6	4.8
ETCH	TEG	TEG-901	504.0	0.0	1.5	0.0	35.5	10.6	55.0	7.1
ION	EAT	EAT200MC	11.2	0.0	11.6	9.8	37.1	9.7	56.9	17.8
ION	VAR	VR-3500	56.8	40.3	12.5	17.0	121.7	51.1	225.0	0.0
ION	VAR	VR-CF4	41.7	36.7	10.1	13.0	81.5	16.8	86.5	13.4
PVD	BAZ	BAK550/1	168.0	0.0	11.4	6.3	34.7	21.7	47.1	11.1
PVD	MRC	MR-662	117.5	71.4	7.7	10.4	39.0	15.6	44.5	20.5
PVD	VAR	VR-31XX	56.5	19.9	10.3	8.1	55.3	4.5	63.3	5.8
STEP	GCA	GCA-6300	107.5	85.6	4.0	1.8	23.5	10.2	34.2	20.0
STEP	NIK	N1505G4D	0.0	0.0	2.0	0.0	34.7	6.1	38.0	2.9
TRACK	EAT	EAT-UNI	235.2	95.0	2.0	1.5	46.5	5.0	67.5	10.6
TRACK	GCA	GCA-9503	43.0	0.0	2.0	0.0	55.7	10.1	64.0	15.4
TRACK	MTI	MTI-TARG	0.0	0.0	8.0	0.0	26.4	9.4	31.5	6.4
TRACK	SVG	SVG-8100	80.0	77.2	1.8	1.0	35.1	30.9	46.1	40.1

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15+ PROCESS FLOWS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.)	S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA500FA	50.0	8.5	4.2		47.8	0.86	0	0.0
ALIGN	CAN	PLA501	33.8	29.4	34.2		32.2	0.85	17	7.5
ALIGN	PKN	PKN340/1	51.6	10.0	7.7		47.6	0.81	7	0.0
CLEAN	FSI	SATURN	106.6	62.7	119.9		101.5	0.47	12	0.9
CVD	AMT	AMT-2100	37.6	16.4	13.2		28.1	0.84	36	17.1
CVD	THE	THE-9XXX	33.0	0.0	0.0		26.6	0.97	36	0.0
DIFF	BTU	BTU-7351	26.2	0.0	0.0		24.3	0.52	25	0.0
DIFF	THE	THE-4704	0.0	0.0	0.0		0.0		26	0.0
DIFF	THE	THE-MAXI	21.0	0.0	0.0		18.1		13	0.0
EPI	AMT	AMT-7800	6.6	5.3	0.0		4.1	8.21	39	37.3
EPI	GEN	GEN-1	18.5	7.8	9.9		13.9	0.93	26	0.0
ETCH	AMT	AMT-8100	19.8	10.4	6.8		15.4	0.74	26	11.9
ETCH	TEG	TEG-901	35.5	10.6	7.1		34.8	0.65	26	0.0
ION	EAT	EAT200MC	45.4	7.3	37.3		31.8	0.65	32	39.7
ION	VAR	VR-3500	121.7	51.1	0.0		89.9	0.54	45	16.2
ION	VAR	VR-CF4	81.5	16.8	13.4		55.7	0.94	28	23.8
PVD	BAZ	BAK550/1	40.1	14.0	4.5		25.9	0.74	34	29.4
PVD	MRC	MR-662	39.0	15.6	20.5		25.1	0.88	17	12.5
PVD	VAR	VR-31XX	55.3	4.5	5.8		39.9	0.87	28	25.9
STEP	GCA	GCA-6300	26.1	6.9	16.3		21.0	0.69	40	20.2
STEP	NIK	N1505G4D	43.2	6.0	11.4		38.0	0.91	0	0.0
TRACK	EAT	EAT-UNI	46.5	4.9	10.6		43.8	0.69	17	6.2
TRACK	GCA	GCA-9503	55.7	10.1	15.4		52.4	0.87	26	0.0
TRACK	MTI	MTI-TARG	31.9	1.6	4.4		31.0	0.84	0	0.0
TRACK	SVG	SVG-8100	35.1	30.9	40.1		32.8	0.76	17	7.5

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MAINTENANCE COST <=5% EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	PLA501FA	13	81	25	95	1	52	37	46
ALIGN	PKN	PKN340/1	26	72	39	90	9	68	88	11
CLEAN	FSI	SATURN	30	78	13	95	3	70	42	0
CVD	AMT	AMT-3300	6	100	0	81	8	32	8	105
CVD	ASM	ASM-PRX	11	32	14	85	5	230	129	82
CVD	GEN	GE8301/6	4	38	0	78	0	410	0	56
CVD	TEM	TEM-232	5	44	9	67	18	179	33	272
DIFF	BTU	BTU-7351	14	78	31	93	0	57	61	6
DIFF	BTU	BTU-8DF4	53	48	11	78	7	115	32	332
DIFF	THE	THE-4704	36	98	1	91	1	39	0	104
DIFF	TYL	TYTAN-II	72	54	38	93	5	82	64	40
EPI	AMT	AMT-7800	10	80	29	62	9	63	37	273
ETCH	AMT	AMT-8330	15	66	34	79	14	219	129	131
ETCH	BRN	BRN-6540	6	17	2	77	10	402	92	65
ETCH	BRN	BRN-3075	3	34	16	89	14	219	299	5
ETCH	DRY	DRIE100	7	21	3	93	4	132	66	11
ETCH	LAM	LAM-590	19	52	26	76	12	226	146	54
ION	EAT	EAT200MC	17	68	20	72	9	336	177	114
ION	VAR	VR-350D	4	89	16	81	8	131	147	81
ION	VAR	VR-CF4	4	65	33	76	11	187	136	154
PVD	BAZ	BAK550/1	7	59	21	65	6	193	182	352
PVD	MRC	MR-942	2	96	0	73	0	21	7	196
PVD	VAR	VR-31XX	10	68	37	71	20	140	154	375
STEP	GCA	GCA-6300	39	70	27	82	12	177	93	97
STEP	NIK	N1505G4D	22	57	15	85	3	183	116	172
TRACK	GCA	GCA-1006	17	70	42	86	2	100	61	185
TRACK	SVG	SVG-8100	50	68	21	95	4	54	20	47

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MAINTENANCE COST <=5% EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	PLA501FA	9		50.5	48.8	1.0	0.7	163.0	0.0	4.0	0.0
ALIGN	PKN	PKN340/1	0		60.1	18.9	1.3	0.7	168.0	0.0	1.1	1.2
CLEAN	FSI	SATURN	0		165.5	81.3	0.9	0.3	0.0	0.0	1.0	0.0
CVD	AMT	AMT-3300	135		138.4	171.1	2.7	0.8	6.5	2.1	1.7	2.0
CVD	ASM	ASM-PRX	19		154.2	136.0	13.8	10.2	70.8	47.6	7.1	4.7
CVD	GEN	GE8301/6	0		605.5	569.2	51.5	0.0	120.0	0.0	4.3	4.4
CVD	TEM	TEM-232	61		276.5	235.5	68.7	78.2	13.8	5.2	3.1	0.7
DIFF	BTU	BTU-7351	0		151.2	23.8	2.6	3.1	0.0	0.0	0.5	0.0
DIFF	BTU	BTU-BDF4	171		1741.3	1224.3	82.3	77.8	237.0	78.5	15.4	3.0
DIFF	THE	THE-4704	0		22.0	2.8	0.9	0.2	252.0	118.8	6.0	2.8
DIFF	TYL	TYTAN-II	55		150.7	134.1	5.7	7.1	168.8	147.2	30.8	24.7
EPI	AMT	AMT-7800	350		72.0	41.6	3.6	1.4	11.0	11.4	1.3	0.3
ETCH	AMT	AMT-8330	73		239.3	228.8	4.9	2.9	138.1	173.7	4.1	5.3
ETCH	BRN	BRN-6540	73		44.7	22.5	10.9	1.3	36.9	20.1	8.4	6.8
ETCH	BRN	BRN-3075	2		581.7	192.7	57.8	72.2	136.8	154.8	3.1	2.3
ETCH	DRY	DRIE100	10		156.7	119.3	8.8	2.3	151.2	74.6	24.3	1.3
ETCH	LAM	LAM-590	50		79.4	54.9	12.5	6.8	74.6	63.9	7.1	5.0
ION	EAT	EAT200MC	39		49.5	34.7	11.2	13.6	23.9	16.5	2.8	2.4
ION	VAR	VR-3500	42		51.2	33.2	4.4	6.4	21.4	28.8	3.0	3.9
ION	VAR	VR-CF4	183		37.6	18.1	4.2	2.5	19.7	17.0	1.9	2.3
PVD	BAZ	BAK550/1	459		73.8	33.5	4.6	2.4	24.0	0.0	1.2	1.1
PVD	MRC	MR-942	274		364.0	435.6	10.0	11.3	4.0	0.0	3.0	0.0
PVD	VAR	VR-31XX	340		92.7	63.5	13.2	6.7	26.3	27.2	48.1	80.2
STEP	GCA	GCA-6300	130		106.9	51.1	11.0	9.4	103.6	65.7	2.4	1.3
STEP	NIK	N1505G4D	0		221.0	52.3	5.5	5.5	128.0	0.0	3.8	4.8
TRACK	GCA	GCA-1006	133		66.0	72.1	2.3	1.4	101.1	60.7	3.5	2.1
TRACK	SVG	SVG-8100	55		113.1	121.5	1.8	1.6	94.6	62.6	1.1	0.7

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MAINTENANCE COST <=5% EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	PLA501FA	32.0	11.3	0.6	0.5	27.6	38.7	29.6	41.5
ALIGN	PKN	PKN340/1	47.0	0.0	1.2	1.1	48.6	11.1	57.8	10.5
CLEAN	FSI	SATURN	0.0	0.0	4.1	0.1	52.7	43.5	144.3	124.0
CVD	AMT	AMT-3300	93.7	70.0	3.5	1.6	40.7	20.6	60.0	0.0
CVD	ASM	ASM-PRX	165.3	49.0	5.6	4.2	10.5	9.8	10.3	8.5
CVD	GEN	GE8301/6	295.0	0.0	15.2	6.8	21.6	4.9	22.9	2.4
CVD	TEM	TEM-232	15.6	7.3	3.0	0.1	22.3	2.9	20.9	6.9
DIFF	BTU	BTU-7351	268.8	0.0	5.7	6.1	16.8	0.0	32.2	0.0
DIFF	BTU	BTU-BDF4	280.0	39.9	14.5	1.5	118.3	6.2	26.5	7.4
DIFF	THE	THE-4704	300.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0
DIFF	TYL	TYTAN-II	242.7	148.5	39.2	23.3	16.6	0.2	16.9	0.2
EPI	AMT	AMT-7800	123.2	184.3	6.1	8.6	6.6	5.3	0.8	0.0
ETCH	AMT	AMT-8330	84.4	80.3	7.8	4.9	18.6	9.3	25.0	4.4
ETCH	BRN	BRN-6540	49.8	26.6	7.8	8.9	25.5	13.0	27.5	3.5
ETCH	BRN	BRN-3075	262.7	216.2	49.0	84.0	36.3	11.1	54.7	14.8
ETCH	DRY	DRIE100	709.0	855.6	27.4	33.2	40.9	6.6	89.6	68.5
ETCH	LAM	LAM-590	71.6	22.3	1.8	0.6	17.9	5.1	23.6	7.3
ION	EAT	EAT200MC	44.5	28.9	7.9	7.5	35.4	11.5	50.4	15.5
ION	VAR	VR-350D	64.2	48.8	3.0	2.2	122.6	50.1	176.0	69.3
ION	VAR	VR-CF4	57.7	64.4	2.5	1.4	87.0	21.7	88.5	16.3
PVD	BAZ	BAK550/1	168.0	0.0	11.4	6.3	34.7	21.7	47.1	11.1
PVD	MRC	MR-942	117.5	71.4	7.7	10.4	50.0	0.0	59.0	0.0
PVD	VAR	VR-31XX	64.3	29.7	17.1	17.1	42.3	12.9	48.8	16.9
STEP	GCA	GCA-6300	136.3	134.5	3.0	2.4	22.7	7.0	29.6	14.0
STEP	NIK	N1505G4D	422.0	0.0	2.7	1.0	31.7	1.8	36.0	0.1
TRACK	GCA	GCA-1006	79.0	50.9	1.2	1.1	45.2	28.1	53.2	39.2
TRACK	SVG	SVG-8100	175.5	162.5	0.9	0.4	30.5	24.0	32.9	25.7

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MAINTENANCE COST <=5% EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	PLA501FA	27.6	38.7	41.5	26.1	0.93	13	0.0
ALIGN	PKN	PKN340/1	55.7	6.7	6.3	50.1	0.84	7	0.0
CLEAN	FSI	SATURN	82.2	67.9	193.8	78.2	0.36	0	0.0
CVD	AMT	AMT-3300	40.7	20.6	0.0	32.8	0.68	43	20.6
CVD	ASN	ASN-PRX	20.9	22.8	17.4	17.8	1.02	7	8.0
CVD	GEN	GE8301/6	39.9	1.2	6.5	30.9	0.94	2	0.0
CVD	TEM	TEM-232	34.8	4.5	10.7	23.2	1.06	0	0.0
DIFF	BTU	BTU-7351	26.2	0.0	0.0	24.3	0.52	25	0.0
DIFF	BTU	BTU-BDF4	28.5	9.6	11.5	22.4	4.46	0	0.0
DIFF	THE	THE-4704	0.0	0.0	0.0	0.0		26	0.0
DIFF	TYL	TYTAN-II	37.2	0.5	0.5	34.7	0.98	12	12.5
EPI	AMT	AMT-7800	6.6	5.3	0.0	4.1	8.23	39	37.3
ETCH	AMT	AMT-8330	26.7	14.5	9.2	21.0	0.75	56	60.0
ETCH	BRN	BRN-6540	39.8	20.3	5.5	30.5	0.93	0	0.0
ETCH	BRN	BRN-3075	56.7	17.3	23.1	50.6	0.66	0	0.0
ETCH	DRY	DRIE100	63.8	10.3	106.9	59.3	0.46	11	0.0
ETCH	LAM	LAM-590	31.5	11.4	15.1	24.0	0.76	64	69.5
ION	EAT	EAT200MC	57.5	16.7	19.4	41.2	0.70	60	0.0
ION	VAR	VR-3500	159.2	52.0	42.9	129.5	0.70	28	26.8
ION	VAR	VR-CF4	105.6	46.7	56.0	80.3	0.98	28	21.7
PVD	BAZ	BAK550/1	40.1	14.0	4.5	25.9	0.74	34	29.4
PVD	MRC	MR-942	50.0	0.0	0.0	36.7	0.85	24	2.9
PVD	VAR	VR-31XX	58.9	16.7	11.1	41.7	0.87	28	25.9
STEP	GCA	GCA-6300	32.2	8.3	11.3	26.5	0.77	40	20.2
STEP	NIK	N1505G4D	60.9	18.9	17.6	51.5	0.88	0	0.0
TRACK	GCA	GCA-1006	61.0	5.7	16.7	52.1	0.85	26	0.0
TRACK	SVG	SVG-8100	39.4	26.6	28.6	37.4	0.93	13	0.0

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MAINTENANCE COST >5% AND <=10% EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA500FA	2	79	0	70	0	312	0	78
ALIGN	CAN	PLA501	7	67	17	84	19	163	211	52
CLEAN	FSI	FSI-2120	20	60	13	82	13	39	11	139
CVD	AMT	AMT-3300	7	33	3	66	3	637	110	78
EPI	GEM	GEM-2	6	56	12	77	4	315	191	85
ETCH	BRN	BRN-8231	6	62	26	93	3	80	25	20
ETCH	DRY	DRIE100	5	50	15	79	10	275	171	92
ETCH	TEG	TEG-901	4	46	16	94	4	65	45	20
ION	EAT	EAT-3206	3	48	30	74	7	223	148	186
TRACK	EAT	EAT45/60	16	72	10	75	18	230	143	115
TRACK	GCA	GCA-1000	7	58	16	71	43	475	763	56

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MAINTENANCE COST >5% AND <=10% EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	MPA500FA	0		26.5	2.1	2.2	0.0	1.9	0.0	0.3	0.0
ALIGN	CAN	PLA501	37		22.3	2.4	0.7	0.5	10.9	13.7	0.1	0.1
CLEAN	FSI	FSI-2120	98		389.0	0.0	6.8	0.0	138.0	216.8	0.2	0.0
CVD	AMT	AMT-3300	37		155.1	166.8	37.5	51.3	155.1	166.8	1.2	1.1
EPI	GEM	GEM-2	53		68.4	36.9	11.3	12.4	44.0	55.4	0.5	0.6
ETCH	BRN	BRN-8231	0		124.3	51.0	3.7	2.5	63.7	103.3	0.2	0.3
ETCH	DRY	DRIE100	6		20.0	5.7	1.8	1.1	24.0	0.0	1.0	0.0
ETCH	TEG	TEG-901	0		166.7	202.1	4.4	2.4	139.4	225.7	0.2	0.3
ION	EAT	EAT-3206	94		9.0	1.4	1.2	0.3	8.1	10.6	0.6	0.2
TRACK	EAT	EAT45/60	100		43.5	23.0	1.3	0.6	19.5	31.1	0.2	0.1
TRACK	GCA	GCA-1000	0		3.8	2.0	16.2	27.5	8.6	2.4	0.7	0.5

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MAINTENANCE COST >5% AND <=10% EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA500FA	168.0	0.0	3.0	0.0	33.0	0.0	60.0	0.0
ALIGN	CAN	PLA501	96.0	101.8	2.0	0.0	52.0	8.5	70.0	14.1
CLEAN	FSI	FSI-2120	536.0	318.7	2.2	0.8	72.7	13.7	250.7	179.2
CVD	AMT	AMT-3300	168.0	0.0	6.0	2.8	33.0	12.7	37.5	3.5
EPI	GEM	GEM-2	444.0	318.7	3.5	0.6	14.8	6.3	17.2	6.8
ETCH	BRN	BRN-8231	720.0	0.0	2.5	0.0	24.0	10.6	50.0	0.0
ETCH	DRY	DRIE100	168.0	0.0	1.2	0.3	45.0	0.0	0.0	0.0
ETCH	TEG	TEG-901	720.0	0.0	2.5	0.0	26.0	1.7	30.0	17.3
ION	EAT	EAT-3206	352.0	318.7	5.0	6.1	75.7	31.8	106.7	11.6
TRACK	EAT	EAT45/60	536.0	318.7	6.3	2.9	44.7	12.6	68.3	16.1
TRACK	GCA	GCA-1000	168.0	0.0	1.0	0.0	49.7	7.5	56.7	5.8

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MAINTENANCE COST >5% AND <=10% EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA500FA	51.6	0.0	0.0	36.1	0.55	78	0.0
ALIGN	CAN	PLA501	68.3	31.5	45.9	57.0	0.74	52	36.8
CLEAN	FSI	FSI-2120	98.2	22.2	273.5	80.3	0.29	113	86.3
CVD	AMT	AMT-3300	33.0	12.7	3.5	21.8	0.88	26	0.0
EPI	GEM	GEM-2	17.8	4.7	6.7	13.8	0.86	33	13.0
ETCH	BRN	BRN-8231	32.2	16.0	16.2	29.9	0.48	26	6.5
ETCH	DRY	DRIE100	45.0	0.0	0.0	35.6		9	1.4
ETCH	TEG	TEG-901	35.4	6.4	10.8	33.2	0.87	22	3.7
ION	EAT	EAT-3206	83.0	19.1	50.5	61.3	0.71	74	76.7
TRACK	EAT	EAT45/60	61.7	25.4	28.0	46.3	0.65	56	37.5
TRACK	GCA	GCA-1000	49.7	7.5	5.8	35.4	0.88	13	18.0

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MAINTENANCE COST >10% EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA-500	10	85	21	96	1	44	15	34
ALIGN	CAN	PLA501FA	2	73	0	97	0	6	0	27
ALIGN	PKN	PKN-240	24	94	17	74	14	173	152	117
CLEAN	FSI	FSI-MEGA	30	100	1	88	10	123	91	60
CLEAN	STL	ST-860	5	100	0	77	26	323	368	4
CVD	AMT	AMT-2100	6	100	1	89	9	84	76	52
CVD	ASM	ASM-3A	5	97	5	78	24	86	109	156
DIFF	BTU	BTU-7351	2	97	5	85	11	32	36	165
DIFF	THE	THE-MA	11	98	3	83	2	93	8	89
ETCH	AMT	AMT-8100	11	99	2	69	6	342	118	145
ETCH	BRN	BRN-2100	11	86	15	94	5	55	37	7
ETCH	BRN	BRN-3100	2	98	1	98	0	7	1	6
ETCH	LAM	LAM-690	13	87	9	87	6	150	58	9
ETCH	TEG	TEG-901	14	88	15	92	7	86	94	7
ION	EAT	NV10-160	11	84	22	66	7	331	158	151
ION	VAR	VR-CF4	6	82	28	75	20	290	278	139
PVD	ASM	ASM-200	5	81	17	86	7	150	50	31
PVD	MRC	MR603/43	6	98	3	62	9	235	65	243
PVD	VAR	VR-31XX	10	92	13	65	17	199	141	241
STEP	ULT	UT-1100	30	92	10	75	2	191	41	85
TRACK	GCA	GCA-9000	13	90	14	98	0	24	21	5
TRACK	SSI	SSI-COAT	19	86	3	89	9	84	65	23
TRACK	SVG	SVG-8100	67	93	10	92	7	66	73	36

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MAINTENANCE COST >10% EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	MTBF S.D.	MTTR	MTTR S.D.	MTBS	MTBS S.D.	MTFS	MTFS S.D.
ALIGN	CAN	MPA-500		39	80.8	22.1	2.4	1.9	4.5	0.0	0.6	0.0
ALIGN	CAN	PLA501FA		4	15.9	1.8	0.3	0.2	34.6	5.5	1.8	0.3
ALIGN	PKN	PKN-240		64	80.9	97.7	8.9	7.0	2.0	0.0	0.2	0.0
CLEAN	FSI	FSI-MEGA		97	161.8	87.5	6.7	3.2	0.0	0.0	0.0	0.0
CLEAN	STL	ST-860		0	130.0	42.4	4.4	0.0	0.0	0.0	0.0	0.0
CVD	AMT	AMT-2100		42	57.0	57.5	6.5	7.6	79.7	93.5	1.2	1.1
CVD	ASM	ASM-3A		170	51.5	47.9	7.6	10.3	26.5	0.0	4.0	0.0
DIFF	BTU	BTU-7351		131	204.4	223.5	4.5	5.6	13.5	0.0	8.0	0.0
DIFF	THE	THE-NA		24	188.5	92.7	15.8	0.0	0.0	0.0	0.0	0.0
ETCH	AMT	AMT-8100		50	25.0	9.4	5.0	1.7	2.5	2.1	0.8	0.3
ETCH	BRN	BRN-2100		4	149.9	134.1	5.4	6.0	0.0	0.0	0.0	0.0
ETCH	BRN	BRN-3100		0	31.2	6.8	0.3	0.0	160.4	2.6	1.0	0.0
ETCH	LAM	LAM-690		3	44.6	40.4	5.9	0.0	0.0	0.0	0.0	0.0
ETCH	TEG	TEG-901		1	47.1	26.9	4.6	6.0	102.5	66.9	1.6	0.9
ION	EAT	NV10-160		89	20.7	14.3	3.7	2.3	5.5	3.5	0.5	0.1
ION	VAR	VR-CF4		156	13.1	2.9	1.3	1.1	29.1	34.1	1.2	1.1
PVD	ASM	ASM-200		30	27.3	10.2	5.1	5.2	18.0	0.0	0.3	0.0
PVD	MRC	MR603/43		215	44.7	40.1	11.0	11.7	0.0	0.0	0.0	0.0
PVD	VAR	VR-31XX		180	25.7	11.1	3.6	2.0	25.5	24.8	0.8	0.4
STEP	ULT	UT-1100		23	44.2	38.8	4.7	0.1	0.0	0.0	0.0	0.0
TRACK	GCA	GCA-9000		2	63.0	52.3	0.5	0.2	156.6	0.0	2.0	0.0
TRACK	SSI	SSI-COAT		12	43.8	22.8	0.5	0.0	210.0	0.0	3.0	0.0
TRACK	SVG	SVG-8100		31	71.4	45.8	2.4	2.0	35.3	32.2	3.6	3.2

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MAINTENANCE COST >10% EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA-500	200.0	0.0	1.5	0.0	31.8	17.3	40.0	21.2
ALIGN	CAN	PLA501FA	47.2	7.5	15.8	2.5	55.0	0.0	65.0	0.0
ALIGN	PKN	PKN-240	40.4	52.0	3.1	2.5	41.0	2.8	77.5	31.8
CLEAN	FSI	FSI-MEGA	91.9	19.2	4.7	5.3	180.0	0.0	200.0	0.0
CLEAN	STL	ST-860	727.0	0.0	1.5	0.0	144.0	0.0	180.0	0.0
CVD	AMT	AMT-2100	197.4	96.2	27.1	37.1	134.0	101.8	220.0	198.0
CVD	ASM	ASM-3A	85.6	80.8	17.4	8.2	400.0	0.0	456.0	0.0
DIFF	BTU	BTU-7351	51.0	51.6	9.3	4.9	150.0	0.0	200.0	0.0
DIFF	THE	THE-NA	133.2	0.0	9.8	0.0	0.0	0.0	0.0	0.0
ETCH	AMT	AMT-8100	122.2	62.1	7.4	1.2	57.6	54.3	49.0	52.8
ETCH	BRN	BRN-2100	558.5	620.1	2.3	2.2	65.0	0.0	180.0	0.0
ETCH	BRN	BRN-3100	163.4	4.1	70.0	0.0	117.5	24.8	122.5	24.8
ETCH	LAM	LAM-690	1156.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0
ETCH	TEG	TEG-901	157.2	55.6	42.7	37.4	43.0	3.6	62.0	32.0
ION	EAT	NV10-160	118.1	34.6	7.5	0.2	44.4	27.9	69.0	29.7
ION	VAR	VR-CF4	77.9	31.3	19.1	22.5	69.6	44.3	126.5	43.1
PVD	ASM	ASM-200	48.0	0.0	1.0	0.0	24.6	17.5	32.5	10.6
PVD	MRC	MR603/43	367.9	0.0	24.4	0.0	28.0	0.0	30.0	0.0
PVD	VAR	VR-31XX	78.6	42.9	8.8	4.8	29.9	22.7	40.0	17.3
STEP	ULT	UT-1100	315.1	90.8	4.9	0.0	0.0	0.0	0.0	0.0
TRACK	GCA	GCA-9000	196.6	0.0	70.0	0.0	52.5	10.6	63.0	17.0
TRACK	SSI	SSI-COAT	236.8	0.0	46.6	0.0	50.0	0.0	65.0	0.0
TRACK	SVG	SVG-8100	162.8	104.8	11.1	11.4	57.2	11.7	78.0	7.6

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MAINTENANCE COST >10% EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.)	S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA-500	37.2	9.6	11.3		35.8	0.79	16	0.0
ALIGN	CAN	PLA501FA	55.0	0.0	0.0		53.5	0.85	1	0.1
ALIGN	PKN	PKN-240	53.1	19.9	71.6		39.3	0.53	119	122.6
CLEAN	FSI	FSI-MEGA	180.0	0.0	0.0		158.2	0.90	39	36.9
CLEAN	STL	ST-860	225.0	0.0	0.0		172.9	0.80	12	6.6
CVD	AMT	AMT-2100	151.4	77.2	166.2		134.4	0.61	28	30.9
CVD	ASM	ASM-3A	400.0	0.0	0.0		313.2	0.88	77	95.9
DIFF	BTU	BTU-7351	150.0	0.0	0.0		127.3	0.75	18	18.4
DIFF	THE	THE-NA	0.0	0.0	0.0		0.0		73	50.8
ETCH	AMT	AMT-8100	90.0	84.8	86.7		62.3	1.18	59	37.2
ETCH	BRN	BRN-2100	101.5	0.0	0.0		95.3	0.36	34	34.5
ETCH	BRN	BRN-3100	117.5	24.7	24.7		115.7	0.96	3	0.0
ETCH	LAM	LAM-690	0.0	0.0	0.0		0.0		37	30.2
ETCH	TEG	TEG-901	49.6	16.1	62.9		45.8	0.69	18	17.9
ION	EAT	MV10-160	61.0	45.7	65.5		40.1	0.64	95	104.5
ION	VAR	VR-CF4	73.1	38.2	43.1		54.5	0.55	97	163.8
PVD	ASM	ASM-200	28.0	12.7	0.7		24.2	0.76	16	14.7
PVD	MRC	MR603/43	28.0	0.0	0.0		17.2	0.93	60	80.7
PVD	VAR	VR-31XX	36.4	19.2	7.6		23.8	0.75	50	32.6
STEP	ULT	UT-1100	0.0	0.0	0.0		0.0		91	44.7
TRACK	GCA	GCA-9000	52.5	10.6	17.0		51.6	0.83	4	0.0
TRACK	SSI	SSI-COAT	50.0	0.0	0.0		44.3	0.77	66	54.9
TRACK	SVG	SVG-8100	68.0	10.4	14.4		62.8	0.73	10	10.9

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<20 PROCESS ENGINEERS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA500FA	3	76	5	79	15	226	149	54
ALIGN	CAN	PLA501FA	15	69	10	91	12	83	131	39
ALIGN	PKN	PKN340/1	25	71	41	93	5	41	51	49
CLEAN	FSI	FSI-2120	20	60	13	82	13	39	11	139
CVD	AMT	AMT-2100	12	73	36	77	14	271	339	43
CVD	ASM	ASM-PRX	4	58	16	68	16	312	92	166
CVD	BTU	BTU-8DF4	2	63	10	68	40	236	301	218
CVD	ACS	ACS-512	3	50	28	88	9	197	236	40
DIFF	BTU	BTU-7351	9	97	5	93	0	11	5	39
DIFF	THE	THE-9XXX	56	63	52	93	3	15	7	36
DIFF	THE	THE-MAXI	68	51	14	86	0	72	83	228
EPI	AMT	AMT-7800	10	80	29	62	9	63	37	273
EPI	GEM	GEM-2	6	56	12	77	4	315	191	85
ETCH	BRN	BRN-2000	7	64	21	94	4	64	39	14
ETCH	BRN	BRN-3100	6	90	15	97	3	20	22	28
ETCH	DRY	DRIE102	5	50	15	79	10	275	171	92
ETCH	TEG	TEG-901	11	74	27	96	3	41	40	10
ION	EAT	MV10-160	3	77	25	58	2	339	245	219
ION	EAT	EAT-3206	3	48	30	74	7	223	148	186
ION	VAR	VR-350D	3	63	39	76	17	168	195	166
ION	VAR	VR-CF4	5	66	32	72	15	266	238	172
PVD	BAZ	BAK550/1	4	61	29	61	2	99	117	352
PVD	MRC	MR603/43	2	59	0	56	0	187	241	102
PVD	TMS	TMS-3200	4	55	40	80	18	92	98	181
PVD	VAR	VR-31XX	7	68	31	81	12	68	29	120
TRACK	EAT	EAT45/60	35	77	15	83	17	149	150	70
TRACK	GCA	GCA-9000	8	63	17	78	38	358	665	39
TRACK	SVG	SVG-SCRB	28	73	14	96	3	23	31	42

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<20 PROCESS ENGINEERS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	MPA500FA	41		39.4	22.4	2.7	0.9	2.8	1.5	0.4	0.2
ALIGN	CAN	PLA501FA	22		18.5	3.8	0.5	0.3	22.8	16.1	1.0	1.0
ALIGN	PKN	PKN340/1	54		48.8	35.0	0.7	0.2	85.0	117.4	1.1	1.2
CLEAN	FSI	FSI-2120	98		389.0	0.0	6.8	0.0	138.0	216.8	0.2	0.0
CVD	AMT	AMT-2100	38		80.7	108.1	16.3	32.2	93.8	115.4	1.1	0.8
CVD	ASM	ASM-PRX	143		9.8	13.1	4.2	3.0	11.5	14.8	1.6	2.0
CVD	BTU	BTU-BDF4	244		23.9	16.8	2.1	0.2	20.9	22.8	1.3	0.8
CVD	ACS	ACS-512	39		830.8	1143.0	150.9	210.8	823.7	1153.0	1.2	1.1
DIFF	BTU	BTU-7351	47		90.3	62.3	2.7	3.0	13.5	0.0	8.0	0.0
DIFF	THE	THE-9XXX	20		125.6	75.8	3.4	3.3	245.3	313.0	6.7	8.0
DIFF	THE	THE-MAXI	101		2800.0	0.0	92.0	128.7	2800.0	0.0	2.0	0.0
EPI	AMT	AMT-7800	350		72.0	41.6	3.6	1.4	11.0	11.4	1.3	0.3
EPI	GEM	GEM-2	53		68.4	36.9	11.3	12.4	44.0	55.4	0.5	0.6
ETCH	BRN	BRN-2000	10		120.5	42.4	3.0	2.4	63.7	103.3	0.2	0.3
ETCH	BRN	BRN-3100	38		32.8	5.5	0.5	0.4	160.4	2.6	1.0	0.0
ETCH	DRY	DRIE102	6		20.0	5.7	1.8	1.1	24.0	0.0	1.0	0.0
ETCH	TEG	TEG-901	7		104.7	127.8	3.0	2.6	124.6	130.8	1.2	1.1
ION	EAT	NV10-160	193		25.2	17.7	3.5	3.0	4.0	1.7	0.5	0.0
ION	EAT	EAT-3206	94		9.0	1.4	1.2	0.3	8.1	10.6	0.6	0.2
ION	VAR	VR-3500	217		53.6	79.3	12.9	15.5	50.9	81.5	0.9	0.9
ION	VAR	VR-CF4	161		47.6	56.7	7.9	12.8	45.6	59.2	1.1	0.8
PVD	BAZ	BAK550/1	459		86.0	36.8	5.6	2.3	24.0	0.0	2.0	0.0
PVD	MRC	MR603/43	141		68.0	17.0	2.0	0.0	26.8	0.0	0.8	0.0
PVD	TMS	TMS-3200	127		60.2	45.4	3.7	5.4	67.2	87.6	4.2	3.4
PVD	VAR	VR-31XX	156		22.9	12.9	2.4	2.1	39.5	5.0	12.6	16.2
TRACK	EAT	EAT45/60	93		46.4	16.7	1.8	1.0	57.7	68.0	0.4	0.4
TRACK	GCA	GCA-9000	29		9.4	11.3	12.2	23.8	45.6	74.0	1.0	0.8
TRACK	SVG	SVG-SCRB	43		36.1	19.1	0.4	0.2	48.3	17.2	3.7	3.2

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<20 PROCESS ENGINEERS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTTM	MTTM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA500FA	178.7	18.5	2.5	0.9	28.5	7.8	48.3	20.2
ALIGN	CAN	PLA501FA	62.1	60.5	7.2	8.0	42.9	24.2	54.0	31.0
ALIGN	PKN	PKN340/1	107.5	85.5	0.7	0.4	46.5	2.1	60.0	0.0
CLEAN	FSI	FSI-2120	536.0	318.7	2.2	0.8	72.7	13.7	250.7	179.2
CVD	AMT	AMT-2100	147.2	36.4	17.7	29.3	68.6	78.2	145.0	186.2
CVD	ASM	ASM-PRX	444.0	390.3	2.5	2.1	10.3	13.8	21.2	29.3
CVD	BTU	BTU-BDF4	384.0	475.2	1.9	0.9	23.4	11.9	49.0	1.4
CVD	ACS	ACS-512	108.0	84.8	1.0	0.0	48.5	12.0	99.0	72.1
DIFF	BTU	BTU-7351	141.7	179.8	3.6	3.2	150.0	0.0	200.0	0.0
DIFF	THE	THE-9XXX	352.8	261.4	5.6	7.2	123.7	108.0	200.0	0.0
DIFF	THE	THE-MAXI	124.0	62.2	11.5	0.7	21.0	0.0	0.0	0.0
EPI	AMT	AMT-7800	123.2	184.3	6.1	8.6	6.6	5.3	0.8	0.0
EPI	GEM	GEM-2	444.0	318.7	3.5	0.6	14.8	6.3	17.2	6.8
ETCH	BRN	BRN-2000	520.0	346.4	1.9	1.0	34.3	22.2	82.5	65.0
ETCH	BRN	BRN-3100	164.9	3.9	46.8	40.1	95.0	42.7	122.5	24.8
ETCH	DRY	DRIE102	168.0	0.0	1.2	0.3	45.0	0.0	0.0	0.0
ETCH	TEG	TEG-901	354.4	284.4	31.0	36.5	36.6	9.2	49.8	28.2
ION	EAT	NV10-160	45.1	48.0	3.6	3.5	35.8	16.9	60.0	0.0
ION	EAT	EAT-3206	352.0	318.7	5.0	6.1	75.7	31.8	106.7	11.6
ION	VAR	VR-350D	64.8	47.7	12.4	17.1	62.2	53.0	0.0	0.0
ION	VAR	VR-CF4	56.1	36.2	13.7	15.3	71.0	33.5	117.0	56.6
PVD	BAZ	BAK550/1	168.0	0.0	10.1	8.3	50.0	0.0	55.0	0.0
PVD	MRC	MR603/43	588.0	594.0	25.2	35.1	13.0	0.0	15.0	0.0
PVD	TMS	TMS-3200	72.1	83.1	6.9	5.4	131.7	189.1	162.0	220.0
PVD	VAR	VR-31XX	100.5	67.2	2.5	2.6	35.4	34.9	60.0	42.4
TRACK	EAT	EAT45/60	406.1	294.3	4.1	3.6	41.4	13.8	59.0	20.1
TRACK	GCA	GCA-9000	177.5	16.5	24.0	39.8	52.3	8.0	61.2	10.3
TRACK	SVG	SVG-SCRB	80.1	53.3	14.8	11.7	47.3	28.5	65.0	36.5

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<20 PROCESS ENGINEERS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.)	S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA500FA	44.5	12.2	31.6		35.1	0.59	57	36.0
ALIGN	CAN	PLA501FA	49.4	32.4	44.1		45.0	0.79	24	31.9
ALIGN	PKN	PKN340/1	46.5	2.1	0.0		43.3	0.78	9	3.8
CLEAN	FSI	FSI-2120	98.2	22.2	273.5		80.3	0.29	113	86.3
CVD	AMT	AMT-2100	68.6	78.2	186.2		53.1	0.47	31	23.2
CVD	ASM	ASM-PRX	15.9	21.7	46.0		10.8	0.48	88	105.7
CVD	BTU	BTU-BDF4	36.6	18.6	2.2		24.9	0.48	57	57.9
CVD	ACS	ACS-512	64.5	34.7	131.8		56.9	0.49	20	8.3
DIFF	BTU	BTU-7351	150.0	0.0	0.0		138.7	0.75	15	14.5
DIFF	THE	THE-9XXX	123.7	108.0	0.0		114.8	0.62	25	0.8
DIFF	THE	THE-MAXI	21.0	0.0	0.0		18.1		13	0.0
EPI	AMT	AMT-7800	6.6	5.3	0.0		4.1	8.23	39	37.3
EPI	GEM	GEM-2	17.8	4.7	6.7		13.8	0.86	33	13.0
ETCH	BRN	BRN-2000	49.6	37.0	107.0		46.7	0.42	26	5.3
ETCH	BRN	BRN-3100	95.0	42.7	24.7		92.0	0.78	2	1.0
ETCH	DRY	DRIE102	45.0	0.0	0.0		35.6		9	1.4
ETCH	TEG	TEG-901	43.4	13.1	46.1		41.6	0.74	15	11.5
ION	EAT	MV10-160	38.8	11.7	0.0		22.6	0.60	127	126.6
ION	EAT	EAT-3206	83.0	19.1	50.5		61.3	0.71	74	76.7
ION	VAR	VR-350D	62.6	52.4	0.0		47.5		37	29.7
ION	VAR	VR-CF4	73.1	29.5	56.6		52.3	0.61	79	117.4
PVD	BAZ	BAK550/1	50.0	0.0	0.0		30.5	0.91	34	29.4
PVD	MRC	MR603/43	20.3	0.0	0.0		11.3	0.87	76	76.5
PVD	TMS	TMS-3200	136.7	185.1	214.1		109.0	0.81	61	88.3
PVD	VAR	VR-31XX	38.4	30.6	30.5		31.2	0.59	37	18.1
TRACK	EAT	EAT45/60	54.2	21.2	29.6		45.1	0.70	43	32.1
TRACK	GCA	GCA-9000	52.2	8.0	10.3		40.8	0.85	10	13.9
TRACK	SVG	SVG-SCRB	47.2	28.5	36.5		45.4	0.73	9	10.8

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20 TO <40 PROCESS ENGINEERS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	PKN	PKN-300	16	83	29	83	13	176	145	47
CLEAN	FSI	FSI-SRD	26	100	1	88	9	140	89	9
CLEAN	STL	ST-860	5	100	0	77	26	323	368	4
CVD	ASM	ASM-PRX	8	66	48	86	5	122	19	61
CVD	THE	THE-4300	24	98	1	77	12	183	0	85
ETCH	AMT	AMT-8100	7	98	2	71	6	363	125	129
ETCH	BRN	BRN-2075	2	42	13	86	18	299	374	4
ETCH	DRY	DRIE100	10	60	57	84	16	172	123	56
ETCH	LAM	LAM-690	9	82	3	86	7	155	70	9
ION	EAT	NV10-160	9	91	12	66	1	301	114	164
PVD	VAR	VR-3280	9	79	36	63	12	180	97	304
STEP	GCA	GCA6300B	16	73	38	90	5	124	0	34
STEP	ULT	UT-1100	13	83	3	75	2	171	6	75
TRACK	SSI	SVG-COAT	18	84	1	84	2	122	5	30
TRACK	SVG	SVG-8100	40	88	21	90	9	113	86	22

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20 TO <40 PROCESS ENGINEERS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	MTBF S.D.	MTTR	MTTR S.D.	MTBS	MTBS S.D.	MTFS	MTFS S.D.
ALIGN	PKN	PKN-300	42		129.7	178.6	10.3	7.5	2.0	0.0	0.2	0.0
CLEAN	FSI	FSI-SRD	9		190.2	80.8	9.7	0.0	0.0	0.0	0.0	0.0
CLEAN	STL	ST-860	0		130.0	42.4	4.4	0.0	0.0	0.0	0.0	0.0
CVD	ASM	ASM-PRX	26		142.5	164.8	11.7	10.8	68.5	68.6	7.0	7.6
CVD	THE	THE-4300	109		34.6	3.8	41.9	0.0	0.0	0.0	0.0	0.0
ETCH	AMT	AMT-8100	38		21.9	7.2	4.2	0.5	2.5	2.1	0.8	0.3
ETCH	BRN	BRN-2075	3		576.5	272.2	77.0	90.5	201.9	150.0	1.9	1.2
ETCH	DRY	DRIE100	72		137.4	146.4	8.3	2.9	102.5	143.5	11.8	16.4
ETCH	LAM	LAM-690	4		24.7	7.5	0.0	0.0	0.0	0.0	0.0	0.0
ION	EAT	NV10-160	123		11.8	0.9	2.0	0.6	8.0	0.0	0.4	0.0
PVD	VAR	VR-3280	151		40.7	35.8	4.2	4.1	23.6	22.1	6.2	8.1
STEP	GCA	GCA63008	29		68.8	15.3	5.0	0.0	16.0	19.2	2.1	2.3
STEP	ULT	UT-1100	4		13.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRACK	SSI	SVG-COAT	1		30.8	3.8	0.0	0.0	0.0	0.0	0.0	0.0
TRACK	SVG	SVG-8100	32		87.5	65.7	3.7	1.5	21.1	34.1	0.4	0.5

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20 TO <40 PROCESS ENGINEERS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	PKN	PKN-300	158.0	0.0	8.7	0.0	41.0	2.8	77.5	31.8
CLEAN	FSI	FSI-SRD	0.0	0.0	0.0	0.0	180.0	0.0	200.0	0.0
CLEAN	STL	ST-860	727.0	0.0	1.5	0.0	144.0	0.0	180.0	0.0
CVD	ASM	ASM-PRX	190.5	31.8	7.1	3.1	17.4	9.4	26.5	16.3
CVD	THE	THE-4300	0.0	0.0	0.0	0.0	33.0	0.0	34.0	0.0
ETCH	AMT	AMT-8100	158.0	0.0	7.8	1.2	57.6	54.3	49.0	52.8
ETCH	BRN	BRN-2075	320.0	271.5	73.2	102.9	35.4	15.5	60.6	15.1
ETCH	DRY	DRIE100	741.0	810.3	29.6	30.2	37.2	11.8	90.0	67.9
ETCH	LAM	LAM-690	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ION	EAT	NV10-160	158.0	0.0	7.7	0.0	58.5	19.1	69.0	29.7
PVD	VAR	VR-3280	49.0	28.0	8.8	3.0	36.3	16.5	46.7	15.3
STEP	GCA	GCA6300B	98.5	72.8	1.5	1.7	22.3	5.2	32.5	3.5
STEP	ULT	UT-1100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRACK	SSI	SVG-COAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRACK	SVG	SVG-8100	233.3	68.5	1.2	0.5	43.0	8.7	58.7	19.6

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20 TO <40 PROCESS ENGINEERS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	PKN	PKN-300	53.1	19.9	71.6	43.9	0.53	63	32.5
CLEAN	FSI	FSI-SRD	180.0	0.0	0.0	157.8	0.90	48	40.9
CLEAN	STL	ST-860	225.0	0.0	0.0	172.9	0.80	12	6.6
CVD	ASM	ASM-PRX	27.1	14.7	25.4	23.2	0.65	26	0.0
CVD	THE	THE-4300	33.0	0.0	0.0	25.5	0.97	25	0.0
ETCH	AMT	AMT-8100	90.0	84.8	86.7	63.4	1.18	56	42.3
ETCH	BRN	BRN-2075	55.2	24.2	23.5	47.3	0.58	0	0.0
ETCH	DRY	DRIE100	58.0	18.4	106.0	49.0	0.41	27	0.0
ETCH	LAM	LAM-690	0.0	0.0	0.0	0.0		44	33.0
ION	EAT	MV10-160	78.7	47.7	65.5	51.8	0.85	53	43.2
PVD	VAR	VR-3280	46.3	8.8	15.7	29.3	0.78	73	32.0
STEP	GCA	GCA6300B	34.8	8.2	5.5	31.4	0.69	18	0.0
STEP	ULT	UT-1100	0.0	0.0	0.0	0.0		126	33.2
TRACK	SSI	SVG-COAT	0.0	0.0	0.0	0.0		97	17.0
TRACK	SVG	SVG-8100	67.1	13.6	30.7	60.5	0.73	22	10.2

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40 TO <60 PROCESS ENGINEERS EQUIPMENT DATA

EQUIP TYPE	EQUIP TYPE	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	ALIGN	PKN-240	9	100	0	70	13	171	169	152
CLEAN	CLEAN	SATURN	10	97	6	89	12	101	89	93
CVD	CVD	AMT-2100	5	100	0	86	1	52	37	160
DIFF	DIFF	BTU-BDF4	32	48	11	78	7	115	32	332
DIFF	DIFF	THE-4704	36	98	1	91	1	39	0	104
ETCH	ETCH	AMT-8330	15	89	24	77	8	224	62	183
ETCH	ETCH	BRN-6540	6	17	2	77	10	402	92	65
ETCH	ETCH	LAM-590	8	63	32	82	7	253	102	16
ION	ION	EAT200MC	6	83	16	71	5	356	141	130
ION	ION	VR-350DF	2	99	1	81	11	164	140	122
PVD	PVD	MR-942	2	98	3	71	4	154	180	241
PVD	PVD	VR3180/X	5	80	39	75	12	146	165	291
STEP	STEP	GCA-6000	20	80	16	87	8	192	135	70
STEP	STEP	UT-1100	21	99	1	79	6	184	63	97
TRACK	TRACK	SVG-8000	52	87	26	93	4	60	28	52

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40 TO <60 PROCESS ENGINEERS EQUIPMENT DATA

EQUIP TYPE	EQUIP TYPE	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	ALIGN	PKN-240	37		56.5	18.9	8.4	7.4	0.0	0.0	0.0	0.0
CLEAN	CLEAN	SATURN	120		128.3	83.8	5.0	3.5	0.0	0.0	1.0	0.0
CVD	CVD	AMT-2100	142		229.1	151.1	8.5	9.2	0.0	0.0	4.0	0.0
DIFF	DIFF	BTU-BDF4	171		1624.5	1707.7	102.7	98.0	198.0	56.6	17.1	0.6
DIFF	DIFF	THE-4704	0		22.0	2.8	0.9	0.2	252.0	118.8	6.0	2.8
ETCH	ETCH	AMT-8330	48		289.9	256.5	4.5	2.3	336.0	0.0	0.8	0.0
ETCH	ETCH	BRN-6540	73		44.7	22.5	10.9	1.3	36.9	20.1	8.4	6.8
ETCH	ETCH	LAM-590	9		77.8	26.8	13.4	7.2	91.8	70.9	11.9	6.4
ION	ION	EAT200MC	0		27.8	18.9	6.5	7.3	20.2	0.0	2.5	2.8
ION	ION	VR-350DF	12		46.6	35.9	2.0	2.2	0.0	0.0	0.0	0.0
PVD	PVD	MR-942	211		372.5	423.5	18.6	0.9	4.0	0.0	3.0	0.0
PVD	PVD	VR3180/X	117		107.4	72.9	13.1	4.9	25.2	36.8	65.3	108.0
STEP	STEP	GCA-6000	85		98.3	53.8	7.9	11.1	99.6	85.4	1.4	0.6
STEP	STEP	UT-1100	25		46.5	36.2	3.6	1.9	151.0	0.0	3.0	0.0
TRACK	TRACK	SVG-8000	37		138.2	99.4	2.9	1.3	147.0	11.3	1.5	0.7

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40 TO <60 PROCESS ENGINEERS EQUIPMENT DATA

EQUIP TYPE	EQUIP TYPE	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	ALIGN	PKN-240	20.8	4.8	2.2	0.7	60.0	0.0	67.0	0.0
CLEAN	CLEAN	SATURN	91.9	19.2	4.5	4.4	21.9	0.0	56.6	0.0
CVD	CVD	AMT-2100	168.6	197.5	4.8	1.1	51.0	0.0	60.0	0.0
DIFF	DIFF	BTU-BDF4	257.0	2.8	14.2	2.0	15.3	4.6	26.9	10.4
DIFF	DIFF	THE-4704	300.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0
ETCH	ETCH	AMT-8330	36.1	10.4	5.7	2.6	22.5	7.6	26.9	5.1
ETCH	ETCH	BRN-6540	49.8	26.6	7.8	8.9	25.5	13.0	27.5	3.5
ETCH	ETCH	LAM-590	415.7	641.2	2.5	1.5	17.8	3.1	23.4	9.8
ION	ION	EAT200MC	65.4	43.6	8.1	5.5	44.4	12.9	63.2	20.1
ION	ION	VR-350DF	91.0	21.2	5.0	0.1	180.0	0.0	225.0	0.0
PVD	PVD	MR-942	217.4	212.7	19.7	6.7	50.0	0.0	59.0	0.0
PVD	PVD	VR3180/X	89.1	24.6	13.7	2.2	47.6	14.5	54.0	19.7
STEP	STEP	GCA-6000	53.6	9.4	3.1	2.8	23.2	10.2	32.2	20.9
STEP	STEP	UT-1100	222.4	172.9	4.0	1.7	41.0	0.0	59.0	0.0
TRACK	TRACK	SVG-8000	227.3	140.6	1.7	1.1	44.5	20.5	47.7	21.6

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40 TO <60 PROCESS ENGINEERS EQUIPMENT DATA

EQUIP TYPE	EQUIP TYPE	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	ALIGN	PKN-240	60.0	0.0	0.0	41.8	0.90	137	138.6
CLEAN	CLEAN	SATURN	34.2	0.0	0.0	30.5	0.39	16	3.8
CVD	CVD	AMT-2100	51.0	0.0	0.0	43.8	0.85	44	25.3
DIFF	DIFF	BTU-BDF4	23.8	7.2	16.2	18.7	0.57	0	0.0
DIFF	DIFF	THE-4704	0.0	0.0	0.0	0.0		26	0.0
ETCH	ETCH	AMT-8330	24.1	4.7	3.2	18.6	0.83	37	22.6
ETCH	ETCH	BRN-6540	39.8	20.3	5.5	30.5	0.93	0	0.0
ETCH	ETCH	LAM-590	27.8	4.9	15.4	22.7	0.76	17	0.0
ION	ION	EAT200MC	69.4	20.1	31.4	49.6	0.70	40	0.0
ION	ION	VR-350DF	180.0	0.0	0.0	145.4	0.80	29	4.9
PVD	PVD	MR-942	50.0	0.0	0.0	35.3	0.85	71	64.2
PVD	PVD	VR3180/X	53.5	5.7	10.0	40.3	0.88	17	6.5
STEP	STEP	GCA-6000	29.9	7.5	15.1	26.1	0.72	26	0.0
STEP	STEP	UT-1100	41.0	0.0	0.0	32.5	0.69	47	20.7
TRACK	TRACK	SVG-8000	52.9	8.6	8.8	49.1	0.93	12	7.8

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60+ PROCESS ENGINEERS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
CVD	GEN	GE8301/6	4	38	0	78	0	410	0	56
ETCH	AMT	AMT-8330	4	40	25	77	24	224	206	68
ETCH	LAM	LAM-690	14	40	18	70	12	242	145	86
ION	EAT	NV10-80	11	54	14	78	8	354	185	120
STEP	NIK	GCA63000	22	57	15	85	3	183	116	172

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60+ PROCESS ENGINEERS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
CVD	GEN	GE8301/6	0		605.5	569.2	51.5	0.0	120.0	0.0	4.3	4.4
ETCH	AMT	AMT-8330	50		87.8	70.8	6.6	3.8	39.1	39.5	5.2	5.9
ETCH	LAM	LAM-690	56		59.8	51.3	13.1	4.8	32.0	17.4	5.2	1.9
ION	EAT	NV10-80	58		72.1	33.3	16.3	18.0	34.6	15.9	3.7	2.5
STEP	NIK	GCA6300D	0		221.0	52.3	5.5	5.5	128.0	0.0	3.8	4.8

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60+ PROCESS ENGINEERS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
CVD	GEN	GE8301/6	295.0	0.0	15.2	6.8	21.6	4.9	22.9	2.4
ETCH	AMT	AMT-8330	164.0	67.9	10.9	5.9	13.6	10.2	22.6	1.7
ETCH	LAM	LAM-690	84.8	11.2	1.9	0.8	16.3	6.6	21.6	7.5
ION	EAT	NV10-80	66.0	19.4	9.8	8.8	26.5	3.6	41.9	3.0
STEP	NIK	GCA6300D	422.0	0.0	2.7	1.0	31.7	1.8	36.0	0.1

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60+ PROCESS ENGINEERS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.)	S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
CVD	GEN	GE8301/6	39.9	1.2	6.5		30.9	0.94	2	0.0
ETCH	AMT	AMT-8330	30.1	23.7	6.0		23.1	0.60	146	0.0
ETCH	LAM	LAM-690	36.7	14.9	17.0		25.6	0.76	85	69.5
ION	EAT	NV10-80	54.1	15.8	11.3		41.9	0.63	0	0.0
STEP	NIK	GCA6300D	60.9	18.9	17.6		51.5	0.88	0	0.0

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<10 EQUIPMENT ENGINEERS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA500FA	3	76	5	79	15	226	149	54
ALIGN	CAN	PLA601FA	15	69	10	91	12	83	131	39
ALIGN	PKN	PKN-240	44	89	23	76	14	163	147	110
CLEAN	FSI	FSI-MEGA	44	89	20	86	11	99	90	89
CLEAN	STL	ST-860	5	100	0	77	26	323	368	4
CVD	AMT	AMT-3300	17	81	33	79	12	228	287	52
CVD	ASM	ASM-3A	7	69	48	85	21	59	90	109
CVD	ASM	ASM-PRX	12	62	30	77	14	217	122	113
CVD	BTU	BTU-BDF4	2	63	10	68	40	236	301	218
CVD	ACS	ACS-512	3	50	28	88	9	197	236	40
DIFF	BTU	BTU-7351	10	98	4	87	9	26	28	112
DIFF	BTU	BTUBDF41	22	77	0	73	0	124	0	143
DIFF	THE	THE-9XXX	67	81	37	88	6	54	46	62
DIFF	THE	THE-MAXI	68	51	14	86	0	72	83	228
EPI	AMT	AMT-7800	12	85	26	62	8	97	73	287
EPI	GEM	GEM-2	6	56	12	77	4	315	191	85
ETCH	AMT	AMT-8100	7	100	0	71	8	293	128	169
ETCH	BRN	BRN-8231	17	74	23	93	4	68	31	12
ETCH	BRN	BRN-2075	8	71	29	92	11	131	242	18
ETCH	DRY	DRIE100	15	55	35	82	11	223	135	74
ETCH	LAM	LAM-590	14	89	10	88	6	121	82	12
ETCH	TEG	TEG-901	21	76	25	93	6	72	77	9
ETCH	VAR	VR-20	4	53	67	52	11	555	63	234
ION	EAT	MV10-160	10	84	20	64	7	291	177	184
ION	EAT	EAT-3206	5	59	32	73	6	179	150	151
ION	VAR	VR-350D	4	72	37	75	14	192	166	153
ION	VAR	VR-CF4	5	66	32	72	15	266	238	172
PVD	BAZ	BAL-800	4	61	29	61	2	99	117	352
PVD	MRC	MR603/43	3	80	29	62	8	218	179	98
PVD	TMS	TMS-3200	4	55	40	80	18	92	98	181
PVD	VAR	VR-31XX	14	75	33	71	15	174	127	212
STEP	GCA	GCA-6300	18	82	31	82	15	130	11	29
STEP	ULT	UT-1100	30	92	10	75	2	191	41	85
TRACK	EAT	EAT45/60	35	77	15	83	17	149	150	70
TRACK	GCA	GCA-9000	8	63	17	78	38	358	665	39
TRACK	SSI	SSI-COAT	19	86	3	89	9	84	65	23
TRACK	SVG	SVG-8100	96	83	18	93	6	61	63	42

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<10 EQUIPMENT ENGINEERS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	MPA500FA		41	39.4	22.4	2.7	0.9	2.8	1.5	0.4	0.2
ALIGN	CAN	PLA601FA		22	18.5	3.8	0.5	0.3	22.8	16.1	1.0	1.0
ALIGN	PKN	PKN-240		66	49.0	22.0	6.3	6.8	57.3	95.8	0.8	1.0
CLEAN	FSI	FSI-MEGA		99	187.1	111.5	6.7	2.9	138.0	216.8	0.2	0.0
CLEAN	STL	ST-860		0	130.0	42.4	4.4	0.0	0.0	0.0	0.0	0.0
CVD	AMT	AMT-3300		36	80.1	91.8	14.4	26.6	80.4	108.3	1.0	0.8
CVD	ASM	ASM-3A		145	61.0	37.7	5.6	8.1	41.2	20.9	3.2	1.1
CVD	ASM	ASM-PRX		103	76.1	122.4	7.9	7.8	40.0	52.2	4.3	5.5
CVD	BTU	BTU-BDF4		244	23.9	16.8	2.1	0.2	20.9	22.8	1.3	0.8
CVD	ACS	ACS-512		39	830.8	1143.0	150.9	210.8	823.7	1153.0	1.2	1.1
DIFF	BTU	BTU-7351		131	181.0	163.1	4.6	4.0	13.5	0.0	8.0	0.0
DIFF	BTU	BTUBDF41		0	1975.0	0.0	41.4	0.0	315.0	0.0	12.0	0.0
DIFF	THE	THE-9XXX		35	157.1	78.1	7.5	7.6	245.3	313.0	6.7	8.0
DIFF	THE	THE-MAXI		101	2800.0	0.0	92.0	128.7	2800.0	0.0	2.0	0.0
EPI	AMT	AMT-7800		287	61.3	40.2	4.4	1.9	11.0	11.4	1.3	0.3
EPI	GEM	GEM-2		53	68.4	36.9	11.3	12.4	44.0	55.4	0.5	0.6
ETCH	AMT	AMT-8100		37	27.3	12.2	5.5	2.1	2.5	2.1	0.8	0.3
ETCH	BRN	BRN-8231		7	137.1	91.8	4.3	3.6	63.7	103.3	0.2	0.3
ETCH	BRN	BRN-2075		30	250.3	327.4	31.1	61.7	181.2	89.9	1.4	0.8
ETCH	DRY	DRIE100		47	78.7	108.4	5.0	4.2	63.2	94.5	6.4	11.3
ETCH	LAM	LAM-590		8	69.3	65.3	3.6	3.2	168.0	0.0	3.0	0.0
ETCH	TEG	TEG-901		6	95.1	115.4	4.3	4.5	124.6	130.8	1.2	1.1
ETCH	VAR	VR-20		134	37.3	23.6	5.3	2.5	54.0	0.0	2.5	0.0
ION	EAT	MV10-160		150	20.4	13.1	3.3	2.2	5.0	2.5	0.5	0.1
ION	EAT	EAT-3206		104	8.7	1.1	1.2	0.3	8.1	10.6	0.6	0.2
ION	VAR	VR-350D		179	45.5	66.8	10.6	13.5	50.9	81.5	0.9	0.9
ION	VAR	VR-CF4		161	47.6	56.7	7.9	12.8	45.6	59.2	1.1	0.8
PVD	BAZ	BAL-800		459	86.0	36.8	5.6	2.3	24.0	0.0	2.0	0.0
PVD	MRC	MR603/43		100	69.7	12.3	7.7	10.0	26.8	0.0	0.8	0.0
PVD	TMS	TMS-3200		127	60.2	45.4	3.7	5.4	67.2	87.6	4.2	3.4
PVD	VAR	VR-31XX		166	33.6	27.8	4.1	3.0	31.6	16.0	9.4	11.1
STEP	GCA	GCA-6300		22	73.9	13.9	8.4	5.8	66.7	88.8	2.7	1.9
STEP	ULT	UT-1100		23	44.2	38.8	4.7	0.1	0.0	0.0	0.0	0.0
TRACK	EAT	EAT45/60		93	46.4	16.7	1.8	1.0	57.7	68.0	0.4	0.4
TRACK	GCA	GCA-9000		29	9.4	11.3	12.2	23.8	45.6	74.0	1.0	0.8
TRACK	SSI	SSI-COAT		12	43.8	22.8	0.5	0.0	210.0	0.0	3.0	0.0
TRACK	SVG	SVG-8100		38	62.4	43.6	2.0	1.8	38.1	26.5	2.4	3.0

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<10 EQUIPMENT ENGINEERS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	MPA500FA	178.7	18.5	2.5	0.9	28.5	7.8	48.3	20.2
ALIGN	CAN	PLA601FA	62.1	60.5	7.2	8.0	42.9	24.2	54.0	31.0
ALIGN	PKN	PKN-240	55.3	61.8	2.6	2.4	45.3	2.5	73.3	23.1
CLEAN	FSI	FSI-MEGA	314.0	316.1	3.4	3.7	72.7	13.7	250.7	179.2
CLEAN	STL	ST-860	727.0	0.0	1.5	0.0	144.0	0.0	180.0	0.0
CVD	AMT	AMT-3300	168.6	68.5	14.3	24.6	67.5	70.0	128.8	155.5
CVD	ASM	ASM-3A	113.1	74.4	11.8	11.4	225.0	247.5	265.5	269.4
CVD	ASM	ASM-PRX	317.2	269.3	4.8	3.4	13.8	10.5	23.9	19.6
CVD	BTU	BTU-BDF4	384.0	475.2	1.9	0.9	23.4	11.9	49.0	1.4
CVD	ACS	ACS-512	108.0	84.8	1.0	0.0	48.5	12.0	99.0	72.1
DIFF	BTU	BTU-7351	123.6	130.9	6.6	5.7	150.0	0.0	200.0	0.0
DIFF	BTU	BTUBDF41	523.0	278.6	8.2	9.4	21.7	3.8	37.8	17.2
DIFF	THE	THE-9XXX	279.6	224.1	7.0	5.7	123.7	108.0	200.0	0.0
DIFF	THE	THE-MAXI	124.0	62.2	11.5	0.7	21.0	0.0	0.0	0.0
EPI	AMT	AMT-7800	100.1	157.4	6.1	7.0	6.6	5.3	0.8	0.0
EPI	GEN	GEM-2	444.0	318.7	3.5	0.6	14.8	6.3	17.2	6.8
ETCH	AMT	AMT-8100	122.2	62.1	7.4	1.2	57.6	54.3	78.0	70.7
ETCH	BRN	BRN-8231	639.2	370.0	2.4	1.3	34.3	22.2	82.5	65.0
ETCH	BRN	BRN-2075	227.0	160.2	57.4	60.5	71.1	45.2	91.6	39.4
ETCH	DRY	DRIE100	454.5	573.0	15.4	23.9	41.1	8.2	90.0	67.9
ETCH	LAM	LAM-590	620.0	758.0	3.1	1.7	23.0	0.0	30.0	0.0
ETCH	TEG	TEG-901	341.3	265.9	27.5	35.2	36.6	9.2	49.8	28.2
ETCH	VAR	VR-20	98.6	98.2	3.6	3.8	45.0	0.0	45.0	0.0
ION	EAT	NV10-160	77.9	60.4	5.2	3.2	44.8	22.8	75.0	21.2
ION	EAT	EAT-3206	352.0	318.7	5.0	6.1	75.7	31.8	106.7	11.6
ION	VAR	VR-3500	75.1	44.1	10.6	14.4	62.6	53.0	0.0	0.0
ION	VAR	VR-CF4	56.1	36.2	13.7	15.3	71.0	33.5	117.0	56.6
PVD	BAZ	BAL-800	168.0	0.0	10.1	8.3	50.0	0.0	55.0	0.0
PVD	MRC	MR603/43	514.6	438.8	24.9	24.8	13.0	0.0	15.0	0.0
PVD	TMS	TMS-3200	72.1	83.1	6.9	5.4	131.7	189.1	162.0	220.0
PVD	VAR	VR-31XX	84.3	52.1	6.6	5.4	31.1	20.8	50.0	28.3
STEP	GCA	GCA-6300	121.7	65.3	2.0	1.4	22.5	3.7	31.7	2.9
STEP	ULT	UT-1100	315.1	90.8	4.9	0.0	0.0	0.0	0.0	0.0
TRACK	EAT	EAT45/60	406.1	294.3	4.1	3.6	41.4	13.8	59.0	20.1
TRACK	GCA	GCA-9000	177.5	16.5	24.0	39.8	52.3	8.0	61.2	10.3
TRACK	SSI	SSI-COAT	236.8	0.0	46.6	0.0	50.0	0.0	65.0	0.0
TRACK	SVG	SVG-8100	162.4	106.4	8.2	10.4	45.6	22.2	62.7	29.7

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<10 EQUIPMENT ENGINEERS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.)	S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA500FA	44.5	12.2	31.6		35.1	0.59	57	36.0
ALIGN	CAN	PLA601FA	49.4	32.4	44.1		45.0	0.79	24	31.9
ALIGN	PKN	PKN-240	53.4	12.0	55.6		40.3	0.62	97	117.5
CLEAN	FSI	FSI-MEGA	98.2	22.2	273.5		84.1	0.29	67	63.0
CLEAN	STL	ST-860	225.0	0.0	0.0		172.9	0.80	12	6.6
CVD	AMT	AMT-3300	73.3	70.9	152.4		58.1	0.52	34	22.9
CVD	ASM	ASM-3A	225.0	247.5	269.4		191.5	0.85	51	80.7
CVD	ASM	ASM-PRX	21.5	16.5	30.7		16.5	0.58	67	82.9
CVD	BTU	BTU-BDF4	36.6	18.6	2.2		24.9	0.48	57	57.9
CVD	ACS	ACS-512	64.5	34.7	131.8		56.9	0.49	20	8.3
DIFF	BTU	BTU-7351	150.0	0.0	0.0		131.1	0.75	20	13.7
DIFF	BTU	BTUBDF41	33.8	5.9	27.0		24.5	0.57	163	0.0
DIFF	THE	THE-9XXX	123.7	108.0	0.0		108.6	0.62	49	40.6
DIFF	THE	THE-MAXI	21.0	0.0	0.0		18.1		13	0.0
EPI	AMT	AMT-7800	6.6	5.3	0.0		4.1	8.23	46	33.2
EPI	GEM	GEM-2	17.8	4.7	6.7		13.8	0.86	33	13.0
ETCH	AMT	AMT-8100	90.0	84.8	110.5		63.8	0.74	81	26.5
ETCH	BRN	BRN-8231	49.6	37.0	107.0		46.3	0.42	30	22.6
ETCH	BRN	BRN-2075	79.1	39.2	25.4		73.0	0.78	2	1.0
ETCH	DRY	DRIE100	51.5	13.0	106.0		42.1	0.46	15	10.5
ETCH	LAM	LAM-590	23.0	0.0	0.0		20.3	0.77	31	30.0
ETCH	TEG	TEG-901	43.4	13.1	46.1		40.6	0.74	19	14.4
ETCH	VAR	VR-20	45.0	0.0	0.0		23.5	1.00	15	12.5
ION	EAT	NV10-160	57.2	38.0	57.0		36.4	0.60	96	88.1
ION	EAT	EAT-3206	83.0	19.1	50.5		60.9	0.71	106	89.9
ION	VAR	VR-350D	62.6	52.4	0.0		47.1		36	24.3
ION	VAR	VR-CF4	73.1	29.5	56.6		52.3	0.61	79	117.4
PVD	BAZ	BAL-800	50.0	0.0	0.0		30.5	0.91	34	29.4
PVD	MRC	MR603/43	20.3	0.0	0.0		12.5	0.87	90	59.0
PVD	TMS	TMS-3200	136.7	185.1	214.1		109.0	0.81	61	88.3
PVD	VAR	VR-31XX	40.2	18.2	22.0		28.5	0.62	47	27.8
STEP	GCA	GCA-6300	30.9	9.0	12.6		25.2	0.71	37	25.6
STEP	ULT	UT-1100	0.0	0.0	0.0		0.0		91	44.7
TRACK	EAT	EAT45/60	54.2	21.2	29.6		45.1	0.70	43	32.1
TRACK	GCA	GCA-9000	52.2	8.0	10.3		40.8	0.85	10	13.9
TRACK	SSI	SSI-COAT	50.0	0.0	0.0		44.3	0.77	66	54.9
TRACK	SVG	SVG-8100	54.7	25.0	34.9		50.9	0.73	12	10.8

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10 - 20 EQUIPMENT ENGINEERS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.
ALIGN	PKN	PKN-542	23	72	39	90	10	71	84
CLEAN	FSI	SATURN	30	84	22	96	3	84	63
DIFF	BTU	BTU-8DF4	32	48	11	78	7	115	32
ETCH	AMT	AMT-8330	6	68	49	74	12	323	167
ETCH	BRN	BRN-6540	6	17	2	77	10	402	92
ETCH	LAM	LAM-590	4	45	4	78	1	311	20
ION	EAT	NV10-80	12	68	29	75	11	320	153
ION	VAR	VR-CF3	6	66	48	79	13	253	65
PVD	VAR	VR-3180	5	57	50	72	18	119	50
STEP	NIK	N1505G3A	19	84	23	88	8	168	138
TRACK	MTI	MTI-TARG	34	77	32	97	1	48	26

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20 + EQUIPMENT ENGINEERS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
DIFF	THE	THE-4704	36	98	1	91	1	39	0	104
DIFF	TYL	TYTAN-II	72	54	38	93	5	82	64	40
ETCH	AMT	AMT-8330	13	75	27	77	15	232	136	131
ETCH	LAM	LAM-690	14	40	18	70	12	242	145	86
ION	EAT	EAT200MC	7	69	12	71	4	447	56	120
ION	VAR	VR-3500E	3	84	21	86	4	182	166	93
PVD	VAR	VR-31XX	4	87	20	63	27	160	232	597
STEP	GCA	GCA6300D	21	68	32	84	11	160	96	221
TRACK	GCA	GCA-1006	17	70	42	86	2	100	61	185

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EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
DIFF	THE	THE-4704	0		22.0	2.8	0.9	0.2	252.0	118.8	6.0	2.8
DIFF	TYL	TYTAN-II	55		150.7	134.1	5.7	7.1	168.8	147.2	30.8	24.7
ETCH	AMT	AMT-8330	73		253.7	247.2	5.2	3.1	138.1	173.7	5.2	6.0
ETCH	LAM	LAM-690	56		59.8	51.3	13.1	4.8	32.0	17.4	5.2	1.9
ION	EAT	EAT200MC	58		53.8	49.4	16.1	18.2	34.6	15.9	3.5	2.8
ION	VAR	VR-3500E	52		70.3	2.4	6.2	8.0	41.7	0.0	5.7	0.0
PVD	VAR	VR-31XX	358		91.1	69.3	17.8	3.1	8.2	7.3	12.8	17.0
STEP	GCA	GCA63000	128		122.0	74.5	8.3	11.8	140.5	27.6	1.8	0.9
TRACK	GCA	GCA-1006	133		66.0	72.1	2.3	1.4	101.1	60.7	3.5	2.1

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EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
DIFF	THE	THE-4704	300.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0
DIFF	TYL	TYTAN-II	242.7	148.5	39.2	23.3	16.6	0.2	16.9	0.2
ETCH	AMT	AMT-8330	84.4	80.3	7.5	5.3	21.5	6.1	25.1	4.8
ETCH	LAM	LAM-690	84.8	11.2	1.9	0.8	16.3	6.6	21.6	7.5
ION	EAT	EAT200MC	66.0	19.4	7.8	5.4	30.3	5.2	52.6	21.5
ION	VAR	VR-3500E	91.0	21.2	4.2	1.1	133.9	65.2	176.0	69.3
PVD	VAR	VR-31XX	56.5	20.0	26.8	20.5	49.9	10.6	54.0	19.7
STEP	GCA	GCA63000	203.0	220.6	4.7	1.5	21.8	10.8	31.1	21.6
TRACK	GCA	GCA-1006	79.0	50.9	1.2	1.1	45.2	28.1	53.2	39.2

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20 + EQUIPMENT ENGINEERS EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.)	S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
DIFF	THE	THE-4704	0.0	0.0	0.0		0.0		26	0.0
DIFF	TYL	TYTAN-II	37.2	0.5	0.5		34.7	0.98	12	12.5
ETCH	AMT	AMT-8330	30.7	10.8	10.0		23.7	0.85	56	60.0
ETCH	LAM	LAM-690	36.7	14.9	17.0		25.6	0.76	85	69.5
ION	EAT	EAT200MC	60.0	7.7	17.6		42.4	0.58	0	0.0
ION	VAR	VR-3500E	188.7	12.4	42.9		162.0	0.76	14	16.7
PVD	VAR	VR-31XX	66.1	18.9	6.4		41.7	0.92	13	0.0
STEP	GCA	GCA6300D	31.8	9.6	15.3		26.7	0.70	26	0.0
TRACK	GCA	GCA-1006	61.0	5.7	16.7		52.1	0.85	26	0.0

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<10 HOURS TRAINING EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	PLA501FA	14	66	9	96	2	26	35	30
ALIGN	PKN	PKN340/1	22	100	24	90	1	82	12	50
CLEAN	FSI	FSI-NA	25	81	32	95	2	71	53	26
CVD	AMT	AMT-2100	14	78	34	78	13	253	306	51
CVD	ASM	ASM-PRX	9	73	38	81	2	243	190	54
CVD	THE	THE-4300	10	99	2	81	7	118	93	12
DIFF	BTU	BTU-7351	9	97	5	93	0	11	5	39
DIFF	THE	THE-MAXI	68	51	14	86	0	72	83	228
EPI	AMT	AMT-7800	10	80	29	62	9	63	37	273
EPI	GEM	GEM-1	4	47	6	75	2	475	46	39
ETCH	AMT	AMT-8100	7	98	2	71	6	363	125	129
ETCH	BRN	BRN-2075	2	98	1	98	0	7	1	6
ETCH	TEG	TEG-901	8	91	15	98	1	12	6	5
ION	EAT	MV10-160	7	97	2	63	4	204	147	180
ION	VAR	VR-350D	2	59	55	67	8	210	255	236
ION	VAR	VR-CF4	8	76	33	74	13	213	177	216
PVD	BAZ	BAK550/1	4	61	29	61	2	99	117	352
PVD	MRC	MR603/43	6	96	0	55	0	103	123	199
PVD	TMS	TMS-2550	3	72	0	90	0	38	0	135
PVD	VAR	VR-31XX	9	97	4	61	10	96	59	283
STEP	GCA	GCA-6300	13	100	0	76	16	133	13	37
TRACK	EAT	EAT45/60	32	80	0	94	0	39	0	21
TRACK	GCA	GCA-9000	17	75	0	98	0	25	0	5
TRACK	SVG	SVG-SCRB	64	81	0	93	0	57	0	39

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<10 HOURS TRAINING EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	PLA501FA	7		17.1	2.5	0.3	0.2	29.9	9.0	1.2	1.0
ALIGN	PKN	PKN340/1	1		145.8	3.5	7.1	0.1	85.0	47.7	1.1	0.4
CLEAN	FSI	FSI-NA	0		311.5	109.6	8.2	2.1	388.0	0.0	0.2	0.0
CVD	AMT	AMT-2100	39		73.0	98.5	14.3	29.2	80.4	108.3	1.0	0.8
CVD	ASM	ASM-PRX	16		13.2	18.0	3.0	1.4	21.0	1.4	2.3	1.0
CVD	THE	THE-4300	6		60.6	33.0	24.4	24.8	0.0	0.0	0.0	0.0
DIFF	BTU	BTU-7351	47		90.3	62.3	2.7	3.0	13.5	0.0	8.0	0.0
DIFF	THE	THE-MAXI	101		2800.0	0.0	92.0	128.7	2800.0	0.0	2.0	0.0
EPI	AMT	AMT-7800	350		72.0	41.6	3.6	1.4	11.0	11.4	1.3	0.3
EPI	GEM	GEM-1	0		86.5	44.6	20.3	11.7	86.5	44.6	1.0	0.0
ETCH	AMT	AMT-8100	38		21.9	7.2	4.2	0.5	2.5	2.1	0.8	0.3
ETCH	BRN	BRN-2075	0		31.2	6.8	0.3	0.0	160.4	2.6	1.0	0.0
ETCH	TEG	TEG-901	1		132.3	161.0	2.3	2.8	194.0	117.7	1.9	0.9
ION	EAT	NV10-160	99		15.2	5.1	2.2	0.6	7.0	1.4	0.5	0.1
ION	VAR	VR-350D	254		79.0	93.4	15.7	20.8	73.0	101.8	1.1	1.2
ION	VAR	VR-CF4	163		47.0	57.1	8.0	12.7	55.8	63.2	1.3	0.8
PVD	BAZ	BAK550/1	459		86.0	36.8	5.6	2.3	24.0	0.0	2.0	0.0
PVD	MRC	MR603/43	278		36.1	28.1	2.3	0.5	0.0	0.0	0.0	0.0
PVD	TMS	TMS-2550	0		55.4	0.0	0.6	0.0	96.1	0.0	5.5	0.0
PVD	VAR	VR-31XX	235		18.3	4.6	2.0	0.4	8.0	0.0	0.5	0.0
STEP	GCA	GCA-6300	25		71.0	18.4	10.1	7.2	85.2	117.1	2.2	2.5
TRACK	EAT	EAT45/60	0		53.4	0.0	1.8	0.0	111.8	0.0	0.6	0.0
TRACK	GCA	GCA-9000	0		44.0	0.0	0.4	0.0	81.3	0.0	1.1	0.0
TRACK	SVG	SVG-SCR8	0		52.4	0.0	1.6	0.0	34.9	0.0	2.6	0.0

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<10 HOURS TRAINING EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	PLA501FA	35.6	14.1	8.4	8.6	39.1	26.2	47.6	31.6
ALIGN	PKN	PKN340/1	102.5	40.0	4.6	24.0	43.3	4.5	71.7	7.1
CLEAN	FSI	FSI-NA	168.0	0.0	2.0	0.0	131.0	69.3	250.0	70.7
CVD	AMT	AMT-2100	145.3	32.9	15.7	26.7	67.5	70.0	128.8	155.5
CVD	ASM	ASM-PRX	168.0	0.0	3.0	2.8	12.3	16.6	19.2	26.5
CVD	THE	THE-4300	224.0	0.0	3.4	0.0	33.0	0.0	34.0	0.0
DIFF	BTU	BTU-7351	141.7	179.8	3.6	3.2	150.0	0.0	200.0	0.0
DIFF	THE	THE-MAXI	124.0	62.2	11.5	0.7	21.0	0.0	0.0	0.0
EPI	AMT	AMT-7800	123.2	184.3	6.1	8.6	6.6	5.3	0.8	0.0
EPI	GEM	GEM-1	168.0	0.0	3.0	0.0	18.5	7.8	20.0	9.9
ETCH	AMT	AMT-8100	158.0	0.0	7.8	1.2	57.6	54.3	49.0	52.8
ETCH	BRN	BRN-2075	163.4	4.1	70.0	0.0	117.5	24.8	122.5	24.8
ETCH	TEG	TEG-901	230.2	183.9	52.9	34.2	39.2	6.6	49.6	6.2
ION	EAT	MV10-160	84.6	103.8	4.3	4.8	53.7	15.9	69.0	29.7
ION	VAR	VR-350D	47.2	52.0	16.3	22.2	92.5	10.6	0.0	0.0
ION	VAR	VR-CF4	45.2	30.8	16.3	16.4	85.2	16.8	110.0	41.8
PVD	BAZ	BAK550/1	168.0	0.0	10.1	8.3	50.0	0.0	55.0	0.0
PVD	MRC	MR603/43	168.0	0.0	0.3	0.0	28.0	0.0	30.0	0.0
PVD	TMS	TMS-2550	24.1	0.0	6.3	0.0	184.0	234.8	223.0	0.0
PVD	VAR	VR-31XX	31.4	3.1	3.9	4.0	39.5	21.9	45.0	21.2
STEP	GCA	GCA-6300	159.0	12.7	2.8	0.2	20.8	3.1	32.5	3.5
TRACK	EAT	EAT45/60	235.2	0.0	2.0	0.0	46.5	5.0	67.5	0.0
TRACK	GCA	GCA-9000	196.6	0.0	70.0	0.0	54.0	7.9	62.0	0.0
TRACK	SVG	SVG-SCRB	115.5	0.0	11.0	0.0	47.5	23.3	66.5	0.0

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<10 HOURS TRAINING EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.)	S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	PLA501FA	39.1	26.2	31.6		37.7	0.82	10	11.7
ALIGN	PKN	PKN340/1	51.4	9.9	7.1		46.1	0.60	23	18.1
CLEAN	FSI	FSI-NA	131.0	69.3	70.7		125.0	0.52	10	4.3
CVD	AMT	AMT-2100	73.3	70.9	152.4		57.2	0.52	29	21.2
CVD	ASM	ASM-PRX	19.0	26.2	41.6		15.3	0.64	19	8.8
CVD	THE	THE-4300	33.0	0.0	0.0		26.6	0.97	36	0.0
DIFF	BTU	BTU-7351	150.0	0.0	0.0		138.7	0.75	15	14.5
DIFF	THE	THE-MAXI	21.0	0.0	0.0		18.1		13	0.0
EPI	AMT	AMT-7800	6.6	5.3	0.0		4.1	8.23	39	37.3
EPI	GEM	GEM-1	18.5	7.8	9.9		13.9	0.93	26	0.0
ETCH	AMT	AMT-8100	90.0	84.8	86.7		63.4	1.18	56	42.3
ETCH	BRN	BRN-2075	117.5	24.7	24.7		115.7	0.96	3	0.0
ETCH	TEG	TEG-901	39.2	6.6	6.2		38.3	0.79	9	11.8
ION	EAT	NV10-160	67.2	39.2	65.5		42.6	0.78	45	35.8
ION	VAR	VR-350D	92.5	10.6	0.0		61.6		54	2.7
ION	VAR	VR-CF4	85.2	16.8	41.8		63.1	0.77	23	23.6
PVD	BAZ	BAK550/1	50.0	0.0	0.0		30.5	0.91	34	29.4
PVD	MRC	MR603/43	28.0	0.0	0.0		15.5	0.93	12	13.6
PVD	TMS	TMS-2550	184.0	0.0	0.0		165.6	0.83	10	0.0
PVD	VAR	VR-31XX	46.2	12.4	9.3		28.1	0.88	54	5.1
STEP	GCA	GCA-6300	26.0	4.3	17.4		19.6	0.64	37	25.6
TRACK	EAT	EAT45/60	46.5	0.0	0.0		43.8	0.69	17	0.0
TRACK	GCA	GCA-9000	54.0	0.0	0.0		52.9	0.87	15	0.0
TRACK	SVG	SVG-SCRB	55.2	0.0	0.0		51.5	0.71	13	0.0

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10 TO <30 HOURS OF TRAINING EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	PKN	PKN-240	26	92	22	73	14	158	158	143
CLEAN	FSI	SATURN	4	100	0	88	13	101	103	93
CVD	ASM	ASM-3A	6	57	61	80	26	83	112	146
CVD	ASM	ASM-PRX	8	25	10	88	2	157	31	91
CVD	GEN	GE-8402	3	69	44	70	11	395	22	99
CVD	TEM	TEM-232	5	44	9	67	18	179	33	272
DIFF	BTU	BTU-BDF4	53	48	11	78	7	115	32	332
ETCH	AMT	AMT-8330	6	69	27	69	22	263	193	116
ETCH	BRN	BRN-6540	6	17	2	77	10	402	92	65
ETCH	BRN	BRN-2075	7	44	23	90	12	175	259	22
ETCH	DRY	DRIE100	12	35	19	86	10	203	134	51
ETCH	LAM	LAM-590	22	52	26	76	11	247	112	51
ETCH	VAR	VR-20	4	53	67	52	11	555	63	234
ION	EAT	MV80-160	6	75	17	71	6	386	119	188
ION	EAT	EAT200MC	2	65	10	73	9	273	170	240
ION	VAR	VR-3500F	3	85	21	78	7	281	26	85
PVD	VAR	VR-31XX	9	49	33	67	22	243	147	392
STEP	GCA	GCA6300D	28	50	18	84	9	222	98	112
STEP	ULT	UT-1100	17	100	0	76	3	211	59	94
TRACK	GCA	GCA-1006	17	57	17	67	40	485	754	131
TRACK	SVG	SVG-8100	44	78	26	94	5	60	28	37

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10 TO <30 HOURS OF TRAINING EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	PKN	PKN-240	42		51.8	21.2	7.3	7.4	2.0	0.0	0.2	0.0
CLEAN	FSI	SATURN	120		133.4	95.8	5.9	3.1	0.0	0.0	0.0	0.0
CVD	ASM	ASM-3A	184		82.7	3.8	8.2	9.5	56.0	0.0	2.5	0.0
CVD	ASM	ASM-PRX	16		231.0	39.6	19.7	0.6	95.2	30.8	9.2	4.4
CVD	GEN	GE-8402	60		127.0	107.5	32.9	26.4	120.0	0.0	7.4	0.0
CVD	TEM	TEM-232	61		276.5	235.5	68.7	78.2	13.8	5.2	3.1	0.7
DIFF	BTU	BTU-BDF4	171		1741.3	1224.3	82.3	77.8	237.0	78.5	15.4	3.0
ETCH	AMT	AMT-8330	90		49.3	44.0	8.1	2.6	39.1	39.5	7.4	6.5
ETCH	BRN	BRN-6540	73		44.7	22.5	10.9	1.3	36.9	20.1	8.4	6.8
ETCH	BRN	BRN-2075	34		445.2	314.9	43.6	65.4	136.8	154.8	3.1	2.3
ETCH	DRY	DRIE100	47		88.3	104.8	5.3	4.3	87.6	85.2	12.7	13.5
ETCH	LAM	LAM-590	52		68.8	37.9	13.3	5.5	55.9	49.9	7.9	5.1
ETCH	VAR	VR-20	134		37.3	23.6	5.3	2.5	54.0	0.0	2.5	0.0
ION	EAT	NV80-160	144		46.4	37.6	13.4	14.0	23.1	17.6	3.7	2.4
ION	EAT	EAT200MC	0		9.0	1.4	1.2	0.3	2.0	0.0	0.5	0.0
ION	VAR	VR-3500F	40		44.9	33.5	7.7	5.8	41.7	0.0	5.7	0.0
PVD	VAR	VR-31XX	349		65.0	65.6	10.3	8.1	39.9	21.0	64.6	84.0
STEP	GCA	GCA63000	173		124.9	52.9	15.9	9.4	63.3	50.2	2.5	1.2
STEP	ULT	UT-1100	35		59.7	39.7	4.7	0.1	0.0	0.0	0.0	0.0
TRACK	GCA	GCA-1006	129		40.8	66.0	17.2	26.7	26.1	27.8	2.3	2.3
TRACK	SVG	SVG-8100	42		136.1	101.0	3.1	0.8	107.8	66.8	1.0	0.1

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10 TO <30 HOURS OF TRAINING EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	PKN	PKN-240	41.9	55.8	2.0	0.8	45.0	0.0	60.0	0.0
CLEAN	FSI	SATURN	91.9	19.2	4.7	5.3	0.0	0.0	0.0	0.0
CVD	ASM	ASM-3A	155.4	17.8	11.9	16.1	50.0	0.0	75.0	0.0
CVD	ASM	ASM-PRX	164.0	69.3	7.9	2.0	15.5	6.7	15.2	0.3
CVD	GEN	GE-8402	229.1	93.2	12.8	3.4	18.1	0.0	21.2	0.0
CVD	TEM	TEM-232	15.6	7.3	3.0	0.1	22.3	2.9	20.9	6.9
DIFF	BTU	BTU-BDF4	280.0	39.9	14.5	1.5	18.3	6.2	26.5	7.4
ETCH	AMT	AMT-8330	126.2	81.2	9.7	6.5	19.5	1.2	21.6	0.0
ETCH	BRN	BRN-6540	49.8	26.6	7.8	8.9	25.5	13.0	27.5	3.5
ETCH	BRN	BRN-2075	239.0	182.7	36.9	72.8	39.7	11.3	54.7	14.8
ETCH	DRY	DRIE100	438.5	584.5	14.3	24.4	42.9	4.5	89.6	68.5
ETCH	LAM	LAM-590	250.3	444.2	2.2	1.2	16.9	5.0	22.3	7.3
ETCH	VAR	VR-20	98.6	98.2	3.6	3.8	45.0	0.0	45.0	0.0
ION	EAT	NV80-160	57.4	30.3	4.5	1.9	39.0	13.5	47.4	9.4
ION	EAT	EAT200MC	168.0	0.0	1.5	0.0	94.0	0.0	100.0	0.0
ION	VAR	VR-350DF	106.0	0.0	4.2	1.1	87.8	0.0	127.0	0.0
PVD	VAR	VR-31XX	98.1	50.6	17.4	19.1	40.1	13.8	51.0	27.4
STEP	GCA	GCA6300D	155.4	176.4	1.9	2.8	21.9	4.1	24.9	4.8
STEP	ULT	UT-1100	315.1	90.8	4.9	0.0	0.0	0.0	0.0	0.0
TRACK	GCA	GCA-1006	150.3	30.6	0.8	0.3	39.1	12.6	45.2	17.8
TRACK	SVG	SVG-8100	288.3	74.0	1.4	1.2	31.5	2.0	34.2	2.5

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10 TO <30 HOURS OF TRAINING EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	PKN	PKN-240	45.0	0.0	0.0	32.6	0.75	119	135.1
CLEAN	FSI	SATURN	0.0	0.0	0.0	0.0		16	3.8
CVD	ASM	ASM-3A	50.0	0.0	0.0	40.1	0.67	73	101.4
CVD	ASM	ASM-PRX	31.1	20.3	7.9	27.3	1.02	2	0.0
CVD	GEN	GE-8402	40.7	0.0	0.0	28.6	0.85	23	29.2
CVD	TEM	TEM-232	34.8	4.5	10.7	23.2	1.06	0	0.0
DIFF	BTU	BTU-BDF4	28.5	9.6	11.5	22.4	0.69	0	0.0
ETCH	AMT	AMT-8330	43.7	2.7	0.0	30.1	0.90	109	53.0
ETCH	BRN	BRN-6540	39.8	20.3	5.5	30.5	0.93	0	0.0
ETCH	BRN	BRN-2075	55.0	14.5	23.1	49.7	0.73	1	0.0
ETCH	DRY	DRIE100	54.4	12.4	106.9	46.8	0.48	10	1.4
ETCH	LAM	LAM-590	33.2	11.9	15.7	25.1	0.76	68	66.1
ETCH	VAR	VR-20	45.0	0.0	0.0	23.5	1.00	15	12.5
ION	EAT	NV80-160	63.9	15.9	14.5	45.0	0.82	44	5.4
ION	EAT	EAT200MC	94.0	0.0	0.0	68.2	0.94	30	8.5
ION	VAR	VR-350DF	197.5	0.0	0.0	154.0	0.69	18	21.6
PVD	VAR	VR-31XX	60.8	18.5	16.8	40.5	0.79	24	0.2
STEP	GCA	GCA63000	38.3	3.5	5.3	32.2	0.88	0	0.0
STEP	ULT	UT-1100	0.0	0.0	0.0	0.0		57	14.6
TRACK	GCA	GCA-1006	49.6	7.5	5.2	33.1	0.87	1	0.0
TRACK	SVG	SVG-8100	49.1	3.2	4.0	46.0	0.92	11	10.9

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30 TO <45 HOURS TRAINING EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	PKN	PKN-661	20	47	3	80	6	209	111	3
CLEAN	FSI	SATURN	49	91	13	88	9	130	95	9
ETCH	AMT	AMT-8330	13	65	36	83	5	97	126	13
ION	EAT	NV10-80	15	66	24	73	12	316	147	37
ION	EAT	EAT200MC	4	89	2	82	15	24	31	28
PVD	VAR	VR-3280	4	93	4	74	11	106	181	65
STEP	GCA	GCA-ALS	9	80	13	90	9	33	24	10
STEP	ULT	UT-1100	17	83	2	79	8	117	93	53

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30 TO <45 HOURS TRAINING EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	PKN	PKN-661	0		36.0	15.2	1.8	0.0	0.0	0.0	0.0	0.0
CLEAN	FSI	SATURN	9		171.6	77.1	0.9	0.3	0.0	8.5	1.0	0.0
ETCH	AMT	AMT-8330	4		313.0	232.1	3.6	1.4	336.0	4.2	0.8	31.3
ION	EAT	MV10-80	0		29.4	31.8	1.3	0.4	0.0	0.0	0.0	0.0
ION	EAT	EAT200MC	25		28.1	28.1	0.5	0.0	0.0	24.8	0.8	78.0
PVD	VAR	VR-3280	61		93.0	67.0	16.0	0.0	0.0	61.2	0.0	68.0
STEP	GCA	GCA-ALS	0		91.5	74.2	1.6	0.1	160.0	0.0	1.4	47.0
STEP	ULT	UT-1100	39		16.6	4.8	1.4	0.0	0.0	0.0	0.0	0.0

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30 TO <45 HOURS TRAINING EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	PKN	PKN-661	0.0	0.0	2.0	0.0	49.0	15.6	0.0	3.0
CLEAN	FSI	SATURN	0.0	0.0	4.1	0.1	52.7	43.5	144.3	9.0
ETCH	AMT	AMT-8330	31.3	4.9	6.4	3.3	18.3	11.4	26.4	13.3
ION	EAT	NV10-80	0.0	0.0	17.0	4.2	29.7	8.0	0.0	37.0
ION	EAT	EAT200MC	78.0	0.0	5.0	0.0	150.0	0.0	61.4	27.5
PVD	VAR	VR-3280	68.0	0.0	15.0	0.0	55.5	6.4	0.0	65.3
STEP	GCA	GCA-ALS	47.0	0.0	4.5	2.1	23.8	14.4	36.4	10.0
STEP	ULT	UT-1100	37.0	0.0	2.0	0.0	41.0	0.0	0.0	0.0

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30 TO <45 HOURS TRAINING EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	PKN	PKN-661	0.0	49.0	15.6	0.0		0	208.5
CLEAN	FSI	SATURN	82.2	52.6	43.5	72.2	0.36	75	130.2
ETCH	AMT	AMT-8330	19.8	18.3	11.4	16.3	0.69	26	96.6
ION	EAT	NV10-80	0.0	29.6	8.0	0.0		0	316.0
ION	EAT	EAT200MC	46.3	150.0	0.0	34.0	2.44	85	24.0
PVD	VAR	VR-3280	0.0	55.5	6.4	0.0		0	106.3
STEP	GCA	GCA-ALS	27.6	23.8	14.4	24.5	0.65	26	33.0
STEP	ULT	UT-1100	0.0	0.0	0.0	0.0		0	44.7

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45+ HOURS TRAINING EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	NUMBER	PRODUCTIVE TIME	PRODUCTIVE TIME S.D.	AVAILABLE TIME	AVAILABLE TIME S.D.	UNSCHEDULED DOWNTIME	UNSCHEDULED DOWN S.D.	SCHEDULED DOWNTIME
ALIGN	CAN	MPA500FA	3	76	5	79	15	226	149	54
CLEAN	FSI	FSI-8231	2	67	0	74	0	46	0	195
CVD	BTU	BTU-BDF4	2	63	10	68	40	236	301	218
EPI	GEN	GEN-2	2	66	6	79	6	156	74	130
ETCH	BRN	BRN-2100	3	65	26	93	4	68	46	14
ETCH	TEG	TEG-901	3	48	19	93	2	89	3	15
TRACK	EAT	EAT45/60	3	75	4	76	19	223	155	103

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45+ HOURS TRAINING EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	SCHEDULED DOWN	S.D.	MTBF	S.D.	MTTR	S.D.	MTBS	S.D.	MTFS	S.D.
ALIGN	CAN	MPA500FA	41		39.4	22.4	2.7	0.9	2.8	1.5	0.4	0.2
CLEAN	FSI	FSI-8231	0		0.0	0.0	0.0	0.0	13.0	15.6	0.0	0.0
CVD	BTU	BTU-BDF4	244		23.9	16.8	2.1	0.2	20.9	22.8	1.3	0.8
EPI	GEM	GEM-2	0		50.3	27.9	2.4	1.1	1.5	0.3	0.0	0.0
ETCH	BRN	BRN-2100	10		99.7	9.6	1.9	0.7	4.0	0.6	0.0	0.0
ETCH	TEG	TEG-901	8		58.6	14.9	4.2	2.1	8.8	2.0	0.1	0.1
TRACK	EAT	EAT45/60	115		41.8	21.8	1.8	1.4	21.7	34.9	0.3	0.1

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45+ HOURS TRAINING EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MTBM	MTBM S.D.	MTFM	MTFM S.D.	MAX FAB RATE	MAX FAB S.D.	RATED THRUPUT	RATED THRUPUT S.D.
ALIGN	CAN	NPA500FA	178.7	18.5	2.5	0.9	28.5	7.8	48.3	20.2
CLEAN	FSI	FSI-8231	720.0	0.0	2.2	1.1	68.0	15.6	226.0	246.1
CVD	BTU	BTU-BDF4	384.0	475.2	1.9	0.9	23.4	11.9	49.0	1.4
EPI	GEN	GEM-2	720.0	0.0	4.0	0.0	11.0	1.4	14.5	3.5
ETCH	BRN	BRN-2100	520.0	346.4	1.9	1.0	36.3	26.8	93.3	75.1
ETCH	TEG	TEG-901	520.0	346.4	1.9	1.0	32.3	12.7	50.0	52.0
TRACK	EAT	EAT45/60	520.0	346.4	5.6	4.2	38.0	18.0	53.3	25.2

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454 HOURS TRAINING EQUIPMENT DATA

EQUIP TYPE	MFG	MODEL #	MAX FAB RATE (4" EQUIV.)	MAX FAB (4" EQUIV.) S.D.	RATED THRUPUT (4" EQUIV.) S.D.	NET THRUPUT	MAX FAB/ RATED THRUPUT	DELAY TIME	DELAY S.D.
ALIGN	CAN	MPA500FA	44.5	12.2	31.6	35.1	0.59	57	38.0
CLEAN	FSI	FSI-8231	106.2	24.3	384.4	78.8	0.30	163	6.0
CVD	BTU	BTU-BDF4	36.6	18.6	2.2	24.9	0.48	57	57.9
EPI	GEM	GEN-2	17.2	2.2	5.5	13.6	0.76	39	18.4
ETCH	BRN	BRN-2100	56.8	41.8	117.3	53.0	0.39	26	6.5
ETCH	TEG	TEG-901	50.5	19.8	81.2	46.8	0.65	23	5.2
TRACK	EAT	EAT45/60	59.4	28.1	39.3	45.0	0.71	60	30.8

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CORPORATE OVERHEAD

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CORPORATE OVERHEAD ITEMS

ITEM	FREQUENCY MENTIONED BY RESPONDENTS
Administrative/Corporate	47
Payroll Related (vacation, (training, fringes)	31
Indirect Material	20
Utilities	10
Manufacturing	10
Rent/Utilities	9
Depreciation/Amortization	8
Operation & Maintenance	7
Engineering	7
Computer/MIS	6
Taxes	6
Communication	5
R&D	4
Allocated Expenses	4
Sales	2

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