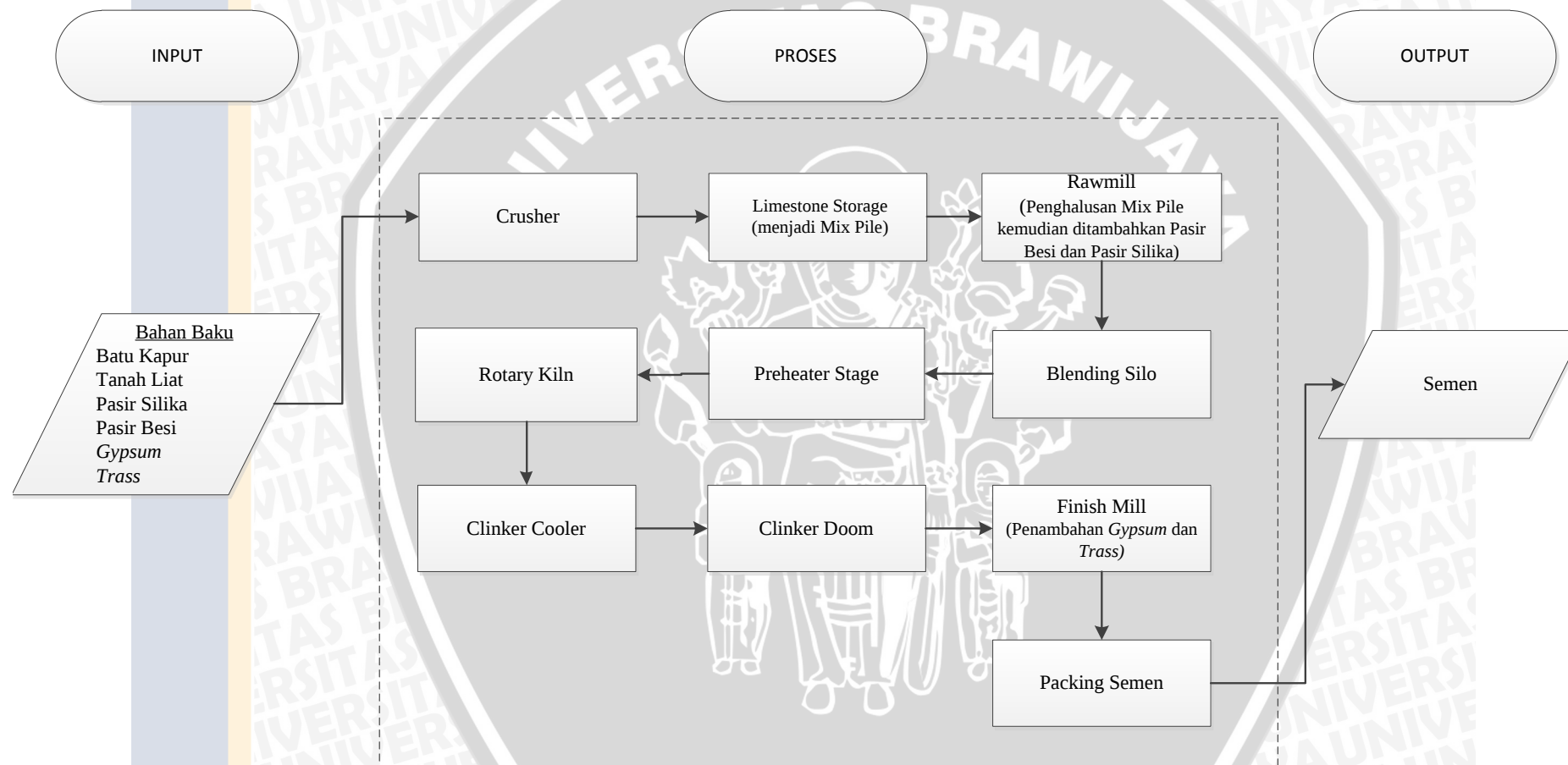


LAMPIRAN 1



Gambar Diagram Sistem Proses Pembuatan Semen

LAMPIRAN 2 : Distribusi yang Mendasari Data

Uji Distribusi Lama Waktu Perbaikan Mesin *Clinker Cooler* Dengan Menggunakan
Software Minitab 16

Distribution Identification for Tr Main Gear

Descriptive Statistics

N	N*	Mean	StDev	Median	Minimum	Maximum	Skewness	Kurtosis
8	0	18,72	5,80303	20,53	8,21	23,83	-1,14549	0,0336661

Goodness of Fit Test

Distribution	AD	P
Lognormal	0,794	0,022
Exponential	1,931	0,008
Weibull	0,683	0,061

Table of Percentiles

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	1	7,17999	1,96184	4,2 12,3
Exponential	1	0,18814	0,06652	0,1 0,4
Weibull	1	7,37190	2,62929	3,7 14,8

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	5	9,3508	2,02107	6,1 14,3
Exponential	5	0,9602	0,33949	0,5 1,9
Weibull	5	10,6166	2,60606	6,6 17,2

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	10	10,7649	2,03506	7,4 15,6
Exponential	10	1,9723	0,69733	1,0 3,9
Weibull	10	12,4722	2,46831	8,5 18,4

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	50	17,6908	2,42446	13,5 23,1
Exponential	50	12,9757	4,58761	6,5 25,9
Weibull	50	19,0120	1,75952	15,9 22,8

Distribution Identification for Tr Firebrick Lining

Descriptive Statistics

N	N*	Mean	StDev	Median	Minimum	Maximum	Skewness	Kurtosis
15	0	15,842	7,22972	19,42	0,92	23,44	-0,675876	-0,668818

Goodness of Fit Test

Distribution	AD	P
Lognormal	1,503	<0,005
Exponential	2,103	0,006
Weibull	0,939	0,015

Table of Percentiles

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	1	1,79784	0,77184	0,8 4,2
Exponential	1	0,15922	0,04111	0,1 0,3
Weibull	1	2,31621	1,16597	0,9 6,2

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	5	3,20404	1,09177	1,6 6,2
Exponential	5	0,81259	0,20981	0,5 1,3
Weibull	5	4,75195	1,64632	2,4 9,4

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	10	4,35990	1,30300	2,4 7,8
Exponential	10	1,66912	0,43097	1,0 2,8
Weibull	10	6,52681	1,82366	3,8 11,3

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	50	12,9236	2,82926	8,4 19,8
Exponential	50	10,9808	2,83524	6,6 18,2
Weibull	50	14,9765	1,97536	11,6 19,4

Distribution Identification for Tr Drive Gear

Descriptive Statistics

N	N*	Mean	StDev	Median	Minimum	Maximum	Skewness	Kurtosis
16	0	16,7431	6,85769	18,03	1,86	23,44	-0,830400	-0,230565

Goodness of Fit Test

Distribution	AD	P
Lognormal	1,491	<0,005
Exponential	2,655	<0,003
Weibull	0,978	0,011

Table of Percentiles

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	1	3,00297	0,99404	1,6 5,7
Exponential	1	0,16827	0,04207	0,1 0,3
Weibull	1	3,48097	1,40572	1,6 7,7

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	5	4,76013	1,25093	2,8 8,0
Exponential	5	0,85881	0,21470	0,5 1,4
Weibull	5	6,30989	1,75444	3,7 10,9

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	10	6,08520	1,40283	3,9 9,6
Exponential	10	1,76406	0,44102	1,1 2,9
Weibull	10	8,20547	1,84053	5,3 12,7

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	50	14,4712	2,44556	10,4 20,2
Exponential	50	11,6054	2,90136	7,1 18,9
Weibull	50	16,3179	1,72837	13,3 20,1

Distribution Identification for Tr Tyre & Roller

Descriptive Statistics

N	N*	Mean	StDev	Median	Minimum	Maximum	Skewness	Kurtosis
18	0	13,1378	7,42290	13,325	0,42	23,44	-0,124285	-1,21915

Goodness of Fit Test

Distribution	AD	P
Lognormal	1,122	<0,005
Exponential	1,342	0,043
Weibull	0,497	0,207

Table of Percentiles

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	1	0,956204	0,441374	0,4 2,4
Exponential	1	0,132039	0,031122	0,1 0,2
Weibull	1	0,980454	0,588194	0,3 3,2

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	5	1,89250	0,69379	0,9 3,9
Exponential	5	0,67388	0,15884	0,4 1,1
Weibull	5	2,54834	1,05660	1,1 5,7

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	10	2,72328	0,87608	1,4 5,1
Exponential	10	1,38420	0,32626	0,9 2,2
Weibull	10	3,88559	1,30369	2,0 7,5

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	50	9,8319	2,32144	6,2 15,6
Exponential	50	9,1064	2,14640	5,7 14,5
Weibull	50	11,7194	1,88770	8,5 16,1

Distribution Identification for Tf Main Gear

Descriptive Statistics

N	N*	Mean	StDev	Median	Minimum	Maximum	Skewness	Kurtosis
7	0	2460,57	2892,08	1127	23	7291	0,909734	-0,702688

Goodness of Fit Test

Distribution	AD	P
Lognormal	0,343	>0,250
Exponential	1,630	0,016
Weibull	0,332	0,398

Table of Percentiles

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	1	2,8289	4,97315	0,1 88,7
Exponential	1	24,7296	9,34690	11,8 51,9
Weibull	1	0,7382	2,01286	0,0 154,6

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	5	13,758	19,1126	0,9 209,4
Exponential	5	126,211	47,7032	60,2 264,7
Weibull	5	11,559	21,9214	0,3 475,6

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	10	31,971	38,8149	3,0 345,3
Exponential	10	259,247	97,9862	123,6 543,8
Weibull	10	38,953	60,0692	1,9 800,2

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	50	625,97	549,134	112,2 3493,6
Exponential	50	1705,54	644,633	813,1 3577,5
Weibull	50	936,24	707,016	213,1 4113,3

Distribution Identification for Tf Firebrick Lining

Descriptive Statistics

N	N*	Mean	StDev	Median	Minimum	Maximum	Skewness	Kurtosis
14	0	1002,43	2255,28	379,5	4	8763	3,62056	13,3350

Goodness of Fit Test

Distribution	AD	P
Lognormal	0,874	0,021
Exponential	2,568	<0,003
Weibull	0,804	0,028

Table of Percentiles

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	1	6,6859	5,83395	1,2 37,0
Exponential	1	10,0747	2,69259	6,0 17,0
Weibull	1	0,6534	0,97904	0,0 12,3

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	5	20,7610	14,3744	5,3 80,6
Exponential	5	51,4179	13,7420	30,5 86,8
Weibull	5	7,6661	8,1376	1,0 61,4

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	10	37,982	23,0597	11,6 124,8
Exponential	10	105,616	28,2272	62,6 178,3
Weibull	10	22,743	19,9355	4,1 126,8

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	50	319,857	142,131	133,9 764,2
Exponential	50	694,831	185,701	411,5 1173,2
Weibull	50	391,559	184,930	155,2 988,1

Distribution Identification for Tf Drive Gear

Descriptive Statistics

N	N*	Mean	StDev	Median	Minimum	Maximum	Skewness	Kurtosis
15	0	1052,8	1253,65	840	8	4656	1,93390	4,32934

Goodness of Fit Test

Distribution	AD	P
Lognormal	0,651	0,072
Exponential	1,291	0,048
Weibull	0,426	>0,250

Table of Percentiles

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	1	4,1526	4,05592	0,6 28,2
Exponential	1	10,5810	2,73200	6,4 17,6
Weibull	1	1,3600	2,08112	0,1 27,3

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	5	15,4610	11,9856	3,4 70,6
Exponential	5	54,0016	13,9431	32,6 89,6
Weibull	5	13,4123	14,2811	1,7 108,1

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	10	31,159	21,1858	8,2 118,1
Exponential	10	110,924	28,6403	66,9 184,0
Weibull	10	36,852	31,9233	6,7 201,3

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	50	369,144	183,855	139,1 979,8
Exponential	50	729,745	188,419	439,9 1210,5
Weibull	50	519,125	221,659	224,8 1198,7

Distribution Identification for Tf Tyre & Roller

Descriptive Statistics

N	N*	Mean	StDev	Median	Minimum	Maximum	Skewness	Kurtosis
17	0	778,941	787,162	600	7	2040	0,666643	-1,26660

Goodness of Fit Test

Distribution	AD	P
Lognormal	0,671	0,066
Exponential	1,358	0,041
Weibull	0,597	0,110

Table of Percentiles

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	1	5,13480	4,30503	1,0 26,6
Exponential	1	7,82862	1,89872	4,9 12,6
Weibull	1	1,86053	2,46457	0,1 25,0

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	5	17,1156	11,3946	4,6 63,1
Exponential	5	39,9545	9,6904	24,8 64,3
Weibull	5	15,1033	13,9127	2,5 91,9

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	10	32,5185	18,9946	10,3 102,2
Exponential	10	82,0696	19,9048	51,0 132,0
Weibull	10	38,0804	28,5222	8,8 165,3

Distribution	Percent	Percentiles	Standard Error	95,0% CI
Lognormal	50	312,886	134,062	135,1 724,6
Exponential	50	539,921	130,950	335,6 868,5
Weibull	50	428,351	157,446	208,4 880,4

LAMPIRAN 3 : Perhitungan Serta Grafik Probabilitas MTTF dan MTTR

Perhitungan Nilai Parameter Komponen, *MTTF*, dan *MTTR* Dengan Menggunakan *Software Minitab 16*

Distribution Analysis: Tr Main Gear

Variable: Tr Main Gear

Censoring Information Count
Uncensored value 8

Estimation Method: Maximum Likelihood

Distribution: Weibull

Parameter Estimates

Parameter	Estimate	Standard Error	95,0% Normal CI	
			Lower	Upper
Shape	4,46872	1,41393	2,40357	8,30823
Scale	20,6370	1,69506	17,5684	24,2416

Log-Likelihood = -24,514

Goodness-of-Fit
Anderson-Darling (adjusted) = 2,100

Characteristics of Distribution

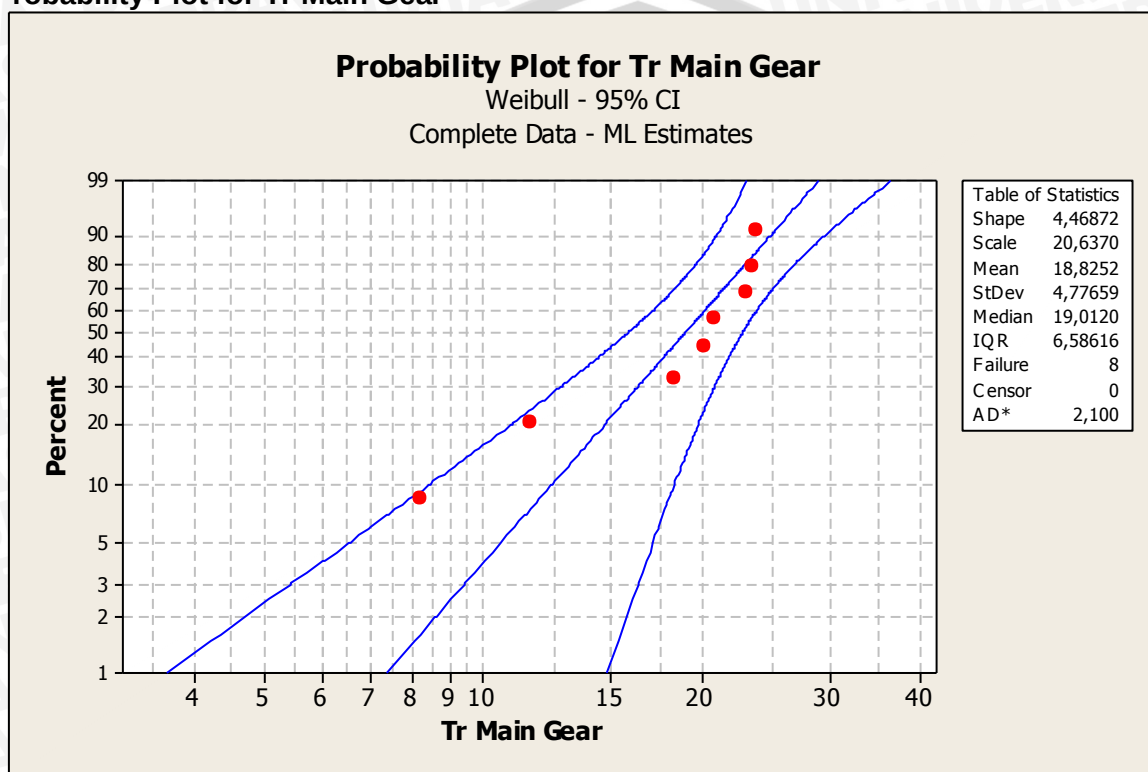
	Estimate	Standard Error	95,0% Normal CI	
			Lower	Upper
Mean(MTTF)	18,8252	1,67257	15,8165	22,4061
Standard Deviation	4,77659	1,23920	2,87269	7,94231
Median	19,0120	1,75952	15,8581	22,7931
First Quartile(Q1)	15,6158	2,11946	11,9683	20,3748
Third Quartile(Q3)	22,2019	1,75672	19,0125	25,9264
Interquartile Range(IQR)	6,58616	1,82181	3,82984	11,3262

Table of Percentiles

Percent	Percentile	Standard Error	95,0% Normal CI	
			Lower	Upper
1	7,37190	2,62929	3,66426	14,8311
2	8,61857	2,66015	4,70662	15,7820
3	9,44793	2,65160	5,45060	16,3768
4	10,0878	2,63116	6,05035	16,8194
5	10,6166	2,60606	6,56211	17,1764
6	11,0717	2,57901	7,01357	17,4780
7	11,4739	2,55124	7,42069	17,7410
8	11,8360	2,52335	7,79358	17,9753
9	12,1668	2,49565	8,13914	18,1876
10	12,4722	2,46831	8,46227	18,3823
20	14,7528	2,22334	10,9798	19,8224
30	16,3853	2,02649	12,8582	20,8800
40	17,7568	1,87143	14,4429	21,8311
50	19,0120	1,75952	15,8581	22,7931
60	20,2372	1,70016	17,1648	23,8595
70	21,5123	1,71279	18,4041	25,1454
80	22,9560	1,83573	19,6258	26,8512
90	24,8715	2,17219	20,9586	29,5150

91	25,1218	2,22892	21,1120	29,8933
92	25,3917	2,29300	21,2728	30,3082
93	25,6861	2,36619	21,4431	30,7688
94	26,0121	2,45099	21,6257	31,2881
95	26,3802	2,55128	21,8251	31,8859
96	26,8077	2,67338	22,0483	32,5946
97	27,3262	2,82896	22,3079	33,4734
98	28,0035	3,04353	22,6309	34,6517
99	29,0447	3,39548	23,0970	36,5238

Probability Plot for Tr Main Gear



Distribution Analysis: Tr Firebrick Lining

Variable: Tr Firebrick Lining

Censoring Information Count
Uncensored value 15

Estimation Method: Maximum Likelihood

Distribution: Weibull

Parameter Estimates

Parameter	Estimate	Standard Error	95,0% Normal CI	
			Lower	Upper
Shape	2,26816	0,514904	1,45358	3,53922
Scale	17,6031	2,07201	13,9765	22,1708

Log-Likelihood = -51,615

Goodness-of-Fit

Anderson-Darling (adjusted) = 1,694

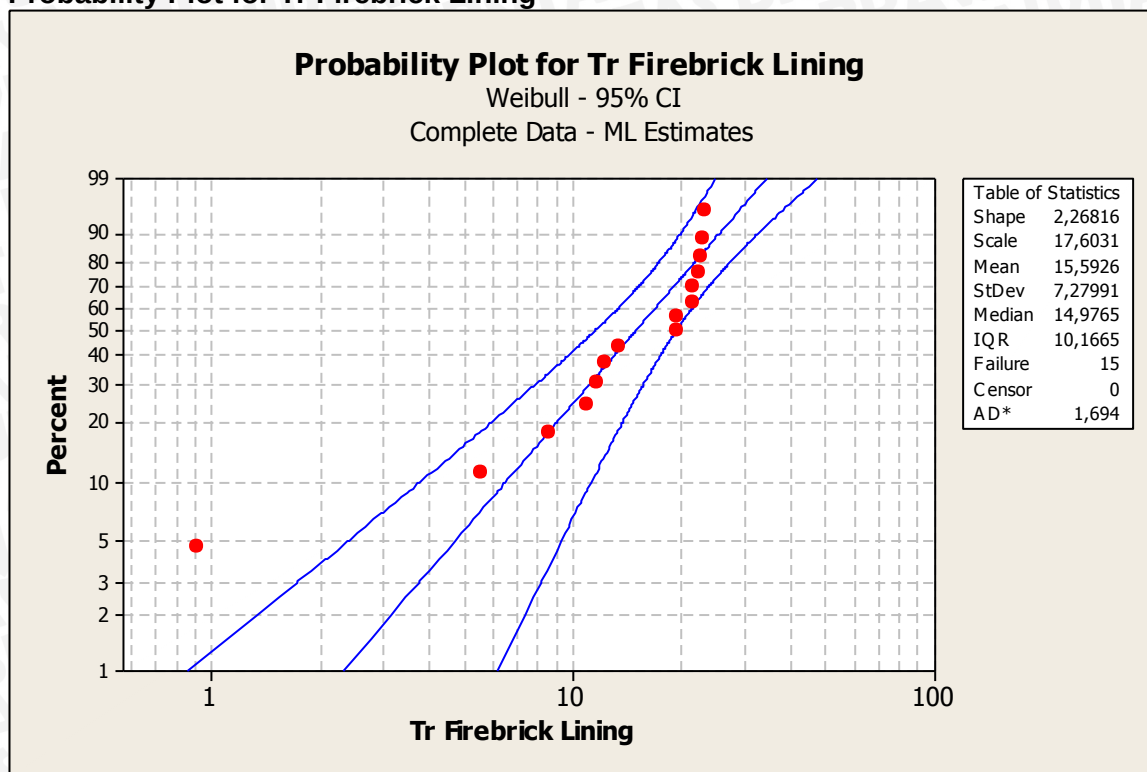
Characteristics of Distribution

	Estimate	Standard Error	95,0% Normal CI	
			Lower	Upper
Mean(MTTF)	15,5926	1,84366	12,3673	19,6592
Standard Deviation	7,27991	1,49859	4,86300	10,8980
Median	14,9765	1,97536	11,5649	19,3947
First Quartile(Q1)	10,1632	1,95151	6,97567	14,8073
Third Quartile(Q3)	20,3297	2,31494	16,2632	25,4131
Interquartile Range(IQR)	10,1665	1,99714	6,91767	14,9412

Table of Percentiles

Percent	Percentile	Standard Error	95,0% Normal CI	
			Lower	Upper
1	2,31621	1,16597	0,863550	6,21251
2	3,15113	1,37266	1,34176	7,40045
3	3,77643	1,49580	1,73752	8,20792
4	4,29686	1,58173	2,08839	8,84076
5	4,75195	1,64632	2,40975	9,37071
6	5,16162	1,69703	2,70975	9,83203
7	5,53751	1,73799	2,99336	10,2440
8	5,88713	1,77171	3,26390	10,6187
9	6,21566	1,79989	3,52373	10,9641
10	6,52681	1,82366	3,77456	11,2859
20	9,08634	1,93564	5,98494	13,7949
30	11,1736	1,95711	7,92684	15,7502
40	13,0909	1,95928	9,76279	17,5537
50	14,9765	1,97536	11,5649	19,3947
60	16,9375	2,03640	13,3817	21,4383
70	19,1044	2,18557	15,2670	23,9062
80	21,7125	2,50135	17,3240	27,2127
90	25,4264	3,19862	19,8703	32,5361
91	25,9330	3,31344	20,1881	33,3127
92	26,4848	3,44327	20,5273	34,1712
93	27,0932	3,59194	20,8935	35,1326
94	27,7748	3,76499	21,2945	36,2272
95	28,5544	3,97097	21,7420	37,5014
96	29,4734	4,22406	22,2555	39,0321
97	30,6070	4,55061	22,8699	40,9615
98	32,1197	5,00904	23,6607	43,6029
99	34,5148	5,78237	24,8543	47,9303

Probability Plot for Tr Firebrick Lining



Distribution Analysis: Tr Drive Gear

Variable: Tr Drive Gear

Censoring Information Count
Uncensored value 16

Estimation Method: Maximum Likelihood

Distribution: Weibull

Parameter Estimates

Parameter	Estimate	Standard Error	95,0% Normal CI Lower	Upper
Shape	2,74030	0,602315	1,78117	4,21591
Scale	18,6531	1,76162	15,5011	22,4460

Log-Likelihood = -53,756

Goodness-of-Fit

Anderson-Darling (adjusted) = 1,683

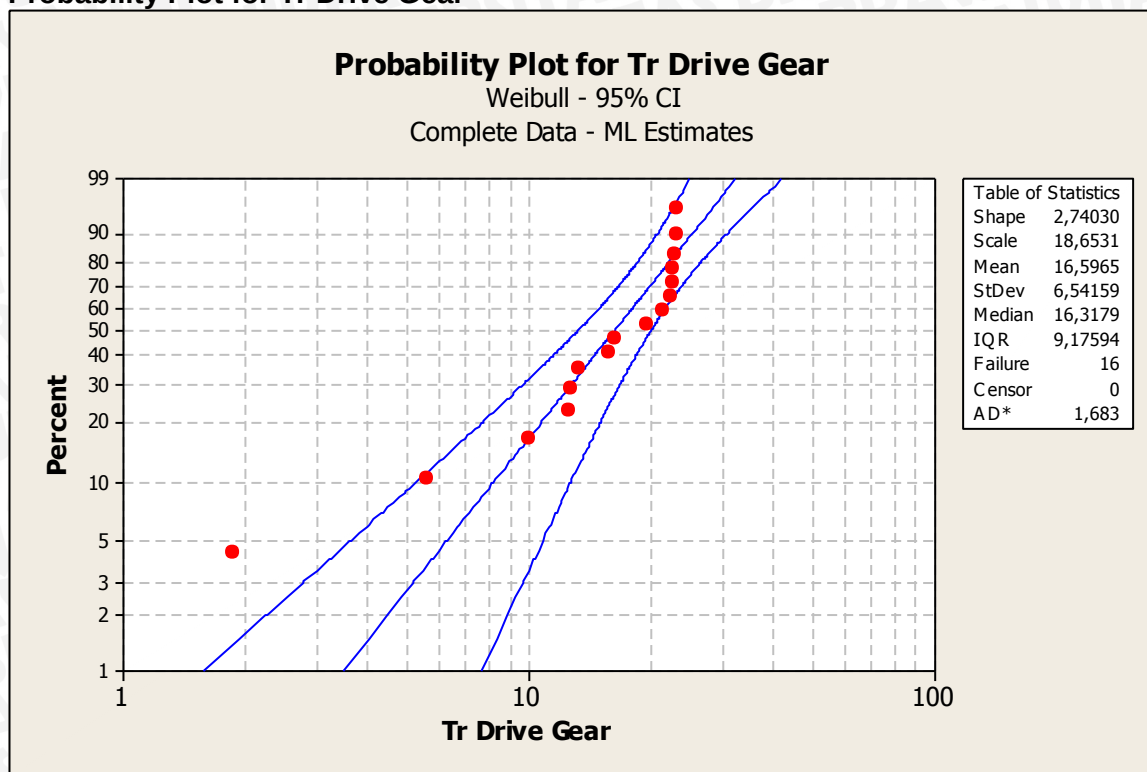
Characteristics of Distribution

	Estimate	Standard Error	95,0% Normal CI Lower	Upper
Mean(MTTF)	16,5965	1,60605	13,7292	20,0626
Standard Deviation	6,54159	1,23068	4,52424	9,45847
Median	16,3179	1,72837	13,2589	20,0827
First Quartile(Q1)	11,8385	1,82578	8,75023	16,0166
Third Quartile(Q3)	21,0144	1,91753	17,5730	25,1297
Interquartile Range(IQR)	9,17594	1,72617	6,34634	13,2672

Table of Percentiles

Percent	Percentile	Standard Error	95,0% Normal CI Lower	Upper
1	3,48097	1,40572	1,57746	7,68141
2	4,49113	1,56967	2,26390	8,90950
3	5,21704	1,65813	2,79825	9,72662
4	5,80542	1,71496	3,25374	10,3582
5	6,30989	1,75444	3,65889	10,8816
6	6,75690	1,78301	4,02840	11,3335
7	7,16170	1,80417	4,37102	11,7341
8	7,53398	1,81998	4,69245	12,0962
9	7,88033	1,83180	4,99667	12,4282
10	8,20547	1,84053	5,28657	12,7360
20	10,7903	1,84599	7,71635	15,0889
30	12,8046	1,80151	9,71867	16,8703
40	14,5980	1,75497	11,5335	18,4767
50	16,3179	1,72837	13,2589	20,0827
60	18,0674	1,74335	14,9542	21,8288
70	19,9604	1,83090	16,6760	23,8917
80	22,1907	2,04736	18,5198	26,5892
90	25,2890	2,54502	20,7620	30,8031
91	25,7053	2,62719	21,0390	31,4065
92	26,1572	2,72001	21,3342	32,0705
93	26,6536	2,82614	21,6521	32,8103
94	27,2074	2,94942	21,9994	33,6482
95	27,8380	3,09577	22,3861	34,6176
96	28,5775	3,27496	22,8285	35,7743
97	29,4843	3,50510	23,3560	37,2205
98	30,6854	3,82615	24,0323	39,1803
99	32,5675	4,36245	25,0475	42,3452

Probability Plot for Tr Drive Gear



Distribution Analysis: Tr Tyre & Roller

Variable: Tr Tyre & Roller

Censoring Information Count
Uncensored value 18

Estimation Method: Maximum Likelihood

Distribution: Weibull

Parameter Estimates

Parameter	Estimate	Standard Error	95,0% Normal CI	
			Lower	Upper
Shape	1,70643	0,344547	1,14874	2,53487
Scale	14,5273	2,08702	10,9622	19,2517

Log-Likelihood = -61,513

Goodness-of-Fit

Anderson-Darling (adjusted) = 1,156

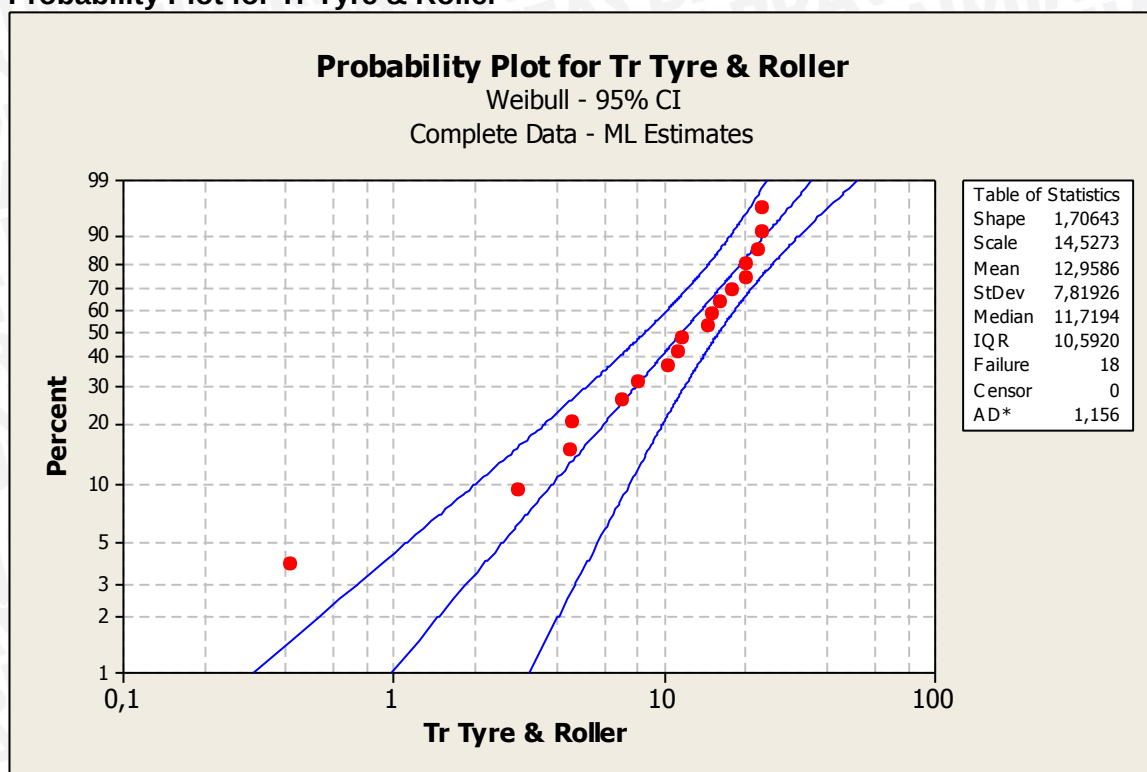
Characteristics of Distribution

	Estimate	Standard Error	95,0% Normal CI	
			Lower	Upper
Mean(MTTF)	12,9586	1,82138	9,83826	17,0686
Standard Deviation	7,81926	1,63857	5,18551	11,7907
Median	11,7194	1,88770	8,54669	16,0699
First Quartile(Q1)	7,00000	1,62690	4,43881	11,0390
Third Quartile(Q3)	17,5920	2,42995	13,4196	23,0616
Interquartile Range(IQR)	10,5920	1,95282	7,37975	15,2024

Table of Percentiles

Percent	Percentile	Standard Error	95,0% Normal CI	
			Lower	Upper
1	0,980454	0,588194	0,302534	3,17746
2	1,47613	0,767400	0,532854	4,08923
3	1,87766	0,888537	0,742704	4,74699
4	2,22918	0,981263	0,940704	5,28245
5	2,54834	1,05660	1,13065	5,74363
6	2,84442	1,12004	1,31467	6,15417
7	3,12299	1,17474	1,49411	6,52768
8	3,38776	1,22274	1,66990	6,87281
9	3,64132	1,26539	1,84272	7,19546
10	3,88559	1,30369	2,01309	7,49982
20	6,03175	1,55143	3,64339	9,98576
30	7,93978	1,68717	5,23518	12,0416
40	9,80003	1,78658	6,85568	14,0089
50	11,7194	1,88770	8,54669	16,0699
60	13,8018	2,02670	10,3501	18,4047
70	16,1967	2,25514	12,3285	21,2786
80	19,1999	2,67157	14,6170	25,2197
90	23,6837	3,55902	17,6416	31,7952
91	24,3129	3,70615	18,0336	32,7786
92	25,0029	3,87321	18,4557	33,8727
93	25,7693	4,06546	18,9153	35,1068
94	26,6344	4,29057	19,4232	36,5228
95	27,6327	4,56044	19,9960	38,1860
96	28,8209	4,89493	20,6605	40,2046
97	30,3036	5,33119	21,4657	42,7802
98	32,3104	5,95238	22,5180	46,3612
99	35,5515	7,02241	24,1392	52,3593

Probability Plot for Tr Tyre & Roller



Distribution Analysis: Tf Main Gear

Variable: Tf Main Gear

Censoring Information Count
Uncensored value 7

Estimation Method: Maximum Likelihood

Distribution: Weibull

Parameter Estimates

Parameter	Estimate	Standard Error	95,0% Normal CI	
			Lower	Upper
Shape	0,592496	0,186316	0,319901	1,09737
Scale	1737,95	1167,00	466,094	6480,39

Log-Likelihood = -59,974

Goodness-of-Fit
Anderson-Darling (adjusted) = 1,983

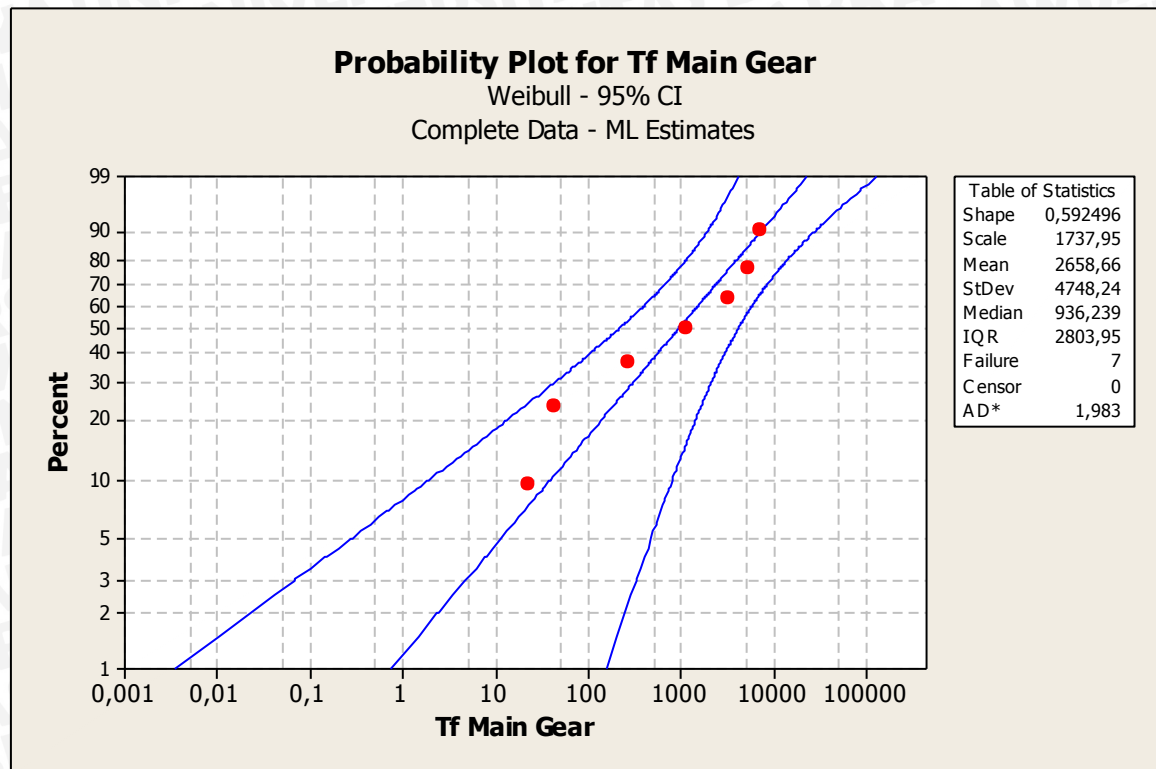
Characteristics of Distribution

	Estimate	Standard Error	95,0% Normal CI	
			Lower	Upper
Mean (MTTF)	2658,66	1785,83	712,698	9917,88
Standard Deviation	4748,24	4174,63	847,537	26601,5
Median	936,239	707,016	213,102	4113,25
First Quartile(Q1)	212,228	229,104	25,5809	1760,72
Third Quartile(Q3)	3016,18	1927,19	862,150	10551,9
Interquartile Range (IQR)	2803,95	1790,29	802,214	9800,58

Table of Percentiles

Percent	Percentile	Standard Error	95,0% Normal CI	
			Lower	Upper
1	0,738186	2,01286	0,0035248	154,595
2	2,39855	5,67994	0,0231335	248,689
3	4,79617	10,3550	0,0696839	330,108
4	7,86209	15,8112	0,152656	404,912
5	11,5587	21,9214	0,280920	475,592
6	15,8632	28,6028	0,463017	543,481
7	20,7615	35,7970	0,707315	609,400
8	26,2450	43,4605	1,02210	673,904
9	32,3092	51,5600	1,41564	737,394
10	38,9526	60,0692	1,89623	800,172
20	138,227	164,623	13,3922	1426,71
30	305,052	301,933	43,8405	2122,62
40	559,329	477,056	105,117	2976,21
50	936,239	707,016	213,102	4113,25
60	1499,54	1030,75	389,817	5768,40
70	2377,39	1539,41	668,233	8458,10
80	3880,23	2480,88	1108,23	13585,8
90	7101,93	4823,27	1876,22	26882,5
91	7658,99	5266,77	1989,92	29478,6
92	8301,87	5790,71	2115,66	32576,6
93	9056,04	6420,91	2256,42	36346,0
94	9959,61	7196,55	2416,50	41048,6
95	11073,1	8180,91	2602,50	47113,5
96	12500,5	9484,92	2825,33	55307,9
97	14443,6	11328,0	3105,17	67183,8
98	17373,1	14236,2	3486,36	86573,5
99	22879,6	20051,0	4106,55	127473

Probability Plot for Tf Main Gear



Distribution Analysis: Tf Firebrick Lining

Variable: Tf Firebrick Lining

Censoring Information Count
Uncensored value 14

Estimation Method: Maximum Likelihood

Distribution: Weibull

Parameter Estimates

Parameter	Estimate	Standard Error	95,0% Normal CI	
			Lower	Upper
Shape	0,661955	0,123977	0,458572	0,955539
Scale	681,174	291,389	294,534	1575,36

Log-Likelihood = -107,532

Goodness-of-Fit

Anderson-Darling (adjusted) = 1,784

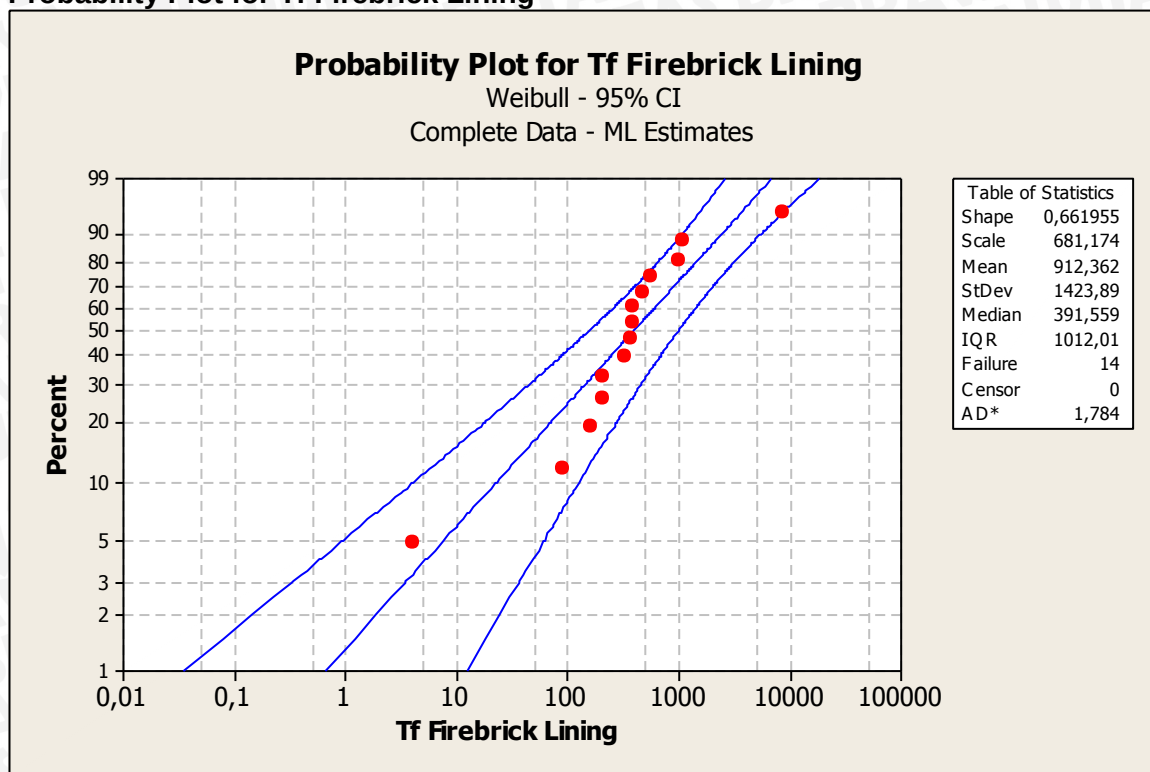
Characteristics of Distribution

	Estimate	Standard Error	95,0% Normal CI	
			Lower	Upper
Mean(MTTF)	912,362	372,284	410,053	2029,99
Standard Deviation	1423,89	699,674	543,514	3730,28
Median	391,559	184,930	155,160	988,128
First Quartile(Q1)	103,717	66,1603	29,7081	362,097
Third Quartile(Q3)	1115,72	453,765	502,773	2475,94
Interquartile Range(IQR)	1012,01	408,607	458,672	2232,87

Table of Percentiles

Percent	Percentile	Standard Error	95,0% Normal CI	
			Lower	Upper
1	0,653428	0,979036	0,0346606	12,3186
2	1,87620	2,45623	0,144187	24,4135
3	3,48856	4,18343	0,332582	36,5927
4	5,42960	6,08939	0,602741	48,9108
5	7,66613	8,13759	0,957252	61,3939
6	10,1773	10,3057	1,39858	74,0588
7	12,9490	12,5789	1,92914	86,9178
8	15,9714	14,9465	2,55134	99,9814
9	19,2376	17,4006	3,26760	113,259
10	22,7426	19,9355	4,08037	126,759
20	70,6609	49,1114	18,0954	275,924
30	143,511	84,9669	44,9704	457,980
40	246,918	128,975	88,7023	687,338
50	391,559	184,930	155,160	988,128
60	596,902	260,591	253,683	1404,47
70	901,663	372,750	401,010	2027,37
80	1397,90	564,474	633,520	3084,56
90	2401,32	995,790	1065,29	5412,90
91	2569,23	1073,31	1132,95	5826,36
92	2761,43	1163,75	1208,97	6307,46
93	2984,93	1271,09	1295,58	6877,11
94	3250,16	1401,36	1396,03	7566,86
95	3573,56	1564,21	1515,35	8427,28
96	3983,23	1776,38	1662,00	9546,44
97	4533,13	2070,63	1851,77	11097,1
98	5347,93	2524,49	2120,20	13489,5
99	6842,40	3404,31	2580,53	18143,0

Probability Plot for Tf Firebrick Lining



Distribution Analysis: Tf Drive Gear

Variable: Tf Drive Gear

Censoring Information Count
Uncensored value 15

Estimation Method: Maximum Likelihood

Distribution: Weibull

Parameter Estimates

Parameter	Estimate	Standard Error	95,0% Normal CI	
			Lower	Upper
Shape	0,712172	0,151085	0,469900	1,07936
Scale	868,516	330,705	411,780	1831,85

Log-Likelihood = -117,899

Goodness-of-Fit

Anderson-Darling (adjusted) = 1,227

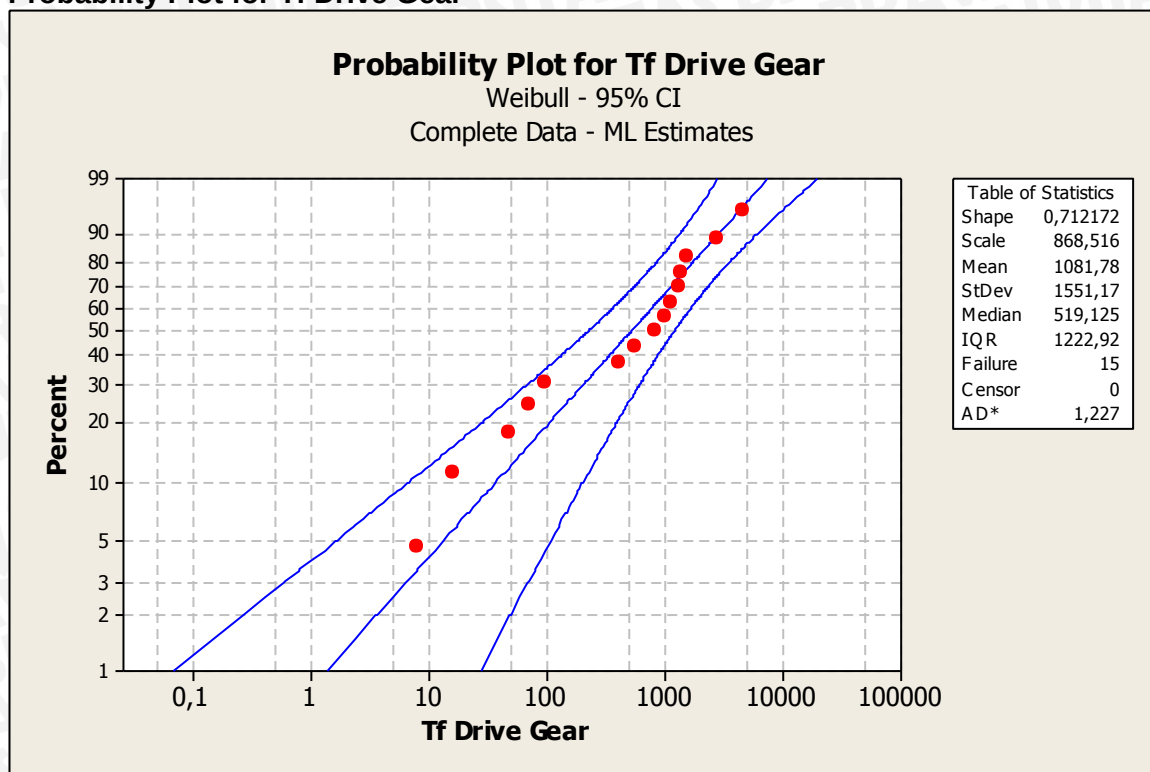
Characteristics of Distribution

	Estimate	Standard Error	95,0% Normal CI	
			Lower	Upper
Mean(MTTF)	1081,78	401,346	522,802	2238,41
Standard Deviation	1551,17	750,232	601,130	4002,65
Median	519,125	221,659	224,812	1198,74
First Quartile(Q1)	151,011	91,7456	45,9055	496,764
Third Quartile(Q3)	1373,93	498,809	674,425	2798,95
Interquartile Range(IQR)	1222,92	445,899	598,459	2498,97

Table of Percentiles

Percent	Percentile	Standard Error	95,0% Normal CI	
			Lower	Upper
1	1,35997	2,08112	0,0677590	27,2956
2	3,62502	4,81806	0,267897	49,0515
3	6,45185	7,81903	0,599941	69,3841
4	9,73326	10,9886	1,06482	88,9693
5	13,4123	14,2811	1,66403	108,105
6	17,4535	17,6703	2,39942	126,958
7	21,8328	21,1392	3,27305	145,636
8	26,5334	24,6761	4,28722	164,214
9	31,5430	28,2728	5,44436	182,750
10	36,8524	31,9233	6,74707	201,288
20	105,703	70,7993	28,4421	392,841
30	204,220	113,847	68,4824	609,002
40	338,180	162,748	131,677	868,530
50	519,125	221,659	224,812	1198,74
60	768,186	299,224	358,020	1648,26
70	1127,13	414,402	548,306	2317,01
80	1694,26	615,760	831,037	3454,14
90	2801,46	1080,97	1315,05	5967,98
91	2983,11	1165,26	1387,30	6414,54
92	3190,00	1263,68	1467,57	6933,98
93	3429,32	1380,52	1557,91	7548,69
94	3711,68	1522,31	1661,34	8292,44
95	4053,79	1699,40	1782,49	9219,24
96	4484,08	1929,74	1929,10	10423,0
97	5056,79	2248,31	2115,54	12087,3
98	5896,59	2737,44	2373,77	14647,5
99	7414,42	3677,89	2804,42	19602,5

Probability Plot for Tf Drive Gear



Distribution Analysis: Tf Tyre & Roller

Variable: Tf Tyre & Roller

Censoring Information Count
Uncensored value 17

Estimation Method: Maximum Likelihood

Distribution: Weibull

Parameter Estimates

Parameter	Estimate	Standard Error	95,0% Normal CI	
			Lower	Upper
Shape	0,778373	0,156349	0,525062	1,15389
Scale	685,957	224,557	361,114	1303,01

Log-Likelihood = -129,326

Goodness-of-Fit
Anderson-Darling (adjusted) = 1,299

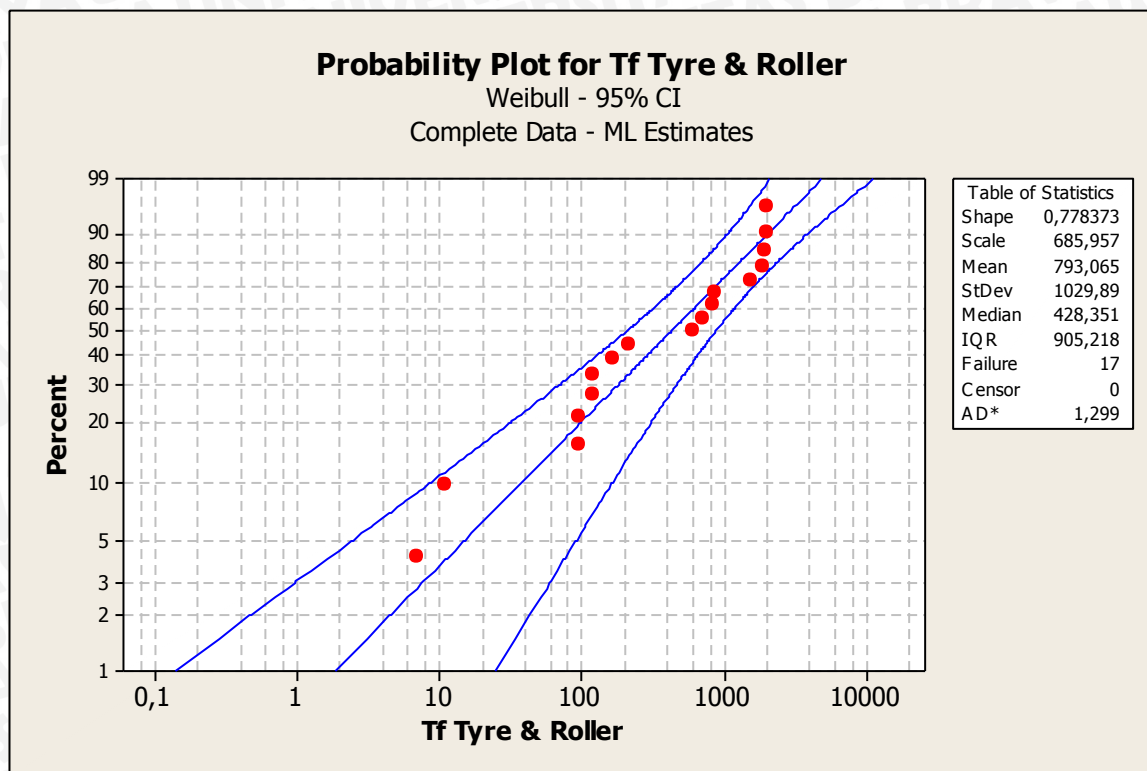
Characteristics of Distribution

	Estimate	Standard Error	95,0% Normal CI	
			Lower	Upper
Mean(MTTF)	793,065	250,572	426,941	1473,16
Standard Deviation	1029,89	425,896	457,921	2316,29
Median	428,351	157,446	208,416	880,379
First Quartile(Q1)	138,403	72,5909	49,5107	386,894
Third Quartile(Q3)	1043,62	325,618	566,188	1923,64
Interquartile Range(IQR)	905,218	285,110	488,265	1678,23

Table of Percentiles

Percent	Percentile	Standard Error	95,0% Normal CI	
			Lower	Upper
1	1,86053	2,46457	0,138702	24,9569
2	4,56252	5,24835	0,478686	43,4869
3	7,73185	8,10856	0,989943	60,3889
4	11,2634	11,0024	1,66034	76,4089
5	15,1033	13,9127	2,48297	91,8697
6	19,2187	16,8312	3,45353	106,950
7	23,5875	19,7533	4,56924	121,764
8	28,1944	22,6766	5,82833	136,389
9	33,0281	25,5998	7,22976	150,884
10	38,0804	28,5222	8,77304	165,292
20	99,8626	57,7741	32,1331	310,352
30	182,426	87,7463	71,0662	468,287
40	289,405	120,031	128,372	652,441
50	428,351	157,446	208,416	880,379
60	613,084	205,365	317,974	1182,08
70	870,698	275,124	468,709	1617,45
80	1264,20	394,936	685,335	2332,02
90	2002,84	665,111	1044,66	3839,87
91	2121,34	713,303	1097,47	4100,41
92	2255,56	769,316	1155,93	4401,28
93	2409,90	835,501	1221,50	4754,52
94	2590,84	915,375	1296,28	5178,22
95	2808,50	1014,53	1383,54	5701,08
96	3080,06	1142,58	1488,67	6372,65
97	3438,13	1318,16	1621,72	7289,00
98	3957,06	1584,82	1804,94	8675,28
99	4879,65	2089,50	2108,14	11294,8

Probability Plot for Tf Tyre & Roller



Lampiran 4

Kepada Yth : Kasi Roller Mill, Kiln & Coal Mill I, Bpk. Choirul Fuad

Dengan hormat,

Terlampir kami sampaikan data Mahasiswa/Siswa/i permohonan Penelitian / Riset dari :
Universitas Brawijaya - Malang

Nama Siswa	 Syahril Ashadi P
Jumlah Siswa	 1 (satu) Orang
Dalam rangka	 Penelitian / Riset
Jurusan	 Mesin
Tanggal Pengajuan	 09 sd. 20 Juli 2012
Lama Kerja Praktek/Magang/Penelitian	 2 (dua) Minggu
Materi Proposal Mahasiswa	 Analisis Peningkatan Proses Produksi Pada Mesin Rotary Kiln Dengan Metode Reability Centerd Maintenance II

Gresik, 09 Juli 2012
Hormat Kami
Kasi Penyelenggaraan Diklat
Ttd,
Rahardjo, ST.

Mohon konfirmasi, apakah permohonan tersebut dapat dibantu/tdk dapat dibantu :

Mahasiswa/Siswa/i tersebut	 (V) dapat dibantu
	 () tidak dapat dibantu
Tanggal disetujui	 10 Juli 2012
Nama & Nopeg pembimbing yang ditunjuk	 Choirul Fuad (V) Kasi () Regu
Unit Kerja	 Raw Mill Kiln dan Coal Mill tb 1

Tuban, 9 Juli 2012
Ttd,
(*Choirul Fuad*)