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APPENDICES



APPENDIX A
Output Quantity

The Number of Ladle (AMF Moulding Line) (1 charge = 2 ladles)

Part Name		Part Name	
BODY 10DJ100	13	DN80GG25	8
BODY 10DJ125	46	Flank Air	75
BODY 10DJ150	35	Holder Bearing	13
BODY 16DJ200	28	Pulley Engine RT140	3
Body 16DJL100	34	Pulley Engine	21
BODY 16DJL150	36	Pulley Main Clutch	49
BODY 16DJL200	4	Pulley Tension	20
BODY 16DJL50	2	Drum MN	126
BODY 16DJL65	8	FCC	219
BODY 200DJL3"	83	Flywheel FCC	86
BODY 200DJL8"	22	Flywheel ZE0	582
BODY PN16DJL100	36	Flywheel ZE1	2493
BODY PN16DJL150	32	Flywheel ZE7	702
BODY PN16DJL65	12	Hub KD	1124
DISC 16DJ125	12	Hub NOK	78
DISC 16DJ150	22	Proton	360
DISC 16DJ200	30	Ring NOK	93
DISC 16DJ250	1	Ring NZ	20
DN100GG25	10	Slider	389
DN100GGG40	36	Rear Counter	52
DN125GGG40	8	Clevis Thimble	28
DN50GG25	24	Thimble Eye	30
DN50GGG40	12	Clutch	57
DN65GG25	53	Pulley	40
DN65GGG40	13	Head Pole	4
		Grand Total	7284

The Number of Ladle (FD Moulding Line) (1 charge = 2 ladles)

Part Name	
> 50 Products	559

Number of AMF Sand Mould

Part Name		Part Name	
BODY 10DJ100	384	Flank Air	2,228
BODY 10DJ125	1,461	Holder Bearing	358
BODY 10DJ150	1,003	Pulley Engine RT140	90
BODY 16DJ200	660	Pulley Engine	595
Body 16D JL100	689	Pulley Main Clutch	1,435
BODY 16D JL150	792	Pulley Tension	386
BODY 16D JL200	100	Drum MN	3,438
BODY 16D JL50	55	FCC	6,301
BODY 16D JL65	245	Flywheel FCC	2,458
BODY 200D JL3"	2,449	Flywheel ZE0	18,367
BODY 200D JL8"	466	Flywheel ZE1	72,468
BODY PN16D JL100	678	Flywheel ZE7	21,928
BODY PN16D JL150	765	Hub KD	33,903
BODY PN16D JL65	343	Hub NOK	2,150
DISC 16DJ125	346	Proton	10,852
DISC 16DJ150	647	Ring NOK	3,263
DISC 16DJ200	856	Ring NZ	702
DISC 16DJ250	50	Slider	13,686
DN100GG25	170	Rear Counter	1,480
DN100GGG40	1,009	Clevis Thimble	819
DN125GGG40	181	Thimble Eye	580
DN50GG25	852	HUB-108280	88
DN50GGG40	368	Clutch	1,641
DN65GG25	1,656	Pulley	1,207
DN65GGG40	364	Head Pole	142
DN80GG25	121	Grand Total	217,275

The Number of Mix Sand (AMF Moulding Line)

Part Name		Part Name	
BODY 10DJ100	39	Flank Air	226
BODY 10DJ125	148	Holder Bearing	36
BODY 10DJ150	102	Pulley Engine RT140	9
BODY 16DJ200	67	Pulley Engine	60
Body 16DJL100	70	Pulley Main Clutch	145
BODY 16DJL150	80	Pulley Tension	39
BODY 16DJL200	10	Drum MN	346
BODY 16DJL50	6	FCC	637
BODY 16DJL65	23	Flywheel FCC	249
BODY 200DJL3"	248	Flywheel ZE0	1857
BODY 200DJL8"	47	Flywheel ZE1	7335
BODY PN16DJL100	69	Flywheel ZE7	2217
BODY PN16DJL150	75	Hub KD	3431
BODY PN16DJL65	35	Hub NOK	217
DISC 16DJ125	35	Proton	1097
DISC 16DJ150	65	Ring NOK	330
DISC 16DJ200	87	Ring NZ	71
DISC 16DJ250	5	Slider	1385
DN100GG25	17	Rear Counter	149
DN100GGG40	101	Clevis Thimble	82
DN125GGG40	18	Thimble Eye	59
DN50GG25	86	HUB-108280	9
DN50GGG40	37	Clutch	165
DN65GG25	165	Pulley	122
DN65GGG40	37	Head Pole	13
DN80GG25	12	Grand Total	21970

Time required by products in grinding process

Part	Number	Second/Piece					Total Time (Second)				
		Grinder 18"	Grinder 12"	Grinder 16"	Angle Grinder	Die Grinder	Grinder 18"	Grinder 12"	Grinder 16"	Angle Grinder	Die Grinder
HANDLE 4641	731	120			0		0	87,720	0	0	0
STOP LEVER	651	25			0		0	16,275	0	0	0
BRAKE DRUM 10	473				600		0	0	0	283,800	0
HUB 8 HOLLES	1053				600		0	0	0	631,800	0
Pulley S	297				0		0	0	0	0	0
Pulley D	2877				0		0	0	0	0	0
Perpendicular Plate	513	20			0		0	10,260	0	0	0
NUT	483				0		0	0	0	0	0
Pulley P	1147				0		0	0	0	0	0
Pulley SAK	319				0		0	0	0	0	0
NUT 6	13286				0		0	0	0	0	0
BUSH WM 2148	537	20			0		0	10,740	0	0	0
BUSH WM 2053	587	20			0		0	11,740	0	0	0
BUSH WM 2057	429	20			0		0	8,580	0	0	0
BUSH WM 2061	1006	20			0		0	20,120	0	0	0
BUSH WM 2062	1022	20			0		0	20,440	0	0	0
BUSH WM 2064	521	20			0		0	10,420	0	0	0
BUSH WM 2101	200	20			0		0	4,000	0	0	0
BUSH WM 2058	1538	20			0		0	30,760	0	0	0
BUSH WM 2214	1018	20			0		0	20,360	0	0	0
BUSH WM 6310 2101	242	20			0		0	4,840	0	0	0
BUSH WM 2060	2292	20			0		0	45,840	0	0	0
Ring 6 BB # 2085	4732				0		0	0	0	0	0
HAND LEVER	525	25			0		0	13,125	0	0	0
Suspended Plate	1169	30			0		0	35,070	0	0	0
Plate #1	629	30			0		0	18,870	0	0	0
Plate #2	457	30			0		0	13,710	0	0	0
Pulley 2 groove	291				0		0	0	0	0	0
FORK DIFF LOCK	1057	80	5		0		0	84,560	5,285	0	0
FORK SHIFT 1-R	749	85	5		0		0	63,665	3,745	0	0
FORK SHIFT 3-5	795	85	5		0		0	67,575	3,975	0	0
FORK SHIFT L-H	1058	85	5		0		0	89,930	5,290	0	0
SE 80x6617	725	20			0		0	14,500	0	0	0
L.B 1.1/2"	4850		25		0		0	0	121,250	0	0
L.B 3/4"	18610		40		0		0	0	744,400	0	0
L.L 3/4"	8169		40		0		0	0	326,760	0	0
L.L 1.1/2"	209		25		0		0	0	5,225	0	0
L.L 1.1/4"	3483		25		0		0	0	87,075	0	0
L.R 3/4"	9081		40		0		0	0	363,240	0	0
L.R 1.1/4"	3031		30		0		0	0	90,930	0	0
L.R 1.1/2"	160		25		0		0	0	4,000	0	0

L.R 1/2"	1174		25	0		0	0	29,350	0	0	
Cover L.R 1/2"	1761		10	0		0	17,610	0	0	0	
Cover L.B 3/4"	27052		15	0		0	405,780	0	0	0	
Cover L.B 1.1/2"	12394		15	0		0	185,910	0	0	0	
Block 1 3/4"	1051		60	0		0	0	63,060	0	0	
Block 2 3/4"	3755		70	0		0	0	262,850	0	0	
Block 3 3/4"	1521		70	0		0	0	106,470	0	0	
Block 4 3/4"	1730		135	0		0	0	233,550	0	0	
Block FS-1 3/4"	2053		425	0		0	0	872,525	0	0	
Block FS-3 3/4"	573		425	0		0	0	243,525	0	0	
Block OC3"	1095		20	0		0	21,900	0	0	0	
Block 2"	24		15	0		0	360	0	0	0	
WORM WHEEL 450S	5825		15	10	0	0	87,375	58,250	0	0	
WORM WHEEL 450L	3927		15	10	0	0	58,905	39,270	0	0	
CALIPER # 3	200		50	0		0	0	10,000	0	0	
CALIPER # 4	300		60	0		0	0	18,000	0	0	
BODY 10DJ100	983	15		0		14,745	0	0	0	0	
BODY 10DJ125	957	15	255	0		14,355	0	244,035	0	0	
BODY 10DJ150	924	15	290	0		13,860	0	267,960	0	0	
BODY 10DJ200	410	15	290			6,150	0	118,900	0	0	
BODY 200DJL3"	3927	15	120	0		58,905	0	471,240	0	0	
BODY 200DJL8"	203	120	680	0	285	24,360	0	138,040	0	57,855	
DN50GG25	1783	15	240	0	90	26,745	0	427,920	0	160,470	
DN50GGG40	841	15	200	0	20	12,615	0	168,200	0	16,820	
DN65GG25	2176	15	240	0	90	32,640	0	522,240	0	195,840	
DN65GGG40	233	15	240	0	20	3,495	0	55,920	0	4,660	
DN80GG25	442	20	260	0	90	8,840	0	114,920	0	39,780	
DN100GG25	525	20	260	0	90	10,500	0	136,500	0	47,250	
DN100GGG40	837	20	260	0	20	16,740	0	217,620	0	16,740	
DN125GGG40	228	20	260	0	20	4,560	0	59,280	0	4,560	
BODY PN16DJL100	2345	20	192	0		46,900	0	450,240	0	0	
BODY PN16DJL125	222	20	192	0		4,440	0	42,624	0	0	
BODY PN16DJL150	1486	30	300	0		44,580	0	445,800	0	0	
BODY PN16DJL200	648	30	300	0		19,440	0	194,400	0	0	
Body PN16DJL65	1622	20	210	0		32,440	0	340,620	0	0	
Body PN16DJL50	159	20	210			3,180	0	33,390	0	0	
DISC 16DJ125	1980	20		0	20	39,600	0	0	0	39,600	
DISC 16DJ150	2152	25		0	30	53,800	0	0	0	64,560	
DISC 16DJ200	1387	30		0	40	41,610	0	0	0	55,480	
DISC 16DJ250	303	40		0	40	12,120	0	0	0	12,120	
Drum MN	5556	40		0		222,240	0	0	0	0	
FCC	7559	40		0		302,360	0	0	0	0	
Flank Air	4437		30	300	0	120	0	133,110	1,331,100	0	532,440
Flywheel ZE0	54197	15	15	0		812,955	0	812,955	0	0	
Flywheel ZE1	188628	15	15	0		2,829,420	0	2,829,420	0	0	
Flywheel ZE7	53875	15		0		808,125	0	0	0	0	
Holder Bearing	1896			0		0	0	0	0	0	
Hub KD	118363	20		0	20	2,367,260	0	0	0	2,367,260	
Hub NOK	7738	20		0		154,760	0	0	0	0	

Proton	35424	20		0	708,480	0	0	0	0
Pulley Engine	770	10	540	0	7,700	0	415,800	0	0
Pulley Main Clutch	1240	25		0	155	31,000	0	0	192,200
Pulley Tension	3434	30		0		103,020	0	0	0
Ring NOK	8360	20		0		167,200	0	0	0
Ring NZ	1849	20				36,980	0	0	0
Slider	193832		45	0	0	8,722,440	0	0	0
Clutch	3045			0	0	0	0	0	0
Pulley	10072			0	0	0	0	0	0
BOS CTH 120	3508				0	0	0		0
BOS M24	1586				0	0	0		0
CounterWeight	1524	20			30,480	0	0		0
CLEVIS EYE NUT	3899					0	0		0
				Total	9,098,120	10,336,490	13,537,149	915,600	3,807,635

BIOGRAPHY

Mr. Korakij Ngaobenzakul has a B.E. from King Mongkut's Institute of Technology Ladkrabang in Control Engineering. He worked in railway business as test engineer and programmer for 3 and half years. After that, he decided to change his role by moving to work with his family business (Foundry) as Plant Manager. At this time, he decided to continue his study in Engineering Management and Manufacturing jointly offered by Chulalongkorn University and Warwick at the Regional Centre for Manufacturing Systems Engineering. He was enrolled as a part-time student and graduated in the academic year 2005.

