

Figure A-9.20 PRODUCTION FLOW SHEET OF SMALL-SCALE CASTING

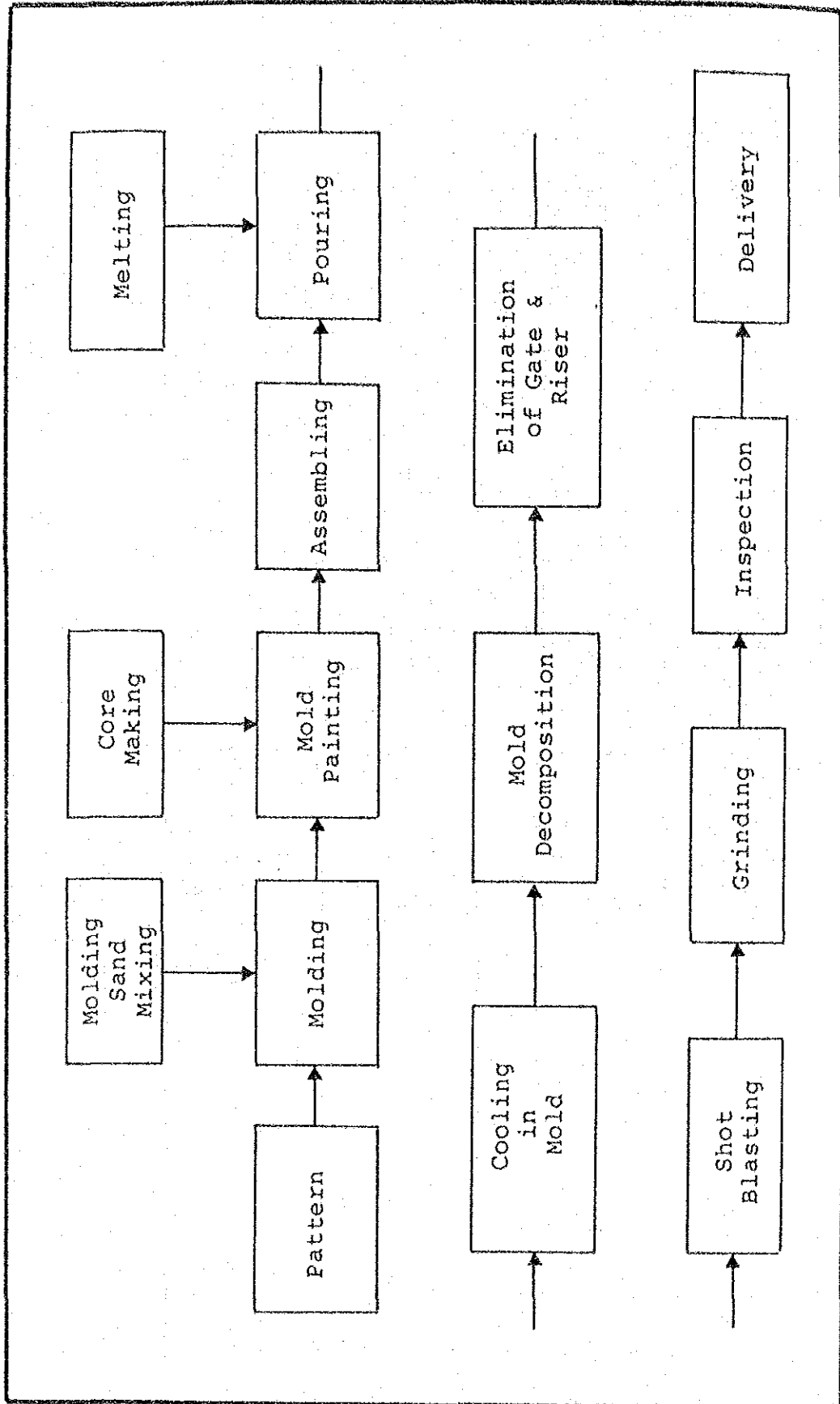


Figure A-9.21 LAYOUT OF SMALL-SCALE CASTING FACTORY

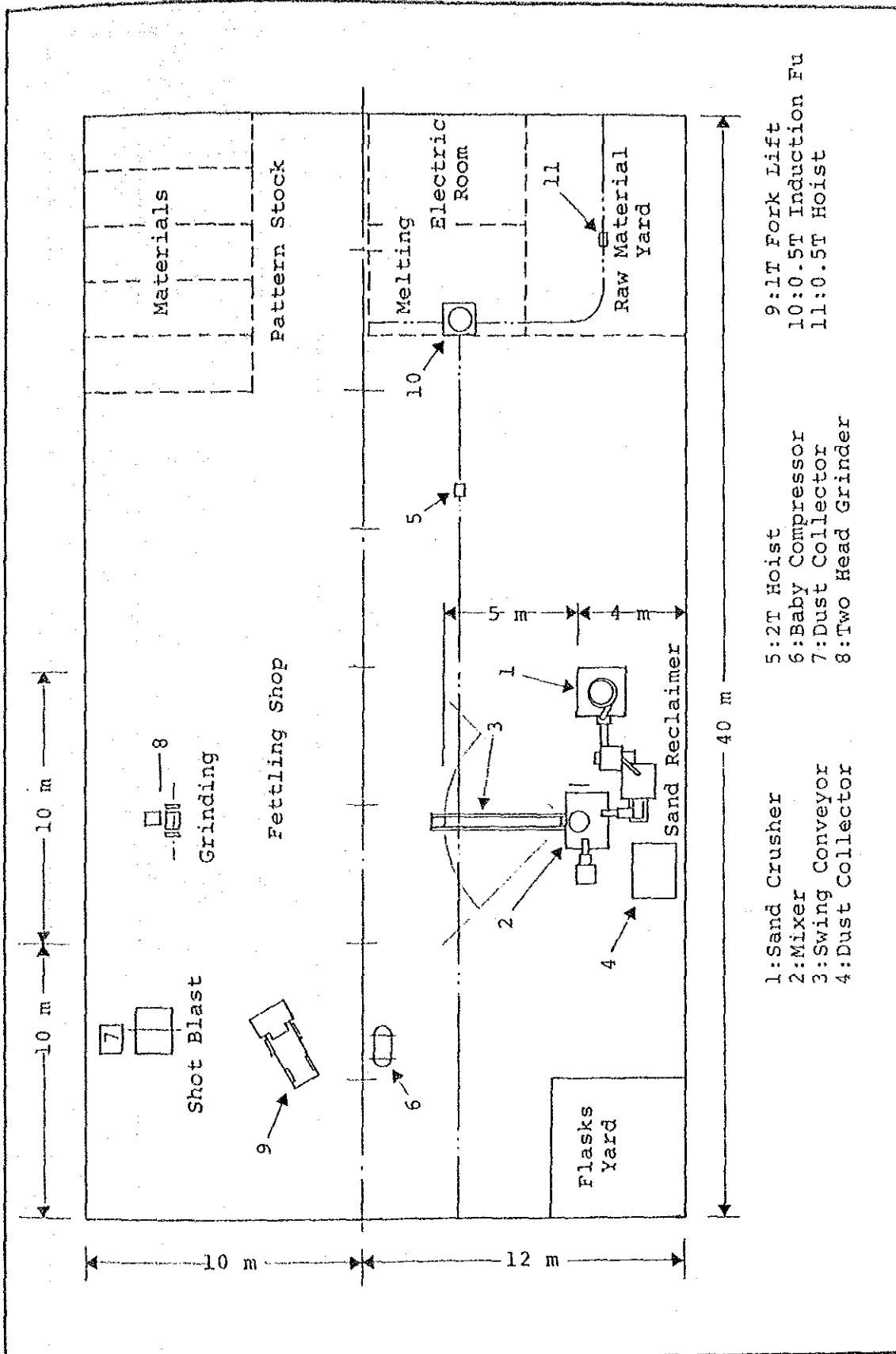


Figure A-9.22 ORGANIZATION OF SMALL SCALE CASTING

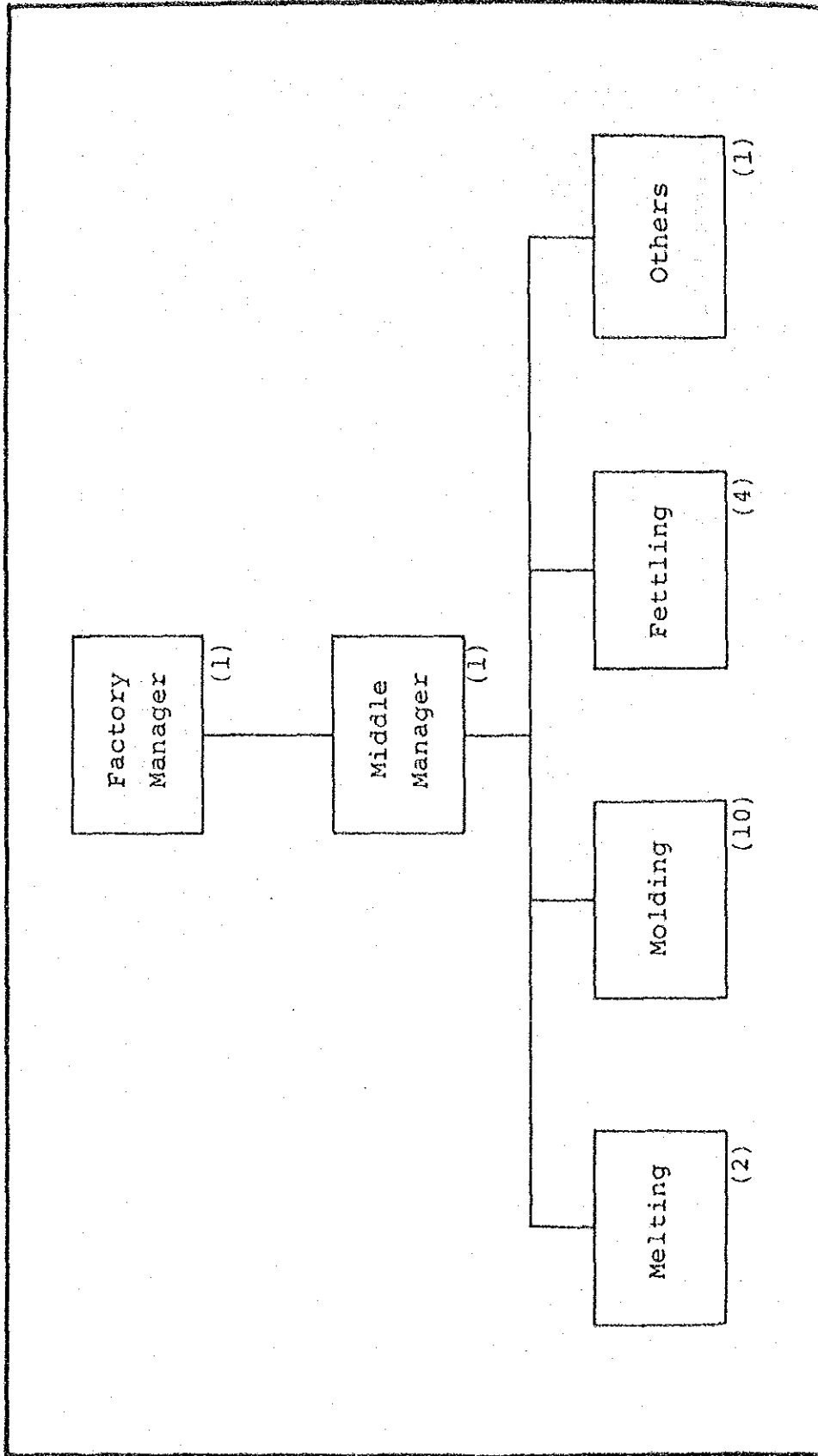


Figure A-9.23 PRODUCTION FLOW SHEET OF SCREW AND RIVET

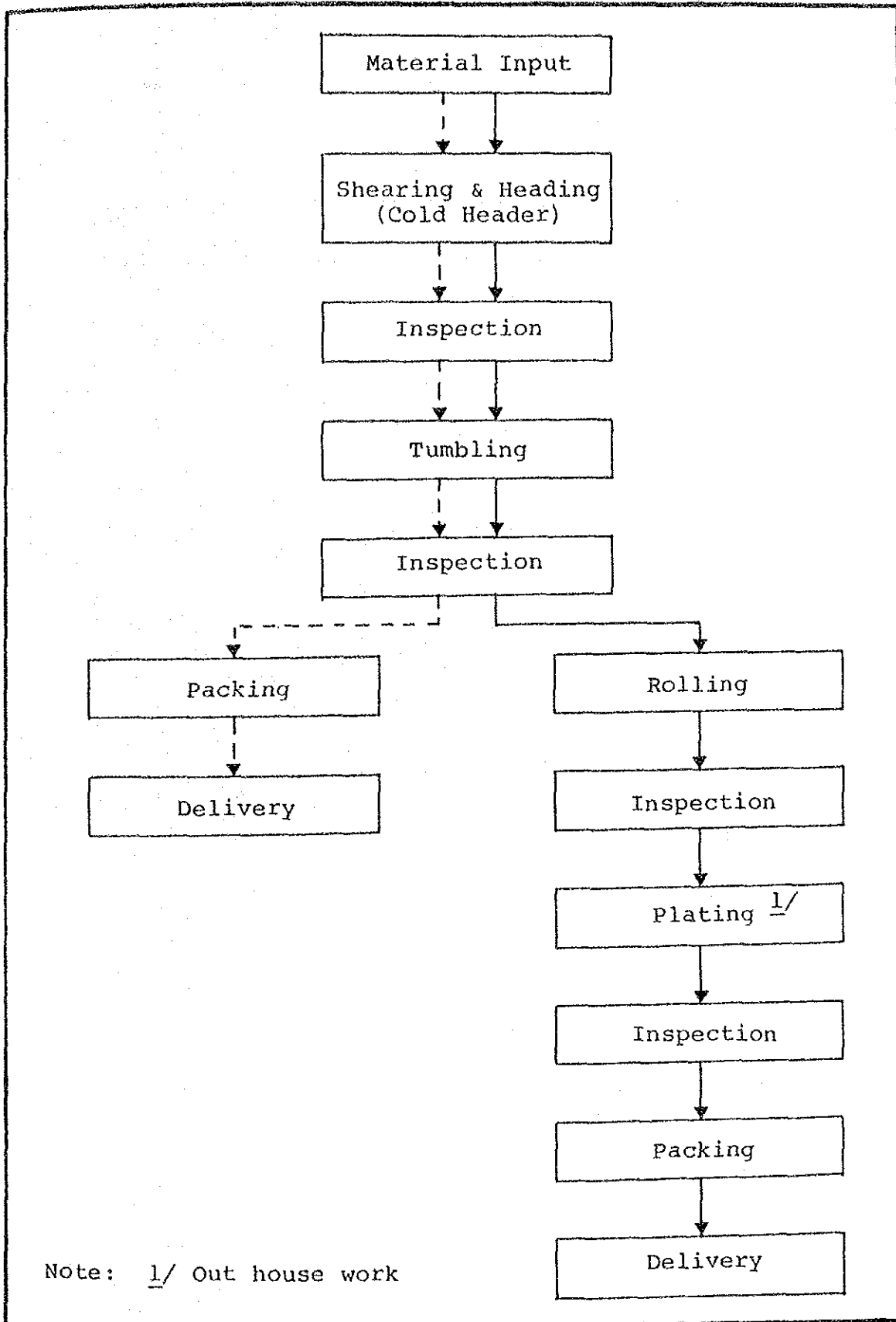


Figure A-9.24 LAYOUT OF CROSS-RECESSED HEAD MACHINE
SCREW AND COLD HEADED RIVETS SHOP

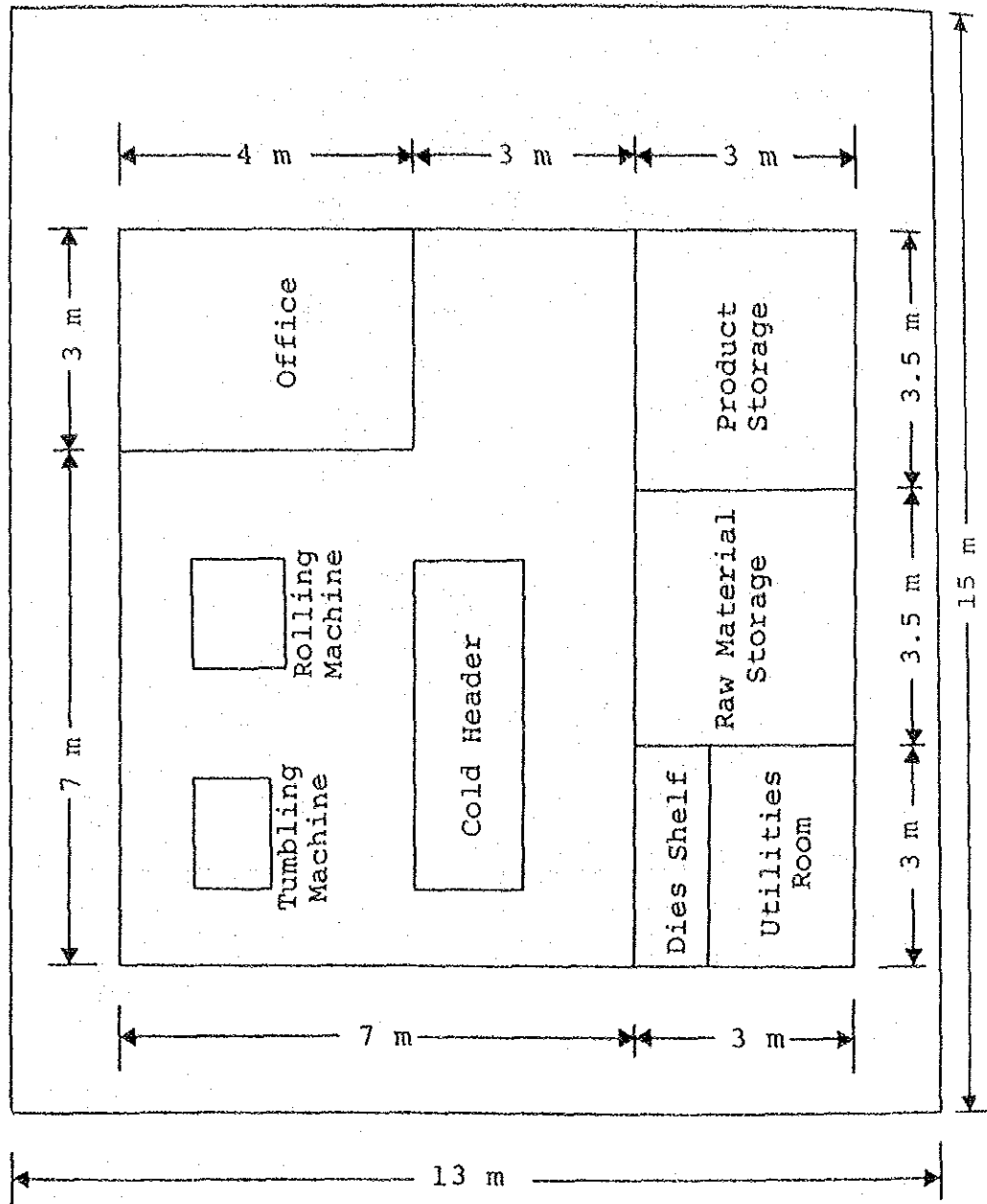


Figure A-9.25 ORGANIZATION OF SMALL-SCALE FACTORY FOR SCREW AND RIVET

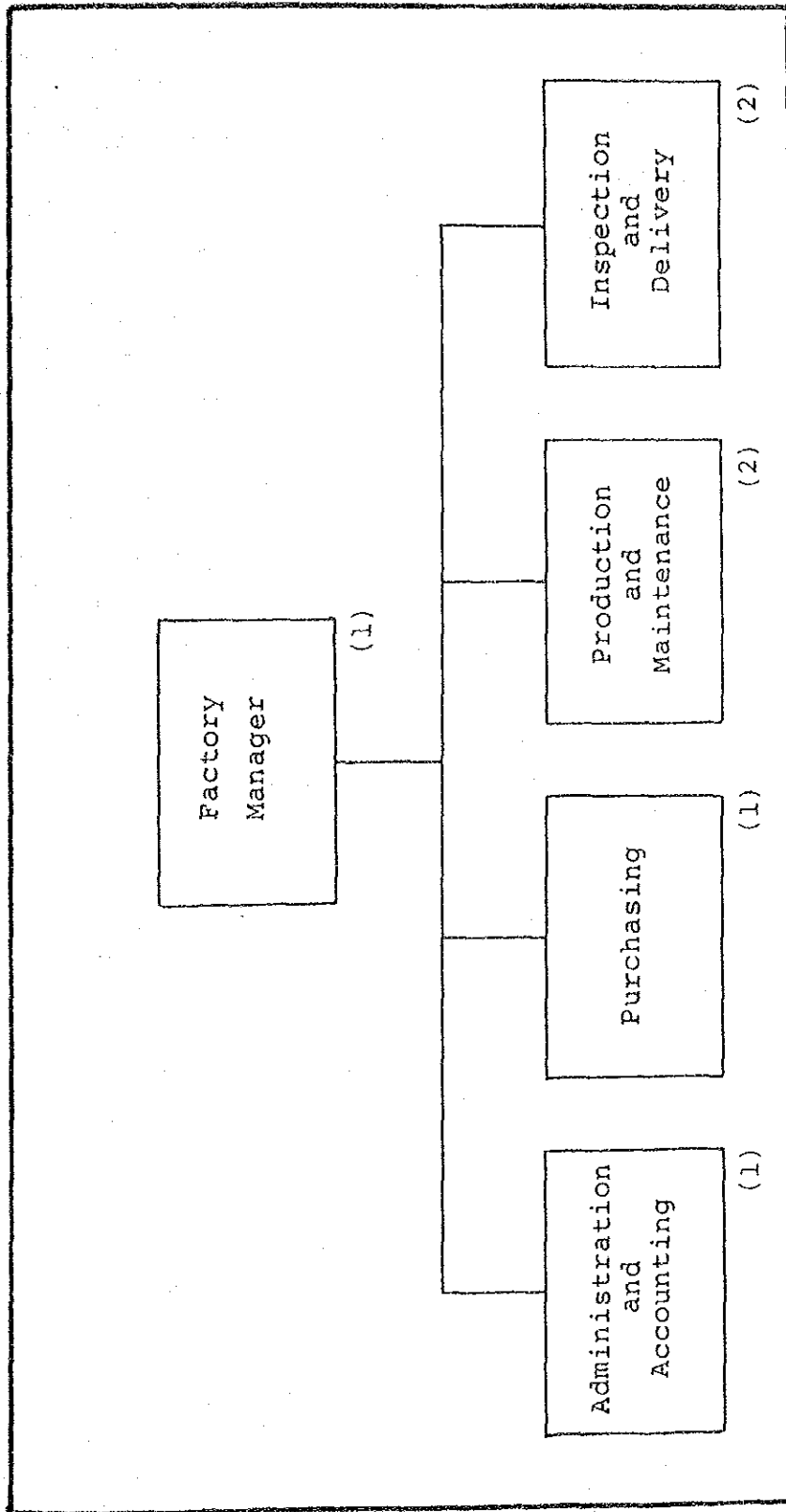


Figure A-9.26 PRODUCTION FLOW SHEET OF PRESSWORK

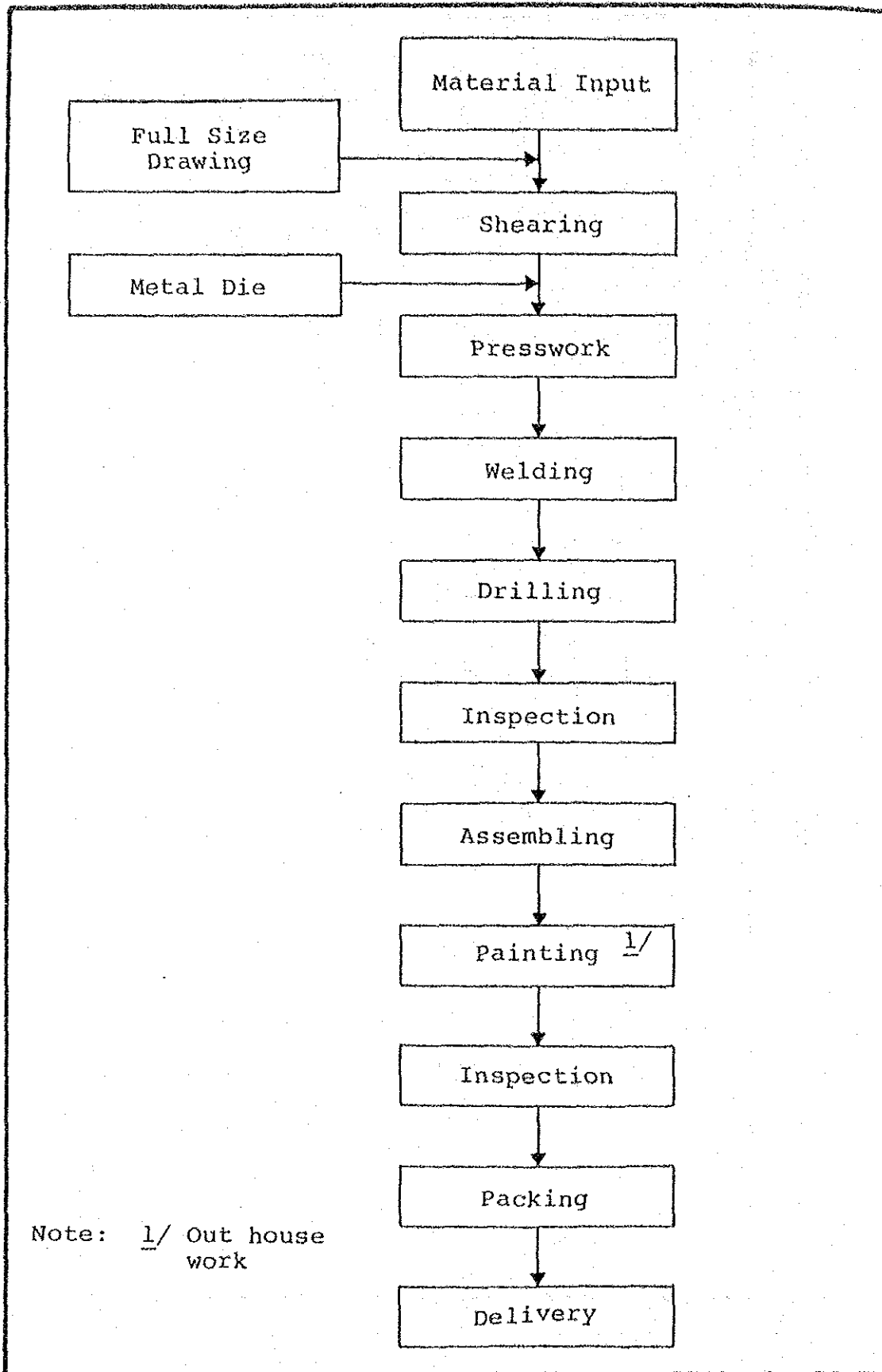


Figure A-9.27 LAYOUT OF PRESS WORK SHOP

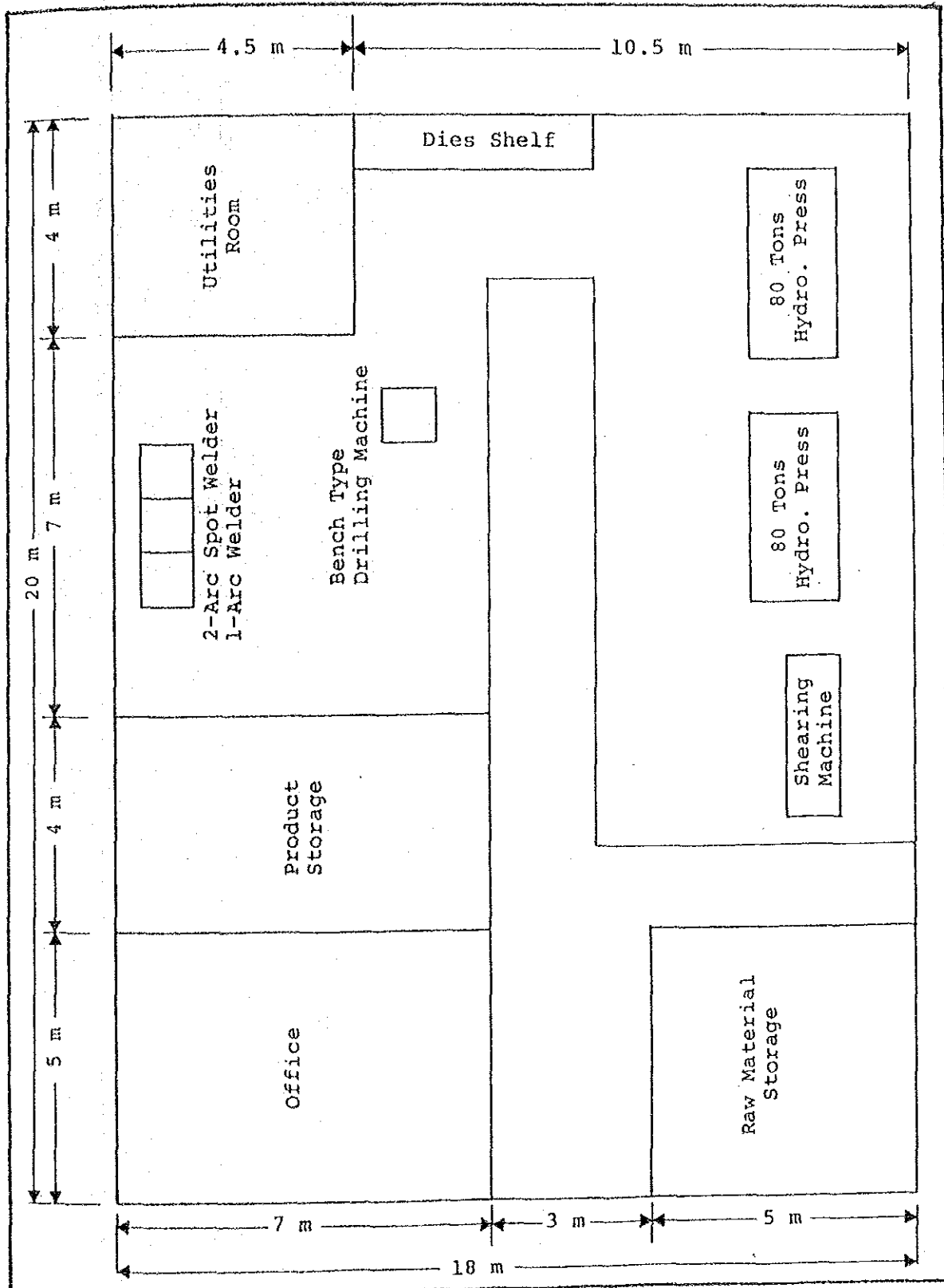


Figure A-9.28 ORGANIZATION OF SMALL SCALE PRESSWORK SHOP

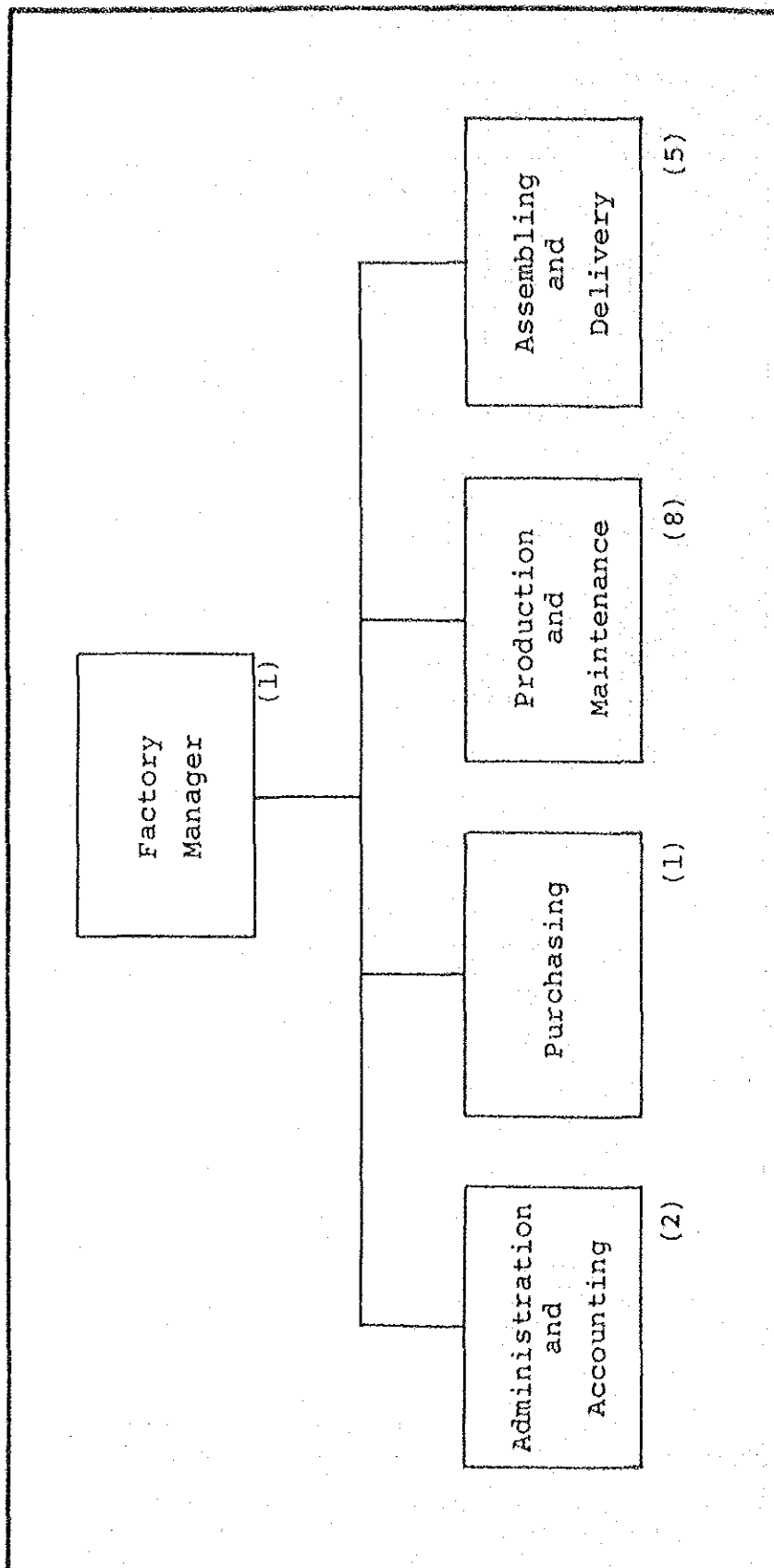


Figure A-9.29 PROCESS FLOW SHEET OF PLATING SHOP
 (FOR ZINC PLATING FOLLOWED BY CHROMATE TREATMENT)

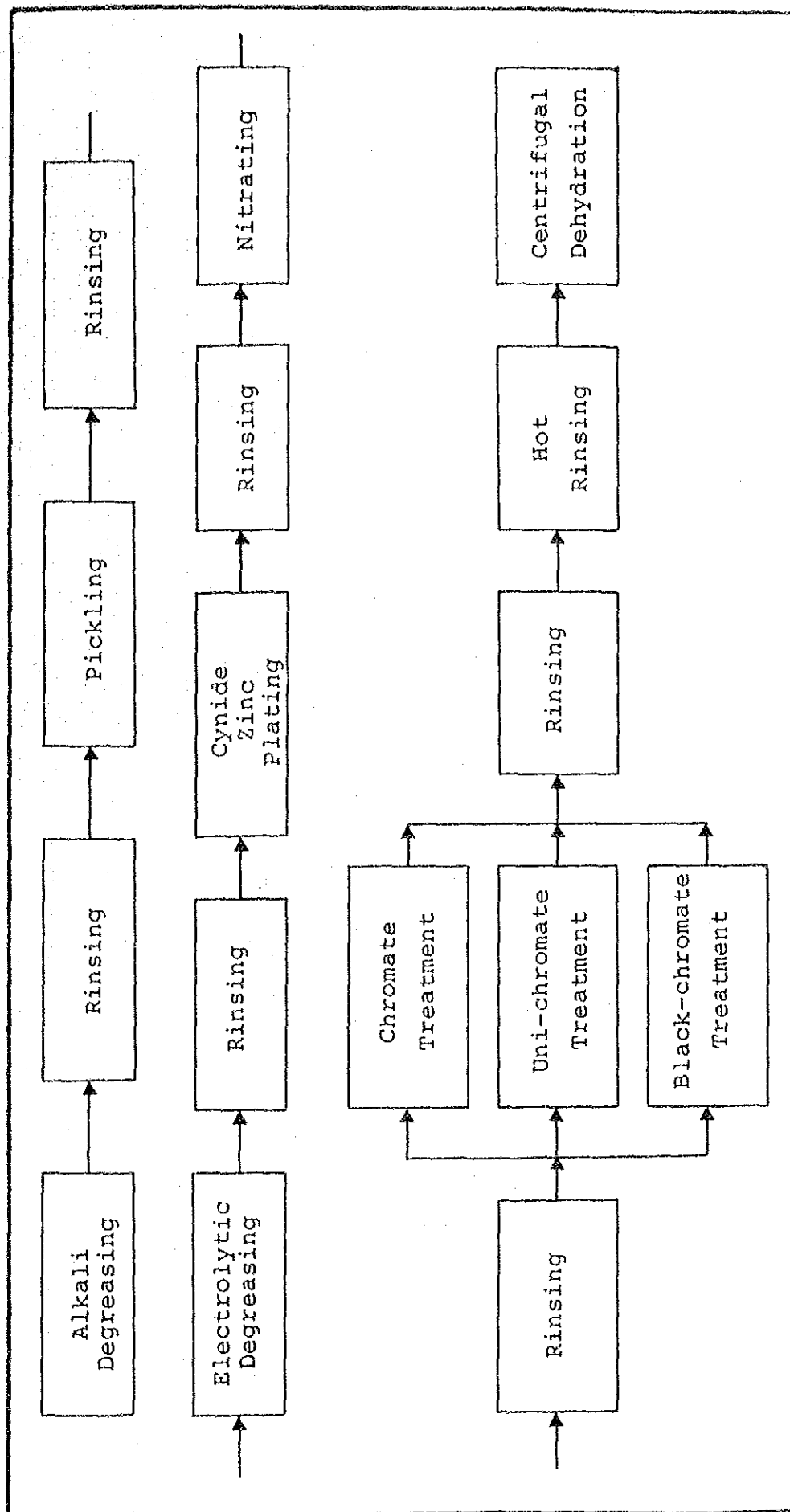
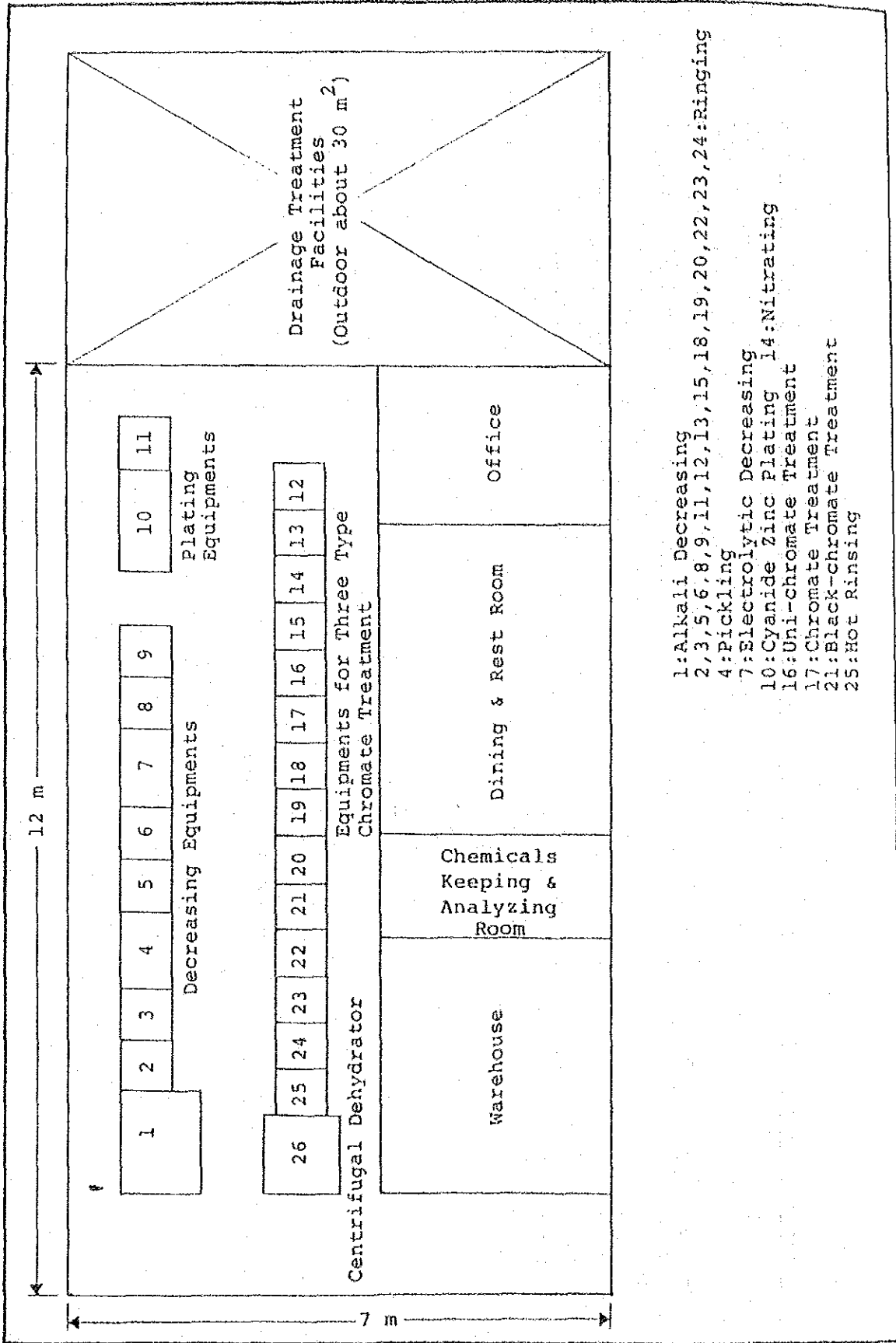


Figure A-9.30 LAYOUT OF PLATING SHOP



- 1: Alkali Decreasing
- 2, 3, 5, 6, 8, 9, 11, 12, 13, 15, 18, 19, 20, 22, 23, 24: Ringing
- 4: Pickling
- 7: Electrolytic Decreasing
- 10: Cyanide Zinc Plating
- 14: Nitration
- 16: Uni-chromate Treatment
- 17: Chromate Treatment
- 21: Black-chromate Treatment
- 25: Hot Rinsing

Figure A-9.31 ORGANIZATION OF SMALL SCALE PLATING SHOP

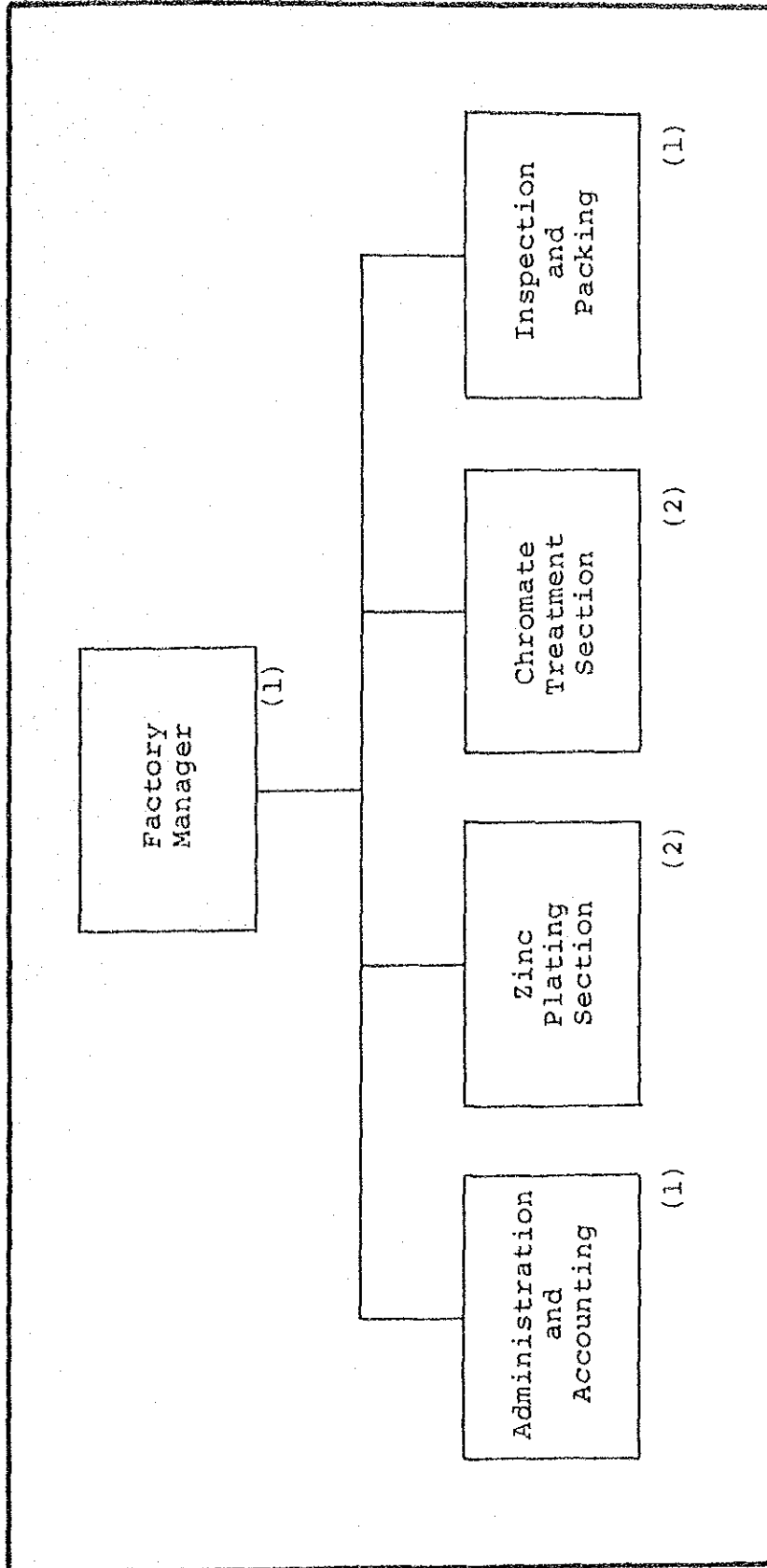


Figure A-9.32 PRODUCTION FLOW SHEET OF AIR & OIL FILTER

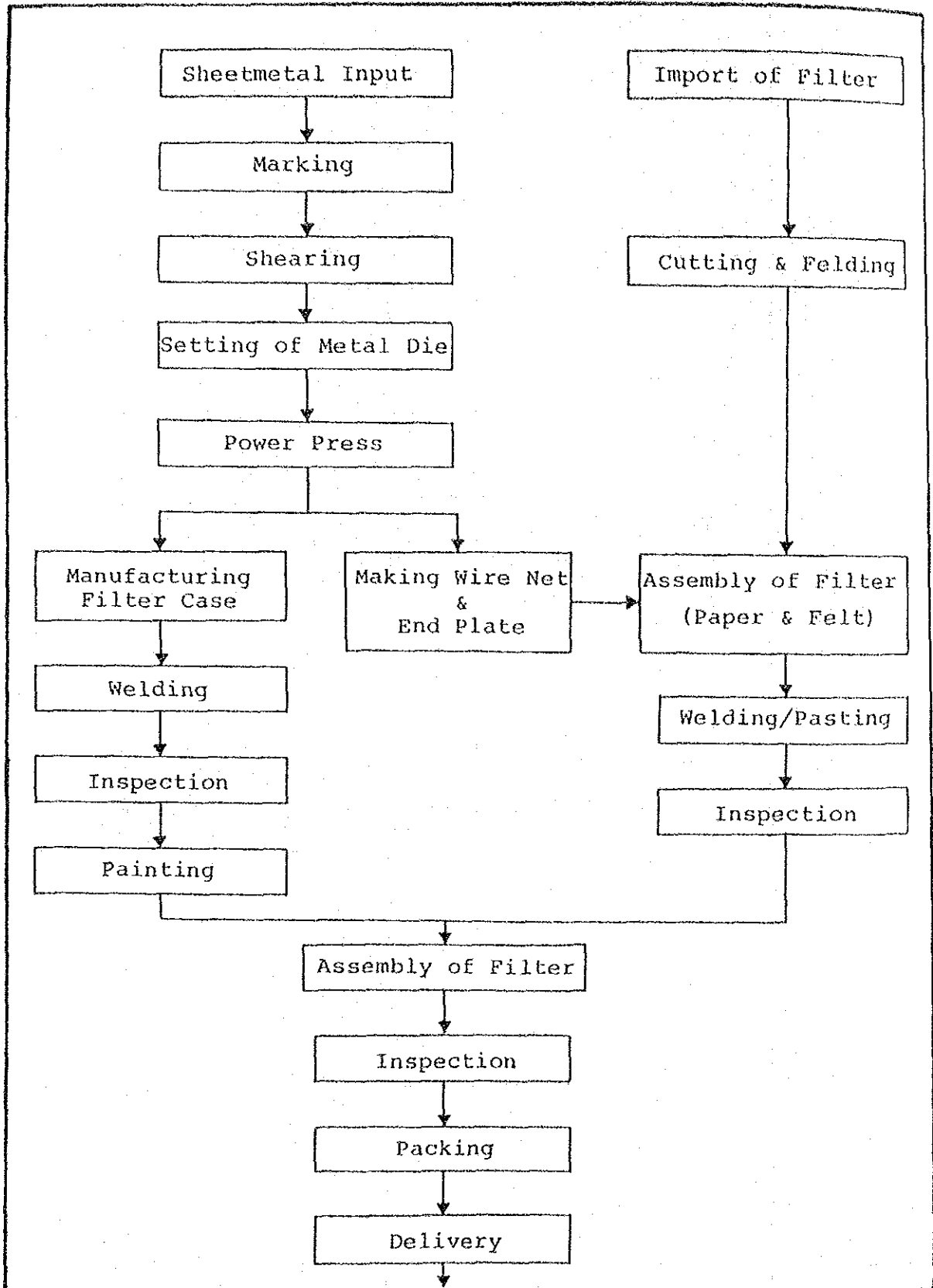


Figure A-9.33 LAYOUT OF FILTER MANUFACTURING FACTORY

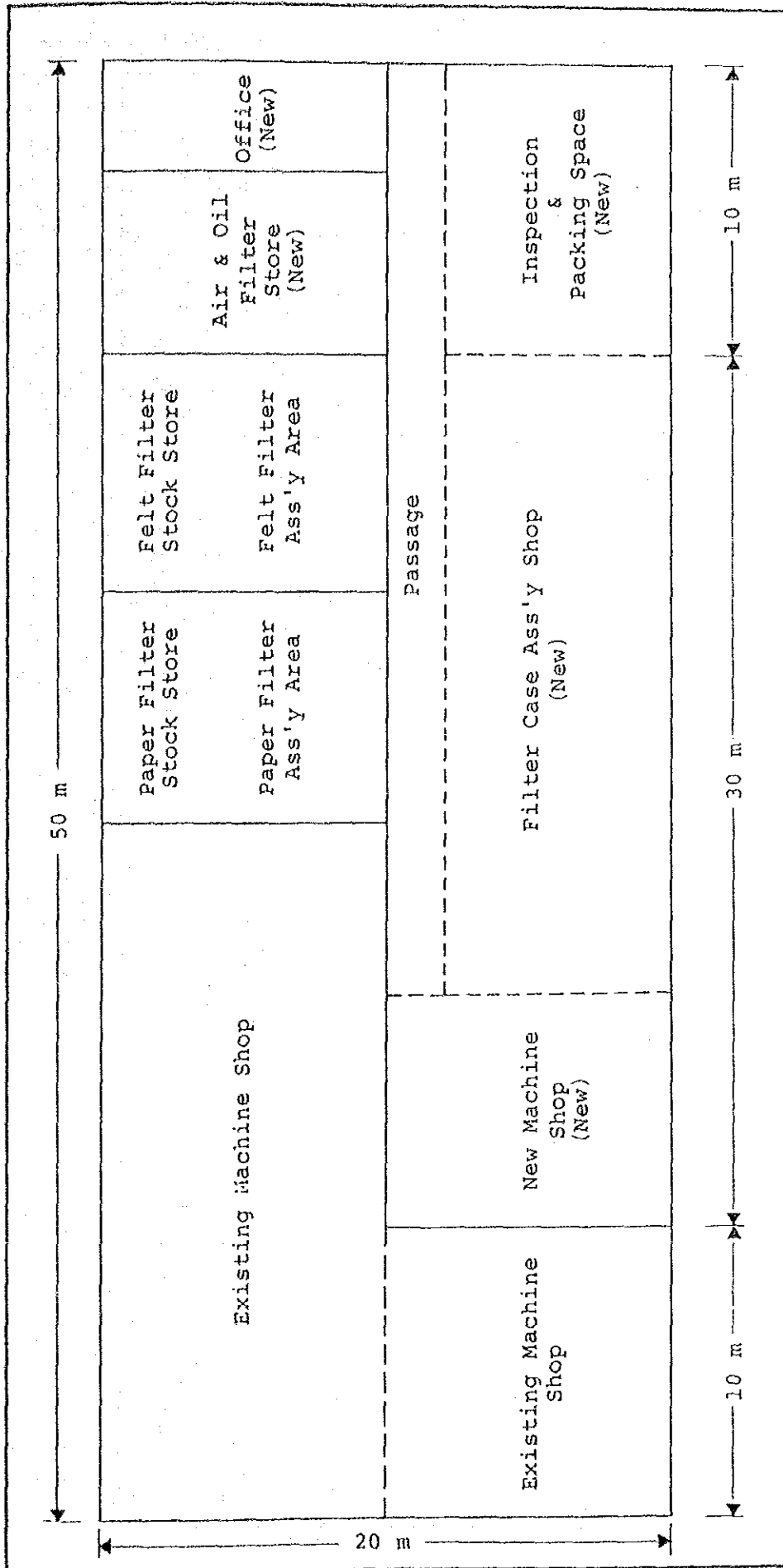


Figure A-9.34 ORGANIZATION OF FILTER MANUFACTURING FACTORY

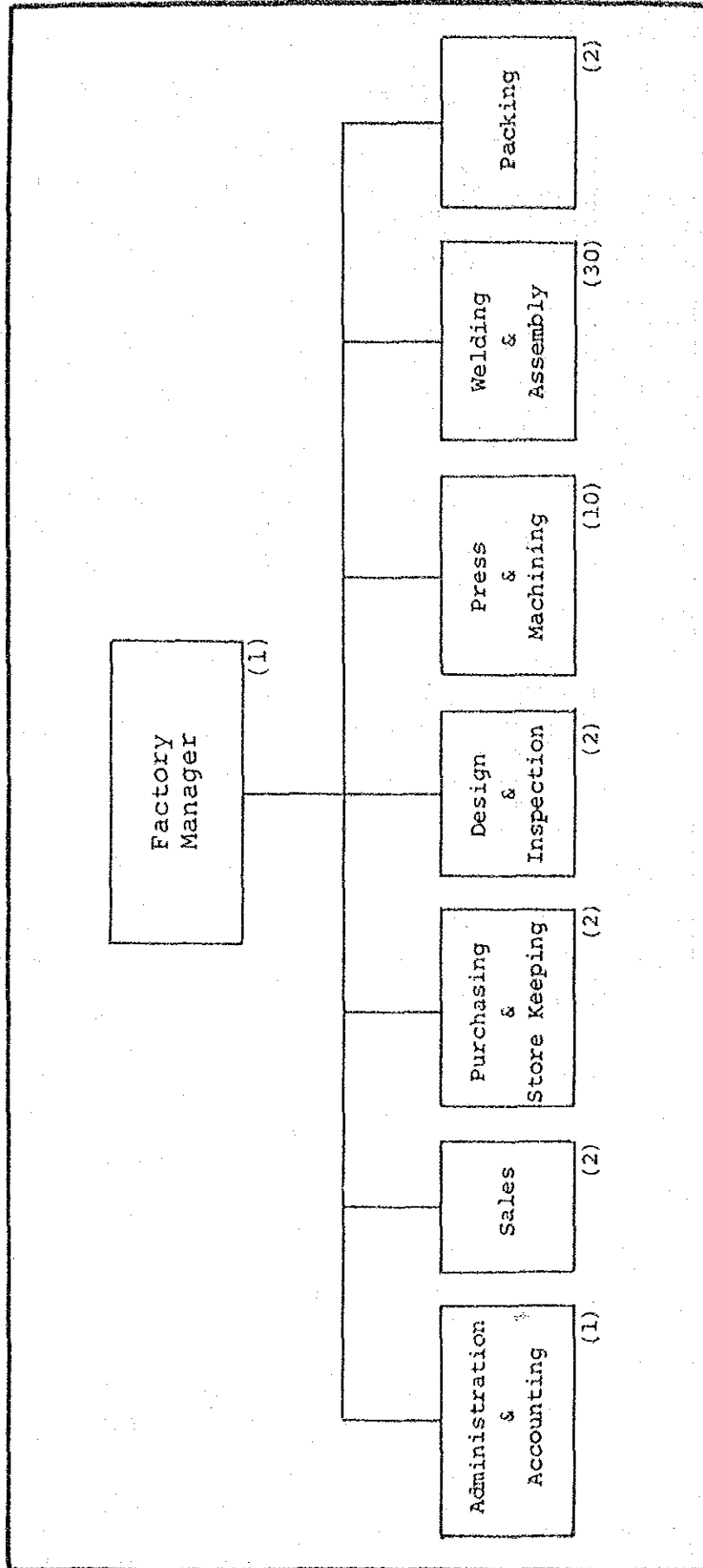


Figure A-9.35 PRODUCTION FLOW SHEET OF CASTING

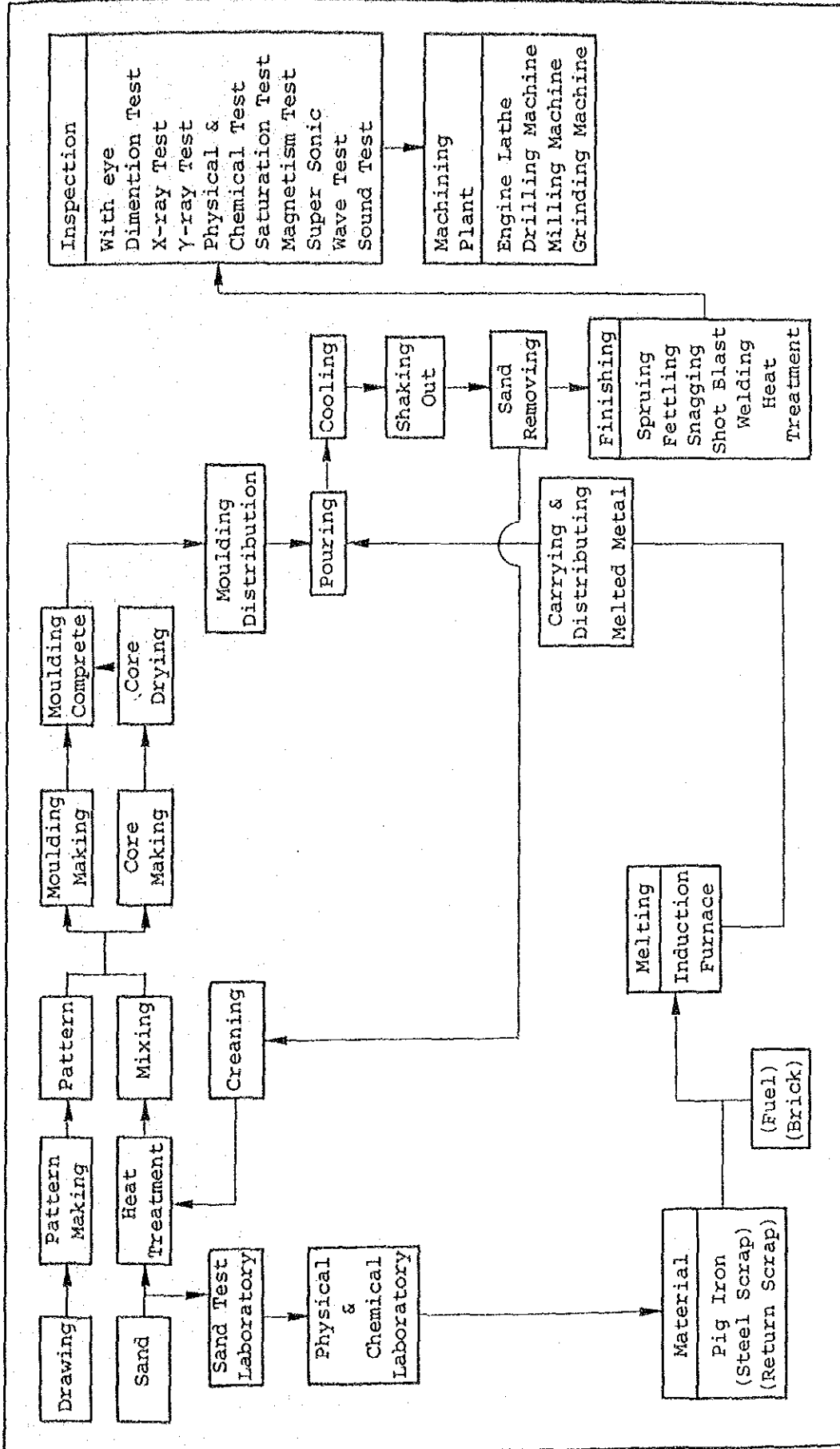


Figure A-9.36 PRODUCTION FLOW SHEET OF ASSEMBLY

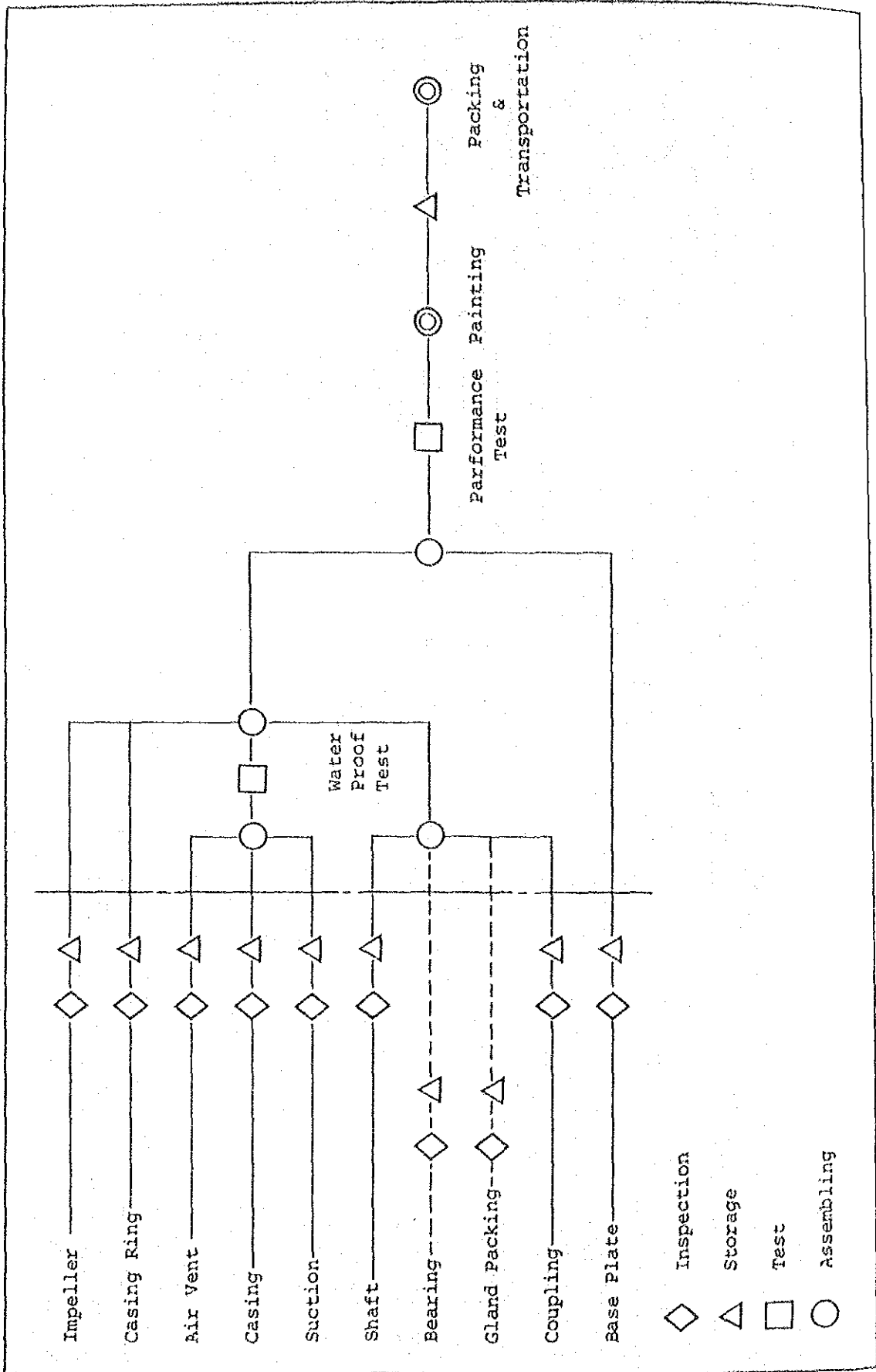


Figure A-9.37 LAYOUT OF PUMP MANUFACTURING FACTORY

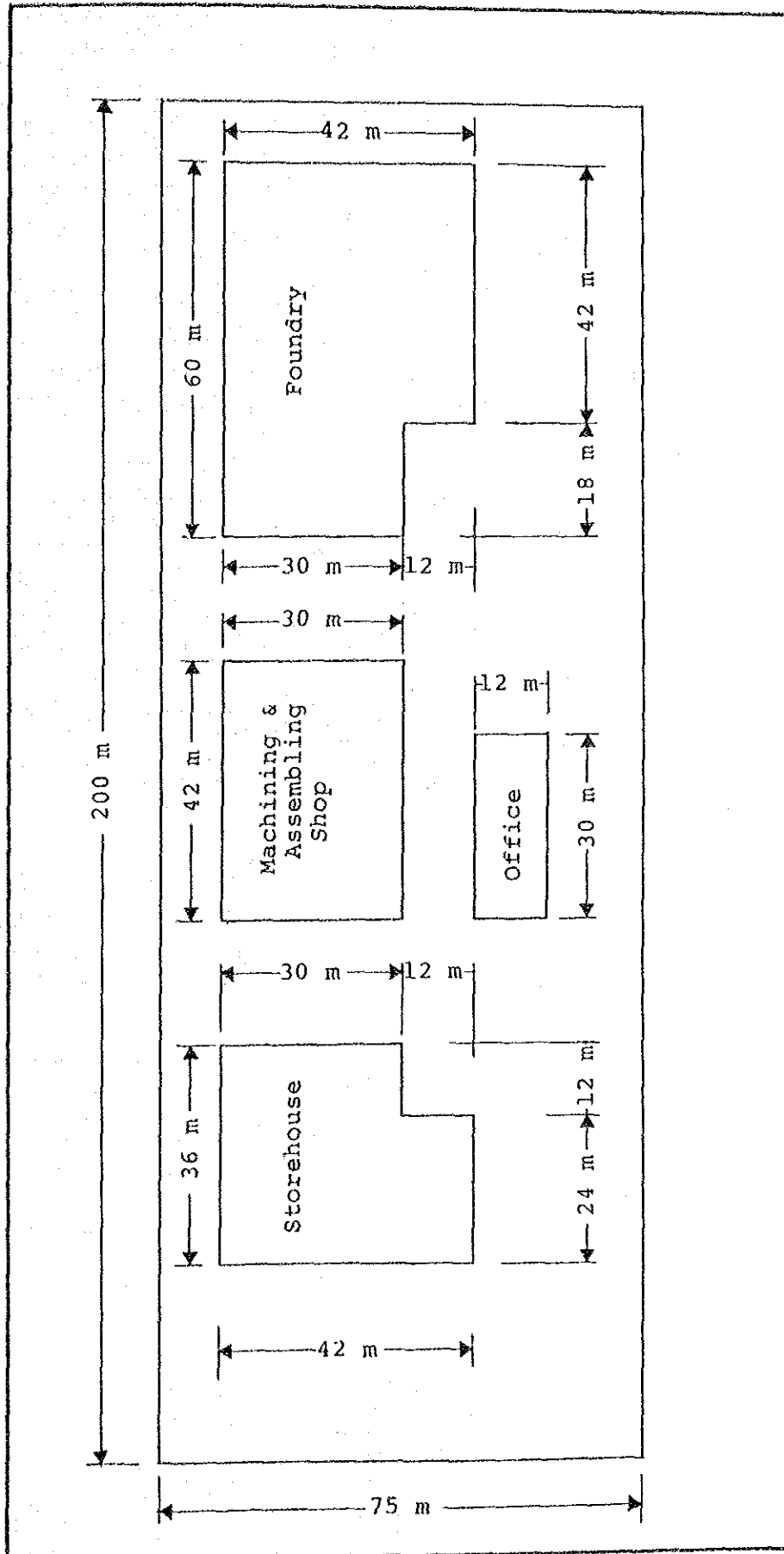


Figure A-9.38 ORGANIZATION OF PUMP MANUFACTURING FACTORY

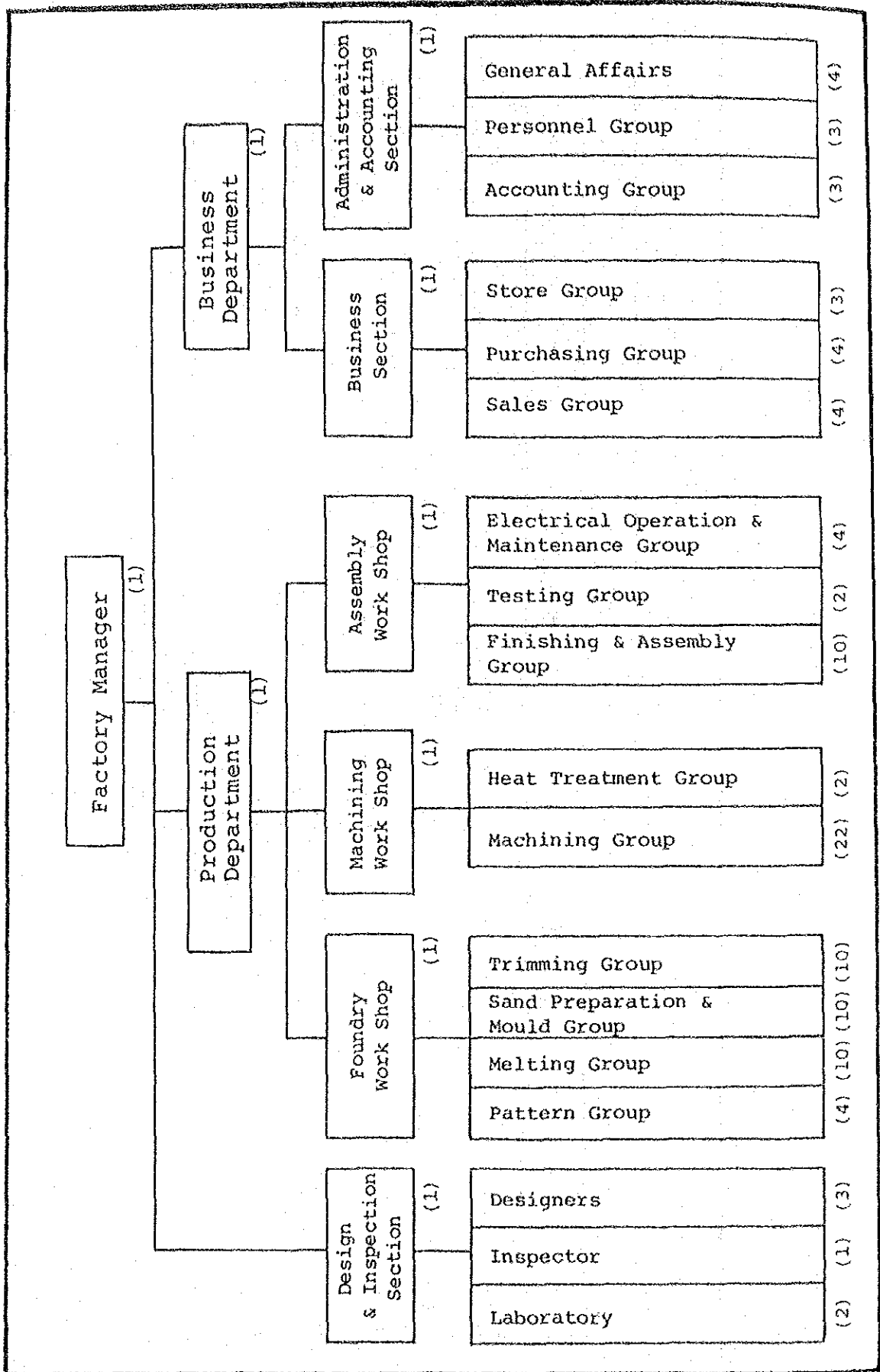


Figure A-9.39 PRODUCTION FLOW SHEET OF SWITCH GEAR BOX

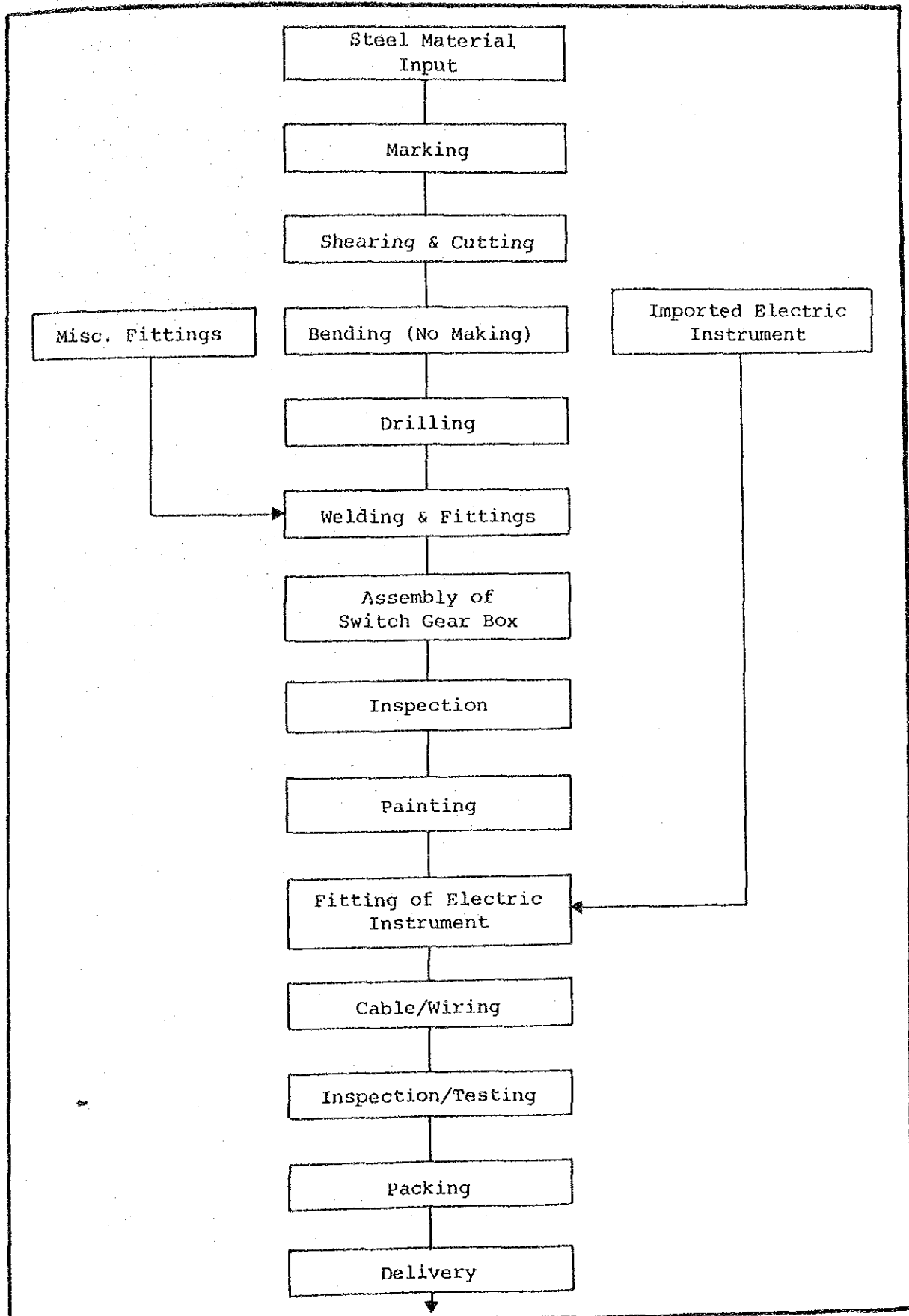


Figure A-9.40 LAYOUT OF EXISTING SWITCHGEAR MANUFACTURING FACTORY

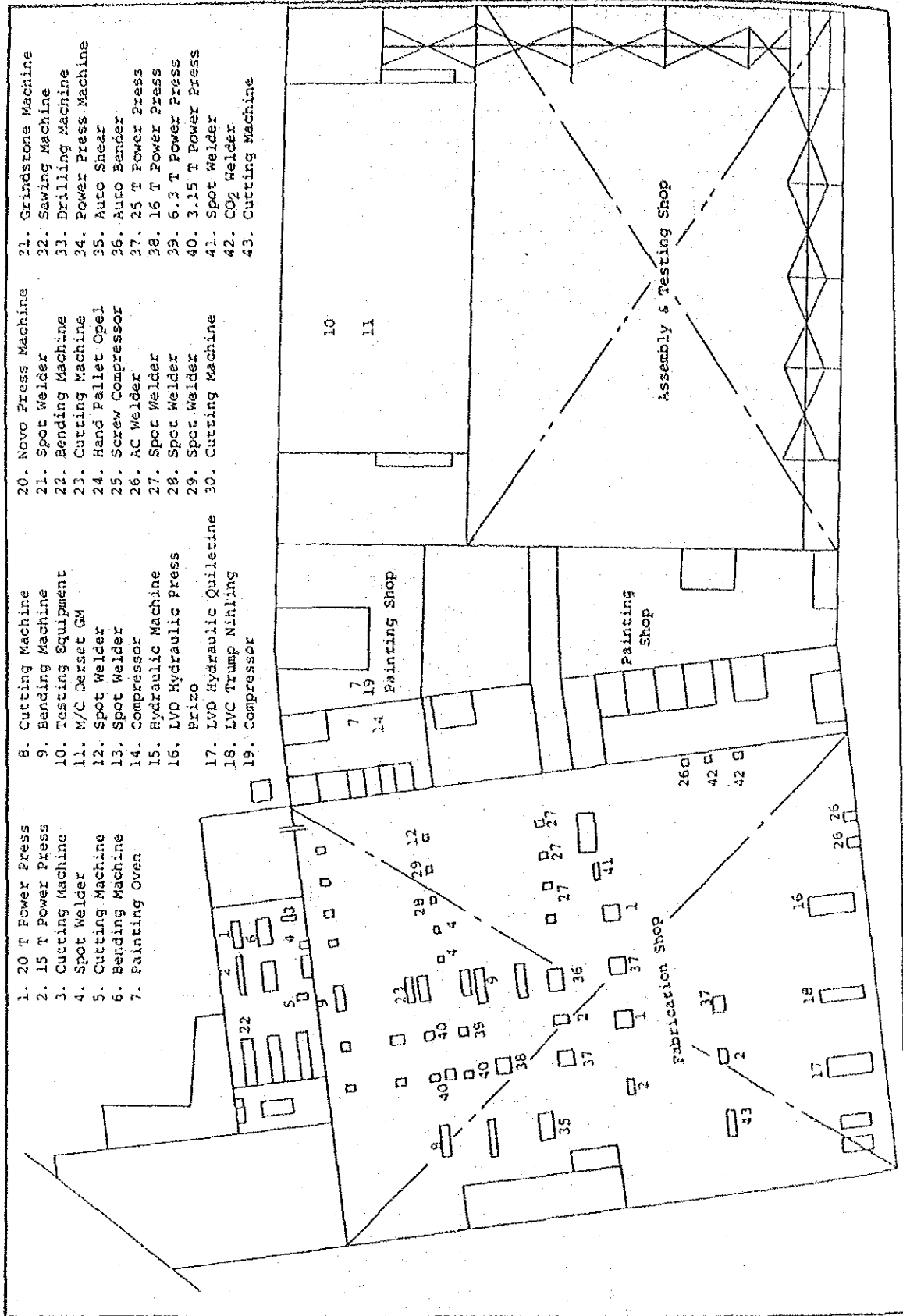


Figure A-9.41 LAYOUT OF EXPANDED FACTORY OF MANUFACTURING SWITCHGEAR

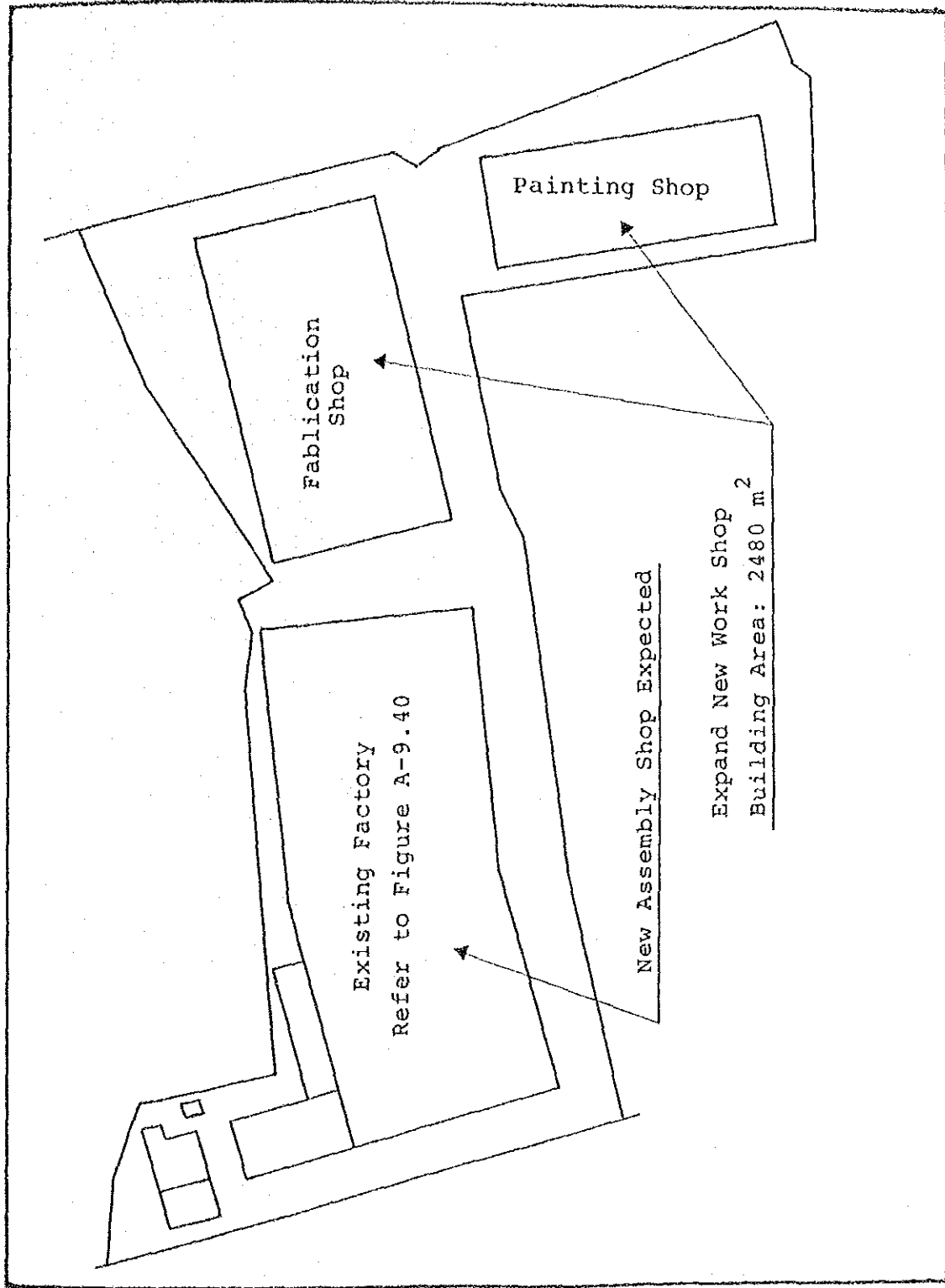


Table A-9.1 OUTLINE OF MODEL PLANT

Item	Casting Shop	Forging Shop	Machining Shop	Sheet Work Shop	Press Work Shop	Steel Fabrication Shop
Production capacity	1) Automobile & rotary parts (S.C. & DCI) 7,920T/Y 2) By order Production (S.C. & DCI) 1,680T/Y 3) Hand molding (S.C.) 2,400T/Y	1) Flange 1,380T/Y 2) Gear 1,380T/Y 3) Automobile parts 1,380T/Y 4) Mild steel bolt 230T/Y 5) High tensile bolt 230T/Y	1) Transmission parts of mini tractor 800 sets/Y 2) Transmission parts of small lathes 200 sets/Y	1) Steel plate products 1,500T/Y	1) Steel press products 1,380T/Y	1) Steel products & steel structure 1,500T/Y
	Total 12,000T/Y	Total 4,600T/Y	Total 1,000 sets/Y	Total 1,500T/Y	Total 1,380T/Y	Total 1,500T/Y
Operation	2 shift	2 shift	2 shift	1 shift	2 shift	1 shift
Land area	15,000 m ²	4,680 m ²	3,000 m ²	3,000 m ²	1,060 m ²	8,500 m ²
Building area	9,010 m ²	1,600 m ²	1,480 m ²	890 m ²	656 m ²	5,095 m ²
Employees (Persons)	272	102	163	90	25	97
Electric receiving capacity	7,000 KVA	700 KVA	800 KVA	400 KVA	250 KVA	600 KVA

Table A-9.2 EQUIPMENT & MACHINERY LIST OF CASTING SHOP

Section	Name	Quantity	Specification
Pattern	Band saw	1	
	Side cutter	1	
	Automatic planer	1	
	Planer	1	
	Electric tools	1	
	Hand tools	4	
	Vise	4	
	Enlarged scale	1	
Melting	Surface plate	2	1 ^M x2 ^M x0.2 ^M
	High frequency induction furnace	2	2 ^T , two furnece
	High frequency induction furnace	2	1 ^T
	Upper ladle	6	2 ^T
	Lower ladle	4	1 ^T
	Weight machine	2	200 kg
	Lifting magnet	2	1 ^T
	Ladle drying barner	3	
Sand preparation & molding	Static pressure molding line	1	60 Mold/Hr 600 ^M x700 ^L x250 ^H
	Green sand preparation system	1	
	Self setting sand preparation system	1	5 T/Hr
	Self setting sand molding conveyor line	2	1 ^M x30 ^M ^L
	Flasks for hand molding	60	1,500 ^Q x300/300
Trimming	Shot blast	1	Hanger type
	Shot blast	2	5 ^T , Table type
	Fixed grinder	20	350ø, double head type
	Swing grinder	5	400ø
	Hand grinder	15	5ø inner angle
	Welding machine	5	CO ₂ semi auto type
	Gas cutting torch	5	Including hose
	Heat treatment furnace	2	10 ^T 2Mx4M
	Heat treatment furnace	2	5 ^T 2Mx3M
Machining	Horizontal turning mill	1	1M
	Lathe	4	6 feet length
	Lathe	4	8 feet length
	Floor type horizontal boring	1	120 m/m
	Horizontal boring machine	1	75 m/m
	Milling machine	1	Type 3
	Drilling machine	1	1,500 m/m
	Shaper	2	24 inch
Inspection & testing	Fluoreses x-ray spectro graph	1	
	C.S. analyzer	1	
	CE meter	1	
	Tensile tester	1	30 ^T
	Hardness tester	1	
	Charpy impact tester	1	30 kg-m
	Ultrasonic tester	1	
	Magnetic perticle tester	1	
	X-ray tester	1	
	Metellographic micro scope	1	
	Pressura tester	1	30 kg/cm ²
	Standard sieving machine	1	
	Permeability tester	1	
	Compression strength tester (sand)	1	
	Handling	Inspection iron board	2
Measuring apparatus		1	
Floor operating crane		1	10 ^T
Floor operating crane		6	5 ^T
Hoist crana		2	5 ^T
Forklift		2	2 ^T
Utilities	Motrack	3	1.5 ^T
	Electric receiving unit	1	Capacity 7,000 KVA

Table A-9.3 EQUIPMENT & MACHINERY LIST OF FORGING SHOP

Section	Name	Quantity	Specification	
Forging	Material stock yard	1	10 ^m x 1.5 ^m x 10space	
	Band saw	1	Cap 50 cm ² /min	
	Frame planer	1	Table 5 ^m x 1 ^m	
	Furnace	2	Batch system direct heating furnace 1250°C, 2 ton 1.5 ^{mW} x 2 ^{mL} x 1.5 ^{mH}	
	Pneumatic hammer (1)	2	Pneumatic hammer drop system C-Frame type 1 ton	
	Pneumatic hammer (2)	1	Pneumatic hammer drop system C-Frame type 2 ton	
	800t Hydraulic press	1	Effective area 1 m ²	
	200t Trimming press	2	Crank macha-press	
	Forklift with manipulation	1	200 kg	
	Friction press	1	25 ton, max 50mm ϕ	
	Quenching furnace	3	2 ^{mW} x 2 ^{mL} x 1.5 ^{mH}	
	Water quenching bath	1	Direct heating type 950°C, 3 ton 3 ^m x 3 ^m x 3 ^m Pump 1000 L/min	
	Oil quenching bath	1	3 ^m x 3 ^m x 3 ^m Pump 1000 L/min	
	Cooling tower	1	50,000 Kcal/H water tank 125 m ³	
	Tempering furnace	2	700°C 3 ton	
	Die	1	Car flange & gear Die 170 (20 ton)	
	Stock yard	1	Pallet for 2 ton	
	Machining	Surface table	2	2 ^m x 3 ^m
		NC Lathe	3	300 ϕ x 600 ^L
		NC Lathe	1	500 ϕ x 1,000 ^L
Lathe		2	5,000 ϕ x 2,000 ^L	
Lathe		2	1,000 ϕ x 3,000 ^L	
Trimmer		2	9 ϕ - 30 ϕ Bolt head	
Thread rolling machine		2	9 ϕ - 30 ϕ Bolt thread	
Shaper		1	Table 0.5 ^{mW} x 1.5 ^{mL}	
Plano miller		1	Table 1 ^{mW} x 2 ^{mL}	
Radial drilling machine		2	Arm 0.5 ^m Bit dia < 50 ϕ	
Radial drilling machine	4	Bit dia < 20 ϕ		
Inspection	Hardness tester	1		
	Ultrasonic testing machine	1		
	Magnetic particle testing machine	1		
	X-ray tester	1		
	Amsler universal testing machine	1	50 ton	
	Impact testing machine	1		
	Grinding machine	1		
	Milling machine	1		
	Sawing machine	1	For test pica	
	Lathe	1	For test pica	
Universal testing machine	1	With x-ray		
Packing & store	Stencil machine	1		
	Product ware house	1	With pallet 25 units	
Transport & service	Over hand travelling crane	2	5 ton x 12 ^m span	
	Forklift	3	2 ton	
	Air compressor	1		
	Electric receiving unit	1	Capacity 700 KVA	

Table A-9.4 EQUIPMENT & MACHINERY LIST OF MACHINING SHOP

(1/2)			
Section	Item	Q'ty	Specification
Machining Shop	Layout machine	3	Height 500
	CNC lathe	3	CC 500 ϕ 200
	Turret lathe	2	
	Lathe	4	
	Machining center	3	
	Shaper	2	
	Radial drilling m/c	2	
	Multiaxis drilling m/c	1	
	Drilling m/c	3	
	Milling m/c	2	Vertical
	Milling m/c	2	Horizontal
	Boring m/c	2	
	Gear hobbing m/c	3	ϕ 150
	Gear hobbing m/c	1	ϕ 350
	Gear shaper	1	ϕ 300
	Straight bevel generator	1	ϕ 150
	Spiral bevel generator	1	ϕ 300
	Key seater m/c	1	
	Cylindrical grinder	2	
	Plane grinder	1	
	Gear grinder	3	
	Surface plate	5	
	Universal grinder	1	
	Floor grinder	1	
	Tool grinder	2	
	Hob sharpener	1	
	Grinding wheel balancer	1	
	Cutting tool	1	
	Grinding wheel	1	
	Hand tool	1	
Measuring & Instrument	Involute tester	1	10 - 350 ϕ
	Tooth pitch tester	2	M = 0.5 - 6
	Tooth micro meter	2	
	Hob tester	1	
	3-dimension coordinator	1	
	Roundness tester	1	
	Roughness tester	1	
	Measuring microscope	1	
	Block gauge	2	
	Height gauge	2	
	Parallel gauge	2	
	Flat gauge	2	
	Fxt. micrometer	3	
	Internal micrometer	2	
	Precision level	1	
	Square	2	
Straight edge	2		
V-block	4		

Table A-9.4 (Continued)

(2/2)

Section	Item	Q'ty	Specification
	Dial gauge	20	
	Dynamic balancer	1	
	Vibrometer	2	
	Other measuring tool	1	
Heat Treatment	Gas atmosphere furnace	2	
	Tempering furnace	2	
	Wash cleaning tank	2	
	Tool and jigs	1	
	Shot blaster	1	
	Universal testing m/c	1	
	Vickers hardness tester	1	
	Brinell Hdn. tester	1	
	Rockwell Hdn. tester	2	
	Shore Hdn. tester	2	
	Magnetic particle detector	1	
	Ultrasonic detector	1	
	Microscope	1	
Utility	Overhead crane	1	1 ton
Facilities	Hoist crane	1	0.5 ton
	Compressor air	2	
	Fork lift	2	0.5 ton
	Motor vehicle	3	
	Electric receiving unit	1	800 KVA

Table A-9.5 EQUIPMENT & MACHINERY LIST OF SHEET WORKING SHOP

Item	Specification	Quantities
1. Surface plate	Marking 5 m x 8 m	1
2. Surface plate	Welding 5 m x 10 m	1
3. Automatic gas cutting machine		10
4. Semi auto electric welding machine	arc type	3
5. Semi auto electric welding machine	CO ₂ gas type	7
6. Hydro press	150 ton	1
7. Bending roller	plate wide 1,500 mm plate thickness 12 mm	1
8. Heat treatment furnace	4 m x 3 m x 4 m	1
9. Sand blaster		1
10. Lathe	3'-0" 5.5 kw	1
11. Radial drilling machine	0.75 kw	1
12. Bench drilling machine	2.2 kw	1
13. Shaper	2.2 kw	1
14. Milling machine	5 kw	1
15. Saring machine	1.5 kw	1
16. Grainder	double head type 1.0 kw	1
17. Over head crane	3 ton	1
18. Jib hoist	0.5 ton	2
19. Hand cart	0.5 ton	10
20. Air compressoure		1
21. Test & inspection tools	15 kw	1 Lot
22. Hand tools		1 Lot
23. Electric receiving & distribution equipment		1 Lot

Table A-9.6 EQUIPMENT AND MACHINERY LIST OF PRESS WORK SHOP

Section	Item	Q'ty	Specification
Press	Mechanical press	1	300t 30 KW
	Mechanical press	1	150t 22 KW
	Mechanical press	1	80t 7.5 KW
	Power press	1	45t 3.7 KW
	Shearing machine	1	4.5mm 3.75 KW
Metal die	Lathe 6 feet	2	5.5 KW
	Milling machine	1	type 2 5.5 KW
	Surface griner	1	(600x300) 5.5 KW
	Radial drilling machine	1	(950H) 5.5 KW
	Bench drilling machine	2	(3-11 ϕ) 0.3 KW
	Contour machine	1	(350m/m) 1.56 KW
	Sawing machine	1	(250m/m) 1.5 KW
	Hand grinder	2	0.6 KW
	Disk grinder	2	0.3 KW
	Bench grinder	1	0.6 KW
	Vise	3	
	Surface plate	1	(500x750)
	Height gauge & other		
	Service facilities	Welding machine	1
2			Arc 200V 24.5KVA
Compressor		1	(screw type) 37 KW
Die transportation lifter		3	
Steel rack		1	
Pallet (folding type)		20	
Pallet for transportation		3	
Measuring tools and milling tools		1	
Die		10	
Electric receiving unit		1	250 KVA

Table A-9.7 EQUIPMENT AND MACHINERY LIST OF STEEL FABRICATION SHOP

Section	Name	Q'ty	Specification	
No. 1 Shop	3t overhead travelling hoist	1	span about 19m	3.9 KW
	5t overhead travelling hoist	1	span about 19m	6.5 KW
	High speed cutter	1	5HP	
	Pipe bender	1	pipe dia 65A, hydro-manual operation	
	Angle cutter	1	max. angle 13x100x100	2.2 KW
	200t hydro press	1	plate width: 2,500mm plate thickness: 16mm	18 KW
	2t jib hoist	2		2.6 KW
	Bending roller	1	plate thickness: 13mm plate width: 3,200mm	12.5 KW
	Turning roller	2	max. load: 5t dia: 350mm ϕ - 3,000mm ϕ length: 2,000mm - 12,000mm	-
	Electric welding equipment	70	ARC - welder	
		10	CO ₂ - welder	No. 1 &
		2	MIG - welder	No. 2 shop
	No.2 Shop	High speed cutter	1	5HP
3t overhead travelling hoist		2	span about 19m	3.9 KW
Angle cutter (uni-cutter)		1	capacity: (1) Punching: 16mm x 19mm ϕ (2) Shearing: 9mm x 300mm 13mm x 100mm Angle 13x100x100	2.2 KW
Radial drilling machine		1	small type bite: 4mm ϕ - 50mm ϕ	0.75 KW
Grinder		1	bench type, 255mm ϕ x2	0.94 KW
Eye-tracing gas cutting machining		1	1,200x400. 4 burner	
Radial drilling machine		1	22 KW brass: 110mm ϕ , HT steel: 50 ϕ	
Grinder		1	bench type of item no. 24	0.94 KW
Shearing machine		1	7.5HP shearing capacity: 6.0mm x 3,100mm	
Vibro-shear		1	steel: 0.6-3.2mm sus: 0.6-1.0mm	1.5 KW
Press brake		1	capacity: 4.5mm x 2,500mm	6.5 KW
Pipe bender		1	hydro operated, 100 ϕ pipe	15 KW
Shearing machine		1	7.5HP, capacity 6mm x 3,100mm	
Punching machine		1	32mm ϕ x 8mm, 32mm ϕ sq x 8mm	2.2 KW
Shearing machine for square bar		1	32mm ϕ sq, 32mm ϕ	2.2 KW
Angle cutter		1	punching 16mm x 19mm ϕ shearing 9mm x 300mm 13mm x 100mm Angle 13 x 100 x 100	2.2 KW
Hydro press		1	55t	2.2 KW
Portable hand roller		1	plate width: 1,000mm	-
0.5t jib hoist		4	fixed type	0.75 KW

Table A-9.8 ESTIMATED PROJECT COST OF CASTING

(UNIT: US\$1,000)			
Item	Foreign	Local	Total
1. Plant direct cost			
(1) Equipment, materials	5,451.6	-	5,451.6
(2) Spare parts	167.8	-	167.8
(3) Ocean freight,	100.0	-	100.0
Insurance	136.8	-	136.8
Inland transportation	-	40.0	40.0
(4) Civil & erection	145.1	3,498.4	3,643.5
(5) Office accommodation & facilities	-	98.4	98.4
(6) Engineering & supervising	167.1	-	167.1
(7) Over head expense (10%)	616.8	363.7	980.5
Sub-total	6,785.2	4,000.5	10,785.7
2. Tax and duty			
(1) Import tax (CIFx10%)	-	585.6	585.6
(2) Import sales tax (CIFx10%)	-	585.6	585.6
(3) Value added tax (Localx10%)	-	400.0	400.0
Sub-total	-	1,571.2	1,571.2
3. Working capital (3 months of variable cost)	-	2,174.2	2,174.2
4. Contingency & other (20%)	1,357.0	1,549.2	2,906.2
Grand-total	8,142.2	9,295.1	17,437.3
Production capacity (T/Y)			12,000
Investment cost per ton of product (\$/T)			1,500

Table A-9.9 ESTIMATED PROJECT COST OF FORGING

(UNIT: US\$1,000)			
Item	Foreign	Local	Total
1. Plant direct cost			
(1) Equipment, materials	3,135	-	3,135
(2) Spare parts	73	-	73
(3) Ocean freight,	50.0	-	50.0
Insurance	69.5	-	69.5
Inland transportation	-	20.0	20.0
(4) Civil & erection	30.2	980.2	1,010.4
(5) Office accommodation & facilities	-	62.7	62.7
(6) Engineering & Supervising	153.0	-	153.0
(7) Over head expense (10%)	351.1	106.3	457.4
Sub-total	3,861.8	1,169.2	5,031.0
2. Tax and duty			
(1) Import tax (CIFx10%)	-	332.8	332.8
(2) Import sales tax (CIFx10%)	-	332.8	332.8
(3) Value added tax (Localx10%)	-	116.9	116.9
Sub-total	-	782.5	782.5
3. Working capital (3 months of variable cost)	-	979.6	979.6
4. Contingency & other (20%)	772.4	586.3	1,358.7
Grand-total	4,634.2	3,517.6	8,151.8
Production capacity (T/Y)			4,600
Investment cost per ton of product (\$/T)			1,800

Table A-9.10 ESTIMATED PROJECT COST OF MACHINING

(UNIT: US\$1,000)			
Item	Foreign	Local	Total
1. Plant direct cost			
(1) Equipment, materials	3,586.9	-	3,586.9
(2) Spare parts	71.7	-	71.7
(3) Ocean freight,	57.5	-	57.5
Insurance	68.1	-	68.1
Inland transportation	-	23.0	23.0
(4) Civil & erection	26.0	856.7	882.7
(5) Office accommodation & facilities	-	71.7	71.7
(6) Engineering & Supervising	225.5	-	225.5
(7) Over head expense (10%)	403.6	95.1	498.7
Sub-total	4,439.3	1,046.5	5,485.8
2. Tax and duty			
(1) Import tax (CIFx10%)	-	378.4	378.4
(2) Import sales tax (CIFx10%)	-	378.4	378.4
(3) Value added tax (Localx10%)	-	104.7	104.7
Sub-total	-	861.5	861.5
3. Working capital (3 months of variable cost)	-	403.7	403.7
4. Contingency & other (20%)	887.8	462.3	1,350.1
Grand-total	5,327.1	2,774.0	8,101.1
Production capacity (T/Y)			639
Investment cost per ton of product (\$/T)			12,700

Table A-9.11 ESTIMATED PROJECT COST OF SHEET WORKING
(SHEET WORK & WELDING)

(Unit: US\$, 000)			
Item	Foreign	Local	Total
1. Plant direct cost			
(1) Equipment & material	420.1	-	420.1
(2) Spare parts	8.4	-	8.4
(3) Ocean freight	7.5	-	7.5
Insurance	13.2	-	13.2
Inland transport	-	3.0	3.0
(4) Civil & erection	15.0	392.0	407.0
(5) Office accommodation facilities	-	8.4	8.4
(6) Engineering & supervising	40.4	-	40.4
(7) Over head	50.5	40.3	90.8
Sub-total	555.1	443.7	998.8
2. Tax & duty			
(1) Import tax (CIF x 10%)	-	44.9	44.9
(2) Import sales tax (CIF x 10%)	-	44.9	44.9
(3) Value added tax Local	-	44.4	44.4
Sub-total	-	134.2	134.2
3. Working capital (3 months of variable cost)	-	290.9	290.9
4. Contingency & other (20%)	111.0	173.8	284.8
Total	666.1	1,042.6	1,708.7

Production capacity (T/Y)

1,500

Investment cost per ton of product (\$/T)

1,140

Table A-9.12 ESTIMATED PROJECT COST OF PRESS WORK (SMALL PARTS)

(UNIT: US\$1,000)			
Item	Foreign	Local	Total
1. Plant direct cost			
(1) Equipment, materials	468.2	-	468.2
(2) Spare parts	17.0	-	17.0
(3) Ocean freight,	9.3	-	9.3
Insurance	11.7	-	11.7
Inland transportation	-	3.7	3.7
(4) Civil & erection	10.0	277.9	287.9
(5) Office accommodation & facilities	-	9.5	9.5
(6) Engineering & Supervising	17.8	-	17.8
(7) Over head expense (10%)	53.4	29.1	82.5
Sub-total	587.4	320.2	907.6
2. Tax and duty			
(1) Import tax (CIFx10%)	-	48.8	48.8
(2) Import sales tax (CIFx10%)	-	48.8	48.8
(3) Value added tax (Localx10%)	-	32.0	32.0
Sub-total	-	129.6	129.6
3. Working capital (3 months of variable cost)	-	366.0	366.0
4. Contingency & other (20%)	117.5	163.1	280.6
Grand-total	704.9	978.9	1,683.8
Production capacity (T/Y)			1,380
Investment cost per ton of product (\$/T)			1,220

Table A-9.13 ESTIMATED PROJECT COST OF STEEL FABRICATION

(UNIT: US\$1,000)			
Item	Foreign	Local	Total
1. Plant direct cost			
(1) Equipment, materials	679.1	-	679.1
(2) Spare parts	25.5	-	25.5
(3) Ocean freight,	26.3	-	26.3
Insurance	42.5	-	42.5
Inland transportation	-	10.5	10.5
(4) Civil & erection	75.1	2,054.5	2,129.6
(5) Office accommodation & facilities	-	13.6	13.6
(6) Engineering & supervising	74.5	-	74.5
(7) Over head expense (10%)	92.3	207.9	300.2
Sub-total	1,015.3	2,286.5	3,301.8
2. Tax and duty			
(1) Import tax (CIFx10%)	-	77.3	77.3
(2) Import sales tax (CIFx10%)	-	77.3	77.3
(3) Value added tax (Localx10%)	-	228.7	228.7
Sub-total	-	383.3	383.3
3. Working capital (3 months of variable cost)	-	325.8	325.8
4. Contingency & other (20%)	203.1	595.1	798.2
Grand-total	1,218.4	3,590.7	4,809.1
Production capacity (T/Y)			1,500
Investment cost per ton of product (\$/T)			3,210

Table A-9.14 EQUIPMENT & MACHINERY LIST OF SMALL SCALE CASTING

Section	Name	Quantity	Specification
Melting	High Frequency Furnace	1	0.5T Reserves Furnace Body
	CE Meter	1	
	Imersion Pyrometer	1	1700°C
	Ladle	2	0.5T, Top pouring
Sand Preparation & Molding	Sand Preparation Unit	1 set	3T/H Max
	Platform Scale (1)	1	50kg Max
	Platform Scale (2)	1	250kg Max
Trimming	Shot Blast	1 set	150kg/Batch
	Double Head Grinder	1	Wheel 405ø x 50 1960 r.p.m.
	Air Grinder (1)	1	Wheel 100ø 9000 r.p.m.
	Air Grinder (2)	1	Wheel 150ø 7200 r.p.m.
Inspection	Movable Compressor	1	5.5 - 7kg/cm ²
Handling	Hoist (1)	1	2T
	Hoist (2)	1	1T
	Forklift	1	1T
Utilities	Sub-station	1	3000V → 220V (600kVA)

Table A-9.15 ESTIMATED PROJECT COST OF SMALL SCALE CASTING

(Unit: US\$ 1,000)

Item	Foreign	Local	Total
1. Plant direct cost			
(1) Equipment, materials	424	-	424
(2) Spare parts	15	-	15
(3) Ocean freight,	8	-	8
Insurance	6	-	6
Inland transportation	-	3	3
(4) Civil & erection	21	418	439
(5) Office accommodation & facilities	-	8	8
(6) Engineering & supervising	32	-	32
(7) Over head expense (10%)	<u>51</u>	<u>43</u>	<u>94</u>
Sub-total	557	472	1,029
2. Tax and duty			
(1) Import tax (CIFx10%)	-	45	45
(2) Import sales tax (CIFx10%)	-	45	45
(3) Value added tax (Localx10%)	<u>-</u>	<u>47.2</u>	<u>47.2</u>
Sub-total	-	137.2	137.2
3. Working capital (3 months of variable cost)	-	47	47
4. Contingency & other (20%)	111	131.2	242.2
Grand-total	668	787.4	1,455.4

Table A-9.16 EQUIPMENT & MACHINERY LIST OF SCREW & RIVET SHOP

Name	Q'ty	Specification
1. Cold header	1	6 x 60 Double stroke cold header (3.7kW + 0.75kW)
2. Tumbling machine	1	0.4m ³ x 15 - 20rpm (0.75kW)
3. Rolling machine	1	6 x 35 Inclined type motor drive (0.75kW)
4. Die	5	For M6, M5, M4, M3 & M2.6
5. Measuring tools & inspection tools	1 set	Screw gauge, Dial gauge, Measuring microscope, etc
6. Electric receiving unit	1	(10kVA)

Table A-9.17 ESTIMATED PROJECT COST OF SCREW/RIVET

(Unit: US\$ 1,000)

Item	Foreign	Local	Total
1. Plant direct cost			
(1) Equipment, materials	60.0	-	60.0
(2) Spare parts	1.2	-	1.2
(3) Ocean freight,	0.5	-	0.5
Insurance	0.9	-	0.9
Inland transportation	-	0.2	0.2
(4) Civil & erection	3.0	49.9	52.9
(5) Office accommodation & facilities	-	1.2	1.2
(6) Engineering & supervising	6.5	-	6.5
(7) Over head expense (10%)	<u>7.2</u>	<u>5.1</u>	<u>12.3</u>
Sub-total	79.3	56.4	135.7
2. Tax and duty			
(1) Import tax (CIFx10%)	-	6.3	6.3
(2) Import sales tax (CIFx10%)	-	6.3	6.3
(3) Value added tax (Localx10%)	<u>-</u>	<u>5.6</u>	<u>5.6</u>
Sub-total	-	18.2	18.2
3. Working capital (3 months of variable cost)	-	9.9	9.9
4. Contingency & other (20%)	15.9	16.9	32.8
Grand-total	95.2	101.4	196.6

Table A-9.18 EQUIPMENT & MACHINERY LIST OF PRESS WORK SHOP

Name	Q'ty	Specification
1. Press brake machine	2	80 ton Hydrostatic press (18.5kW)
2. Shearing machine	1	6 x 2.5 Mechanical shearing machine (5.5kW)
3. Bench type drilling machine	1	Bit dia = 20 ϕ (0.75kW)
4. Welding machine	2	Arc. spot welder (100V-10A)
5. Welding machine	1	Arc. welder (24.5kVA)
6. Die	10	
7. Measuring tools	1	
8. Electric receiving unit	1	(100kVA)

Table A-9.19 ESTIMATED PROJECT COST OF PRESS (SMALL ITEMS BY THIN PLATE)

(Unit: US\$ 1,000)

Item	Foreign	Local	Total
1. Plant direct cost			
(1) Equipment, materials	110.0	-	110.0
(2) Spare parts	2.0	-	2.0
(3) Ocean freight,	3.2	-	3.2
Insurance	1.7	-	1.7
Inland transportation	-	1.3	1.3
(4) Civil & erection	5.6	77.2	82.8
(5) Office accommodation & facilities	-	2.2	2.2
(6) Engineering & supervising	8.5	-	8.5
(7) Over head expense (10%)	<u>13.1</u>	<u>8.1</u>	<u>21.2</u>
Sub-total	144.1	88.8	232.9
2. Tax and duty			
(1) Import tax (CIFx10%)	-	11.7	11.7
(2) Import sales tax (CIFx10%)	-	11.7	11.7
(3) Value added tax (Localx10%)	<u>-</u>	<u>8.9</u>	<u>8.9</u>
Sub-total	-	32.3	32.3
3. Working capital (3 months of variable cost)	-	28.5	28.5
4. Contingency & other (20%)	28.8	29.9	58.7
Grand-total	172.9	179.5	352.4

Table A-9.20 EQUIPMENT & MACHINERY LIST OF PLATING SHOP

(1/2)

Section	Name	Q'ty	Specification
Plating	Bath for Alkali Decreasing	1	1200 x 900 x 600H, SS + PVC
	Bath for Rinsing	19	600 x 600 x 600H, PVC
	Bath for Pickling	1	900 x 600 x 600H, PVC
	Bath for Electrolytic Decreasing	1	900 x 600 x 600H, SS + PVC
	Bath for Cyanide Zinc Plating	1	1200 x 1200 x 800H, SS + PVC
	Bath for Rinsing	1	600 x 1200 x 800H, SS + PVC
	Bath for Hot Rinsing	1	600 x 600 x 600H, SUS304
	Barrel for Cyanide Zinc Plating	3	ø400 x 650L, PVC
	Cage	40	ø300 x 200H, SUS304
	Carrier (Hand Movable)	1	
	Driving Device of Barrel Rotation	1	0.25kW
	Rectifier for Electrolytic Decreasing	1	10V x 300A
	Rectifier for Cyanide Zinc Plating	1	12V x 600A
	Filter for Electrolytic Decreasing	1	700 l/Hr, 0.18kW
	Filter for Cyanide Zinc Plating	1	3500 l/Hr, 0.265kW
	Heater for Alkali Decreasing	2	3kW x 2
	Heater for Electrolytic Decreasing	1	3kW
	Heater for Hot Rinsing	1	3kW
	Cooler for Cyanide Zinc Plating	1	Air Cooling Type 1.5kW
	Centrifugal Dehydrator	1	Motor: 2.2kW Heater: 5kW
	Cage for Centrifugal Dehydrator	2	ø550 x 300H, SUS304
	Showering Tower for Electrolytic Decreasing and Pickling	1	Pump: 0.2kW Fan: 0.75kW
	Showering Tower for Cyanide Zinc Plating	1	Pump: 0.2kW, Fan: 0.75kW
	Water Tank	1	3m ³ Pannel Tank, 1m x 3m x 1mH
	Cubicle	1	70kVA
	Pannel Board	1	

Table A-9.20 (Continued)

(2/2)

Section	Name	Q'ty	Specification	
Drainage	Primary and Third Reacting Tank	2	550 x 550 x 700H, PVC	
	Secondary Reacting Tank, Primary pH Tank and Coagulating Tank	3	750 x 750 x 900H, PVC	
	Secondary pH Regulating Tank	1	1000 x 1000 x 900H, PVC	
	Reducing Tank	1	400 x 400 x 600H, PVC	
	Chemicals Tank	6	N-100, 100 l Poly-tank	
	Pump for Water	8	0.2kW x 8	
	Pump for Chemicals	14	0.065kW x 14	
	Plunging Pump of Calcium Hydrate Dehydrator	1	0.2kW	
		1	Pump: 3.7kW Oil Pressure 1.5kW	
	Agitator	10	0.1kW x 10	
	Agitator for Secondary pH Tank	1	0.2kW	
	pH Meter	7	0 - 14pH	
	ORP Meter	4	+700 micro V	
	pH Recorder	1	0 - 14 pH	
	Flow Meter	7	PVC/PVC	
	Level Switch	10	PVC Float	
	Control Pannel Board	1	Outdoors Self-Standing Double Door Type	
	Common facilities for plating and drainage	Valve	1 lot	15A - 40A, PVC
		Materials for Piping	1 lot	15A - 50A, PVC
		Framwork	1 lot	SS + Tar Epoxy Paint, PVC
Copper Bus-bar		1 lot	5T x 50W	
Copper Cable		1 lot		

Table A-9.21 ESTIMATED PROJECT COST OF ELECTROPLATING

(Unit: US\$ 1,000)

Item	Foreign	Local	Total
1. Plant direct cost			
(1) Equipment, materials	97.0	-	97.0
(2) Spare parts	2.9	-	2.9
(3) Ocean freight,	3.4	-	3.4
Insurance	1.5	-	1.5
Inland transportation	-	1.3	1.3
(4) Civil & erection	28.9	37.4	66.3
(5) Office accommodation & facilities	-	1.9	1.9
(6) Engineering & supervising	34.5	-	34.5
(7) Over head expense (10%)	<u>16.8</u>	<u>4.1</u>	<u>20.9</u>
Sub-total	185.0	44.7	229.7
2. Tax and duty			
(1) Import tax (CIFx10%)	-	10.5	10.5
(2) Import sales tax (CIFx10%)	-	10.5	10.5
(3) Value added tax (Localx10%)	<u>-</u>	<u>4.5</u>	<u>4.5</u>
Sub-total	-	25.5	25.5
3. Working capital (3 months of variable cost)	-	2.7	2.7
4. Contingency & other (20%)	37.0	14.6	51.6
Grand-total	222.0	87.5	309.5

Table A-9.22 MACHINERY LIST OF FILTER MANUFACTURING FACTORY

Existing machinery

1. Press machine 35T	1
2. Press machine 16T	2
3. Press machine 10T	1
4. Press machine 6.3T	2
5. Lathe	1
6. Folding machine	1
7. Drilling machine	1
8. Spot welder	2
9. Transformer for welding	1
10. Hand press	6

Additional machinery

1. Power press machine, 70T x 165 strokes	2
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Table A-9.23 ESTIMATED EXPANSION COST OF FILTER MANUFACTURING FACTORY

(Unit: US\$ 1,000)

Item	Foreign	Local	Total
1. Plant direct cost			
(1) Equipment, materials	23.5	-	23.5
(2) Spare parts	1.5	-	1.5
(3) Ocean freight,	0.5	-	0.5
Insurance	0.5	-	0.5
Inland transportation	-	0.1	0.1
(4) Civil & erection	-	20.0	20.0
(5) Office accommodation & facilities	-	0.5	0.5
(6) Engineering & supervising	2.4	-	2.4
(7) Over head expense (10%)	2.8	2.1	4.9
Sub-total	31.1	22.7	53.8
2. Tax and duty			
(1) Import tax (CIF x 10%)	-	2.6	2.6
(2) Import sales tax (CIF x 10%)	-	2.6	2.6
(3) Value added tax (Local x 10%)	-	2.3	2.3
Sub-total	-	7.5	7.5
3. Working capital additional	-	45.0	45.0
4. Contingency & other (20%)	6.2	15.0	21.2
Grand-total	37.3	90.2	127.5

Table A-9.24 MACHINERY LIST OF PUMP MANUFACTURING FACTORY

(Foundry Equipment)

Item	Q'ty	Description
1.	2	High frequency induction furnace 350 kW, 2 x 500 kg complete set
2.	1	High frequency induction furnace 500 kW, 2 x 1,500 kg complete set
3.		Laboratory equipment 1 spectrometer 1 current pulse generator 1 micro processor 1 printer 1 visual display
4.	1	CE temperature meter
5.	1	Induction holding unit
6.	1	Moulding system
7.		Core making 1 sand mixing machine 3 table 1 core shelf 1 core drying furnace
8.		Sand treatment plant 1 sand mixing machine 1 pneumatic sand transport
9.		Surface cleaning and fettling 5 small shot blast machine 1 grinding machine 1 vise 1 stationary grinding machine 1 shot blast machine 10 hand grinding machine 1 HF installation
10.	1	Gust-apparatus 1,000 Amp. 1 ventilator
11.	1	Rolling conveyor
12.	3	Overhead crane
13.	1	Wall crane
14.		Other equipment
15.	1	Compressor with piping
16.	3	Pouring ladle
17.		Cope and drag

Table A-9.25 MACHINERY LIST OF PUMP MANUFACTURING FACTORY

(Machine Shop and Assembly Shop Plant and Equipment)

Item	Q'ty	Description
1.	6	Lathe, Centre height 255 mm, Centre distance 1,000 mm, Motor power 10 HP
2.	1	Lathe, Centre height 255 mm, Centre distance 3,000 mm, Motor power 10 HP
3.	1	Lathe, Centre height 300 mm, Centre distance 6,000 mm, Motor power 15 HP
4.	2	Lathe, Centre height 420 mm, Centre distance 1,500 mm, Motor power 20 HP
5.	1	Lathe, Centre height 500 mm, Centre distance 4,000 mm, Motor power 40 HP
6.	1	Lathe, Centre height 800 mm, Centre distance 4,000 mm, Motor power 75 HP

Table A-9.26 ESTIMATED COST OF PUMP MANUFACTURING FACTORY

(Unit: US\$ 1,000)

Item	Foreign	Local	Total
1. Plant direct cost			
(1) Equipment, materials	1,945.0	-	1,945
(2) Spare parts	82.7	-	82.7
(3) Ocean freight, Insurance	50.0 60.0	- -	50.0 60.0
Inland transportation	-	40.0	40.0
(4) Civil & erection	-	1,350.0	1,350.0
(5) Office accommodation & facilities	-	15.0	15.0
(6) Engineering & supervising	300.0	-	300.0
(7) Over head expense (10%)	243.8	140.5	384.3
Sub-total	2,681.5	1,545.5	4,227.0
2. Tax and duty			
(1) Import tax (CIF x 10%)	-	213.8	213.8
(2) Import sales tax (CIF x 10%)	-	213.8	213.8
(3) Value added tax (Local x 10%)	-	154.6	154.6
Sub-total	-	582.2	582.2
3. Working capital additional	-	900.0	900.0
4. Contingency & other (20%)	536.3	605.5	1,141.8
Grand-total	3,217.8	3,633.2	6,851.0

Table A-9.27 MACHINERY LIST OF SWITCHGEAR MANUFACTURING FACTORY

FABRICATION AND PAINTING SHOP (EXISTING EQUIPMENT) (1/2)

No.	Q'ty	Name
1.	2 sets	20 Ton Power Press
2.	3 sets	15 Ton Power Press
3.	1 set	Cutting Machine
4.	2 sets	Spot Welder
5.	1 pce	Cutting Machine
6.	1 pce	Bending Machine
7.	2 pcs	Painting Oven
8.	1 pce	Cutting Machine
9.	1 pce	Bending Machine
10.	1 pce	Testing Equipment
11.	1 pce	M/C Derset GM
12.	1 pce	Spot Welder Merk Aro
13.	1 pce	Spot Welder Merk Moller
14.	1 pce	Compressor Hitachi
15.	1 pce	Hydrolic Machine
16.	1 set	LVD Hydrolic Press Prizo 70/30
17.	1 set	LVD Hydrolic Quiletine MPB 2500
18.	1 set	LVD Trump Nibling
19.	1 pce	Compressor
20.	1 pce	Novo Press Machine
21.	1 pce	Spot Welder
22.	1 pce	Bending Machine for Acrilic
23.	1 pce	Cutting Machine
24.	2 pcs	Hand Pallet Opel
25.	1 pce	Screw Compressor
26.	4 pcs	AC ARC Welder
27.	3 pcs	Spot Welder
28.	1 pce	Spot Welder
29.	1 pce	Spot Welder
30.	1 pce	Cutting Machine For
31.	2 pcs	Grindstone Machine
32.	1 pcs	Sawing Machine
33.	2 pcs	Drilling Machine
34.	1 pce	Power Press Machine
35.	1 set	Auto Shear
36.	1 set	Auto Bender
37.	3 pcs	25 Ton Power Press
38.	1 pce	16 Ton Power Press
39.	1 pce	6.3 Ton Power Press

Table A-9.27 (Continued)

(2/2)

No.	Q'ty	Name
40.	3 pcs	3.15 Ton Power Press
41.	1 pce	Spot Welding Toa Seiki
42.	2 pcs	CO ₂ Welding TS ARC
43.	1 pce	Cutting Machine for Equal Angel Bor

Note: Equipment and machineries in perolatan work shop and laboratory were deleted.

FABRICATION AND PAINTING SHOP (NEW EQUIPMENT)

No.	Q'ty	Name
1.	2 sets	Equipment for Press Brake (Amada Meteres)
2.	1 set	Painting Equipment, Drying Furnase and Power Coating Equipment

Table A-9.28 ESTIMATED EXPANSION COST OF SWITCHGEAR FACTORY

(Unit: US\$ 1,000)

Item	Foreign	Local	Total
1. Plant direct cost			
(1) Equipment, materials	167.0	-	167.0
(2) Spare parts	8.5	-	8.5
(3) Ocean freight,	0.3	-	0.3
Insurance	2.6	-	2.6
Inland transportation	-	0.1	0.1
(4) Civil & erection	50.0	950.0	1,000.0
(5) Office accommodation & facilities	-	19.0	19.0
(6) Engineering & supervising	16.7	-	16.7
(7) Over head expense (10%)	24.5	96.9	121.4
Sub-total	269.6	1,066.0	1,335.6
2. Tax and duty			
(1) Import tax (CIF x 10%)	-	17.8	17.8
(2) Import sales tax (CIF x 10%)	-	17.8	17.8
(3) Value added tax (Local x 10%)	-	106.6	106.6
Sub-total	-	142.2	142.2
3. Working capital additional			
	-	630.0	630.0
4. Contingency & other (20%)			
	53.9	367.6	421.5
Grand-total	323.5	2,205.8	2,529.3

Part IV ANNEX

CONTENT

PART IV ANNEX

- ANNEX I-1 MEMBER LIST OF JICA TEAM
- I-2 MEMBER LIST OF STEERING COMMITTEE OF THE STUDY ON THE DEVELOPMENT OF LINKAGE-TYPE INDUSTRIES
- I-3 LIST OF GOVERNMENT ORGANIZATION VISITED BY THE TEAM
- I-4 LIST OF FINANCING ORGANIZATION VISITED BY THE TEAM
- I-5 LIST OF LARGE SCALE INDUSTRIES INTERVIEWED BY CONSULTANTS AND LOCAL INTERVIEWERS (EMPLOYEE OVER 100 PERSONS)
- I-6 LIST OF MEDIUM AND SMALL SCALE INDUSTRIES INTERVIEWED BY CONSULTANTS AND LOCAL INTERVIEWERS
- I-7 LIST OF DOCUMENTS OBTAINED BY JICA TEAM
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- ANNEX II BASIC DATA FOR ECONOMY AND INDUSTRY IN INDONESIA
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- ANNEX IV RESULTS OF QUESTIONNAIRE TO LARGE-SCALE INDUSTRY AND MEDIUM- AND SMALL-SCALE INDUSTRY
- ANNEX V BACK DATA FOR DELETION PROGRAM

ANNEX I PERFORMANCE LIST OF LOCAL SURVEY

MEMBER LIST OF JICA TEAM

1. Coordination group

- M. SAKANASHI (Team Leader/Project Management)
- S. INAKAZU (Sub-leader of the Team/Senior Project Engineer)
- H. TANAKA (Residential Coordinator/Economist)
- T. USHIJIMA (Technical Group Leader/Electrical Engineer)

2. Financial group

- J. KUWABARA (Economist)
- S. ISHII (Economist)

3. Technical group 1

- M. IMOTO (Metalworking Senior Engineer)
- S. KOHARA (Mechanical Engineer)

4. Technical group 2

- M. HAGINO (Senior Project Engineer)
- M. NAGATOMO (Transportation Machine Engineer)

5. Technical group 3

- H. ENDO (Metalworking Engineer)
- T. SETO (Metalworking Engineer)

MEMBER LIST OF STEERING COMMITTEE
of
THE STUDY ON THE DEVELOPMENT OF LINKAGE-TYPE INDUSTRIES

- Chairman : Mr. Tuk Setyohadi
Secretary General
Ministry of Industry (MOI)
- Vice Chairman : Mr. Bachrum S. Harahap
Special Assistant to Minister, MOI
- Committee Secretary : Mr. A.S. Siagian
Head, Bureau of International
Cooperation, MOI
- Committee Members :
1. Mr. Tata C. Syarief,
SE Director of Programme Development,
Directorate General of Machinery and
Basic Metal Industry, MOI
 2. Ir. Soesanto Sahardjo Director of Programme Development,
Directorate General of Multifarious
Industries, MOI
 3. Ir. Soenaryo Director of Programme Development
Directorate General of Basic Chemical
Industry, MOI
 4. Mr. Djoko Mulyanto Director of Programme Development,
Directorate General of Small Scale
Industry, MOI
 5. Drs. Muchlis Tahar Head of Industrial Research Center,
Agency for Industrial Research and
Development, MOI
 6. Mr. Ilchaidi Elias S.E. Head, Bureau of Planning, MOI
 7. Mrs. Buli O.
Surjaatmaja Director for External Fund Foreign
Monetary Fund, Ministry of Finance
 8. Dr. Ir. Bambang Purnomo Head, Bureau of Industry, Mining and
Electric Energy, BAPPENAS
 9. Ir. Mansjurdin Nurdin Deputy General manager and of General
Credit Department, Bank Indonesia
 10. Drs. Wahid Salim Head of the Inter-Governments
Department, Cabinet Secretariat of
R.I.

LIST OF GOVERNMENT ORGANIZATION

VISITED BY THE TEAM

Secretary General

Bureau of International Cooperation

Bureau of Planning

Agency for Industrial Research and Development

Directorate General of Machine and Basic Metal Industry

Directorate of Programming

Directorate of Machine Industries

Directorate of Electrical Equipment and Electronic
Industries

Directorate of Land and Air Transportation Industry

Directorate of Ship Building Industries

Directorate General of Multifarious Industry

Directorate of Programming

Directorate of Electrical Equipment and Metal Industries

Directorate General of Small-scale Industry

Directorate of Programming

Directorate of Metal-working Industries

REGIONAL OFFICE OF DEPARTMENT OF INDUSTRY (KANWIL)

KANWIL DKI JAKARTA	JAKARTA
KANWIL WEST JAVA	BANDUNG
KANWIL CENTRAL JAVA	SEMARANG
KANWIL EAST JAVA	SURABAYA
KANWIL YOGYAKARTA	YOGYAKARTA
KANWIL NORTH SUMATERA	MEDAN
KANWIL EAST KALIMANTAN	BALIKPAPAN
KANWIL SOUTH SULAWESI	UJUNG PANDANG

MINISTRY OF FINANCE

Jl. Lapangan Banteng Timur 2-4

Directorate General of Foreign Monetary Fund

Directorate of External Fund

Directorate General of Domestic Monetary Fund

Directorate of Financial Institution

Directorate of Investment

BKPM (Investment Coordination Board)

Bureau of Promotion

LIST OF FINANCING ORGANIZATION

VISITED BY THE TEAM

No.	Name of Organization	Address
1.	Bank Indonesia	Jl. M.H. Thamrin 2 Jakarta
2.	Bank Indonesia, Surabaya Office	Jl. Pablewan No.105 Surabaya
3.	Bank Negara Indonesia 1946 Surabaya Branch and Surabaya Resional Office	Jl. Pemuda No.36
4.	Bank Dagang Negara Surabaya Branch	Jl. Kembangan Jepur 168
5.	Bank Pembangunan Daerah of East Jawa Office	Jl. Garuda No.1 Surabaya
6.	Bank of Tokyo	Nusantara Building Jl. M.H. Thamrin No.59, Jakarta
7.	OECE	Nusantara Building Jl. M.H. Thamrin No.59, Jakarta
8.	Bank Bumi Daya Central Office	Jl. Imam Bonjol No.61 Jakarta
9.	Bank Pembangunan Indonesia Central Office	Jl. Gondangdia Lama 2-4, Jakarta
10.	World Bank Jakarta Office	Jl. H.R. Rasuna Said (Lippo Bldg.)
11.	Bank Expor Impor Indonesia Central Office	Jl. Lapangan Setasiun 1, Jakarta-Kota
12.	Bank Rakyat Office Central Office	Jl. Veteran No.8, Jakarta Pusat

No.	Name of Organization	Address
13.	P.T. Asuransi Kredit Indonesia	Jl. Cikini Raya No.99 Jakarta Pusat
14.	Bank Duta Ekonomi Head Office	Jl. Kebon Sirih 12, Jakarta
15.	Overseas Express Bank	Jl. Pecenongan No.84 Jakarta
16.	Bank Indonesia, Bandung Office and RPMUs - Jabar	Jl. Braga, Bandung
17.	Bank Negara Indonesia Bandung Regional Office and Bandung Branch	Jl. Braga No.133, Bandung
18.	Bank Dagang Negara Bandung Branch	Jl. Asia Afrika 119, Bandung
19.	Bank Pembangunan Daerah of Jabar - Head Office	Jl. Kejaksaan No.8, Bandung
20.	Bank Indonesia Medan	Jl. Palang Merah 112A, Medan

LIST OF LARGE SCALE INDUSTRIES
INTERVIEWED BY CONSULTANTS AND
LOCAL INTERVIEWERS

(Employee over 100 persons)

1. AUTOMOTIVE AND AUTOMOTIVE PARTS

1. P.T. Karama Yudha Tiga Berlian Motors
Jl. Jen. A. Yani Proyek Pulomas
Jakarta
2. P.T. Toyota-Astra Motor
Jl. Jenderal Sudirman 5
Jakarta
3. P.T. Toyota Engine Indonesia
Jl. Yos Sudarso Sunter I
Jakarta
4. P.T. Toyota Mobilindo
Jl. Yos Sudarso Sunter II
Jakarta Utara
5. P.T. Multi Astra
Jl. Yos Sudarso Sunter
Jakarta
6. P.T. Kramayudha Ratu Motor
Jl. Raya Bekasi Km. 22-23
Jakarta
7. P.T. Sanoh Indonesia
Jl. Rawagelam IV/K. II-3
Kawasan Industri
Pulogadung Jakarta
8. P.T. Nippondenso Indonesia
Jl. Yos Sudarso, Sungai Bambu
Jakarta Utara

9. P.T. Meiwa Indonesia
Jl. Raya Bogor Km. 30
Jawa Barat
10. P.T. Kramayudha SBY Majapahit Motor
Jl. Taman Sepanjang
Surabaya
11. P.T. Colt Engine Manufacturing
Jl. Raya Bekasi Km. 21-22
Rawaterate Pulogadung
Jakarta
12. P.T. Mitsubishi Kramayudha & Manufacturing
Jl. Bekasi Timur Km. 22
Jakarta
13. P.T. Kayaba Indonesia
Jl. Rawaterate Raya I/4
Pulogadung Jakarta
14. P.T. Mesin Isuzu Indonesia
Jl. Sudirman H.18 Lt.4
Jakarta
15. P.T. Showa Indonesia
Jl. Laksda Yos Sudarso
Sunter II
Jakarta
16. P.T. Suzuki Indonesia Manufacturing
Jl. Kalibesar Barat 46
Jl. Raya Penggilingan
Cakung, Jakarta

2. HEAVY EQUIPMENT

17. P.T. Komatsu Indonesia
Jl. Kramat Raya 43
Jakarta
18. P.T. Barata Indonesia
Jl. Ngagel 109
Surabaya
19. P.T. Boma Bisma Indera
Jl. Ngagel No. 155-157
Surabaya

3. SHIP BUILDING

20. P.T. Pelita Bahari
Jl. Sindang Laut 100 Tg. Priok
Jakarta Utara
21. P.T. Dok & Perkapalan Tg. Priok
Jl. Penambangan Pelabuhan I
Tg. Priok, Jakarta
22. P.T. Kojai
Jl. R.R. Martadinata I/2
Tanjung Priok
23. P.T. Dok dan Perkapalan Surabaya
Jl. Perak Barat 432-435
Surabaya
24. P.T. Menubar
Jl. Batu Panggal Samarinda
East Kalimantan

25. P.T. Industri Kapal Indonesia
Jl. Tinumbu, Ujung Pandang

4. AGRICULTURE MACHINERY

26. P.T. Kubota Indonesia
Jl. Setiabudi 279
Semarang
27. C.V. Karya Hidup Sentosa
Jl. Magelang 144
Yogyakarta
28. P.T. Yamindo
Jl. Ir. H. Juanda
Surabaya
29. P.T. Yanmar Agricultural Machinery Manufacturing
Jl. Ir. H. Juanda 42
Jakarta
30. P.T. Candi Naga
Jl. Jembatan Lima No.43
Jakarta Barat Tel. 346140 - 375651

5. PUMP

31. P.T. Ebara Indonesia
Jl. Raya Jakarta - Bogor Km. 32
Curug Cimanggis - Bogor
32. P.T. Aneka Pompa Bandung
Jl. Kramat Jati 18
Jakarta Timur

6. DIESEL ENGINE & PARTS

33. P.T. Yanmar Diesel Indonesia
Jl. Raya Bogor
Bogor

34. P.T. Yanmar Indonesia
Jl. Raya Bogor Cimanggis
Bogor

35. P.T. Bani Nusa Indonesia
Jl. Industri No.15
Bandung Tel. (022) 614797

7. MACHINE TOOL

36. P.T. Oyama
Jl. Yos Sudarso 56
DKI

37. P.T. Sarana Widya Utama
Glodok Plaza S 84
Jl. Pinangsia
Jakarta Tel. 627727, 627440

38. P.T. Sumber Bahagia
Jl. Mayor Okeng Jaya Atmaja 13
Bogor Tel. (0251) 21633

39. P.T. Sumber Bahagia
Jl. Mayon Oking No.13 Bogor

8. STEEL STRUCTURES & OFFSHORE EQUIPMENT

- 40. P.T. Musashi Indonesia
Jl. Yos Sudarso, By Pass
Jakarta
- 41. P.T. Permiko Enginnering and Construction
Ratu Plaza Office Tower, 30th Fl.
Jl. Jen. Sudirman
Jakarta

9. ELECTRICAL EQUIPMENT

- 42. P.T. Fuji Dharma Electric Co. Ltd.
Jl. Gajah Mada 156
Jakarta
- 43. P.T. Industira
Jl. Bendungan Hilir II
Jakarta
- 44. P.T. Toa Galva Industries
Jl. Hayam Wuruk 27,
Jakarta
- 45. P.T. Metbelosa
Jl. Taruna No.1, Pulogadung
Jakarta Timur
- 46. P.T. National Gobel
Jl. Raya Jakarta - Bogor
Gandaria Pakayon
Pasar Rebo
Jakarta Timur
- 47. P.T. Morawa Electric Tranbuana
Jl. Timor No.21F
Medan

10. PLANT EQUIPMENT

48. P.T. Super Andalas Steel (Boiler, Blower)
Jl. K.L. Yos Sudarso Km 9 Medan

11. BASIC METAL

49. P.T. Krakatau Steel
Jl. Cilegon West-Jawa
50. P.T. Gunung Gahapi (Steel Plate)
Jl. Medan Belawan Km 10 Medan
51. P.T. Sermani Steel Corporation (G.I Sheet)
Jl. Urip Sumohardjo Tello Baru
Ujun Pandang

LIST OF MEDIUM AND SMALL SCALE
INDUSTRIES INTERVIEWED BY CONSULTANTS
AND LOCAL INTERVIEWERS

(JAKARTA AREA)

No.	Name of Organization	Address	Business Field
1.	P.T. PRIMA JABAR STEEL	Jl. Rawa Gelam III no. 1 Kawasan Pologadung Jakarta Timur	Tea Screenings
2.	SINAR LOGAM	Jl. Dokter no.41 Kaplik Utara Raya	Spray Container
3.	P.T. ASAFLUX & SOLDER	Jl. Pluit Mas V Block E no.7 A.B	Solder material
4.	RITAFNI	Jl. Kebon Raya (Simpang III) Tomang Barat Baru Jakarta	Fence
5.	SUGENG	Jl. Raya kebon Jeruk no.32 Jakarta Barat	Fence
6.	SUBUR JAYA	Jl. Raya Bogor 107/km 19 Jakarta - Timur 13510	Fence
7.	PEMUDA	Jl. Pemuda No.75 Rawamangun Jakarta Timur	Repair of Industrial Machinery, Pressworks
8.	P.T. SURIA MURNI	Gg. Kongsis no.3 K.H. Mansyur Jakarta Kota	Oil can, Cake can etc. Presswork
9.	C.V. HIDUP BARU	Jl. Mangga Besar 4R/ 47 Jakarta	Printing letter Casting printing
10.	P.T. MATAHARI ALKA	Jl. Rawagelam I no.1 Kawasan Industri Pulogadung. Jkt	Filling Cabinet Drafting stand, Kitchen sink

No.	Name of Organization	Address	Business Field
11.	P.T. PURNA KADERA	Jl. Rawagatel Kav. III S.39 Industrial Estate Pulogadung Jakarta	Seat frame & Cover, bus seat
12.	P.T. BUMI KAYA STEEL INDUSTRIES	Jl. Pulolentut 7, Kawasan Industri Pulogadung-Jkt	Galvanized Steel pipe electric pole
13.	MURNI	Jl. Karet Sawah 300 Jakarta Pusat	Wire net
14.	P.T. MULIA BHAKTI WIBAWA	Jl. Karet Tongsin Raya Jakarta Pusat	Repairing for Auto parts
15.	P.T. SINAR WIRA UTAMA	Jl. Raya Rawa Buaya 6 Cengkareng P.O. Box 953/Jkt. Jakarta Barat	Workshop, Machining
16.	P.T. PRINDA	Jl. Raya Pisangan Lama 79 Jatinegara	Thermos, Coffee Pot (Glass)
17.	P.T. LEDU	Jl. Pisangan Lama Raya no. 77 Jajarta Timur	Rice Cooker (Aluminium)
18.	P.T. SENOPATI MICROFIT SENANATHO		Powder Metallurgy
19.	P.T. WIRA GULFINDO	Jl. Gunung Sahariraya no. 30	Kerosene, Pressure Vessel for Oil
20.	P.T. CAHAYA BINTANG SUASA	Jl. Kapuk Raya Gg. Sama no.7 Jakarta Barat	Container for Paint
21.	MALUKU MUDA	Jl. Teluk Gong No.19 A-C Jakarta Utara	Cast Iron, Machining (Flywheel, Cnoppling)

No.	Name of Organization	Address	Business Field
22.	SUMBER JAYA	Jl. Palmerah Selatan 145 Jakarta Pusat	Aluminium Casting (Flying Pan)
23.	SINAR BAJA SLIPI	Jl. Palmerah Utara IV 203 Jakarta Barat	Filing Cabinet Steel Desk
24.	C.V. MAKMUR JAYA	Jl. Kemandoran 1 No.9A Palmerah Barat	Aluminium Cast Bar for Extrusion
25.	P.T. STAR METAL WARE	Jl. Kemandoran V/11 Palmerah Keb. Lama Jakarta	Lamp, Steam Iron Hair Dryer
26.	SONIC	Jl. Rawa Buaya Raya no.8 Cengkareng Jakarta	
27.	ABADI	Jl. T.S.S. No. 15 Jembatan V Jkt	Container (Tin Plate)
28.	TIGA SAUDARA	Jl. Kerajinan Kebon sayur no.9 Kampun Jawa - Jkt	Machining & Assly (Food Machine)
29.	SETIA	Jl. Mangga Dua abdad No.2 Jkt - Pusat	Liquid Measure
30.	ZUBAIDI DB	Jl. Mangga Dua abdad Rt. 15/11 Jkt - Pusat	Liquid Measure
31.	PT. LLGA RAYA	Jl. Teluk Gong no.9	Cooker (Stain- less Steel)
32.	C.V. CIPTA KARYA	Desa Bibis no.3 Tandes Surabaya	Pump & Machine Tool

No.	Name of Organization	Address	Business Field
33.	C.V. INDOBRAKE	Jl. Buntaran no.3 Desa Manukan Wetan Kecamatan Tandes Surabaya	Brake lining & brake shoe
34.	P.T. MUARA TEWE SPRING	Jl. Pulogadung 30, Pulogadung Industrial Estate Jakarta Timur	Springs for Car
35.	P.T. BENTENG MERARI INDUSTRI	Jl. Raya 78, AESA GILANG TAMAN SIDOARJO	Kerosine Stove and Electric iron
36.	ASYARI & SONS	Jl. Pertukangan 1 Pasuruan	Agriculture Machine
37.	P.T. MAMINDO	Pandaan Kabupaten Pasuruan Jawa Timur	Tractor, Agriculture machine
38.	TANJUNG ALAM	Jl. Aout III 196	Machining and Repare
39.	C.V. PABRIK MESIN "GUNTUR"	Jl. Kol Sugiono 14 Malang	Pump and Machining
40.	SEMERU JAYA	Jl. Mangga 10. Malang	Pump and Agriculture Machine

(CENTRAL JAWA AREA)

No.	Name of Organization	Address	Business Field
1.	LIK/CSF, Tegal	Tegal	Water pump
2.	BAROKAH	Jl. KJ. Muklas I/437 Tegal	Rice mill
3.	UD. MASRURI	Tembok Luwung No.291 Adiwerna Tegal	Muffler, Engine Hook Bolt, PLN Equipment
4.	PERTUKANGAN BESI		Hand Forging
5.	BP. H. ABOESEIRI	Jl. Raya Kajen Talang No. 226 Tegal	Sheet Metal Working/ Machining (Engine parts)
6.	MURBAUT "MAKDUM"	Banjaran Tembok Luwung Rt.04 Rk 01 Aiwerna Tegal	Hand Forging Water pump
7.	GUNANG MAS	Batur, Ceper, Klaten	Iron Casting (for rice mill)
8.	C.V. MUSTIKA KARYA	Batur, Ceper, Klaten	Iron casting (pump)
9.	BD. DAWAN ASYHRI	Jl. Batur, Ceper, Klaten	Al casting (Hopper, Crank case cover)
10.	SLAMET ZAINI	Jl. Kemasan Kalimati Adiwerna Tegal	Cable Clamp Bolt

(BANDUNG AREA)

No.	Name of Organization	Address	Business Field
1.	P.T. TURBINDO	Jl. Baros Pasar 97, Cimahi Bandung	Pump
2.	P.T. TELNIC	Jl. Soekarno-Hatta P.O. Box 582 Bandung	Language Labo. Traffic Signal System
3.	Balai Besar Bahan dan Barang Teknik	Asia Afrika 146, Bandung	Machine Pool pump

(SURABAYA)

No.	Name of Organization	Address	Business Field
1.	P.T. BENIENG MERAPI INDUSTRI	Jl. Raya 78 AESA Gilang Gilang SIDOARJO	Kerosene stone Electric Iron (Presswork, own Die-making)
2.	ASYARI AND SONS	Jl. Pertukangan 1 Pasuruan	Parts of Agri- machine Press for tile Pulley etc. (Casting & Machining)
3.	TANJUNG ALAM		Machining & Repair for sugar and cement plant
4.	P.T. YANMAR AGRI- CULTURAL MACHINERY MANUFACTURING INDONESIA (P.T. YAMINDO)	Pandaan Kabupaten Pasuruan, Jawa Timur	Wheel Tractor Hand Tractor Rice Huller Rice Polisher Paddy Thresher
5.	C.V. PABRIK MESIN "GUNTUR"	Jl. Kol. Sugiono 14 Malang	Agri-Machine (Machining & Machine Assembly)
6.	SEMERU JAYA	Jl. Kol. Sugiono 250 Malang	Agri-Machine (Casting, Machining Machine Assembly Repair of Auto Mobile Car)

No.	Name of Organization	Address	Business Field
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(MEDAN)

- | | | | |
|----|----------------------|-------------------------------------|--|
| 1. | C.V. LOGAM | Jl. K.L. Yos Sudarso
130 Medan | |
| 2. | P.T. GLUGUR | Jl. K.L. Yos Sudarso
NO 9L Medan | |
| 3. | P.T. SENI | Jl. Medan T. Morawa
Km 7½ Medan | |
| 4. | U.D. INDUSTRI BAHARI | Jl. Sisingamangaraja
No 8B Medan | |

(BALIK PAPAN)

- | | | | |
|----|---------------------------|--|--|
| 1. | P.T. KARINDO | Jl. Adilmakmur XIV/
45 Balikpapan | |
| 2. | P.T. SARANA DAYA
UTAMA | Jl. Semoi Rt III
No 49 P.O. Box 437 | |

(UJUNG PANDANG)

- | | | | |
|----|---------------------------------|---|--|
| 1. | C.V. LATIHAN KERJA
TEKNOLOGI | Jl. Mentimun No 30
Ujungpandang | |
| 2. | P.T. SAMATO | Jl. Bandang VII/4
Ujungpandang | |
| 3. | P.T. GARMAK MOTOR | Jl. Urip Sumohandjo
No 83 Ujungpandang | |

NO.	N A M E	ISSUED BY	DATE OF ISSUE
1.	Standard Trade & Industry Directory of Indonesia VI 1985 KOMPASS		1985
2.	Buku PEGANGAN PENGGUNAAN PRODUKSI DALAM NEGERI BUKU I	Team Pengendali Pengadaan Barang/Peralatan Pemerintah Sekretariat Negara Republik Indonesia	November 1984
3.	Buku PEGANGAN PENGGUNAAN PRODUKSI DALAM NEGERI BUKU II	- " -	- " -
4.	INFORMASI POTENSI INDUSTRI PERIODE OCTOBER 1984	Departemen Perindustrian	October 1984
5.	Buku Saku STATISTIK INDONESIA 1983 Statistical Pocketbook of Indonesia	Biro Pusat Statistik, Jakarta Indonesia	1983
6.	INDIKATOR EKONOMI Monthly Statistical Bulletin	- " -	April 1985
7.	HARGA PERDAGANGAN BESAR DI JAKARTA	- " -	February 1985
8.	PENDAPATAN NASIONAL INDONESIA 1973-1983 (TABEL-TABEL POKOK)	- " -	August 1984
9.	STATISTIK INDUSTRI KECIL 1979	- " -	Maret 1982
10.	STATISTIK INDONESIA - Statistical Yearbook	- " -	January 1984
11.	INDONESIA 1984 An Official Hand Book	Department of Information Republic of Indonesia	1984
12.	STATISTIK KEUANGAN Financial Statistics 1981/1982 DAN 1982/1983	Biro Pusat Statistik, Jakarta, Indonesia	August 1983

NO.	NAME	ISSUED BY	DATE OF ISSUE
13.	DELETION PROGRAM - Industri Logam Dasar	Direktorat Jenderal Industri Logam Dasar Departemen Perindustrian	June 1984
14.	INDONESIA POLICIES AND PROSPECTS FOR LONG TERM FINANCIAL DEVELOPMENT	Report by mission comprising para Suriyasarachchi	15 June 1985
15.	DAFTAR PERUSAHAAN DIT. JEN. IMLD.	Departemen Perindustrian Direktorat Logam Dasar	December 1984
16.	DAFTAR PERUSAHAAN INDUSTRI ELEKTRONIK PROFESSIONAL SEMESTER KE-II 1984	Direktorat Jenderal Industri Mesin dan Logam Dasar Direktorat Industri Mesin Listrik dan Elektronika	December 1984
17.	DAFTAR PERUSAHAAN INDUSTRI MESIN LISTRIK DAN PERALATAN LISTRIK TENAGA 1984	- " -	September 1984
18.	DAFTAR ANGGOTA GABUNGAN PENGUSAHA INDUSTRI ELEKTRONIK & ALAT-ALAT LISTRIK RUMAH TANGGA INDONESIA	Departemen Perindustrian	1985
19.	WEST JAVA DAFTAR PERUSAHAAN	KAWIL, BANDUNG	November 1984
20.	STARTING AN INDUSTRIAL ENTERPRISE HOW IPIP/UNIDO CAN HELP YOU	IPIP/UNIDO	August 1984
21.	STANDAR INDUSTRI INDONESIA (SII)	Pusat Standardisasi Industri	- " -
22.	STANDAR INDUSTRI INDONESIA SUPPLEMENT SII 1984/1985	- " -	
23.	ORGANIZATION CHART OF THE MINISTRY OF INDUSTRY		

NO.	N A M E	ISSUED BY	DATE OF ISSUE
24.	STAFF APPRAISAL REPORT INDONESIA BANK PEMBANGUNAN INDONESIA (BAPINDO) V	The World Bank	April 13, 1983
25.	STAFF APPRAISAL REPORT INDONESIA BANK PEMBANGUNAN INDONESIA (BAPINDO) V	- " -	May 8, 1981
26.	ANNUAL REPORT	BANK INDONESIA	1981/1982, 1982/1983, 1983/1984
27.	MONTHLY REPORT	BANK INDONESIA	1982/3, 1983/3, 1984/3, 1985/3
28.	WEEKLY REPORT	BANK INDONESIA	1985/3
29.	ANNUAL REPORT	BANK NEGARA INDONESIA 1946	1982, 1983
30.	ANNUAL REPORT	BANK DAGANG NEGARA	1982, 1983
31.	ANNUAL REPORT	BANK BUMI DAYA	1982, 1983
32.	ANNUAL REPORT	BANK PEMBANGUNAN INDONESIA	1981, 1982, 1983
33.	ANNUAL REPORT	BANK RAKYAT INDONESIA	1982, 1983
34.	ANNUAL REPORT	BANK EKSPOR IMPOR INDONESIA	1981, 1982, 1983
35.	ANNUAL REPORT	BANK DUTA EKONOMI	1983
36.	ANNUAL REPORT	OVERSEAS EXPRESS BANK	1982, 1983

NO.	N A M E	ISSUED BY	DATE OF ISSUE
37.	ANNUAL REPORT	BANK PEMBANGUNAN DAERAH - JABAR (WEST JAVA)	1983
38.	ANNUAL REPORT	BANK PEMBANGUNAN DAERAH - JATIM (EAST JAVA)	1982, 1983
39.	ASSOSIASI PERBENGKELAN 7 PERMESINAN	Assosiasi Perbengkelan & Permesinan	April 1983
40.	ASSOSIASI PRODUSEN PERALATAN LISTRIK INDONESIA	Assosiasi Produsen Peralatan Listrik Indonesia	1984
41.	PENGEMBANGAN KAPASITAS NASIONAL SEKTOR INDUSTRI 1984 - 1987	Departemen Perindustrian	Edisi 1984
42.	THE DEVELOPMENT OF THE DIESEL INDUSTRY	P.T. Data Commilt Inc.	25 July 1983
43.	GABUNGAN INDUSTRI PENGERJA LOGAM DAN MESIN INDONESIA LIST OF MEMBERS AS OF APRIL 25, 1985	G A M M A	25 April 1985
44.	PELIMPAPAN WEWENANG PEMBINAAN INDUSTRI KECIL KEPADA KANTOR DEPARTEMEN PERINDUSTRIAN DI KABUPATEN/KOTAMADYA DAN PENDAFTARAN INDUSTRI KECIL	Departemen Perindustrian	March 1983
45.	SURAT KEPUTUSAN MENTERI PERINDUSTRIAN	Departemen Perindustrian	August 1980
46.	PRE-FEASIBILITY STUDY FOR FOUNDRY AND PUMP PRODUCTS MARKET APPRAISAL - PUMPS IN INDONESIA	P.T. Aneka Pomp bandung	April 1985
47.	STUDI INVESTASI INDUSTRI REPARASI/DOCK KAPAL UNTUK KELAS 30.000 DWT	Proyek Pengembangan Industri Perkapalam Direktorat Jenderal Industri Mesin dan Logam Dasar D.P.	November 1984

NO.	N A M E	ISSUED BY	DATE OF ISSUE
48.	STUDI INVESTASI INDUSTRI PEMBUNTAN BANGUNAN BARU KAPAL UNTUK KELAS 10.000 DWT	Proyek Pengembangan Industri Perkapalan Direktorat Jenderal Industri Mesin dan Logam Dasar D.P.	November 1984
49.	ALSINTANI Member List Indonesian Agricultural Machinery Associations Member List	alsintani	-
50.	S I I STANDAR INDUSTRI INDONESIA	Pusat Standardisasi Industri	30 January 1985
51.	DAFTAR PERUSAHAAN (List of Company in Bandung Area)	M O I Bandung	22 July 1985
52.	P.T. KUBOTA INDONESIA LIST OF SUBCONTRACTORS	P.T. Kubota Indonesia	-
53.	L I K "TAKARU" MEMBERS LIST	L I K "TAKARU" Tegal	-
54.	DISTRIBUTION SYSTEM OF STEEL PRODUCT OF THE INDONESIAN	N K K JAKARTA Office	-
55.	PELAKSANAAN PROGRAM KETERKAITAN ANTARA SEKTOR INDUSTRI DENGAN SEKTOR EKONOMI LAINNYA	Departemen Perindustrian (Biro Eumas)	March 1985
56.	PROYEK PENGEMBANGAN DUNIA USAHA JAWA TENGAH (Central Java Enterprise Development Project)	Development Alternatives, Inc.	March 31, 1983
57.	INDONESIA POLICIES FOR GROWTH AND EMPLOYMENT (COPY)	World Bank	April 23, 1985
58.	INDONESIA RECENT ECONOMIC DEVELOPMENT	I. M. F.	May 10, 1985

LIST OF INSTITUTIONS VISITED BY THE TEAM
(AS SUPPLEMENTAL LOCAL SURVEY)

(Jakarta Area)

1. The Center for Vocational and Extension Service Training (CEVEST)
2. Laboratory for Strength and Material Component and Structure (LUK),
PUSPIPTEK

(Surabaya Area)

3. Regional Institute for Industries in Surabaya
4. Surabaya Institute of Technology
5. Project for Simple Standard Machine Tool (MPSS)

(Bandung Area)

6. Metal Industries Development Center (MIDC)
7. Institute for Research and Development of Industrial Materials and
Technical Products (BBBT)
8. Bandung Institute of Technology (ITB)

**ANNEX II BASIC DATA FOR ECONOMY AND
INDUSTRY IN INDONESIA**

GROSS DOMESTIC PRODUCT BY INDUSTRIAL ORIGIN AT CURRENT MARKET PRICES, 1969-84

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983/a	1984/b
Agriculture	1,339	1,575	1,546	1,837	2,710	3,497	4,003	4,812	5,906	6,706	8,996	11,290	13,642	15,668	19,771	22,737
Farm food crops	822	961	961	1,071	1,573	2,095	2,554	3,044	3,660	3,992	4,892	6,357	8,102	9,961	12,381	15,455
Farm nonfood crops	199	214	196	226	323	386	358	481	762	802	1,201	1,305	1,326	1,227	1,496	1,746
Estate crops	69	83	107	118	152	191	184	213	326	404	590	693	904	1,026	1,146	1,277
Livestock products	89	103	124	135	173	223	303	346	305	462	690	991	1,258	1,418	1,521	1,757
Forestry	59	102	142	173	355	423	413	513	525	653	1,048	1,141	1,140	983	1,040	1,122
Fishery	101	112	116	114	134	179	191	215	328	393	575	803	912	1,053	1,188	1,380
Mining & quarrying	129	173	294	491	831	2,374	2,485	2,930	3,600	4,358	6,980	11,673	12,971	11,708	13,824	17,473
Manufacturing	251	312	307	448	650	890	1,124	1,453	1,817	2,420	3,310	5,288	5,822	7,661	8,918	12,531
Electricity, gas & water	13	15	18	20	30	52	70	98	106	118	149	225	288	380	503	622
Construction	75	100	128	174	262	406	590	813	1,023	1,242	1,790	2,524	3,118	3,507	4,434	4,689
Commerce, hotels, etc.	476	619	592	769	1,118	1,775	2,104	2,552	2,959	3,450	4,775	6,391	7,966	8,865	10,874	12,268
Transport & communications	77	96	162	182	257	442	521	663	843	1,032	1,421	1,965	2,353	2,795	3,325	3,887
Banking, etc.	22	33	45	53	83	113	151	207	236	396	655	752	1,404	1,604	1,841	2,108
Ownership of dwelling	53	66	85	103	143	194	258	319	542	671	914	1,200	1,439	1,703	1,982	2,248
Public administration	136	183	214	290	405	585	864	1,074	1,394	1,685	2,200	3,142	3,905	4,429	5,225	5,957
Other services	147	168	181	197	264	380	473	546	607	668	835	996	1,119	1,293	1,538	1,743
Gross domestic product	2,718	3,340	3,672	4,564	6,753	10,708	12,643	15,467	19,033	22,746	32,025	45,446	54,027	59,633	71,215	86,261

/a Preliminary.

/b Estimate.

Source: BPS

GROSS DOMESTIC PRODUCT BY INDUSTRIAL ORIGIN AT CONSTANT 1973 MARKET PRICES, 1971-84

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983/a	1984/b
Agriculture	2,441	2,479	2,710	2,811	2,811	2,944	2,992	3,135	3,256	3,425	3,594	3,670	3,845	4,040
Farm food crops	1,436	1,415	1,573	1,681	1,696	1,755	1,735	1,835	1,909	2,073	2,261	2,295	2,412	2,560
Farm nonfood crops	302	329	323	307	312	325	385	388	402	417	429	459	484	510
Estate crops	154	160	152	174	183	188	201	210	210	233	244	285	288	290
Livestock products	160	169	173	186	202	216	177	184	202	212	220	230	241	249
Forestry	258	276	355	325	274	310	335	352	338	308	246	197	203	207
Fishery	131	130	134	138	144	150	159	166	174	182	193	204	217	224
Mining & quarrying	551	674	831	859	828	952	1,070	1,049	1,047	1,035	1,069	940	957	1,031
Manufacturing	490	564	650	755	848	930	1,058	1,236	1,395	1,705	1,878	1,901	1,942	2,391
Electricity, gas & water	25	26	30	37	41	46	49	57	69	78	90	106	113	119
Construction	171	222	262	320	365	385	464	529	563	639	720	758	805	747
Commerce, hotels, etc.	924	1,028	1,118	1,224	1,294	1,351	1,438	1,530	1,681	1,852	2,043	2,159	2,240	2,289
Transport & communications	210	229	257	288	303	343	439	514	560	609	677	717	753	790
Banking, etc.	64	75	83	88	102	117	151	165	160	208	231	259	276	291
Ownership of dwelling	93	121	143	174	198	209	252	288	306	336	359	377	401	418
Public administration	326	393	405	443	564	596	689	768	805	972	1,076	1,115	1,176	1,215
and defence	250	256	264	270	277	283	280	296	303	310	319	323	334	339
Other services														
Gross domestic product	5,545	6,067	6,753	7,269	7,631	8,156	8,882	9,567	10,165	11,169	12,055	12,325	12,842	13,670

- GDP deflator	66	75	100	147	166	190	214	238	315	407	448	484	555	631
- GDP growth (%)		9.4	11.3	7.6	5.0	6.9	8.9	7.7	6.3	9.9	7.9	2.2	4.2	6.4
- Growth of manufacturing sector (%)		15.1	15.2	16.2	12.3	9.7	13.8	16.8	12.9	22.2	10.1	1.2	2.2	23.1
- AV. annual growth (%) for the 5 years development plan period:														
REPELITA II (1974-1978)														
REPELITA III (1979-1983)														

GDP
6.9%
6.0%

Manufacturing sector
12.7%
8.9%

(Note) /a Preliminary. /b Estimate.

Source: BPS, REPELITA III

EXPENDITURES ON GDP AT CURRENT MARKET PRICES, 1971-84

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983/a	1984/b
Private consumption	2,848	3,309	4,804	7,344	8,732	10,572	12,481	15,184	19,514	27,503	35,560	41,670	49,231	59,182
Government consumption	341	414	716	841	1,254	1,591	2,077	2,659	3,733	4,689	5,788	6,832	7,791	7,606
Gross domestic investment (GDI)	580	857	1,208	1,797	2,572	3,205	3,826	4,671	6,704	9,485	11,553	13,467	17,188	17,759
Export of goods and non-factor services	527	762	1,356	3,044	2,897	3,621	4,513	4,974	9,629	13,849	14,928	13,345	17,733	22,203
Less import of goods and non-factor services	624	778	1,331	2,318	2,812	3,522	3,864	4,742	7,555	10,080	13,802	15,681	20,728	20,489
Gross domestic product (GDP)	3,672	4,564	6,753	10,708	12,643	15,467	19,033	22,746	32,025	45,446	54,027	59,633	71,215	86,261
Net factor income abroad	-68	-144	-245	-499	-557	-483	-678	-867	-1,484	-2,011	-1,925	-1,958	-3,036	-4,317
GNP (Gross National Product)	3,604	4,420	6,508	10,209	12,086	14,984	18,355	21,879	30,541	43,435	52,102	57,675	68,179	81,944
GDS (Gross Domestic Saving)	483	841	1,233	2,523	2,657	3,304	4,475	4,903	8,778	13,254	12,679	11,130	14,193	n.a.
GNS (Gross National Saving)	415	697	988	2,024	2,100	2,821	3,797	4,036	7,294	11,243	10,754	9,172	11,157	n.a.
GDI/GDP (%)	15.8	18.8	17.9	16.8	20.3	20.7	20.1	20.5	20.9	20.9	21.4	22.6	24.1	20.6
GDS/GDP (%)	13.2	18.4	18.3	23.6	21.0	21.4	23.5	21.6	27.4	29.2	23.5	18.7	19.9	-
GNS/GNP (%)	11.5	15.8	15.2	19.8	17.4	18.8	20.7	18.4	23.9	25.9	20.6	15.9	16.4	-

/a Preliminary.

/b Estimate.

Source: BPS

EXPENDITURES ON GDP AT CONSTANT 1973 MARKET PRICES, 1971-84

	(Rp. billion)													
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983/a	1984/b
Private consumption	4,088	4,324	4,804	5,502	5,699	6,154	6,400	6,880	7,866	8,867	10,350	10,698	11,501	12,155
Government consumption	518	561	716	641	836	896	1,044	1,288	1,345	1,490	1,641	1,775	1,759	1,579
Gross domestic investment	867	1,032	1,208	1,440	1,650	1,749	2,027	2,333	2,436	2,896	3,219	3,637	3,921	3,474
Export of goods and non-factor services	943	1,143	1,356	1,445	1,410	1,650	1,806	1,824	1,822	1,719	1,678	1,444	1,535	1,774
Less import of goods and non-factor services	871	993	1,331	1,759	1,964	2,293	2,395	2,698	3,304	3,803	4,833	5,229	5,874	5,312
Gross domestic product	5,545	6,067	6,753	7,269	7,631	8,156	8,882	9,567	10,165	11,169	12,055	12,325	12,842	13,670
Net factor income abroad	-95	-184	-245	-378	-389	-314	-420	-493	-649	-759	-674	-653	-835	-1,453
GNP (Gross National Product)	5,450	5,883	6,508	6,891	7,242	7,842	8,462	9,074	9,516	10,410	11,381	11,672	12,007	12,217
GDS (Gross Domestic Saving)	728	1,012	1,233	1,987	1,712	1,807	2,435	2,461	3,337	4,319	3,606	2,856	3,071	-
GNS (Gross National Saving)	633	828	988	1,609	1,323	1,493	2,015	1,968	2,688	3,560	2,932	2,203	2,236	-
GDI/GDP (%)	15.6	17.0	17.9	19.8	21.6	21.4	22.8	24.4	24.0	25.9	26.7	29.5	30.5	-

/a Preliminary.

/b Estimate.

Source: BPS

DISTRIBUTION OF GDP AT CURRENT MARKET PRICES, 1971-84

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983/a	1984/b
(In Percent)														
<u>Economic sectors</u>														
Agriculture, forestry and fishery	44.8	40.3	40.1	32.7	31.7	31.1	31.0	29.5	28.1	24.8	25.3	26.3	26.4	26.4
Mining	8.0	10.8	12.3	22.2	19.7	18.9	18.9	19.2	21.8	25.7	24.0	19.6	19.4	20.3
Manufacturing	8.4	9.8	9.6	8.3	8.9	9.4	9.5	10.6	10.3	11.6	10.8	12.9	12.5	14.5
Electricity, gas and water	0.5	0.4	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.6	0.7	0.7
Construction	3.5	3.8	3.9	3.8	4.7	5.3	5.4	5.5	5.6	5.6	5.8	5.9	6.2	5.4
Transport and communications	4.4	4.0	3.8	4.1	4.1	4.3	4.4	4.5	4.4	4.3	4.3	4.7	4.7	4.5
Other services	30.4	30.9	29.8	28.4	30.4	30.4	30.2	30.2	29.3	27.5	29.3	30.0	30.1	28.2
<u>Gross domestic product</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
<u>Expenditure categories</u>														
Private consumption	77.5	72.5	71.1	68.6	69.1	68.4	65.6	66.8	60.9	60.5	65.8	69.9	69.1	68.6
Government consumption	9.3	9.1	10.6	7.8	9.9	10.3	10.9	11.7	11.7	10.3	10.7	11.4	11.0	8.8
Gross domestic investment	15.8	18.8	17.9	16.8	20.3	20.7	20.1	20.5	20.9	20.9	21.4	22.6	24.1	20.6
Exports, net	-2.6	-0.4	0.4	6.8	0.7	0.6	3.4	1.0	6.5	8.3	2.1	-3.9	-4.2	2.0
<u>Gross domestic product</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

/a Preliminary.

/b Estimate.

Source: BPS

DISTRIBUTION OF GDP AT CONSTANT 1973 MARKET PRICES, 1971-84

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983/a	1984/b
(In Percent)														
<u>Economic sectors</u>														
Agriculture, forestry and fishery	44.0	40.8	40.0	38.7	36.8	36.1	33.7	32.8	32.0	30.7	29.8	29.8	29.9	29.6
Mining	9.9	11.1	12.3	11.8	10.9	11.7	12.1	11.0	10.3	9.3	8.9	7.6	7.4	7.5
Manufacturing	8.8	9.3	9.6	10.4	11.1	11.4	11.9	12.9	13.7	15.3	15.6	15.4	15.1	17.5
Electricity, gas and water	0.5	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.9	0.9	0.9
Construction	3.1	3.7	3.9	4.4	4.8	4.7	5.2	5.5	5.6	5.7	6.0	6.2	6.3	5.5
Transport and communications	3.8	3.8	3.8	4.0	4.0	4.2	4.9	5.4	5.5	5.4	5.6	5.8	5.9	5.8
Other services	29.9	30.9	29.8	30.2	31.9	31.3	31.6	31.8	32.2	32.9	33.4	34.3	34.5	33.2
<u>Gross domestic product</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
<u>Expenditure categories</u>														
Private consumption	73.7	71.3	71.1	75.7	74.7	75.5	72.0	71.9	77.4	79.4	85.9	86.8	89.6	88.9
Government consumption	9.4	9.2	10.6	8.8	11.0	11.0	11.8	12.8	13.2	13.3	13.6	14.4	13.7	11.6
Gross domestic investment	15.6	17.0	17.9	19.8	21.6	21.4	22.8	24.4	24.0	25.9	26.7	29.5	30.5	25.4
Exports, net	1.3	2.5	0.4	-4.3	-7.3	-7.9	-6.6	-9.1	-14.6	-18.6	-26.2	-30.7	-33.6	-25.9
<u>Gross domestic product</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

/a Preliminary.

/b Estimate.

Source: BPS

BALANCE OF PAYMENTS, 1973/74 - 1984/85

	(US\$ million)											
	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85 Prel.
1. Net oil /a	641	2,638	3,138	3,710	4,352	3,785	6,308	9,345	8,379	5,788	6,016	5,308
2. Net LNG /a	-	-	-	-	93	225	667	1,256	1,382	1,378	1,355	1,922
3. Non-oil (net)	-1,297	-2,776	-3,992	-4,512	-5,135	-5,165	-4,777	-8,470	-12,551	-14,205	-11,522	-10,171
Exports, FOB	1,905	2,033	1,873	2,863	3,507	3,979	6,171	5,587	4,170	3,928	5,367	5,902
Imports, CIF	-2,938	-4,341	-5,090	-6,167	-7,241	-7,543	-9,028	-11,837	-14,561	-15,824	-14,346	-13,446
Services (non-freight)	-364	-468	-755	-1,208	-1,401	-1,601	-1,920	-2,220	-2,160	2,309	-2,543	-2,627
4. Current account (1+2+3)	-756	-138	-854	-802	-690	-1,155	2,198	2,131	-2,790	-7,039	-4,151	-2,941
5. SDRs	-	-	-	-	-	64	65	62	-	-	-	-
6. Official capital	643	660	1,295	1,823	2,106	2,101	2,690	2,684	3,521	5,011	5,793	3,584
IGGI	556	513	945	1,596	1,694	1,567	2,237	2,406	2,415	2,905	4,255	3,263
Program aid	281	180	74	147	157	94	239	118	50	21	84	52
Project aid	275	333	871	1,449	1,537	1,473	1,998	2,288	2,365	2,884	4,171	3,211
ODA	(275)	(333)	(482)	(513)	(661)	(814)	(1,106)	(1,299)	(996)	(1,356)	(1,902)	(1,411)
Non-ODA	(-)	(-)	(389)	(936)	(876)	(659)	(892)	(989)	(1,369)	(1,528)	(2,269)	(1,800)
Non-IGGI	87	147	1,050	227	412	534	453	278	1,106	2,106	1,538	321
7. Official debt repayment (principal)	-81	-89	-77	-166	-761	-632	-692	-615	-809	-926	-1,010	-1,292
8. Miscellaneous capital	549	-131	-1,075	38	176	392	-1,315	-361	1,140	1,795	1,131	401
Direct investment	331	538	454	287	285	271	217	140	142	311	193	245
Others	218	-669	-1,529	-249	-109	121	-1,532	-501	998	1,484	938	156
9. Total (4 through 8)	355	302	-11	823	831	770	2,946	3,901	1,052	-1,159	1,823	-248
10. Errors and omissions	5	-311	-353	108	-180	-62	-1,256	-1,165	-2,050	-2,121	247	915
11. Monetary movements /b	-360	9	364	-1,001	-651	-708	-1,690	-2,736	988	3,280	-2,070	-667

/a Gross exports of products less imports of goods and services of the oil and LNG sectors respectively.

/b Bank Indonesia's net international reserves. Increase in net assets indicated by a minus (-).

Source: Bank Indonesia

EXPORTS BY CATEGORY, 1971/72 - 1984/85

	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85 Prel.
	(US\$ million)													
Timber /a	170	275	720	615	527	885	943	1,130	2,166	1,672	752	899	1,123	n.a.
Rubber	215	211	483	425	381	577	608	774	1,101	1,078	770	614	962	n.a.
Coffee	54	83	79	92	112	330	626	508	715	588	343	363	469	n.a.
Other agriculture exports	207	230	371	491	452	555	721	787	1,133	935	866	646	750	n.a.
Subtotal - Agriculture	646	799	1,653	1,623	1,472	2,347	2,898	3,199	5,115	4,273	2,731	2,522	3,304	n.a.
Metals and Minerals (excluding oil)	82	102	175	296	257	320	363	437	609	774	756	676	764	n.a.
Manufactures plywood	56	76	77	114	144	196	245	343	447	540	683	730	1,299	n.a.
others	56	76	77	114	144	196	245	343	447	540	484	406	n.a.	n.a.
Total non-oil exports	784	977	1,905	2,033	1,873	2,863	3,506	3,979	6,171	5,587	4,170	3,928	5,367	5,902
Total oil and LNG	n.a.	n.a.	n.a.	4,548	5,410	6,350	7,354	7,374	12,340	17,298	18,824	14,744	14,449	13,869
Oil and products	n.a.	n.a.	n.a.	4,548	5,410	6,350	7,192	6,858	10,995	15,187	16,482	12,283	12,050	10,625
LNG	-	-	-	-	-	-	162	516	1,345	2,111	2,342	2,461	2,399	3,244
Total exports	n.a.	n.a.	n.a.	6,581	7,283	9,213	10,861	11,353	18,510	22,885	22,934	18,672	19,816	19,771

/a Includes plywood up to 1981.

Source: Bank Indonesia

IMPORTS BY CATEGORY, 1975/76 - 1984/85

Categories	(Rp. billion)									
	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85 Prel.
Food	565	693	1,106	946	1,393	1,485	1,637	1,296	n.a.	n.a.
Other consumer goods	200	260	281	344	365	540	743	1,146	n.a.	n.a.
Intermediate goods	1,869	1,867	2,275	2,561	3,501	4,274	4,983	5,192	n.a.	n.a.
Capital goods	2,456	3,347	3,579	3,692	3,769	5,538	7,198	8,190	n.a.	n.a.
<u>Total non-oil imports</u>	<u>5,090</u>	<u>6,167</u>	<u>7,241</u>	<u>7,543</u>	<u>9,028</u>	<u>11,837</u>	<u>14,561</u>	<u>15,824</u>	<u>14,346</u>	<u>13,446</u>
Oil sector	2,262	2,640	2,909	3,364	2,940	4,050	5,407	4,802	3,489	3,210
Non-factor services (net)	345	490	536	586	1,237	1,702	2,604	1,715	2,543	2,627
Total imports and NPS	7,697	9,297	10,686	11,493	13,205	17,589	22,572	22,341	20,378	19,283

Source: Bank Indonesia

Table ANX II-10

DISTRIBUTION OF EXPORT VALUE BY CATEGORY, 1974/75 - 1984/85

	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85
											(In percentage)
Agricultural products	24.7 (73.8)	20.2 (78.6)	25.5 (82.0)	26.7 (82.7)	28.2 (80.4)	27.6 (82.9)	18.7 (76.5)	11.8 (65.5)	13.5 (64.2)	16.7 (61.6)	n.a.
Metals and minerals (excluding oil)	4.5 (14.6)	3.5 (13.7)	3.5 (11.2)	3.3 (10.3)	3.8 (11.0)	3.3 (9.9)	3.4 (13.8)	3.3 (18.1)	3.6 (17.2)	3.9 (14.2)	n.a.
Manufactures	1.7 (5.6)	2.0 (7.7)	2.1 (6.8)	2.3 (7.0)	3.0 (8.6)	2.4 (7.2)	2.3 (9.7)	3.0 (16.4)	3.9 (18.6)	6.5 (24.2)	n.a.
Total non-oil exports	30.9 (100.0)	25.7 (100.0)	31.1 (100.0)	32.3 (100.0)	35.0 (100.0)	33.3 (100.0)	24.4 (100.0)	18.1 (100.0)	21.0 (100.0)	27.1 (100.0)	29.9
Oil and LNG	69.1	74.3	68.9	67.7	65.0	66.7	75.6	81.9	79.0	72.9	70.1
Total exports	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Team's estimate based on the figures shown in Table ANX II-8

DISTRIBUTION OF IMPORT VALUE BY CATEGORY, 1975/76 - 1984/85

	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85
	(In Percentage)									
Food	7.3 (11.1)	7.4 (11.2)	10.4 (15.3)	8.2 (12.5)	10.6 (15.4)	8.4 (12.5)	7.2 (11.3)	5.8 (8.2)	n.a.	n.a.
Other consumer goods	2.6 (3.9)	2.8 (4.2)	2.6 (3.9)	3.0 (4.6)	2.8 (4.0)	3.1 (4.6)	3.3 (5.1)	5.1 (7.2)	n.a.	n.a.
Intermediate goods	24.3 (36.7)	20.1 (30.3)	21.3 (31.4)	22.3 (34.0)	26.5 (38.8)	24.3 (36.1)	22.1 (34.2)	23.2 (32.8)	n.a.	n.a.
Capital goods	31.9 (48.3)	36.0 (54.3)	33.5 (49.4)	32.1 (48.9)	28.5 (41.8)	31.5 (46.8)	31.9 (49.4)	36.7 (51.8)	n.a.	n.a.
Total non-oil imports	66.1 (100.0)	66.3 (100.0)	67.8 (100.0)	65.6 (100.0)	68.4 (100.0)	67.3 (100.0)	64.5 (100.0)	70.8 (100.0)	70.4	69.7
Oil sector	29.4	28.4	27.2	29.3	22.2	23.0	24.0	21.5	17.1	16.7
Non-factor services (net)	4.5	5.3	5.0	5.1	9.4	9.7	11.5	7.7	12.5	13.6
Total imports and NFS	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Team's estimate based on the figures shown in Table ANX II-9

ANNUAL CHANGE AND GROWTH OF EXPORTS AND IMPORTS, 1975/76 - 1982/83

	Annual Change Against Previous Year (%)										Average Annual Growth (%)		
	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1975/76 - 1978/79	1978/79 - 1982/83	1975/76 - 1982/83			
<u>Exports</u>													
Agricultural produces	+59.4	+23.5	+10.4	+59.9	-16.5	-36.1	-7.7	+29.5	-5.8	+8.0			
Metals and minerals (excluding oil)	+24.5	+13.4	+20.4	+39.4	+27.1	-2.3	-10.6	+19.4	+11.5	+14.8			
Manufactures	+36.1	+25.0	+40.0	+30.3	+20.8	+26.5	+6.9	+33.5	+20.8	+26.1			
Total non-oil exports	+52.9	+22.5	+13.5	+55.1	+90.5	+74.6	-5.8	+28.6	-0.3	+11.2			
Oil and LNG	+17.4	+15.8	+0.3	+67.3	+40.2	+8.8	-21.7	+10.9	+18.9	+15.4			
Total exports	+26.5	+17.9	+4.5	+63.0	+23.6	+24.2	-18.8	+15.9	+13.2	+14.4			
<u>Imports</u>													
Food	+22.7	+59.6	-14.5	+47.3	+6.6	+10.2	-20.8	+18.7	+8.2	+12.6			
Other consumer goods	+30.0	+8.1	+22.4	+6.1	+47.9	+37.6	+54.2	+19.8	+35.1	+28.3			
Intermediate goods	-0.1	+21.9	+12.6	+36.7	+22.1	+16.6	+4.2	+11.1	+19.3	+15.7			
Capital goods	+36.3	+6.9	+3.2	+2.1	+46.9	+30.0	+13.8	+14.5	+22.0	+18.8			
Total non-oil imports	+21.2	+17.4	+4.2	+19.7	+31.1	+23.0	+8.7	+14.0	+20.3	+17.6			
Oil sector	+16.7	+10.2	+15.6	-12.6	+37.8	+33.5	-11.2	+14.1	+9.3	+11.4			
Non-factor services (net)	+42.0	+9.4	+9.4	+111.1	+37.6	+53.0	-34.1	+19.3	+30.8	+25.7			
Total imports and NFS	+20.8	+14.9	+7.6	+14.9	+33.2	+28.3	-1.0	+14.3	+18.1	+16.4			

Source: Team's estimate based on the figures shown in Tables ANX II-8 and ANX II-9

CENTRAL GOVERNMENT BUDGET SUMMARY, 1973/74 - 1983/84

	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84
(RD. billion)											
1. Domestic revenue	967.7	1,753.7	2,241.9	2,906.0	3,534.4	4,266.1	6,596.8	10,227.0	12,212.6	12,418.3	14,432.7
2. Routine expenditures /a	713.3	1,016.1	1,332.6	1,629.8	2,148.9	2,743.7	4,061.8	5,800.0	6,977.6	6,996.3	8,411.8
3. Government saving (1-2)	254.4	737.6	909.3	1,276.2	1,385.5	1,522.4	2,535.0	4,427.0	5,235.0	5,422.0	6,020.9
4. Development expenditures	450.9	961.8	1,397.7	2,054.5	2,156.8	2,555.6	4,014.2	5,916.1	6,940.0	7,359.6	9,899.2
5. Balance (3-4)	-196.5	-224.2	-488.4	-778.3	-771.3	-1,033.2	-1,379.2	-1,489.1	-1,705.0	-1,937.6	-3,878.3
Financed by:											
6. Counterpart funds /b	89.8	36.1	20.2	10.2	35.8	48.2	64.8	64.1	45.1	15.1	14.9
7. Project aid	114.1	195.9	471.4	773.5	737.6	987.3	1,316.3	1,429.7	1,663.9	1,924.9	3,867.5
8. Change in balances (- = increase)	-7.4	-7.8	-3.2	-5.5	-2.1	-2.3	-1.9	-4.7	-4.0	-2.4	-4.1

/a Includes debt service payments.
/b Program aid.

Source: Ministry of Finance

CENTRAL GOVERNMENT RECEIPTS, 1973/74 - 1983/84

	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84
<u>Taxes on income</u>	505.0	1,228.7	1,592.1	2,046.6	2,511.3	2,995.3	5,129.3	8,230.3	10,100.3	10,009.9	11,605.1
Income tax	34.4	43.3	61.7	84.2	104.6	122.2	148.1	164.2	207.2	288.8	398.8
Corporate tax	44.2	91.2	128.2	127.2	169.5	226.5	297.1	447.6	559.1	674.5	757.4
Corporate tax on oil	344.6	973.1/a	1,249.1	1,619.4	1,948.7	2,308.7	4,259.6	7,019.6	8,627.8	8,170.4	9,520.2
Withholding tax	56.8	83.3	97.3	148.4	201.7	232.5	291.3	433.5	513.0	641.9	628.1
IPEDA	19.5	28.0	34.6	42.2	52.5	63.1	71.4	87.2	94.5	105.2	132.4
Other	5.5	9.8	21.2	25.2	34.3	43.3	61.8	78.2	98.7	129.1	168.2
<u>Taxes on domestic consumption</u>	165.4	158.6	231.3	319.6	397.8	491.4	537.2	732.9	888.0	1,137.4	1,392.1
Sales tax	54.6	84.9	119.2	162.3	203.4	221.1	192.2	265.6	310.7	476.6	575.2
Excises	61.7	74.4	97.3	130.7	181.9	232.9	326.4	437.9	544.2	620.1	773.2
Other oil revenues	37.6	-15.9	-1.1	15.9	-/b	-/b	-/b	-/b	-/b	-/b	-/b
Miscellaneous levies	11.5	15.2	15.9	10.7	12.5	17.4	18.6	29.4	33.1	40.7	43.7
<u>Taxes on international trade</u>	247.5	299.8	308.1	421.3	481.7	587.0	843.0	948.1	887.9	835.4	916.0
Import duties	128.2	160.6	174.0	257.4	286.9	295.3	316.7	448.0	536.2	521.9	557.0
Sales tax on imports	50.7	68.9	72.5	102.2	114.6	125.5	137.2	195.1	223.3	231.0	255.0
Export tax	68.6	70.3	61.6	61.7	80.2	166.2	389.1	305.0	128.4	82.5	104.0
Non-tax receipt	49.8	66.6	110.4	118.5	143.6	191.4	187.3	315.7	336.4	435.6	519.5
Domestic revenue	967.7	1,753.7	2,241.9	2,906.0	3,534.0	4,266.1	6,696.8	10,277.0	12,212.6	12,418.3	14,432.7
Development funds	203.9	232.0	491.6	783.8	773.4	1,035.5	1,381.1	1,492.8	1,709.0	1,940.0	3,882.4
Counterpart funds /c	89.8	36.1	20.2	10.2	35.8	48.2	64.8	64.1	45.1	15.1	14.9
Project aid /d	114.1	195.9	471.4	773.6	737.6	987.3	1,316.3	1,429.7	1,663.9	1,924.9	3,867.5
Total revenues	1,171.6	1,985.7	2,733.5	3,689.8	4,307.8	5,301.6	8,077.9	11,720.8	13,921.6	14,358.3	18,315.1

/a Excludes under payment of revenues, estimated at about Rp. 340 billion, due to the Government by PERTAMINA.

/b Oil subsidies shown as government expenditures (see Table 5.3).

/c Program aid.

/d Includes commercial bank and suppliers' credits for development programs/projects.

/e Since 1984/85 withholding tax neglected and combined with income tax.

/f Classification changed to other tax and included in miscellaneous levies.

/g Since 1984/85 classification changed to value-added tax and tax on luxury goods.

Source: Ministry of Finance

DEVELOPMENT EXPENDITURES BY SECTOR, 1975/76 - 1983/84

Sector	(Rp. Billion)									
	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	
Agriculture and irrigation (of which fertilizer subsidy)	257 (135)	356 (107)	380 (32)	450 (83)	508 (125)	929 (284)	954 (371)	931 (420)	913 (324)	
Industry and mining	124	195	139	205	356	491	827	913	2,153	
Electric power	128	218	223	272	376	431	530	758	660	
Transportation and tourism	312	429	355	413	466	780	807	876	1,527	
Manpower and transmigration	12	27	61	95	162	326	417	436	456	
Regional development	173	190	251	275	336	482	616	711	749	
Education	114	136	211	251	362	575	726	703	1,032	
Health	38	48	71	79	142	218	286	259	279	
Housing and water supply	13	30	90	56	117	191	166	151	221	
General public services /a	72	114	123	225	473	700	800	785	899	
Government capital participation	115	225	190	162	465	389	389	281	234	
Others /b	40	87	63	73	250	404	422	556	776	
<u>Total development expenditures</u>	<u>1,398</u>	<u>2,055</u>	<u>2,157</u>	<u>2,556</u>	<u>4,014</u>	<u>5,916</u>	<u>6,940</u>	<u>7,360</u>	<u>9,899</u>	
<u>Total (excluding fertilizer subsidies)</u>	<u>1,264</u>	<u>1,948</u>	<u>2,125</u>	<u>2,473</u>	<u>3,929</u>	<u>5,633</u>	<u>6,569</u>	<u>6,940</u>	<u>9,575</u>	

/a Law and order, defense and security, government apparatus.

/b Trade and cooperatives, religion, information and science. From 1979/80 includes natural resource development and environment.

Source: Ministry of Finance

PROJECT AID BY SECTOR, 1975/76 - 1983/84

Sector	(Rp. billion)								
	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84
Agriculture and irrigation	43.0	106.7	145.5	135.2	154.5	223.0	135.9	101.0	155.0
Industry and mining	76.4	137.3	95.4	199.0	306.8	225.9	580.9	733.8	1,051.0
Electric power	89.7	165.2	163.9	207.8	257.2	264.9	308.2	506.0	1,182.0
Transportation and tourism	226.5	303.8	212.9	249.7	192.4	308.0	263.6	332.1	889.0
Manpower and transmigration	0.6	1.0	9.8	11.6	23.0	31.1	30.5	14.9	45.0
Regional development	0.4	1.5	7.9	7.9	18.2	23.6	16.7	2.6	7.0
Education	7.3	5.3	29.5	35.3	42.8	50.0	36.7	24.2	211.0
Health	6.9	5.9	14.8	21.7	34.4	36.2	33.6	23.7	37.0
Housing and water supply	2.8	2.9	28.1	18.3	28.1	33.0	21.7	21.2	51.0
General public services	-	-	-	54.1	174.9	153.8	180.0	83.2	152.0
Government capital participation	6.7	7.3	23.1	33.1	34.3	35.6	27.9	46.7	45.0
Others ^{/a}	11.1	36.7	6.7	13.6	49.7	44.6	28.2	35.5	42.0
Total project aid ^{/b}	471.4	773.6	737.6	987.3	1,316.3	1,429.7	1,663.9	1,924.9	3,867.0

^{/a} Since 1979/80 includes natural resource development and environment.

^{/b} Includes commercial credits for development programs/projects.

Source: Ministry of Finance

APPROVED FOREIGN INVESTMENT BY SECTOR, 1967-83 /a

Sector	(US\$ million)									
	1967-76	1977	1978	1979	1980	1981	1982	1983/b	Total 1967-83	
Agriculture	84.4	21.4	3.1	22.2	50.2	25.0	15.9	-	-	222.2
Forestry	147.3	28.5	38.6	39.7	38.6	157.6	63.3	-	-	513.6
Fishery	45.3	2.7	16.6	38.4	2.9	21.6	6.2	-	-	133.7
Mining & quarrying	1,057.4	0.5	38.1	350.0	3.0	17.0	226.4	19.0	-	1,711.4
<u>Manufacturing</u>	<u>2,819.6</u>	<u>245.0</u>	<u>280.8</u>	<u>1,516.2</u>	<u>708.9</u>	<u>854.4</u>	<u>1,245.9</u>	<u>1,751.6</u>	-	<u>9,422.4</u>
Food	175.4	7.3	5.5	63.5	14.2	40.5	6.4	-	-	312.8
Textiles & leather	842.6	68.9	113.8	91.4	77.4	138.6	46.9	11.9	-	1,391.5
Wood & wood products	22.3	-	1.0	6.0	11.2	123.6	15.5	12.9	-	192.5
Paper & paper products	85.7	9.7	0.5	10.4	2.3	48.5	-	628.9	-	786.0
Chemicals & rubber	308.6	50.3	25.4	380.2	282.2	255.3	351.5	125.2	-	1,778.7
Nonmetallic minerals	310.9	18.3	19.7	76.7	222.1	20.1	62.5	11.9	-	742.2
Ferrous metals	820.4	18.4	9.9	843.5	-	84.8	3.6	819.2	-	2,599.8
Metal products	248.7	72.1	98.1	44.5	98.8	143.0	759.5	141.5	-	1,606.3
Other	5.0	-	6.9	-	0.7	-	-	-	-	12.6
Construction	62.4	2.5	5.4	0.5	7.7	48.8	30.9	1.5	-	159.7
<u>Trade & wholesale</u>	<u>167.8</u>	<u>7.0</u>	<u>9.7</u>	<u>3.0</u>	<u>38.6</u>	<u>-</u>	<u>19.2</u>	<u>25.0</u>	-	<u>270.3</u>
Wholesale trade	11.7	-	-	-	-	-	2.2	-	-	13.9
Hotels	156.1	7.0	9.7	3.0	38.6	-	17.0	25.0	-	256.4
<u>Transport & communication</u>	<u>44.6</u>	<u>-</u>	<u>-</u>	<u>0.2</u>	<u>31.6</u>	<u>-</u>	<u>17.8</u>	<u>-</u>	-	<u>94.2</u>
Transport	44.6	-	-	0.2	31.6	-	17.8	-	-	94.2
Communication	-	-	-	-	-	-	-	-	-	-
Real estate & business services	234.8	20.2	4.4	45.2	-	23.4	204.9	92.6	-	625.6
Other services	14.7	-	-	-	2.0	-	-	-	-	-
Total	4,663.6	327.9	396.7	2,015.4	881.5	1,147.8	1,830.5	1,889.7	-	13,153.1

/a Intended Capital Investment. Amounts represent original approval plus approved expansion minus cancellation.

/b Preliminary estimates.

Source: Investment Board

IMPLEMENTATION OF FOREIGN INVESTMENT BY SECTOR, 1967-83

Sector	(US\$ million)										Total 1967-83
	1967-76	1977	1978	1979	1980	1981	1982	1983/a			
Agriculture	40.2	12.5	10.1	4.3	14.5	13.0	5.8	2.3			102.7
Forestry	260.3	22.1	15.0	19.2	26.2	34.9	11.0	2.6			391.3
Fishery	67.8	2.8	13.5	10.5	7.9	0.4	9.0	-			111.9
Mining & quarrying	299.2	20.1	57.3	47.5	49.4	70.0	32.2	17.7			593.4
<u>Manufacturing</u>	<u>1,726.6</u>	<u>186.2</u>	<u>267.0</u>	<u>192.0</u>	<u>235.4</u>	<u>243.5</u>	<u>278.9</u>	<u>220.3</u>			<u>3,449.9</u>
Food	136.4	11.9	14.9	7.1	7.4	15.8	7.1	1.2			201.8
Textiles & leather	716.9	27.9	31.4	41.7	78.7	102.5	69.7	14.1			1,082.9
Wood & wood products	20.7	1.4	0.4	0.1	2.3	2.2	23.9	8.6			60.6
Paper & paper products	17.9	9.6	11.8	1.4	6.1	2.5	1.6	-			50.9
Chemicals & rubber	237.9	28.0	71.7	44.8	32.0	44.5	164.9	110.5			734.4
Nonmetallic minerals	210.8	42.9	9.0	3.2	30.9	30.9	49.4	15.9			392.1
Ferrous metals	111.8	27.8	37.8	47.5	23.9	7.9	28.5	54.0			339.2
Metal products	263.4	35.4	89.9	36.0	52.0	35.3	33.8	15.8			561.6
Others	10.8	1.3	0.1	10.2	2.0	1.9	-	0.2			26.5
Construction	34.5	3.0	1.4	12.0	0.8	0.6	6.9	-			59.2
<u>Trade & Hotels</u>	<u>79.8</u>	<u>6.2</u>	<u>17.2</u>	<u>4.3</u>	<u>0.4</u>	<u>2.9</u>	<u>-</u>	<u>0.2</u>			<u>111.0</u>
Wholesale trade	10.1	-	0.7	-	-	2.5	-	0.2			13.5
Hotels	69.7	6.2	16.5	4.3	0.4	0.4	-	-			97.5
<u>Transport & Communication</u>	<u>16.2</u>	<u>2.0</u>	<u>4.7</u>	<u>21.9</u>	<u>4.8</u>	<u>1.3</u>	<u>-</u>	<u>-</u>			<u>51.0</u>
Transport	9.7	1.8	1.3	0.1	2.1	0.2	-	-			15.2
Communication	6.6	0.2	3.4	21.8	2.7	1.1	-	-			35.8
Real estate & business services	76.5	3.8	14.0	6.9	7.2	12.4	6.1	3.8			130.7
Others	109.5	0.1	5.0	-	-	-	-	-			114.6
Total	2,710.7	258.8	405.2	318.6	346.6	379.0	449.9	246.9			5,115.7

/a Preliminary estimates.

Source: Bank Indonesia

APPROVED DOMESTIC INVESTMENT /^a BY SECTOR, 1968-82

Sector	(Rp. billion)									
	1968-75	1976	1977	1978	1979	1980	1981	1982/ ^b		
Agriculture, fisheries & livestock	89.6	42.3	49.4	100.4	36.4	126.9	192.0	511.0		
Forestry	178.7	35.1	64.0	58.5	81.8	397.6	313.0	182.0		
Mining	50.0	-	-	18.3	32.9	37.1	13.5	453.0		
<u>Manufacturing</u>	<u>1,125.3</u>	<u>174.6</u>	<u>401.4</u>	<u>531.2</u>	<u>502.3</u>	<u>861.5</u>	<u>1,791.0</u>	<u>2,096.0</u>		
Textile	405.5	42.5	75.0	167.6	41.8	143.6	96.0	77.0		
Chemicals	178.8	-2.2	98.7	103.0	142.0	431.6	893.0	542.0		
Electric manufacturing	24.2	-	-	-	-	-	-	-		
Other manufacturing	516.8	134.3	227.7	260.6	318.5	286.3	802.0	1,477.0		
Construction	14.2	-1.2	-	2.6	2.1	1.5	15.1	16.0		
Hotel	79.7	6.8	4.1	11.6	12.4	1.0	52.6	70.0		
Real estate	92.4	41.3	35.2	15.0	3.8	24.0	-12.5	71.0		
Others	111.7	7.4	19.9	24.2	16.9	53.9	61.0	461.0		
Total	1,741.6	276.3	574.5	761.8	688.6	1,503.6	2,426.0	3,860.0		

/^a Intended capital investment. Figures represent original approvals plus approved expansions minus cancellations.
/^b Preliminary estimate.

Source: Investment coordinating Board

PROJECTED BALANCE OF PAYMENTS (1984/85 - 1988/89)
(REPLITA IV)

	(US\$ million)				
	1984/85	1985/86	1986/87	1987/88	1988/89
A. Trade and services					
1. Exports (FOB)	19,875	22,433	25,332	28,223	31,116
Non-oil/LNG	6,050	7,009	8,015	9,215	10,753
Oil	10,644	11,873	13,463	14,664	15,766
LNG	3,181	3,551	3,854	4,344	4,597
2. Imports (FOB)	-17,287	-18,979	-20,844	-22,906	-24,799
Non-oil/LNG	-13,190	-14,482	-16,011	-17,636	-19,194
Oil	- 3,885	- 4,260	- 4,573	- 4,979	- 5,304
LNG	- 212	- 237	- 260	- 291	- 301
3. Services (net)	- 7,257	- 8,026	- 8,570	- 9,087	- 9,548
Non-oil/LNG sector	- 4,283	- 4,736	- 4,931	- 5,021	- 5,166
Oil sector	- 1,845	- 2,003	- 2,221	- 2,445	- 2,656
LNG	- 1,129	- 1,287	- 1,418	- 1,621	- 1,726
4. Current Account	- 4,669	- 4,572	- 4,082	- 3,770	- 3,231
Non-oil/LNG	-11,423	-12,209	-12,927	-13,442	-13,607
Oil	4,914	5,610	6,669	7,240	7,806
LNG	1,840	2,027	2,176	2,432	2,570
B. Official Capital	5,481	5,079	5,070	5,568	5,713
1. Program aid	67	42	44	48	51
2. Project aid	3,248	4,037	4,352	4,920	5,278
3. Others	2,166	1,000	674	600	384
C. Official debt prepayments	- 1,297	- 1,380	- 1,665	- 2,169	- 2,536
D. Private capital	695	1,097	927	821	692
E. Monetary movements	- 210	- 224	- 250	- 450	- 638
F. Error and omissions	-	-	-	-	-

NUMBER OF ESTABLISHMENTS AND PERSONS ENGAGED IN THE MANUFACTURING SECTOR
(LARGE - AND MEDIUM - SCALE ESTABLISHMENTS: 1974/75 -1983)

ISIC	Industry	Number of Establishments										Persons engaged (1,000 persons)									
		1974/75	1979	1980	1981	1982	1983	1974/75	1979	1980	1981	1982	1983	1974/75	1979	1980	1981	1982	1983		
31	Food, beverages, and tobacco	2,367 (33.4)	2,420 (30.4)	2,489 (30.9)	2,341 (29.5)	2,268 (28.3)	2,395 (29.0)	268 (40.5)	295 (33.9)	321 (33.1)	321 (31.7)	324 (30.4)	322 (28.8)								
32	Textile, wearing apparel, and leather	2,056 (29.1)	2,147 (27.0)	2,188 (27.2)	2,153 (27.1)	2,088 (26.0)	2,065 (25.0)	174 (26.3)	227 (26.1)	258 (26.6)	265 (26.2)	266 (24.9)	301 (26.9)								
33	Wood and wood products; including furniture	407 (5.7)	633 (7.9)	620 (7.7)	647 (8.1)	705 (8.7)	717 (8.7)	22 (3.3)	51 (5.9)	65 (6.7)	71 (7.0)	97 (9.1)	92 (8.2)								
34	Paper and paper products; printing and publishing	289 (4.1)	358 (4.5)	363 (4.5)	366 (4.6)	378 (4.7)	384 (4.7)	22 (3.3)	30 (3.4)	32 (3.3)	35 (3.5)	37 (3.5)	36 (3.2)								
35	Chemicals; and chemical, <u>z</u> petroleum, coal, rubber and plastic products	899 (12.7)	823 (10.3)	837 (10.4)	851 (10.7)	920 (11.5)	979 (11.9)	84 (12.7)	104 (12.0)	110 (11.4)	121 (12.0)	132 (12.4)	145 (13.0)								
36	Non-metallic mineral products (except petroleum and coal products)	480 (6.8)	675 (8.5)	640 (7.9)	665 (8.4)	704 (8.8)	707 (8.6)	25 (3.8)	43 (4.9)	47 (4.9)	50 (4.9)	53 (5.0)	55 (4.9)								
37	Basic metals	18 (0.3)	22 (0.3)	23 (0.3)	22 (0.3)	23 (0.3)	25 (0.3)	2 (0.3)	8 (0.9)	9 (0.9)	10 (1.0)	10 (0.9)	13 (1.2)								
38	Fabricated metal products, machinery, and equipment	500 (7.0)	796 (10.0)	811 (10.1)	813 (10.2)	839 (10.4)	880 (10.7)	56 (8.4)	106 (12.2)	121 (12.5)	132 (13.0)	140 (13.1)	147 (13.1)								
39	Other manufacturing industries	65 (0.9)	86 (1.1)	83 (1.0)	84 (1.1)	95 (1.2)	93 (1.1)	9 (1.4)	6 (0.7)	6 (0.6)	7 (0.7)	8 (0.7)	8 (0.7)								
	Manufacturing-total	7,091 (100.0)	7,960 (100.0)	8,054 (100.0)	7,942 (100.0)	8,020 (100.0)	8,245 (100.0)	662 (100.0)	870 (100.0)	969 (100.0)	1,012 (100.0)	1,067 (100.0)	1,119 (100.0)								

Note: z Excluding petroleum refinery.

Source: BPS

SUBSECTORAL VALUE - ADDED IN THE MANUFACTURING SECTOR, 1975 - 1983
(LARGE - AND MEDIUM - SCALE ESTABLISHMENTS: AT FACTOR COST)

ISIC	Industry	Valve added at factor cost (Current prices)								Valve added at factor cost (Constant 1975 prices) /b		Ann growth Rate (%)	
		1975	1979	1980	1981	1982	1983	1979	1980	1981	1982	1975/80	1975/82
31	Food, beverages, and tobacco	197.5 (41.0)	433.2 (33.6)	674.7 (31.7)	854.0 (31.4)	904.2 (31.2)	1,121.2 (31.4)	313.9 (41.2)	365.0 (38.8)	379.8 (37.1)	391.7 (38.1)	13.1	10.3
32	Textile, wearing apparel, and leather	86.0 (17.8)	198.2 (15.4)	292.4 (13.7)	317.9 (11.7)	391.5 (13.5)	533.5 (14.9)	92.9 (12.2)	98.3 (10.5)	103.6 (10.1)	99.1 (9.6)	2.7	2.0
33	Wood and wood products; including furniture	18.3 (3.8)	59.9 (4.6)	153.3 (7.2)	204.9 (7.5)	247.1 (8.5)	199.5 (5.6)	37.8 (5.0)	66.5 (7.1)	80.4 (7.9)	72.2 (7.0)	29.4	21.7
34	Paper and paper products; printing and publishing	17.2 (3.5)	44.7 (3.5)	63.1 (3.0)	56.0 (2.0)	76.0 (2.6)	64.0 (1.8)	24.3 (3.2)	24.4 (2.6)	24.4 (2.4)	23.7 (2.3)	7.2	4.7
35	Chemicals; and chemical, /a petroleum, coal, rubber and plastic products	71.7 (14.9)	224.9 (17.4)	360.8 (16.9)	467.2 (17.2)	476.5 (16.4)	549.9 (15.4)	139.2 (18.3)	175.3 (18.6)	197.5 (19.3)	199.8 (19.5)	22.5	15.8
36	Non-metallic mineral products (except petroleum and coal products)	25.7 (5.3)	113.3 (8.8)	152.7 (7.2)	201.7 (7.4)	154.8 (5.3)	191.8 (5.4)	70.3 (9.2)	81.7 (8.7)	89.8 (8.8)	92.5 (9.0)	26.0	20.1
37	Basic metals	1.1 (0.2)	58.8 (4.6)	67.0 (3.1)	79.5 (2.9)	67.7 (2.3)	72.6 (2.0)	4.6 (0.6)	10.6 (1.1)	12.8 (1.3)	10.0 (1.0)	57.3	27.5
38	Fabricated metal products, machinery, and equipment	63.7 (13.2)	153.2 (11.9)	357.7 (16.8)	533.1 (19.6)	576.8 (19.9)	826.4 (23.2)	77.4 (10.1)	116.8 (12.4)	132.0 (12.9)	136.2 (13.3)	12.9	11.5
39	Other manufacturing industries	1.1 (0.2)	4.2 (0.2)	8.3 (0.4)	8.1 (0.3)	9.5 (0.3)	10.0 (0.3)	1.6 (0.2)	1.9 (0.2)	2.2 (0.2)	2.1 (0.2)	11.6	9.7
	Manufacturing-total	482.3 (100.0)	1,290.4 (100.0)	2,130.0 (100.0)	2,722.4 (100.0)	2,904.1 (100.0)	3,568.9 (100.0)	762.0 (100.0)	940.5 (100.0)	1,022.5 (100.0)	1,027.3 (100.0)	14.3	11.4

Note: /a Excluding petroleum refinery.

Source: U.N. Industrial Statistics for 1975 and 1979, B.P.S. for 1980 - 1983, and Team's estimates

GROSS OUTPUT VALUE AND VALUE - ADDED AT MARKET PRICE
(LARGE - AND MEDIUM - SCALE ESTABLISHMENTS: 1981 - 1983)

ISIC	Industry	(A) Gross Output Value			(B) Value - Added at Market Price			(C) B/A Ratio (%)			Average 1983 (1981/83)	Average 1983 (1981/83)	
		1981	1982	1983	Average (1981/83)	1981	1982	1983	1981	1982			1983
31	Food, beverages, and tobacco	2,902.1	3,260.7	3,892.8	3,351.9	1,154.4	1,275.0	1,522.7	1,317.4	39.8	39.1	39.1	39.3
32	Textile, wearing apparel, and leather	1,040.9	1,141.2	1,353.0	1,178.4	327.1	401.8	545.1	424.7	31.4	35.2	40.3	36.0
33	Wood and wood products: including furniture	513.7	702.0	513.2	576.3	209.7	255.1	207.0	223.9	40.8	36.3	40.3	38.9
34	Paper and paper products: printing and publishing	205.2	250.4	343.6	266.4	59.6	81.4	69.0	70.0	29.0	32.5	20.1	26.3
35	Chemicals; and chemical, ^{/a} petroleum, coal, rubber and plastic products	1,503.8	1,518.7	2,256.1	1,759.5	497.1	505.6	581.5	528.1	33.1	38.3	25.8	30.0
36	Non-metallic mineral products (except petroleum and coal products)	363.4	409.2	384.3	385.6	211.9	166.7	203.7	194.1	58.3	40.7	53.0	50.3
37	Basic metals	249.4	275.6	354.9	293.3	81.7	71.0	75.6	76.1	32.8	25.8	21.3	25.9
38	Fabricated metal products, machinery, and equipment	1,498.9	1,844.7	2,171.4	1,838.3	566.7	627.8	873.0	689.2	37.8	34.0	40.2	37.5
39	Other manufacturing industries	21.6	28.1	33.9	27.9	8.6	10.4	10.8	9.9	39.8	37.0	31.9	35.5
	Manufacturing-total	8,299.0	9,430.6	11,303.2	9,677.6	3,116.8	3,394.8	4,088.4	3,533.3	37.6	36.0	36.2	36.5

Note: ^{/a} Excluding petroleum refinery.

Source: BPS

FIXED CAPITAL FORMATION IN MANUFACTURING SECTOR
(LARGE - AND MEDIUM- SCALE ESTABLISHMENTS: 1980 - 1983)

ISIC	Industry	Fixed Capital Formation (FCF)					FCF/VAM / ^b Ratio (%)					FCF/VAP / ^c Ratio (%)				
		1980	1981	1982	1983	1980	1981	1982	1983	1980	1981	1982	1983			
		56.2	62.8	136.5	100.4	6.0	5.4	10.7	6.6	8.3	7.4	15.1	9.0			
31	Food, beverages, and tobacco	110.9	116.2	131.2	142.5	36.9	35.5	32.7	26.1	37.9	36.6	33.5	26.7			
32	Textile, wearing apparel, and leather	43.8	45.6	122.8	89.7	27.6	21.7	48.1	45.0	28.6	22.3	49.7	45.0			
33	Wood and wood products; including furniture	15.3	63.1	38.5	48.7	23.3	105.9	47.3	70.6	24.2	112.7	50.7	76.1			
34	Paper and paper products; printing and publishing	61.6	100.5	182.2	148.2	16.3	20.2	36.0	25.5	17.1	21.5	38.2	27.0			
35	Chemicals; and chemical, / ^a petroleum, coal, rubber and plastic products	83.1	106.8	197.7	175.1	52.6	50.4	118.6	86.0	54.4	52.9	127.7	91.3			
36	Non-metallic mineral products (except petroleum and coal products)	8.1	4.8	33.1	22.7	11.8	5.9	46.6	30.0	12.1	6.0	48.9	31.3			
37	Basic metals	58.9	76.7	176.3	137.5	15.2	13.5	28.1	15.8	16.5	14.4	30.6	16.6			
38	Fabricated metal products, machinery, and equipment	1.9	0.3	2.4	2.1	21.6	3.5	23.1	19.4	22.9	3.7	25.3	22.1			
39	Other manufacturing industries	439.8	576.8	1,020.7	866.9	17.8	18.5	30.1	21.2	20.6	21.2	35.1	24.3			
	Manufacturing-total															

Notes: /^a Excluding petroleum refinery.
/^b VAM: Value-added at market price.
/^c VAP: Value-added at factor cost.

Source: BPS

NUMBER OF ESTABLISHMENTS AND NUMBER OF PERSONS ENGAGED OF LARGE/MEDIUM, SMALL AND HOUSEHOLD MANUFACTURING ESTABLISHMENTS 1974/1975

Industry Code	Number of Establishments				Persons Engaged			
	Large/ Medium	Small	Household	Total	Large/ Medium	Small	Household	Total
31	2,367 (33.38)	24,275 (50.38)	434,284 (35.18)	460,926 (35.74)	268,388 (40.56)	151,194 (44.05)	1,401,117 (35.93)	1,820,759 (37.12)
32	2,066 (29.13)	5,792 (12.02)	139,680 (11.31)	147,538 (11.44)	174,246 (26.33)	55,375 (16.13)	435,124 (11.16)	664,745 (13.55)
33	407 (5.74)	5,456 (11.32)	534,862 (43.33)	540,725 (41.92)	22,368 (3.38)	41,680 (12.14)	1,644,004 (42.15)	1,708,052 (34.82)
34	289 (4.08)	867 (1.80)	2,628 (0.21)	3,784 (0.29)	21,982 (3.32)	8,067 (2.35)	9,478 (0.24)	39,527 (0.81)
35	899 (12.68)	1,382 (2.87)	5,317 (0.43)	7,598 (0.59)	83,802 (12.67)	12,422 (3.62)	20,946 (0.54)	117,170 (2.39)
36	480 (6.77)	6,749 (14.00)	80,599 (6.53)	87,828 (6.81)	24,597 (3.72)	46,916 (13.67)	263,203 (6.75)	334,716 (6.83)
37	18 (0.25)	-	-	18 (0.00)	2,060 (0.31)	-	-	2,060 (0.04)
38	500 (7.05)	2,957 (6.14)	15,432 (1.25)	18,889 (1.47)	55,867 (8.44)	22,113 (6.44)	55,773 (1.43)	133,753 (2.73)
39	65 (0.92)	708 (1.47)	21,709 (1.76)	22,482 (1.74)	8,394 (1.27)	5,473 (1.60)	70,151 (1.80)	84,018 (1.71)
Total	7,091 (100.00)	48,186 (100.00)	1,234,511 (100.00)	1,289,788 (100.00)	661,704 (100.00)	343,240 (100.00)	3,899,856 (100.00)	4,904,800 (100.00)

Source: BPS

VALUE OF GROSS OUTPUT AND VALUE ADDED (AT MARKET PRICE) OF LARGE/MEDIUM, SMALL, AND HOUSEHOLD MANUFACTURING ESTABLISHMENTS 1974/1975

Industry Code	Value of Gross Output				Value Added at Market Price			
	Large/ Medium	Small	Household	Total	Large/ Medium	Small	Household	Total
31	543,872 (42.04)	86,019 (54.59)	114,093 (56.81)	743,984 (45.03)	226,754 (47.54)	25,637 (48.35)	37,300 (45.18)	289,691 (47.29)
32	232,881 (18.00)	21,113 (13.40)	18,191 (9.06)	272,185 (16.48)	72,213 (15.14)	6,263 (11.81)	7,133 (8.64)	85,609 (13.98)
33	28,691 (2.22)	16,514 (10.48)	38,872 (19.36)	84,077 (5.09)	12,534 (2.63)	6,992 (13.18)	21,949 (26.58)	41,475 (6.77)
34	30,142 (2.33)	3,728 (2.37)	862 (0.43)	34,732 (2.10)	11,490 (2.41)	1,699 (3.20)	482 (0.58)	13,671 (2.23)
35	214,007 (16.54)	9,579 (6.08)	3,043 (1.51)	226,629 (13.72)	62,494 (13.10)	3,340 (6.30)	1,140 (1.38)	66,974 (10.93)
36	32,245 (2.49)	9,991 (6.34)	15,823 (7.88)	58,059 (3.51)	16,633 (3.49)	4,502 (8.49)	9,535 (11.55)	30,670 (5.01)
37	18,805 (1.45)	-	-	18,805 (1.14)	3,998 (0.84)	-	-	3,998 (0.65)
38	173,780 (13.43)	9,039 (5.74)	5,915 (2.94)	188,734 (11.42)	60,280 (12.64)	3,874 (7.31)	2,960 (3.59)	67,114 (10.96)
39	19,363 (1.50)	1,575 (1.00)	4,028 (2.01)	24,966 (1.51)	10,551 (2.21)	720 (1.36)	2,066 (2.50)	13,337 (2.18)
Total	1,293,786 (100.00)	157,558 (100.00)	200,827 (100.00)	1,652,171 (100.00)	476,947 (100.00)	53,027 (100.00)	82,565 (100.00)	612,539 (100.00)

Source: BPS

NUMBER OF ESTABLISHMENTS AND NUMBER OF PERSONS ENGAGED OF LARGE/MEDIUM, SMALL AND HOUSEHOLD MANUFACTURING ESTABLISHMENTS 1979

Industry Code	Number of Establishments				Persons Engaged			
	Large/ Medium	Small	Household	Total	Large/ Medium	Small	Household	Total
31	2,420 (30.40)	57,280 (50.68)	617,668 (43.56)	677,368 (44.02)	294,441 (33.84)	403,517 (48.79)	1,362,762 (48.76)	2,060,720 (45.88)
32	2,147 (26.97)	9,692 (8.57)	177,246 (12.50)	189,085 (12.29)	227,787 (26.18)	91,402 (11.05)	293,198 (10.49)	612,387 (13.63)
33	633 (7.95)	15,144 (13.40)	434,376 (30.64)	450,153 (29.25)	51,221 (5.89)	110,932 (13.41)	735,816 (26.33)	897,969 (19.99)
34	358 (4.50)	1,263 (1.12)	-	1,621 (0.11)	29,876 (3.43)	11,931 (1.44)	-	41,807 (0.93)
35	823 (10.34)	1,786 (1.58)	-	2,609 (0.17)	103,803 (11.93)	17,363 (2.10)	-	121,166 (2.70)
36	675 (8.48)	19,814 (17.53)	104,997 (7.41)	125,486 (8.16)	43,000 (4.94)	133,687 (16.17)	221,113 (7.91)	397,800 (8.86)
37	22 (0.28)	-	-	22 (0.00)	8,247 (0.95)	-	-	8,247 (0.18)
38	796 (10.00)	6,814 (6.03)	32,009 (2.26)	39,619 (2.57)	105,686 (12.15)	49,527 (5.99)	79,447 (2.84)	234,660 (5.22)
39	86 (1.08)	1,231 (1.09)	51,506 (3.63)	52,823 (3.43)	5,958 (0.69)	8,676 (1.05)	102,497 (3.67)	117,131 (2.61)
Total	7,960 (100.00)	113,024 (100.00)	1,417,802 (100.00)	1,538,786 (100.00)	870,019 (100.00)	827,035 (100.00)	2,794,833 (100.00)	4,491,887 (100.00)

Source: BPS

VALUE OF GROSS OUTPUT AND VALUE ADDED (AT MARKET PRICE) OF LARGE/MEDIUM, SMALL, AND HOUSEHOLD MANUFACTURING ESTABLISHMENTS 1979

Industry Code	Value of Gross Output				Value Added at Market Price			
	Large/ Medium	Small	Household	Total	Large/ Medium	Small	Household	Total
31	1,614,688 (34.87)	344,684 (57.36)	440,637 (58.94)	2,400,009 (40.14)	674,109 (40.60)	82,489 (44.04)	132,172 (45.69)	889,770 (41.59)
32	669,277 (14.45)	73,930 (12.30)	50,989 (6.82)	794,196 (13.28)	207,104 (12.47)	27,684 (14.78)	20,623 (7.07)	255,411 (11.94)
33	189,274 (4.09)	71,395 (11.88)	105,861 (14.16)	366,530 (6.13)	62,704 (3.78)	29,258 (15.62)	58,020 (19.91)	149,982 (7.01)
34	127,813 (2.76)	11,082 (1.84)	-	138,895 (2.32)	49,277 (2.97)	4,660 (2.49)	-	53,937 (2.52)
35	890,898 (19.24)	22,864 (3.81)	-	913,762 (15.28)	264,481 (15.93)	8,756 (4.67)	-	273,237 (12.77)
36	207,536 (4.48)	37,648 (6.27)	44,754 (5.99)	289,938 (4.85)	115,037 (6.93)	18,549 (9.90)	26,948 (9.25)	160,534 (7.50)
37	215,154 (4.65)	-	-	215,154 (3.60)	59,145 (3.56)	-	-	59,145 (2.77)
38	696,257 (15.04)	34,918 (5.81)	42,724 (5.72)	773,899 (12.95)	223,688 (13.47)	14,151 (7.55)	23,079 (7.92)	260,918 (12.20)
39	19,717 (0.42)	4,410 (0.73)	62,577 (8.37)	86,704 (1.45)	4,914 (0.29)	1,776 (0.95)	29,600 (10.16)	36,290 (1.70)
Total	4,630,614 (100.00)	600,931 (100.00)	747,542 (100.00)	5,979,087 (100.00)	1,660,459 (100.00)	187,323 (100.00)	291,442 (100.00)	2,139,224 (100.00)

Source: BPS

**ANNEX III BASIC DATA FOR CAPACITY,
PRODUCTION AND TRADE OF GOODS
PRODUCED BY ASSEMBLY-TYPE
INDUSTRY**

STRUCTURE AND SIMPLIFIED PROCESSES IN INDONESIAN SHIPYARDS

Figure ANX III-2

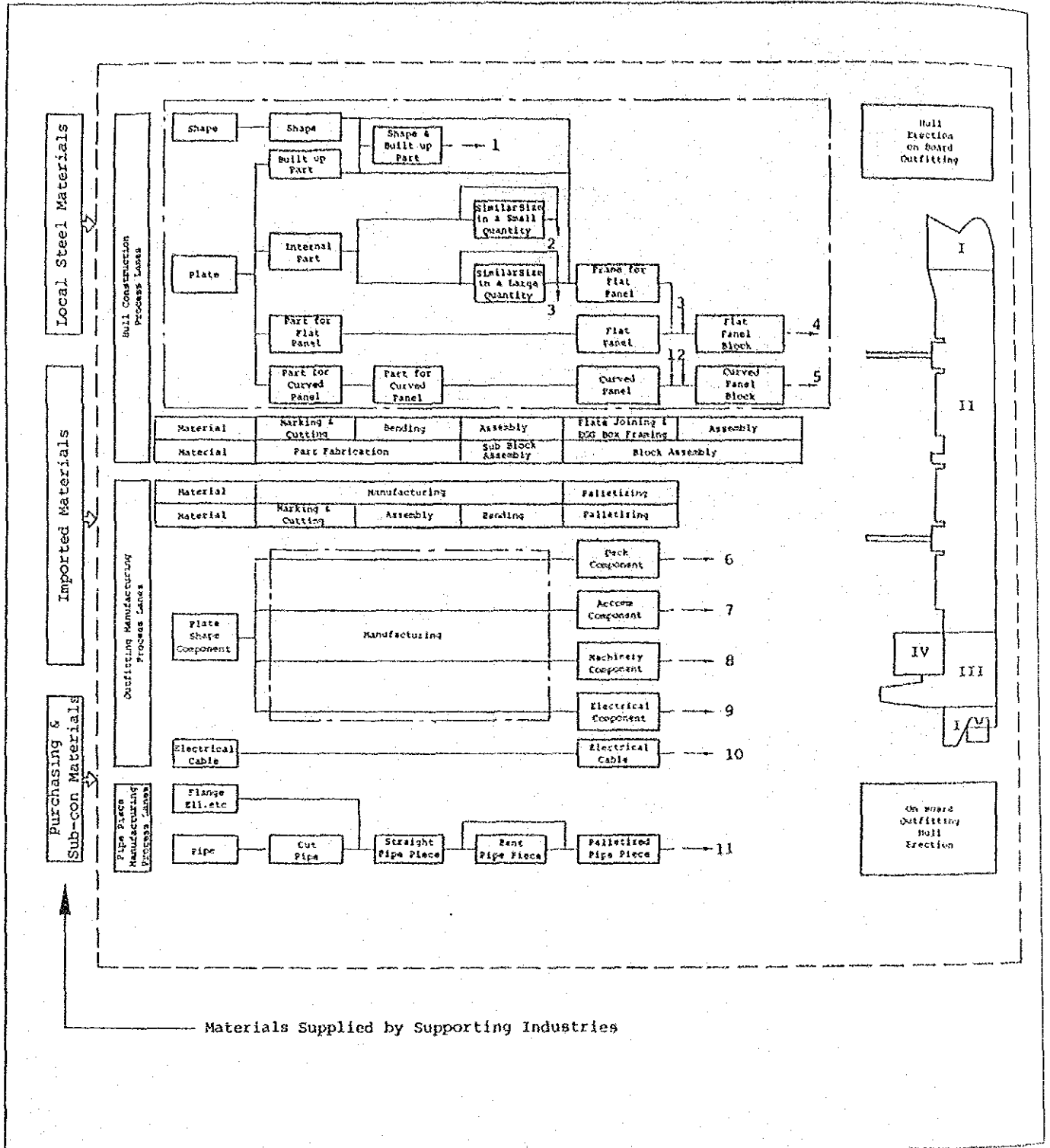
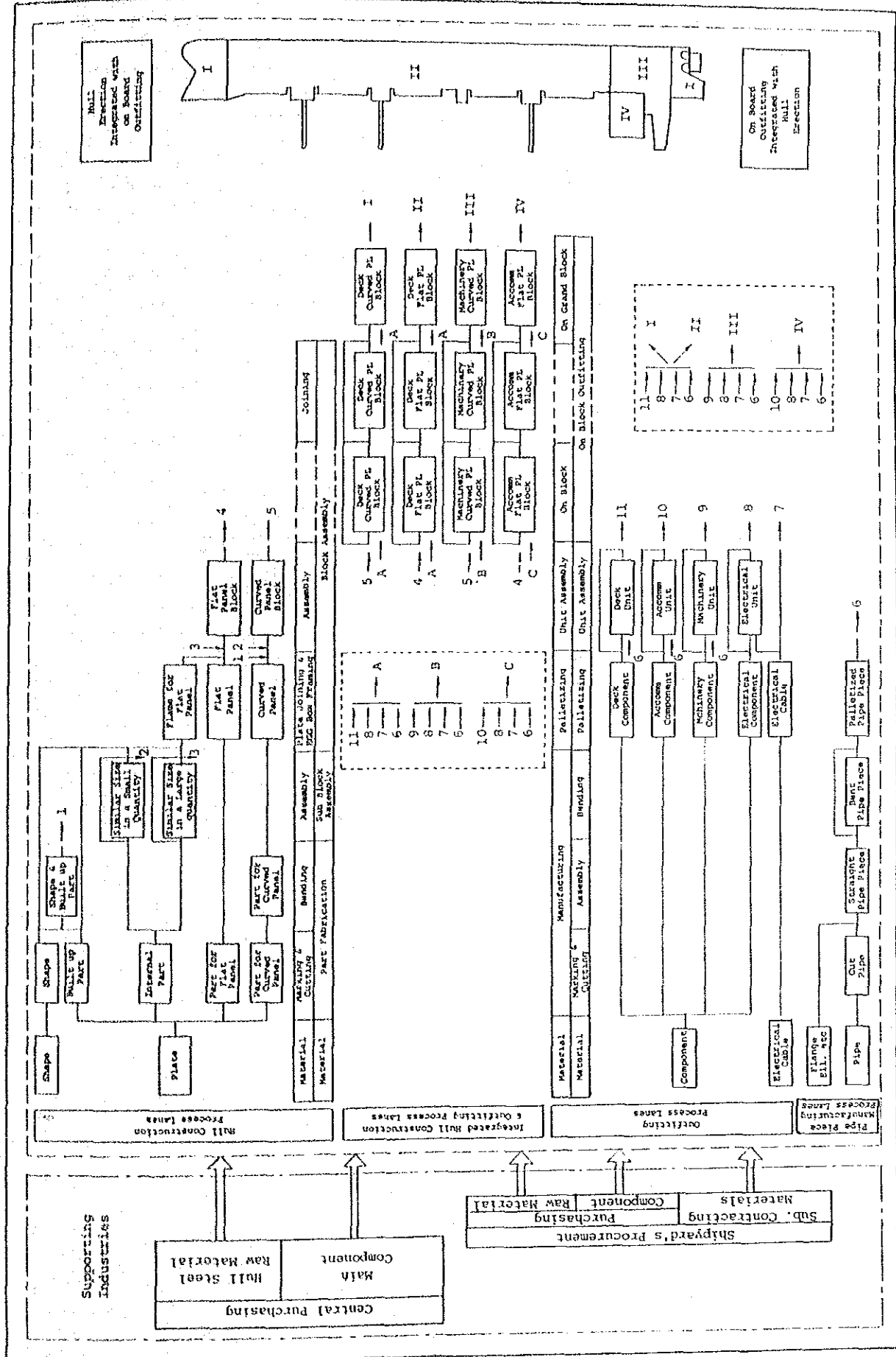


Figure AXX III-3

STRUCTURE AND PROCESSES IN JAPANESE SHIPYARDS



COMPARATIVE SHIPBUILDING SCHEDULE OF INDONEISAN AND JAPANESE SHIPYARDS

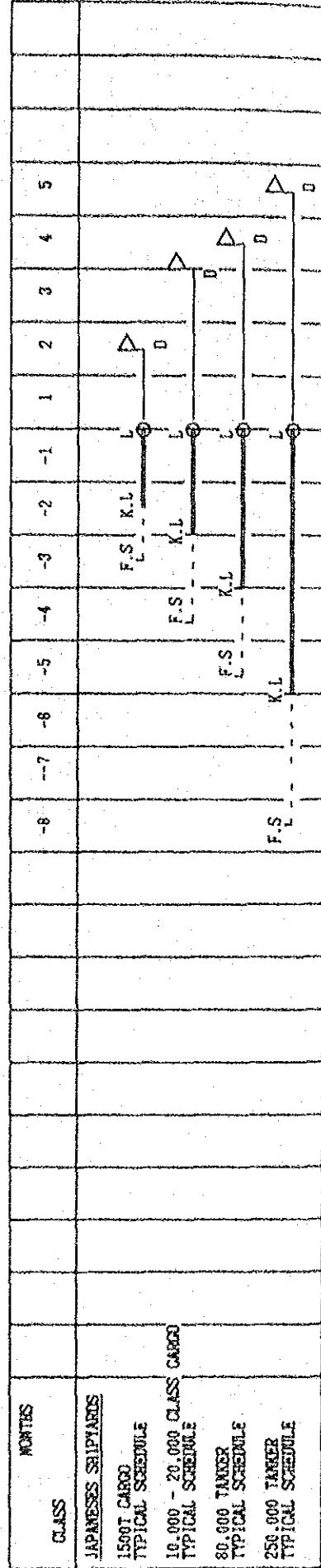
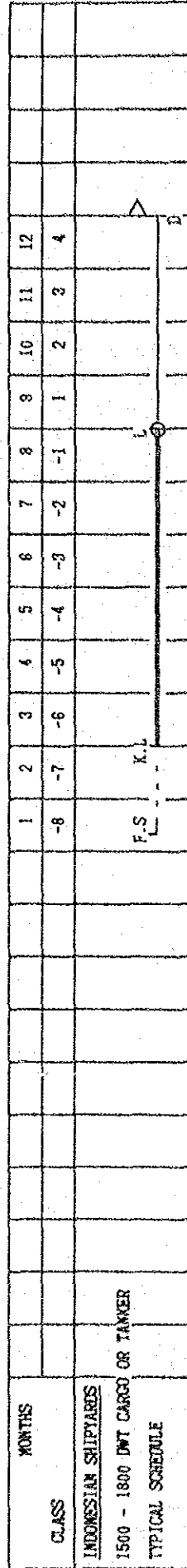
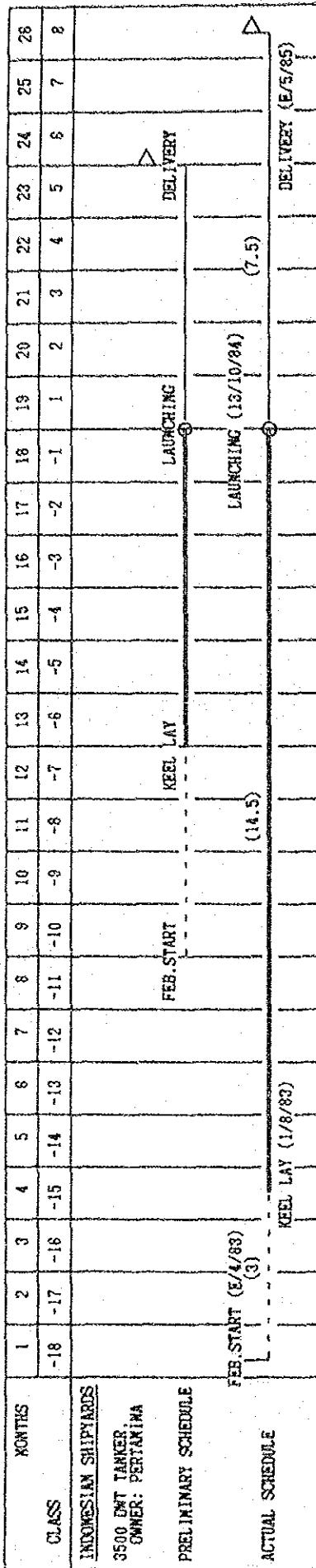


Figure ANX III-5
 FLOW CHART OF OUT FITTING MATERIALS IN JAPANESE SHIPYARDS

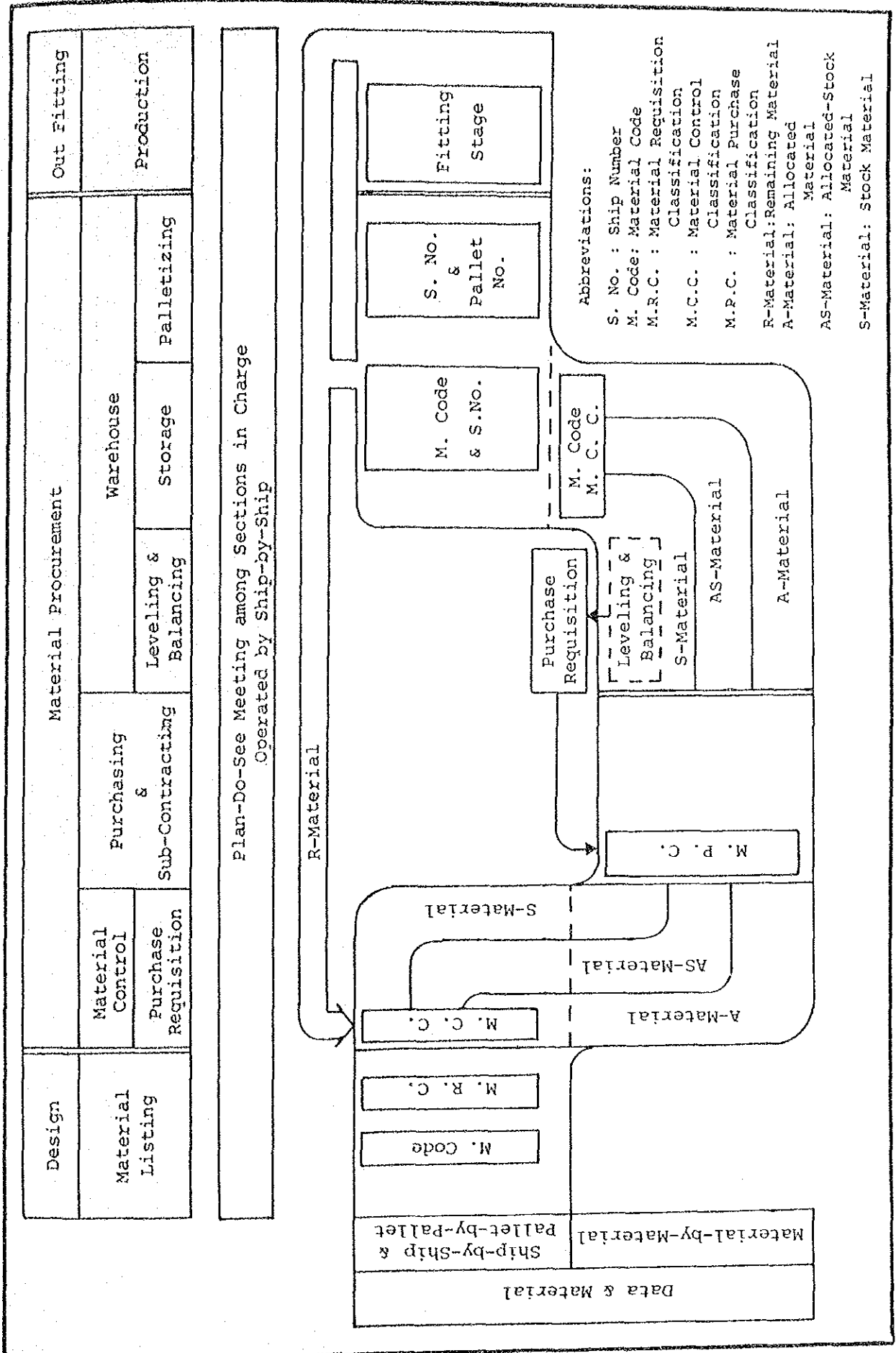
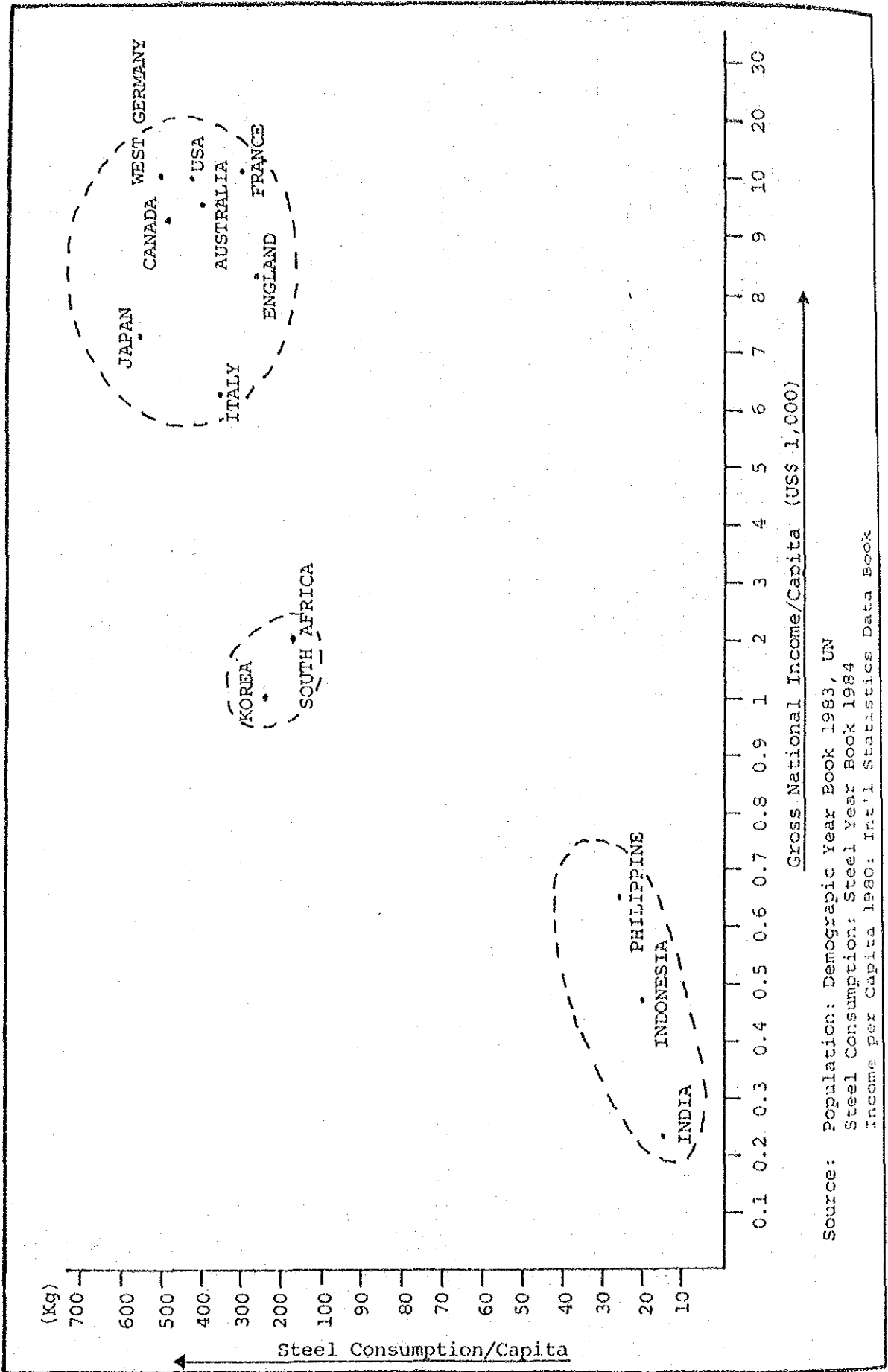


Figure ANX III-6

STEEL CONSUMPTION/GROSS INCOME PER CAPITA



ESTABLISHMENTS, EMPLOYEES, VALUE ADDED AND LOCALIZATION BY INDUSTRY GROUP (1980) 1/

Code No.	Industry Group	Establishment (No.)	Employees (Persons)	2/ Emp./Est. (Persons)	Value Added (Million RP)	Fixed Capital Formation (Million RP)	3/ Import Materials (Million RP)	4/ Total Materials (Million RP)	5/ Localization (%)
38200	Machineries & repair incl. machineries & sewing machine assembling	132	12,055	91	34,944	3,444	34,128	41,317	17.4
38311	Storage batteries	12	1,029	86	3,650	308	5,398	5,620	4.0
38312	Dry cell battery	11	5,932	539	12,592	2,284	17,767	19,803	10.3
38320	Radio, T.V. cassette and other communication equipment & apparatus	34	14,527	427	53,861	7,599	110,075	125,281	12.1
38330	Electrical apparatus and supplies	53	15,706	296	59,671	5,106	58,018	77,169	24.8
38340	Electricity appliances	3	194	65	199	1	62	340	81.8
38411	Ship building and repairing	42	7,034	167	20,287	2,016	4,514	9,943	54.6
38430	Motor vehicles assembling & mfty.	32	11,424	357	78,499	13,764	89,152	109,944	18.8
38440	Motor cycles and three wheel motor vehicles assembling and manufacturing	15	5,568	371	35,758	1,610	68,522	105,861	35.3
38460	Motor vehicle body and equipment	50	4,284	86	6,917	2,738	7,579	13,186	42.5
38490	Transport equipment not elsewhere classified	4	67	17	47	-	14	24	41.7
Total		388	77,820	201	306,425	38,870	395,229	508,388	22.3

Notes:

- 1/ The data are for medium & large-scale industries based on BPS classification (20 employees and above).
- 2/ Averaged employees per establishment.
- 3/ Imported raw materials, intermediates, components and parts.
- 4/ Imported materials plus local ones.
- 5/ (1.0 - Import/Total) x 100

Source: Statistik Industri, BPS

ESTABLISHMENTS, EMPLOYEES, VALUE ADDED AND LOCALIZATION BY INDUSTRY GROUP (1981) 1/

Code No.	Industry Group	Establishment (No.)	2/ Employees (Persons)	Emp./Est. (Persons)	Value Added (Million RP)	Fixed Capital Formation (Million RP)	Import 3/ Materials (Million RP)	Total 4/ Materials (Million RP)	5/ Localization (%)
38200	Machineries & repair incl. machineries & sewing machine assembling	128	12,658	99	44,694	10,107	47,400	60,581	21.8
38311	Storage batteries	13	1,147	88	6,214	810	5,038	6,572	23.3
38312	Dry cell battery	9	6,229	692	12,846	1,697	22,489	25,713	12.6
38320	Radio, T.V. cassette and other communication equipment & apparatus	36	16,142	448	61,129	9,291	130,053	151,786	85.7
38330	Electrical apparatus and supplies	55	15,095	274	62,608	11,845	60,559	81,309	25.4
38340	Electricity appliances	2	165	83	416	1	179	187	4.3
38411	Ship building and repairing	46	7,261	158	26,963	1,742	5,377	10,915	50.7
38430	Motor vehicles assembling & mfty.	38	14,250	375	102,646	8,313	92,549	126,773	27.0
38440	Motor cycles and three wheel motor vehicles assembling and manufacturing	14	6,869	491	143,905	4,457	86,732	135,111	35.8
38460	Motor vehicle body and equipment	55	5,740	104	11,146	9,802	9,499	17,273	45.0
38490	Transport equipment not elsewhere classified	2	34	17	38	-	-	70	100.0
	Total	398	85,590	215	472,605	58,065	459,955	616,290	25.4

Notes:

1/ The data are for medium & large-scale industries based on BPS classification (20 employees and above).

2/ Averaged employees per establishment.

3/ Imported raw materials, intermediates, components and parts.

4/ Imported materials plus local ones.

5/ $(1.0 - \text{Import}/\text{Total}) \times 100$

Source: Statistik Industri, BPS

ESTABLISHMENTS, EMPLOYEES, VALUE ADDED AND LOCALIZATION BY INDUSTRY GROUP (1982) 1/

Code No.	Industry Group	Establishment (No.)	Employees (Persons)	2/ Emp./Est. (Persons)	Value Added (Million RP)	Fixed Capital Formation (Million RP)	3/ Import Materials (Million RP)	Total 4/ Materials (Million RP)	5/ Localization (8)
38200	Machineries & repair incl. machineries & sewing machine assembling	131	13,007	99	54,641	7,197	42,481	63,244	32.8
38311	Storage batteries	15	1,364	91	7,053	2,473	6,338	7,687	17.5
38312	Dry cell battery	9	4,874	542	15,780	1,561	22,735	26,874	15.4
38320	Radio, T.V. cassette and other communication equipment & apparatus	36	15,340	426	73,605	8,696	116,188	135,574	14.3
38330	Electrical apparatus and supplies	56	15,129	270	91,320	16,705	91,665	104,775	12.5
38340	Electricity appliances	2	165	83	308	1	233	576	59.5
38411	Ship building and repairing	54	8,090	150	27,018	9,698	8,057	20,307	60.3
38430	Motor vehicles assembling & mftg.	42	14,354	342	91,546	24,607	120,023	150,340	20.2
38440	Motor cycles and three wheel motor vehicles assembling and manufacturing	13	7,486	576	90,543	16,624	166,584	241,551	31.0
38460	Motor vehicle body and equipment	58	6,257	108	20,175	4,252	8,212	17,762	53.8
38490	Transport equipment not elsewhere classified	4	6,488	1,622	8,500	38,741	28,899	30,866	6.4
	Total	420	92,554	220	480,489	130,555	612,415	799,556	23.5

Notes:

1/ The data are for medium & large-scale industries based on BPS classification (20 employees and above).

2/ Averaged employees per establishment.

3/ Imported raw materials, intermediates, components and parts.

4/ Imported materials plus local ones.

5/ (1.0 - Import/Total) x 100

Source: Statistik Industri, BPS

Table ANX III-1

CAPACITY, PRODUCTION DEMAND OF MACHINE TOOLS (1982 - 1987)

No.	Kind of machine tools		Capacity production demand					(Unit)
			1982	1983	1984	1985	1986	1987
1	Lathe	Unit	300	300	700	700	700	1,200
			127	183	250	300	450	700
			3,000	3,400	3,700	4,200	4,900	5,250
2	Drilling machine	Unit	550	550	550	550	550	2,000
			71	130	225	350	550	1,500
			1,200	1,600	2,500	3,600	4,400	5,600
3	Sawing machine	Unit	100	100	100	100	100	100
			30	30	50	75	100	100
			8,800	8,800	8,950	9,120	9,280	9,440
4	Milling machine	Unit	250	250	250	250	250	550
			25	25	50	100	250	400
			500	600	650	700	800	800
5	Bending machine	Unit	100	100	100	100	100	100
			25	25	25	50	75	100
			200	400	700	1,000	1,500	2,000
6	Shaping machine	Unit	-	-	100	100	100	100
			-	-	20	40	60	75
			75	75	75	100	100	150
7	Grinding machine	Unit	-	-	25	25	50	50
			-	-	25	25	50	50
			25	25	25	30	50	70
8	Rolling machine	Unit	100	100	100	100	100	100
			10	15	25	35	50	75
			1,100	1,400	1,520	1,630	1,740	1,850
9	Shearing machine	Unit	100	100	100	100	100	100
			15	20	50	60	75	100
			300	300	360	430	490	750
10	Dies, mold, jigs, & fixtures	Ton	3,000	3,000	11,500	11,500	11,500	11,500
			150	150	1,000	3,000	4,500	6,500
			11,500	11,500	11,800	12,200	12,400	12,700
11	Special machine tools	Unit	-	-	250	250	250	250
			-	-	20	60	80	135
			90	90	124	132	160	200

Source: PENGEMBANGAN KAPASITAS NASIONAL SEKTOR INDUSTRI 1984-1987, MOI, 1984

IMPORT OF MACHINE TOOLS (1982-1984)

Table ANXIII-5

KIND OF MACHINE TOOLS	QUANTITY (UNIT)	NET WEIGHT (TON)	
Machine tool operating by electricity, ultrasonic	1	1,942	880
	2	406	473
	3	1,726	327
Gear cutting machine	1	75	69
	2	74	6
	3	12	5
Lathe	1	2,301	2,765
	2	1,512	1,790
	3	1,053	1,032
Reaming or milling machine, metal working	1	358	374
	2	597	299
	3	620	354
Drilling or boring machine	1	4,863	980
	2	4,540	498
	3	3,973	482
Sawing machine	1	4,385	279
	2	454	111
	3	2,807	130
Plating machine	1	126	146
	2	604	70
	3	140	89
Tapping or screw cutting machine	1	196	134
	2	271	39
	3	425	51
Sharpening, trimming, trucing, grinding, polishing	1	-	1,248
	2	-	594
	3	-	720
Other metal working press grinding, polishing	1	-	4,130
	2	-	3,475
	3	-	1,798
Forging machine, strapping machine	1	-	90
	2	-	10
	3	-	54
Bending, forming, folding or flattening	1	-	849
	2	-	909
	3	-	479
Shearing, punching or notching	1	-	619
	2	-	501
	3	-	1,042
Other machine tools for working metal	1	-	5,838
	2	-	5,696
	3	-	4,716

NOTE

1: 1983

2: 1983

3: 1984

SOURCE : IMPORT STATISTICS, IBPS

Table ANX III-6

CAPACITY, PRODUCTION AND DEMAND OF AGRICULTURAL MACHINE AND EQUIPMENT

		(Unit: number)					
Item		1982/83	1983/84	1984/85	1985/86	1986/87	1987/88
1. Hand tractor	. Capacity	2,150	2,150	2,150	2,150	2,150	2,150
	. Production	1,055	1,270	1,500	1,700	1,900	2,150
	. Demand	4,000	5,000	8,000	15,800	20,500	33,000
2. Mini tractor 12-22.5KW	. Capacity	200	200	200	200	200	200
	. Production	116	100	125	150	175	200
	. Demand	1,200	1,500	3,000	3,500	4,000	5,000
3. Tractor over 22.5KW	. Capacity	-	5,250	5,250	5,250	5,250	5,250
	. Production	-	-	10	500	520	550
	. Demand	-	-	2,000	2,200	2,500	2,900
4. Thresher	. Capacity	2,500	2,500	2,500	2,500	2,500	2,500
	. Production	1,279	1,284	1,500	1,700	2,000	2,500
	. Demand	3,000	5,000	10,000	20,000	40,000	78,000
5. Huller	. Capacity	6,100	6,100	6,100	6,100	6,100	6,100
	. Production	1,678	1,559	2,000	3,000	4,000	6,000
	. Demand	32,000	34,000	39,000	46,000	54,000	72,000
6. Polisher	. Capacity	3,500	3,500	3,500	3,500	3,500	3,500
	. Production	388	376	1,000	1,500	2,500	3,500
	. Demand	33,000	34,000	39,000	46,000	54,000	72,000
7. Rice milling	. Capacity	1,570	1,570	1,570	1,570	1,570	1,570
	. Production	372	500	1,000	1,250	1,500	1,570
	. Demand	1,000	2,250	3,500	5,000	7,000	11,500
8. Irrigation pump	. Capacity	7,200	7,200	7,200	7,200	7,200	7,200
	. Production	2,110	3,065	5,000	5,500	6,000	7,200
	. Demand	4,600	5,500	6,000	8,000	9,500	11,000
9. Hand sprayer (1000 unit)	. Capacity	348	497	497	497	497	497
	. Production	159	170	200	225	240	260
	. Demand	160	172	185	200	217	236

Source: PENGEMBANGAN KAPASITAS NASIONAL SEKTOR INDUSTRI 1984-1987, MOI, 1984

Table ANX III-7

IMPORT OF AGRICULTURAL MACHINE AND EQUIPMENT (1981-1984)

		(Unit: number)			
CCCN Code No.	Item	1981	1982	1983	1984
8410200	Reciprocating pump	23,961	61,421	34,589	61,571
8410300	Centrifugal pump	8,032	11,695	23,132	7,239
8410400	Rotary pump	15,167	11,975	14,785	134
8425200	Combined harvester- thresher	(33.8 ton)	(206.6 ton)	(230.2 ton)	(3.3 ton)
8425300	Other harvester- thresher	(20.6 ton)	(233.1 ton)	(1,214.1 ton)	(18.1 ton)
8429111	Rice huller < 50kg	-	-	5	4,184
8429119	Rice huller > 50kg	-	7,315	5,158	5,476
8429190	Grain mill	-	11,186	11,619	6,168
8701111	Track laying tractor for agriculture CKD < 100KW	1	-	46	-
8701112	Track laying tractor for agriculture CKD > 100KW	25	-	1	1
8701121	Tractor for agricul. built up < 100KW	-	4	7	2
8701122	Tractor for agricul. built up > 100KW	-	27	2	15
8701911	4 wheel tractor for agricul. CKD < 20KW	-	71	80	20
8701912	4 wheel tractor for agricul. CKD 20-40KW	15	50	24	12
8701913	4 wheel tractor for agricul. CKD > 45KW	-	-	71	4
8701921	4 wheel tractor for agricul. built up < 20KW	430	66	145	32
8701922	4 wheel tractor for agricul. built up 20-40KW	75	172	59	27
8701923	4 wheel tractor for agricul. built up > 45KW	528	751	636	251
8701941	2 wheel tractor for agricul. CKD	755	808	855	-
8701942	2 wheel tractor for agricul. built up	716	1,633	1,986	1,100
8701992	Other tractor for agricul. CKD, built up	238	212	1	-

Source: Import Statistics, 1981, 1982, 1983 and 1984, BPS

PRODUCTION CAPACITY OF AGRICULTURAL MACHINE AND EQUIPMENT (1982)

Firm	Hand Tractor	Tractor	Thresher	Huller	Rice Mill Polisher	Dryer	Sprayer	Pump, Irrigation or Centrifugal
1. Sumber Sujaka								abt. 5,300
2. Sudono & Co.,								N.A.
3. Growth Sumatera								2,000
4. Fongso Indonesia	200							
5. Wira Sakti		200						
6. Biro Tehnk Djupri			1,500					
7. Aktiva Coy			70					
8. Mutof							1,000	
9. Promotor Indonesia								1,200
10. Roda Tani	1,000							1,000
11. Echo	1,200			2,500	3,300			1,000
12. Glugur				1,160				
13. Suratman			40					80
14. Guntur				1,200				
15. New Ruhak Ind. Ltd.	200					300		axial 2,400
16. Lingga Wastu Jaya	360							
17. Arika	400	600						
18. Bina Pertiwi	1,000	1,000						
19. Indo Tani	1,000	1,000						
20. Yamindo	250	200	260	2,500	750			
21. Fa Teha	100		100					
22. Agrindo	2,500	2,000	500	900	600	150		
23. Buma Sakti	240		240			240		
24. Dwika								120
25. Ind. National Kemajuan			100	700	120 (Rice mill)			
26. Karya Hidup Sentosa	1,500		1,500	2,000	1,000			1,000
Total	9,950	5,000	4,310	10,960	5,770	690	1,000	14,100

Source: DIRECTORY Basic Metal Industry 1982, BKS-ILLMA

Table ANX III-9 (1)

CAPACITY, PRODUCTION AND DEMAND FOR CONSTRUCTION EQUIPMENT

Item	Year						(unit)
		1982/1983 Capacity Production Demand	1983/1984 Capacity Production Demand	1984/1985 Capacity Production Demand	1985/1986 Capacity Production Demand	1986/1987 Capacity Production Demand	1987/1988 Capacity Production Demand
1. Crawler bulldozer			1,065	1,065	1,065	1,065	1,065
	n.a.		22	530	643	739	879
			n.a.	650	715	786	982
2. Hydraulic excavator			635	635	635	635	635
	n.a.		10	160	176	194	232
			n.a.	230	253	291	348
3. Motor grader			255	255	255	255	255
	n.a.		-	147	150	171	204
			138	150	165	190	226
4. Wheel loader			340	340	340	340	340
	n.a.		1	120	168	193	230
			165	170	187	215	256
1-4 Sub total			2,295	2,295	2,295	2,295	2,295
	n.a.		-	957	1,137	1,297	1,545
			-	1,200	1,320	1,482	1,812
5. Road/vibro roller			1,000	1,000	1,000	1,000	1,000
	n.a.		404	424	445	467	491
			500	525	551	579	607
6. Stone crusher		590	590	590	590	590	590
		18	18	20	125	135	150
		100	100	110	125	135	150
7. Concrete mixer		2,000	2,000	2,000	2,000	2,000	2,000
		1,200	1,200	1,300	1,800	1,900	2,000
		1,300	1,500	1,650	1,800	1,900	2,100
8. Plate compactor		500	500	500	500	500	500
		400	400	440	450	480	500
		450	500	500	600	650	700

Note: 1 to 4 are items stipulated by the deletion program.

Source: PENGEMBANGAN KAPASITAS NASIONAL SEKTOR INDUSTRI 1984-1987, MOI, 1984

Table ANX III-9 (2)

LICENSED PRODUCTION CAPACITY OF CONSTRUCTION EQUIPMENT

Construction Equipment Company	(Unit)										
	Crawler Bulldozer	Hydraulic Excavator	Motor Grader	Wheel Loader	Road Roller	Vibro Roller	Stone Crusher	Concrete Mixer			
Pt. Komatsu Indonesia	555 (47)	75 (1)	90 (2)	75 (1)							
Pt. Natra Raya	410 (30)		165 (2)	160 (3)							
Pt. Triguna Utama Machinery		350 (23)									
Pt. Barata M & E					300 (300)	300 (7)	300 (8)				
Pt. Sakai Sakti					100 (11)		150 (7)				
Pt. Sydney Metal							30 (8)	1,000 (480)			
Pt. Boma Bisma Indra								50 (25)			
Others	100	210	-	105		500	135	-			
Total	1,065	635	255	340	1,200	615	1,050				

Note: () shows actual production in 1983.

Source: BUKU PEGANGAN PENGGUNAAN PRODUKSI
DALAM NEGERI 1984, MOI, R.I.I.

Table ANX III-10

IMPORT OF CONSTRUCTION EQUIPMENT

Products	Quantity (unit)			Net weight (KG)			Value CIF (US \$)		
	1982	1983	1984	1982	1983	1984	1982	1983	1984
Mechanically propelled road rollers in C-K-D	39	13	4	231,895	65,083	15,592	772,430	262,931	38,530
Mechanically propelled road rollers in built-up	611	458	178	2,567,751	2,208,367	1,081,498	9,851,476	6,669,732	3,935,841
Parts of mechanically propelled road rollers	-	-	-	161,604	65,448	114,865	706,022	221,297	1,159,166
Bulldozers, angle dozers and levellers self propelled	1,488	957	623	21,764,527	11,644,019	8,721,248	80,875,876	43,866,070	38,982,183
Mechanical shovels and excavators self propelled	-	-	-	10,926,355	8,295,477	5,592,821	32,093,198	19,243,332	24,275,609
Other machines self propelled	-	-	-	2,697,658	3,426,574	1,903,653	15,807,392	14,655,399	11,072,786

(BUREAU OF STATISTICS)

PRODUCTION CAPACITY OF AUTOMOTIVE

Assembler	Capacity	Brand
P.T. Alun indah	1,500	Citroen, Berliet
P.T. Garmak motor	20,000	Chevrolet, Opel
P.T. Gaya motor	45,000	Daihatsu, Peugeot, Renault
P.T. German motor mfg	8,000	Mercedes Benz
P.T. Indonesia service co.	10,000	Dodge, Ford, Fiat, VW, BMW AMC, Nissan
P.T. Imer motor	10,000	Nissan
P.T. Indo mobil utama	20,000	Suzuki
P.T. Ismac	3,500	Volvo, Nissan
P.T. Krama yudha ratu motor	60,000	Mitsubishi
p.T. krama yudha surabaya	50,000	Mitsubishi
P.T. Krama yudha kusuma	6,000	Mitsubishi
P.T. Multi astra	80,000	Toyota
P.T. National assembler	15,000	Mazda, Suzuki, Hino, Landrover
P.T. Pantja motor	7,500	Isuzu
P.T. Prospect motor	10,000	Honda
P.T. Permorin	10,000	Mitsubishi
P.T. Udatin	12,000	Holden
Total	368,500	

Source: POTENSI INDUSTRI, 1984, MOI

Item	Capacity
Passenger car	55,275
Commercial car	313,225

Source: BUKU PEGANGAN PENGGUNAAN PRODUKSI DALAM NEGERI, 1984

Table ANX III-12

ACTUAL DELIVERY OF AUTOMOTIVE (1984)

Brand				(NBR)
	Commercial Car	Passenger Car	General Purpose Car	Total
Daihatsu	33,637	3,270	1,827	38,734
Mitsubishi	32,693	1,681	-	34,374
Toyota	23,226	5,595	849	29,670
Suzuki	18,774	-	5,238	24,012
Honda	-	8,231	-	8,231
Isuzu	1,669	-	-	1,669
Mazda	360	956	-	1,316
Hino	1,068	-	-	1,068
Nissan	-	357	133	490
UD nissan	176	-	-	176
Chevrolet	4,455	-	405	4,860
Mercedes benz	1,753	758	75	2,586
Peugeot	-	1,067	-	1,067
Citroen	667	11	-	678
Jeep	-	-	625	625
Ford	26	575	-	601
Holden	-	444	-	444
Renault	-	406	-	406
Volkswagen	391	-	-	391
Volvo	181	87	-	268
Opel	180	-	-	180
BMW	-	174	-	174
Fiat	-	107	-	107
Landrover	-	-	94	94
Berliet	58	-	-	58
Dodge	37	-	-	37
Simca	-	10	-	10
Tata	5	-	-	5
Total	119,356	23,729	9,246	152,331

Source: P.T. KRAMA YUDHA TIGA BERLIAN MOTORS

ACTUAL DELIVERY OF AUTOMOTIVE (1985)

(From January to May)

Brand				(NBR)
	Commercial Car	Passenger Car	General Purpose Car	Total
Daihatsu	13,663	967	1,205	15,835
Suzuki	12,154	120	1,500	13,774
Mitsubishi	11,300	995	-	12,295
Toyota	10,555	1,170	172	11,897
Honda	-	3,405	-	3,405
Mazda	376	676	-	1,052
Isuzu	663	-	-	663
Nissan	-	234	13	247
Hino	227	-	-	227
Chevrolet	1,382	-	952	2,334
Mercedes benz	895	302	101	1,298
Ford	8	607	-	615
Opel	327	168	-	495
Peugeot	-	418	-	418
Citroen	314	3	-	317
Jeep	-	-	196	196
Volvo	20	153	-	173
Renault	-	164	-	164
Volkswagen	114	-	-	114
Berliet	112	-	-	112
BMW	-	61	-	61
Landrover	-	-	35	35
Holden	-	34	-	34
Fiat	-	31	-	31
Total	52,110	9,508	4,174	65,792

Source: P.T. KRAMA YUDHA TIGA BERLIAN MOTORS

PRODUCTION AND DELIVERY OF AUTOMOTIVE

Year	(Production)		(NBR)
	Passenger	Commercial	Total
1975	29,814	54,296	84,110
1976	31,258	51,093	82,351
1977	12,070	78,126	90,196
1978	15,174	91,733	106,907
1979	14,174	86,604	100,778
1980	22,468	151,267	173,735
1981	27,156	182,740	209,896
1982	29,680	159,965	189,645
1983	24,183	131,655	155,838
1984	23,368	130,302	153,670

Source: MOI, 1985

Year	Grand Total	(Delivery)			(NBR)
		Commercial Car	Passenger Car	General Purpose Car	
1981	207,804	157,745	25,813	24,246	
1982	188,780	133,634	30,096	25,050	
1983	151,858	117,247	23,050	11,561	
1984	152,331	119,356	23,729	9,246	

Source: P.T. KRAMA YUDHA TIGA BERLIAN MOTORS

PRODUCTION CAPACITY OF MOTOR CYCLE

		(NBR)
Assembler	Capacity	Brand
P.T. Harapan motor sakti	200,000	Yamaha
P.T. Federal motor	300,000	Honda
P.T. Indohero steel & eng. co.	200,000	Suzuki
P.T. Tunas bekasi motor co.	60,000	Kawasaki
P.T. Dan motor vespa indonesia	90,000	Vespa
P.T. Tunas bekasi motor	200,000	Binter
P.T. Tunas bekasi motor	60,000	Scoter
Total	1,110,000	

Source: POTENSI INDUSTRI, 1984

PRODUCTION AND DELIVERY OF MOTORCYCLE AND SCOOTER

	(NBR)	
	Delivery	Production
1974	233,000	n.a.
1975	254,176	300,700
1976	194,214	270,000
1977	239,289	302,000
1978	235,658	320,000
1979	190,744	212,572
1980	366,047	409,985
1981	515,682	503,273
1982	550,228	557,439
1983	361,777	362,300
1984	248,000	247,600

Source: PASUMI

CAPACITY, PRODUCTION AND DEMAND OF ELECTRICAL
MACHINE & APPLIANCES

			(unit 1,000)					
Products	Item	Unit	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88
1 Radio/radio cassette	(1)	1,000	4,950	5,768	5,768	5,768	5,768	5,768
	(2)		1,589	1,503	1,587	1,699	1,818	1,946
	(3)		1,305	1,414	1,511	1,618	1,732	1,863
2 TV colour	(1)	1,000	700	965	965	965	966	965
	(2)		232	189	279	298	320	342
	(3)		229	189	266	284	306	326
3 TV B/W	(1)	1,000	1,400	1,314	1,314	1,314	1,314	1,314
	(2)		421	433	512	549	587	629
	(3)		412	433	488	522	599	599
4 Cassette recorder	(1)	1,000	781	1,424	1,424	1,424	1,424	1,424
	(2)		366	288	466	499	534	572
	(3)		366	288	414	444	476	509
5 Room fan	(1)	1,000	878	1,356	1,356	1,356	1,356	1,356
	(2)		756	801	1,056	1,131	1,210	1,296
	(3)		756	801	960	1,028	1,100	1,178
6 Air condition	(1)	1,000	142	317	317	317	317	317
	(2)		55	69	79	84	90	97
	(3)		55	69	76	80	85	92
7 Refrigerator	(1)	1,000	340	450	450	450	450	450
	(2)		152	139	176	190	206	227
	(3)		152	139	160	173	187	206
8 Electric iron	(1)	1,000	130	130	130	130	130	130
	(2)		33.7	35.7	40	42.5	44.8	47.4
	(3)		35.5	38.0	40	42.5	44.8	47.4
9 Rice cooker	(1)	1,000	53.2	233	233	233	233	233
	(2)		49.0	52	58	61.5	65	68.5
	(3)		51.5	56	58	61.5	65	68.5
10 Storage battery	(1)	1,000	4,059	4,557	6,500	7,000	7,500	8,000
	(2)		3,521	4,080	6,405	6,869	7,343	7,862
	(3)		4,700	4,985	5,337	5,716	6,119	6,562
11 Dry battery	(1)	1,000	682,420	1,006,536	1,000,536	1,058,466	1,147,378	1,245,000
	(2)		576,600	633,600	861,566	922,603	987,599	1,057,409
	(3)		632,345	670,617	717,963	768,835	822,999	881,174
12 Lamp filament	(1)	1,000	100,400	101,480	101,480	101,480	101,480	101,480
	(2)		30,400	45,439	63,675	68,192	73,482	78,682
	(3)		45,563	49,239	53,066	56,826	61,235	65,568
13 Lamp fluorescent	(1)	1,000	21,000	22,200	22,200	22,200	22,200	22,200
	(2)		5,300	9,650	17,476	18,715	20,032	21,446
	(3)		13,639	14,743	15,888	17,013	18,211	19,497
14 Blower	(1)	1,000	0.5	0.5	0.5	0.5	0.5	0.5
	(2)		0.1	0.1	0.2	0.25	0.35	0.5
	(3)		1.8	1.8	2.3	2.5	3.0	3.4
15 Generator set	(1)	1,000	62.0	62.0	62.0	62.0	76.0	76.0
	(2)		26.4	33.8	37.4	41.1	45.4	50.0
	(3)		50.4	37.6	41.7	45.8	50.5	55.5
16 Electric motor	(1)	1,000	-	16.0	72	92	120	160
	(2)		-	-	36	65	98	133
	(3)		-	297.2	333	337	410	450
17 Distribution transformer	(1)	1,000	9.4	20.2	20,150	20,150	25,150	25,150
	(2)		5.0	5.7	10,300	12,500	13,500	15,000
	(3)		5.7	6.6	11,430	12,340	13,300	14,400
18 Power transformer	(1)	1,000	-	20.0	40	40	60	60
	(2)		-	7.0	20	24	30	40
	(3)		-	-	102	28	35	22
19 Low & medium voltage panel	(1)	1,000	15.6	19.4	27,000	27,000	42,000	42,000
	(2)		10.6	14.0	18,800	22,000	26,100	30,000
	(3)		64.2	17.6	20,900	24,500	29,000	33,000
20 High voltage panel	(1)	1,000	-	0.6	0.6	0.6	0.6	0.6
	(2)		-	0.1	0.17	0.25	0.31	0.36
	(3)		-	-	0.83	0.18	360	0.14
21 Electric welding machine	(1)	1,000	-	9.0	9.0	9.0	9.0	9.0
	(2)		-	1.8	4.0	5.0	6.0	8.0
	(3)		-	8.2	9.2	10.0	11.0	12.0
22 Kwh meter	(1)	1,000	-	920	1,120	1,120	1,350	1,550
	(2)		-	500	700	900	1,160	1,160
	(3)		-	800	1,160	1,160	1,160	1,160

Note: (1) Capacity (2) Production (3) Demand

Source: PENGEMBANGAN KAPASITAS NASIONAL SEKTOR INDUSTRI 1984-1987 MOI 1986

Ballast for L.T.	Refrigerator	Glow Lump - Lump Pijian	T.V.	Transformator Distribusi
Daya Elec'	National Gobel	Hikari	Besuki Indah	Unindo
Nikatsu Electric	Sanyo	Philips	National Gobel	Trafindo Perkasa
Brocomutiara Elec'	Tjiparai	Sarana Agatra Utama	Wheel Antariksa	Morawa Elec' Transbuana
Sinar Semp Urna Abadi Elec'	Gempita Work	Sibalec	Yasontha	Rawa Buaya
Asata Utama Ele' Industry	Yansuli	Perindra	Elbiru	First Pura Jaya Teknika
Bumi Kencana Kusuma	Mataric Jaya	Perlana	Gemini Elec'	Asata Utama
Veltama Vista Megah Elec Ind'	Indo Air-Con	Sinas Purnama Sakti	Hartomo Intana Ele'	Bambang Jaya
Raw Buaya	Solitron	Bintang Terang	Indo Machine	National Gobel
Sinar Massaakti	Plas Copac	Sinar Ang Kasa Rungkut	Solitron Elec'	
Indo Tri Saya Industries	Ster Cosmos	Puji Chaya	Ster Cosmos	
Textron	Great Ancol		Nusantara Polar Ele'	
Sinar Ele'	Jaya Intal Indo'		Multipular Corp'	
	Glor Seni			
	Hartono Istana Elec			
	Sehat Gembira Jaya			
KWH Meter	Storage Battery	Lump T.L	M.C.B.	Radio Kominikasi
Sigma Tirta	Yuasa Battery	Sinar Angkasa Rungkut	Alisindo Perkassa	Radio Praqu Communication
Metbelosa	G.S. Battery	Philips	Dharmas Sadhana	Centronic
Fuji Dmaruma	Sinar Stupa electro	Ratin Ele'	Sigma Tirta	Inti
Melcoinda	Asia Storage Battery	Hikari	Mega Eltra	Chatu Listiwa
Meco Indo	Nippers Battery	Sarana Gatrautama	Asean Power Elec'	Dharma Switnggal Utama
Xahi Utama	Andalasa Jaya	Perinda	Mega Daya	Indisi
Len	Indonesia Battery	Sinar Purnama Sakti		
		Sinar Baru Elect'		

Battery Kering	Motor	Radio Broad Cast	Isolator	Current Transformer
Chemical Intes' Industry Union Carbide Indonesia Padi Tractor Hadi Terang Ever Bright	Eitab Indonesia Ahli Teknik Ind' Wira Mustika Tecomulti Indo Bangna Prima	Centronics Inti Radio Freq' Communication Len-Lipi	Chaya Inaba Elec' Indonesia Keramik Twink Indonesia Sinar Angkasa Rungkat	Aeg Bina Siri Seg Sinar Elec' Seb Nikkatsu Electric Works
Transformator	Lumpu Dekorasi	Telephone	Transmitter Brodcast for T.V. & Radio	Lumpu Kendaraan Bermotor
Erka Sahatih Moraw Elec' Transewana Sinar National	Sinar Angkasa Rungkut Hikari Puji Cahaya	Inti Erindo Utama Indi raya	Radio Freq' Communication Electronika Nusantara Inti	Sinar Angkasa Rungkut Tiger Head Bulbs
Terminal Box	Kipas Angin	Stap Up/Down Transformer	Condenser	Trans Rectifier
Reychem Perkasa Nasionesia Nusaniara -Telekingdo	Ster Cosmos Indo Machine National Gobel	Sinar Elec' Seb Nikkatsu Elec' Work	Diamond Sarda Elec'	CV Erka Sinar Electronica Seb
Trans Tanaga	Trans Tinggo	Transceiver	Broadcast transmitter	Lump Senter
Unind Sidohita	Cahaya Inaba Ele' Indonesia Keramik	Hausma Ketabang Kali	Inti Radio Freq' Communication	Tiger Head Bulbs
Semi Conductory	Radio Mobil	T.V. Antena	Radio Mobil Tele	Mesin Cuci
Fairclid Semi-Con National Semi-Con	Inti	Pers Profesional	Inti	Yasunli
A/C Mobile				
Nippon Denso				

- Source: 1) "Potensi Industri 1984", MOI
 2) BUKU PEGANGAN PENGGUNAAN PRODUKSI DALAM NEGERI BUKU.I. BARANG PRODUKSI DALAM NEGERI 1984
 3) MOI DIRECTORAT INDUSTRI MESIN LISTRIK DAN ELECTRONIKA "DAFTAR PERUSAHAAN INDUSTRI MESIN LISTRIK DAN PERALATAN LISTRIK TENAGA" 1984

IMPORT OF ELECTRICAL MACHINE AND APPLIANCES

CCCN No.	Item	(Unit: US\$ million)			
		1981	1982	1983	1984
850111 - 6	D.C. motor & generator	4.5	22.0	4.0	4.7
8501121 & 29	AC, DC, motor	23.7	38.9	31.7	35.1
8501132 - 34	AC generator < 5kg	22.7	8.0	11.0	5.1
8501211 - 215	Ac generator > 5kg	77.9	112.4	103.8	68.0
8501410 & 490	Parts for motor	14.9	21.4	17.0	19.2
8515211,19,21,29	TV	44.5	34.6	27.1	20.5
8515311,19,21,29, 8515311,91 & 99	Radio, radio cassette	10.8	7.5	4.2	3.1
8515600	Radio for navigation	6.4	7.1	17.0	9.0
8515910	Parts TV	17.1	12.1	12.7	16.4
8501510 & 90	Transformer	56.9	113.9	32.5	70.1
8519140	Switch board & panel	19.6	26.9	42.9	30.7
8521900	Parts for TV apparatus	15.9	29.0	102.0	102.5
8521300 & 400	Transistor, micro circuit	19.1	8.6	81.9	7.0
8515920	Parts for radio broad cast	11.8	9.8	7.4	15.3
8515990	Parts for other radio	22.2	38.5	18.6	29.5
8519132	Junction box	1.5	1.1	1.9	2.5

Source: BIRD PUSAT STATISTIK (1981-1984)

Table ANX III-20

EXPORT OF ELECTRICAL MACHINE AND APPLIANCES

CCCN No.	Item	(Unit: US\$ 1,000)			
		1981	1982	1983	1984
8501129	AC/DC motor	138.6	-	-	-
8501134	AC generator > 5kg Built-up	16.0	86.4	-	147.9
8503110	Dry battery 60mm ^H x 33mm ^Ø	794.2	635.2	-	1,159.3
8504199	Storage Battery	-	39.6	20.8	41.7
8503199	Primary battery	200.0	-	-	-
8514120	Loud speaker	-	-	876.0	1,385.5
8515219	TV Colour Built-up	-	-	1,192.0	-
8515221	T.V. B/W	44.4	-	-	175.7
8515319	Radio for mobile	-	-	-	120.0
8515321	Portable type radio CKD	-	50.6	80.9	7.3
8515329	Portable type radio Built-up	-	359.6	311.0	18.2
8515399	Other Radio	-	90.0	609.8	-
8515910	Part T.V. & Receiver	340.2	79.4	550.1	1.9
851592	Part Radio	1,978.4	700.6	135.7	511.7
8521300	Semi conductor	52,250.7	75,592.1	114,941.3	133,164.2
8521900	Part T.V. & Apparatus	678.5	1,452.4	1,682.1	1,098.5

Source: Exports by Commodity Country of Destination and Part of Export 1981-1984
BIRO PUSAT STATISTIK

EXISTING SHIPBUILDING AND REPAIRING CAPACITY

1. NUMBER OF SHIPBUILDING AND REPAIRING ENTERPRISES

Kinds of Shipyards	Number of Enterprises
Steel shipbuilder, large size (over 500 DWT)	14
medium size (200 - 500 DWT)	26
small size including small repair yards (up to 200 BRT)	73
	(10 state - owned)
FRP boat yard	15
Ferrocement shipyard	3
Wooden boat shipyard and traditional shipyard	ABT 1,500

Source: Country Report of Indonesia by Mr Sutito, March 1984
Development pattern of Indonesia's Shipbuilding Industry 1983

2. EXISTING CAPACITY FOR NEW SHIPBUILDING

Class (GT)	100 & Below	101 - 500	501 - 1,000	1,001 - 5,000	Total
Total (GT)	6,355	5,350	22,550	11,100	45,355
No. of Berths	65	11	24	4	104

Notes: 1. New shipbuilding total capacity installed About 45,000 GT/year
2. Average annual new ship production (Total) About 20,000 GT/year
3. Biggest new shipbuilding berth capacity 8,000 GT
4. Biggest ship ever built: Floating dock 2,500 TLC
Passenger cargo coaster 1,000 DWT

Source: Country report of Indonesia by Mr Sutito, March 1984