Crafting

Special Note
All these times and difficulties assume that the craftsman is working in a properly equipped workshop with all the requisite smelting, fabrication, drilling, etc. equipment. If that is not the case, increase the time and difficulties as appropriate or rule that it is impossible to make the item under present conditions.

Schematics

Schematics are detailed instructions on how to make an item, including any planned Benefits and Flaws (see item specifications). Schematics are created using the Science: Engineering specialization that corresponds to the Crafting skill to make the item.
Base Schematic Definition: A Base Schematic is the instructions on how to make any unmodified item typically found in the CSC or CRB.
Custom Schematic Definition: A Custom Schematic is the instructions on how to make any item that has been modified from the Base Schematic in some way. Any copyrighted (company specific) schematic will be a Custom Schematic.

PURCHASING SCHEMATICS

A Base Schematic can usually be purchased for a fraction of the cost of making the item, typically about 1% of the item, anywhere that the tech level and law level allow the purchase of said item. Standard ship libraries typically contain all the Base Schematics that are available at the time of their installation, restricted by tech and law levels. Custom Schematics cost more, usually in the 10% of the adjusted item cost range, if they are available. Each Benefit added increases the Rarity of the item by 1. See *Equipment* document on the effects of Rarity.

CREATING SCHEMATICS

Follow the Schematic Difficulty Flowchart to determine the difficulty in making the Schematic.

- **Base Schematic?:** Do you already have a schematic of the base item you wish to modify?
- **Reverse Engineering?:** Do you have an item that you are wanting to reverse engineer?
- **Modified Item?:** Has the item you are reverse engineering already been modified from its base capabilities?
- **Known Item?:** Are you trying to build a schematic of a known item or one that you have just conceptualized?

Schematic Difficulty Flowchart						
Base Schematic?	Yes	Base				
	No	Reverse Engineering?	Yes	Modified Item?	Yes	Modified
					No	Reverse
			No	Known Item?	Yes	Known
					No	Unknown

The time and difficulties listed below make the assumption that you are working on an item that is your tech level or lower and you have ready access to reference material to aid you in your research. Make an OE **Percentage Maneuver** skill check using the appropriate Engineering specialization modified with the final calculated difficulty. Each roll takes the time specified (including any multipliers) in the item construction chart. Once 100% is reached then the schematic has been created. If the roll ever results in a critical, not only do you suffer that critical but all progress is lost and you must start over.

- ➔ **Base:** Modifying an existing schematic is fairly straightforward. The initial difficulty of the task is Routine(+30), modified with any Benefits or Flaws for the difficulty of the check. The time required will be the base time listed with the item.
- ➔ **Modified:** Attempting to reverse engineer a modified item is a bit tricky. The initial difficulty is the construction difficulty listed for the base item in its chart. You then add in the adjustments from any modifications made. Time is increased by +300%. The end result will provide you with a Custom Schematic for the item with modifications plus a Base Schematic that you can then modify by restarting this process.
- ➔ **Reverse:** Reverse engineering an unmodified item is done at the construction difficulty listed for the item in its chart. Time is increased by +200% but in the end you will have a Base Schematic for the item in question. Restart this process.
- ➔ **Known:** You have a good idea of what you want to create but no working examples. Increase the time by 500% and the construction difficulty once. Completion will give you a Base Schematic of the item that you can use to restart this process.
- ➔ **Unknown:** With nothing to go on but your imagination, the time is increased by +1000% and the creation difficulty twice, but in the end you will have a Base Schematic with which to restart this process.

USING A SCHEMATIC OVER

Typically, once you create a schematic it can be used over and over. However, you will need to make an **Absolute Moderate(+0) Composition: Writing** check to see how well you convey the knowledge you have attained.

SELLING SCHEMATICS

If you get at least a Partial Success on the Writing test, you can sell your results at the next TL 8+ world with a Class A or B starport. This will be a one-time, free Income Endeavor that uses as its base the income stated in the Writing results table and can

Composition: Writing Results	
Absolute Failure	You stare in horror at the gibberish on the screen as you quickly hit the delete button and hope no one has seen this garbage.
Failure	The content of this schematic is intelligible only to yourself and whoever shares the secret language between you and your imaginary friend. Even the fabricator is confused. Roll an extra D6 when calculating the cost (CSC p.7) and drop the lowest dice. You also must double the time required.
Partial Success	You create a marginally comprehensible schematic that you can sell for 10% of the modified cost.
Success	You create a decent schematic that you cal see for 25% of the modified cost.
Absolute Success	Your wordsmithing and elegant flowcharts create a schematic that can be sold for 50% of the modified cost.

be adjusted using the Trade(Merchant) for a legal schematic or Trade(Fence) for an illegal schematic. The difficulty of this check will be the unmodified base construction difficulty for that type of item. **Note:** The creator does not have to make the roll to sell the schematic; a trusted friend may do so.

FABRICATION CHAMBER

In the CSC Update 2023 book, Fabrication Chambers are introduced. These chambers are to crafting what microwaves are to cooking. They require no skill but also create only items that you have a schematic for and is no higher than the TL of the chamber minus 2. Additionally, the item must fit within the chamber. Fabrication chambers come with all the Base Schematics available at the time of purchase that fall within the tech level and law level restrictions of the locale that the chamber was purchased and that will fit into the chamber.

Crafting Resolution

To determine the actual crafting difficulty, a series of questions need to be asked and for that we have created the flow chart below.

- **Schematic?:** Do you have a schematic of the exact item you want with all of the Benefits and Flaws you intend to have?
- **Components?:** Do you have the components necessary to build the item in question? Components are parts that are specifically designed for the item in question (ie, laser weaponry parts to use to build a laser rifle).
- **Fab Chamber?:** Do you have access to a Fabrication Chamber of at least the TL of the item in question to use to fabricate the components necessary?
- **Raw Materials?:** Do you have the required raw materials to feed into the fabrication chamber or to manually create?
- **Spare Parts?:** This one is a two part question. The first one only applies if you do have a fabrication chamber, and if so then you have to first use it to break down the spare parts into raw materials to feed into the fabrication chamber. The second applies if you do not have a fabrication chamber, in which case you are actually building the item out of bits and pieces you have lying around.

Crafting Difficulty Flow Chart											
Schematic?	Yes	Components?	Yes	Schema 1							
			No	Fab Chamber?	Yes	Raw Materials?	Yes	Schema 2			
							No	Spare Parts?	Yes	Schema 3
									No	Impossible
					No	Raw Materials?	Yes	Schema 4		
							No	Spare Parts?	Yes	Schema 5
									No	Impossible
	No	Components?	Yes	Scratch 1						
			No	Fab Chamber?	Yes	Raw Materials?	Yes	Scratch 2		
							No	Spare Parts?	Yes	Scratch 3
									No	Impossible
					No	Raw Materials?	Yes	Scratch 4		
								Spare Parts?	Yes	Scratch 5

							No		No	Impossible

Begin with the base difficulty for the item then apply all the modifiers from the Benefits and Flaws that you have selected. Next, apply the effects from the flowchart to the difficulty and time.

BUILDING FROM A SCHEMATIC

- ➔ **Schema 1:** Optimal solution! Make the crafting roll at with no additional penalties on the roll or increase in the time.
- ➔ **Schema 2:** Will take some extra time but still no additional penalties to the roll, +100% Time.
- ➔ **Schema 3:** Breaking the spare parts down will add still more time, but no additional penalties to the roll, +200% Time.
- ➔ **Schema 4:** Creating the components manually is doable, but time consuming. Make a series of appropriate **Percentage Maneuver Medium(+0) Crafting** rolls with each consuming Cr500 in raw materials and taking 8 hours. Multiply the percentage result from the check by Cr500 to find out how much you manufacture in components (yes, on a particularly good check you could get more). There is no additional increase in the time other than what is required to make the components.
- ➔ **Schema 5:** Will have to make additional Mechanics(Mechanical) and/or Mechanics(Electrical) checks to manually break the spare parts down and rebuild them into usable components. This should be done as a **Percentage Maneuver Medium(+0)** for each Cr1000 in materials required with each check taking 8 hours. Multiply the percentage result from the check by Cr1000 to find out how much you retrieved in components (yes, on a particularly good check you could get more). Final crafting check will be at an additional -20 and +200% Time.

BUILDING FROM SCRATCH

Without a schematic, you are just building the item on the fly; attaching parts, seeing what works, and if it doesn't, starting over.

- ➔ **Scratch 1:** -20 to the roll, +100% Time
- ➔ **Scratch 2:** -20 to the roll, +200% Time.
- ➔ **Scratch 3:** -20 to the roll, +300% Time.
- ➔ **Scratch 4:** See Schema 4 for making the components from raw materials with the difficulty increased to Very Hard(-20) since you are lacking a schematic. Apply a -20 penalty to the construction roll and +100% time.
- ➔ **Scratch 5:** See Schema 5 for getting the components from the spare parts with the difficulty increased to Very Hard(-20) since you are lacking a schematic. Apply a -40 penalty to the construction roll and +300% Time.

Many items require more than one crafting skill. If more than one is listed, take the average of all listed. Skills listed with an 'or' between them allow you to pick one. If a team is working on a project, they make take the highest of the individual skills listed from among the team. For example, John and Susie are building a suit of poly carapace armor. John's Fabric Craft is +55 and Metalcraft is +20. Susie's Fabric Craft is +28 and Metalcraft is +45. John will contribute his +55 Fabric Craft and Susie her +45 Metalcraft which are then averaged for a +50 to the check.

Make a D100OE roll and add the Crafting skill(s) total then apply whatever difficulty modifier resulted from your selection of options and consult the chart.

Roll	Materials	Time	Unexpected Flaws
<1	100+10D10%	100+10D10%	Explodes when turned on. Hopefully you weren't wearing it...
1-10	100+9D10%	100+9D10%	8
11-20	100+8D10%	100+8D10%	7
21-30	100+7D10%	100+7D10%	6
31-40	100+6D10%	100+6D10%	5
41-50	100+5D10%	100+5D10%	4
51-75	100+4D10%	100+4D10%	3
76-90	100+3D10%	100+3D10%	2
91-100	100+2D10%	100+2D10%	1
101-110	90+2D10%	90+2D10%	0
111-120	80+2D10%	80+2D10%	0
121-130	70+2D10%	70+2D10%	0
131-150	60+2D10%	60+2D10%	0
151-175	50+2D10%	50+2D10%	0
176+	40+2D10%	40+2D10%	0

MATERIALS

The base cost of making an item is its cost as listed in the CSC or other reference. The difficulty penalty is converted into a percentage cost increase when calculating the cost of the modified item. So a -20 difficulty becomes a 20% increase in cost. The Materials column shows what percentage (either higher or lower) that crafting the item actually cost. For example, doohickey A has a base cost of Cr1000. Joe modifies it with a -20 difficulty modification which increases its base cost by 20% to Cr1200. His final crafting result is 137 and after rolling the 2D10 he gets 68%. He is actually out Cr816 to create doohickey A.

TIME

Start with the base time listed on the construction charts. Again, the difficulty penalty is converted into a percentage time increase when calculating the base time of the modified item. The time column shows how much the effort deviated from the base time required to craft the item. For example, doohickey A has a base time of 4 hours. Joe's modifications applied a -20 to his check so this translates into a 20% increase in the base time to 4.8 hours. His final crafting result of 137 yielded a time factor of 72% making the actual time taken 3.5 hours (after rounding).

Flaw Table	
D10 Roll	**Flaw Level**
1-4	Minor
5-7	Moderate
8-9	Major
10	Severe

UNEXPECTED FLAWS

If you fail to get a Success (101+) on your crafting check, you

still make the item, it just has unexpected flaws. Roll on the Flaws Table once for each flaw generation by your crafting check to get the level of the flaw then consult the individual crafting tables to resolve what the flaw is.

Personal Weapons

The method used to calculate the difficulty of crafting a weapon starts with selecting the base weapon type from the table below. Then, you apply the effects from the Benefits and Flaws charts of the stock weapon you are trying to craft to get the final difficulty.

Type	Difficulty	Time	Skill
Fist Weapon	Light(+10)	4 hours	Metalcraft
Blunt Weapon	Easy(+20)	6 hours	Metalcraft or (Stonecraft & Woodcraft)
Bladed Weapon	Hard(-10)	16 hours	Metalcraft
Unpowered Shield	Medium(+0)	8 hours	Metalcraft or Woodcraft
Powered Shield	Very Hard(-20)	12 hours	Powered Melee
Static Weapon	Extremely Hard(-30)	24 hours	Powered Melee
Arc-Field Weapon	Sheer Folly(-50)	48 hours	Powered Melee
Simple Projectile Weapon	Medium(+0)	4 hours	Woodcraft or Leathercraft or Fabric Craft
Solid Projectile Pistol	Medium(+0)	8 hours	Metalcraft & (Chemical Synthesis or Power Systems)
Solid Projectile Rifle	Very Hard(-20)	8 hours	Metalcraft & (Chemical Synthesis or Power Systems)
Heavy Projectile Rifle	Extremely Hard(-30)	12 hours	Metalcraft & (Chemical Synthesis or Power Systems)
Energy Pistol	Very Hard(-20)	12 hours	(Metalcraft or Stonecraft), Electronics, & Power Systems
Energy Rifle	Very Hard(-20)	16 hours	(Metalcraft or Stonecraft), Electronics, & Power Systems
Heavy Energy Rifle	Sheer Folly(-50)	24 hours	(Metalcraft or Stonecraft), Electronics, & Power Systems
Missile Launcher	Sheer Folly(-50)	16 hours	Metalcraft & Electronics
Missile	Very Hard(-20)	4 hours	Metalcraft & Chemical Synthesis
Grenade	Hard(-10)	2 hours	Chemical Synthesis
Mine	Hard(-10)	4 hours	Chemical Synthesis

Difficulty	Benefits
-10	**Lightweight:** Reduce the weapon's weight by 10%. **Disorient Quality:** The weapon gains the Disorient quality (this can only be selected once). **Increased Range:** Increase the ranged weapon's base range by 10%.

Difficulty	Benefits
	Expanded Magazine: Increase the weapon's magazine capacity by 25% or a minimum of 1. **Knockdown Quality:** The melee weapon gains the Knockdown quality (this can only be selected once). **AP Quality:** The weapon gains the AP2 quality (or increase its AP quality by 2). **Sturdy:** Increase the base Strength of the weapon by 10
-20	**Knockdown Quality:** The ranged weapon gains the Knockdown quality (this can only be selected once). **Slaying Quality:** The weapon gains the Slaying 1 quality (or increase its Slaying quality by 1, to a maximum of 5). **Defensive Quality:** The melee weapon gains the Defensive 1 quality (or increase its Defensive quality by 1, to a maximum of 5). **Accurate Quality:** The weapon gains the Accurate 1 quality (or increase its Accurate quality by 1, to a maximum of 5).
-30	**Secondary Barrel:** The ranged weapon gains a second barrel that can be used to house a grenade launcher, micro-missile launcher, etc. **Deflection Quality:** The melee weapon gains the Deflection 1 quality (or increase its Deflection quality by 1, to a maximum of 5). **Improved Blast:** The ranged weapon's Blast quality is improved by 2. **Superior Quality:** The weapon gains the Superior quality.
-40	**Auto Fire Quality:** The ranged weapon gains the Auto 2 quality (or increase its Auto quality by 1). **Burn Quality:** The ranged weapon gains the Burn 1 quality (or increase its Burn quality by 1). **Concussive Quality:** The weapon gains the Concussive quality. **Sunder Quality:** The melee weapon gains the Sunder quality (this can only be selected once).
-50	**Lethal:** Weapon gains the Lethal quality (this can only be selected once).

Flaw Level	Roll	Flaw
Minor (+5)	**1**	*Heavy:* Increase the weapon's weight by 25%.
	2	*Flimsy:* Decrease the weapon's base Strength by 10.
	3	*Bulky:* The weapon gains the Bulky quality. If it already has that, increase it to Very Bulky. If already Very Bulky, roll on the Moderate table.
	4	*Unwieldy:* The weapon gains the Unwieldy quality. If it already has that, increase it to Very Unwieldy. If already Very Unwieldy, roll on the Moderate table.
	5	*Inferior:* The weapon gains the Inferior 1 quality or increases its existing Inferior quality by one.
	6	*Wasted Time:* Add 20% to the time it takes to create this item.

Flaw Level	Roll	Flaw
	7	*Wasted Materials:* Add 20% to the final cost of this item.
	8	*Reduced Blast:* If the weapon has a Blast quality, reduce it by one. If it does not, then roll on the Moderate table.
	9	*Reduced AP:* If the weapon has an AP quality, reduce it by two. If it does not, then roll on the Moderate table.
	10	*Minor Accident:* One crafter takes a 'A' critical of an appropriate type determined by the GM.
Moderate (+10)	**1**	Downgrade flaw to Minor.
	2	*Complex:* The weapon is difficult to maintain and gains the Complex 1 quality or increases its existing Complex quality.
	3	*Difficult to Customize:* Apply a penalty of -20 on all checks to install attachments on this weapon (this can only occur once).
	4	*Dangerous:* The weapon gains the Dangerous quality. If it already has that, increase it to Very Dangerous. If already Very Dangerous, roll on the Major table.
	5	*Expensive:* The weapon has intricate mechanisms that can only be replaced at substantial cost. Whenever it becomes damaged, the cost to repair the weapon is doubled (this can only occur once).
	6	*Reduce Auto:* If the weapon has an Auto quality, reduce it by one. Otherwise, roll on the Major Table.
	7	*Reduce Range:* Weapon's base range is reduced by 50% each time this occurs. If the weapon is melee (range under 2 meters), reroll this result.
	8	*Wear and Tear:* The workshop the character was using to craft the weapon is damaged. Roll randomly on the Malfunction chart to see to what extent (this can only occur once).
	9	*Inaccurate Quality:* The weapon gains the Inaccurate 1 quality (or increase its Inaccurate quality by one).
	10	*Moderate Accident:* One crafter takes a 'B' critical of an appropriate type determined by the GM.
Major (+15)	**1**	Downgrade flaw to Moderate.
	2	*Slow Loader:* The weapon gains the Slow Loader 1 quality (or increases its existing Slow Loader quality by one). If the weapon is unlikely to run out of ammo during a fight (a laser rifle with 100 shots, for example) this instead becomes the Limited Ammo flaw (see Severe).
	3-4	*Faulty:* The weapon gains the Faulty 1 item quality (or increases its existing Faulty quality by one).
	5-6	*Prepare:* The weapon gains the Prepare 1 quality (or increase its Prepare quality by 1).

Flaw Level	Roll	Flaw
	7	*Weak:* Weapon gains the Weak 1 quality or increases it's Weak quality by 1.
	8-9	*Ammunition-Inefficient:* One extra round is expended every time the weapon is used (this can only occur once). If the weapon doesn't have rounds or is single shot, reroll this flaw.
	10	*Major Accident:* One crafter takes a 'C' critical of an appropriate type determined by the GM.
Severe (+20)	**1**	Downgrade flaw to Major.
	2-3	*Limited Ammo:* The weapon changes draw extra energy or have caused the magazine to have to be smaller. The number of rounds in the weapon's magazine is reduced by 50%. This can occur more than once with each reducing the capacity amount by 50%. (100rnds becomes 50rnds becomes 25rnds, etc.). If the weapon lacks a power source or ammo, reroll this flaw.
	4-5	*Slow Quality:* The weapon gains the Slow-Firing/Striking 1 quality (or increase its Slow Firing quality by 1).
	6-7	*Supply Shortage:* The character is missing a critical component midway through constructing the item. The crafter cannot finish it until he has a chance to acquire more supplies and spends credits equal to 20% of the Price on these additional supplies (this can only be selected once).
	8	*Reduce Mark:* The Mark of the weapon is reduced by 1.
	9	*Deadly, But Not in a Good Way:* The weapon must be mounted (on a tripod, gyroarm, vehicle, etc.). If not, it inflicts a 'Z' critical (Heat for energy, Impact if slug) on its user every time it is fired. Reroll if melee or weapon is not hand-held.
	10	*Deadly Accident:* One crafter takes a 'D' critical of an appropriate type determined by the GM.

Gadgets

Gadgets are any tool, device, toy, etc. not covered in more detail in one of the other sections of this document.
As items are entered into the *Equipment* document, their time, difficulty and skill required for crafting will be amended. Following is a rough outline of general items for those not yet done in detail.

Type	Difficulty	Time	Skill
Simple Unpowered Device	Easy(+20)	2 hours	The skill used to make a gadget will typically be a combination of
Complex Unpowered Device	Medium(+0)	6 hours	
Simple Powered Device	Light(+10)	8 hours	

Complex Powered Device	Hard(-10)	16 hours	several crafting skills for all but the
Complex Computerized Device	Very Hard(-20)	24 hours	
Very Complex Computerized Device	Sheer Folly(-50)	40 hours	

SAMPLE ITEMS

- **Simple Unpowered Device:** Rope, Grappling Hook, Wrench
- **Complex Unpowered Device:** Hand Drill, Binoculars, Camera, Wristwatch
- **Simple Powered Device:** Drill, Digital Camera, Cold Light Lantern, Spotlight, Radio Jammer, Bug Sweeper
- **Complex Powered Device:** Holographic Camera, Chemi-View Goggles, Electronic Binoculars, Densitometer
- **Complex Computerized Device:** Computer, Personal HUD, PRIS Binoculars, Bioscanner
- **Very Complex Computerized Device:** Mini Computer, Fabrication Chamber, PSI-Finder Binoculars

Difficulty	Benefits
-10	**Lightweight:** Reduce the weapon's weight by 10%. **Increased Range:** Increase the device's base range by 10%. **Sturdy:** Increase the base Strength of the weapon by 10
-20	**Simple Quality:** Item gains the Simple 1 quality or increases its existing Simple quality by one. **Accurate Quality:** The weapon gains the Accurate 1 quality (or increase its Accurate quality by 1, to a maximum of 5). **Power Efficient:** Each time this is taken, double the duration of the device's power cells. **Innocuous Appearance:** The item is given an innocuous appearance, applying a -10 for each time this is taken to any checks to identify it. This can be taken a maximum of 3 times.
-30	**Superior Quality:** The item gains the Superior quality.
-40	**Inbuilt Weapon:** A weapon of no greater than 25% of the item's mass can be incorporated into the device. Any checks to identify this weapon suffer an additional -30.

Flaw Level	Roll	Flaw
Minor (+5)	**1-2**	*Heavy:* Increase the item's weight by 25%.
	3-4	*Inferior:* Decrease the item's base Strength by 10.
	5	*Ugly:* The item's appearance is unappealing. Any social checks taken while this device is in evidence suffer a -5 to the roll.
	6-7	*Wasted Time:* Add 20% to the time it takes to create this item.
	8-9	*Wasted Materials:* Add 20% to the final cost of this item.
	10	*Minor Accident:* One crafter takes a 'A' critical of an appropriate type determined by the GM.

Flaw Level	Roll	Flaw
Moderate (+10)	**1**	Downgrade flaw to Minor.
	2-3	*Complex:* The item is difficult to maintain and gains the Complex 1 quality or increases its existing Complex quality.
	4-5	*Inaccurate Quality:* The item gains the Inaccurate 1 quality (or increase its Inaccurate quality by one).
	6	*Expensive:* The item has intricate mechanisms that can only be replaced at substantial cost. Whenever it becomes damaged, the cost to repair the item is doubled (this can only occur once).
	7	*Reduce Range:* Item's base range is reduced by 50% each time this occurs. If the item is doesn't have a range, reroll this result.
	8	*Wear and Tear:* The workshop the character was using to craft the item is damaged. Roll randomly on the Malfunction chart to see to what extent (this can only occur once).
	9-10	*Moderate Accident:* One crafter takes a 'B' critical of an appropriate type determined by the GM.
Major (+15)	**1**	Downgrade flaw to Minor.
	2-4	*Power Hungry:* Each use of this item consumes an additional charge or its duration is halved. Reroll if item doesn't use power cells.
	5-6	*Faulty:* The item gains the Faulty 1 item quality (or increases its existing Faulty quality by one).
	7-9	
	10	*Major Accident:* One crafter takes a 'C' critical of an appropriate type determined by the GM.
Severe (+20)	**1**	Downgrade flaw to Major.
	2-3	*Ramshackle:* The item gains the Ramshackle quality.
	4-6	*Fragile:* Anytime this item suffers a malfunction, increase its severity once. If it is already Extremely Severe, then the item is destroyed.
	7-9	*Supply Shortage:* The character is missing a critical component midway through constructing the item. The crafter cannot finish it until he has a chance to acquire more supplies and spends credits equal to 20% of the Price on these additional supplies (this can only be selected once).
	10	*Deadly Accident:* One crafter takes a 'D' critical of an appropriate type determined by the GM.

Cybernetics

See the *Cybernetics* document for the crafting difficulty and skill used for augmentations. Note that 'Cybernetics' is not a separate crafting skill but a combination

of the following: (Metalcraft or Stonecraft), Electronics, Power Systems, & Fabric Craft. It is an Engineering specialization used for schematics as well as a restriction on Medicine checks dealing with cybernetics.

Type	Difficulty	Time	Skill
Cybereyes	Extremely Hard(-30)	12 hours	Cybernetics
Cybereye Upgrades	Very Hard(-20)	6 hours	Cybernetics
Cyberarms	Hard(-10)	24 hours	Cybernetics
Cyberarm Upgrades	Medium(+0)	12 hours	Cybernetics
Cyberlegs	Medium(+0)	40 hours	Cybernetics
Cyberleg Upgrades	Light(+10)	20 hours	Cybernetics
Cyberears	Very Hard(-20)	12 hours	Cybernetics
Cyberear Upgrades	Hard(-10)	6 hours	Cybernetics
Minor Upgrade	Light(+10)	8 hours	As specified
Moderate Upgrade	Very Hard(-20)	16 hours	As specified
Major Upgrade	Sheer Folly(-50)	40 hours	As specified

Difficulty	Benefits
-10	**Easy to Install:** Gain a +5 on the installation check.
-20	**Tailored:** If built for a specific being, then it is considered tailored for them (see Installing Cybernetics).
-30	**Integrated Upgrade:** If the cybernetic can have slots, an upgrade that consumes only 1 slot can be integrated (at its normal price) so that it consumes 0. This can only be selected once.
-40	**Supreme Craftsmanship:** If the cybernetic can have slots, it begins with one additional. This can only be selected once.

Flaw Level	Roll	Flaw
Minor (+5)	**1**	*Difficult to Install:* Suffer a -5 on the installation check. This can be taken multiple times.
	2	
	3	
	4	
	5-6	*Wasted Time:* Add 20% to the time it takes to create this item.
	7-9	*Wasted Materials:* Add 20% to the final cost of this item.
	10	*Minor Accident:* One crafter takes a 'A' critical of an appropriate type determined by the GM.
Moderate (+10)	**1**	Downgrade flaw to Minor.
	2-3	*Complex:* The item is difficult to maintain and gains the Complex 1

Flaw Level	Roll	Flaw
		quality or increases its existing Complex quality.
	4	
	5	*Expensive:* The item has intricate mechanisms that can only be replaced at substantial cost. Whenever it becomes damaged, the cost to repair the item is doubled (this can only occur once).
	6	*Obvious:* This cybernetic cannot be disguised as natural-looking. If it's wholly internal or is obvious anyway, reroll this result.
	7	
	8-9	*Wear and Tear:* The workshop the character was using to craft the item is damaged. Roll randomly on the Malfunction chart to see to what extent (this can only occur once).
	10	*Moderate Accident:* One crafter takes a 'B' critical of an appropriate type determined by the GM.
Major (+15)	**1**	Downgrade flaw to Moderate.
	2-4	*Difficult to Install:* Increase the difficulty of any check to install this cybernetic by 1.
	5-6	*Faulty:* The item gains the Faulty 1 item quality (or increases its existing Faulty quality by one).
	7-9	
	10	*Major Accident:* One crafter takes a 'C' critical of an appropriate type determined by the GM.
Severe (+20)	**1**	Downgrade flaw to Major.
	2-3	*Severe Feedback:* Any time a character makes a check that uses this cybernetic and the roll comes up a 66, the user takes an 'A' Electrical Critical. Increase the severity of the critical once for each time this flaw occurs.
	4-6	*Wasted Space:* If the cybernetic has slots, it loses 1. Otherwise, reroll this result. This flaw can occur multiple times until the number of slots on them item is 0.
	7-9	*Supply Shortage:* The character is missing a critical component midway through constructing the item. The crafter cannot finish it until he has a chance to acquire more supplies and spends credits equal to 20% of the Price on these additional supplies (this can only be selected once).
	10	*Deadly Accident:* One crafter takes a 'D' critical of an appropriate type determined by the GM.

Starship Weapons

Facility Required: Only turrets, the simplest starship scale weaponry, can be built in a standard 6 ton workshop. A Double Workshop, capable of building barbettes, is a workshop of at least 12 tons (ie, double). Bay weapons can only be built in a full dockyard and are not covered here.

Name	Check	Time	Skill Required
Firmpoint/Fixed Mount	Easy(+20)	12 hours	Metalcraft & Electronics
Single Turret	Medium(+0)	24 hours	Metalcraft, Electronics, & Power Systems
Double Turret	Hard(-10)	36 hours	Metalcraft, Electronics, & Power Systems
Triple Turret	Very Hard(-20)	48 hours	Metalcraft, Electronics, & Power Systems
Popup	-10 to check	+12 hours	Metalcraft, Electronics, & Power Systems
Beam Laser	Medium(+0)	30 hours	Metalcraft, Electronics, & Power Systems
Fusion Gun	Sheer Folly(-50)	50 Hours	Metalcraft, Electronics, & Power Systems
Laser Drill	Light(+10)	20 Hours	Metalcraft, Electronics, & Power Systems
Missile Rack	Very Hard(-20)	35 hours	Metalcraft, Electronics, & Power Systems
Particle Beam	Extremely Hard(-30)	40 hours	Metalcraft, Electronics, & Power Systems
Plasma Gun	Extremely Hard(-30)	40 hours	Metalcraft, Electronics, & Power Systems
Pulse Laser	Hard(-10)	40 hours	Metalcraft, Electronics, & Power Systems
Railgun	Hard(-10)	35 hours	Metalcraft, Electronics, Gravitics, & Power Systems
Sandcaster	Light(+10)	20 hours	Metalcraft, Electronics, Gravitics, & Power Systems
Beam Laser Barbette	Medium(+0)	60 hours	Metalcraft, Electronics, & Power Systems
Fusion Barbette	Sheer Folly(-50)	100 hours	Metalcraft, Electronics, & Power Systems
Ion Cannon	Medium(+0)	60 hours	Metalcraft, Electronics, & Power Systems
Missile Barbette	Very Hard(-20)	70 hours	Metalcraft, Electronics, & Power Systems
Particle Barbette	Extremely Hard(-30)	80 hours	Metalcraft, Electronics, & Power Systems
Plasma Barbette	Extremely Hard(-30)	80 hours	Metalcraft, Electronics, & Power Systems
Pulse Laser Barbette	Hard(-10)	80 hours	Metalcraft, Electronics, & Power Systems
Railgun Barbette	Hard(-10)	70 hours	Metalcraft, Electronics, Gravitics, & Power Systems
Torpedo Barbette	Hard(-10)	75 hours	Metalcraft, Electronics, & Power Systems

Starship weapons can be built at differing tech levels than the base. If you wish to do so (and have the ability to), apply the modifiers from the following chart.

Description	TL	Cost	Effect
Early Prototype	-2	+1000%	Increase the difficulty twice and weapon automatically gets 2 Unexpected Flaws. Time is increased by +1000%.
Prototype	-1	+500%	Increase the difficulty once and the weapon automatically gets 1 Unexpected Flaw. Time is increased by +500%.
Budget	-	-25%	The weapon automatically gets 1 Unexpected Flaw.

Advanced	+1	+10%	Negates 10 points worth of difficulty penalties.
Very Advanced	+2	+25%	Negates 20 points worth of difficulty penalties.
High Technology	+3	+50%	Negates 30 points worth of difficulty penalties.

Note: A # on an effect means that it can only be applied to energy weapons.

Difficulty	**Benefit**
-10	**Energy Efficient:** The weapon consumes 25% less power than normal (may be selected twice). **Size Reduction:** The weapon takes up 10% less tonnage. Cannot be applied to turret weaponry. May be selected 3 times. **#Accurate:** The weapon gains the Accurate 1 quality (or increase its Accurate quality by 1 to a maximum of 5). **Easy to Repair:** The weapon is easy to repair and grants +5 on any attempts to repair it. **#High Yield:** Increase hits delivered by this weapon by 20% (simply, +1 for every full 5 points of damage). This can only be applied twice. **Resilient:** The Severity of all critical hits upon a Resilient weapon are reduced by -1.
-20	**#Long Range:** The range for the weapon is increased by one band, to a maximum of Very Long. May only be applied once. **#Intense Focus:** The weapon gains AP10.
-30	**Superior Quality:** The weapon gains the Superior quality.
-40	**#Lethal:** The weapon gains the Lethal quality.

Flaw Level	**Roll**	**Flaw**
Minor (+5)	**1**	*#Energy Inefficient:* The weapon consumes 30% more power than normal.
	2	*#Inaccurate:* The weapon gains the Inaccurate 1 quality (or increase its Inaccurate quality by 1).
	3	*Increased Size:* The weapon takes up 20% more tonnage. Cannot be applied to turret weaponry.
	4	*Difficult to Repair:* The weapon is difficult to repair and imposes a -5 penalty on any attempts to repair it.
	5-6	*Inferior:* The weapon gains the Inferior 1 quality or increases its existing Inferior quality by one.
	7	*Wasted Time:* Add 20% to the time it takes to create this item.
	8-9	*Wasted Materials:* Add 20% to the final cost of this item.
	10	*Minor Accident:* One crafter takes a 'A' critical of an appropriate type determined by the GM.
Moderate (+10)	**1**	Downgrade flaw to Minor.
	2-3	*Complex:* The item is difficult to maintain and gains the Complex 1 quality or increases its existing Complex quality.

Flaw Level	Roll	Flaw
	4-6	*Expensive:* The item has intricate mechanisms that can only be replaced at substantial cost. Whenever it becomes damaged, the cost to repair the item is doubled (this can only occur once).
	7-8	*Wear and Tear:* The workshop the character was using to craft the item is damaged. Roll randomly on the Malfunction chart to see to what extent (this can only occur once).
	9-10	*Moderate Accident:* One crafter takes a 'B' critical of an appropriate type determined by the GM.
Major (+15)	**1**	Downgrade flaw to Moderate.
	2-5	*Faulty:* The item gains the Faulty 1 item quality (or increases its existing Faulty quality by one).
	6-9	*#Weak:* The weapon gains the Weak quality.
	10	*Major Accident:* One crafter takes a 'C' critical of an appropriate type determined by the GM.
Severe (+20)	**1**	Downgrade flaw to Major.
	2-7	*Supply Shortage:* The character is missing a critical component midway through constructing the item. The crafter cannot finish it until he has a chance to acquire more supplies and spends credits equal to 20% of the Price on these additional supplies (this can only be selected once).
	8-9	*#Reduce Mark:* The Mark of the weapon is reduced by 1.
	10	*Deadly Accident:* One crafter takes a 'D' critical of an appropriate type determined by the GM.

Armor

Name: the name of the armor
Check: the difficulty of making the armor
Time: the base time it takes to make the armor
Skill: The skill(s) used to make the armor.

Standard Armor Type			
Name	**Check**	**Time**	**Skill**
Ballistic Vest	Easy(+20)	15 hours	Fabric Craft
Ceramic Carapace	Extremely Hard(-30)	65 hours	Stonecraft
Cloth	Light(+10)	30 hours	Fabric Craft
Cloth Jacket	Light(+10)	25 hours	Fabric Craft
Cloth Trench Coat	Light(+10)	28 hours	Fabric Craft
Diplo Vest	Easy(+20)	15 hours	Fabric Craft

Flak Jacket	Easy(+20)	15 hours	Fabric Craft & (Stonecraft or Metalcraft)
Flak Shell	Easy(+20)	15 hours	Stonecraft or Metalcraft
Mesh	Easy(+20)	28 hours	Leathercraft & Metalcraft
Personal Energy Shield	Very Hard(-20)	80 hours	Electronics & Power Systems
Poly Carapace	Very Hard(-20)	60 hours	Fabric Craft & Metalcraft
Post-Apocalyptic	Medium(+0)	30 hours	Metalcraft
Protec Suit	Light(+10)	20 hours	Fabric Craft
Tactical Riot Armor	Medium(+0)	25 hours	Fabric Craft & Metalcraft

Anti-Energy Armor Type			
Name	**Check**	**Time**	**Skill**
Ablat	Hard(-10)	35 hours	Fabric Craft
Conduit-Bleed	Extremely Hard(-30)	60 hours	Fabric Craft & Metalcraft
Dispersion	Extremely Hard(-30)	60 hours	Fabric Craft & Metalcraft
Fireproof Suit	Routine(+30)	15 hours	Fabric Craft
Neural Sheath	Extremely Hard(-30)	60 hours	Fabric Craft & Stonecraft
Reflec	Light(+10)	35 hours	Fabric Craft

Civilian Protective Suits			
Name	**Check**	**Time**	**Skill**
Emergency HES	Easy(+20)	20 hours	Fabric Craft, Electronics
Emergency Softsuit	Routine(+30)	20 hours	Fabric Craft, Electronics
Environment Suit	Easy(+20)	20 hours	Fabric Craft, Electronics
Explosive Ordnance Disposal Suit	Medium(+0)	40 hours	Fabric Craft, Electronics, & Metalcraft
HEV Suit	Extremely Hard(-30)	80 hours	Fabric Craft, Electronics, & Metalcraft
Pressure Sleeve	Easy(+20)	20 hours	Fabric Craft, Electronics
Rescue Suit	Medium(+0)	20 hours	Fabric Craft, Electronics
Shipsuit	Light(+10)	20 hours	Fabric Craft, Electronics
Skinsuit	Light(+10)	20 hours	Fabric Craft, Electronics
Vacc Suit	Medium(+0)	35 hours	Fabric Craft, Electronics

Military Protective Suits			
Name	**Check**	**Time**	**Skill**

Boarding Vacc Suit	Very Hard(-20)	45 hours	Fabric Craft, Electronics, & Metalcraft
Ceramic Combat Armor	Extremely Hard(-30)	80 hours	Fabric Craft, Electronics, Stonecraft, & Metalcraft
Combat Armor	Very Hard(-20)	60 hours	Fabric Craft, Electronics, & Metalcraft
Combat Environment Suit	Medium(+0)	30 hours	Fabric Craft, Electronics, & Metalcraft
Psi-Enhanced Combat Armor	Extremely Hard(-30)	100 hours	Fabric Craft, Electronics, Stonecraft, & Metalcraft

Powered Suits			
Name	**Check**	**Time**	**Skill**
Ceramic Powered Plate	Sheer Folly(-50)	130 hours	Fabric Craft, Electronics, Stonecraft, Power Systems, & Metalcraft
Exoskeleton	Extremely Hard(-30)	80 hours	Electronics, Power Systems, & Metalcraft
E3 Suit	Sheer Folly(-50)	120 hours	Fabric Craft, Electronics, Power Systems, & Metalcraft
Grav-Enhanced Powered Plate	Sheer Folly(-50)	130 hours	Fabric Craft, Electronics, Power Systems, Gravitics, & Metalcraft
Mechanical Carapace	Extremely Hard(-30)	100 hours	Fabric Craft, Electronics, Power Systems, & Metalcraft
Powered Plate	Sheer Folly(-50)	120 hours	Fabric Craft, Electronics, Power Systems, & Metalcraft

Battle Dress			
Name	**Check**	**Time**	**Skill**
Artillery	Nigh-Impossible(-100)	180 hours	Fabric Craft, Electronics, Power Systems, & Metalcraft
Assault	Nigh-Impossible(-100)	180 hours	Fabric Craft, Electronics, Power Systems, & Metalcraft
Standard	Absurd(-70)	160 hours	Fabric Craft, Electronics, Power Systems, & Metalcraft
Ceramic	Nigh-Impossible(-100)	180 hours	Fabric Craft, Electronics, Stonecraft, Power Systems, & Metalcraft
Combat Pioneer	Absurd(-70)	165 hours	Fabric Craft, Electronics, Power Systems, & Metalcraft
Command	Nigh-Impossible(-100)	180 hours	Fabric Craft, Electronics, Power

			Systems, & Metalcraft
Logistics	Absurd(-70)	170 hours	Fabric Craft, Electronics, Power Systems, & Metalcraft
Psi-Commando	Nigh-Impossible(-100)	200 hours	Fabric Craft, Electronics, Stonecraft, Power Systems, & Metalcraft
Psi-Enhanced	Nigh-Impossible(-100)	190 hours	Fabric Craft, Electronics, Stonecraft, Power Systems, & Metalcraft
Scout	Absurd(-70)	150 hours	Fabric Craft, Electronics, Power Systems, & Metalcraft

Difficulty	**Benefit**
-10	**Energy Efficient:** The powered armor requires less power than normal. Increase the battery duration by 10%. **Lightweight:** The armor weights 10% less than normal. **Easy to Repair:** The armor is easy to repair and grants +5 on any attempts to repair it. **Custom Fit:** The armor is specifically crafted for the wearer. Reduce the Maneuver penalty by 5. This can only reduce the Maneuver penalty by a maximum of one half its base value. **Improved Defense:** Increase the armor's DB bonus by 2, to a maximum of double the base bonus.
-20	**Extra Slot:** Any armor that has slots gains an extra one. **Special Embellishment:** The wearer of this armor may reroll the ones dice once on any check for one of the following skills: Influence(specialization), Leadership, Trading (this can only be selected once).
-30	**Superior Quality:** The armor gains the Superior quality. **Extra Plating:** Increase the AT of this armor by one, to a maximum of 10. This can only be taken once.
-40	**Superior Defense:** Choose one of the types of attacks this armor defends against and treat the wearer as one size larger when defending against that type. This can only be chosen once.

Flaw Level	**Roll**	**Flaw**
Minor (+5)	**1**	*Energy Inefficient:* The powered armor consumes more power than normal. Decrease its duration by 10%. Reroll if not powered.
	2	*Wasted Time:* Add 20% to the time it takes to create this item.
	3	*Wasted Materials:* Add 20% to the final cost of this item.
	4	
	5	*Difficult to Repair:* The armor is difficult to repair and imposes a -5 penalty on any attempts to repair it.

Flaw Level	Roll	Flaw
	6-7	*Heavy:* Increase the armor's weight by 10%.
	8-9	*Poor Fit:* Increase the armor's maneuver penalty by 5.
	10	*Minor Accident:* One crafter takes a 'A' critical of an appropriate type determined by the GM.
Moderate (+10)	**1**	Downgrade flaw to Minor.
	2-3	*Complex:* The item is difficult to maintain and gains the Complex 1 quality or increases its existing Complex quality.
	4-5	*Expensive:* The item has intricate mechanisms that can only be replaced at substantial cost. Whenever it becomes damaged, the cost to repair the item is doubled (this can only occur once).
	6-7	*Restrictive:* Increase the armor's Ranged penalty by 5.
	8-9	*Wear and Tear:* The workshop the character was using to craft the item is damaged. Roll randomly on the Malfunction chart to see to what extent (this can only occur once).
	10	*Moderate Accident:* One crafter takes a 'B' critical of an appropriate type determined by the GM.
Major (+15)	**1**	Downgrade flaw to Moderate.
	2-4	*Faulty:* The item gains the Faulty 1 item quality (or increases its existing Faulty quality by one).
	5-6	
	7-9	*Major Accident:* One crafter takes a 'C' critical of an appropriate type determined by the GM.
	10	Upgrade flaw to Major.
Severe (+20)	**1**	Downgrade flaw to Major.
	2-5	*Fragile:* Any time the item suffers a malfunction, increase it one step. If it's already extremely severe, then the item is destroyed.
	6-9	*Supply Shortage:* The character is missing a critical component midway through constructing the item. The crafter cannot finish it until he has a chance to acquire more supplies and spends credits equal to 20% of the Price on these additional supplies (this can only be selected once).
	10	*Deadly Accident:* One crafter takes a 'D' critical of an appropriate type determined by the GM.

ROBOTS

Due to the complexity of constructing a robot, they are built in three steps. These steps can be done sequentially by one person or separately by different people.
The equipment installed in a droid is very basic and can't be augmented with cybernetic enhancements (has 0 slots) unless upgraded with the cybernetics as stated in the *Cybernetics* chapter, just as a biological. Installing a cybernetic in a droid uses the average of **Mechanics(Mechanical and Electronics)** instead of Medicine and is a **Light(+10)** check.
Chassis and Brain robot crafting checks receive a +5 bonus per tech level the workshop is greater than the robot that is being built.
Keep in mind that you will create the robot using the rules from the *Robot Handbook*, convert the stats as detailed in the *Robots* document, then apply these rules to determine the difficulty of making the droid.

Size	Time	Difficulty
1	24 hours	Medium(+0)
2	36 hours	Medium(+0)
3	48 hours	Medium(+0)
4	60 hours	Medium(+0)
5	72 hours	Medium(+0)
6	84 hours	Medium(+0)
7	96 hours	Medium(+0)
8	108 hours	Medium(+0)

CHASSIS

Crafting skills used for Chassis: Metalcraft, Stonecraft, Fabric Craft, Electronics, Power Systems.
A droid's chassis gives it the droid's Size, Hits, Armor, DB from armor, Strength, Agility, Quickness, Constitution, and any physical talents or special equipment.
Size: As you can see from the chart to the right, the only real difference the size makes is the amount of time required to construct the chassis.

Locomotion	Modifier
None	+10
Wheels	+5
Wheels, ATV	0
Tracks	0
Grav	-10
Aeroplane	-5
Aquatic	-10
VTOL	-10
Walker	-5
Hovercraft	-5
Thruster	-10

Locomotion: The locomotion of the chassis modifies the task as stated in the locomotion table. If the robot has multiple forms of locomotion then combine the modifiers. The time it takes to build a robot assumes locomotion. If it has none, reduce base time by 20%. Add 20% to the time for each additional form of locomotion after the first.
Armor: Each added point of Traveller armor applies a -2 penalty to the crafting check. There is no penalty for the base protection the robot possesses.
Endurance: Improved efficiency applies a -10 penalty. Slotting additional power packs applies a -5 per pack on the check.
Resiliency: Increasing the resiliency of a robot applies a -5 for every slot consumed. Reducing the resiliency has no effect.
Agility Enhancement: Each level of agility enhancement applies a -10 penalty to the crafting check.
Tactical Speed Enhancement: Each 1 meter increase applies a -5 penalty to the crafting check.
Tactical Speed Reduction: Has no effect on the difficulty.
Manipulators, Additional: Each additional manipulator added applies a -10 penalty to the crafting check.
Manipulators, Removal: Each manipulator removed gives a +5 bonus to the check.

Manipulators, Resizing: Each resized manipulator (regardless of the amount resized) applies a -5 penalty to the check.
Altered Strength: Each point of additional Traveller STR applies a -2 penalty to the crafting check.
Altered Dexterity: Each point of additional Traveller DEX applies a -3 penalty to the crafting check.
Removed Slots: Any removed slots will decrease the base time to build the robot by 1 hour per slot to a maximum of 50% of its base time.

OPTIONS

None of the Zero-slot or Slotted options affect the base time or the difficulty in making the robot chassis. Each option will have to be constructed and installed as a separate action to prevent difficulty bloat on larger robots. Ignore 'Unexpected Flaws' on options. Additionally, to speed things up, all the times for options can be combined and one roll made to find the final effect.
Zero-Slot: Options that have 'Cost per Base Slot' take 0.1 hours per Base Slot and a Medium(+0) difficulty. Other options take 1 hour and have a Medium(+0) difficulty.
Slot-Cost: Base time is 2 hours per slot and have a Medium(+0) difficulty

Difficulty	Benefit
-10	**Energy Efficient:** Increase the battery duration by 10%. **Easy to Repair:** The robot is easy to repair and grants +5 on any attempts to repair it. **Improved Defense:** Increase the robot's DB bonus by 2, to a maximum of double the base bonus. **Reinforced Chassis:** Increase the robot's RMU hits by 4. **Unobtrusive:** The droid gains a +10 bonus on Stalking (this option can only be selected once). **Improved Characteristic:** Apply a +1 bonus to one of the four physical characteristic. This can be selected multiple times for the same or different characteristic.
-20	**Extra Slot:** Increase the number of slots the robot has by 10%, dropping any fractions. This represents the miniaturization of components as opposed to actually making the robot larger. This can be taken a maximum of 3 times.
-30	**Extra Plating:** Increase the AT of this robot's armor by one, to a maximum of 10. This can only be taken once.
-40	**Superior Defense:** Choose one of the types of attacks this robot's armor defends against and treat the it as one size larger when defending against that type. This can only be chosen once.

Flaw Level	Roll	Flaw
Minor (+5)	**1**	*Wasted Materials:* Add 10% to the final cost of the chassis.
	2	*Wasted Time:* Add 10% to the time it takes to create the chassis.
	3	*Shakes:* Apply a -1 Agility bonus to the robot's characteristics.

Flaw Level	Roll	Flaw
	4	*Creep:* Apply a -1 Quickness bonus to the robot's characteristics.
	5	*Weak:* Apply a -1 Strength bonus to the robot's characteristics.
	6	*Unsound:* Reduce the robot's final hits value by 4.
	7	*Difficult to Repair:* The robot is difficult to repair and imposes a -5 penalty on any attempts to repair it.
	8	*Weakpoints:* Decrease the robot's DB by 2.
	9	*Energy Inefficient:* The robot consumes more power than normal. Decrease its duration by 10%.
	10	*Minor Accident:* One crafter takes a 'A' critical of an appropriate type determined by the GM.
Moderate (+10)	**1**	Downgrade flaw to Minor.
	2	*Complex:* The robot is difficult to maintain and gains the Complex 1 quality or increases its existing Complex quality.
	3	*Shakes:* Apply a -2 Agility bonus to the robot's characteristics.
	4	*Creep:* Apply a -2 Quickness bonus to the robot's characteristics.
	5	*Expensive:* The robot has intricate mechanisms that can only be replaced at substantial cost. Whenever it becomes damaged, the cost to repair the item is doubled (this can only occur once).
	6	*Difficult to Customize:* Apply a -10 penalty on any attempt to upgrade the chassis components with cybernetics.
	7	*Weak:* Apply a -2 Strength bonus to the robot's characteristics.
	8	*Slow:* Decrease the robot's tactical movement by by 1m.
	9	*Wear and Tear:* The workshop the character was using to craft the item is damaged. Roll randomly on the Malfunction chart to see to what extent (this can only occur once).
	10	*Moderate Accident:* One crafter takes a 'B' critical of an appropriate type determined by the GM.
Major (+15)	**1**	Downgrade flaw to Moderate.
	2	*Waste:* Robot loses 10% of its slots, dropping fractions, but a minimum of 1 slot.
	3-4	*Faulty:* The robot gains the Faulty 1 item quality (or increases its existing Faulty quality by one).
	5-6	*Compromised:* Reduce the robot's AT by 1.
	7	*Shakes:* Apply a -3 Agility bonus to the robot's characteristics.
	8	*Creep:* Apply a -3 Quickness bonus to the robot's characteristics.
	9	*Weak:* Apply a -3 Strength bonus to the robot's characteristics.
	10	*Major Accident:* One crafter takes a 'C' critical of an appropriate type determined by the GM.

Flaw Level	Roll	Flaw
Severe (+20)	**1**	Downgrade flaw to Major.
	2	*Shakes:* Apply a -4 Agility bonus to the robot's characteristics.
	3	*Creep:* Apply a -4 Quickness bonus to the robot's characteristics.
	4	*Weak:* Apply a -4 Strength bonus to the robot's characteristics.
	5	*Fragile:* Any time the robot suffers a malfunction, increase it one step. If it's already extremely severe, then the robot is destroyed.
	6	*Supply Shortage:* After spending D3x10% of the base time working, the character realizes he is missing a critical component while constructing the robot. The crafter cannot finish it until he has a chance to acquire more supplies and spends credits equal to 20% of the Price on these additional supplies (this can only be selected once). All time spent to this point is lost.
	7	*Inferior Defense:* Treat the robot as 1 Size smaller when defending against 1 type of attack (1-5: Ballistic, 6-10: Energy).
	8-9	*Volatile Power Core:* Whenever this droid suffers a Critical Injury, add +25 to the result. If the Critical Injury Effect kills the droid, it explodes as a +20 OB Fireball, Blast 2 (this can only be selected once).
	10	*Deadly Accident:* One crafter takes a 'D' critical of an appropriate type determined by the GM.

Negative characteristic adjustments are cumulative.

BRAIN

A robot's brain determines its mental characteristics: Reasoning, Memory, Intuition, Empathy, Presence, and Self-Discipline.
Crafting skills used for robot brains: Metalcraft, Stonecraft, Fabric Craft, Electronics, Power Systems.
All brains are **Extremely Hard(-30)** to craft and take a base time of 24 hours.

Difficulty	Benefit
-10	**Improved Characteristic:** Apply a +1 bonus to one of the four physical characteristic. This can be selected multiple times for the same or different characteristic. **Brain Bandwidth Upgrade:** Applies if the brain has had the bandwidth upgrade option added. **Brain Intellect Upgrade 1**: Applies if the Traveller INT is increased by 1. **Hardening:** Applies if the brain has been hardened.
-20	**Easy to Program:** Apply a +10 bonus to the check when programming this brain. **Brain Intellect Upgrade 2**: Applies if the Traveller INT is increased by 2.
-30	**Brain Intellect Upgrade 3**: Applies if the Traveller INT is increased by 3.

Flaw Level	Roll	Flaw
Minor (+5)	**1**	*Wasted Materials:* Add 10% to the final cost of the brain.
	2	*Wasted Time:* Add 10% to the time it takes to create the brain.
	3	*Dumb:* Apply a -1 Reasoning bonus to the robot's characteristics.
	4	*Dora:* Apply a -1 Memory bonus to the robot's characteristics.
	5	*Undisciplined:* Apply a -1 Self-Discipline bonus to the robot's characteristics.
	6	*Cold:* Apply a -1 Empathy bonus to the robot's characteristics.
	7	*Clueless:* Apply a -1 Intuition bonus to the robot's characteristics.
	8	*Unengaging:* Apply a -1 Presence bonus to the robot's characteristics.
	9	*Difficult to Program:* Apply a -5 to the check when programming this brain.
	10	*Minor Accident:* One crafter takes a 'A' critical of an appropriate type determined by the GM.
Moderate (+10)	**1**	Downgrade flaw to Minor.
	2	*Dumb:* Apply a -2 Reasoning bonus to the robot's characteristics.
	3	*Dora:* Apply a -2 Memory bonus to the robot's characteristics.
	4	*Undisciplined:* Apply a -2 Self-Discipline bonus to the robot's characteristics.
	5	*Cold:* Apply a -2 Empathy bonus to the robot's characteristics.
	6	*Clueless:* Apply a -2 Intuition bonus to the robot's characteristics.
	7	*Unengaging:* Apply a -2 Presence bonus to the robot's characteristics.
	8	*Difficult to Program:* Apply a -10 to the check when programming this brain.
	9	*Wear and Tear:* The workshop the character was using to craft the item is damaged. Roll randomly on the Malfunction chart to see to what extent (this can only occur once).
	10	*Moderate Accident:* One crafter takes a 'B' critical of an appropriate type determined by the GM.
Major (+15)	**1**	Downgrade flaw to Moderate.
	2-3	*Waste:* Robot loses 1 point of bandwidth.
	4	*Dumb:* Apply a -3 Reasoning bonus to the robot's characteristics.
	5	*Dora:* Apply a -3 Memory bonus to the robot's characteristics.
	6	*Undisciplined:* Apply a -3 Self-Discipline bonus to the robot's characteristics.
	7	*Cold:* Apply a -3 Empathy bonus to the robot's characteristics.

Flaw Level	Roll	Flaw
	8	*Clueless:* Apply a -3 Intuition bonus to the robot's characteristics.
	9	*Unengaging:* Apply a -3 Presence bonus to the robot's characteristics.
	10	*Major Accident:* One crafter takes a 'C' critical of an appropriate type determined by the GM.
Severe (+20)	**1**	Downgrade flaw to Major.
	2	*Dumb:* Apply a -4 Reasoning bonus to the robot's characteristics.
	3	*Dora:* Apply a -4 Memory bonus to the robot's characteristics.
	4	*Undisciplined:* Apply a -4 Self-Discipline bonus to the robot's characteristics.
	5	*Cold:* Apply a -4 Empathy bonus to the robot's characteristics.
	6	*Clueless:* Apply a -4 Intuition bonus to the robot's characteristics.
	7	*Unengaging:* Apply a -4 Presence bonus to the robot's characteristics.
	8-9	*Supply Shortage:* After spending D3x10% of the base time working, the character realizes he is missing a critical component while constructing the robot. The crafter cannot finish it until he has a chance to acquire more supplies and spends credits equal to 20% of the Price on these additional supplies (this can only be selected once). All time spent to this point is lost.
	10	*Deadly Accident:* One crafter takes a 'D' critical of an appropriate type determined by the GM.

Negative characteristic adjustments are cumulative.

PROGRAMMING

Programming a robot's brain requires the Composition: Programming skill.
Since programming a robot's brain requires no additional materials there is no monetary penalty for crafting it yourself. Ignore the cost column on the crafting resolution chart.
All programming packages have to be coded specifically for a particular robot brain and chassis. Mass produced robots are made identically so can have their programming packages copied from a template. This is not the case for custom made robots using these rules. Each must be programmed individually.
When programming skills into a package, the programmer must have knowledge of the skill level to be programmed. If they lack the skill, the knowledge can come from a wafer jacked chip or from an associate with the skill level in question who assists during the entire programming time. This assistance provides no benefit other than allowing the programmer to program the appropriate skill at the level desired.
All but Standard Brain packages are pass/fail when it comes to programming. If any flaws are generated the package fails to perform and must be recoded from scratch.
Primitive (All): Routine(+30) difficulty and 2 hours time.
Basic(All): Easy(+20) difficulty and 4 hours time.
Hunter/Killer(Standard): Light(+10) and 6 hours time.
Hunter/Killer(Tactical): Medium(+0) and 8 hours time.

Standard Brain Packages: Hard(-10) and 16 hours time.

Difficulty	Benefit
-10	**Skill Level 0:** Highest skill level is rank 0.
-20	**Skill Level 1:** Highest skill level is rank 5. +100% time.
-30	**Skill Level 2:** Highest skill level is rank 10. +200% time.
-40	**Skill Level 3:** Highest skill level is rank 15. +400% time.

Only one of the Skill Level penalties will apply and only for programmed skills, not for intrinsic skills due to hardware (like Recon or Stealth).

Flaw Level	Roll	Flaw
Minor (+5)	**1**	*Loyal:* The robot puts its creator's needs above its own and always looks for ways to help – whether asked to or not.
	2	*Resourceful:* The robot is overly concerned with doing things with as few resources as possible, even if it takes longer or doesn't turn out exactly as was planned.
	3	*Patient:* The robot is never in a rush to get anything done and will always take the 'Going Slower' option when performing checks if at all possible.
	4	*Enthusiastic:* This robot has a boundless capacity to see opportunities and will always point them out.
	5	*Efficient*: This robot abhors waste, especially of time. It will always take the 'Going Faster' option when performing checks if at all possible.
	6	*Cheerful:* The robot is always happy. It especially loves to whistle show tunes, commercials, or other annoying melodies even when it should be quiet.
	7	*Well-Mannered:* This robot is always polite and maintains perfect etiquette, even to the detriment of its assigned tasks.
	8	*Cowardly:* If this robot is a military model, reroll this result. Otherwise, the robot will curl up into a fetal position if threatened.
	9	*Pessimistic:* Apparent doom lurks around every corner and this robot is not shy about pointing this out to anyone who will listen.
	10	*Faulty Logic:* Lose 1 rank in a random skill that has at least one rank.
Moderate (+10)	**1**	Downgrade flaw to Minor.
	2-3	*Lazy:* The robot always takes the 'Going Slower' option when performing checks but gains no benefit from doing so.
	4-5	*Overly Literal:* The robot will attempt to perform its assigned tasks exactly as expected. It can never achieve an 'Absolute Success' on any checks.

Flaw Level	Roll	Flaw
	6-7	*Arrogant:* This robot believes in its superiority over everything else. Apply a -10 to all Social checks this robot makes. If it has no Social skills, reroll this result.
	8-9	*Faulty Logic:* Lose 1 rank in a random skill that has at least one rank.
	10	*Poor Listening Skills:* Apply a -10 penalty to checks to give this robot orders (can only be selected once).
Major (+15)	**1**	Downgrade flaw to Moderate.
	2-4	*Skittish:* If this robot is a military model, it will retreat from combat at the first opportunity. Otherwise, reroll this result.
	5-6	*Easily Distracted:* Any time the robot rolls doubles (11,22,etc.) it will stop whatever it is doing and sit there a number of minutes equal to the tens digit rolled unless prompted by outside forces to continue what it was doing.
	7-9	*Faulty Logic:* Lose 1 rank in a random skill that has at least one rank.
	10	*Limited Programming:* All rank 0 skills the robot possesses suffer a -5 penalty. This can occur multiple times and is cumulative.
Severe (+20)	**1**	Downgrade flaw to Major.
	2-5	*Compassionate:* If this robot is a military model, it is very caring and will always seek to subdue opponents or use non-lethal weaponry. If not, swap this flaw for *Ruthless*.
	6-9	*Ruthless:* If this robot is a non-military model, it is unnecessarily cruel and destructive of things that annoy it. If it is a military model, swap this flaw for *Compassionate*.
	10	*Fatal Flaw:* There is a fatal flaw in the robot's programming. If the robot rolls a 66 on any action, it snaps, becoming as destructive as it can until physically restrained. Once this manifests, the programmer can correct it with an Extremely Hard(-30) Programming check. The GM should keep the results of this check hidden.

If you roll a personality trait that conflicts with a previously rolled trait, keep the first one rolled and reroll the flaw.

SOFTWARE

Creating standard software packages: Programming, Electronics
Creating open-source software packages: Programming

- ➔ **BW:** The bandwidth of the program being created.
- ➔ **Time:** The base time it takes to create the software.
- ➔ **Difficulty:** The difficulty to create the software, based on its bandwidth rating.
- ➔ **Programming:** The minimum ranks in programming the lead programmer must have in order to create the software. Assistants and underlings may have a lower rating, but they will pull down the average.
- ➔ **Related Skill:** If there is a related skill to the software outside of programming, this lists the minimum ranks required. This can be either from someone doing the programming, an assistant, or from a wafer jacked chip of sufficient ranks.

BW	Time	Difficulty	Programming	Related Skill
0	(Cost/100) x 8 hours	Easy(+20)	Rank 1	Rank 1
1	(Cost/100) x 8 hours	Medium(+0)	Rank 5	Rank 5
2	(Cost/200) x 8 hours	Hard(-10)	Rank 10	Rank 10
3	(Cost/400) x 8 hours	Extremely Hard(-30)	Rank 15	Rank 15
4	(Cost/800) x 8 hours	Sheer Folly(-50)	Rank 20	Rank 20

Related Skills

- ➢ Agent – Computers
- ➢ Decryptor – Comms
- ➢ Digital Friend – Science: Psychology
- ➢ Expert – Specific skill being programmed
- ➢ Intellect – none
- ➢ Intelligent Interface – none
- ➢ Interface – none
- ➢ Intrusion – Computers
- ➢ Personal Trainer – Specific skill being programmed
- ➢ Security – Computers
- ➢ Translator – Specific language being programmed
- ➢ Universal Translator – Science: Linguistics

Attachments

Difficulty: The difficulty of crafting an attachment is its Rarity divided in half, rounded up, number of d dice.
Cost: Materials required cost half the cost of the finished attachment.
Time: The time it takes to make an attachment is 4 hours per c plus 2 hours per d.
Interpreting the Results: Each success past the first reduces the time by 2 hours to a minimum of 1 hour. A failed check results in the loss of 100% of the materials.

a Each reduces the materials cost by 10%.
t Each increases the materials cost by 10%.
x Grants a B on the installation check.
y Imposes a b on the installation check.

Workshops

Workshop, while typically associated with Mechanic skill, is a generic term used to reference any type of facility dedicated to a specific skill. Medical Bays for Medicine or Laboratories for Science are also considered Workshops. Libraries fall under the category of workshops, as well. A Library provides the equivalent of an Expert/1 system of the ship's tech level for all Science skills that could conceivably be incorporated by the builders of the Library.

The form and capacity of a workshop is decided in large part by its location. A workshop in a cramped corner aboard a tramp freighter does not have the capabilities of one that takes up a sprawling planet-side warehouse, but it is mobile and secure in a way that the warehouse cannot match.

All workshops worthy of the name provide the same basic utilities. A Technician's workshop offers storage space, including space to house large or unwieldy equipment, as well as access to the essentials of technical work, such as power, tools, and materials.

BASIC BENEFITS

Upon acquiring a workshop, a character chooses the workshop's focus. This is a particular skill category for which it is optimized, generally Composition (Studio), Crafting (Workshop), Lore (Library), Mechanic (Workshop), Medicine (Medbay), Science (Laboratory), or Vocation (Studio). When making checks with the workshop's focus category, the character is always treated as having the right tools for the job. Further, a default workshop has space to store tools, equipment, and other helpful accouterments up to 50 kilograms per ton (roughly Cr5000 worth). A Medicine focused workshop can treat one patient per ton of space.

Skill	Cost per Ton
Composition	10000Cr
Lore	100000Cr
Science	25000Cr
Crafting	15000Cr
Mechanic	15000Cr
Medicine	50000Cr
Vocation	10000Cr

Note: Your typical starship workshop can also be used to craft items that rely on Electronics, Metalcrafting, Power Systems, advanced Stonecraft, and advanced Fabric Craft.

ADVANCED BENEFITS

Advanced or expansive workshops can offer additional benefits to appropriate projects, or cover more types of work. Additional benefits include upgrading relevant checks, downgrading their difficulty, or reducing the cost or time spent on a project. Depending on a workshop's location, there are certain limits to the effects of a workshop.

By default, a workshop has the capacity for one advanced benefits per 2 tons of workshop space. The workshop's owner must acquire and install these in the workshop separately.

Advanced Crafting Workspace: Certain items are extremely difficulty to craft and without the specialized tools and equipment, they are impossible. When selecting this benefit, pick a specific type of crafting (Armor, Personal Weapons, Cybernetics, etc.). When crafting any of these items and taking advantage of the Complementary Skills rule, one additional assistant may add their full ranks to the check for each instance of

an advanced crafting workspace for that type of crafting. This can be selected multiple times for the same or different crafting skills. **Cost:** 25000Cr
Advanced Repair Workspace: By setting aside space in his workshop dedicated to a specific type of repair, the technician receives an Upgrade on his check when performing those repairs. When this advanced benefit is installed, select a specific Mechanic specialization to receive this benefit. This advanced benefit can only be selected once for each specialization. **Cost:** 25000Cr
Comforts of Home: The character receives a +10 on any Fatigue checks he has to make while working in his workshop. **Cost:** 10000Cr
Cybernetics Treatment Facility: The Medbay equipped with this advanced feature confers a +10 bonus on all cybernetic treatments. **Cost:** 20000Cr
Emergency Containment Measures: The character may reroll a single critical result received from working in his workshop. This advanced benefit can only be selected once. **Cost:** 25000Cr
Reclamation Equipment: Halve the D10 total when calculating Materials consumed. This advanced benefit can only be selected once. **Cost:** 50000Cr
Replication Facilities: This benefit allows you to construct a batch of 5 of the same pharmaceutical item at once, consuming 5 times the ingredients but only taking the time of 1. The results of a single test are applied to the entire batch and the same benefits or flaws apply to all the items created in this batch. This benefit can be selected any number of times. **Cost:** 10000Cr
Research Records: The Library this is installed in has extensive research records and provides a +10 to any check involved with making a Schematic. This advanced benefit can only be selected once. **Cost:** 30000Cr
Spare Parts Bin: By carefully organizing his spare parts, the technician can reroll a D10 when calculating the time required to make an item. This advanced benefit can be selected multiple times with each allowing another D10 to be rerolled. **Cost:** 10000Cr
Zero-Grav Workspace: With access to a zero-gravity area as part of a workshop, a Technician can smelt metals and craft pharmaceuticals with unique processes difficult to reproduce under the effects of gravity. The character adds +5 to all Crafting checks in the workshop. This advanced benefit can only be selected once. **Cost:** 50000Cr