

ARTech Laboratory, Inc.
Amputee Restoration Technologies

***Functional Benefits of the Silicone Hand and
Partial Hand***

It does not require a major effort of the imagination to understand that the loss of a limb causes deep emotional trauma. Apart from the obvious difficulties with mobility and self-care, the disturbance in body image requires significant emotional readjustment. In fact, the grief reaction following loss of a limb has been very convincingly compared with that following the loss of a spouse.

In allowing use of an injured limb (which the amputee may consider too repulsive to expose and use) the custom fabricated silicone prosthesis may well improve overall function. When a restoration has a natural appearance, sculpted and painted to match the opposite limb, as opposed to the robotic or mannequin look of traditional prostheses, utilization by the patient is maximized. This enhanced usability may well be one of the most important functions of all.

In addition to the obvious advantage of natural appearance restoration, the partial hand prosthesis may be designed to greatly improve the patient's ability to grasp objects due to the restoration of opposing digits, even though they are considered to be passive in nature. For example, a 2 - 5 trans-metacarpal amputee would have little use of the thumb without digits to oppose it in gripping objects. When needed, the silicone material can be internally reinforced with a semi-rigid material to enhance the opposing effect.

Often overlooked, the ability of the silicone partial hand prosthesis to protect isolated areas on the residual limb becomes a necessity for the amputee who has sensitive scar tissue or damaged nerve endings. Material voids or silicone gel can be incorporated into the surface of the internal socket which can relieve pressure and, therefore, pain for the amputee. In many cases, the massaging effect of the soft silicone socket on scar tissue promotes healing.

In short, a properly designed, custom fabricated silicone prosthesis for the partial hand amputee should be considered an absolute necessity for restoration to a normal lifestyle.