

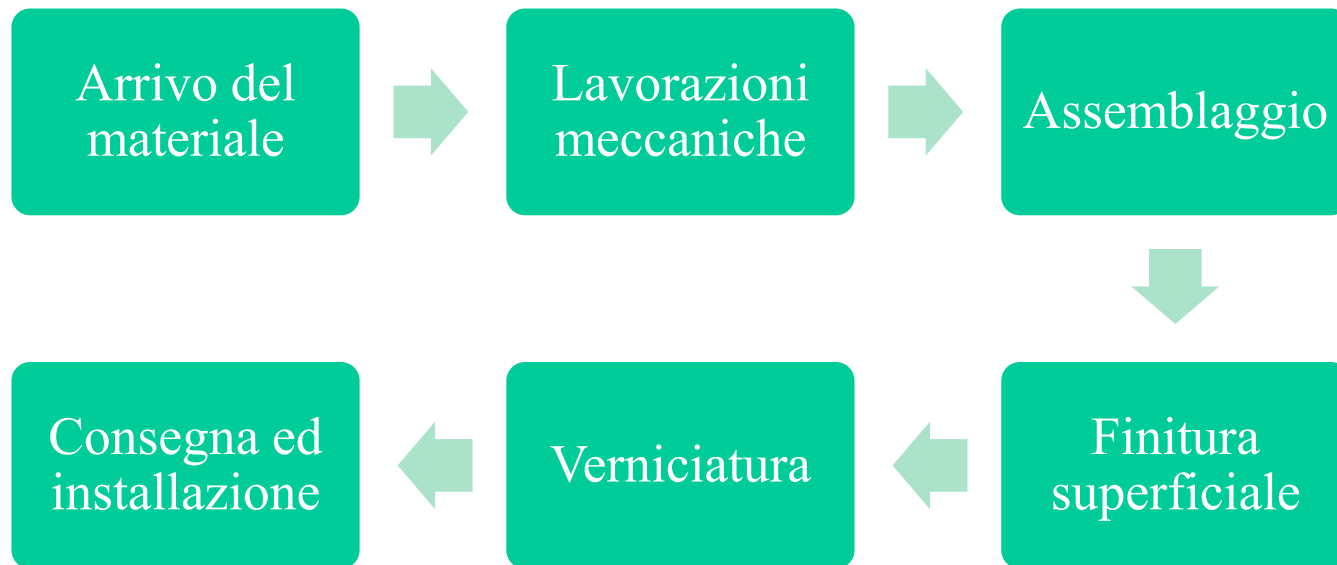
L'officina meccanica e le principali lavorazioni

Prof. Ing. Marco Boscolo

L'industria meccanica



Il ciclo produttivo



Immazzamento



Il magazzino



Taglio

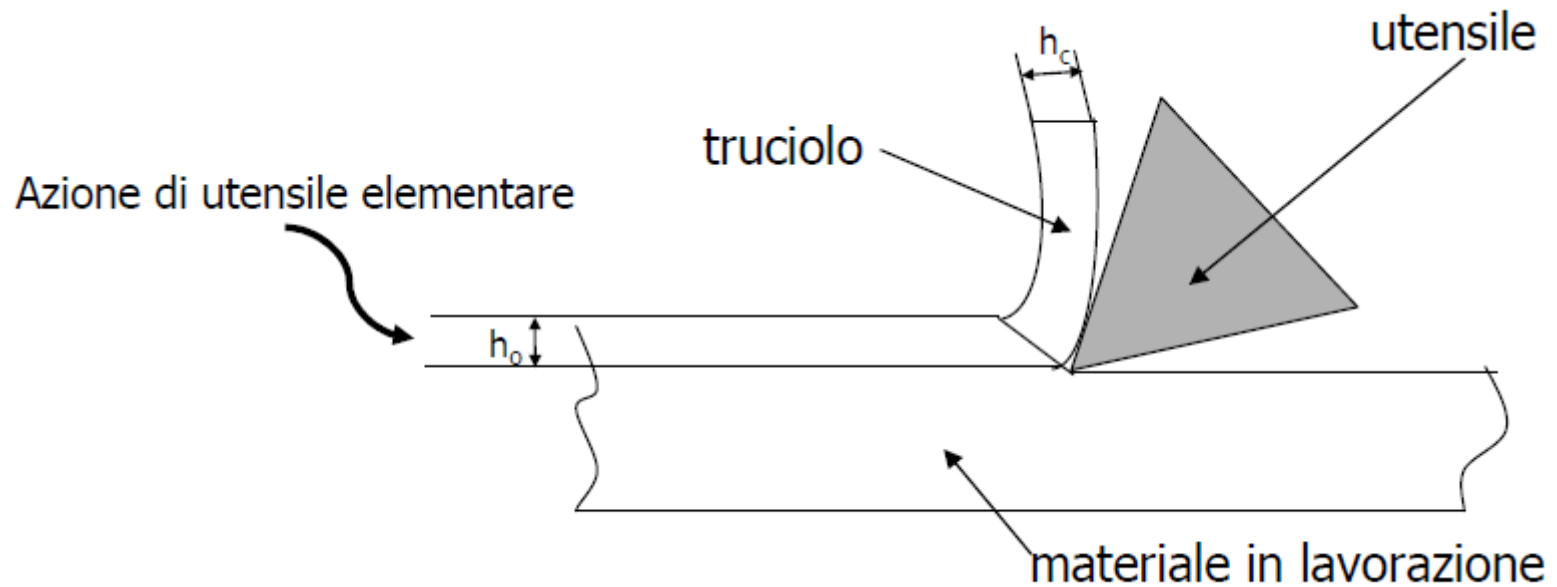


Meccanico



Termico

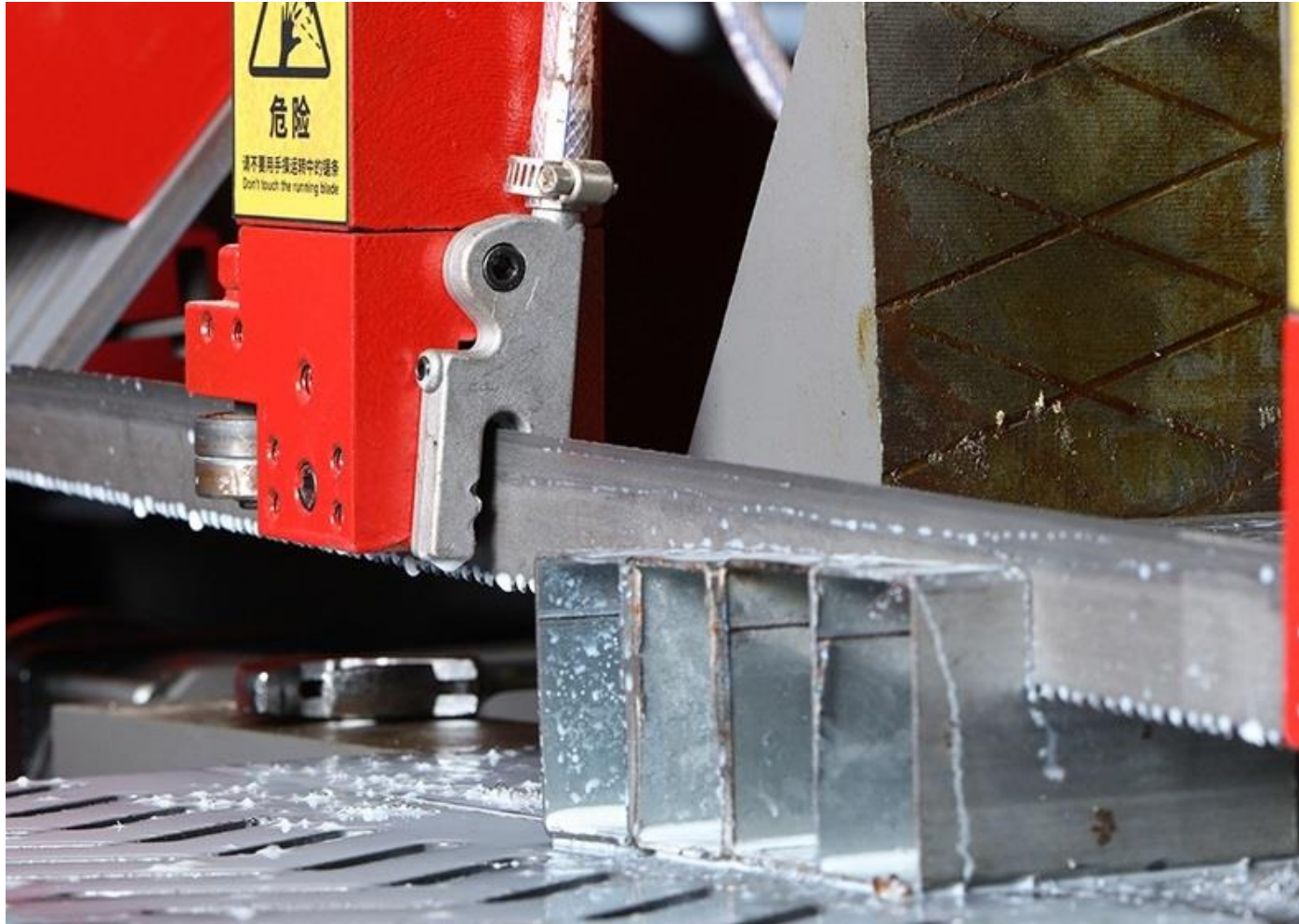
L'azione di taglio



Sega a nastro



Sega a nastro

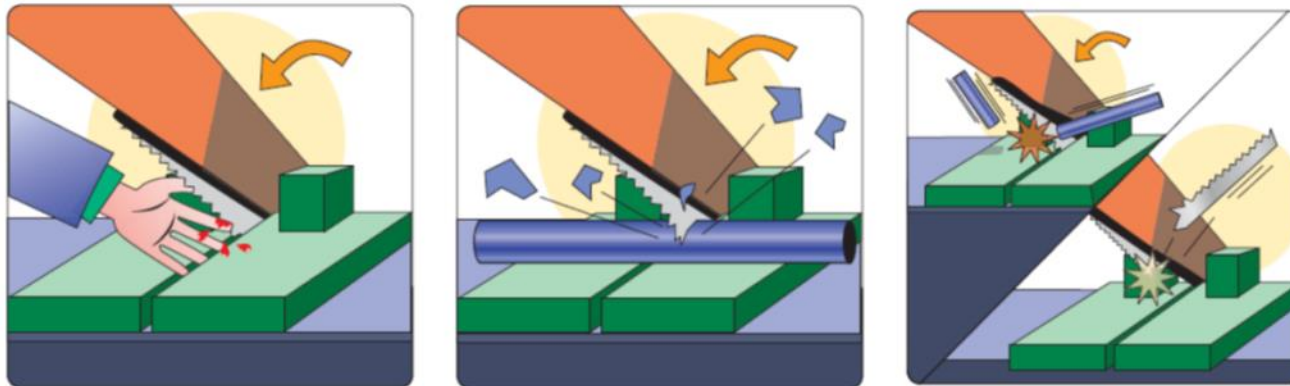


Sega a Nastro: funzionamento



Sega a nastro: pericoli

- mancato intervento dei ripari
- errori di manovra
- contatti accidentali con il nastro;
- proiezione di materiali;
- rottura del nastro
- errato bloccaggio del pezzo



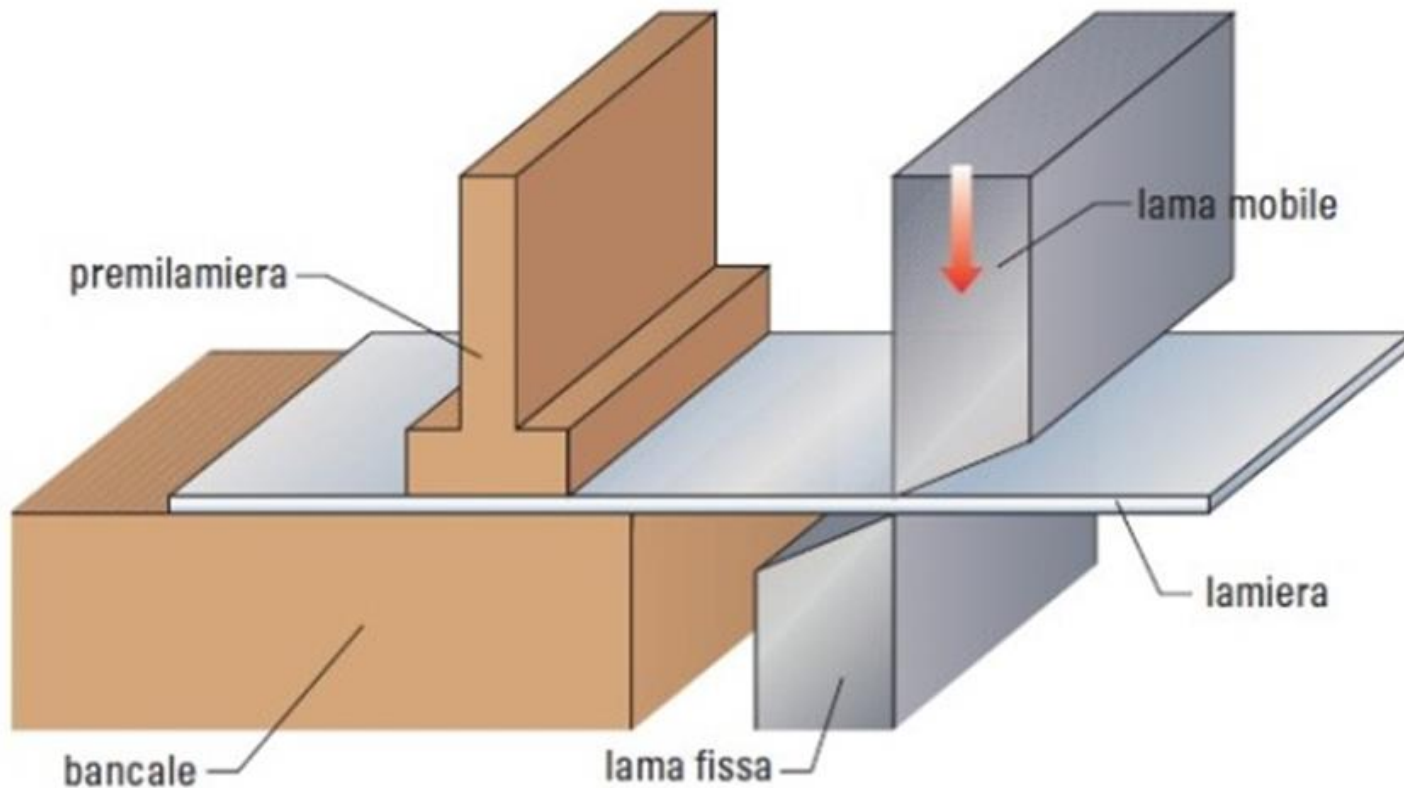
Sega a disco



Sega a disco: pericoli

- mancato intervento dei ripari
- errori di manovra
- contatti accidentali con il disco;
- proiezione di materiali;
- rottura del disco
- errato bloccaggio del pezzo

Cesoatura: principio di funzionamento



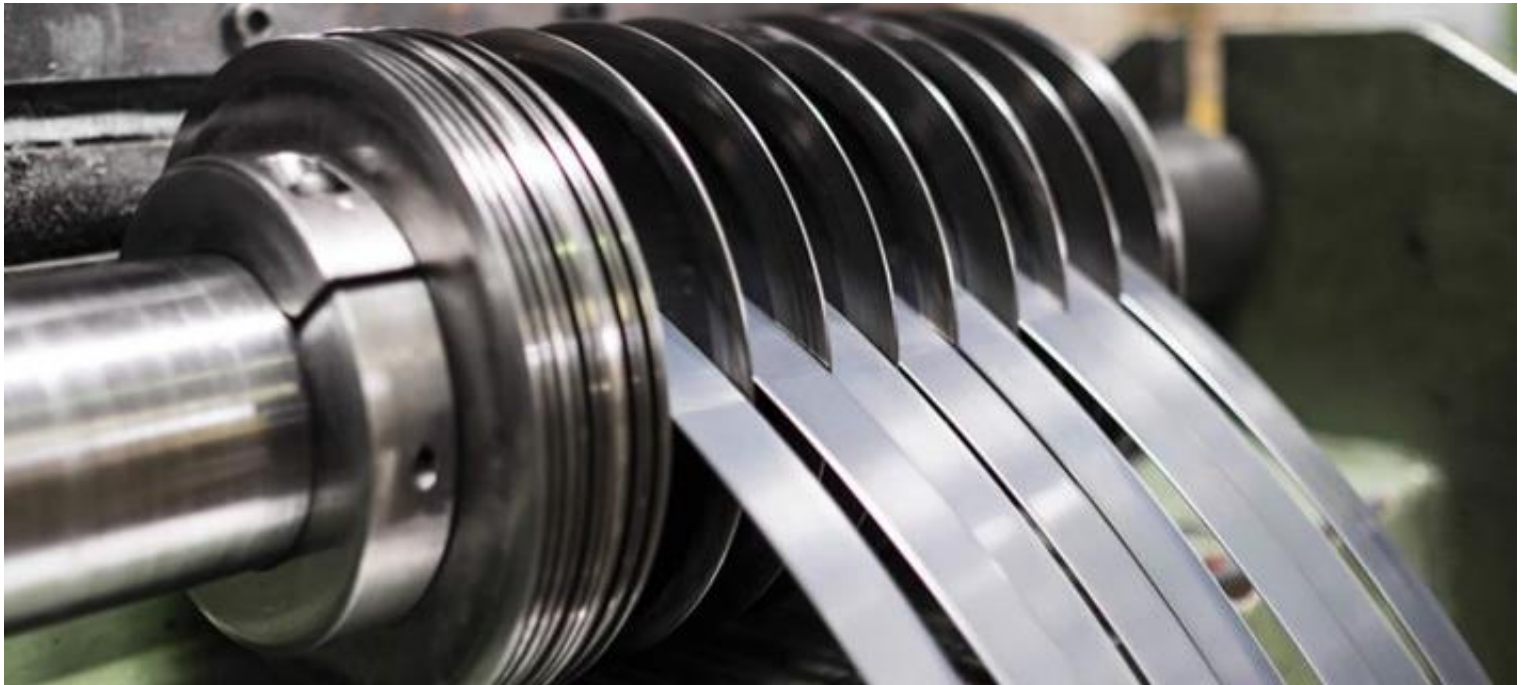
Cesoia lineare



Cesoia a ghigliottina



Cesoia circolare



Punzonatrice



Taglio ossiacetilenico



Taglio al plasma



Taglio laser



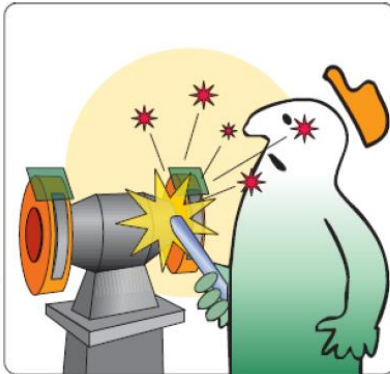
Rischi specifici del taglio termico

- atmosfere potenzialmente esplosive
- l'inalazione dei fumi di saldatura
- lesioni oculari

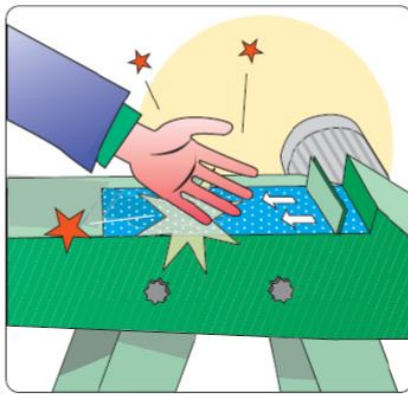
Calandra



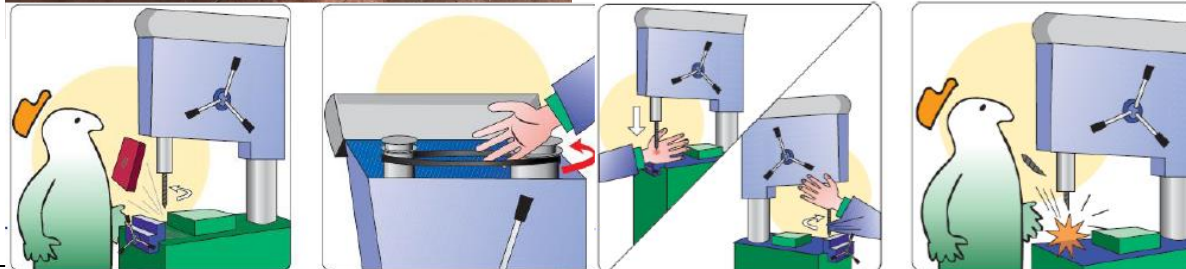
Molatrice



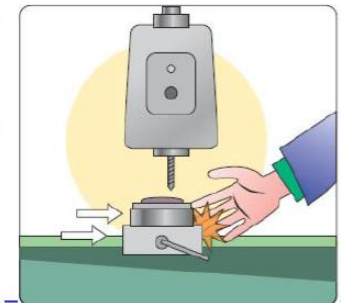
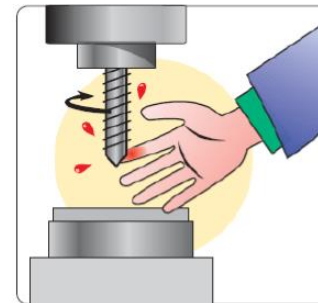
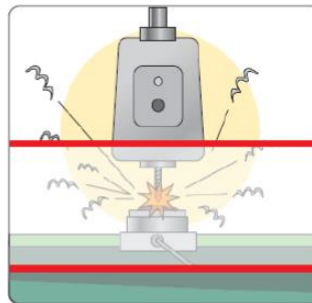
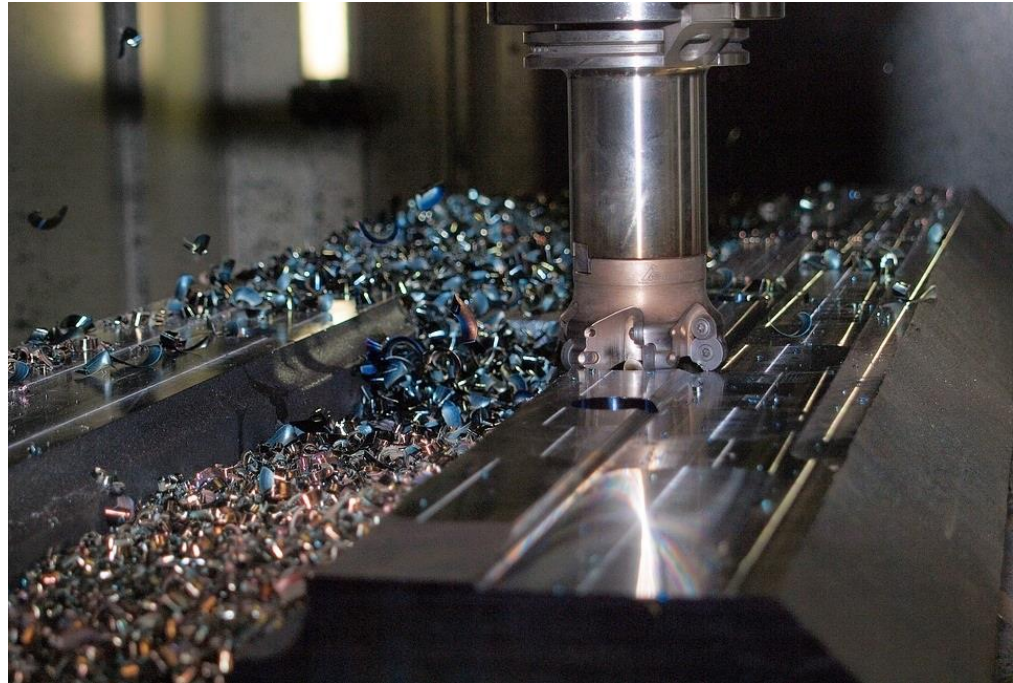
Levigatura



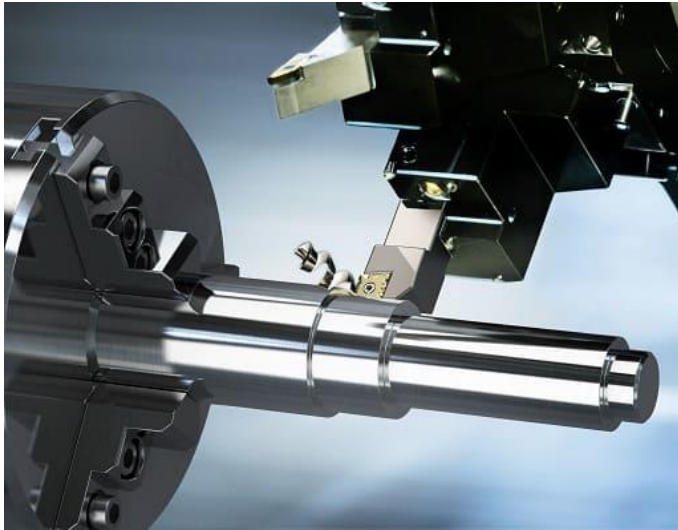
Foratura



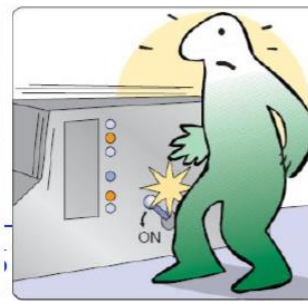
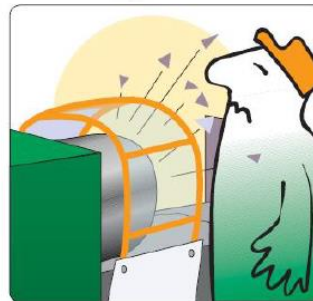
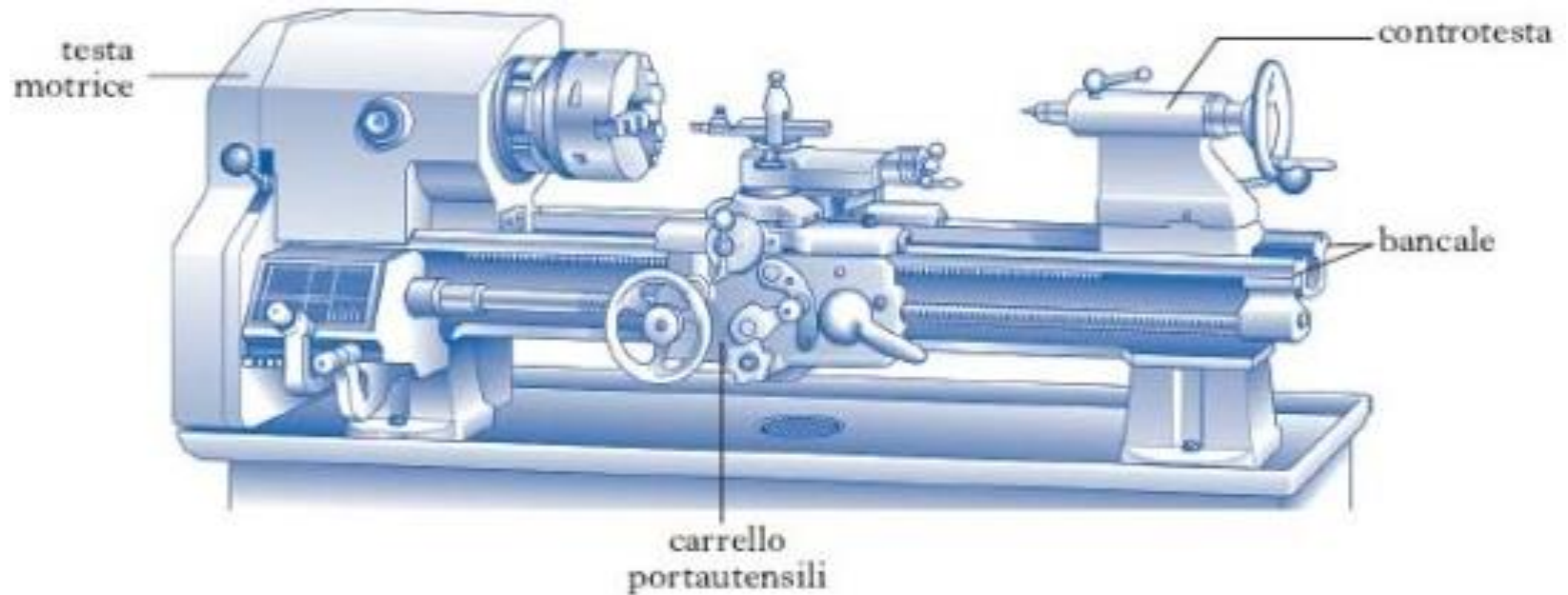
Fresatura



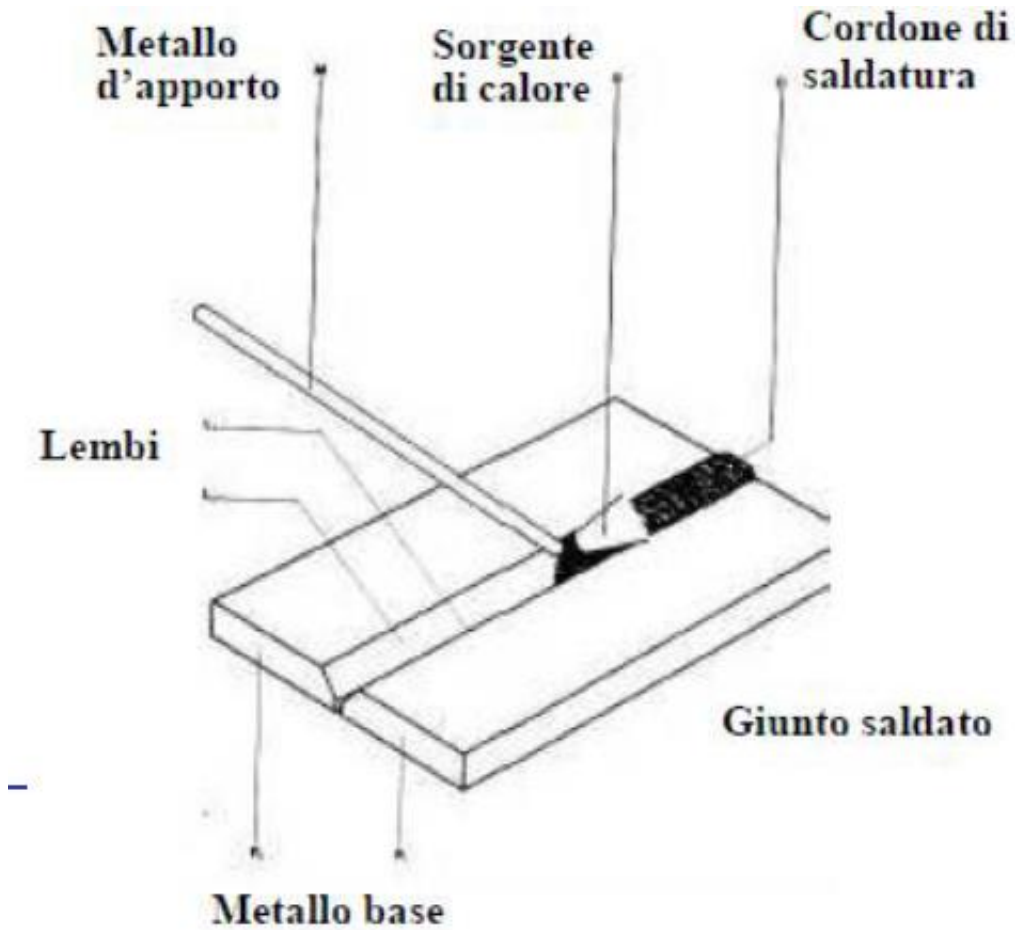
Tornitura



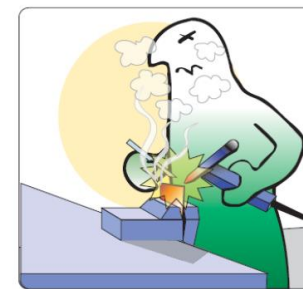
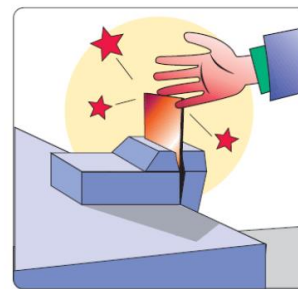
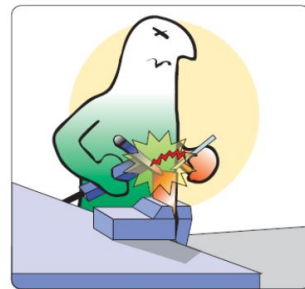
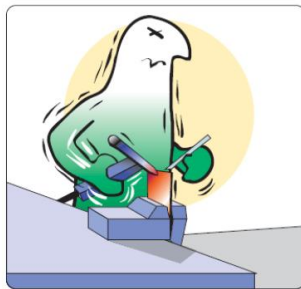
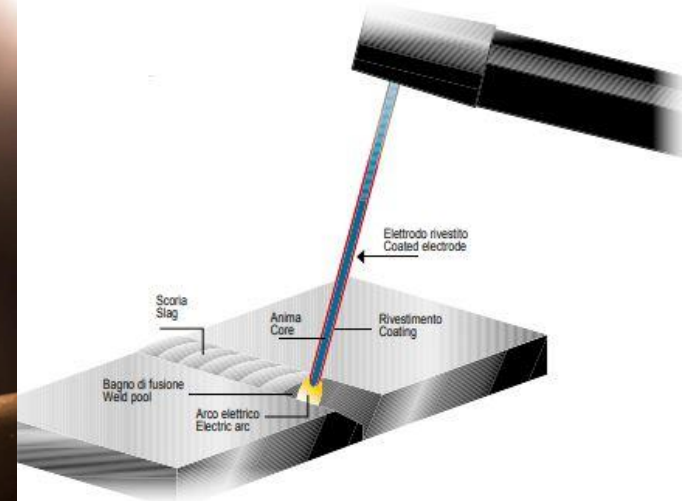
Tornitura



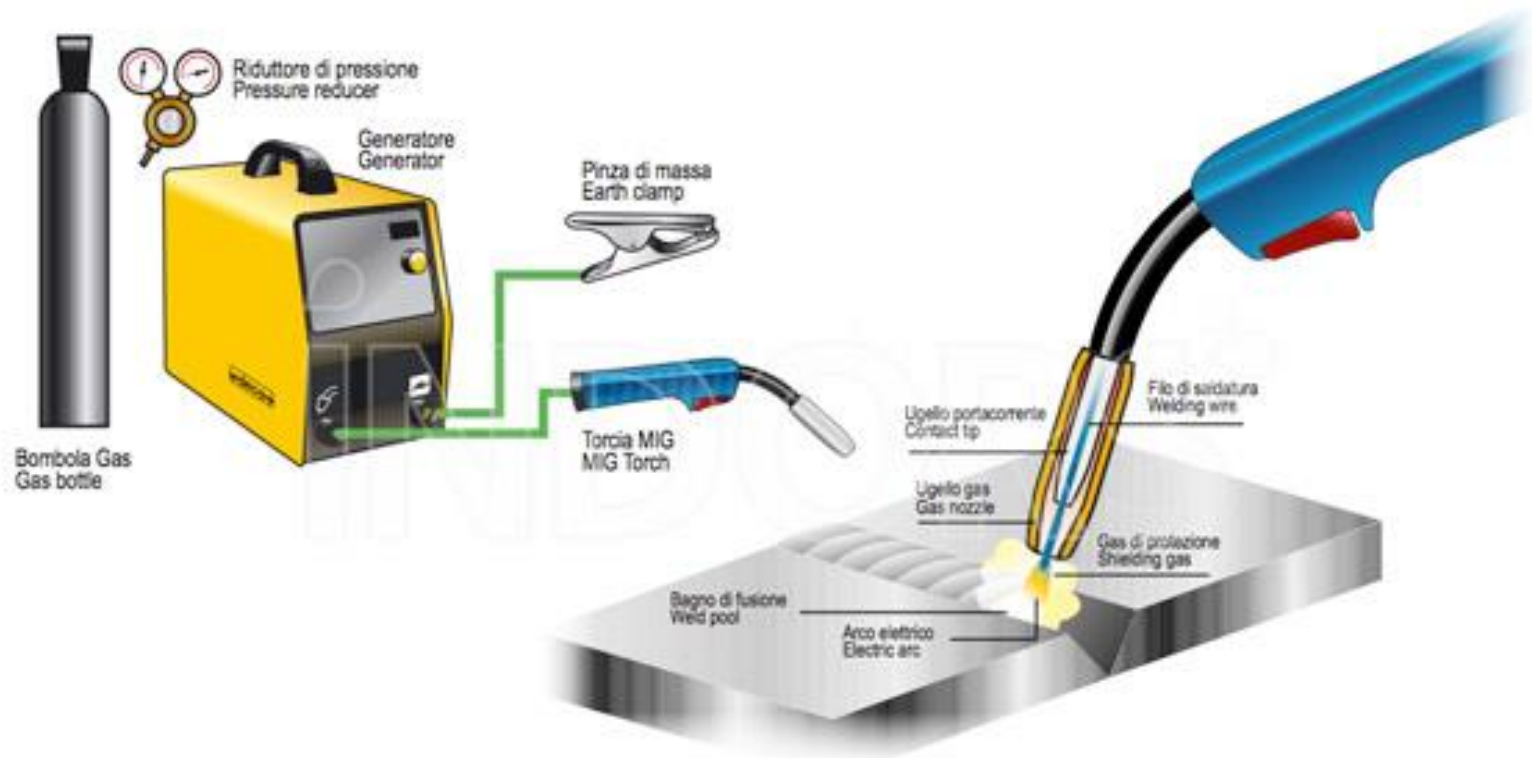
Saldatura



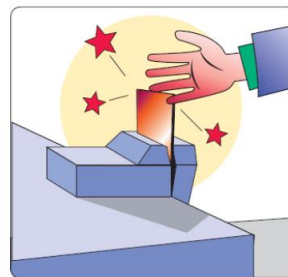
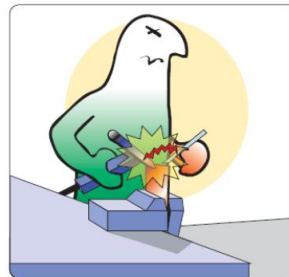
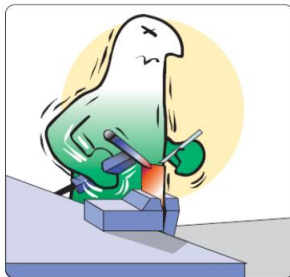
Saldatura con elettrodo rivestito



Saldatura a filo



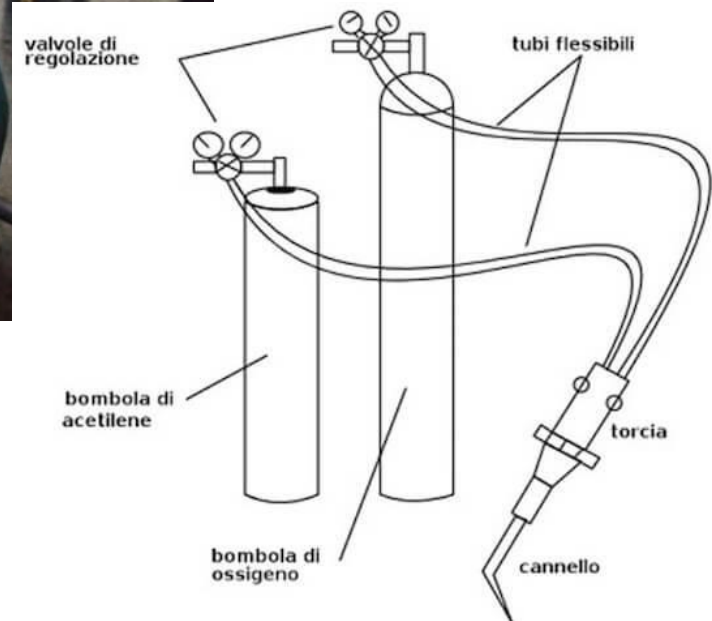
Saldatura a filo



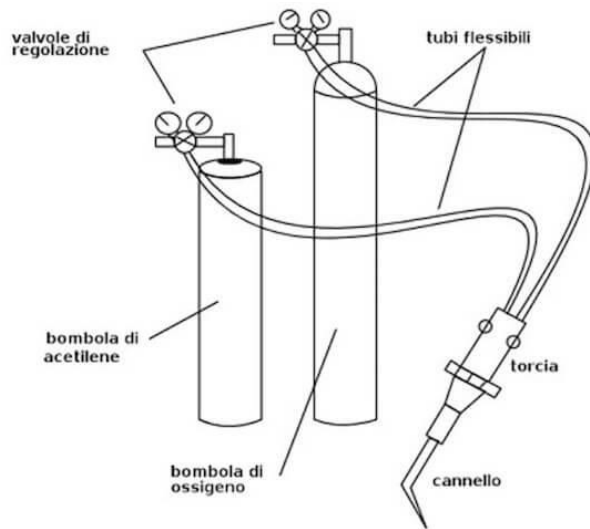
Saldatura TIG (Tungsten Inert Gas)



Saldatura ossiacetilenica



Saldobrasatura



Inquinanti generati nella saldatura

- ossidi di azoto
- ozono
- prodotti di pirolisi (fosgene, aldeidi, fenoli, idrocarburi insaturi, acidi carbonilici, isocromati, acido cianidrico ecc.)
- particolato sottile ($<1\mu\text{m}$) con elevata capacità di penetrazione nell'apparato respiratorio.

Ventilazione locale e generale



Verniciatura a polvere



Verniciatura a spruzzo



Cataforesi



Inquinanti generati nella verniciatura



polveri



nebbie



vapori

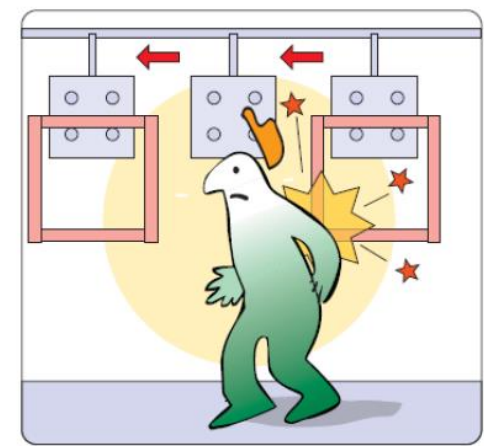
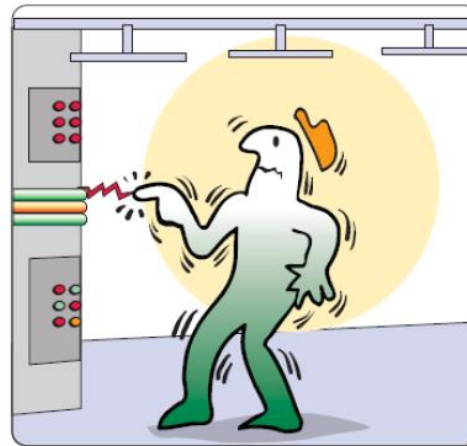
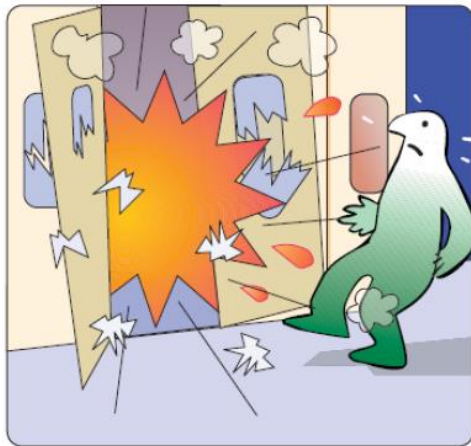
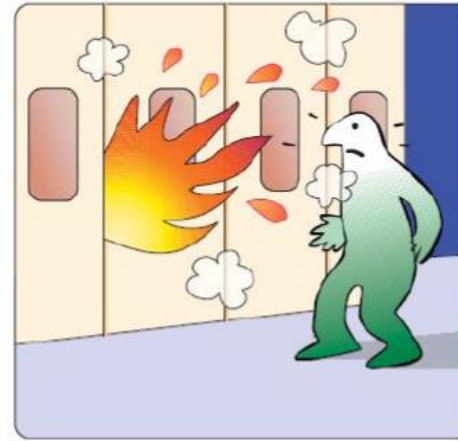
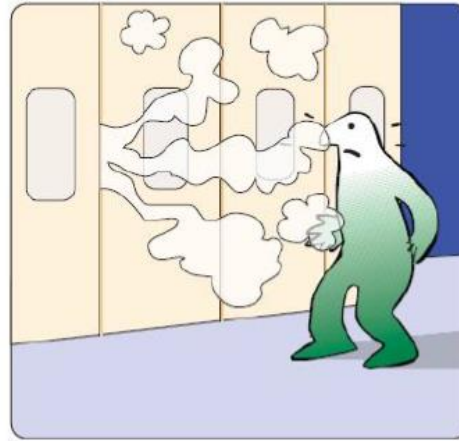
Cabina di verniciatura aperta



Cabina di verniciatura chiusa



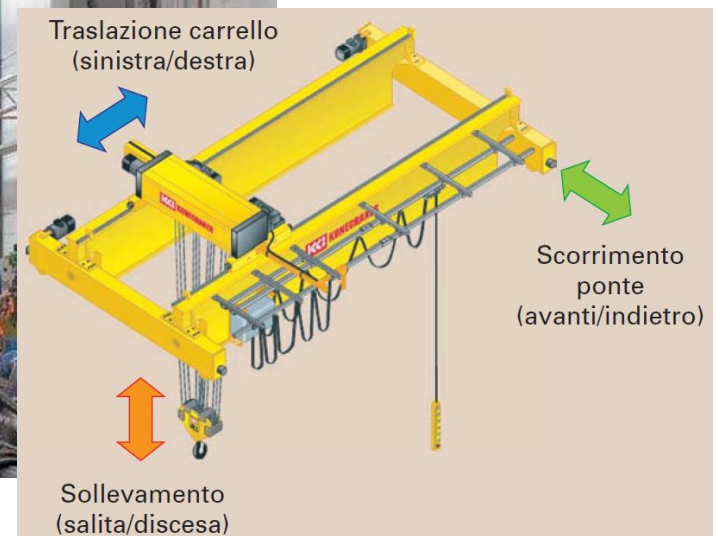
Pericoli implicati



Carrello elevatore



Carroponte



Carroponte: pericoli

- **Perdita di stabilità del carico**
- **Cedimento**
- **Oscillazione del**
- **Interferenza con terze persone**