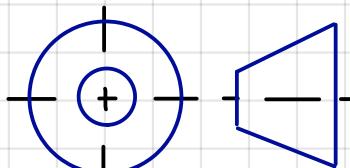
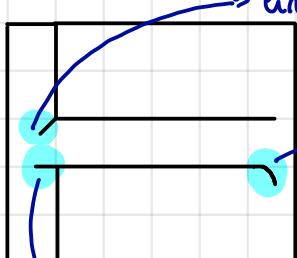


PRIMO DIEDRO



TERZO DIEDRO

Raccordi



linee diritta → un solo raccordo

linee oblique → raccordi cilindrici con stesso diametro

linea curva → raccordi cilindrici con diametro diverso

SEZIONE: solo elementi geometrici che intersecano il piano di sezione

TAGLIO: anche gli elementi che appaiono dietro

Definizioni

ELEMENTI TIPIZZATI → non costruiti ad hoc (standard) eg. viti, guarnizioni, cuscinetti

ASSE non trasmette moto, ALBERO sì ↳ da non compiere in sezione (oltre nervatura)

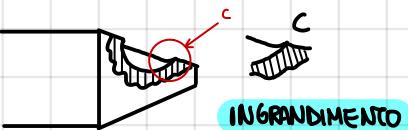
GUARNIZIONE diminuisce attrito fornendo olio su un volume

PALLINATURA → numerare le parti

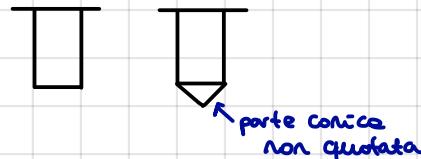
BILL OF MATERIALS → uscita per descrivere componenti di una macchina

NERVATURA → elemento strutturale di limitato spessore usato per SOSTEGNO ↳ non viene capita

Dettagli e Quote

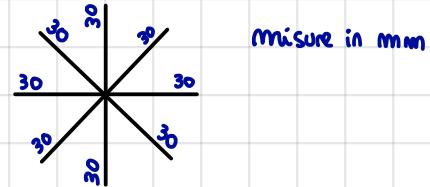


TIPI DI FORO CIELO SEMPLICE

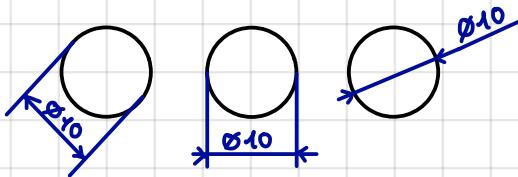


parte conica non quotata

DOVE POSIZIONARE LE QUOTE



QUOTE PER DIAMETRO



$\varnothing 10 \text{ } T 20$
profondità foro

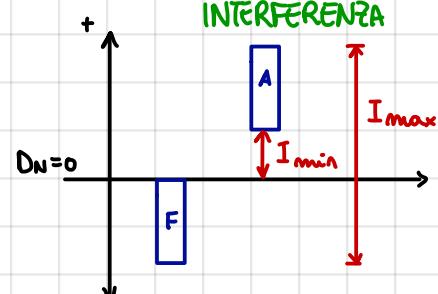
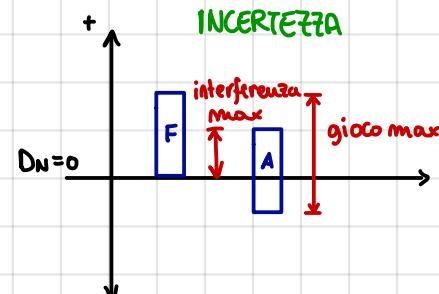
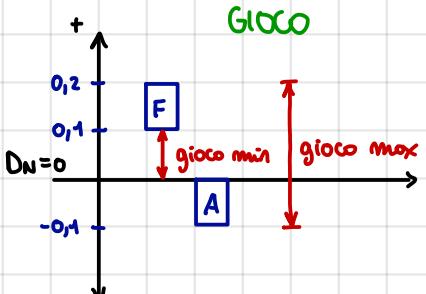
Tolleranze

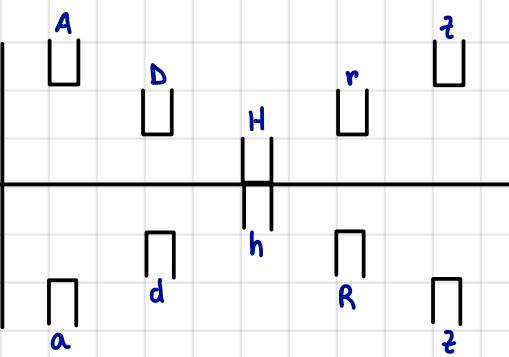
$\varnothing 20 +0,1 -0,05$ → scostamento superiore
→ scostamento inferiore ↳ quota nominale

$$\varnothing_{max} = 20,1$$

$$\varnothing_{min} = 19,95$$

TOLLERANZA = scostamento sup - scostamento inf
 $= 0,15$





SCOST. INF

A = foro a = albero

IT = grado di qualità

IT 0 = ECCELLENTE

IT 16 = PESSIMO

$$\Delta = IT(m) - IT(m-1)$$

Esempio $\varnothing 30^C10/h10$ IT10, scost. inf. foro C, scost. sup. albero h

Interferenza: foro più piccolo dell'albero
fissaggio definitivo

L> Scaldare foro x dilatazione
poi inserire albero e raffreddare

INCERTEZZA: Sia gioco che interferenza \rightarrow GIOCO MAX / INTERF. MAX

ALBERO BASE: scostamento h

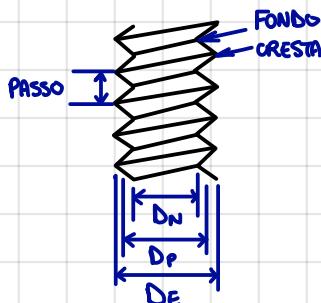
FORO BASE: scostamento H

SE NON IN TABELLE,
NON È POSSIBILE!

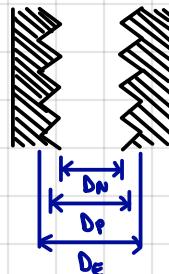
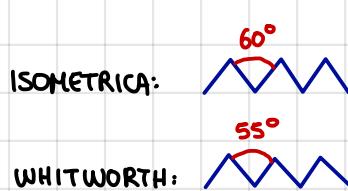
Viti

VITI DI FISSAGGIO: unire due componenti

UTI DI MANOVRA: movimento di elementi diversi



D_n = diametro roccioso
 D_p = diametro primitivo
 D_e = diametro esterno



\rightarrow standard ISO

M10 = vite/foro piano grosso con $\varnothing 10$

M10x0,75 = piano fine da 0,75 mm

10x1,2M = piano da 1,2 mm non tabulato (fuori dalle tavole)

M10-LH = vite sinistrorsa

M10-L3-P1,5 = due filetti ogni 3 mm

PASSO WHITWORTH \rightarrow n° filetti per pollice

Tp 10x1 = trapezoidale $\varnothing 10$ passo 1 mm

FILETTATURA A GAS \rightarrow WHITWORTH 55° TRIANGOLARE

G1"

\hookrightarrow foro passaggio del fluido

$D_e = 33 \text{ mm}$ non 25,4 mm

FILETTATURA A TENUTA STAGNA

R1"

tenuta stagna
cilindrica per madre vite

Rc1"

conica per
vite

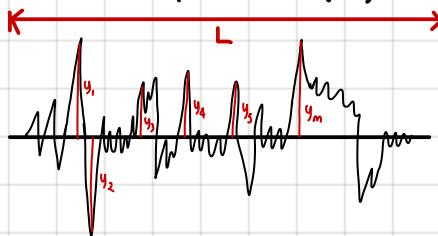
Rp1"

cilindrica per
vite

Rugosità

Diverse tipologie di lavorazioni producono diverse superfici:

RUGOSITÀ = qualità superficie



$$RA = \text{Rugosità} = \frac{1}{L} \int_0^L |y_m| dx$$

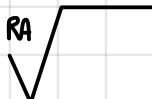
Superficie GIBBOSA = opaca

CROMATURA → anticorrosione

MEDIA INTEGRALE

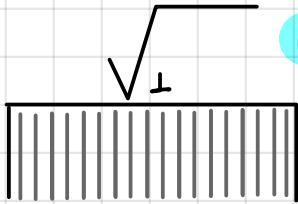
L → rugosità valore medio

VECHIA NOTAZIONE =
OML

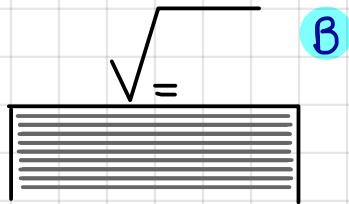


NUOVA NOTAZIONE:

$\sqrt{RA \cdot 0,8/25} \rightarrow$ lunghezza utile (L)
 ↳ Valore RA
 ↳ eventuale sovraccarico
 "a 0,5 la rugosità è:"



SOLCHI PERPENDICOLARI

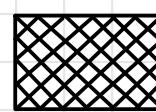
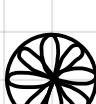


SOLCHI PARALLELI

\checkmark libertà di scelta della lavorazione

\checkmark obbligo dell'utilizzo di asportazione di truciolo

\checkmark divieto di utilizzo di asportazione di truciolo

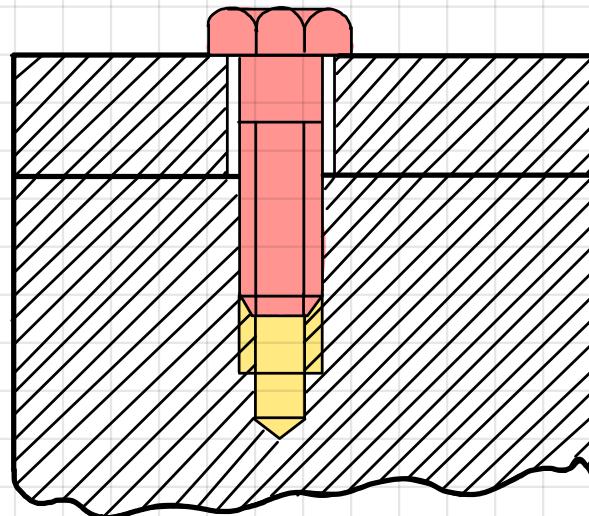
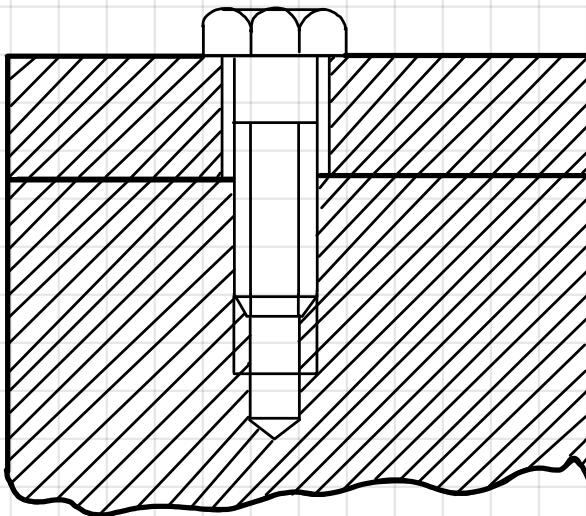


NOTA: \checkmark_{\perp} non ha senso incongruenza

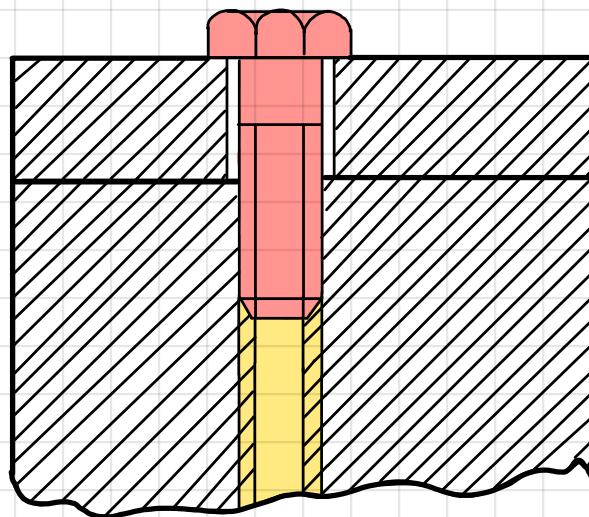
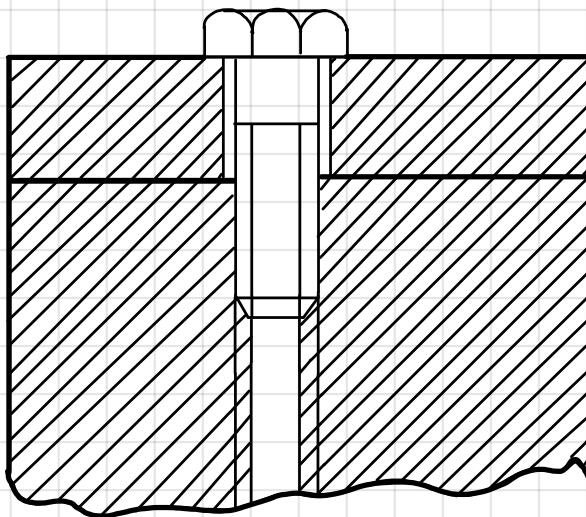
Prescrizioni Geometriche

Organi di Macchina

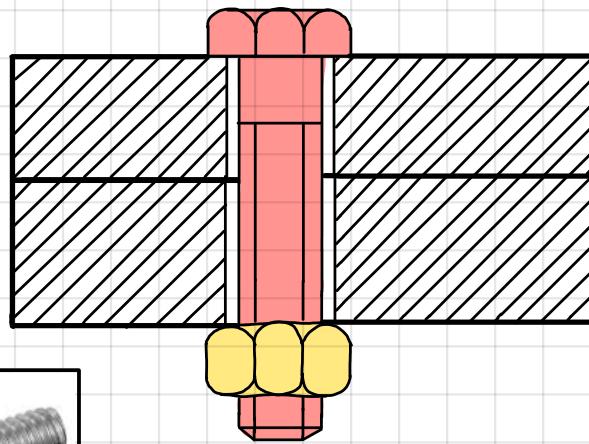
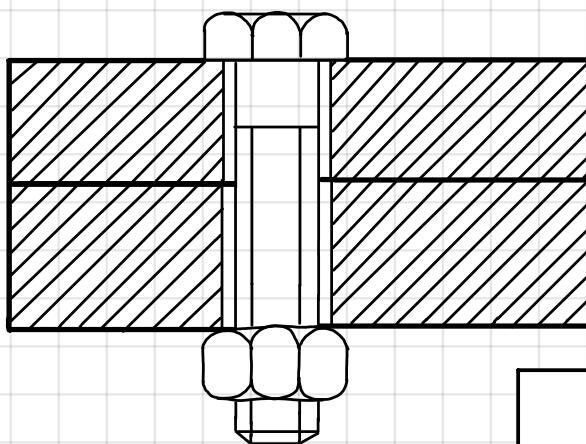
VITE MORDENTE IN FORO CECO



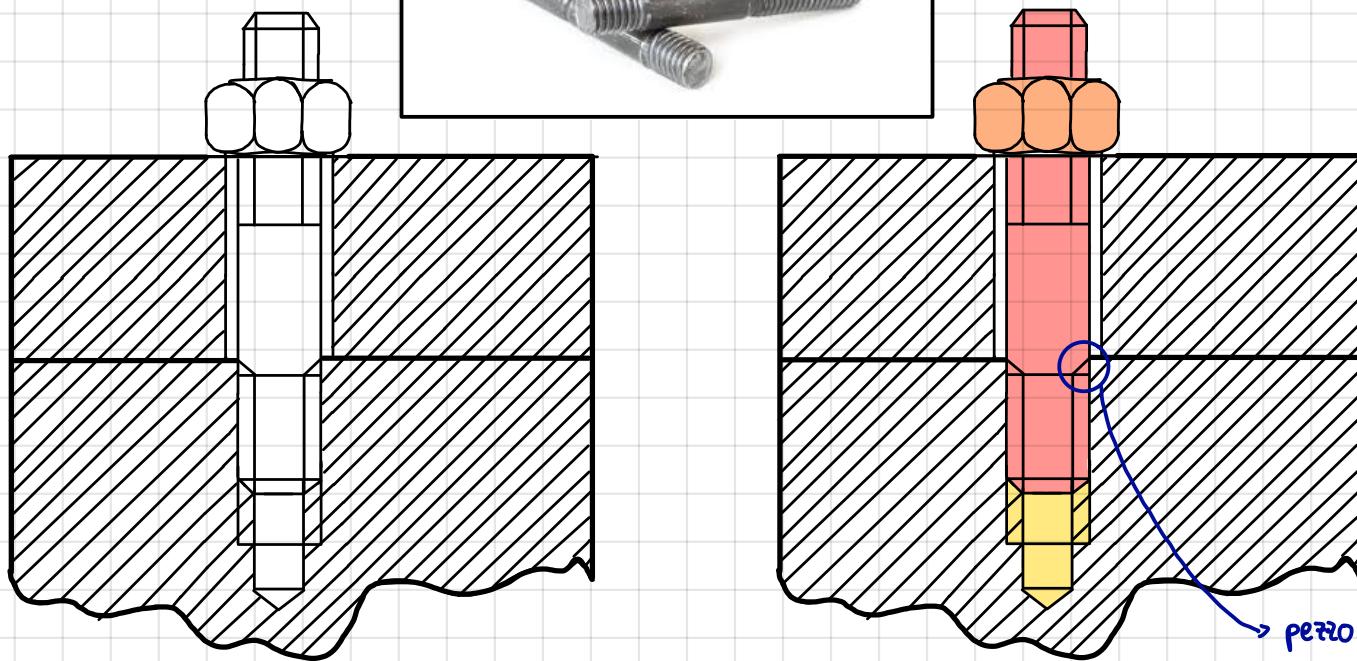
VITE MORDENTE PASSANTE



VITE CON BULLONE

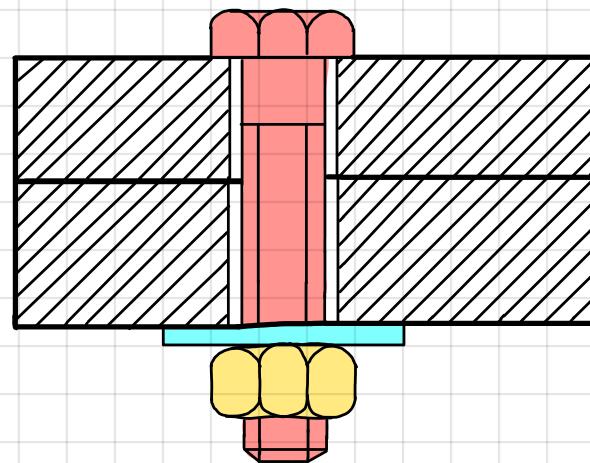


VITE PRIGIONIERA



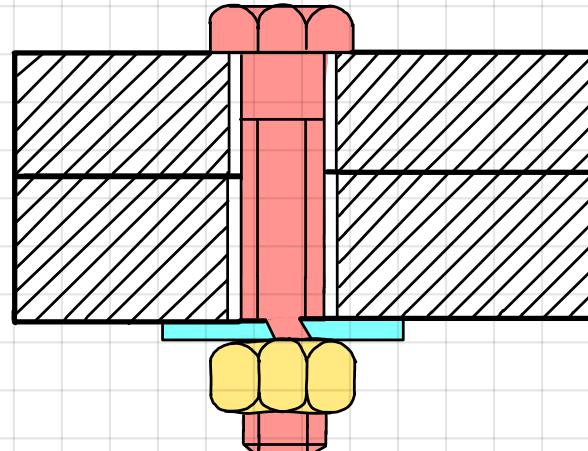
perno di filettatura
avanzata
"buffo inclinato"

RONDELLA SEMPLICE



RONDELLA GROWER

Destrorsa: □ □ □



Sinistrorsa: □ □ □



Cuscinetti

Supporto per il moto rotatorio

Riduce attrito di rotazione

Preserva sede di rotazione

Riduce pericolo di intrusione di polvere e detriti nella aree di rotazione

SFERE

anello interno

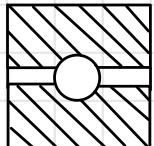


anello esterno

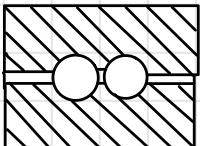
STRISCIAIMENTO



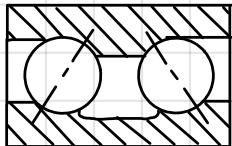
(BRONZINE)



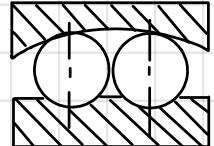
SFERE
1 CORONA
RIGIDO



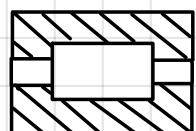
SFERE
2 CORONE
RIGIDO



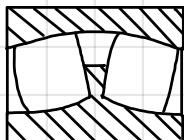
SFERE
2 CORONE
OBliquO



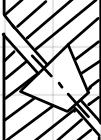
SFERE
2 CORONE
ORIENTABILE



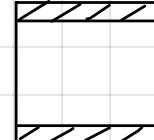
RULLO
RIGIDO



BOTTI
ORIENTABILE

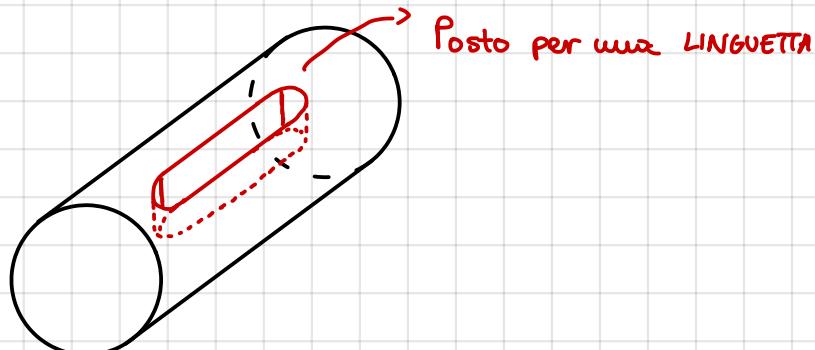


RULLI
CONICI



CUSCINETTO
A STRISCIAIMENTO

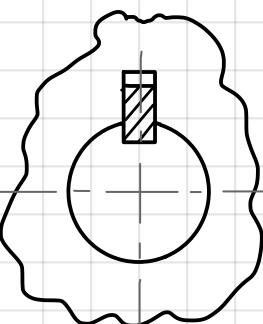
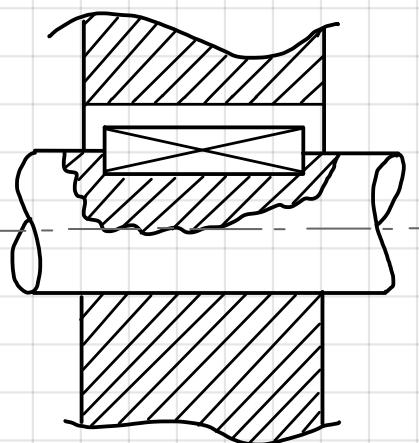
Trasmissione del moto



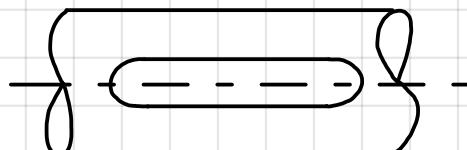
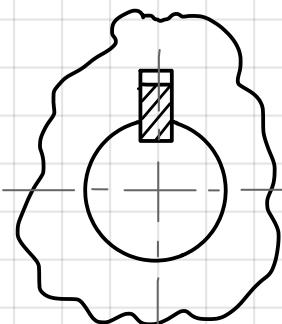
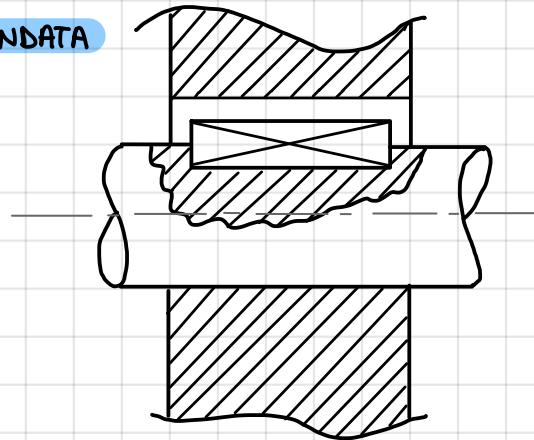
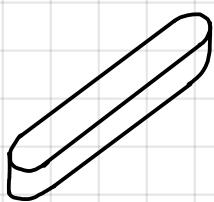
LINGUETTA LAVORA CON SUPERFICIE LATERALE

CHIAVETTA LAVORA CON SUPERFICIE SUPERIORE

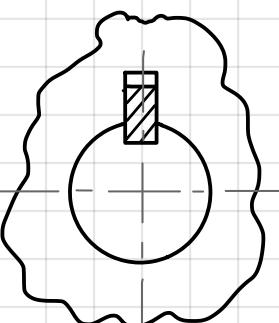
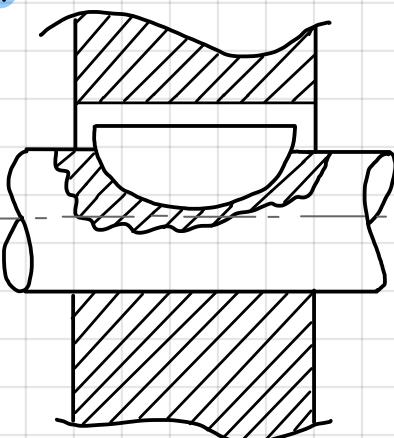
LINGUETTA



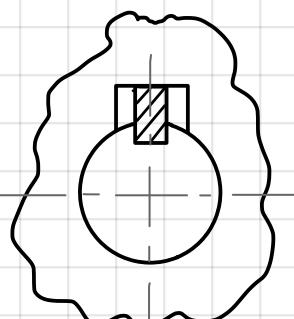
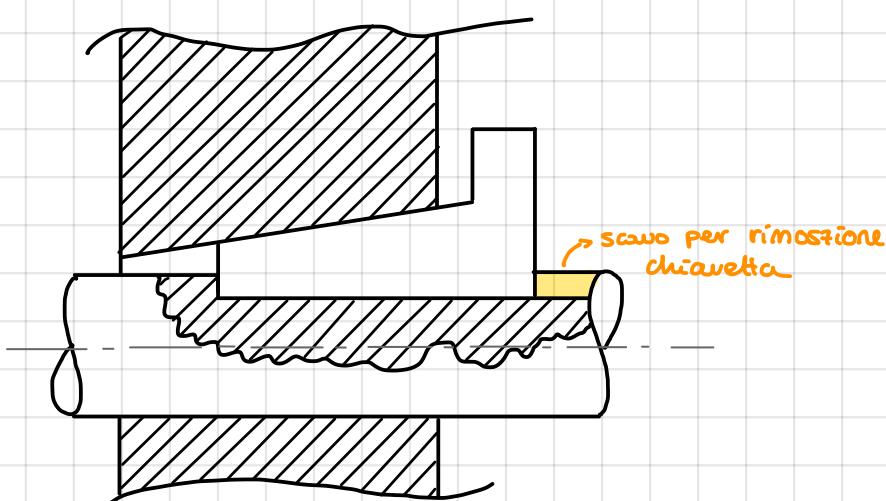
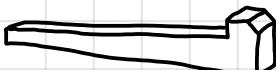
LINGUETTA ARROTONDATA



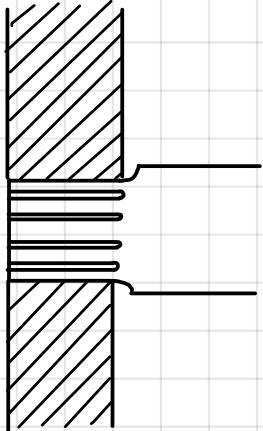
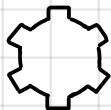
LINGUETTA AMERICANA O A DISCO



CHIAVETTA



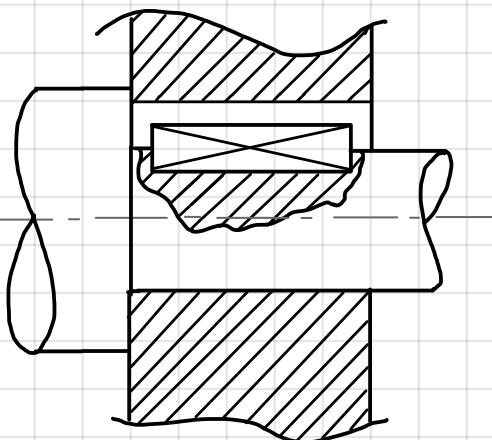
PROFILO SCANALATO



trasmissione di una coppia
importante lasciando
libera la traslazione
dei denti molto piccoli
↳ area resistente maggiore

Sistemi anti-svitamento

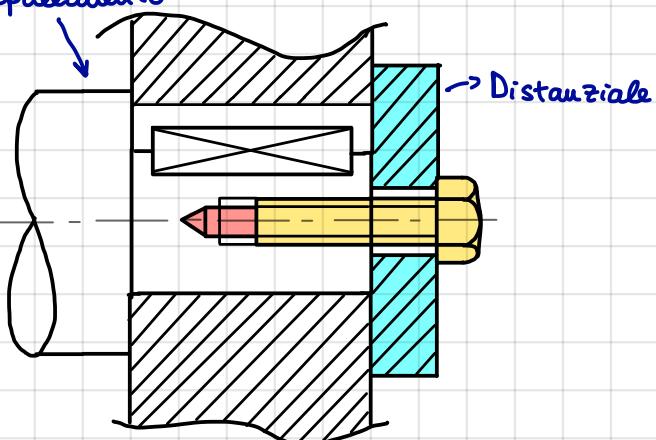
SPALLAMENTO



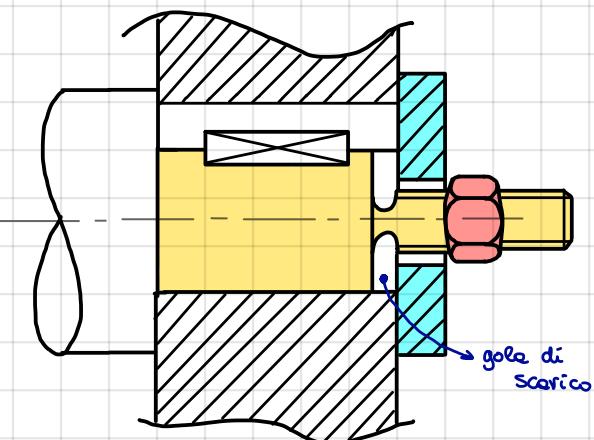
Variazione diametro → spallamento

FISSAGGIO CON VITE

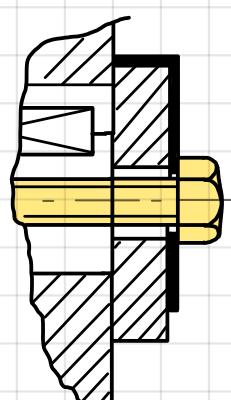
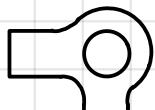
spallamento



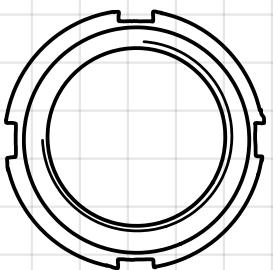
FISSAGGIO CON BULLONE



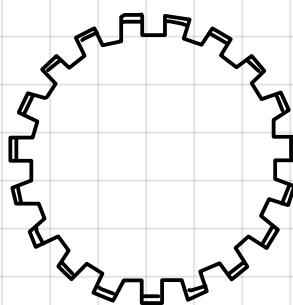
RONDELLE DI SICUREZZA



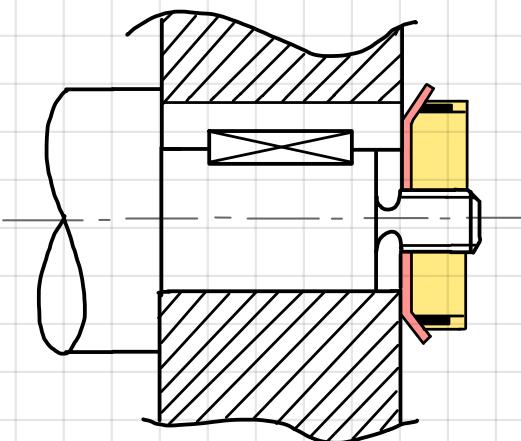
GHIERA CON ROSETTA



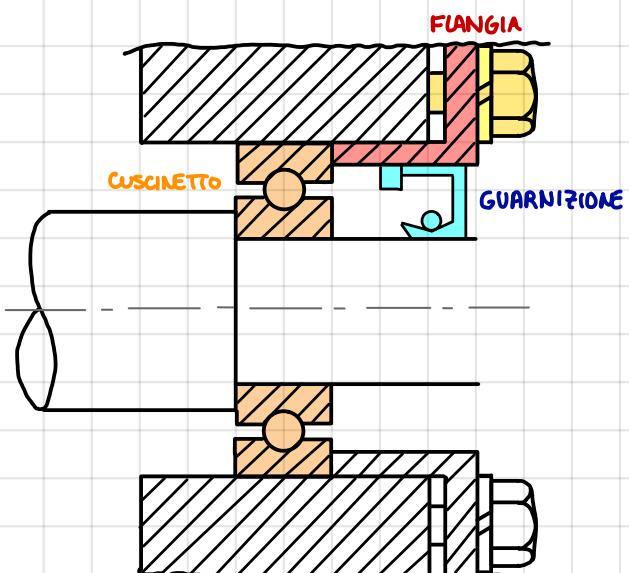
GHIERA



ROSETTA



FLANGIA



ANELLO SEGER (anello di sicurezza unidirezionale per fori)

