

Q70R



Epreuve de Sciences Industrielles A

Durée 5 h

Si, au cours de l'épreuve, un candidat repère ce qui lui semble être une erreur d'énoncé, d'une part il le signale au chef de salle, d'autre part il le signale sur sa copie et poursuit sa composition en indiquant les raisons des initiatives qu'il est amené à prendre.

DOCUMENTS

ANNEXES

Tournez la page S.V.P

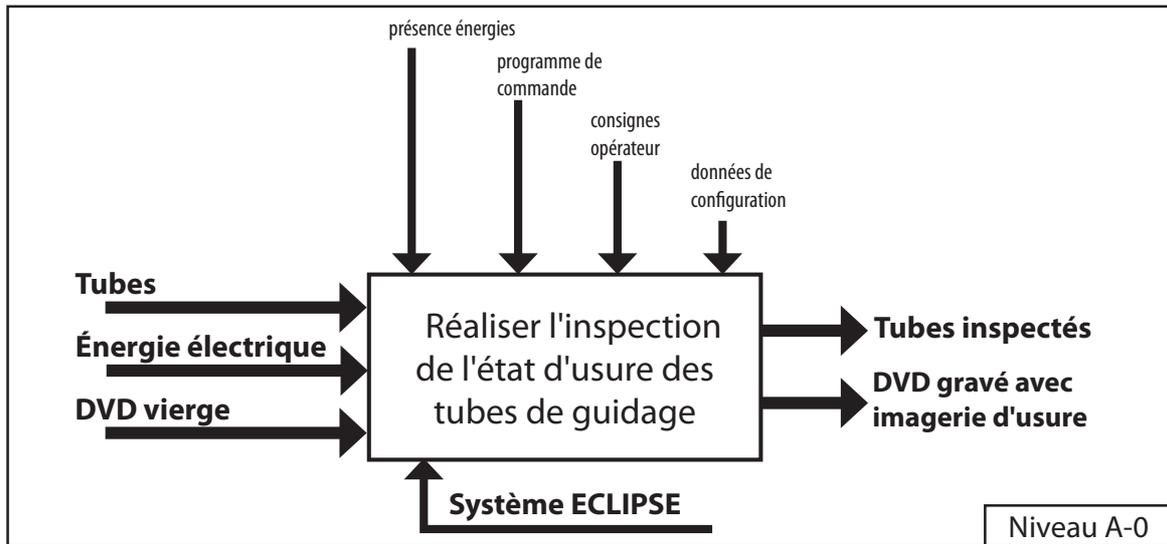


figure 1

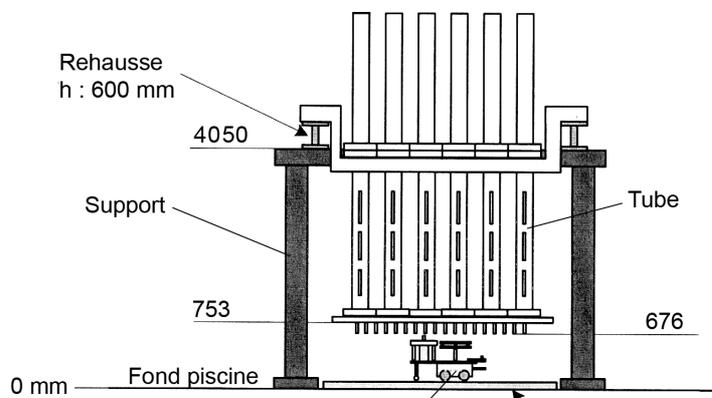
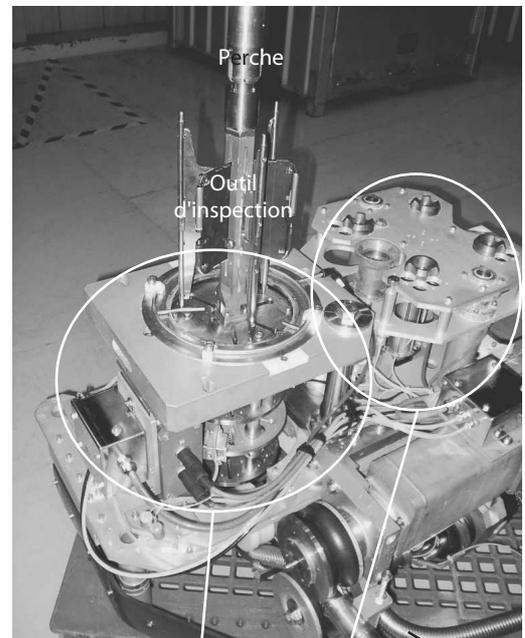
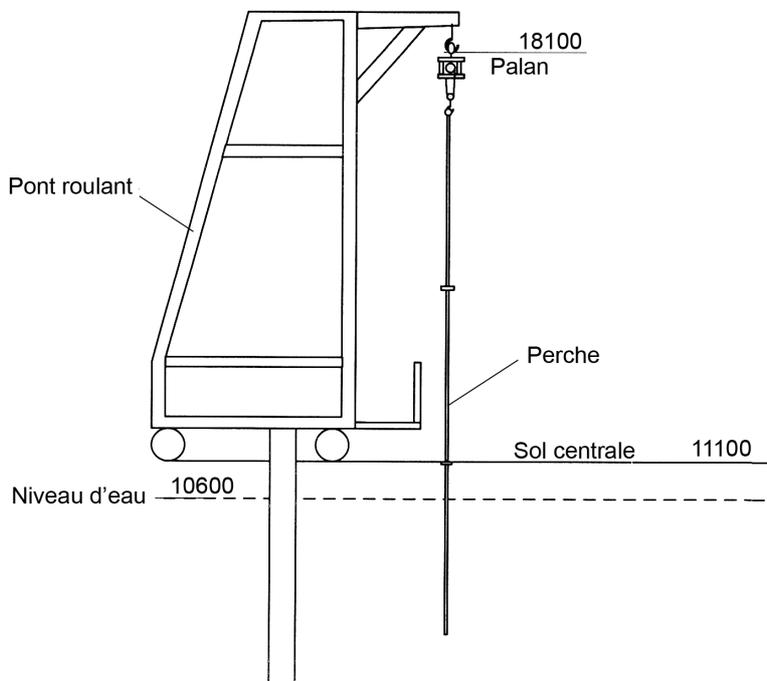
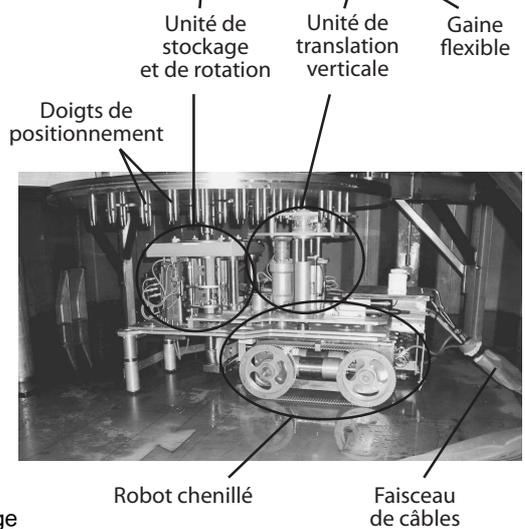
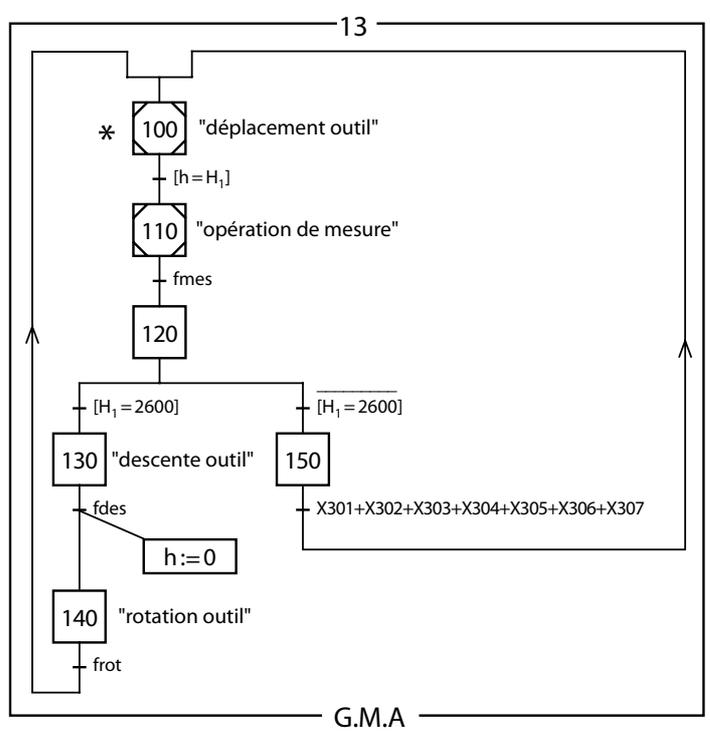
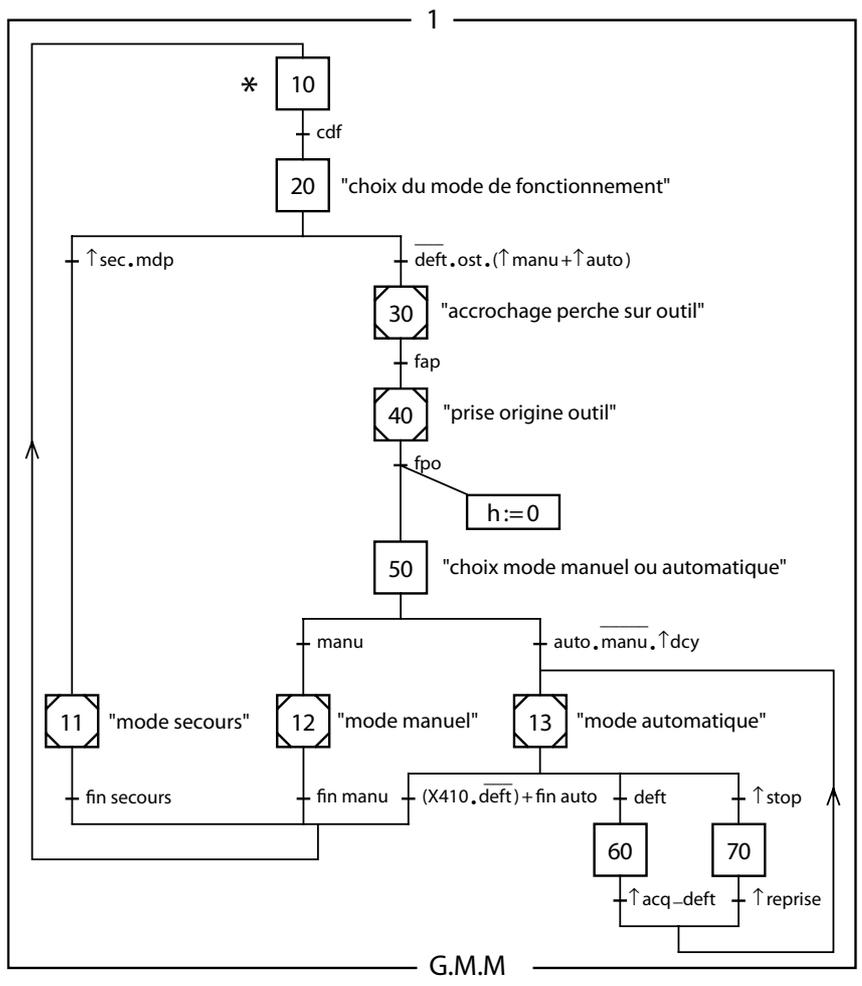
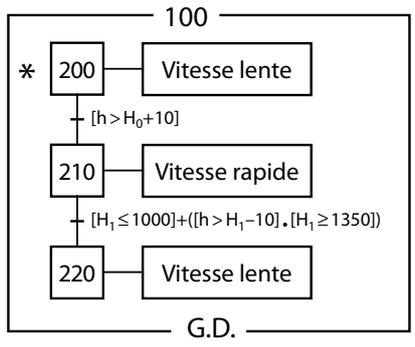
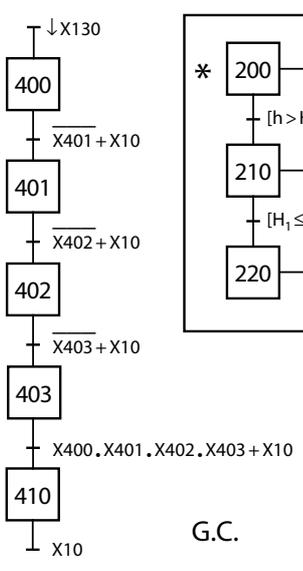
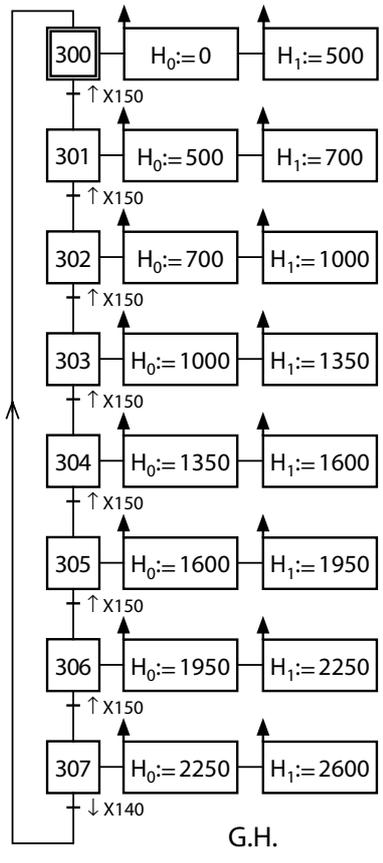
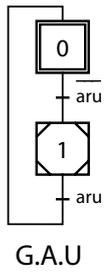
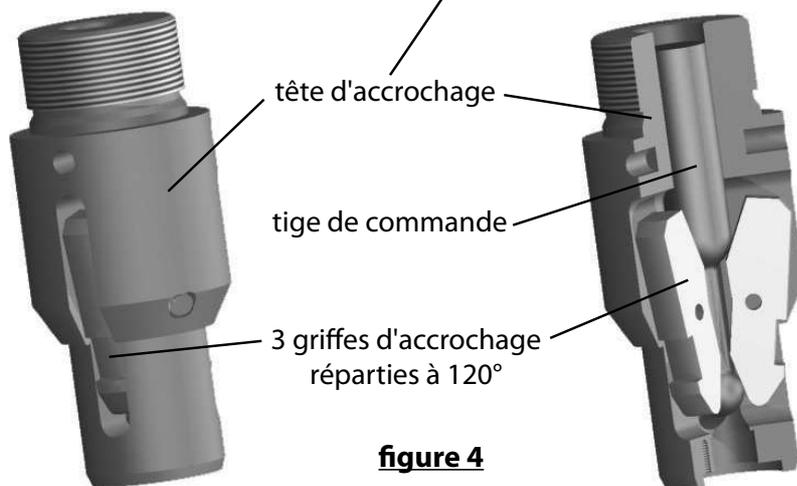
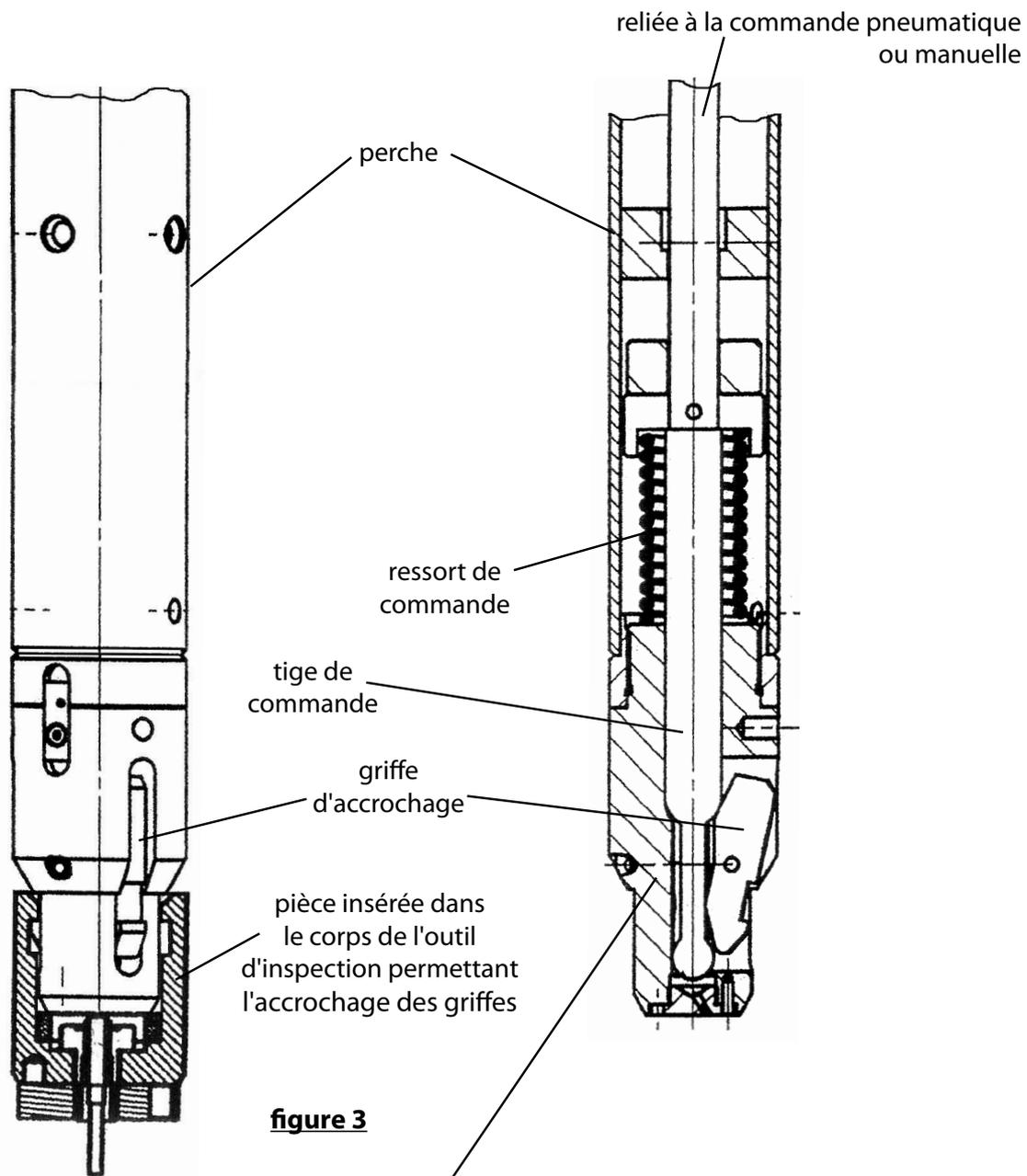
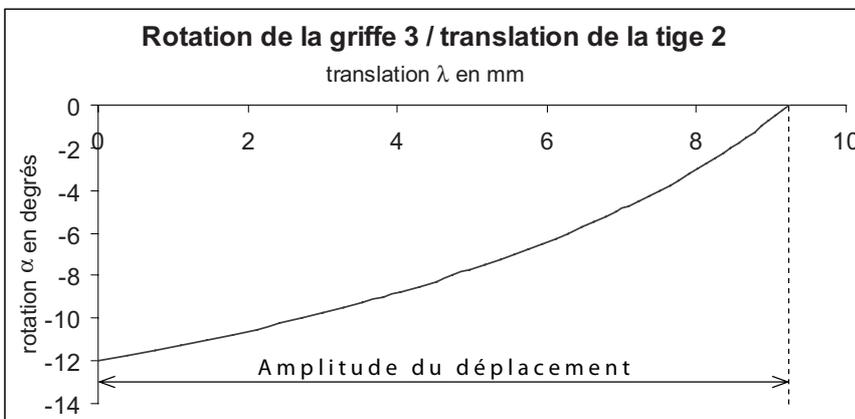
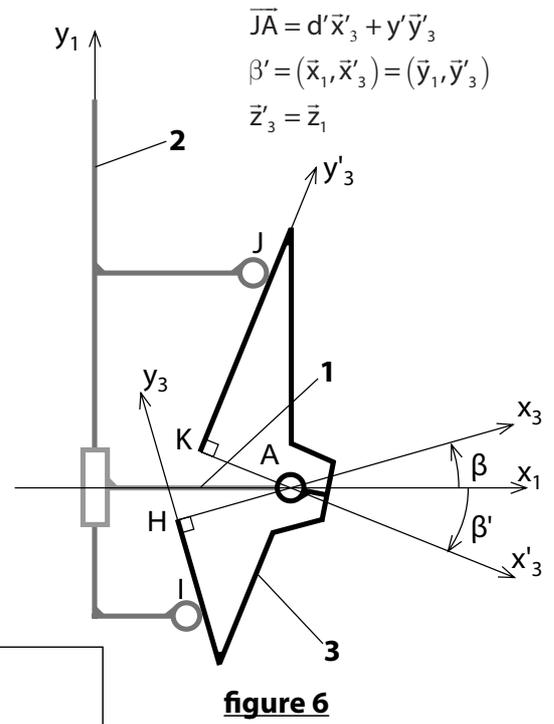
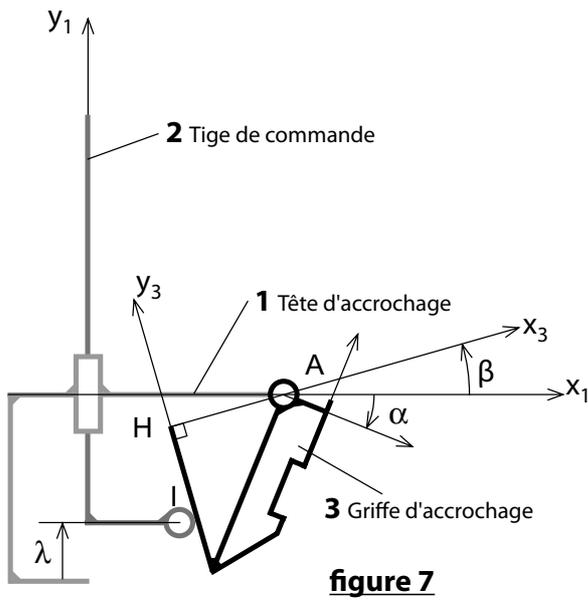
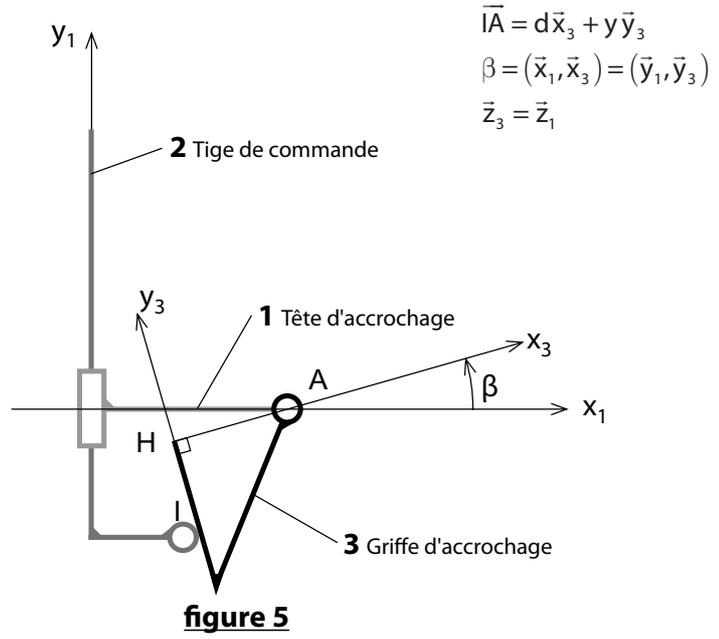
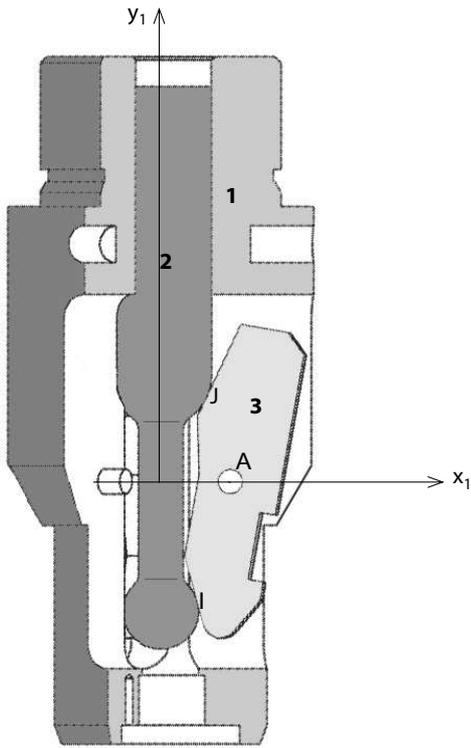


figure 2









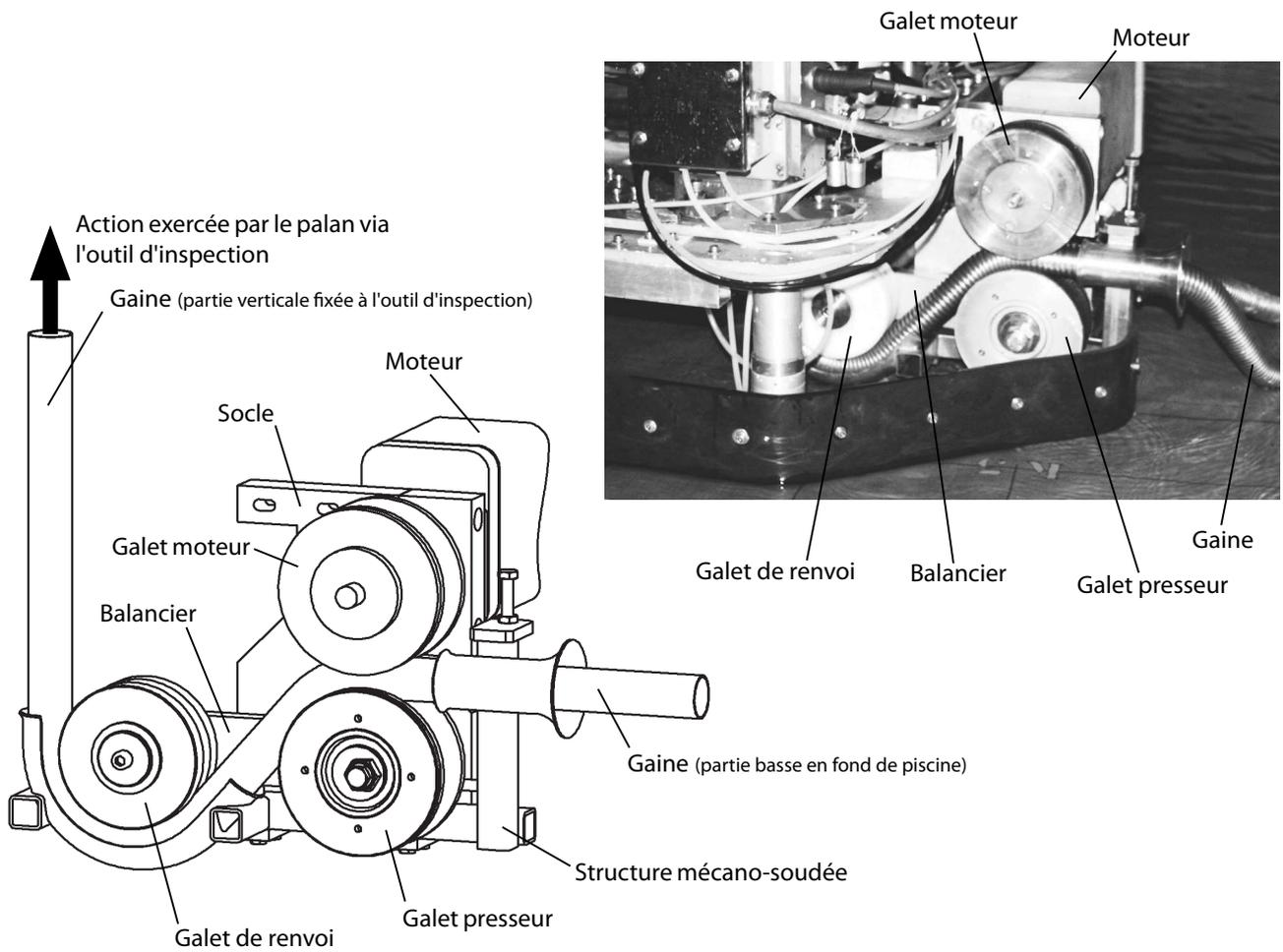
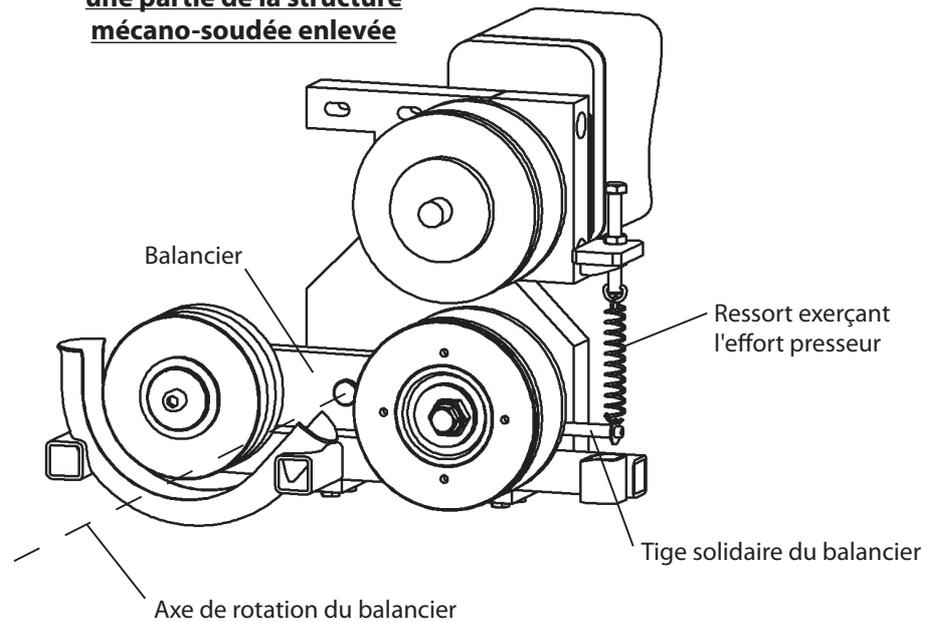
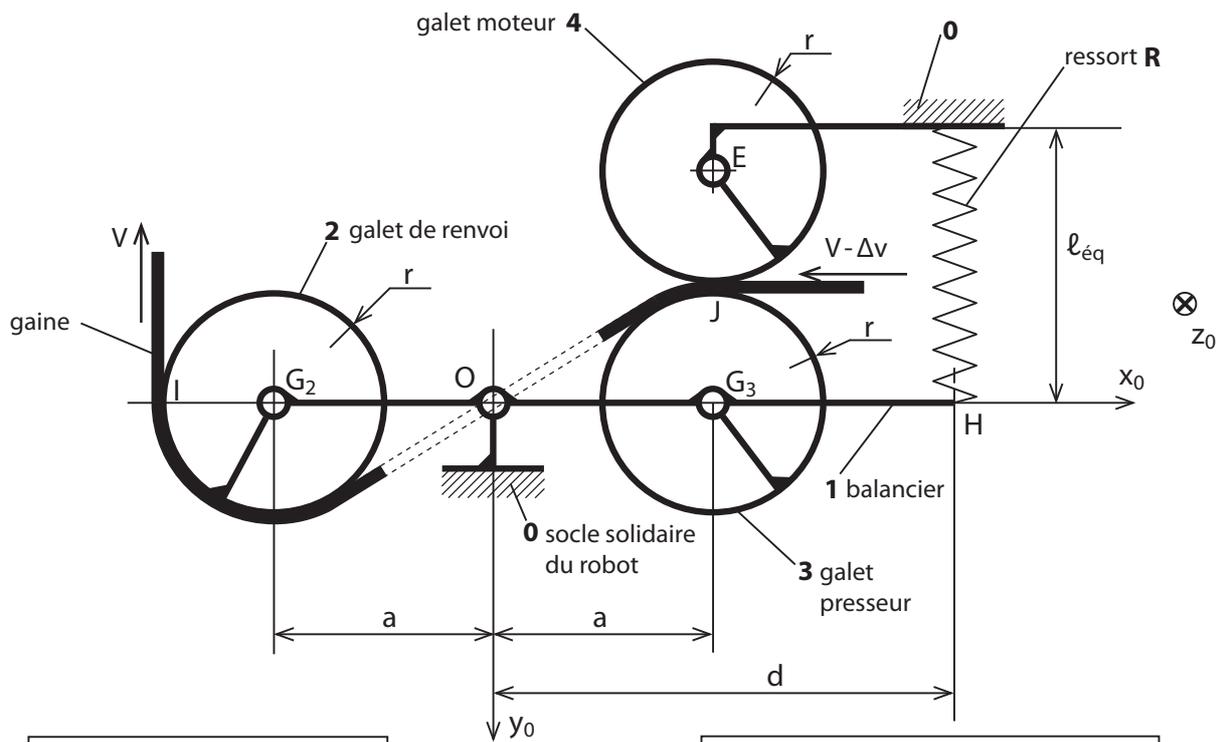


figure 9

figure 10

Vue de l'ensemble sans la gaine
une partie de la structure
mécano-soudée enlevée





Principales dimensions
 $a = 100 \text{ mm}$
 $r = 80 \text{ mm}$
 $d = 200 \text{ mm}$

Caractéristiques ressort R
 raideur : $k = 600 \text{ N/m}$
 longueur à vide : $l_0 = 50 \text{ mm}$
 longueur à l'équilibre : $l_{\text{eq}} = 150 \text{ mm}$

figure 11

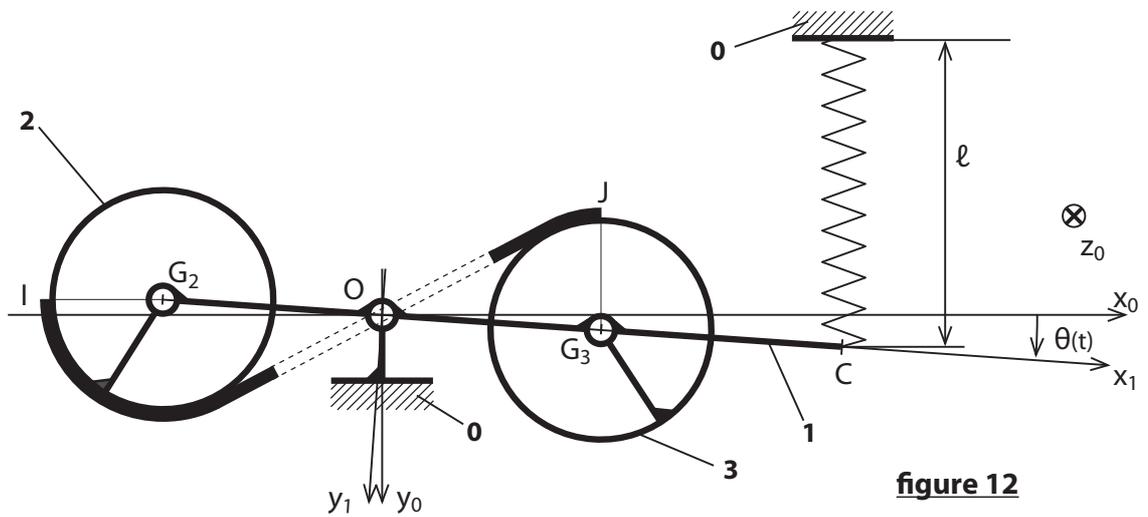
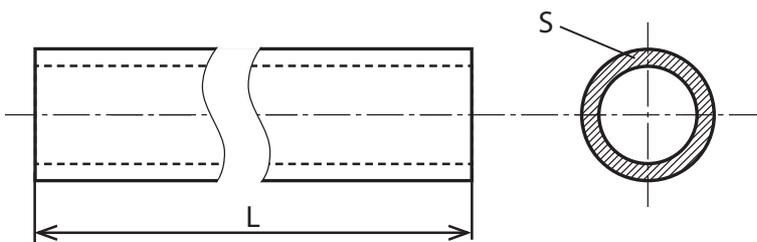


figure 12



Caractéristiques de la gaine
 Section : $S = 120 \text{ mm}^2$
 Module de Young : $E = 4500 \text{ MPa}$
 Longueur (mm) : $400 < L < 3000$

figure 14

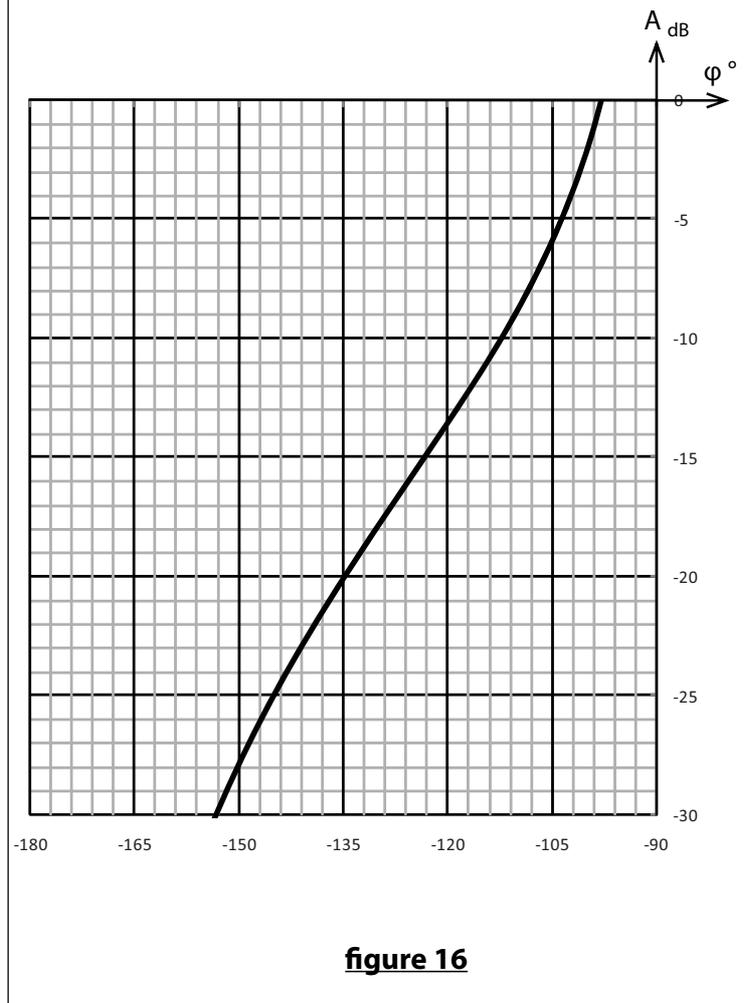
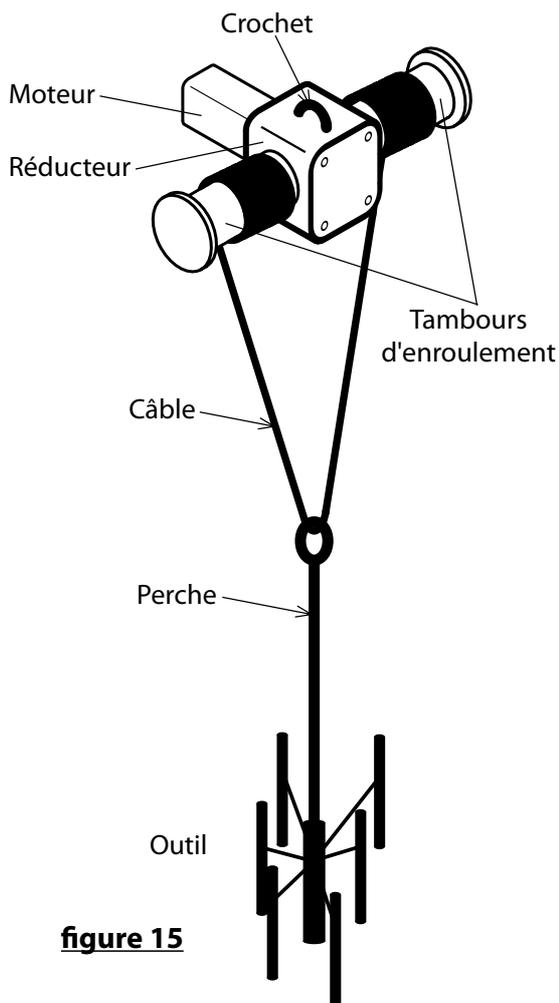
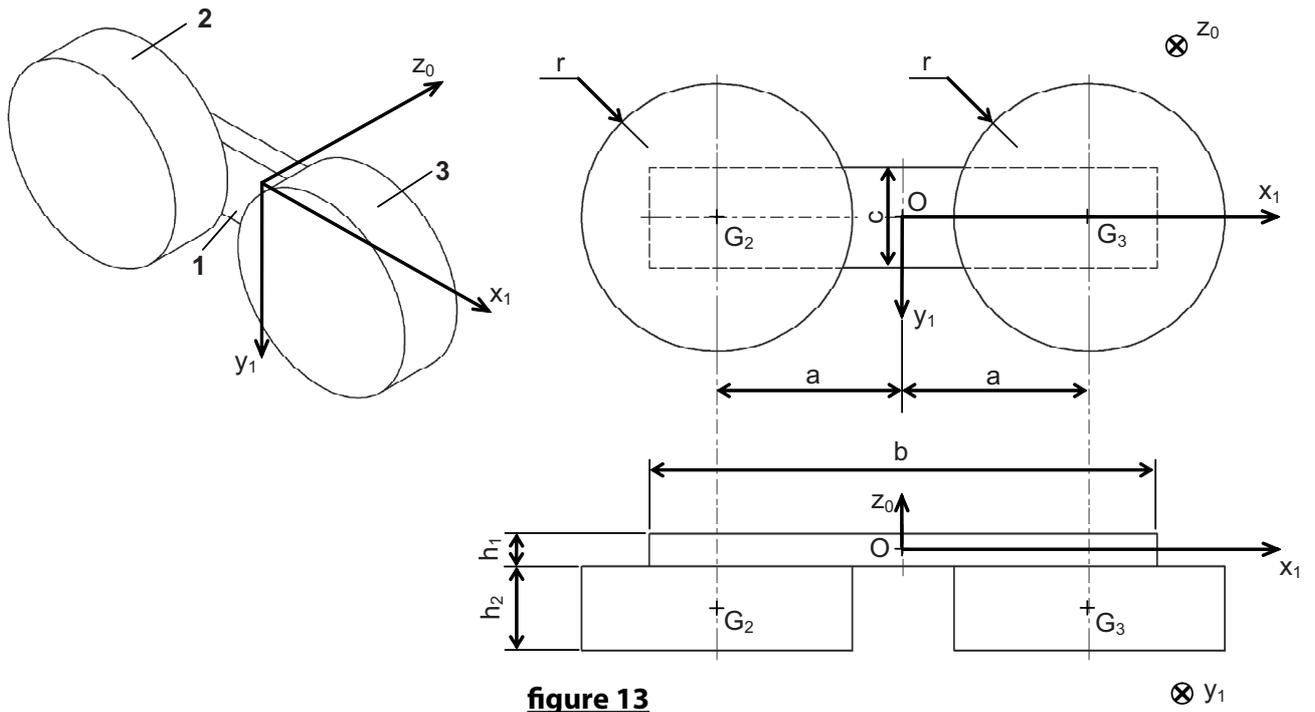


figure 17

Diagrammes de Bode
fonction $W(p)$

