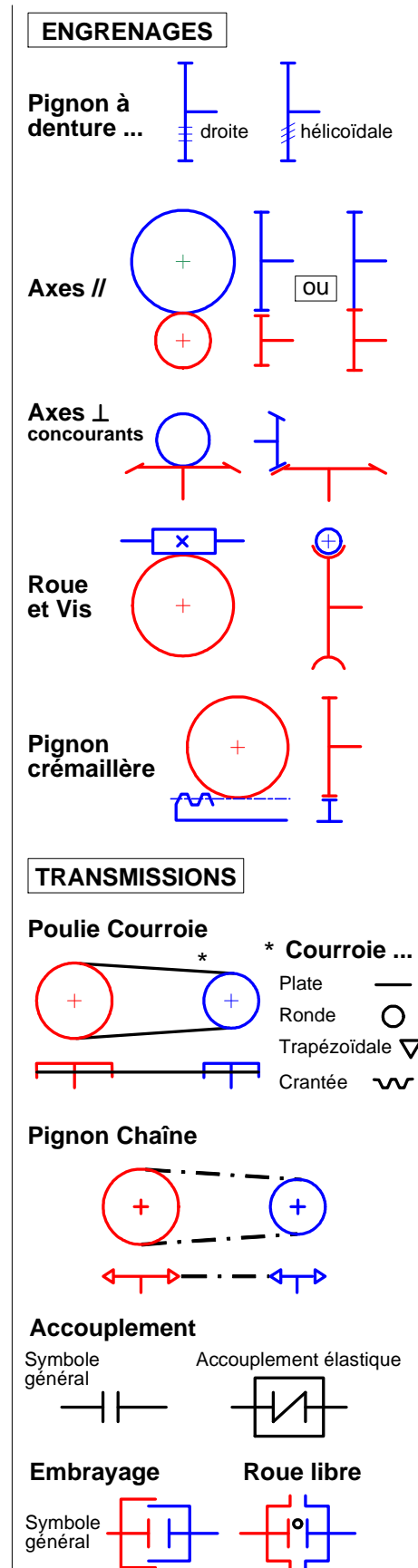
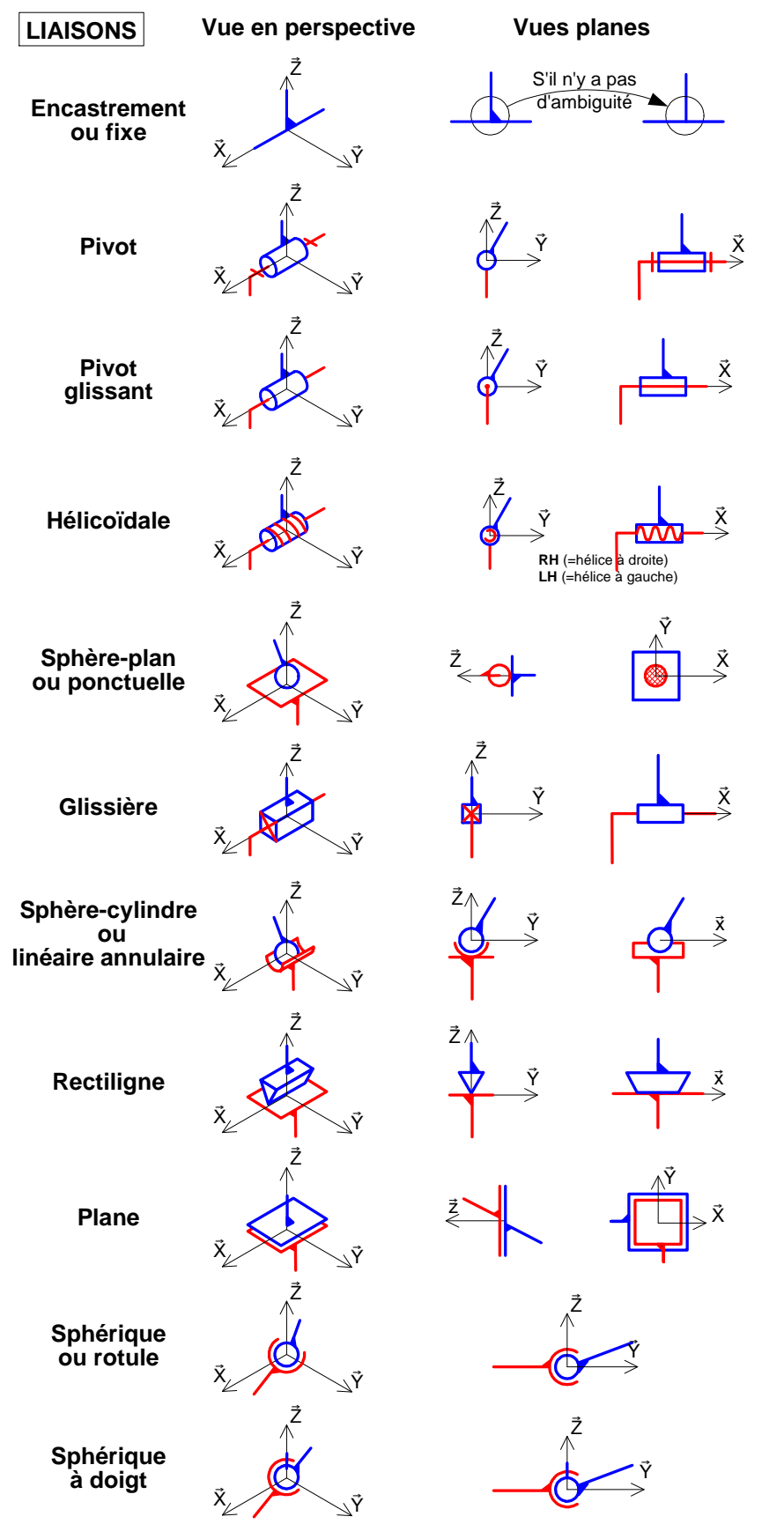


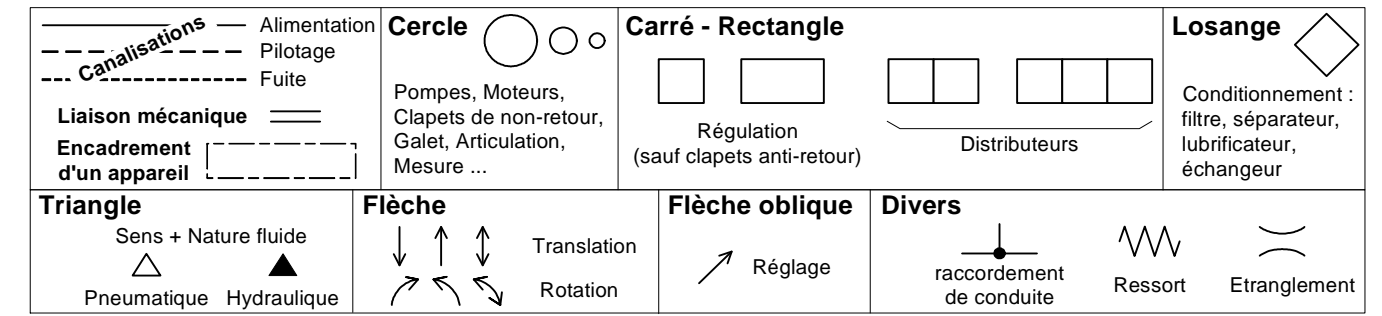


SYMBOLES HYDRO-PNEUMATIQUES

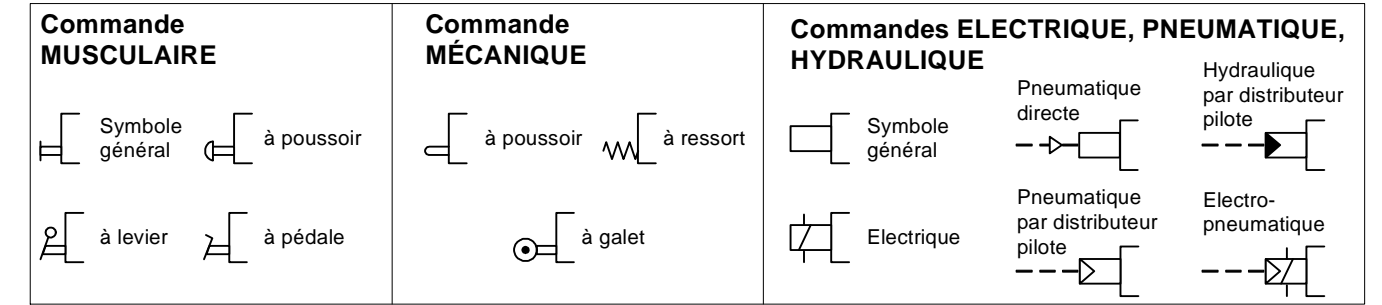
SYMBOLES DES ÉLÉMENTS MÉCANIQUES



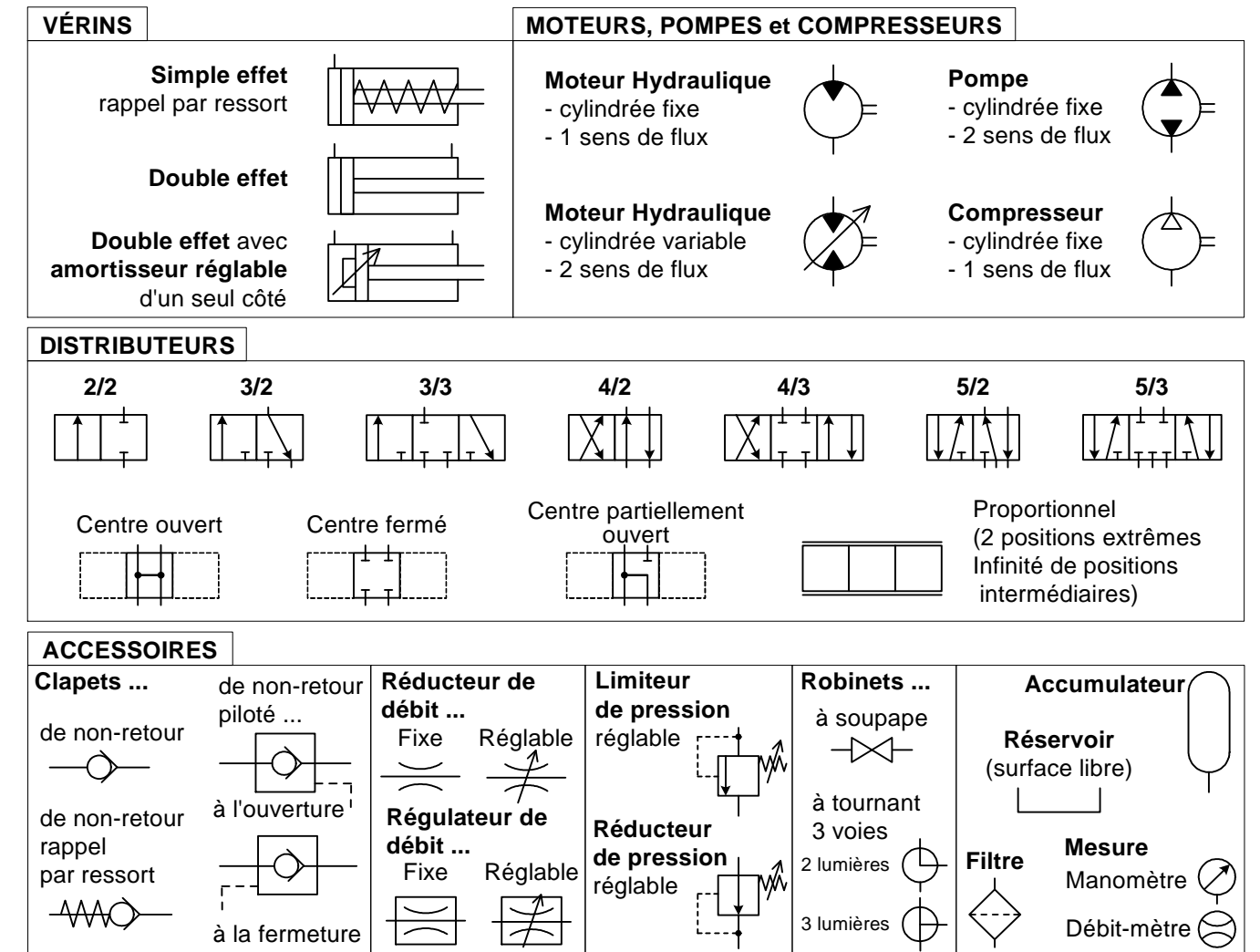
Signes de base



Commandes



Actionneurs - Préactionneurs - Accessoires





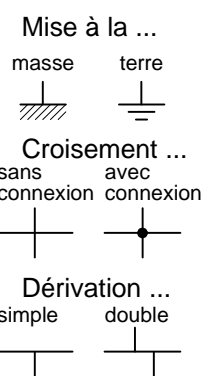
*Ne pas emporter ce document,
le laisser en salle de préparation*

SYMBOLES ÉLECTRIQUES

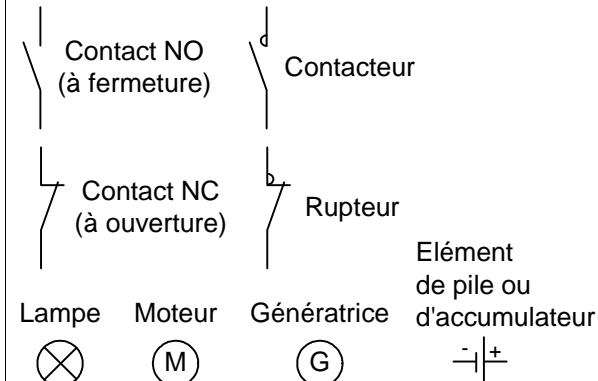
COURANTS, CONDUCTEURS, CONNEXIONS

Courant ...
continu DC
alternatif AC

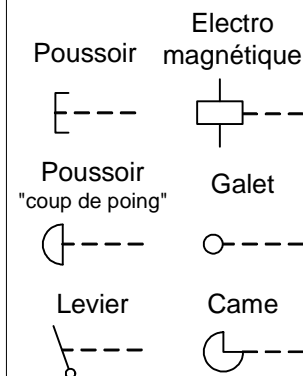
Conducteur ...
circuit de ...
puissance
commande



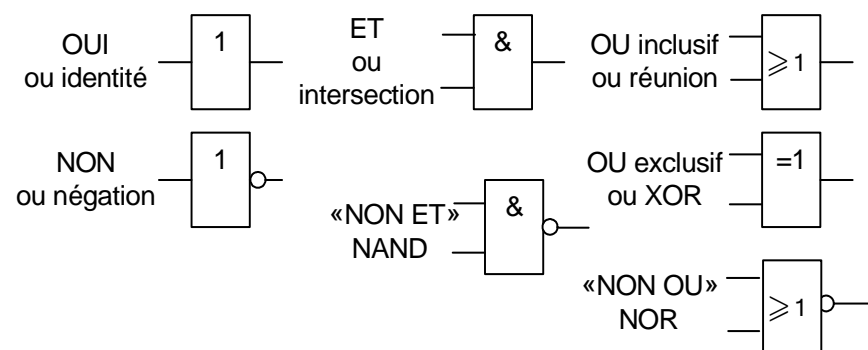
COMPOSANTS



COMMANDE



FONCTIONS LOGIQUES



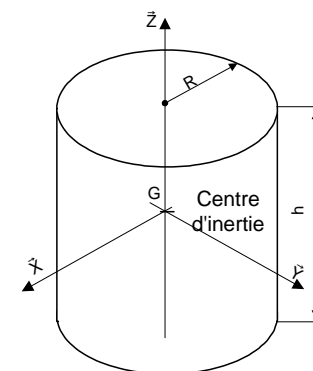
TRANSFORMÉES DE LAPLACE

Fonctions temporelles	Transformée de LAPLACE	Fonctions temporelles	Transformée de LAPLACE
Impulsion unitaire (Dirac) $\delta(t)$	1	Sinus $u(t) \cdot \sin \omega t$	$\frac{\omega}{p^2 + \omega^2}$
Echelon unitaire (dit "de position") $u(t)$ $u(t) = 1$ si $t > 0$	$\frac{1}{p}$	Cosinus $u(t) \cdot \cos \omega t$	$\frac{p}{p^2 + \omega^2}$
Rampe unitaire (dite "de vitesse") $u(t) \cdot t$	$\frac{1}{p^2}$	Sinus amorti $u(t) \cdot e^{-at} \cdot \sin \omega t$	$\frac{\omega}{(p+a)^2 + \omega^2}$
Polynôme $u(t) \cdot t^n$	$\frac{n!}{p^{n+1}}$	Cosinus amorti $u(t) \cdot e^{-at} \cdot \cos \omega t$	$\frac{p+a}{(p+a)^2 + \omega^2}$
Exponentielle $u(t) \cdot e^{-at}$	$\frac{1}{p+a}$		
$u(t) \cdot t \cdot e^{-at}$	$\frac{1}{(p+a)^2}$		
$u(t) \cdot \frac{t^{n-1}}{(n-1)!} \cdot e^{-at}$	$\frac{1}{(p+a)^n}$		

MATRICES D'INERTIE DE VOLUMES ÉLÉMENTAIRES

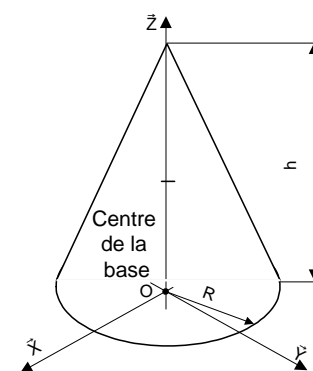
m = masse du solide étudié

CYLINDRE de révolution



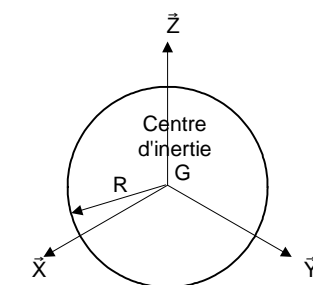
$$\begin{bmatrix} \frac{mR^2}{4} + \frac{mh^2}{12} & 0 & 0 \\ 0 & \frac{mR^2}{4} + \frac{mh^2}{12} & 0 \\ 0 & 0 & \frac{mR^2}{2} \end{bmatrix}_{(G, \vec{x}, \vec{y}, \vec{z})}$$

CÔNE de révolution



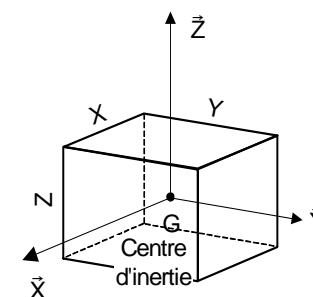
$$\begin{bmatrix} \frac{3mR^2}{20} + \frac{mh^2}{10} & 0 & 0 \\ 0 & \frac{3mR^2}{20} + \frac{mh^2}{10} & 0 \\ 0 & 0 & \frac{3mR^2}{10} \end{bmatrix}_{(O, \vec{x}, \vec{y}, \vec{z})}$$

SPHÈRE



$$\begin{bmatrix} \frac{2mR^2}{5} & 0 & 0 \\ 0 & \frac{2mR^2}{5} & 0 \\ 0 & 0 & \frac{2mR^2}{5} \end{bmatrix}_{(G, \vec{x}, \vec{y}, \vec{z})}$$

PARALLÉLÉPIPÈDE



$$\begin{bmatrix} \frac{m(Y^2 + Z^2)}{12} & 0 & 0 \\ 0 & \frac{m(X^2 + Z^2)}{12} & 0 \\ 0 & 0 & \frac{m(X^2 + Y^2)}{12} \end{bmatrix}_{(G, \vec{x}, \vec{y}, \vec{z})}$$