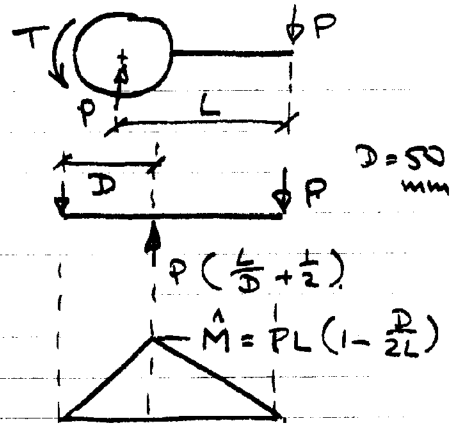
To design a component for safety, all possible failure modes must be examined, and materials/dimensions chosen to prevent failure in any mode.
There are three obvious modes here:

1. Bending of Handle.



Free body of assy. at (i)
The operator's two hands produce the two P's & the torque $T = PL$
Assuming $L/D \gg 1/2$
from free body of handle (ii), max contact force is $PL/D = T/D = 6$ kN
And, with same assumption the max bending moment (iii)
is $\hat{M} = PL = T = 300$ Nm.
So, to avoid handle failure in bending :-
$\hat{\sigma} = \hat{M}\hat{y}/I \leq 300$ MPa, the design stress.
$\therefore \; 300\times10^3 \times d/2 \,/\, \frac{\pi}{64}d^4 \leq 300$ with d in mm
N.mm   mm $\frac{1}{mm^4}$ $\frac{N}{mm^2}$
i.e. $d \geq 10\sqrt[3]{(32/\pi)} = \underline{21.7}$ mm
(This seems excessive, however given the cited material, this minimum must stand).

2 Torque of Tube.
$\hat{\tau} = T\hat{r}/J \leq \hat{\tau}_{all} \approx 0.5\times200$ {assuming max. shear stress
to avoid failure.
Here: $J = \frac{\pi}{32}[(D+t)^4-(D-t)^4] = \frac{\pi}{4}D^3t[1+(t/D)^2]$
$\hat{r} = \frac{1}{2}(D+t) = \frac{1}{2}D[1+(t/D)]$.
As a first approx. assume $t/D \ll 1$ then
$\therefore \; T\,\frac{1}{2}D/\frac{\pi}{4}D^3t = 2T/\pi D^2 t \leq 100$ MPa
or $t \geq 2\times300\times10^3/\pi\times50^2\times100 = \underline{0.76}$ mm.
N mm $\frac{1}{mm^2}$ $\frac{mm^2}{N}$
This minimum, if used, would probably give rise to local buckling - i.e. the tube is far too thin.
However note that we have only considered steady torque, we have not looked at the mechanism whereby torque is transmitted from hole region into body of tube.

3 Contact between Handle & Tube
From 1. above, max contact force is 6kN.
Insert into equation developed in preceding problem, with $L \Rightarrow t$ and $E^* = \frac{207}{2\times0.91} = 113$ GPa