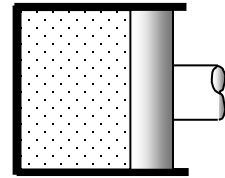## EXAMPLE: Isobaric process

A piston-cylinder contains 1.5 kg of air. Initially, the air is at 150 kPa and 20°C. The air is compressed in an **isobaric process** (and that means...) until the volume is 1 m³. Assume that air is an *ideal gas, but do not assume that the specific heats are constant.* If the compression is quasistatic,

(a) find the work into the system, in kJ, and
(b) the heat transfer into the system, in kJ.

Air flows steadily through a supersonic nozzle. The entering air has negligible velocity. If the exiting air has a velocity of 467 m/s, find the exit temperature. Assume air is an ideal gas with variable specific heats.

200 kPa
600 K
$V \approx 0$

100 kPa
$V = 467$ m/s
$T = ?$