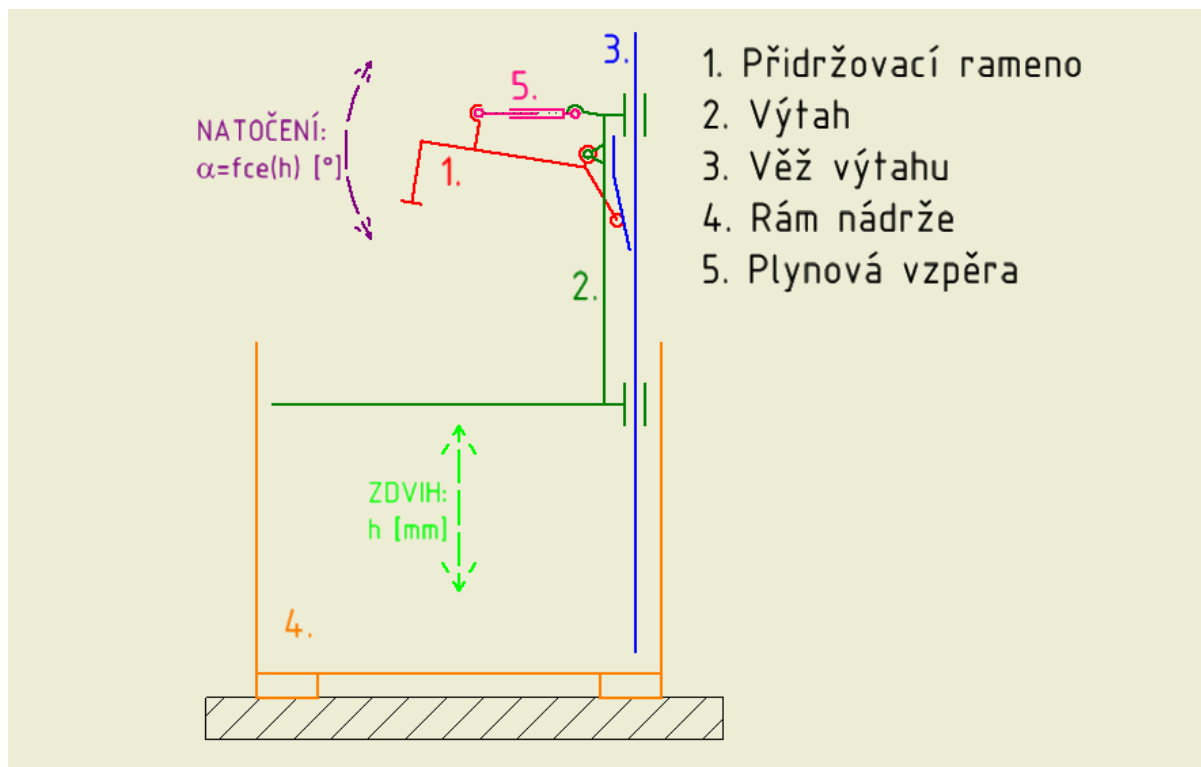


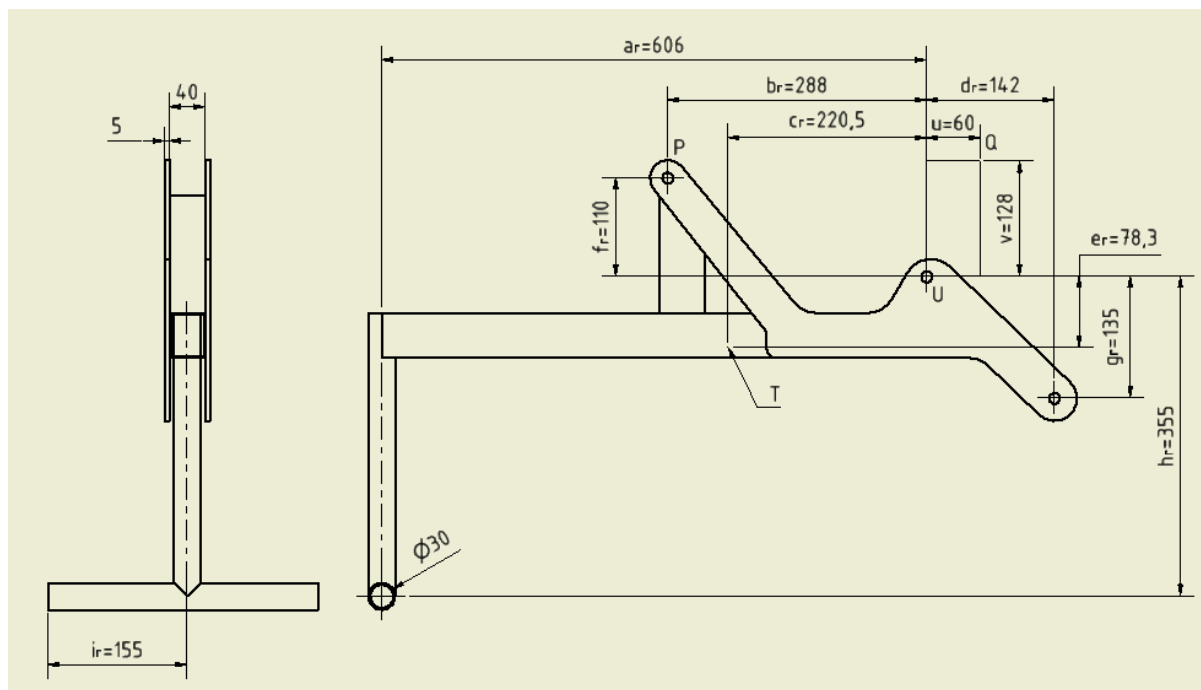
8. Schémata výpočtů

Obrázky vytvořeny v Autodesk Inventor Professional 2013

Kinematické schéma:



C3.00-01-005:



[illegible]

The diagram illustrates a mechanical system with a slider block and a rotating arm. The main diagram shows the following components and forces:

- Slider Block:** A block of mass m moves vertically along a guide. It is subjected to a downward force $F_g = m \cdot g$ and a reaction force F_b from the guide. The forces are decomposed into components relative to a coordinate system (x', y') where x' is horizontal and y' is vertical. The decomposition is given by:

$$F_{bx} = F_b \cdot \sin(\beta)$$

$$F_{by} = F_b \cdot \cos(\beta)$$

$$F_{gx} = F_g \cdot \sin(\beta)$$

$$F_{gy} = F_g \cdot \cos(\beta)$$
- Rotating Arm:** An arm of length l is pivoted at the top. It makes an angle β with the vertical. A force F_p is applied at the end of the arm. The forces are decomposed into components relative to the arm's local coordinate system (x, y) where x is along the arm and y is perpendicular to it. The decomposition is given by:

$$F_{px} = F_p \cdot \cos(\gamma)$$

$$F_{py} = F_p \cdot \sin(\gamma)$$
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An inset diagram shows a detailed view of the slider block and the rotating arm, illustrating the geometry and the forces acting on them. The inset shows the slider block with a vertical guide and a horizontal force F_{bx} acting on it. The rotating arm is shown with a pivot at the top and a force F_p acting at the end. The forces are decomposed into components relative to the arm's local coordinate system (x, y) where x is along the arm and y is perpendicular to it. The decomposition is given by:
$$F_{px} = F_p \cdot \cos(\gamma)$$

$$F_{py} = F_p \cdot \sin(\gamma)$$

[illegible]

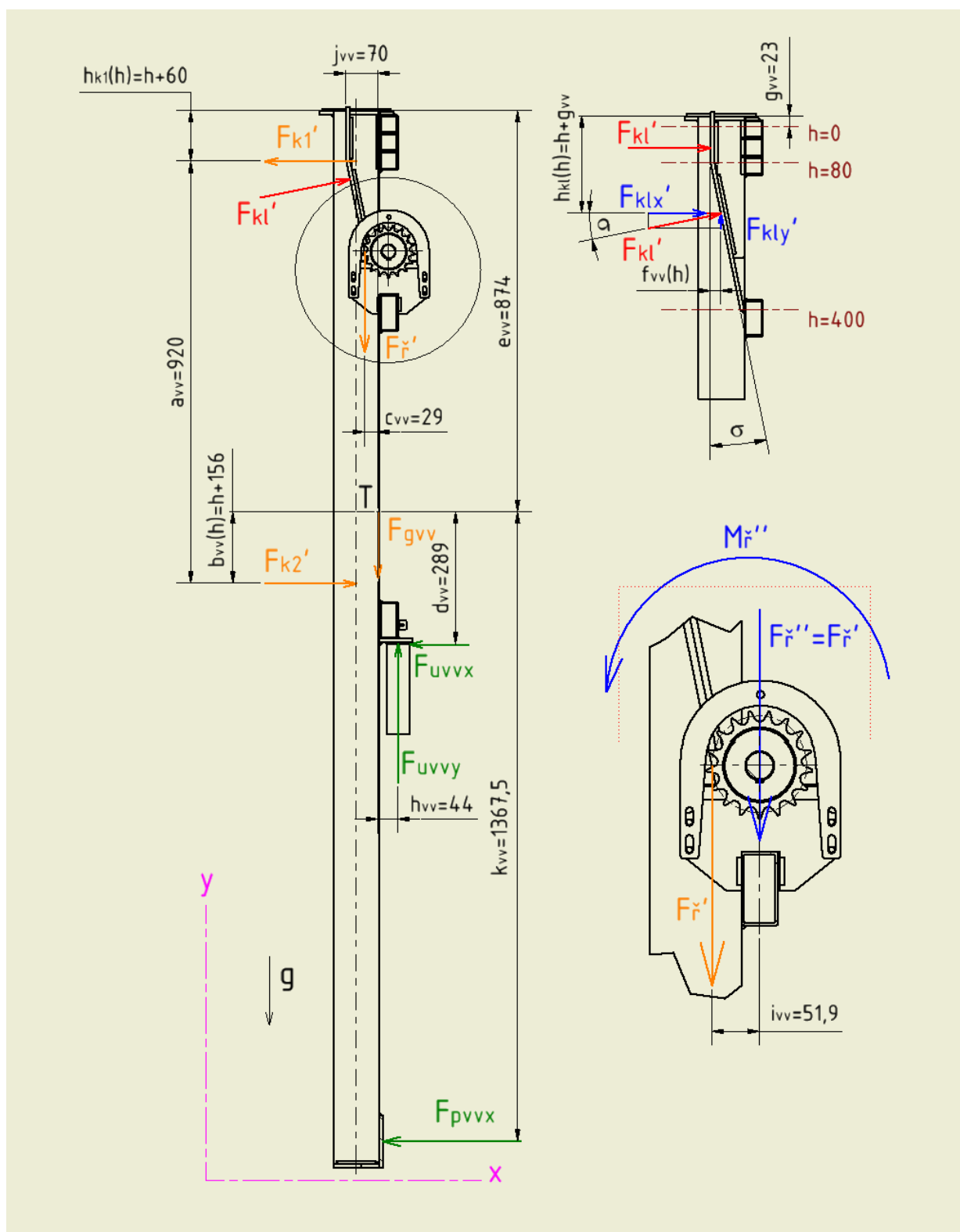
Diagram illustrating the transformation of force components between two coordinate systems. A force vector F is shown in a coordinate system (x, y) and its components F_{ux} and F_{uy} are shown. The same force vector is shown in a rotated coordinate system (x', y') with components F_{ux1} and F_{uy1} . The angle between the x and x' axes is α . The equations for the components are:

$$F_{ux1} = F_{ux} \cdot \cos(\alpha)$$

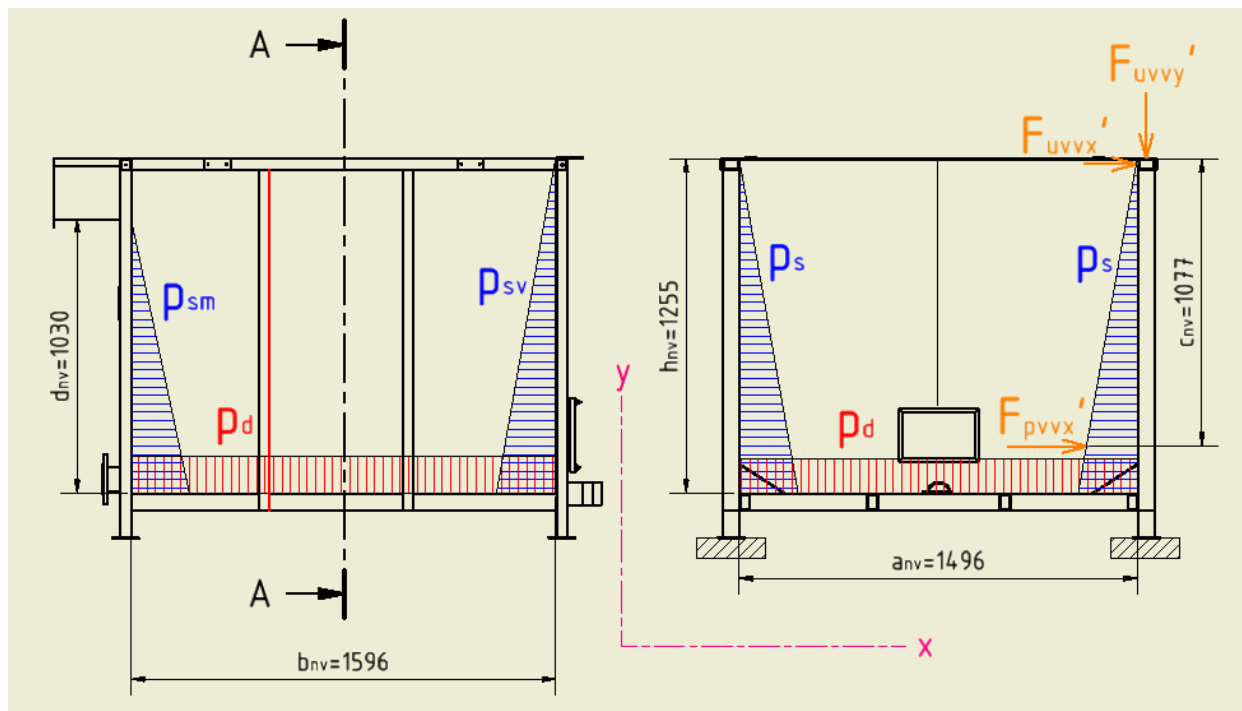
$$F_{uy1} = F_{ux} \cdot \sin(\alpha)$$

$$F_{ux2} = F_{uy} \cdot \sin(\alpha)$$

$$F_{uy2} = F_{uy} \cdot \cos(\alpha)$$



C4.00-01-019+022:



C4.00-01-016-dynamika:

