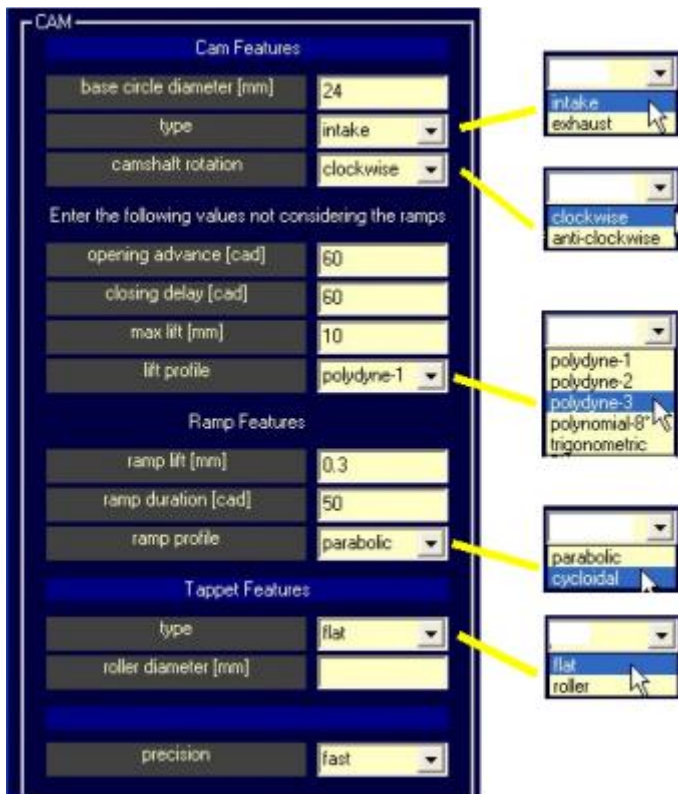


# PERFECT CAM



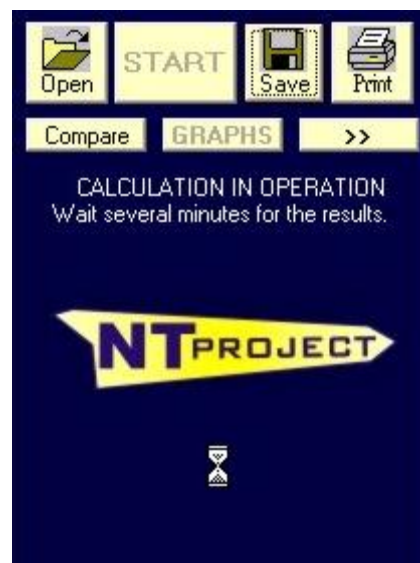
In this little presentation are illustrated the characteristics and the main uses of the software PERFECT CAM that allows to design cams and valve train.

## INPUT CAMMA - PERFECT CAM

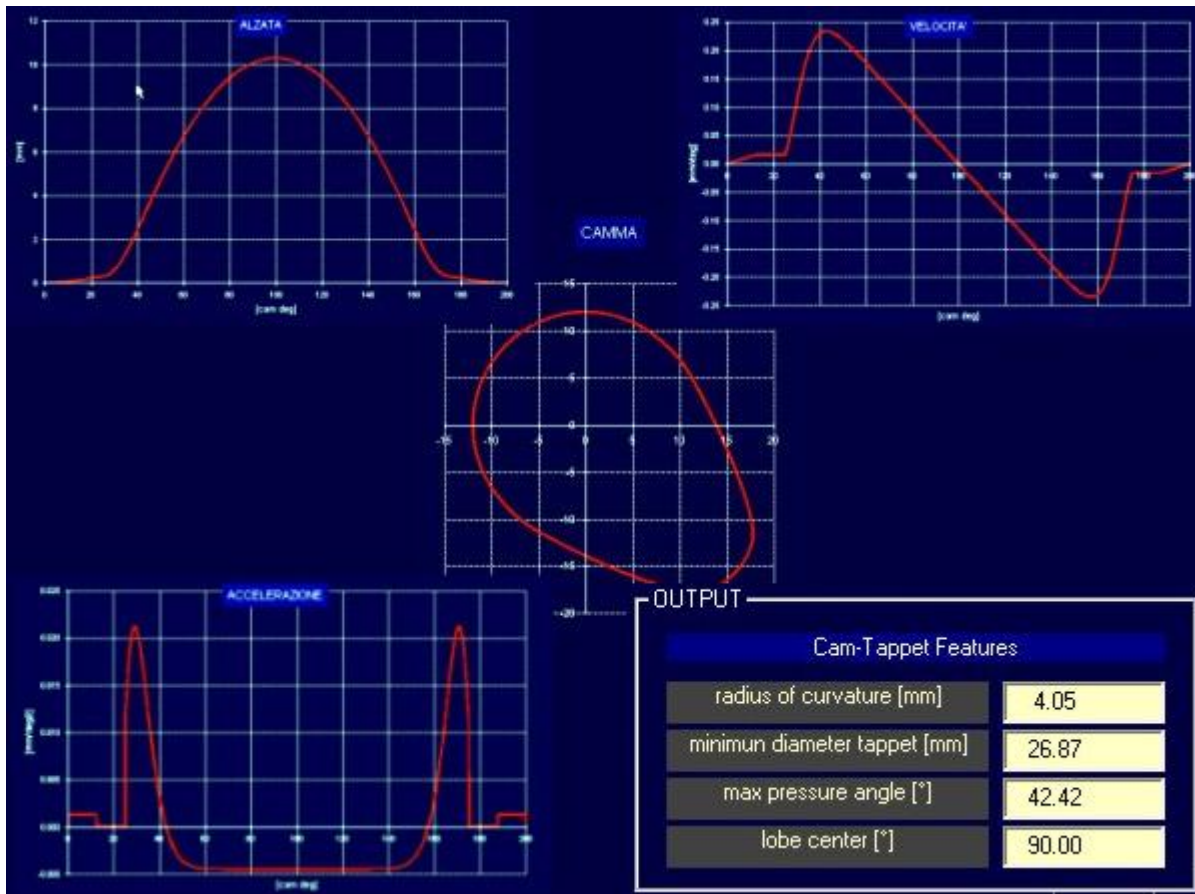


To design cams user must only to enter the essential data to define ramps, lift profile and cam characteristics.

After to have entered the data the calculation can start.



# OUTPUT CAM - PERFECT CAM



Finished the calculation the software supplies immediately the main output:

- cam drawing
- lift
- velocity
- acceleration
- minimum radius of curvature
- minimum diameter of tappet
- maximum angle of pressure.

Other at these output the software creates some files with memorized all the data useful to make the cam.



# INPUT VALVE TRAIN - PERFECT CAM

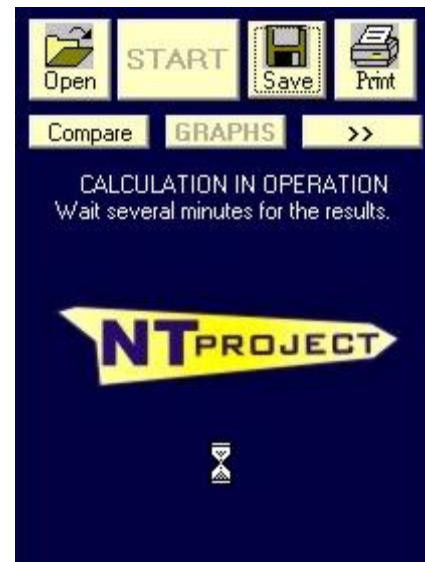
The 'VALVE TRAIN' input form contains the following sections:

- Valve train Features:** speed [rpm] (9000), valve and parts mass [gr] (60), tappet mass [gr] (26), springs mass [gr] (22.5), lubricant (SAE30 100°C).
- Cam Features:** material (18NiCrMo5), roughness [micron] (0.2), width [mm] (15).
- Tappet Features:** material (18NiCrMo5), roughness [micron] (0.2).
- Spring Features:** Ext/Int columns for coil mean diameter, wire diameter, active coils, total length, and preload length.
- External/Internal Spring Material:** OTEVA70SC.

Open dropdown menus show:

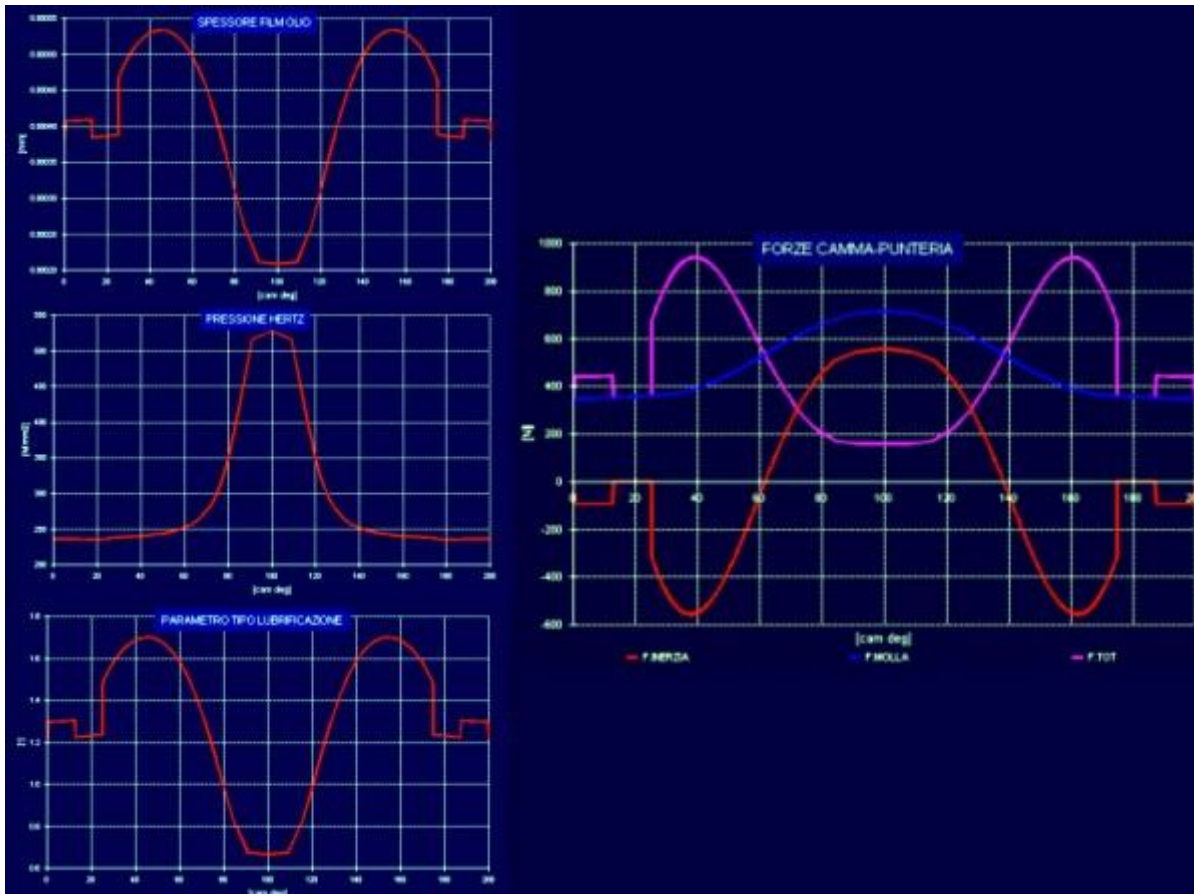
- Lubricant: SAE0W 100°C, SAE0W-30 100°C, SAE0W-40 100°C, SAE5W 100°C, SAE5W-40 100°C, SAE10W 100°C, SAE10W-40 100°C, SAE15W 100°C.
- Material: C10, 18NiCrMo5, 34CrNiMo6, 42CrMo4, C40, C45.
- Pressure Angle: 0.006, 0.012, 0.024, 0.05, 0.1, 0.15, 0.2, 0.25.
- Material: Alloy Steel, Quenched Steel, Inox Steel, OTEVA70SC, OTEVA75SC, Silicon Bronze, Phosphor Bronze, Hard Brass.

The form to verify valve train working need to data easily obtainable. In fact the user must only enter the masses of system elements and the dimensions of springs. The other data can be choosing from apposite lists (If some characteristics aren't know, it's possible choose those more frequently used).





# OUTPUT VALVE TRAIN - PERFECT CAM



Finished the calculation the software, other the cam design output, supplies immediately the main output to verify valve train working:

- force between cam and tappet;
- oil film thickness;
- lubrication parameter;
- hertzian pressure



## PERFECT CAM

The software **PERFECT CAM** allows of:

- TO DESIGN CAMS IN THE DIRECT ATTACK VALVE TRAIN CHECKING RADIUS OF CURVATURE AND TAPPET WIDTH;
- TO OBTAIN LIFT PROFILE WITH RAMPS AUTOMATICALLY JOINED WITH A METHOD TO REDUCE VIBRATIONS;
- TO VERIFY VALVE TRAIN WORKING ABOUT FORCES, FRICTION AND WEAR.

