

Metric Spur Gears and Pinions

DT Workshop Equipment Reference — D&T / STEM resource for school workshops | Robotics & Mechatronics

Metric spur gears are straight-toothed wheels that transmit motion and torque between parallel shafts, with module (pitch) sizes from 0.5 to 2 mm and teeth counts from 12 to 120. They build gearboxes, lifts, turntables and robot transmissions.

Key Features

- Module sizes 0.5, 0.8, 1.0, 1.5, 2.0
- Teeth counts 12-120
- Bore sizes for shaft mounts
- Acetal, nylon and brass gear materials
- Shaft and boss versions

Typical Uses in the Workshop

- Build gearboxes and speed reducers
- Drive lifts, turntables and arms
- Teach gear ratios
- Convert motor speed to torque

Safe Operation

1. Select the module consistently in the train
2. Mount the gears on parallel shafts
3. Set the mesh with light backlash
4. Check the shaft bores and keys align
5. Test the train by hand before power

SAFETY NOTES

- Keep fingers clear of meshing gears
- Check gears are guarded in machines
- Do not run gears without lubrication where needed
- Check the bore fixings are tight
- Do not overload small plastic gears

Maintenance & Consumables

- Keep gears clean of grit
- Check teeth for wear and chips
- Lubricate lightly where specified
- Store gears sorted by module
- Replace worn gears

Specification & Buying Notes

Stock modules 0.5-1.5 in useful tooth counts with matching shafts and set screws. Quality gears run quietly; cheap moulds leave flashing that binds.