Summary

1. Workplace Analysis
   • Deficient Workplace Design
2. Ergonomic Requirements
   • Chair
   • Workbench
   • Armrest
3. Get Moving

Static awkward postures - forced by deficient workplace design:
Reasons for MSD

1. WORKPLACE ANALYSIS
**Shoulders**
short viewing distance + horizontal armrests
→ arms higher than shoulder

**Upper Extremities: Arm / Elbow**
fixed, standardised armrests:
wrong place, bad shape, hard

**Upper Extremities: Wrist / Hand**
free sight; arms laying on table
→ bent wrists adapted to work piece & task
unequal strain on left and right hand:
static force / repetitive fine movements

**Back**
inadequate lumbar support:
backrest hard, fixed or badly placed
back not in line:
body adapts for best view, limited by armrests
Lower Extremities

- footrest not available, not adjustable or not appropriate
- insufficient open space; direct contact with metallic surfaces

Chair

- adapt to visual task → lean forward to have a better viewing angle
- upholstered
- adjustable
- backrest:
  - height
  - angle (< -10°)
- lumbar sup.
- seat:
  - height
  - depth
  - inclination

Working bench (adjustable height)

- varying types of tasks (viewing distance and angles)
- individual sizes of operators

Visual Task determines the position of the head (best viewing position), the rest of the body will cope.
Precise Operations imply fine and firm hand and finger operations which require adequate support of lower arms.
Work Place Design has to account for the needs of varying visual tasks and individual sizes of the operators.

2. ERGONOMIC REQUIREMENTS
Working bench (fixed height)

1. Basic height of workbench: for a tall persons and short viewing distance (left)
2. Lift operator by chair to adequate height and compensate with footrest (adjustable in height and inclination)

Armrests

Armrests to support forearms and allow:
- open joints (shoulders, elbow)
- straight wrists

Precision-work is a static job - even under ideal working conditions

3. GET MOVING
Give them a break

- e.g. limit size of batches
- go and get new material by the hour

relaxing exercises for eyes and body

Keep Fit

Thank you for your precious time and attention