



METAL CUTTING

A.00. Lathes:

- A.01. Centre lathes
- A.02. Precision tool room lathes
- A.03. Teach-In lathes
- A.04. CNC-lathes (2-axes)
- A.05. CNC lathes (3 axes)
- A.06. CNC lathes (4 or more axes)
- A.07. Heavy duty lathes
- A.08. Facing Lathes
- A.09. Copying Lathes
- A.10. Turret lathes (Capstan) and turret automatics
- A.11. Vertical turning machines
- A.12. Vertical borer, single column
- A.13. Vertical borer, double column
- A.14. Chucking lathes (single / double)
- A.15. Multispindle chucking automatics
- A.16. Spindle automatics
- A.17. Slidinghead automatics
- A.18. Multispindle bar automatics
- A.19. Horizontal turning and machining centers
- A.20. Other turning Machines

B.00. Milling machines :

- B.01. Universal milling machines (knee type)
- B.02. Toolroom / tool die milling machines
- B.03. Horizontal milling machines
- B.04. Vertical milling machines
- B.05. Vertical turret mills
- B.06. Bed milling machines (moving table)
- B.07. Bed milling machines (moving column)
- B.08. Production & Keyway milling machines
- B.09. Duplex milling machines
- B.10. Portal & Gantry milling machines
- B.11. Engraving & Copy milling machines
- B.12. Crankshaft and Cam milling machines
- B.13. Facing & Centring machines
- B.14. Other and special purpose milling machines

C.00. Drilling machines :

- C.01. Bench and Column type drilling machines
- C.02. Tapping and drilling machines
- C.03. Radial drilling machines
- C.04. Portable radial drilling machines
- C.05. Rapid radial drilling machines
- C.06. Turret Head drilling machines
- C.07. Multi Spindle drilling machines
- C.08. Gang and other drilling machines
- C.09. Jig Borers (vertical) (coordinate & fine boring machines)

- C.10. Jig Borers (horizontal)
- C.11. Longbed radial drilling machines
- C.12. Portal/gantry drilling machines
- C.13. Deep Hole drilling machines (Horizontal)
- C.14. Deep Hole drilling machines (Vertical)
- C.15. Centre drilling machines
- C.16. Flow drilling machines
- C.17. Endworking machines single / both ends

D.00. Machining centres :

- D.01. Machining Centers (Vertical)
- D.02. Machining Centers (Horizontal)
- D.03. High Speed Machining Centers (HSC)
- D.04. Boring & Tapping Centers
- D.05. Gantry Type Machining Centres
- D.06. Long Bed Machining Centers
- D.07. 5 Sides Machining centres (Vert/Hor)
- D.08. Transfer machines in one unit
- D.09. Transfer machines in one line
- D.10. Transfer Center and FMS systems

E.00. Shaping, Slotting and Broaching machines :

- E.01. Shaping machines
- E.02. Planer (single or double columns)
- E.03. Keyseating machines
- E.04. Slotting machines
- E.05. Broaching machines (Horizontal)
- E.06. Broaching machines (Vertical)

F.00. Borers :

- F.01. Borers (Table type)
- F.02. Borers (Floor type) with travelling column
- F.03. Rectangular Rotary Tables for Borers
- F.04. Round Rotary Tables for Borers

G.00. Grinders :

- G.01. Surface Grinders with vertical spindle
- G.02. Surface Grinders with horizontal spindle
- G.03. Cylindrical Grinders
- G.04. Roll and Heavy Duty Cylindrical Grinders
- G.05. Internal Grinders
- G.06. Centerless Grinders
- G.07. Jig Grinders (vertical)
- G.08. Jig Grinders (horizontal)
- G.09. Double column grinding machines
- G.10. Rotary table surface grinders with vertical spindle
- G.11. Rotary table surface grinders with horizontal spindle

- G.12. Double Rotary table grinders
- G.13. Double sided grinders
- G.14. High speed grinding centres (HSG)

H.00. Tool grinding machines :

- H.01. Tool grinding machines
- H.02. Milling cutter grinding machines
- H.03. Twist drill grinding machines
- H.04. Tap grinding machines
- H.05. Sawblade grinding machines
- H.06. Broaching tool sharpening machines
- H.07. Tool grinders and sharpeners for gear cutters
- H.08. Knife grinding machines
- H.09. Optical Profile Grinding/Lapping Machines
- H.10. Chisel tool grinding machines

I.00. Grinding-, Honing- and Polishing machines :

- I.01. Double grinding wheel machine
- I.02. Polishing machines, single/double
- I.03. Abrasive Band Grinding Machines
- I.04. Centre hole and valve Grinders
- I.05. Crankshaft and camshaft Grinders
- I.06. Cam and profile Grinders
- I.07. Keyway Grinders
- I.08. Honing machines (vertical)
- I.09. Honing Machines (horizontal)
- I.10. Lapping machines
- I.11. Polishing, Vibrators and Tumbling Drums
- I.12. Polishing Automatic Machines

K.00. Gear Cutting Machines :

- K.01. GEAR HOBBERERS
 - K.01.01 Vertical Gear Hobbers
 - K.01.02 Horizontal Gear Hobbers
 - K.01.03 Spline Millers
- K.02. GEAR SHAPERS
 - K.02.01 Gear Shapers
 - K.02.02 Gear Planers
 - K.02.03 Herringbone Shapers
- K.03. GEAR FINISHING MACHINERY
 - K.03.01 Gear Grinders
 - K.03.02 Gear Shaving Machines
 - K.03.03 Gear Honing Machines
 - K.03.04 Profile Grinders
- K.04. BEVEL GEAR MACHINERY
 - K.04.01 Bevel Gear Generators Straight
 - K.04.02 Bevel Gear Planers
 - K.04.03 Bevel Gear Generators Spiral
 - K.04.04 Bevel Gear Grinders
 - K.04.05 Bevel Gear Lappers
 - K.04.06 Bevel Gear Quenching Presses

- K.04.07 Bevel Gear Testers
- K.05 GEAR TESTERS
 - K.05.01 Involute Testers
 - K.05.02 Pitch Testers
 - K.05.03 Gear Tester Combination
 - K.05.04 Gear Tester Lead
 - K.05.05 Gear Tester Rolling Compos.
 - K.05.06 Gear Testers CNC
 - K.05.07 Sound & Noise Testers
- K.06 RACK MACHINERY
 - K.06.01 Rack Millers
 - K.06.02 Rack Shapers
- K.07 VARIOUS GEAR MACHINERY
 - K.07.01 Gear Tooth Chamfering, Pointing & Rounding Machines
 - K.07.02 Gear Deburring Machines
 - K.07.03 Gear Hardening Machines
 - K.07.04 Gear Tool Grinders and Sharpeners
 - K.07.05 Spline Rollers
 - K.07.06 Gearbroaching Machines
 - K.07.07 Relieving Lathes/Grinders
 - K.07.08 Accessories/Parts/Tooling
 - K.07.09 Other Gear Machinery

L.00. Sawing, Filing and Cutting-off Machines :

- L.01. Hack Saws
- L.02. Circular Sawing Machines
- L.03. Band Sawing Machines (Horizontal)
- L.04. Band Sawing Machines (Vertical)
- L.05. Filing Machines
- L.06. Cutting Off Machines by grinding
- L.07. Non Ferrous Circular Sawing Machines

METAL FORMING

M.00. Hydraulic Presses :

- M.01. Open Gap Presses
- M.02. Open Gap Bench Presses
- M.03. Open-Gap Drawing Presses
- M.04. H-frame Presses
- M.05. H-frame Drawing Presses
- M.06. 4 Column Single Action Presses
- M.07. Car body Drawing Presses (double action)
- M.08. Transfer Presses
- M.09. Beam Presses
- M.10. Horizontal Presses
- M.11. Garage Presses
- M.12. Flanging Presses
- M.13. Shipbuilding Presses
- M.14. Fine Blanking Presses
- M.15. Fast-Stroking Blanking Presses
- M.16. Die Spotting Presses
- M.17. Stretch Forming Presses
- M.18. Extrusion Presses
- M.19. Cold Flow Forming Presses
- M.20. Open Gap Straightening Presses
- M.21. H-Frame Straightening Presses
- M.22. Horizontal Bending Presses (Bulldozers)
- M.23. Scrap Balling Presses
- M.24. Forging Presses
- M.25. Percussion Presses
- M.26. Other Hydraulic Presses

N.00. Presses with mechanical driving :

- N.01. Handoperated Lever Presses
- N.02. Handoperated Spindle Presses
- N.03. Pneumatic Presses
- N.04. Bench eccentric presses
- N.05. Open gap eccentric presses
- N.06. H-frame eccentric presses
- N.07. Single action double sided presses
- N.08. Double Action Double Sided Presses
- N.09. H-Frame Multiple-Die Presses
- N.10. Car Body Presses
- N.11. Forging Presses
- N.12. Transfer Presses (2-4 columns)
- N.13. Coupled Transfer Line Presses (2-3 H-frames)
- N.14. Other Eccentric presses
- N.15. Open Gap Crank Presses
- N.16. H-Frame Crank Presses
- N.17. Four Point Crank Presses
- N.18. H-Frame Drawing Presses
- N.19. Other Crank Presses
- N.20. H-Frame Toggle Lever Presses
- N.21. H-Frame Toggle Lever Presses for Cold Flow Solid Forming
- N.22. Horizontal Toggle Lever Presses for Cold Flow Solid Forming

- N.23. Coining Presses
- N.24. Knuckle Joint Presses (2 or 4 columns)
- N.25. Other Knuckle Joint Presses
- N.26. Fly Presses with Friction Drive
- N.27. Fly Presses with Electro Mechanical Drive
- N.28. High speed Punching machines
- N.29. Riveting machines
- N.30. Key-Way Punching Machines
- N.31. Perforating Presses
- N.32. Nail Presses

O.00. Sheet Metalforming machines :

- O.01. Hydraulic Press Brakes
- O.02. Mechanical Press Brakes
- O.03. Manual Folding machines
- O.04. Hydraulic Folding machines
- O.05. Mechanical Folding Machines
- O.06. Hand operated Bending Rolls
- O.07. Hydraulic operated Bending Rolls
- O.08. Mechanical operated Bending Rolls
- O.09. Coiler straightening machines
- O.10. Levelling Rolls and De-Coiling Stand
- O.11. Sheet-straightening machines
- O.12. Laser Cutting Machines
- O.13. Laser systems for Welding
- O.14. Plasma Cutting machines
- O.15. Water jet cutting systems
- O.16. Gas cutting machines
- O.17. Punch / Copying machines (Mechanical)
- O.18. Punch / Copying machines (Hydraulic)
- O.19. Turret Punch machines
- O.20. Sheet centres for punching, bending and cutting
- O.21. Combined punching and laser cutting machines
- O.22. Hand operated Swager
- O.23. Mechanical driving Swager machines
- O.24. Spinning machines
- O.25. Section Benders (Horizontal)
- O.26. Section Benders (Vertical)
- O.27. Profiling Lines
- O.28. Combined punch and plasma cutting lines

P.00. Shears :

- P.01. Table Shears
- P.02. Alligator Shears
- P.03. Guillotine Shears (Hand operated)
- P.04. Guillotine Shears (Mechanical)
- P.05. Guillotine Shears (Hydraulic)
- P.06. Corner Notchers (Mechanical)
- P.07. Corner Notcher (Hydraulic)
- P.08. Shrinker Metal Former
- P.09. Universal Sheet Metalworker
- P.10. Trimming machines
- P.11. Rotary Shears
- P.12. Concrete Bar Cutters
- P.13. Universal Ironworker

P.14. Sheet metal gang slitting line

Q.00. Bending-, straightening- and reducing machines for pipes, bars, shafts and profiles :

- Q.01. Tube Bending machines
- Q.02. Pipe drawing and tube reducing machines
- Q.03. Pipe manufacturing machines
- Q.04. Straightening machines for bars and sections
- Q.05. Combined drawing, straightening and polishing mach. for bars and...
- Q.06. Tube Cut-off machines
- Q.07. Tube bending and welding lines
- Q.08. Induction profile and tube bending machines

R.00. Wire machines :

- R.01. Wire bending and forming machines
- R.02. Wire straightening and cutting-off machines
- R.03. Wire drawing machines
- R.04. Wiring and spring coiling machines
- R.05. Wire crimping machines
- R.06. Wire netting and weaving machines

S.00. Hammers :

- S.01. Air- and magnetic Drop Hammers
- S.02. Die-forging hammers
- S.03. Automatic forging machines
- S.04. Cold- and hot forging rolls
- S.05. Forging plants

T.00. Accessories - Welding :

- T.01. Floor and base plates
- T.02. Cubic and angle plates
- T.03. Rotary tables, circular
- T.04. Rotary tables, rectangular
- T.05. Units Drilling Tapping Milling Grinding Lapping
- T.06. Boring bars and boring heads
- T.07. Cutters for gear machining
- T.08. Selfcentering- and independent chucks with 2-3-4 jaws
- T.09. Chucks, hydraulic
- T.10. Chucks, pneumatic
- T.11. Face plates
- T.12. Round and square magnetic plates
- T.13. Toolposts for lathes
- T.14. Steadies for lathes
- T.15. Diaform dressing equipment
- T.16. Copying attachments for turning and milling
- T.17. Punching units and tools
- T.18. Chip- Swarf Conveyor

T.W.0. W E L D I N G

- T.W.1. Welding, Electric
- T.W.2. Welding, Plasma -
- T.W.3. Welding, Spot -
- T.W.4. Welding, TIG / MIG
- T.W.5. Welding, Seam

U.00. Die casting machines :

- U.01. Die casting machines, cold chamber
- U.02. Die casting machines, hot chamber
- U.03. (Plastic) Injection Moulders
- U.04. Low Pressure Die Casting Machines
- U.05. Gravity Die Casting Machines
- U.06. Trimming Presses
- U.07. Metal Dosage Units
- U.08. Take-out Robots
- U.09. Die Spray Units
- U.10. Induction Furnaces
- U.11. Electric Arc Furnaces
- U.12. Conventional Furnaces (Gas, Fuel or Electric)
- U.99. Foundries

V.00. Robots, Positioners, bar feeders and coilers :

- V.01. Robots, loading and unloading
- V.02. Welding positioners
- V.03. Self Aligning Rotators
- V.04. Column & Boom Manipulators
- V.05. Robots, welding and painting gun
- V.06. Bar feeders and Bar loading magazines
- V.07. Conveyor feed systems, loading and unloading
- V.08. Coilers and decoilers
- V.09. Feed handling system by inlay
- V.10. Feed handling system by rollers
- V.11. Hexapod

W.00. Measuring and testing equipment :

- W.01. Vertical Digitizing and Coordinating Measuring machines
- W.02. Horizontal Digitizing and Coordinating Measuring machines
- W.03. Measuring robots
- W.04. Digital reading devices
- W.05. Profileprojectors and measuring Microscope
- W.06. Height measuring and probe gauge with electronical reading
- W.07. Surface roughness measuring equipment
- W.08. Hardness testers
- W.09. Balancing machines
- W.10. Roundness, shaft and production measuring equipment
- W.11. Laser interferometry
- W.12. Tension and pressure testing gauge
- W.13. Levelling devices manual or electronic
- W.14. Measuring Cylinders, Parallels- and Squares

- W.15. Surface- and die spotting plates
- W.16. Calibrating gauge, setting attachment for cutting- and clamping ...
- W.17. Gear and bevel gear measuring and testing machines
 - W.17.01 Involute Testers
 - W.17.02 Pitch Testers
 - W.17.03 Bevel Gear Testers
 - W.17.04 Gear Tester Combination
 - W.17.05 Gear Tester Lead
 - W.17.06 Gear Tester Rolling Compos.
 - W.17.07 Gear Testers CNC
 - W.17.08 Sound & Noise Testers
- W.99. Gear Inspection Machines

X.00. Erosion, electrochemical and ultrasonic machines :

- X.01. Die-sinking spark erosion machines
- X.02. Wire spark erosion machines
- X.03. Electrochemical machines
- X.04. Ultrasonic machines
- X.05. Spark drilling machines (Small Hole EDM)

Y.00. Surface Treatment, Finishing Plant & Equipment :

- Y.01. Deburring & Polishing
 - Y.01.a. Component Driers
 - Y.01.b. Horizontal Barrelling
 - Y.01.c. Open Ended Barrels
 - Y.01.d. Bowl Vibrators
 - Y.01.e. Tub Vibrators
 - Y.01.f. Vibratory Separators & Conveyers
 - Y.01.g. Mechanical Polishing Machinery
 - Y.01.h. Manual Polishing Machines
 - Y.01.i. Centreless Polishing Machines
 - Y.01.j. Flat Bed Linishing Machines
 - Y.01.k. Automatic Polishing Machines
- Y.02. Cleaning & Degreasing
 - Y.02.a. Aqueous Conveyorised
 - Y.02.b. Aqueous Front Loading
 - Y.02.c. Aqueous Dunk Wash
 - Y.02.d. Aqueous Top Loading
 - Y.02.e. Aqueous Precision Cleaning
 - Y.02.f. Solvent Precision Cleaning
 - Y.02.g. Solvent Cleaning Plants
 - Y.02.h. Automatic Basket Carriers
- Y.03. Rectifiers & DC Power Supplies
 - Y.03.a. Rectifiers
 - Y.03.b. Regulating Transformers
 - Y.03.c. Ancillary DC Equipment
- Y.04. Ovens and Furnaces
 - Y.04.1. Ovens
 - Y.04.1.a. Drying ovens up to 200 °C
 - Y.04.1.b. Drying ovens 200-400 C
 - Y.04.1.c. Drying ovens 400-800 C
 - Y.04.2. Furnaces



- Y.04.2.a Furnaces 800-1050 C
- Y.04.2.b Furnaces 1050-1500 C
- Y.05. Blasting & Extraction
 - Y.05.1. Shot Blasting
 - Y.05.1.a. Suction Venturi Machines
 - Y.05.1.b. Pressure Pot Machines
 - Y.05.1.c. Wet Blast Machines
 - Y.05.1.d. Wheel Blast Machines
 - Y.05.1.e Blasting machines, continuous automatic
 - Y.05.1.f Blasting machines, batch semi automatic
 - Y.05.2. Extraction
 - Y.05.2.a. Dust Extraction - Dry
 - Y.05.2.b. Dust Extraction - Wet
 - Y.05.2.c. Fume Extraction
 - Y.05.2.d. Fume Eliminators & Scrubbers
- Y.06. Surface Treatments
 - Y.06.01. Surface Treatment Plant and Machinery
 - Y.06.02. Water Treatment and Filtration Plant
 - Y.06.03. Tanks process and storage
 - Y.06.04 Surface Treatment, ancillaries
- Y.07. Process Cooling
 - Y.07.01 Chillers
 - Y.07.02 Cooling Equipment