

NAME	AUTOMAT {NOTE. The system has undergone over 40 years of development; details will be given for 1961, labelled [a]; 1993, labelled [c]; & the period in between, labelled [b]}.	
TYPE	Mechanical Engineering.	
HOLE DIAMETER	4.0mm	HOLE SPACING 12.7mm
SETS IN SYSTEM	At some time before 1961: Sets 1 - 6; by 1962: Sets 1,25,33,1500; by 1978: 25,33,1600,2000; in 1993: 401,500,1400,1600,2000,3000; in 1995: as 1993 but plus Nos.901,1900,2001,2100,2500,3500,3901. The extra 1995 sets, & the 1993 No.3000, were combinations of the other 1993 sets. For some time after the introduction of the Square Girder framework parts, Sets 00.300 & 00.600, containing only a selection of those parts, were available. From before the mid-1960s kits to make particular mechanisms were listed & soon afterwards were replaced by similar but ready built COMPACT Mechanisms.	
DIFFERENT PARTS	[a] 358. [b] Not known but included at least 200 parts not in [a] & [c]. [c] 440.	
COLOUR	Steel & brass parts usually nickel plated but some blackened; most aluminium parts anodised, often in a variety of bright colours.	
FIXING METHOD	M 3.5 N&B.	
MOTORS	(i) A mains Motor with 12 attachable Gearboxes giving different output speeds. By 1993 these had been replaced by 2 fully cased Units, each available with 10 different speeds. (ii) A mains Motor with a Controller to allow the speed to be varied. By 1993 these had been replaced by 2 fully cased Units called Varimats, but they were discontinued at about that time.	
PERIOD	1958 to current (1999).	
MANUFACTURER	Automat Precision Engineering Ltd., Limmatquai 120, Zürich 1. From 1965: Automat Service International, D 6095 Schriesheim, Germany. By 1978: Compact Technik GmbH, Branichstraße 8, D 6095 Schriesheim (by 1993, D 69198).	
COMMENTS	The major change to the system was the introduction of the Square Girder framework material in about 1960, but over the years many parts have been added or dropped. All that are known are included in the [a], [b] & [c] pages but there may be others from before 1961, after 1993, and in the intervening years, for which details are not available. The very limited information to hand on Set Contents has all been included. The MCS Automat SMP pages show the AUTOMAT material sold by Stock Model Parts around the early 1970s.	

MATERIAL SUPPLIED BY Josep Bernal, Jeannot Buteux & Constructorama, John Hanby, David Hobson, Thomas Keel, Thomas Morzinck, Geoff Wright.

AUTOMAT [a]: X2.5

No manual cover is shown, the only one known has only 'Instructions' and the name of the company on it

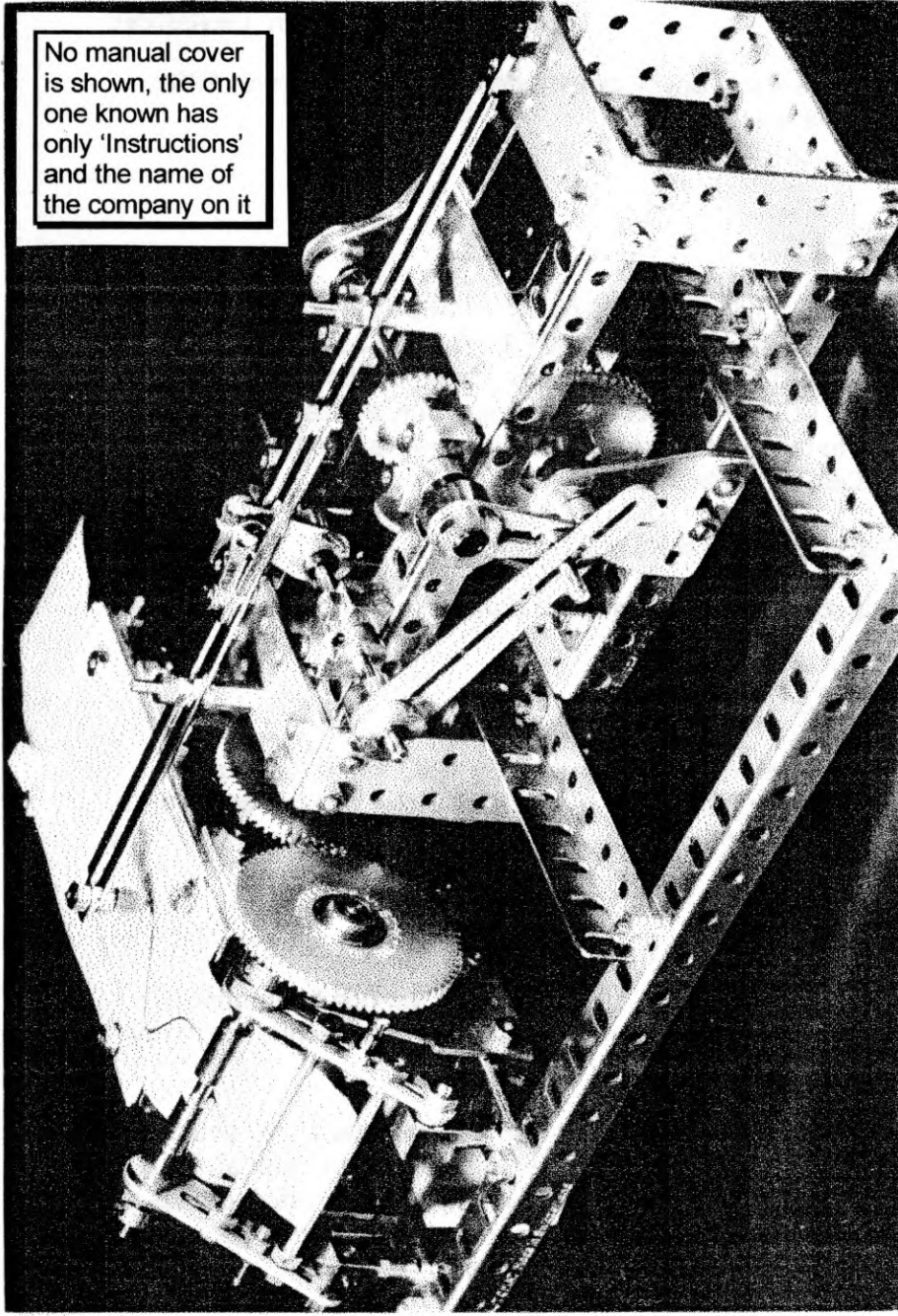


Fig. 36

The Recording Instrument For Velocities And Accelerations.

In describing the crank and oscillating slotted lever mechanism, velocity was mentioned in connection with the cutting stroke and the return journey. We noted that in moving from one point to another the oscillating slotted lever travels at various angular velocities. This change of velocities does not take place suddenly, but gradually. In order to investigate the characteristics of these motions and to analyze them in a detailed manner, we shall use a recording instrument to be built with the AUTOMAT set.

Build the model shown in Fig. 36. Use links of the same length as described in connection with Fig. 27, page 4.

In constructing the model shown in Fig. 36, do the following:

- a) From the driven shaft, build a simple gear train creating a ratio of 1:2 – a gear wheel with 30 teeth on the crank shaft to drive a gear wheel with 60 teeth below it (Fig. 37.)
- b) As shown in Fig. 37, use a bevel gear arrangement of 1:1 resulting in a 90° transmission.

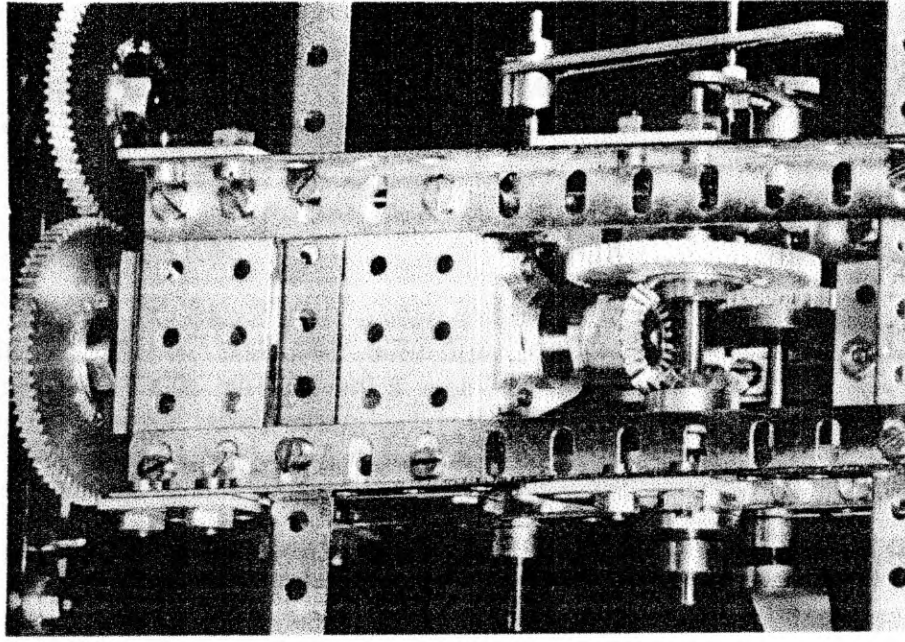


Fig. 37

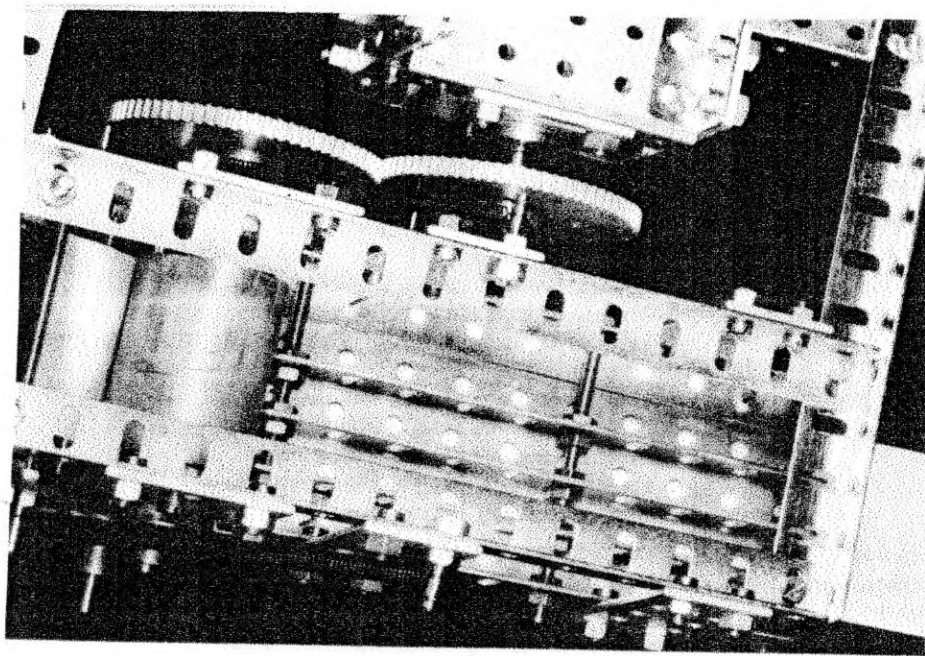
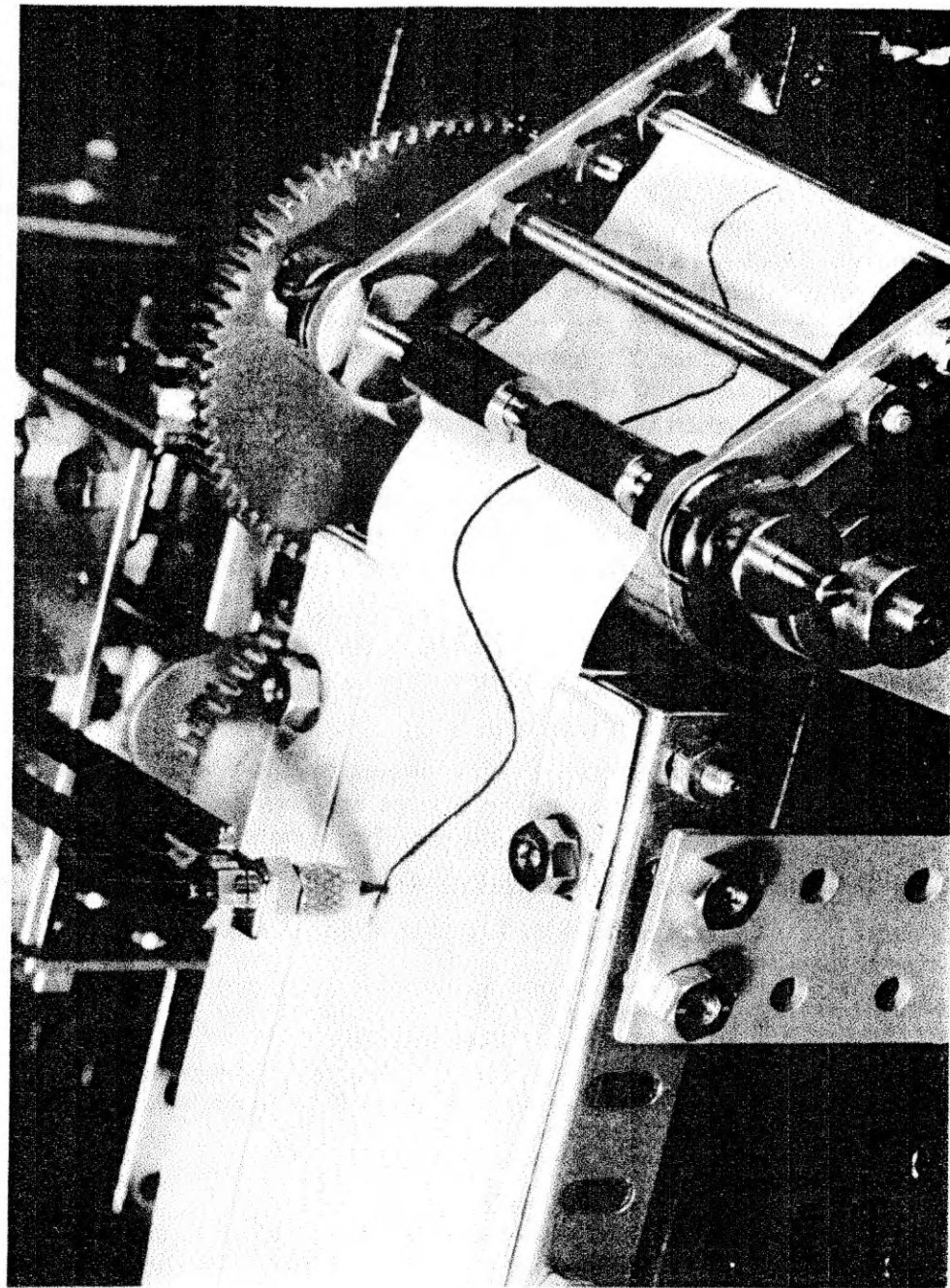


Fig. 38

- c) The driven bevel gear should be linked to drive the lower of the two gear wheels shown at the right of Fig. 38. This lower wheel should have 72 teeth and should drive the upper wheel having the same number of teeth. This upper wheel drives the winding drum of the recording mechanism as shown in Fig. 39.

Fig. 39



The Automat Set No. 33

This is an Automat advanced set for professors, teachers, engineers, training instructors, graduate students and all of those many young engineers immediately interested in going beyond the scope of the basic 50 models incorporated in Set 25.

The Automat Set 33 is of equal fascination to the student of engineering, engineers in development departments of industry, to the scientist who is checking his calculations of velocity and acceleration in a specific mechanism, or to the school interested in building special purpose model mechanisms. A veritable treasure chest of elementary and advanced engineering knowledge and assistance, the applications of Automat 33 are manifold. Its usefulness touches upon all branches of mechanical engineering. It is a valuable assistant when building the mechanical parts and servo-mechanisms of electrical instruments, pneumatic or hydraulic appliances.

Its scope is far wider than that of Set 25, ranging from the simple model explaining the calculation of center distances up to the chart-recording instrument for accurately recording the characteristics of motion of a given mechanism.

With its 2400 parts, Automat No. 33 is the most attractive and popular priced engineering set available anywhere.

This set does not contain a planetary gear.

The parts are neatly laid out in individual compartments and easy-to-use plastic tubes, spread over 3 trays. The 3 trays are enclosed in a sturdy carrying case measuring 450 × 360 × 105 mm. Net weight 14 kg (30 lbs.).

Here is a brief summary of the contents of set No. 33:

Spur gears:	2/18 teeth, 1/24, 2/30, 2/36, 1/48, 1/54, 4/60, 2/72, 1/96, 1/108, 1/120.
	Segments and sectors, complete set of gear quadrant and accessories.
	1 rack each 25, 51 and 76 teeth.
Sprocket gears and chains:	4 each 24 and 36 teeth, 2 lengths à 1/2 meter assembled roller chain, plus sufficient parts to assemble another half meter of chain.
	Sectors with sprocket teeth.
Worm gearing:	1 each worm, double and triple start. 2 each corresponding worm gears.
Bevel gears:	2 each 45° bevel gears for 1 : 1 ratio. 1 set bevel gears 1 : 2 ratio.

Flat-belt pulley wheels:
V-belt pulley wheels:
Stepped (Cone) pulley wheels:
Parts for Cam Mechanisms:

Parts for Intermittent Motion:
Shafting:

Bearings:

Stop collars:
Collet-chuck subassemblies:

Couplings and Clutches:

Levers:

2 each 20, 30, 40, 50 mm diameter.
2 each 20, 25 and 30 mm.
2 pieces.
2 bodies for bell cams.
2 bodies special cams with T-slots.
4 cam roller assemblies, 1 flat cam follower, 1 knife-edge follower.
25 Presspan cam blanks for disk cams.
30 Presspan cam blanks for bell cams.
20 metal cam blanks for bell cams.
1 set of cam profiles for cone clutch with necessary accessories.
1 set Geneva wheel (6 slots) complete with driver.
3 complete sets of friction ratchets.
1 toothed ratchet wheel with pawl and levers.
4 mm centreless ground stainless steel.
2/50 mm, 4/75 mm, 5/100 mm, 5/125 mm, 2/150 mm, 2/200 mm, 4/250 mm.
Ditto with flat at one end:
2/75 mm, 2/100 mm, 2/125 mm.
2 1/2 mm shafting:
1 each 100 and 125 mm long.
Hollow shaft: 1 each 40 and 80 mm long.
12 bearing nuts assemblies for 4 mm shafts.
8 bearing blocks for 4 mm shafts.
4 ditto for 2 1/2 mm shafts.
4 ball bearings for 4 mm shafts with housing assemblies.
16 supports for bearings.
18 for 4 mm shafts and 4 for 2 1/2 mm shafts.
33 for wheels, pinions, worms, levers, etc.
1 each box coupling, flange coupling, elastic coupling, Oldham coupling, double-sided cone clutch, with all accessories.
2 universal joints.
3 each plain levers, 20, 25, 30, 40, 50, 60, 75 mm.
2 each slotted levers, same length.
1 each forked levers, same length.
8 various levers (2 each of 4 different types).
10 subassemblies of hubs for levers.

Couplers and Connecting rods:	10 each screwed rods M 3.5, 25, 30, 40, 50, 60, 75 mm. 6 connectors. 3 spanners with right and left hand thread. 31 bar ends with right and left hand thread, joints, connecting pins, crank pins.
Parts for frames and structures:	8 each angle irons, 1.2 mm thick, with 5, 7, 10, 15 and 20 holes. 8 single angles. 66 various parts (flat plates, different angles). 2 plastic side plates for gear boxes, etc., spacer bars.
Spacers:	142 spacer rings different lengths and diameters.
Fasteners:	338 screws M 3.5 and 2.6. Cheese Head, in different lengths, all cut from the bar. 250 hexagon nuts, 50 washers M 3.5, 20 circlips for crank pins.
Lead screw:	1 piece, threaded length 60 mm with corresponding nut.
Parts for Slides, etc.:	14 pieces.
Parts for instruments, etc.:	1 winding drum for chart-recording instrument. 1 roll chart paper, 16 meters. 1 drum assembly for various applications. 5 pointers and 4 hubs for 4 and 2 1/2 mm shafts. 2 dials each of three different sizes. 1 ruler, 1 writing nib.
Springs:	3 each compression springs 15, 25 and 50 mm long. 3 each tension springs, same lengths. 1 spring casing assembly.
Plus miscellaneous accessories, belting, wrenches and screwdrivers. The Six Teaching Manuals explaining the 50 basic models are also supplied with Set 33.	

The 4000 components of Set 1500 are laid out in a well-organized manner in 5 separate trays, thus facilitating the search for the individual items and their replacement after use. Most of the parts, as will be seen from the next four pages, have their own individual compartments. The 5 separate trays are contained in a solid wooden carrying case measuring 500 × 350 × 137 mm. Total net weight 23 kg (50 lbs.).

Contents of Set 1500

The AUTOMAT Construction Set 1500, containing 4000 components, can be considered the most comprehensive construction set in the world today.

If ever a still better, bigger and more useful set should appear on the market it will be another 'AUTOMAT', extended to comply with the suggestions and recommendations of users all over the world, comprising all vocations from mechanic to engineer, from student to professor, from apprentice to scientist.

The contents, divided into the main groups, comprises the following parts.

Wheels, etc.:

Spur gears
Module 0.75

- 2 pinions, 18 teeth, face width 15 mm
- 3 wheels, 24 teeth width 4 mm
- 4 wheels, 30 teeth width 4 mm
- 3 wheels, 36 teeth width 4 mm
- 2 wheels, 48 teeth width 4 mm
- 3 wheels, 54 teeth width 4 mm
- 4 wheels, 60 teeth width 4 mm
- 3 wheels, 72 teeth width 4 mm
- 2 wheels, 96 teeth width 4 mm
- 2 wheels, 108 teeth width 4 mm
- 2 wheels, 120 teeth width 4 mm

Racks

- 1 piece, 25 teeth
- 1 piece, 51 teeth
- 1 piece, 76 teeth

Sectors

- 2 pieces

Segments

- 3 pieces

Planetary Gear

- 1 complete set of parts, consisting of casing, gear rim with 108 teeth, hub, shaft and hollow shaft, planet-star with hubs, bearing supports

Parts for Structures:

- 1 set of plastic side plates for gear boxes, etc.
- 1 set of 4 distance pieces
- 12 each angle iron, 12 mm thick (3/64"), with 6, 7, 10, 15, 20 holes, spacing 1/2"
- 8 small angles 1x1 hole, hardened
- 8 flat square pieces, 2x2 holes
- 15 flat rectangular pieces, 2x3 holes
- 14 flat rectangular pieces, 2x5 holes
- 20 flat angles, single and double
- 8 connecting pieces, 4 holes
- 8 slotted plates
- 4 slotted flat angles
- 8 slot-hole pieces

Shafts:
stainless steel, centerless ground

- 4 mm diameter: 2 shafts 50 mm long
- 4 shafts 75 mm long
- 8 shafts 100 mm long
- 5 shafts 125 mm long
- 6 shafts 150 mm long
- 2 shafts 200 mm long
- 4 shafts 250 mm long

flats at one end

- 2 shafts 75 mm long
- 4 shafts 100 mm long
- 4 shafts 125 mm long

hollow shafts, 4 mm o. d.
fitting shafts 2.5 mm

- 2.5 mm
- 2 shafts 100 mm long
- 2 shafts 125 mm long
- 2 shafts 40 mm long
- 2 shafts 80 mm long

shaft with rubber rollers

- 1 shaft

expanding shaft, 4 mm

- 1 shaft

stop collars for 2.5 mm shafts

- 4

stop collars for 4 mm shafts

- 20

spacers for 4 mm shafts

- 55 pieces in 3 different lengths (2.5, 5, 10 mm)

Sprocket wheels

- 2 wheels 12 teeth
- 2 wheels 24 teeth
- 2 wheels 36 teeth

Sectors with sprocket teeth

- 2 pieces

Chain

- 2 lengths of ready-mounted chain a 1/2 meter each
- 100 rollers for chain
- 200 links
- 200 circlips, sufficient for assembling another half meter of chain
- 1 tool for assembling chain

Worms and worm gears

- 2 worms double start
- 2 worm gears double start 24 mm o. d.
- 2 worm gears double start 39 mm o. d.
- 2 worms three start
- 2 worm gears three start 24 mm o. d.
- 2 worm gears three start 39 mm o. d.

Bevel gears, Module 1

- 1 pair 45° 20 teeth
- 1 pair 20/40 teeth

Gear quadrant

- 1 complete set of parts

V-belt pulley wheels

- 1 each 20, 25, 30 mm dia.

Flat-belt pulley wheels

- 2 each 20, 30, 40, 50 mm dia.

Stepped pulley wheels

- 2 each 4 steps.

Drums

- 1 pair, 30 mm o. d., 42 mm long

Collet chuck assemblies, etc.

- 38 Collet chuck and other assemblies for mounting wheels on shafts.

Couplings and Clutches:

Box Coupling

- 2 pairs with fixation screws and nuts

Flange Coupling

- 2 pairs, ditto

Elastic Coupling

- 2 pairs, ditto

Oldham Coupling

- 2 sets

Cone Clutch

- 2 complete sets with all accessories

Universal Joints

- 4 single type
- 1 double type

Intermittent Motions:

Geneva wheel, 6 slots

- 1 complete set (indexing plate and driver)

Ratchet wheels

- 2 ratchet wheels, with accessories

Friction ratchet

- 2 drums each for use with levers, wheels, pinions
- 3 inner parts with stop collars
- 20 rollers

Parts for Cam Mechanisms:

4 cam bodies for 4 bell cams or 2 drum cams

- 1 cam body with groove on face
- 1 cam body with groove on side
- 2 flat cam followers
- 1 cam body for positive drive cam
- 6 complete sets of cam rollers
- 1 knife-edged cam follower with sleeves
- 50 Presspan cam blanks 80x80 mm
- 1 mm thick
- 30 Presspan cam blanks for bell cams
- 30 tinplate cam blanks for bell cams
- 1 set cam profiles for automatic control of friction clutch
- Various components for cam mechanisms.

Lead screws

- 1 each 1 mm pitch, 6 mm o. d., threaded length 80, 116, 179 mm, bar ends 4 mm
- 2 nuts for above

Springs:

- 6 compression springs 10 mm long
- 6 compression springs 15 mm long
- 6 compression springs 25 mm long
- 8 compression springs 50 mm long
- 8 tension springs 15 mm long
- 8 tension springs 25 mm long
- 8 tension springs 50 mm long
- 1 complete assembly spring casing
- 8 suspension pieces and bolts

Parts for Measuring Instruments:

- 1 set of parts for simple height gauge
- 1 writing nib
- 4 assemblies of hubs for pointers for 4 and 2.5 mm shafts
- 2 pointers 30 mm long
- 2 pointers 60 mm long
- 1 pointer 165 mm long
- 2 paper dials 360°, 60 mm dia.
- 2 paper dials 360°, 125 mm dia.
- 2 paper dials 180°, 330 mm dia.
- 1 ruler, Millimeter divisions, 100 mm scale
- 1 complete assembly winding drum for chart recording instrument
- 1 roll of chart paper, Millimeter divisions, 16 meters

Miscellaneous

- 1 hand crank and crank handle assembly
- 1 hand wheel and crank handle assembly
- 4 meters plastic cord, 3 mm dia.

Bearings:

- 18 bearings for 4 mm shafts
- 18 supports for same

Bearing Blocks

- 18 bearing blocks for 4 mm shafts
- 4 bearing blocks for 2.5 mm shafts

Ball Bearings

- 4 combined radial-thrust bearings for 4 mm shafts
- 4 sets of casings for ball bearings and stop collars

Parts for Slides

Supports of Slides: 24 pieces

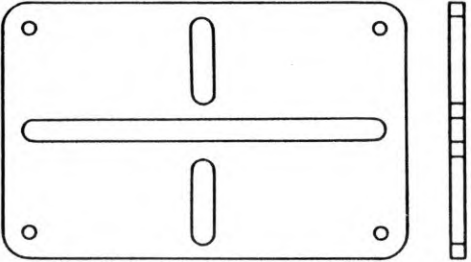
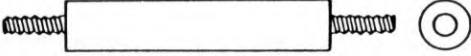
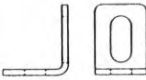
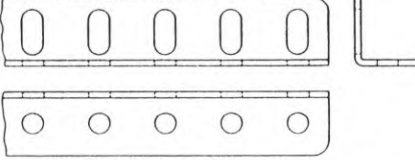
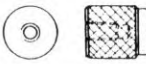
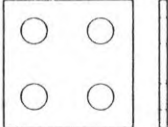
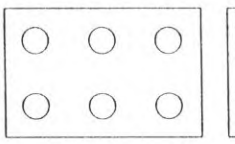
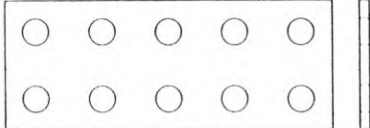
Parts for Lever and Crank Mechanisms:

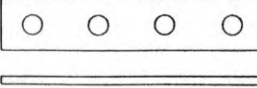
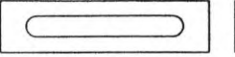
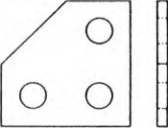
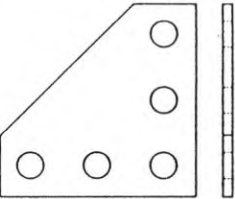
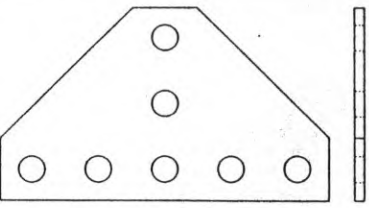
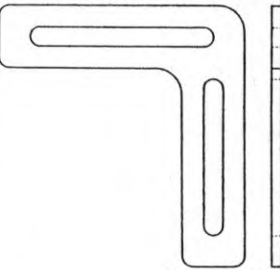
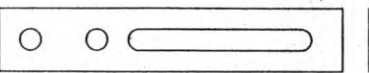
- 28 plain levers, 4 each per length 20, 25, 30, 40, 50, 60, 75 mm
- 28 slotted levers, 4 each ditto,
- 14 forked levers, 2 each, ditto
- 20 crank pins of 4 different types
- 20 bar ends with right-hand thread
- 1 fork for 3-way linkage
- 4 bar ends with left-hand thread
- 10 eye-bolts, 2 each of 5 different lengths
- 70 screwed studs M 3.5, 10 each in lengths 25, 30, 40, 50, 60, 75 mm
- 8 screwed studs with left and right-hand thread, lengths 30, 50, 60, 75 mm
- 6 spanners with left- and right-hand thread 2 each of 3 types
- 3 pins for connecting bar ends
- 50 circlips for crank pins
- 27 complete sets of hubs and collet chuck subassemblies for use with levers
- 112 spacers in 5 different lengths
- 6 weights

Screws, Nuts, Washers:

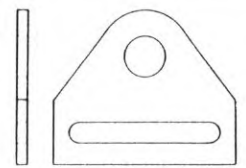
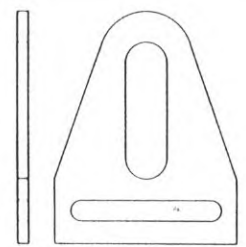
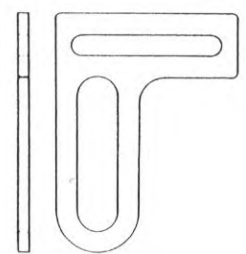
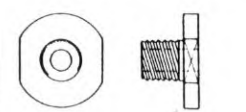
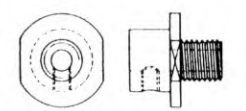
- 50 pieces M 3.5 x 5 cheese head
- 600 pieces M 3.5 x 8 cheese head
- 15 pieces M 3.5 x 12 cheese head
- 50 pieces M 3.5 x 15 cheese head
- 18 pieces different connections
- 2 hand set screws
- 90 set screws (grub screws)
- 120 washers (besides those used in subassemblies)
- 600 nuts M 3.5 cut thread, hexagon SW 7

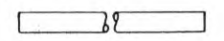
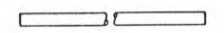
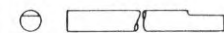
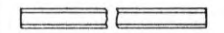
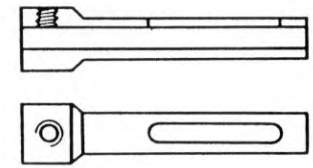
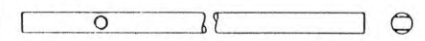
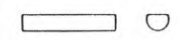
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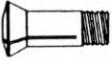
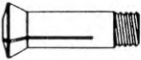
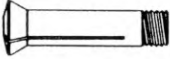
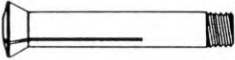
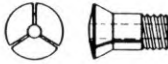
Part	Scale	Description	Ref. No.
	—	Plastic Side-Plates	01.001
	—	Spacer	01.002
	1 : 1	Angle 1×1 hole	01.101
	—	Angle-Iron 5 holes 01.105 7 holes 01.107 10 holes 01.110 15 holes 01.115 20 holes 01.120	
	1 : 1	Feet	01.225
	1 : 1	Flat plate 2×2 holes	01.201
	1 : 1	Flat plate 2×3 holes	01.202
	1 : 1	Flat plate 2×5 holes	01.203

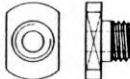
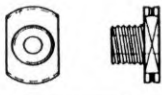
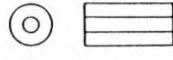
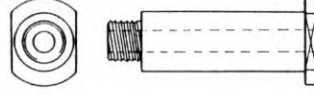
Part	Scale	Description	Ref. No.
	1 : 1	Connecting strip	01.211
	1 : 1	Slotted strip	01.212
	1 : 1	Flat angle 3 holes	01.213
	1 : 1	Flat angle 5 holes	01.215
	1 : 1	Flat angle 7 holes	01.216
	1 : 1	Flat slotted angle	01.218
	1 : 1	Hole and slot plate	01.219

AUTOMAT [a]: X1.3a/4a

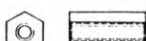
Part	Scale	Description	Ref. No.
	1 : 1	Support, small	02.001
	1 : 1	Support, large, slotted	02.002
	1 : 1	Support, eccentric	02.003
	1 : 1	Bearing for 4 mm shaft	03.101
	1 : 1	Long bearing 4 mm shaft	03.102

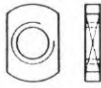
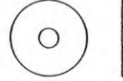
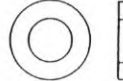
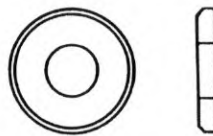
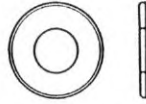
Part	Scale	Description	Ref. No.
	—	Shaft 4 mm dia. 50 mm 75 mm 100 mm 125 mm 150 mm 200 mm 250 mm	04.050 04.075 04.100 04.125 04.150 04.200 04.250
	—	Shaft 2.5 mm dia. 75 mm 100 mm 125 mm	05.075 05.100 05.125
	—	Shaft 4 mm with one flat end 50 mm 75 mm 100 mm 125 mm	06.050 06.075 06.100 06.125
	—	Hollow shaft o. d. 4 mm i. d. 2.5 mm 40 mm 80 mm	08.040 08.080
	1 : 1	Sleeve for expanding shaft	09.201
	—	Expanding shaft	09.204
	1 : 1	Screw for expanding shaft	09.208
	—	4 mm Shaft with rubber rollers	09.901
	1 : 1	4 mm Shaft with flat surface	09.902

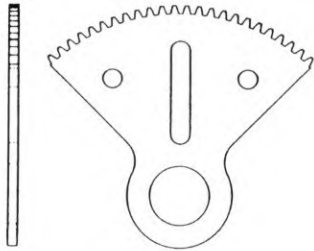
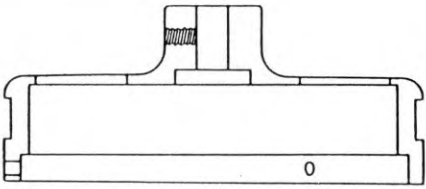
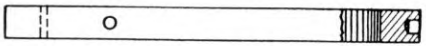
Part	Scale	Description	Ref. No.
	1 : 1	Collet chuck 4 mm shaft 5 mm	11.105
	1 : 1	Collet chuck 4 mm shaft 10 mm	11.110
	1 : 1	Collet chuck 4 mm shaft 16 mm 18 mm	11.116 11.118
	1 : 1	Collet chuck 4 mm shaft 22 mm	11.122
	1 : 1	Collet chuck 4 mm shaft 33 mm	11.133
	1 : 1	Collet chuck 2.5 mm shaft 5 mm	11.205
	1 : 1	Sleeve for Collet chuck without shoulder ditto, with two flats	11.400 11.801
	1 : 1	Sleeve for Collet chuck shoulder 1 mm	11.401
	1 : 1	Sleeve for Collet chuck shoulder 3.5 mm ditto, with two flats	11.404 11.802
	1 : 1	Sleeve for Collet chuck shoulder 9 mm	11.409
	1 : 1	Sleeve for Collet chuck shoulder 32 mm	11.432

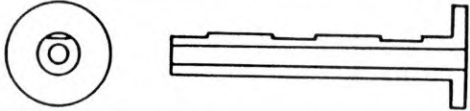
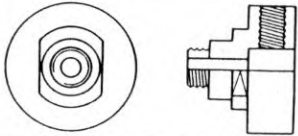
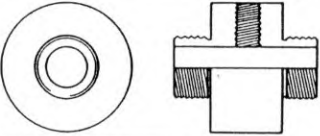
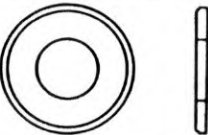
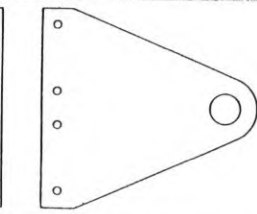
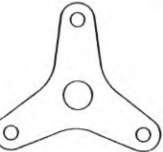
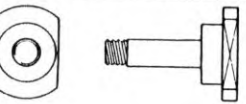
Part	Scale	Description	Ref. No.
	1 : 1	Hub for levers for 4 mm shafts	11.501
	1 : 1	Hub for adjustable lever 34.005 for 4 mm shafts	11.502
	1 : 1	Hub for levers for 3.5 mm crank pins	11.506
	1 : 1	Hub for sectors	11.508
	1 : 1	Hub for connecting sectors and levers	11.507
	1 : 1	Sleeve for idling wheels for 4 mm shafts	11.601
	1 : 1	Sleeve for idling pinion for 4 mm shafts	11.603
	1 : 1	Spacer for gear assembly	11.701
	1 : 1	Hub for idling gear assembly	11.703
	1 : 1	Spacer for assembly of idling pinion and wheel	11.705
	1 : 1	Hub for idling gear assembly	11.702

AUTOMAT [a]: X1.3c/4c

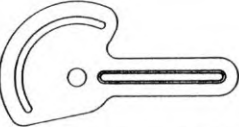
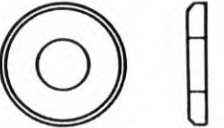
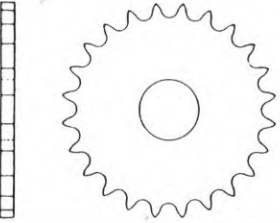
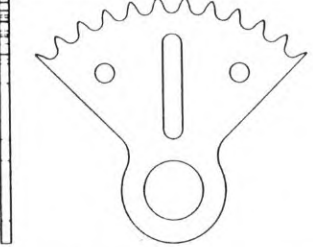
Part	Scale	Description	Re
	—	Screwed rod M 3.5 25 mm 12.425 30 mm 12.430 40 mm 12.440 50 mm 12.450 60 mm 12.460 75 mm 12.475	
	1 : 1	Cheese Head Screw M 3.5 × 5	13.405
	1 : 1	Cheese Head Screw M 3.5 × 8	13.408
	1 : 1	Cheese Head Screw M 3.5 × 12	13.412
	1 : 1	Cheese Head Screw M 3.5 × 15	13.415
	1 : 1	Connector M 3.5	16.001
	1 : 1	Connector M 3.5	16.002
	1 : 1	Connector M 3.5	16.003
	1 : 1	Connector M 3.5	16.004
	1 : 1	Thumb Screw M 3.5	16.401
	1 : 1	Thumb Screw M 3.5	16.403
	1 : 1	Grub Screw M 2.6 × 5	17.305
	1 : 1	Grub Screw M 2.6 × 8	17.308
	1 : 1	Grub Screw M 3.5 × 3	17.403
	1 : 1	Grub Screw M 3.5 × 5	17.405
	1 : 1	Grub Screw M 3.5 × 8	17.408
	1 : 1	Grub Screw M 5 × 8	17.508

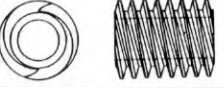
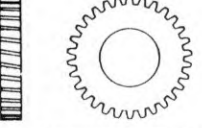
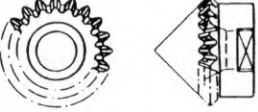
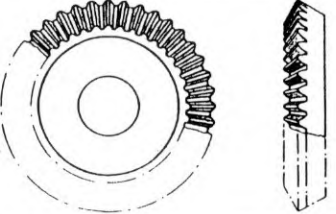
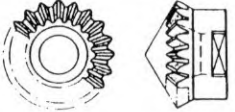
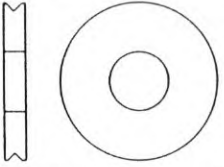
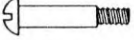
Part	Scale	Description	Ref. No.
	1 : 1	Hexagon Nut M 3.5	18.402
	1 : 1	Special Nut M 5 (gear quadrant)	18.501
	1 : 1	Special Nut M 8 o. d. 18 mm	18.802
	1 : 1	Nut M 8 o. d. 15 mm	18.803
	1 : 1	Nut M 8 o. d. 12 mm	18.804
	1 : 1	Washer for M 3.5 screw	19.401
	1 : 1	Washer for M 3.5 screw o. d. 15 mm	19.402
	1 : 1	Washer for M 8 thread 15 mm outside diameter	19.801
	1 : 1	Washer for M 8 thread 18 mm outside diameter	19.802
	1 : 1	Washer for M 5 screws	19.501

Part	Scale	Description	Ref. N
	—	Pinion 18 teeth	20.018
		Wheel 24 teeth	20.024
		30 teeth	20.030
		36 teeth	20.036
		48 teeth	20.048
		54 teeth	20.054
		60 teeth	20.060
		72 teeth	20.072
		96 teeth	20.096
		108 teeth	20.108
		120 teeth	20.120
		Spur gears Module 0.75	
	—	Racks Module 0.75	25 teeth 22.025 51 teeth 22.051 76 teeth 22.076
	1 : 1	Sector Module 0.75	22.203
	1 : 1	Segment Module 0.75	22.202
	—	Body for Planetary Gear	21.001
	—	Gear Rim with internal gear, Module 0.75 for Planetary Gear	21.002

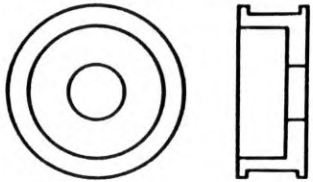
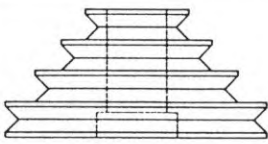
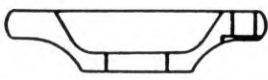
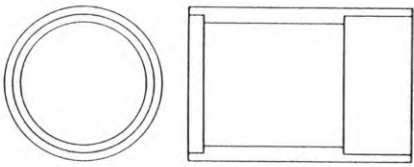
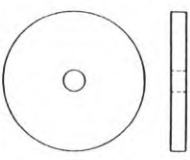
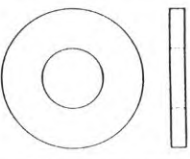
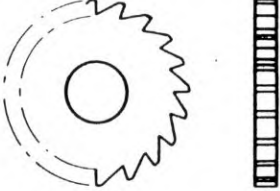
Part	Scale	Description	Ref. No.
	1 : 1	Hub for Planetary Gear	21.003
	—	Hollow Shaft for Planetary Gear	21.004
	—	2.5 mm shaft for Planetary Gear	21.005
	1 : 1	End Piece for Hub of Planetary Gear 21.003	21.006
	1 : 1	Bearing for Planetary Gear	21.007
	1 : 1	Washer for above Bearing 21.007	21.008
	1 : 1	Nut for Bearing 21.007	21.009
	—	Support for Bearing 21.007	21.010
	—	Arm for Planetary Gear	21.011
	1 : 1	Hub for Planet Gears	21.012

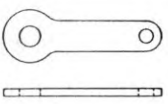
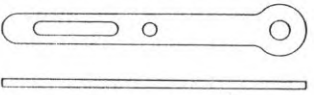
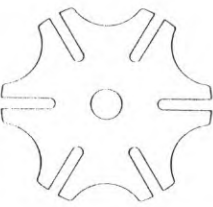
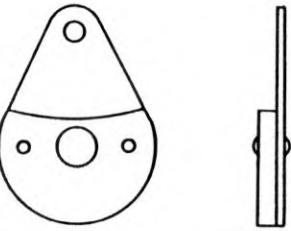
AUTOMAT [a]: X1.3e/4e

Part	Scale	Description	Ref. No.
	—	Gear Quadrant	21.030
	1 : 1	Pivot Pin	21.031
	1 : 1	Sleeve for Intermediary Gears	21.032
		Special Nut M 10	21.033
		Special Washer M 10	21.034
	—	Sprocket Wheel 12 teeth 24 teeth 36 teeth	23.012 23.024 23.036
	1 : 1	Sector with sprocket teeth	23.201
	1 : 1	Spacer for Planet Gears	21.013

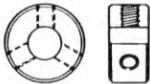
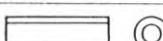
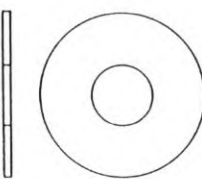
Part	Scale	Description	Ref. No.
	1 : 1	Worm double thread triple thread	24.002 24.003
	—	Worm Wheel dia 24 double thread dia 24 triple thread dia 39 double thread dia 39 triple thread	24.012 24.013 24.022 24.023
	1 : 1	Bevel Gear bevel gear 45° 20 teeth	25.120
	1 : 1	Bevel Gear Bevel gear 40 teeth mating 25.220	25.240
	1 : 1	Bevel Gear mating gear 20 teeth to bevel gear	25.220 25.240
	—	V-Belt Pulley Wheels 20 mm 25 mm 30 mm	26.020 26.025 26.030
	1 : 1	Special screw for flat belt tensioning roller	26.101
	1 : 1	Flat belt tensioning roller	26.110
	1 : 1	Flat piece for connecting chain to above sector 23.201	23.202
	1 : 1	Links for chain	23.204
	1 : 1	Chain roller	23.203
	2 : 1	Circlip for chain	23.205

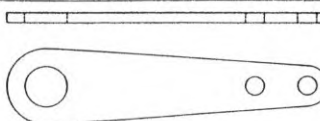
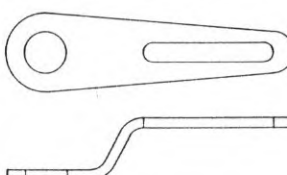
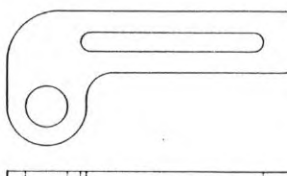
AUTOMAT [a]: X1.3f/4f

Part	Scale	Description	Ref. No.
	—	Flat belt pulley wheels	20 mm 26.120
			30 mm 26.130
			40 mm 26.140
			50 mm 26.150
	1 : 1	Stepped pulley wheel	26.201
	1 : 1	Hand wheel	27.001
	1 : 1	Drum	27.004
	1 : 1	Side Plates to Drum for 4 mm shaft	27.005
	1 : 1	Side Plates to Drum for sleeve of collet chuck	27.006
	1 : 1	Ratchet wheel	28.601

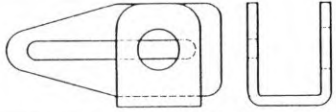
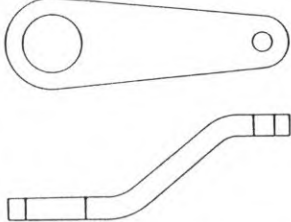
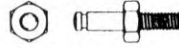
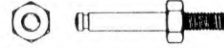
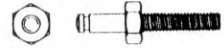
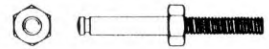
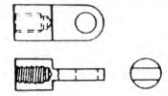
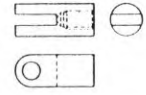
Part	Scale	Description	Ref. No.
	1 : 1	Simple lever for ratchet wheel	28.602
	1 : 1	Adjustable lever for ratchet wheel	28.618
	1 : 1	Pawl for ratchet wheel	28.604
	1 : 2	Indexing Plate for Maltese Cross Mechanism	28.605
	1 : 1	Driver for Maltese Cross Mechanism	28.606
	2 : 1	Driving Pin for Maltese Cross Mechanism	28.610
	1 : 1	Drum for Friction Ratchet for use with levers	28.611
	1 : 1	Drum for Friction Ratchet for use with 4 mm wheels	28.612
	1 : 1	Drum for Friction Ratchet for use with 18 teeth pinion	28.613

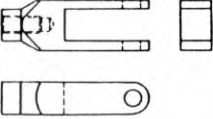
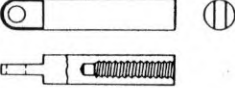
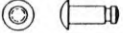
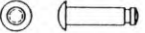
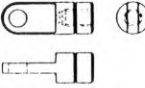
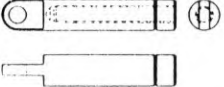
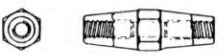
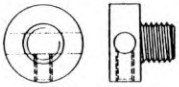
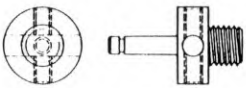
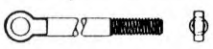
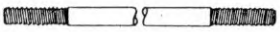
AUTOMAT [a]: X1.3g/4g

Part	Scale	Description	Ref. No.
	1 : 1	Toothed inner part of Friction Ratchet	28.614
	1 : 1	Rollers for Friction Ratchet	28.615
	1 : 1	Stop Collar for Friction Ratchet	28.616
	1 : 1	Spacer 1 mm	31.101
	1 : 1	Spacer 2.5 mm	31.103
	1 : 1	Spacer 5 mm	31.105
	1 : 1	Spacer 10 mm	31.110
	1 : 1	Spacer 20 mm	31.120
	1 : 1	Spacer for 4 mm shaft 2.5 mm	31.603
	1 : 1	Spacer for 4 mm shaft 5 mm	31.605
	1 : 1	Spacer for 4 mm shaft 10 mm	31.610
	1 : 1	Spacer disk 18 mm outside diameter 11.5 mm inside diameter	31.900
	1 : 1	Spacer disk 32 mm outside diameter 11.5 mm inside diameter	31.904

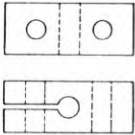
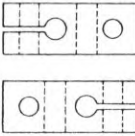
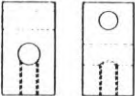
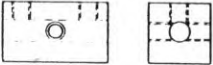
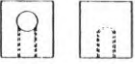
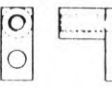
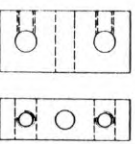
Part	Scale	Description	Ref. No.
	1 : 1	Stop collar for 4 mm shaft	32.001
	1 : 1	Stop collar for 2.5 mm shaft	32.002
	1 : 1	Weight	32.022
	—	Plain lever 20 mm 25 mm 30 mm 40 mm 50 mm 60 mm 75 mm	33.120 33.125 33.130 33.140 33.150 33.160 33.175
	—	Slotted lever 20 mm 25 mm 30 mm 40 mm 50 mm 60 mm 75 mm	33.220 33.225 33.230 33.240 33.250 33.260 33.275
	—	Forked Lever 20 mm 25 mm 30 mm 40 mm 50 mm 60 mm 75 mm	33.320 33.325 33.330 33.340 33.350 33.360 33.375
	1 : 1	Bent Slotted Lever	34.002
	1 : 1	Eccentric lever	34.003

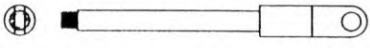
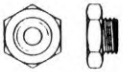
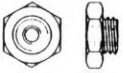
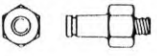
AUTOMAT [a]: X1.3h/4h

Part	Scale	Description	Ref. No.
	1 : 1	Double lever	34.004
	1 : 1	Bent slotted lever for adjustable stroke	34.005
	1 : 1	Hand crank	34.006
	1 : 1	Right angle lever	34.007
	1 : 1	Circlip for 3.5 mm crankpins	33.400
	1 : 1	Crankpin	33.401
	1 : 1	Crankpin	33.402
	1 : 1	Crankpin	33.403
	1 : 1	Crankpin	33.404
	1 : 1	Bar end, right hand thread	33.501
	1 : 1	Forked bar end, right hand thread	33.502

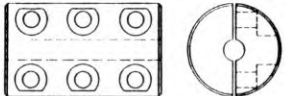
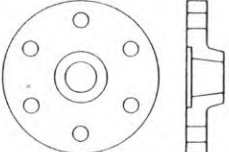
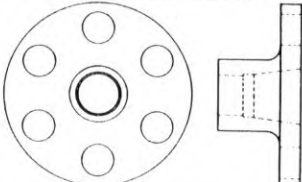
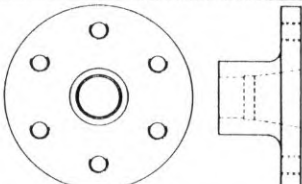
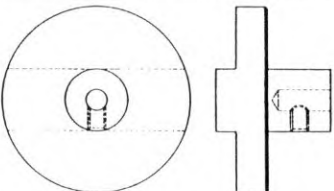
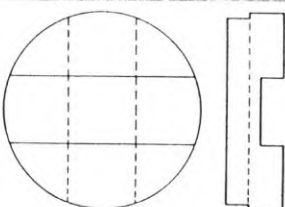
Part	Scale	Description	Ref. No.
	1 : 1	Forked bar end for part 33.502	33.503
	1 : 1	Bar end, right hand thread	33.505
	1 : 1	Pin for connecting bar ends	33.510
	1 : 1	Pin for connecting bar ends when used with part 33.503	33.511
	1 : 1	Bar end, left hand thread	33.601
	1 : 1	Bar end, left hand thread	33.605
	1 : 1	Spanner with external right and left hand thread	33.701
	1 : 1	Spanner with external, right and left hand thread	33.702
	1 : 1	Spanner with internal, right and left hand thread	33.703
	1 : 1	Special part for mounting levers on shafts	33.801
	1 : 1	Special part with crank pin for mounting levers on shafts	33.802
	—	Eye Bolts M 3.5 10 mm 20 mm 30 mm 40 mm 50 mm	33.810 33.820 33.830 33.840 33.850
	—	Threaded Studs M 3.5 30 mm 50 mm 75 mm 100 mm	33.930 33.950 33.975 33.999

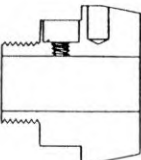
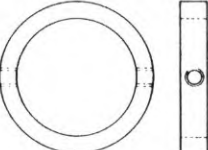
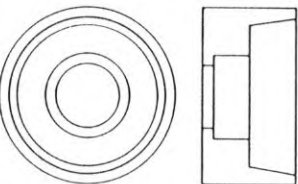
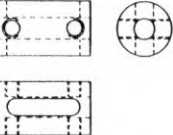
AUTOMAT [a]: X1.3i/4i

Part	Scale	Description	Ref. No.
	1 : 1	Square part for mounting fixed shafts to machine frames	35.102
	1 : 1	Square part for mounting parts at right angles	35.103
	1 : 1	Special connector for various applications	35.104
	1 : 1	Slider for 4 mm shafts	35.105
	1 : 1	Slider for 4 mm shafts	35.106
	1 : 1	Support for slides	35.107
	1 : 1	Sliding piece	35.108
	1 : 1	Special part for various applications	35.109
	—	Bearing blocks for 4 mm shaft for 2,5 mm shaft	35.110 35.111
	1 : 1	Supports and Slides	35.112

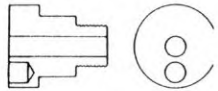
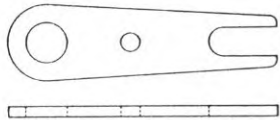
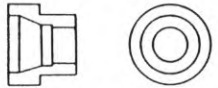
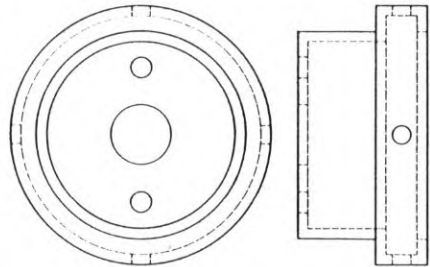
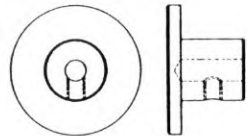
Part	Scale	Description	Ref. No.
	—	Compression Spring <i>Length</i> 10 mm 15 mm 25 mm 50 mm	36.110 36.115 36.125 36.150
	—	Tension Spring <i>Length</i> 15 mm 25 mm 50 mm	36.215 36.225 36.250
	1 : 1	Casing for Spring Assembly	36.500
	1 : 1	Rod for Spring-casing	36.501
	1 : 1	End piece for spring casing for 4 mm shaft	36.502
	1 : 1	End piece for spring casing for M 3.5	36.503
	1 : 1	Piston for Rod 36.501	36.504
	1 : 1	Suspension bolt for tension spring	36.512
	1 : 1	Suspension plate for tension spring	36.513
	1 : 1	Suspension bolt for tension spring	36.515

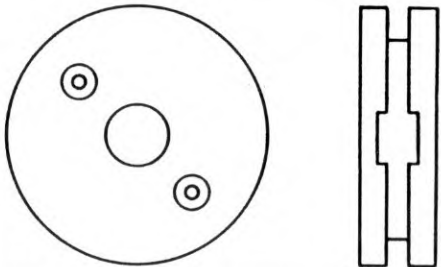
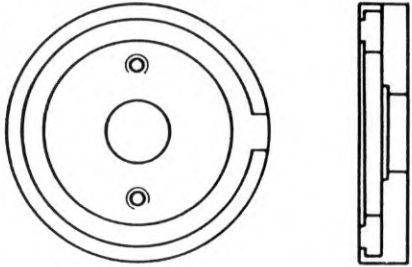
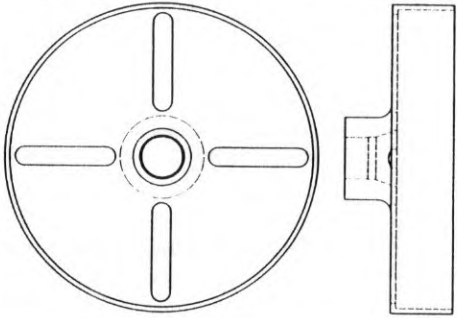
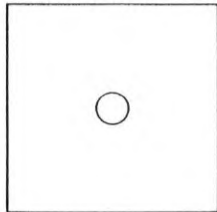
AUTOMAT [a]: X1.3j/4j

Part	Scale	Description	Ref. No.
	1 : 1	Box Coupling	40.001
	1 : 1	Screw for Box Coupling	40.002
	1 : 1	Special Nut for Box Coupling	40.003
	1 : 1	Flange Coupling	40.004
	1 : 1	Double Cone for Flange Coupling	40.005
	1 : 1	Part with cylindrical holes for elastic coupling	40.006
	1 : 1	Part with holes threaded M 3.5 for elastic coupling	40.007
	1 : 1	Special Pin Screw for Elastic Coupling	40.008
	1 : 1	Outer Part for Oldham Coupling	40.009
	1 : 1	Middle Part of Oldham Coupling	40.010

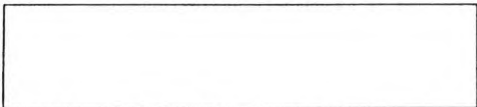
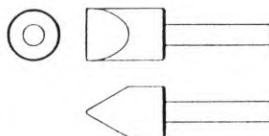
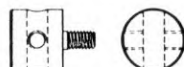
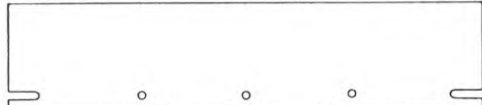
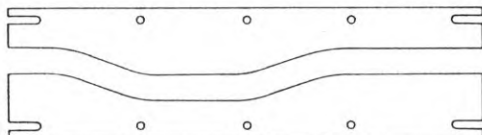
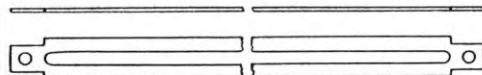
Part	Scale	Description	Ref. No.
	1 : 1	Middle Part of Friction Clutch	40.101
	1 : 1	Cone-End of Middle Part to Friction Clutch	40.102
	1 : 1	Blind-End of Friction Clutch	40.103
	1 : 1	Slip Ring	40.104
	1 : 1	Outer Part of Friction Clutch with internal cone	40.105
	1 : 1	Special Sleeve. Use Grub Screws M 3.5 × 3	40.106
	1 : 1	Stud for Slip-Ring	40.108
	1 : 1	Pin Screw fitting into part 40.101 and 40.106	40.109
	1 : 1	Intermediary Joint fitting on Stud 40.108 of slip ring	40.110

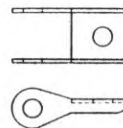
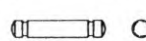
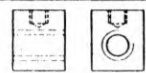
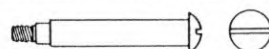
AUTOMAT [a]: X1.3k/4k

Part	Scale	Description	Ref. No.
	1 : 1	Hub for part 40.105 when idling.	40.111
	1 : 1	Clutching lever	40.113
	1 : 1	Sleeve for Collet Chuck. Fits into part 40.105 when used as one-sided clutch	40.114
	1 : 1	Universal Joint	40.120
	1 : 1	Double Universal Joint	40.121
	1 : 1	Body for Bell Cams	50.101
	1 : 1	Special screw for body of bell cams	50.102
	1 : 1	Flat faced cam-follower	50.103

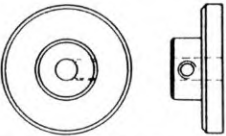
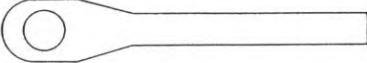
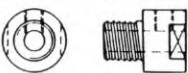
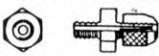
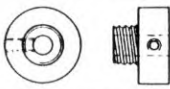
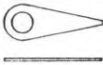
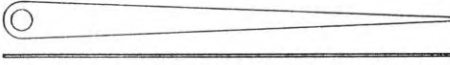
Part	Scale	Description	Ref. No.
	1 : 1	Cam body with groove on circumference	50.104
	1 : 1	Cam body with groove on side	50.106
	1 : 1	Special cam body for grooved cam	50.108
	1 : 1	Screw for cam body 50.104/106, short	50.109
	1 : 1	Screw for cam body 50.104/106, long	50.110
	1 : 2	Presspan disk for disk cams	50.111

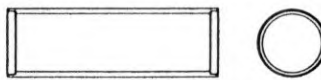
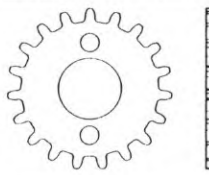
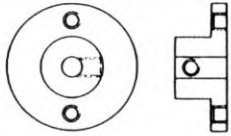
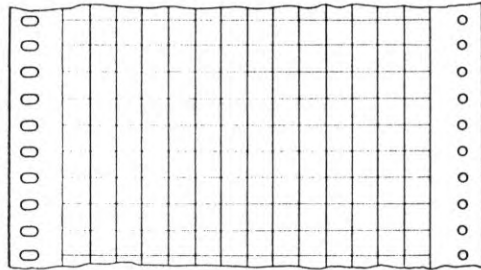
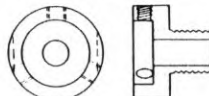
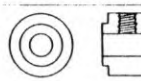
AUTOMAT [a]: X1.3I/4I

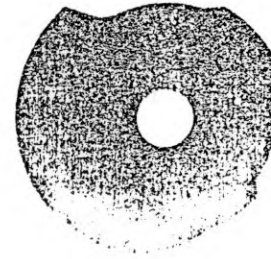
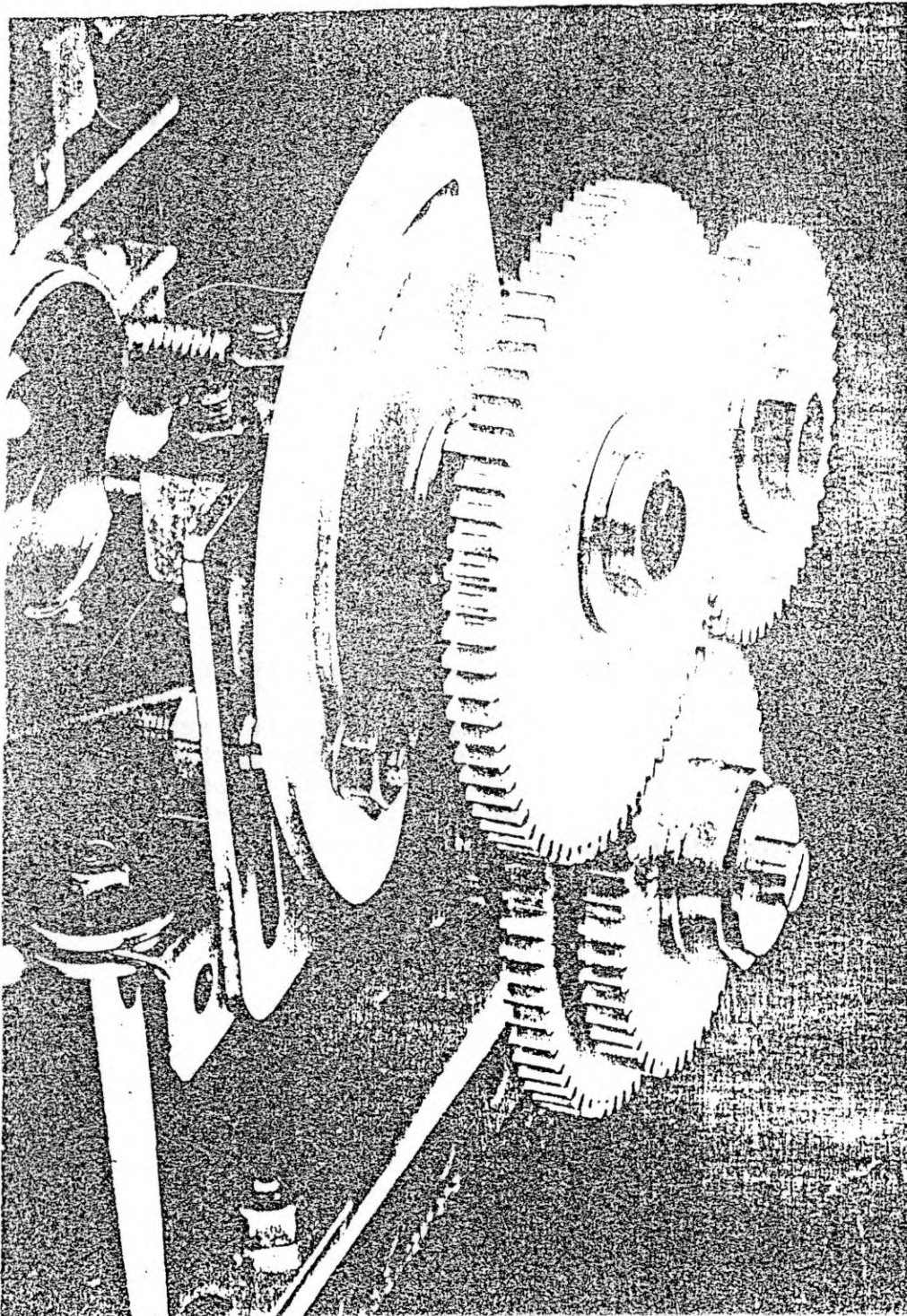
Part	Scale	Description	Ref. No.
	1 : 2	Pressspan strip for bell cams	50.112
	1 : 1	Sleeve for knife-edged cam follower	50.113
	1 : 1	Knife-edged cam follower	50.116
	1 : 1	Sleeve for knife-edged cam-follower	50.117
	1 : 1	Roller	50.118
	1 : 1	Roller with radial threaded hole	50.119
	1 : 2	Blank for Cam Profiles of Bell Cams, metal.	50.120
	1 : 2	Cam-Profile for automatic cone clutch	50.121
	1 : 1	Cam roller	50.201
	1 : 1	Screw for cam roller 50.201	50.301
	—	Slider	50.403

Part	Scale	Description	Ref. No.
	1 : 1	Bearing for Cam Roller	50.410
	1 : 1	Cam roller	50.411
	1 : 1	Shaft for Cam roller fitting parts 50.410/411	50.412
	—	Length Total Threaded 120 60 Lead 176 116 Screws 239 179	51.001 51.002 51.003
	1 : 1	Nut for Lead screw	51.004
	1 : 1	Screw for crank handle, long	59.001
	1 : 1	Crank handle, long	59.002
	1 : 1	Screw for crank handle for hand wheel	59.003
	1 : 1	Crank handle, short	59.004

AUTOMAT [a]: X1.3m/4m

Part	Scale	Description	Ref. No.
	1 : 1	Base for height gauge	76.001
	1 : 1	Arm for height gauge	76.002
	1 : 1	Sliding piece for height gauge	76.003
	1 : 1	Thumb screw for height gauge	76.004
	1 : 1	Writing nib	76.005
	1 : 1	Hub for Pointer hands	for 4 mm shaft 76.008 for 2.5 mm shaft 76.009
	1 : 2	Pointer	black 30 mm 76.010
	1 : 2	Pointer	green 60 mm 76.011
	1 : 2	Pointer	red 165 mm 76.012
	—	Dials	dia 60 mm 76.020 dia 125 mm 76.021
	—	Dial	dia 330 mm 76.022
	—	Ruler mm divisions	76.030

Part	Scale	Description	Ref. No.
	1 : 2	Roller for Recording Instrument	76.101
	1 : 1	Toothed Driving Wheel for Roller of Recording Instrument	76.102
	1 : 1	Hub for roller 76.101	76.103
	1 : 1	Special screw for fitting part 76.102	76.104
	—	Shaft for Roller	76.105
	—	Chart Paper, mm divisions in rolls	76.106
	2 : 1	Combined radial and thrust bearing for 4 mm shafts	76.110
	1 : 1	Casing for above bearing	76.111
	1 : 1	Special collar for use with bearings	76.112
	1 : 1	Support for thumb-screw	76.113



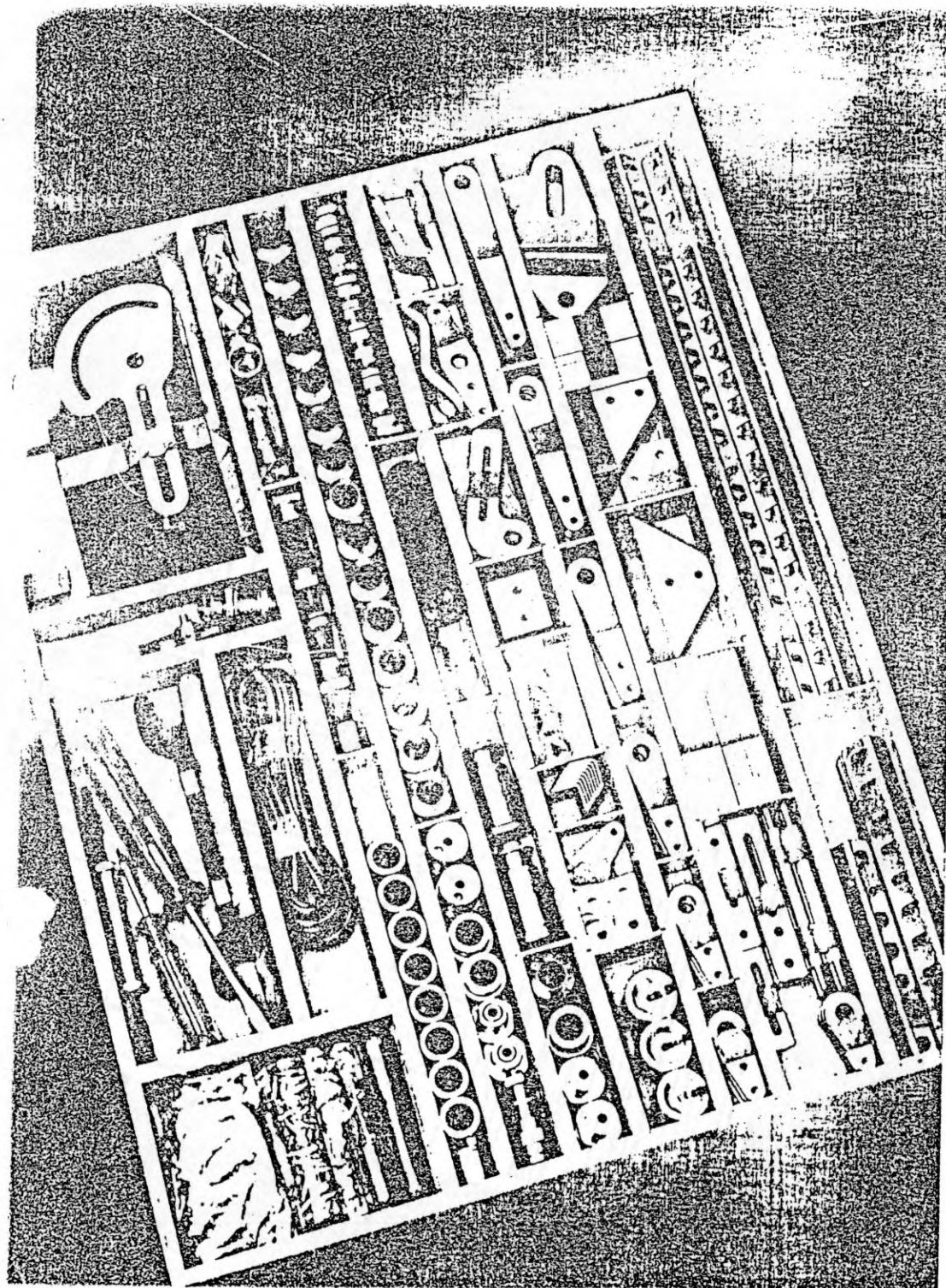
Die **AUTOMAT**
BAUKASTEN

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Made in Switzerland

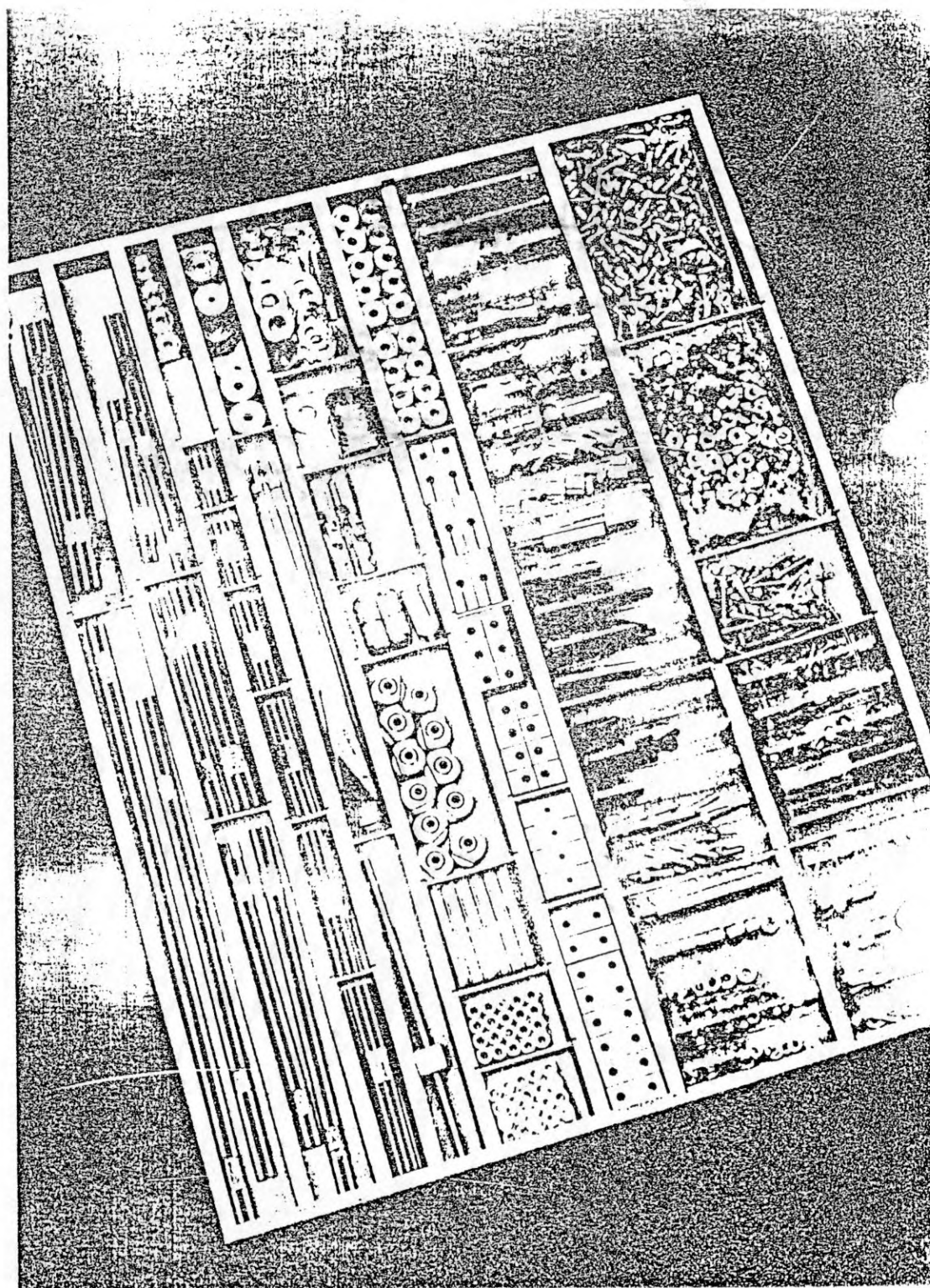
Die Einführung
in die technischen Wissenschaften

Ein wertvolles Hilfsmittel zur Ausbildung
und wissenschaftlichen Forschung



- Wellenverbindungen und Kupplungen: Je 1 Schalen-, Flansch-, elastische Kupplung, Oldham Kupplung, doppelseitige Konuskupplung, mit allen Zusatzteilen.
2 Kardangelenke.
- Hebel: Je 3 Stück Einfachhebel 20, 25, 30, 40, 50, 60, 75 mm.
Je 2 Stück Schlitzhebel, ditto.
Je 1 Stück Gabelhebel, ditto.
Je 2 Stück diverse Hebel von 4 Sorten.
10 Nabenaggregate für Hebel.
- Teile für Koppelstangen usw.: Je 10 Gewindestifte M 3,5, 25, 30, 40, 50, 60, 75 mm.
6 Verbindungsstücke.
3 Spannschlösser mit Links- und Rechtsgewinde.
31 Stangenköpfe, Rechtsgewinde, Linksgewinde, Verbindungsstiften, Kurbelzapfen.
- Teile für Maschinenrahmen: Je 8 Winkelschienen, 1,2 mm dick, mit 5, 7, 10, 15 und 20 Loch.
8 Einfachwinkel gehärtet, 1 x 1 Loch, 90°.
66 verschiedene Flachbleche und Winkel.
1 Paar Plastik-Seitenplatten für Getriebekasten.
- Distanzringe: 142 Distanzringe verschiedener Durchmesser und Längen.
- Schrauben, Muttern: 338 Schrauben M 3,5 und 2,6 Zylinderkopf in verschiedenen Längen. Gedreht.
250 Muttern M 3,5, 6kant, Unterlagscheiben, 20 Sicherungsscheiben für Kurbelzapfen.
- Leitspindel: 1 Stück, Gewindelänge 60 mm, mit Mutter.
- Teile für Schieber und Kulissen: 14 Stück.
- Teile für Instrumente usw.: 1 Antriebstrommel für Registrierapparat.
1 16-m-Rolle Millimeter-Diagrammpapier.
1 Walze für verschiedene Anwendungen.
5 Zeiger und 4 Naben für 4- und 2,5-mm-Wellen.
Je 2 Zifferblätter von drei Typen.
1 Maßstab, 1 Schreibstift.
- Federn: Je 3 Druckfedern, 15, 25 und 50 mm lang.
Je 3 Zugfedern, gleiche Längen.
1 Federgehäuse (Seite 22, Fig. 3).
- Nebst diversen andern Teilen, Plastik-Treibriemen, Werkzeugen.
Mit dem Baukasten 33 wird auch ein vollständiger Satz Anleitungshefte geliefert

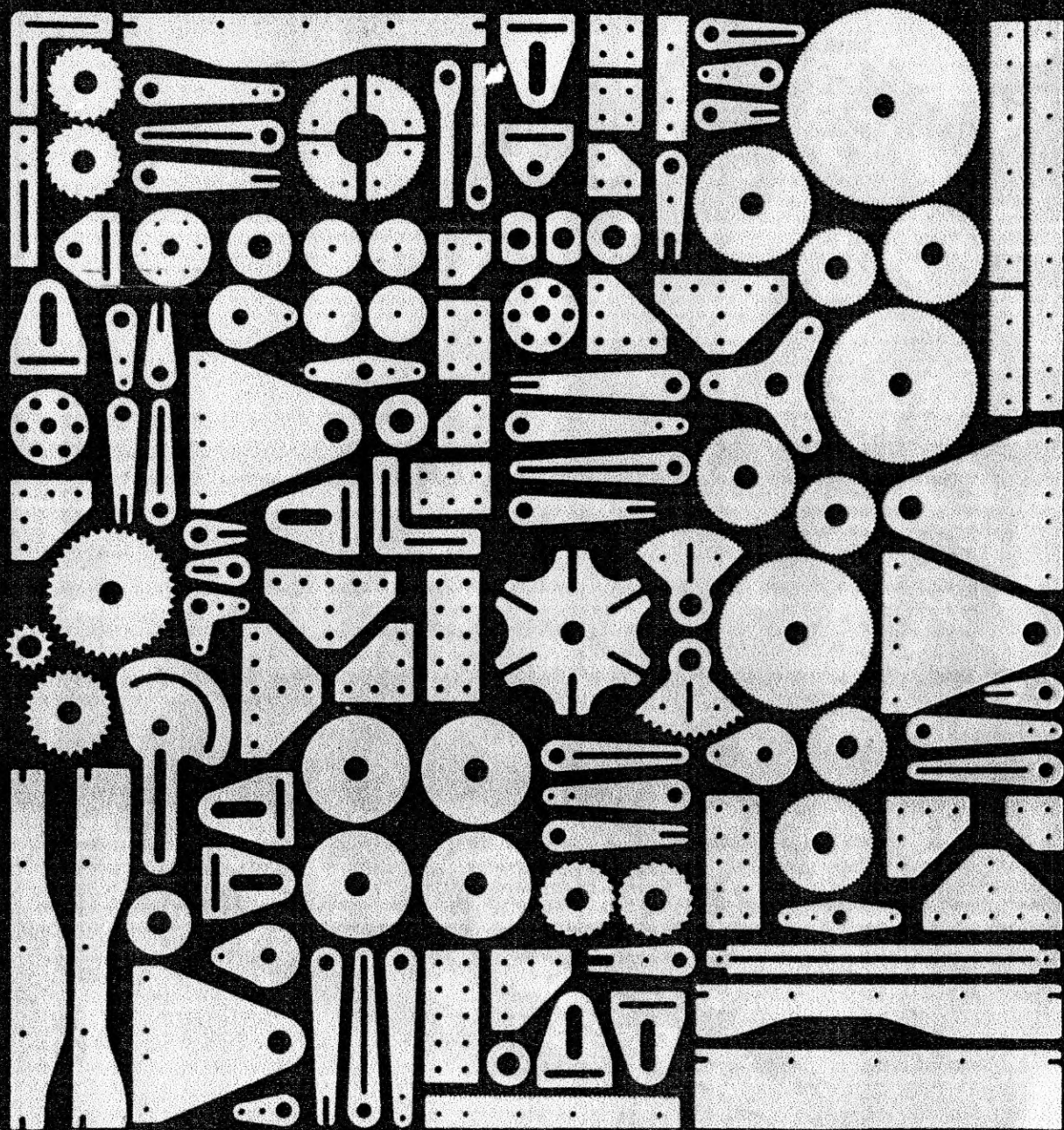
- Schneckengetriebe: Je 1 Schnecke 2- und 3gängig.
Je 2 dazupassende Schneckenräder (Schraubenräder).
- Segeelräder: 2 Stück 45, Übersetzung 1:1, 20 Zähne.
1 Paar 20/40 Zähne. Übersetzung 1:2.
- Flachriemenscheiben: Je 2 Stück 20, 30, 40, 50 mm.
- Seilriemenscheiben: Je 2 Stück 20, 25, 30 mm.
- Stufenscheiben: 2 Stück.
- Bestandteile für Kurventriebe: 2 Kurvenkörper für Glockenkurven.
2 Kurvenkörper mit T-Nuten.
4 Kurvenrollen-Aggregate, 1 Kurventaster.
25 Preßspan-Rohlinge für Scheibenkurven.
30 Preßspan-Rohlinge für Glockenkurven.
20 Metall-Rohlinge für Glockenkurven.
1 Satz Kurvenprofil für automatische Kupplung.
Diverse andere Bestandteile.
- Teile für Schaltwerke: 1 Malteserkreuz 6nutig mit Triebstock.
1 Sperrad mit Schalthebel und Sperrklinke.
3 komplette Sätze Klemmrollen-Freilauf.
- Wellen: 4 mm rostfreier Stahl, centerless geschliffen.
2/50 mm, 4/75 mm, 5/100 mm, 5/125 mm, 2/150 mm,
2/200 mm, 4/250 mm.
Ditto mit einem flachen Ende:
2/75 mm, 2/100 mm, 2/125 mm.
2,5-mm-Wellen:
Je 1 Stück 100 und 125 mm lang.
Hohlwellen: Je 1 Stück 40 und 80 mm lang.
- Lager: 12 Aggregate für Gleitlager für 4-mm-Wellen.
8 Lagerblöcke für 4-mm-Wellen.
4 ditto für 2,5-mm-Wellen.
4 Schulterlager für 4-mm-Wellen.
16 Lagerstützen.
- Stellringe: 18 für 4-mm- und 4 für 2,5-mm-Wellen.
- Spannzangen-Aggregate: 33 Stück für Räder, Ritzel, Hebel usw.



AUTOMAT

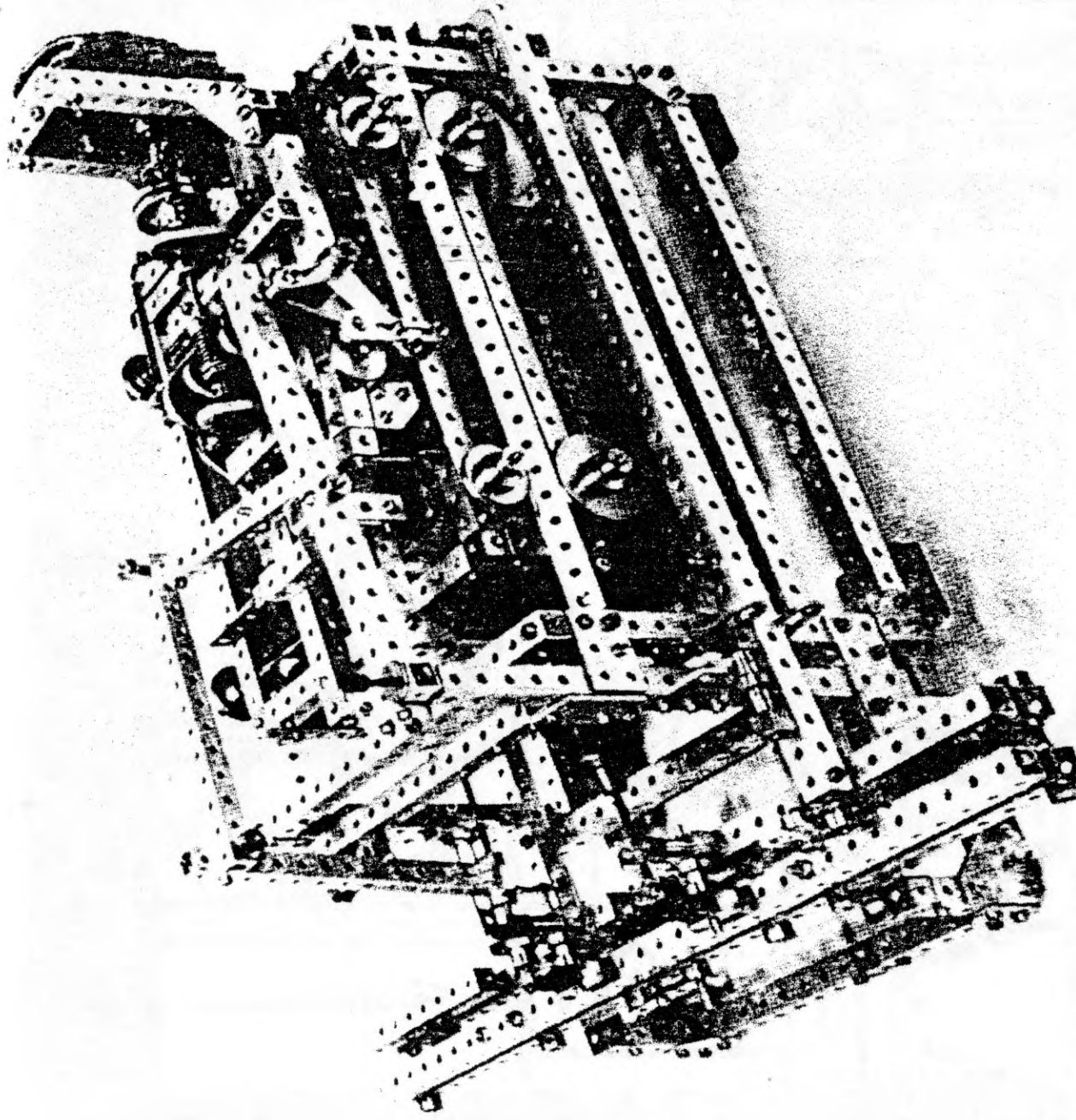
No manual is known from this period. This Parts List cover is 90% full size.

TEILELISTE
PARTS LIST
LISTE DES PARTS DÉTACHÉES
LISTA DE PIEZAS



AUTOMAT SERVICE INTERNATIONAL · D 6905 SCHRIESHEIM · W/GERMANY · POSTFACH 60

AUTOMAT [b]: X1.2



One Set AUTOMAT COMPACT 00.300 contains:

4 pcs. square tubes	3 holes No. 00.003	2 pcs. connectors, long	No. 00.001
8 pcs. square tubes	4 holes No. 00.004	4 pcs. connectors	No. 00.102
8 pcs. square tubes	5 holes No. 00.005	4 pcs. connectors L-form	No. 00.103
8 pcs. square tubes	8 holes No. 00.008	4 pcs. connectors T-form	No. 00.104
8 pcs. square tubes	13 holes No. 00.013	4 pcs. connectors T-corner	No. 00.105
4 pcs. square tubes	18 holes No. 00.018	16 corner pieces	No. 00.106
4 pcs. square tubes	23 holes No. 00.023	* pcs. connectors X-form	No. 00.107
4 pcs. square tubes	28 holes No. 00.028	* pcs. connectors X-corner	No. 00.108
4 pcs. square tubes	33 holes No. 00.033	4 end pieces for tubes	No. 00.109
		1 pair of telescopic pieces	No. 00.110
		1 pair of hinged pieces	No. 00.111
		1 pair of hinges with stud	No. 00.112
100 cheese head screws	8 mm long	4 pcs. connectors, short	No. 00.113
100 cheese head screws	20 mm long	* pcs. connectors XX-form	No. 00.114
100 cheese head screws	30 mm long	1 pair of slotted hinges	No. 00.115
300 hexagonal nuts, washers, tools, etc.		* on request only	

THE AUTOMAT ENGINEERING SYSTEM

The Automat Mechanical Engineering System is a total system designed to fit the needs of several disciplines, with materials that have varied uses. This system will

serve the design engineer, the industrial engineer, the researcher, the student and the teacher. AUTOMAT consists of a series of all metric kits. These are:

MODEL 25: the smallest kit.

This model includes 1300 parts in wooden case (13.8" long x 11" wide x 3" high) and weighs 22 pounds. The ideal kit for the beginner who wishes to learn the basics of mechanical systems. This model is an excellent educational tool and is best utilized by teams of two or three students whose instructor has a larger AUTOMAT kit. It's also an invaluable aid in demonstrating various principles of physics and other areas in which mechanical systems are used.

MODEL 30: similar to model 25 in content. However, this model contains 2600 parts—housed in a wooden case (20.5" long x 17" wide x 4.7" high) weighing 39.5 pounds. A top notch educational tool for larger teams of students or an instructor wishing to build several working models to demonstrate principles of physics, mechanical drawing or kinematics.

MODEL 1500: the smallest kit in which a planetary gear system is included. This model consists of 3800 parts, weighs 55 pounds and comes in a wooden case (20" by 16.9" wide and 5.9" high). This case is the same one used for models 1600 and 2000. It will, therefore, accommodate additional parts as they are needed and ordered. This is the first of three kits designed for industry — but will also serve the needs of larger educational programs.

MODEL 1600: the first kit which includes the square tube frame system. It contains 4100 parts, weighs 66 pounds and is housed in a wooden case (20" long by 16.9" wide and 5.9" high). This model will fill most requirements of industry, education and research.

MODEL 2000: The most advanced of the AUTOMAT kits. It contains 5300 parts in

cluding 2 square tube frame systems. Weighs 77 pounds and is housed in a wooden case (20" long by 16.9" wide and 5.9" high). The ideal model for research laboratories and industry, this model consists of more components for the development of larger and more complex mechanical systems. This is our most popular model.

THE AUTOMAT 4-12 MOTOR SET: Consists of 4 different gearmotors, each with its own interchangeable gear head. The motors provide 2-4-6-8-10-15-20-30-60-120-200-300 RPM.

THE AUTOMAT TRANSISTORIZED VARIABLE SPEED REVERSIBLE MOTOR: consists of two basic parts—that which houses the motor and the box which houses the controls. Has an output speed of 5 to 50 r.p.m.

THE AUTOMAT COMPACT MODEL SERIES are 30 prepackaged kits designed to demonstrate a particular single mechanical system, such as cardiodrive or a differential gear. These small kits are ideal aids for the high school instructor in mechanical systems or mechanical drawing courses.

THE AUTOMAT COMPACT SQUARE TUBE FRAME SYSTEM consists of precision made square tubes and a collection of connecting pieces—a total of 690 parts. Any type of supporting frame work can be constructed with this system. With this system many useful supports for everyday use can be constructed.

THE AUTOMAT COMPACT TECHNIKIT is a series of kits and programmed instruction courses for elementary and junior high school levels.

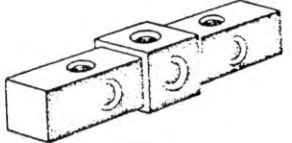
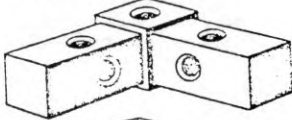
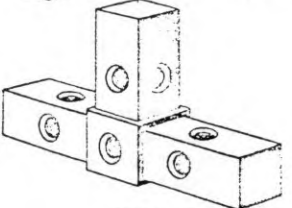
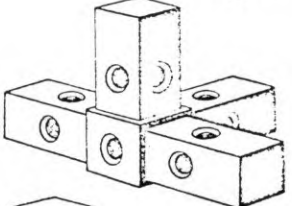
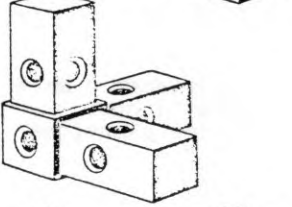
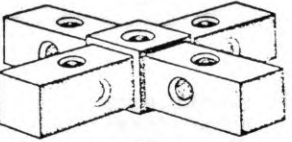
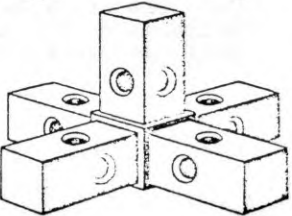
AUTOMAT [b]: X1.6b

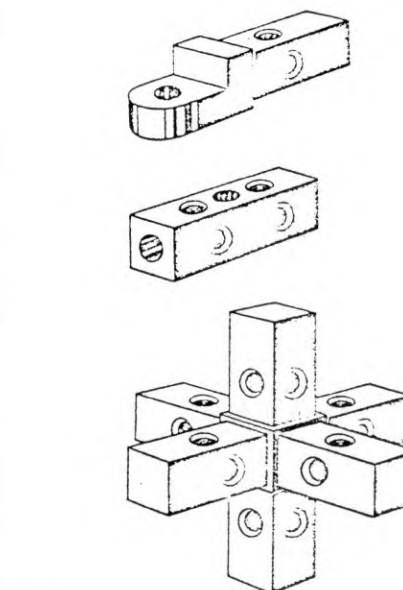
Type	25	33	1500	1600	2000	4 - 12	80.600
number of parts	1,300	2,600	3,800	4,100	5,300	32	—
number of trays	4	3	4	4	4	1	—
length mm	350	450	520	520	520	350	—
width mm	280	350	430	430	430	280	—
height mm	80	130	150	150	150	95	—
weight lbs	22	39½	55	66	77	15½	11
with square tubes	no	no	no	1 Set	2 Sets	no	no
with Planet. gear	no	no	yes	yes	yes	—	—
with manuals	yes	yes	yes	yes	yes	—	—

[The Table above may not be clear and the lines read in order: Type, 25, 33, 1500, 1600, 2000, 4 = 12, 80.600; number of parts, 1300, 2600, 3800, 4100, 5300, 32, - ; number of trays, 4, 3, 4, 4, 4, 1, - ; length mm, 350, 450, 520, 520, 520, 350, - ; width mm, 280, 350, 430, 430, 430, 280, - ; height mm, 80, 130, 150, 150, 150, 95, - ; weight lbs, 22, 39½, 55, 66, 77, 15½, 11; with square tubes, no, no, no, 1 Set, 2 Sets, no, no; with Planet. Gear, no, no, yes, yes, yes, - , - ; with manuals, yes, yes, yes, yes, yes, - , -]

Parts from a mid-1960s List, not shown in AUTOMAT [a] or [c]

AUTOMAT [b]: X1.3/4

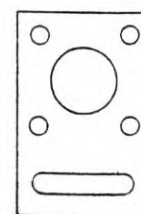
Teil - part	No	Bezeichnung Description
	00.102	Verbindungsstück Connecting piece Pièce de connexion
	00.103	Verbindungsstück Connecting piece Pièce de connexion
	00.104	Verbindungsstück Connecting piece Pièce de connexion
	00.105	Verbindungsstück Connecting piece Pièce de connexion
	00.106	Verbindungsstück Connecting piece Pièce de connexion
	00.107	Verbindungsstück Connecting piece Pièce de connexion
	00.108	Verbindungsstück Connecting piece Pièce de connexion



00.112 Scharnier mit Zapfen
Hinge with stud
Charnière avec tenon

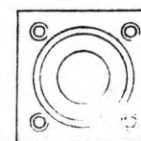
00.113 Verbinder + Lagerteil
Connector + bearing
P.d.connexion + palier

00.114 Verbindungsstück
Connecting piece
Pièce de connexion



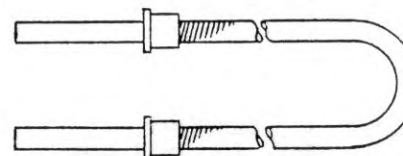
03.103

~~03.103~~ Lagerstütze f. Kugellager
Support for ball bearing
Support p. roulement rad.

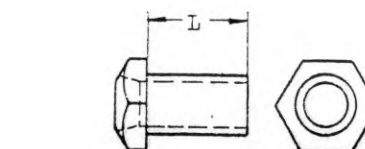


03.104

~~03.104~~ Kugellagerträger
support for ball bearing
support pour roulements
passend-fitting-corresp.
zu-to-pour 03.104



09.100 Biegsame Welle 100 mm
09.150 Flexible shaft 150 mm
09.200 Arbre flexible 200 mm

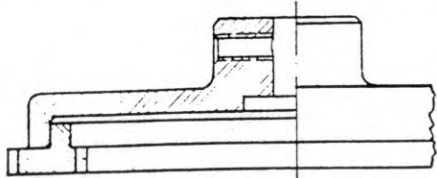


L
11.802 Hülse f.Spannzange 4 mm
11.409 Sleeve f.coll chu.10 mm
11.419 Douille p. pince 19 mm
11.426 26 mm
11.432 32 mm

AUTOMAT [b]: X1.3/4a



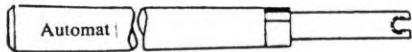
- Spezial-
17.610 Gewindestift M 5 x10
Grub screw
Vis sans tête



- 21.001 Planetenradkörper
Body for Planetary Gear
Corps pour engrenage
planétaire



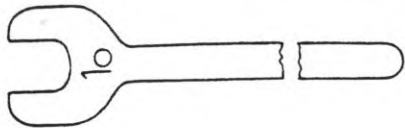
- 21.016 Mutter f. Planetenträger
Nut for Planetary gear hub
Ecrrou pour 21.012



- 23.206 Ketten-Montagewerkzeug
Tool for chain assembly
Outil pour le montage
des chaînes



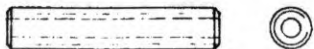
- 23.207 Kette montiert 500 mm
Chain assembled
Chain montée



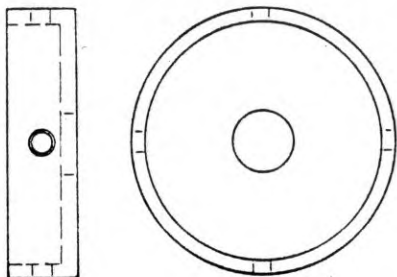
- 23.211 Gabelschlüssel 10 mm
Wrench
Clef



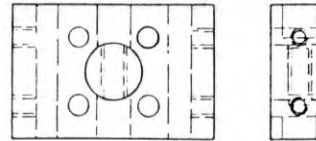
- 32.015 Gewicht 15 g
Weight
Poid



- 33.420 Gewindebuchse M8 x 1x 20
33.430 Treaded sleeve x 30
33.440 Manchon fileté x 40



- 50.101 Kurventräger
Body for bell cams
Corps pour came cloche



- 51.005 Spindelsupport
Nut for lead screw
Support pour vis mère



- 76.110 Rillenkugellager 4 mm
Radial ball bearing
Roulement radial



- 76.113 Stütze für Stellschraube
Support for thumb screw
Support pour vis 16.403



- 76.115 Zwischenstück Welle/Gewindestange
Connection shaft/screw
Connexion arbre/tige filetée



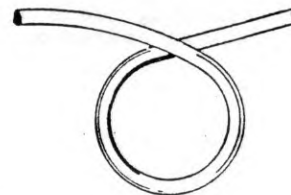
- 76.116 Rolle für Führungen
rollers for sliders
Rouleaux p. coulisses



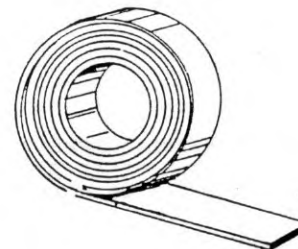
- 76.114 Bleiminer für 76.005
Leads for 76.005
Mines pour 76.005



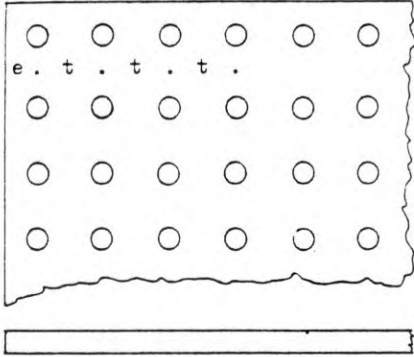
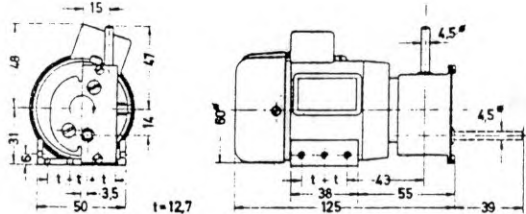
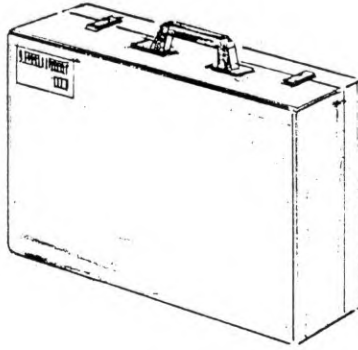
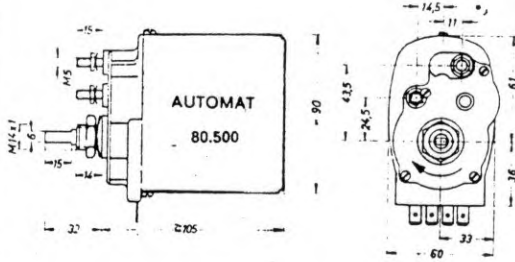
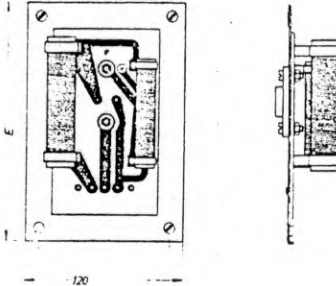
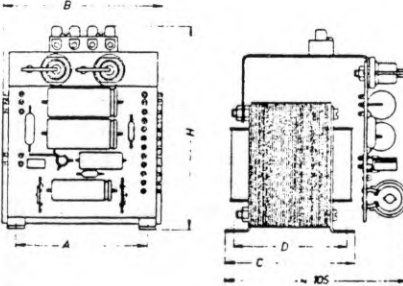
- 76.117 Rundriemen 3 mm Ø
Plastic cord
Cordes plastique



- 76.118 Flachriemen 10 x 1,5 mm
schweißbar PVC
Flat belt weldable
Courroies de transmission
plastique soudable

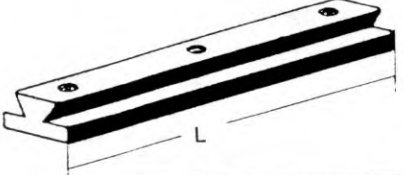
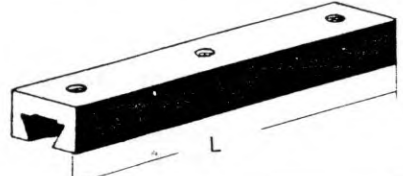
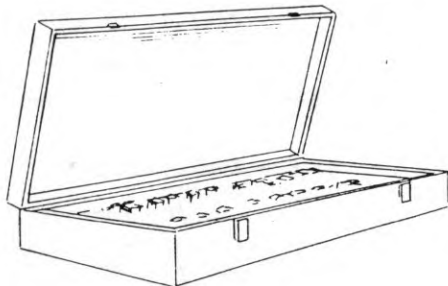
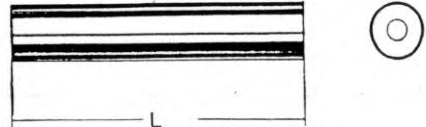


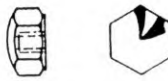
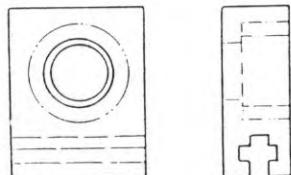
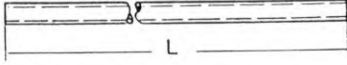
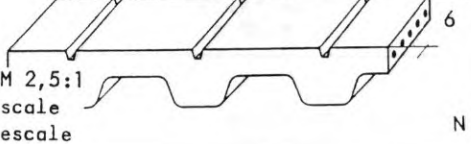
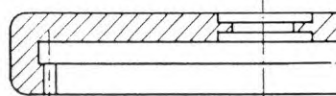
AUTOMAT [b]: X1.3/4b

	76.119 Lochplatte zum Verkleiden von AUTOMAT-Konstruktionen. 303 x 214 mm 24 x 17 Loch. 4 mm Preßspan, blau oder rot Holed plate for panelling AUTOMAT constructions Preßspan 4 mm, red or blue Plaque plate 24 x 17 trou Preßspan 4 mm, rouge ou bleu e = 6,3 mm, t = 12,7 mm		80.002 - 80.300 AUTOMAT Getriebe-Motor 220/110 V, 50 + 60 Hz Gearmotor Moto - réducteurs 2 + 4 + 6 + 8 + 10 + 15 20 + 30 + 60 + 120 + 200 300 U/Min - RPM
	77.000 Holzkoffer mit Innenfächern Wooden case with trays Malette de bois avec des plateaux intérieure Typ 1500 50 x 37 x 14 cm 77.100 Holzkoffer, case, malette Type 33 45 x 36 x 12 cm 77.200 Holzkoffer, case, malette Type 25 35 x 28 x 8 cm 77.300 Holzkoffer, case, malette Type "4=12" 34 x 28 x 10 cm		80.500 Elektr. Regel-Motor Variable Speed Motor Moteur el. à régler 220/110 V, 50 W 40 - 60 Hz, 1 - 50 U/Min
	78.000 Vaseline vaseline vaseline		80.520 Kühlblech für 80.500 Cooling surface Plaque frigorifique pour 80.500 A = 65 mm, B = 78 mm C = 62 mm, D = 48 mm E = 200 mm, H = 110 mm
			80.530 Netz + Regelteil Power supply + regulating device Installation électronique de Reglage

AUTOMAT [b]: X1.3/4c

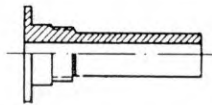
Parts from a 1970 List, not shown in AUTOMAT [a] or [c]

Teil part pleza	Nr.	Bezeichnung description
	N 00.205	Unterprofil L 63,5 mm
	N 208	Slide bar 101,5 mm
	N 210	Barre queue d'aronde 127,0 mm
	N 211	Riel de guida 139,7 mm
	N 213	165,0 mm
	N 223	292,0 mm
	N 228	355,5 mm
	N 00.302	Gleitstück L 25,4 mm
	N 303	Slider threaded 38,0 mm
	N 305	Pièce coulissante 63,5 mm
	N 310	Patin con filete 127,0 mm
	00.300	1 Satz Vierkantrohr m. Verbindern 1 Set of square tubes + connecting pieces 1 jeu de tubes carrés av. d. connecteurs 1 surtido de tubos con piezas de conexión
	N 00.600	2 Satz 4kt-Rohr 00.300 2 Sets of Nr 00.300 2 jeux de Nr 00.300 2 surtidos Nr 00.300
	N 01.002	Distanzstück L 55 mm
	N 003	Spacer 32 mm
	N 004	Barre d'ecartement 23 mm
	N 005	Barra de separación 10 mm
	N 01.008	Spezialmutter für Nr. 01.001 Spezial nut for 01.001 Ecrou special pour 01.001 Tuerca special por 01.001
	N 00.009	Gegenstück zu 01.008 Mating part to 01.008 Doville pour 01.008 Anillo por 01.008

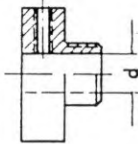
	A	01.225 Fuß für Getriebebox foot for gear box Pied p. boîte d.transmission Pié
	N	03.103 Lagergehäuse für 4 + 6 mm W. Housing f. ball bearings Carter p. paliers à billes Caja p. cojinetes de bolas
	L = 10	08.010 Hohlwelle 4/2,5 mm
	40	040 Hollow shaft
	80	080 Arbre creux - eje hueco
		11.305 Spannzange ungeschlitzt 5 mm
	N 310	Collet chucks unslotted 10 mm
	N 322	Pince d.s. sans fentes 22 mm
	N 333	Pinza sin ranuras p.ej. 33 mm
	18.402	Sechskantmutter M 3,5 SW 7
	802	Hexagon nut M 8x1 SW 16
	805	Ecrou hexagonal M 8x1 SW 12
	810	Tuerca hexagonal M 10x1 SW 16
	812	M 12x1 SW 16
	N	20.330 Zahnriemen 5mm Tlg 66 Z Toothed belt 5mm pitch Courroie denté Correa dentado Modul = 1,592
	N	20.410 Zahnriemen 5mm Tlg 82 Z Toothed belt 5mm pitch Courroie denté 82 dents Correa dentado 82 dientes Modul = 1,592
		21.001 Planetenradkörper Body f. Pl. Gear Corps p. engr. planétaire Cuerpo p. engr. planetario

M 1:1

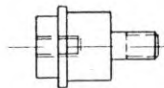
AUTOMAT [b]: X1.3/4d



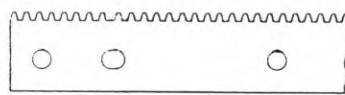
21.003 Lagerzapfen für Pl.radkörper
Hub to body f. Pl.Gear
Moyeu pour corps Nr. 21.001
Cubo para cuerpo Nr. 21.001



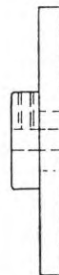
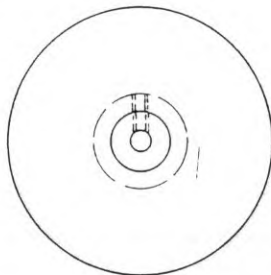
21.004 Gleitlager f. Pl.rad-Getriebe
d=4 Bearing for Planetary Gear
Palier p. engranage planét.
21.005 Cojinete para engranaje plan.
d=8 mm



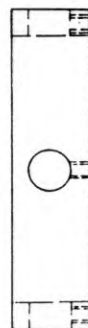
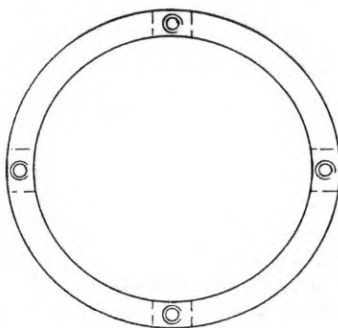
A 21.012 Lagerzapfen f. Pl. Räder
Hub for planetary gears
Moyeu p. roues planètes
Cubo para planetarios



N 22.016 Zahnstange, m = 0,75 Z 16
027 Rack Z 27
054 Crémaillère Z 54
081 Cremallera Z 81



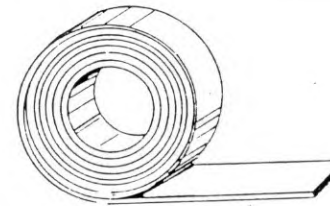
N 23.350 Reibrad-Planscheibe m. Nabe
50 mm Friction disk with hub
N 23.370 Plateau a friction + moyeu
70 mm Plato de fricción



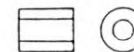
25.250 Ring für Differentialgetriebe
Housing for Differential Gear
Corps p. engranage different.
Cuerpo p. engranaje different



26.300 Flachriemen 10 x 1 x 330 mm
Flat belt Polyurethan yellow
Courroie en plastic
Correa plana



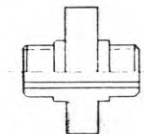
26.301 Flachriemen schweißbar 10x1,5
PVC flat belt weldable
Courroie soudable
Correa soldable, plana



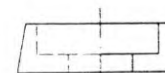
31. N 208 6 x 4,1 x 8,0
601 8 x 4,1 x 1,0
603 8 x 4,1 x 2,5
605 8 x 4,1 x 5,0
610 8 x 4,1 x 10,0
620 8 x 4,1 x 20,0



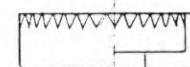
33.620 Gewindebuchse M 8 x 1 x 20
630 Threaded sleeve x 30
640 Manchon fileté x 40
Arandela ros cada



40.101 Konuskupplung - Mittelteil
Friction clutch middle part
Acc. à friction part inter.
Parte inter. del acopl. de
fricción

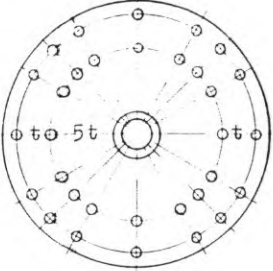
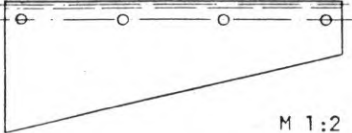
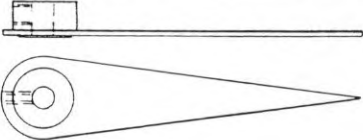
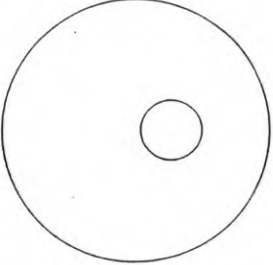
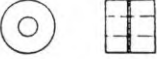
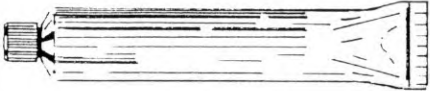
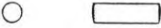
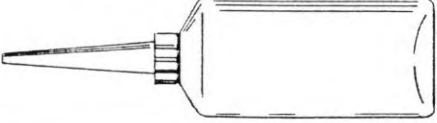


40.102 Konusende für 40.101
Cone - end for 40.101
Partie conique p. 40.101
Parte cónica para 40.101



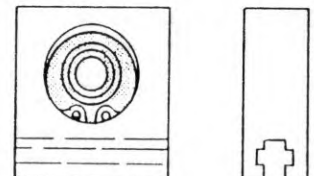
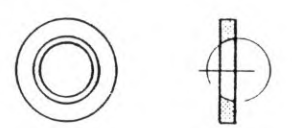
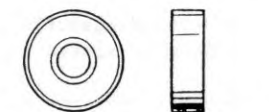
40.103 Zahnring f. Zahnkupplung
Toothed ring f. coupling
Part denté p. accouplmt.
Anillo p. embrague dent.

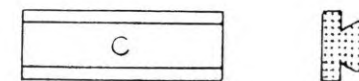
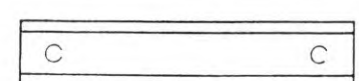
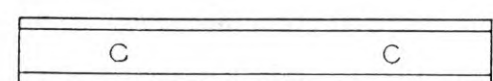
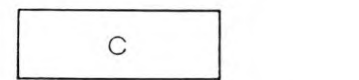
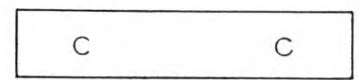
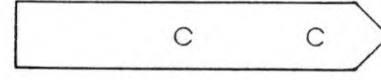
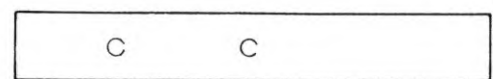
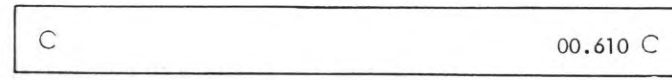
AUTOMAT [b]: X1.3/4e

	40.200 Wellenverbinder 4/4 mm Shaft coupling (2x32.003) Accouplement d'arbres Acoplamiento para arboles		51.006 Spindelstein doppelt Nut for lead screw Support pour vis mère Soporte p. tornillo guía
 M 1:2	50.107 Planscheibe 100 Ø Face plate Corps de came special Cuerpo especial de lava	 A	59.002 Handgriff zu 59.001 Handle Poignée Empunadura
			59.005 Kugelknopf 12 mm Ø Ball knob Bouton rond Botone esférico
 N M 1:2	50.122 Keilschubteil wedge-shaped plate Plaque conique Platina cónico	 N	76.006 Zeiger mit Nabe 30 mm N 007 Pointer with hub 60 mm N 008 Aiguille av. moyeu 120 mm Aguja con cubo
 N 4 mm	50.123 Exzentrerscheibe Eccentric sheave Disque excentrique Disco cónico		76.111 Kugellagergehäuse Casing for ball bearing Capsule pour roulement Caja de rodamiento
		ohne Abbildung without illustration sans - sin illustration	76.119 Preßspanplatte 303 x 214 x 4 Holes plate for panel-constr Plaque plate en prespan bleue Placa de presspan roja o azul
	50.411 Kurvenrolle Cam roller Rouleau pour came Rodillo de leva		78.000 1 Tube Vaseline Vaseline for lubrication Vaseline Vaselina
	50.412 Bolzen zu 50.411 Pin for 50.411 arbre p. 50.411 eje para 50.411		78.001 1 Kännchen Öl Oil bottled D'huile p. lubrication Alkuza con aceite animal

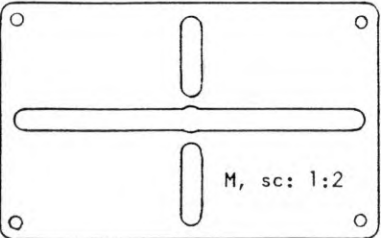
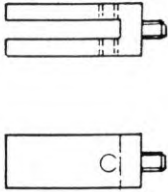
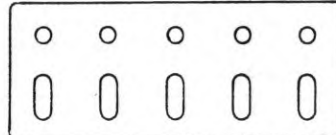
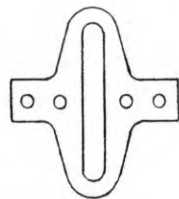
Parts from a late-1970s List, not shown in AUTOMAT [a] or [c]

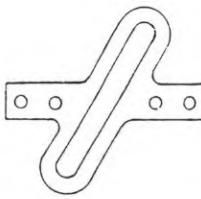
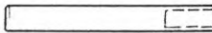
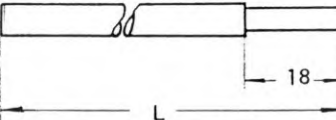
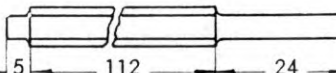
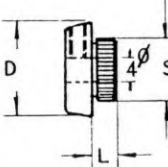
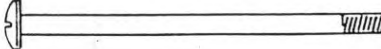
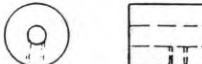
AUTOMAT [b]: X1.3/4f

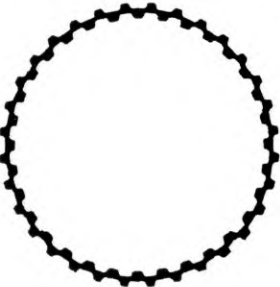
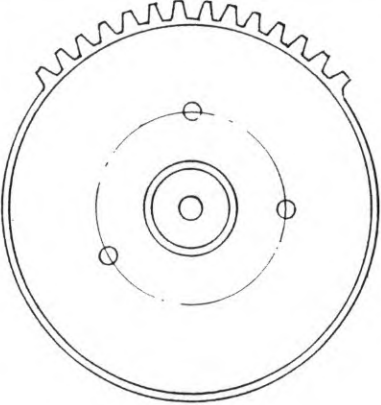
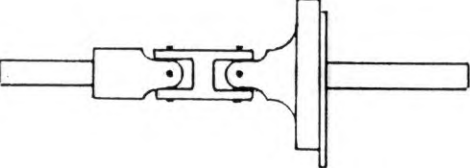
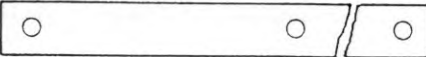
TEIL part pieza	Nr Bezeichnung description
	11.602 Hülse für Spannzange Sleeve f. collet chucks Douille pour pinces d.s. Manguito p. pinzas
	03.300 Kalottenlager - komplett 6mm Selfadjusting bearing 6 mm Palier ajdustabe 6 mm compl. Cojinete esférico 6 mm compl.
	03.108 Kalottenring für 03.105 Spheric spacer f.03.105 Rondelle por 03.105 Arandele esférico p.03.105
	03.105 Sinterbronze-Kalotte 6 mm Spherical bearing 6 mm Sphère p. palier ajustable Bola p. cojinete esférico
	03.106 Vierkantschraube für 03.103 Special screw for 03.103 Vis speciale pour 03.103 Tornillo para pieza 03.103
	03.107 Sicherungsring für 03.103 Snap ring Anneau de protection Anillo de seguridad
	76.200 Rillenkugellager 6 mm Ball bearing Roulement radial Rodiamiento radial

	00.503 Unterprofil Slide bar base	3.t	56
	00.505 Unterprofil Slide bar base	5.t	26 27
	00.507 Unterprofil 7.t Slide bar base	18 25 47	
	00.602 Oberprofil Slide bar top	2.t	27 47
	00.603 Oberprofil Slidebar top	3.t	18
	00.605 Oberprofil Slide bar top	5.t	11 26
	00.670 Oberprofil für Gehrung Slide bar top with mitre end		56
	00.607 Oberprofil 7.t Slide bar top		25
	00.610 C	s.o. same lo.t	50 51 52
Weitere Schwalbenschwanzprofile finden Sie unter den Nummern: 00.205 bis 00.310		Other dovetail bars are shown in the main catalogue under Nos 00.205 till 00.310	

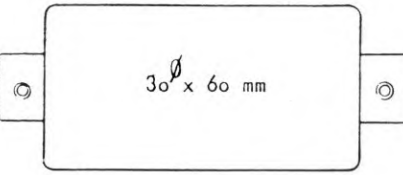
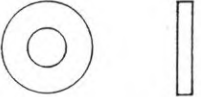
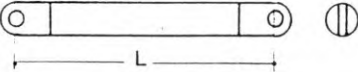
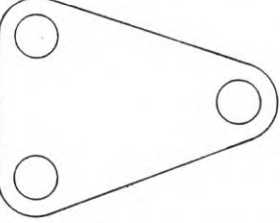
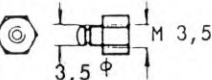
AUTOMAT [b]: X1.3/4g

	01.001 M Plexiglas-Seitenplatte mit Ausfräsung 12,2 Ø Plexi-plate with center hole 12,2 dia für/for Modell 14 Teil/part 21.005
	01.111 Gabelstück 10x10x25 für Verbindungsstücke 00.102 bis 00.108 u. andere Forked connecting bloc for use with all corner- pieces and other purposes
	01.112 Einschraubzapfen für Ver- bindungsstücke 10x10x17 Additional square stud for all cornerpieces
	01.224 12 x 5 mm Gummipuffer (Fuß) Rubber buffer (foot)
	01.301 Schlitz-Loch Platten 1.t 302 Slotted hole plates 2.t 303 Breite/width 25 mm 3.t 304 Dicke/thickness 1,25 4.t 305 5.t 307 7.t 310 t = 12,7 = 1/2" 10.t
	02.004 Kreuzschleife f. Modell 51 Cross slider plate

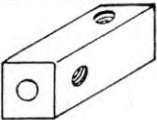
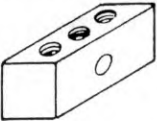
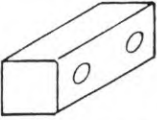
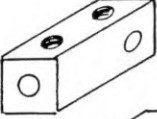
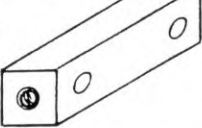
	02.005 30°-Kreuzschleifenteil für Modell 52 30°-Cross Slide plate for model No 52
	04.340 4-mm Welle mit Innengewinde Länge 40 mm 4 mm dia shaft with thread 40 mm length
	06.350 6 mm Welle mit 4 mm Absatz 5a 375 6 mm shaft with 4 mm stud 75 400 100 425 125 450 150
	10.112 Sechskantwelle f. Modell 44 Hexagonal shaft f. model 44
	Einpreßnabe - insert hub 11.505 8,1 15 2,5 506 8,1 15 4,5 507 11,6 15 4,5 508 11,6 18 3,0 509 11,6 18 4,5 510 11,6 18 4,0 "S" "D" "L"
	13.470 Linsenkopfschraube M 3,5 x 70 Lens head screw for models
	76.116 Verbindungsmuffe m. Gewinde Coupler sleeve f. 4 mm shafts

	$m = 0,75, b = 4, d = 11,52$ z 20.030 P Kunststoff - Zahnrad 30 20.036 P Plastic gear 36
	20.430 Doppel-Zahnriemen 66 Zähne Timing belt, doubletoothed für/for Model 39 u.a. $t = 5 \text{ mm}, b = 7 \text{ mm}$
 	23.371 Radkörper für Schalt- getriebe Toothed body for rev. indexing drive (COMPACT Model No 60) 23.372 Sperr- Rad mit Gelenk- welle zu 23.371 Gear with locking seg- ment
	26.302 Bremsband f. Modell 58 brake strap f. model 58

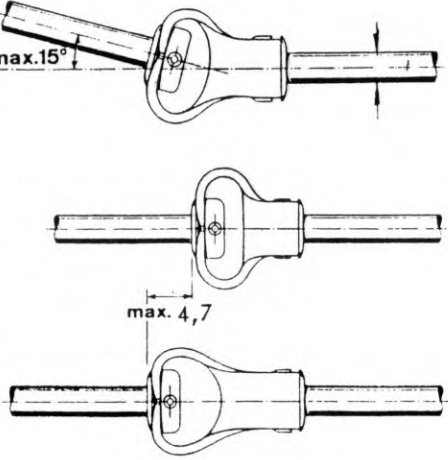
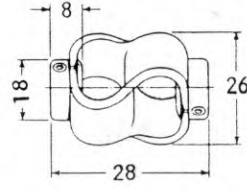
AUTOMAT [b]: X1.3/4h

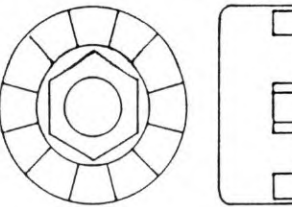
	PVC Trommel für Modell 24 27.003 Registration drum (plastic) for COMPACT Model No 24
	31.904 Unterlegscheibe 18 x 3 x 8,1 Washer
	742 Koppelstange $6\phi \times L$ 33.765 drag bar 790 L 42 65 90
	34.009 Schaltblech für Modell 13 Switch Plate f. model 13
 M 1:2 sc 1:2	34.090 Deichsel für Modell 54 pole for wagon
	36.513 Bolzen für Koppelstangen Eye bolt for drag bars
	36.109 Druckfeder für Modell 43 Compression Spring 5 x 9

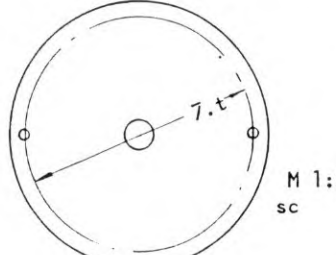
AUTOMAT [b]: X1.3/4i

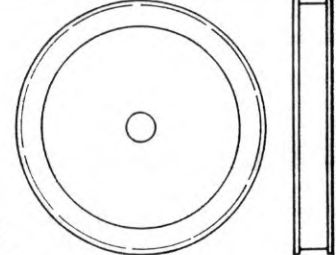
	35.232	Modell 32
	35.243	43
	35.250	Befestigungsklötze Supports for models 10x10x25 mm 50
	35.254	54
	35.215 10x10x43	15 + 17 + 29

	41.002 Einpreßnabe m. Innensechskt Insert for hexagonal shafts
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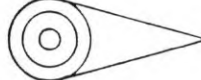
	Elastische Kupplung Elastic coupling für/for 6 mm Wellen/shafts 41.010 (Adapterteil für 4 mm Wel- len ist No 40.200) Reduction part for 4 mm shafts is item No 40.200
	

	42.001 Klauen-Kupplungshälfte Jaw coupling (Kunststoff - plastic)
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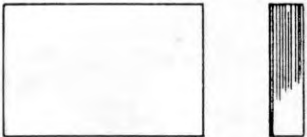
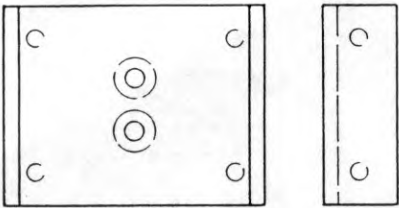
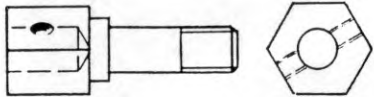
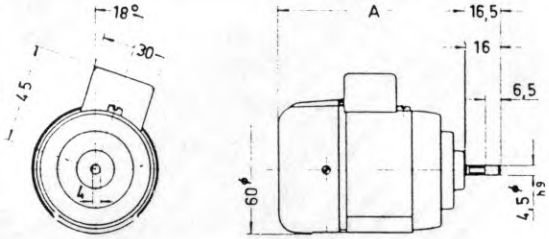
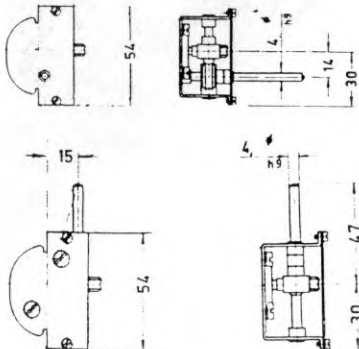
	50.108 Planscheibe für Modell 57 face plate for model 57 100 Ø x 4 mit Nabe 11.510 with hub 11.510
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	50.110 Schwungrad 95 x 15 mm flywheel for model 58
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	51.112 M 6 Gewindespindel für Modell 44, lead screw
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	76.016 Kunststoffzeiger farbig pointer in plastic, var. colours
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	76.019 Zeichenpappe 145 x 95 mm cardboard for models 15+17
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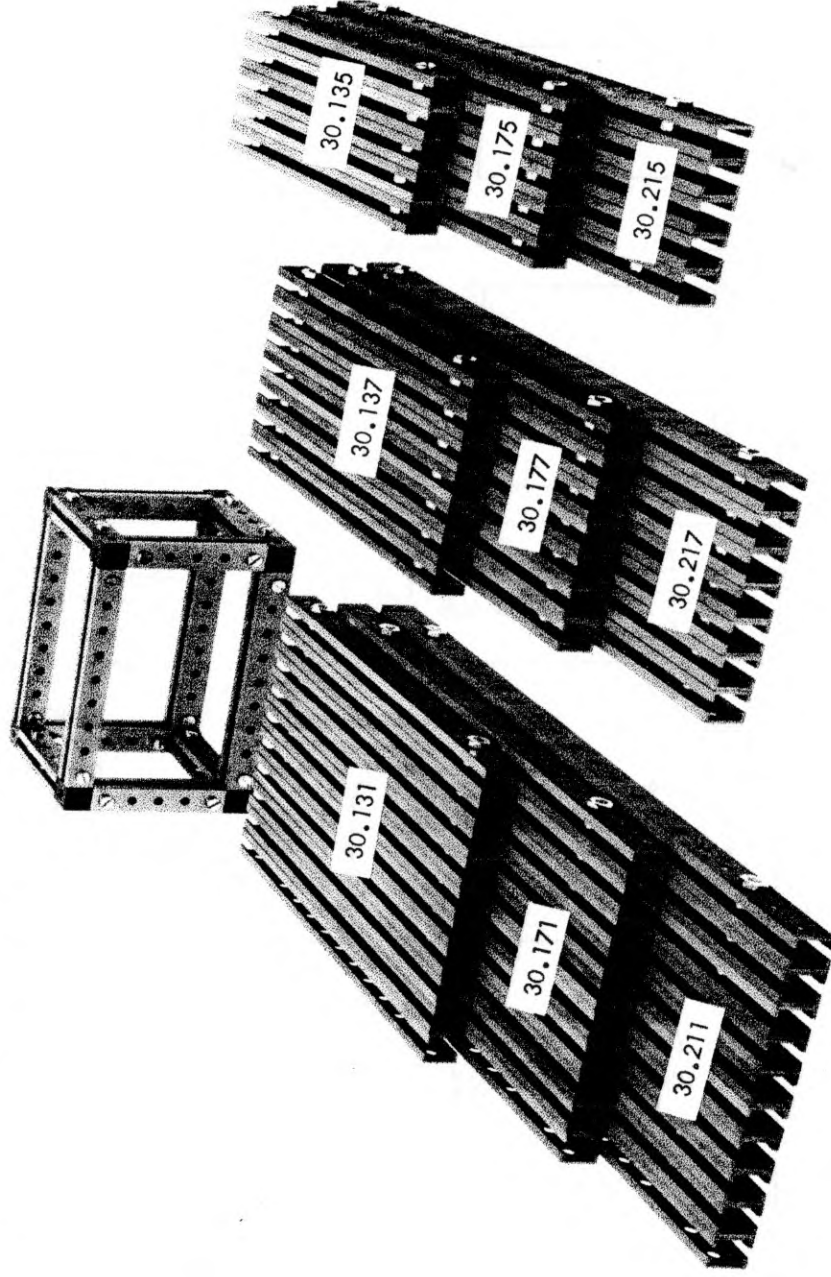
	76.023 Registrierpapier-Block paper pad 40 x 25 mm für Modell 25 for model 25																										
	80.301 Motorfuß 50 x 38 x 14 Base for el. motors of Nos 82.000, 80.002 - 300.																										
	80.666 Adapter f. Ritzel zu 80.600 adapting part for Var. Speed Motor No. 80.600																										
	Einphasen-Wechselstrom Motor, 220 V, 30 W n = 2.800 Single-phase motor 82.000																										
	<table> <thead> <tr> <th></th><th>n</th></tr> </thead> <tbody> <tr> <td>002</td><td>2</td></tr> <tr> <td>004</td><td>4</td></tr> <tr> <td>006</td><td>6</td></tr> <tr> <td>008</td><td>8</td></tr> <tr> <td>81.010 Untersetzungsgetriebe</td><td>10</td></tr> <tr> <td>015 zu Motor 82.000</td><td>15</td></tr> <tr> <td>020 Speed Reduction Gear</td><td>20</td></tr> <tr> <td>030 for Motor 80.200</td><td>30</td></tr> <tr> <td>060</td><td>60</td></tr> <tr> <td>120</td><td>120</td></tr> <tr> <td>200</td><td>200</td></tr> <tr> <td>300</td><td>300</td></tr> </tbody> </table>		n	002	2	004	4	006	6	008	8	81.010 Untersetzungsgetriebe	10	015 zu Motor 82.000	15	020 Speed Reduction Gear	20	030 for Motor 80.200	30	060	60	120	120	200	200	300	300
	n																										
002	2																										
004	4																										
006	6																										
008	8																										
81.010 Untersetzungsgetriebe	10																										
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020 Speed Reduction Gear	20																										
030 for Motor 80.200	30																										
060	60																										
120	120																										
200	200																										
300	300																										

AUTOMAT [b]: X1.3/4k

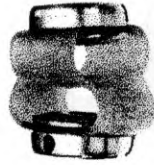
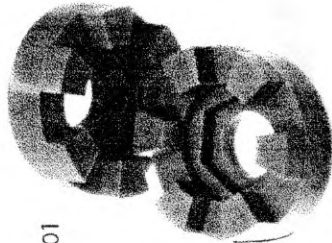
00.404	U-Profil 12,7 x 4,3 x 1,4 L = 4 x t	10	15.408	ditto für Hebel	spannend	f. 4 mm Welle	--
00.405	ditto	10	15.605	ditto Normalausführung	spannend	f. 6 mm Welle	10
00.406	ditto	10	15.609	ditto für 2 Räder	spannend	f. 6 mm Welle	10
00.409	ditto	10	15.705	ditto Normalausführung	freilaufend	f. 6 mm Welle	10
00.410	ditto	10	15.709	ditto für 2 Räder	freilaufend	f. 6 mm Welle	10
00.413	ditto	10	17.406	Gewindestift M 3,5 x 6 für Einpreßnaben 15 Ø			100
00.417	ditto	10	20.050	Stirnrad 50 Zähne, m = 0,75			5
00.421	ditto	10	20.081	ditto 81 Zähne			5
01.111	Gabelzapfen für Eckverbinder	10	20.500	Zahnriemen 1lg 5 mm 7 mm breit	30 Zähne		2
01.112	Einschraubzapfen	10	20.540	ditto	40 Zähne		2
01.224	Gummifuß	20	20.544	ditto	44 Zähne		2
01.301	Loch - Schlitzplatte 25 x 1,25 x 1 t	10	20.549	ditto	49 Zähne		2
01.302	ditto	10	20.556	ditto	56 Zähne		2
01.303	ditto	10	20.566	ditto	66 Zähne		2
01.304	ditto	10	20.578	ditto	78 Zähne		2
01.305	ditto	10	20.584	ditto	84 Zähne		2
01.307	ditto	10	20.600	ditto	100 Zähne		2
01.310	ditto	10	20.782	ditto Doppelverzerrung beids.	82 Zähne		2
03.116	Lager für 6 mm Wellen (Buchse)	--	20.824	ditto "	124 Zähne		2
03.125	Doppel-Kugellager für 6 mm Wellen 25 x 25 x 38,1 mm	4	30.131	Grundplatte 165 x 127 mm			2
03.138	ditto	4	30.135	ditto 165 x 63,5 mm			2
03.501	Kompl. Lager f. 4 mm Wellen - kurz	--	30.137	ditto 165 x 89 mm			2
03.502	Kompl. Lager f. 4 mm Wellen - lang	--	30.171	ditto 216 x 127 mm			2
03.506	Kompl. Lager f. 6 mm Wellen n. 03116	10	30.175	ditto 216 x 63,5 mm			2
06.350	6 mm Welle mit Ansatz 4 Ø x 18 50 mm	10	30.177	ditto 216 x 89 mm			2
06.375	ditto Gesamtlänge 75 mm	10	30.211	ditto 267 x 127 mm			2
06.400	ditto 100 mm	10	30.215	ditto 267 x 63,5 mm			2
06.425	ditto 125 mm	10	30.217	ditto 267 x 89 mm			2
06.450	ditto 150 mm	10	32.104	Wellenverbinder für 2 4-mm-Wellen			10
06.640	Achszapfen für Spannzone 11.605/705 o.A. 6 Ø x 36	10	32.106	ditto für je eine 4 u. 6 mm Welle			10
06.660	ditto 11.609/709 o.A. 6 Ø x 44	10	32.107	ditto für je eine 4 u. 6 mm Welle			10
06.661	Wellenendsicherung f. 06.640/660-6 Ø o.Abb.	20	33.610	Scharnierstück mit 3,7er Bohrung			10
11.505	Einpreßnabe für Hebel 15 Ø x 8,1 x 4 mm	10	33.611	Scharnierstück m. M 3,5er Gewinde			10
11.506	ditto für Ritzel u. 28.606 Bg 4 mm o.Abb.	--	35.103	Lagerklotz 10 x 10 x 25 mm			10
11.507	ditto für kleinere Räder 4 mm	--	36.513	Bolzen für Hebel			10
11.508	ditto f. 22.203 + 23.201 18 Ø 4 mm o.Abb.	10	40.001	Rutschkupplung mit Oldhamteil f. 6 mm Wellen			1
11.509	ditto f. gr. Räder u. Kurbeln 4 mm	--	40.002	1 Satz Innensechskantschlüssel für Kupplung			1
11.510	ditto f. gr. Räder u. Kurbeln 6 mm	10	40.003	Rutschkupplung für 6 mm Wellen			1
12.050	M 6 - Gewindestonge L = 50 mm	10	40.004	Ausgleichkupplung f. 6 mm Wellen			2
12.100	ditto 100 mm	10	40.005	Kreuzschlitz (Oldham-) Kupplung f. 6 mm Wellen			1
12.200	ditto 200 mm	10	40.161	Kardangelenk einfach f. 6 mm Wellen			5
14.004	Gelenkschraube zu Scharnier 33.611	20	40.162	Kardangelenk doppelt f. 6 mm Wellen			5
15.301	Kompl. Spannzone für kleinere Räder, freilaufend f. 4 mm Welle	--	41.010	Elastische Kupplung für 6 mm Wellen			2
15.302	ditto Normalausführung	--	42.001	Klauekupplungs - Hälfte			4
15.308	ditto für Hebel	--	77.500	Aufbewahrungsschrank f. AUTOMAT Teile Typ 15SF			--
15.401	ditto für kleinere Räder spannd f. 4 mm Welle	--	77.501	ditto mit 12 bestückten Tablettis Typ 15SFE			--
15.402	ditto Normalausführung	--	80.301	Fuß für AUTOMAT Getriebemotoren			--
		--	80.666	Adapterstück für Ritzel zum Regelantrieb 80600			--

alle ohne Abbildung

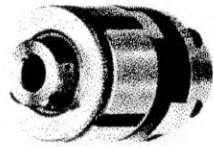
NEUE AUTOMAT BAUTEILE NEW AUTOMAT COMPONENTS



42.001



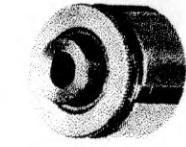
41.010



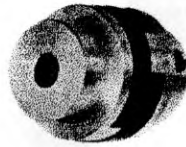
40.001



40.004



40.003



40.005



00.409



00.406



00.410



00.405



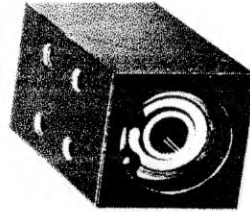
00.413



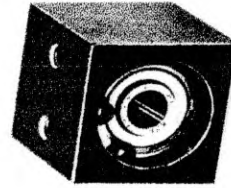
00.404



00.417

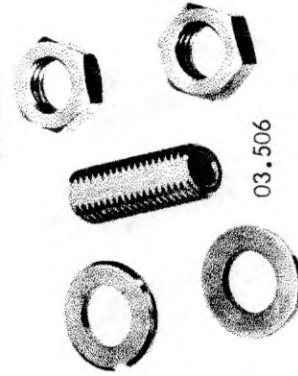


03.138



03.125

00.421



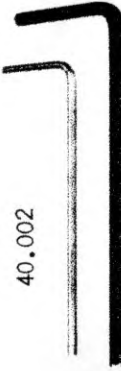
03.502



03.501



03.506



40.002

06.350 bis/till 06.450



01.301

01.302



01.305

01.304

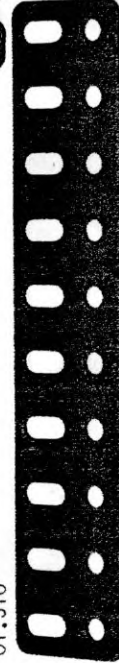


03.116



01.303

01.310

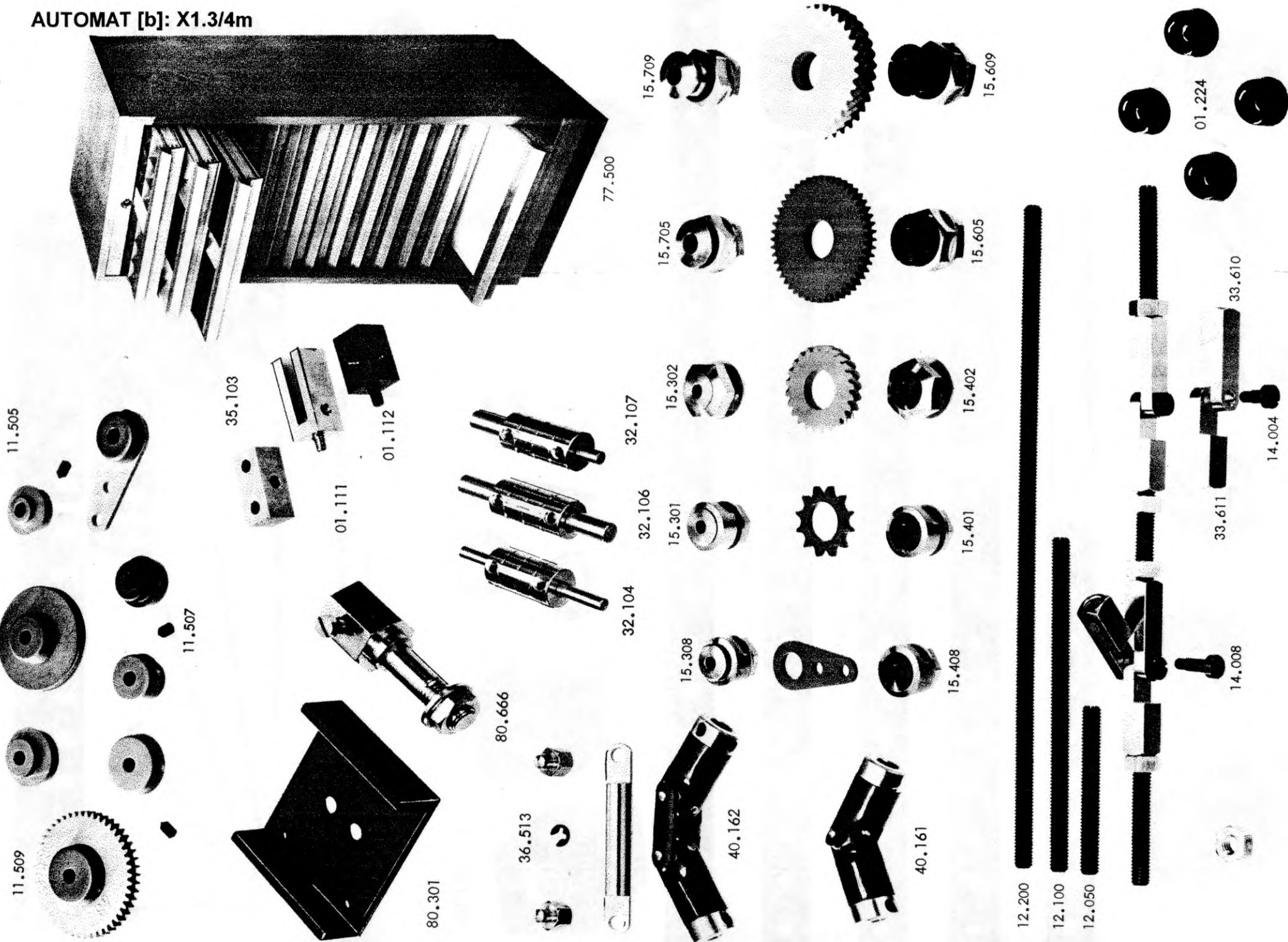


01.307

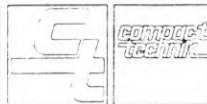


AUTOMAT [b]: X1.3/4I

AUTOMAT [b]: X1.3/4m



AUTOMAT Spare Parts List Prefix numbers – Material Codes



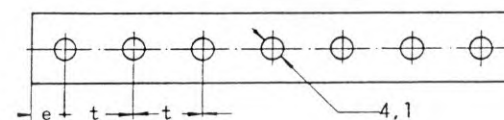
This Parts List contains all currently available AUTOMAT components.
Each part carries a five-digit number, consisting of a two-digit prefix and a three-digit suffix.
The index for all prefix numbers is shown below.
For spare part orders make use of the attached ordersheets only.
All components are shown in scale 1:1. Exceptions hereof are indicated.
Changes and errors reserved.

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06. 6 mm shafts	34
07. 4 mm shafts with threaded ends	35
08. Hollow shafts 6/4 mm dia	35
10. Hexagonal shafts	35
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59. Handles & knobs	51
60. Tools	52
76. Pointers	52
77. Empty wooden cases & trays	52
80. Variable speed drives	—
83. Gearmotors 1– 60 RPM	—
84. Gearmotors 20–300 RPM	—

Material Codes:

Aa = Aluminium anodized Ss = Stainless steel
Bn = Brass nickleed ZA = Zinc alloy – die casted
Sb = Steel browned

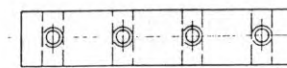
Square Tubes, Connectors & Hinges



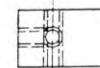
12.7 x 12.7 x 1.35 mm
t = 12.7 mm
e = 6.35 mm Aa

00.003	3 holes	L = 38.1 mm	00.011	11 holes	L = 139.7 mm
00.004	4 holes	L = 50.8 mm	00.013	13 holes	L = 165.0 mm
00.005	5 holes	L = 63.5 mm	00.018	18 holes	L = 228.6 mm
00.006	6 holes	L = 76.2 mm	00.020	20 holes	L = 254.0 mm
00.007	7 holes	L = 88.9 mm	00.023	23 holes	L = 292.1 mm
00.008	8 holes	L = 101.6 mm	00.028	28 holes	L = 355.6 mm
00.009	9 holes	L = 114.3 mm	00.030	30 holes	L = 381.0 mm
00.010	10 holes	L = 127.0 mm	00.033	33 holes	L = 419.1 mm

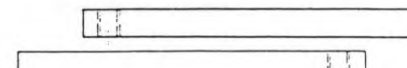
Square tubes must be assembled with matching connectors and/or with flat angle plates
(Nos 01.2...) Use hexagonal screws 13.406/408 plus PVC washers 19.403 to avoid damaging the
anodized surface of the tubes.



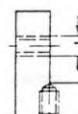
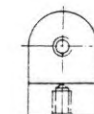
00.101 Straight connector
10 x 10 x 50 mm Aa



00.109 Threaded end connector
10 x 10 x 17 mm Sb



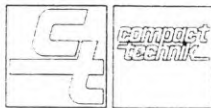
00.110 Telescoping
connector pair
10 x 5 x 63 mm Aa



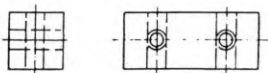
00.112 Hinged pair ZA

AUTOMAT [c]: X1.3/4a

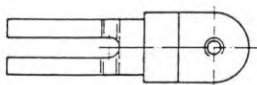
Connectors & Components for Corner Pieces



Dovetail-Slides U and I-Shaped Profiles



00.113 Straight connector short
10 x 10 x 25 mm Aa



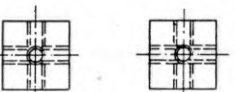
00.115 Toothed Hinged pair with
forked end ZA



00.116 Connector stud for
corner piece assembly Sb



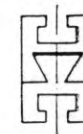
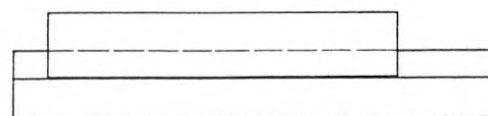
00.120 Center cube for
corner piece assembly Sb



How to make your own corner pieces:

Connector studs **00.116** and center cubes **00.120** allow all corner pieces combinations needed for square tube constructions. Insert setscrew **17.408** into stud first, then turn stud into thread hole of the cube, tighten with a wrench and adjust stud to cube corners in parallel position.

Hinged-assemblies with parts of same number will show an angle pitch of 7.5°, normal hinged-pairs allow an angle pitch of 15°.



00.3...

00.2...

Dovetail-Slides:
12.7 x 19 mm
Aa

00.203 Lower Profile L = 138.1 mm

00.205 Lower Profile L = 63.5 mm

00.207 Lower Profile L = 88.9 mm

00.208 Lower Profile L = 101.6 mm

00.210 Lower Profile L = 127.0 mm

00.302 Upper profile L = 25.4 mm

00.303 Upper profile L = 38.1 mm

00.211 Lower Profile L = 139.7 mm

00.213 Lower Profile L = 165.1 mm

00.223 Lower Profile L = 292.1 mm

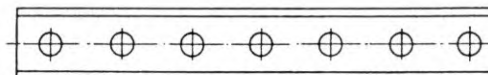
00.228 Lower Profile L = 355.6 mm

00.233 Lower Profile L = 419.1 mm

00.305 Upper profile L = 63.5 mm

00.310 Upper profile L = 127.0 mm

Dovetail slides must be slightly greased with vaseline before assembling to achieve free sliding action and prevent scoring or galling.



U-shaped profiles
12.7 x 4.3 mm.
Aa Hole dia: 4 mm

00.403 L = 38.1 mm

00.404 L = 50.8 mm

00.405 L = 63.5 mm

00.405 L = 76.2 mm

00.407 L = 88.9 mm

00.408 L = 101.6 mm

00.409 L = 114.3 mm

00.410 L = 127.0 mm

00.413 L = 165.1 mm

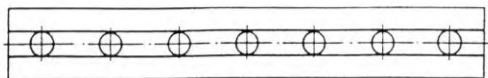
00.415 L = 190.5 mm

00.417 L = 215.9 mm

00.421 L = 226.7 mm

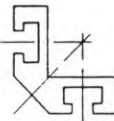
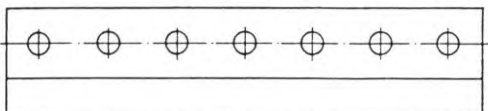
00.433 L = 419.1 mm

T-Slot Profiles



00.605	T-slot profile	L = 63.5 mm
00.607	T-slot profile	L = 88.9 mm
00.610	T-slot profile	L = 127.0 mm
00.613	T-slot profile	L = 165.1 mm
00.617	T-slot profile	L = 215.9 mm
00.633	T-slot profile	L = 419.1 mm

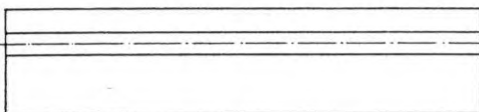
T-slot profile
12.7 x 6.35 mm
Hole dia 4 mm
Aa



00.701	T-slot angleprofile	L = 12.7 mm
00.702	T-slot angleprofile	L = 25.4 mm
00.703	T-slot angleprofile	L = 38.1 mm
00.705	T-slot angleprofile	L = 63.5 mm
00.707	T-slot angleprofile	L = 88.9 mm
00.710	T-slot angleprofile	L = 127.0 mm
00.713	T-slot angleprofile	L = 165.1 mm
00.717	T-slot angleprofile	L = 215.9 mm
00.733	T-slot angleprofile	L = 419.1 mm
00.752*	T-slot angleprofile	L = 25.4 mm

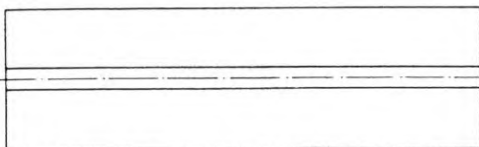
T-slot angle profile
19.1 x 19.1 x 6.35 mm
Hole dia 4 mm
Aa

*one hole-pair



00.802	T-slot profile 3 slots	L = 25.4 mm
00.803	T-slot profile 3 slots	L = 38.1 mm
00.805	T-slot profile 3 slots	L = 63.5 mm
00.807	T-slot profile 3 slots	L = 88.9 mm
00.810	T-slot profile 3 slots	L = 127.0 mm
00.813	T-slot profile 3 slots	L = 165.1 mm
00.817	T-slot profile 3 slots	L = 215.9 mm
00.833	T-slot profile 3 slots	L = 419.1 mm

T-slot profile 3 slots
19.1 x 12.7 mm
Aa



T-slot profiles 4 slots 12.7 x 25.4 mm
Item Nos and lengths see next page
Aa

T-Slot Profiles and Flat Plates

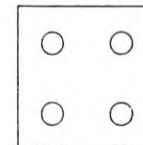


00.902	T-slot profile 4 slots	L = 25.4 mm	4 slots 25.4 x 12.7 mm
00.903	T-slot profile 4 slots	L = 38.1 mm	Aa
00.905	T-slot profile 4 slots	L = 63.5 mm	
00.907	T-slot profile 4 slots	L = 88.9 mm	
00.910	T-slot profile 4 slots	L = 127.0 mm	
00.913	T-slot profile 4 slots	L = 165.0 mm	
00.917	T-slot profile 4 slots	L = 215.9 mm	
00.933	T-slot profile 4 slots	L = 419.1 mm	

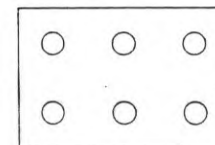
All T-slot profiles can be assembled with flatplates, angle plates and strips. (Part 01.201 thru 01.260).
Insert screw head into slot, add plate, adjust position and fasten with hex-nuts 18.402. Use PVC washers 19.403 to avoid scratching.

If necessary cut and/or miter profiles to your special need.

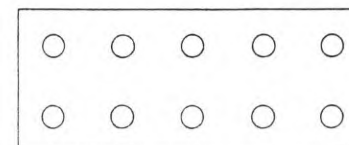
All T-slot profiles can be combined with all other AUTOMAT struts and square tubes and allow the design of stable and precise frame work.



01.201 Flat plate
25 x 25 x 2 mm
Aa



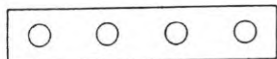
01.202 Flat plate
38 x 25 x 2 mm
Aa



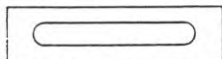
01.203 Flat plate
63 x 25 x 2 mm
Aa

AUTOMAT [c]: X1.3/4c

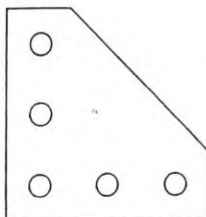
Connecting Strips & Flat Angle Plates



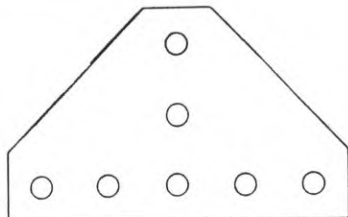
01.211 Punched Strip
50 x 10 x 1.5 mm
Sb



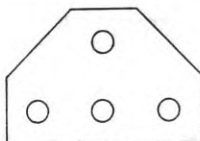
01.212 Slotted strip
40 x 10 x 1.5 mm
Sb



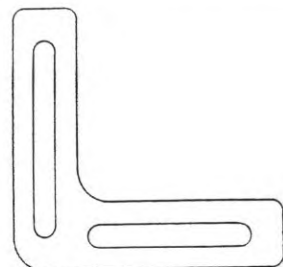
01.215 Flat angle
38 x 38 x 2 mm
Aa



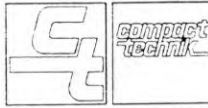
01.216 Flat angle
63 x 38 x 2 mm
Aa



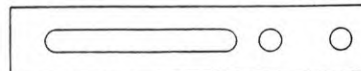
01.217 Flat angle
38 x 25 x 2 mm
Aa



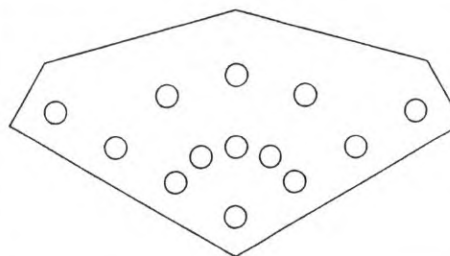
01.218 Flat angle slotted
47 x 42 x 12 x 2 mm
Aa



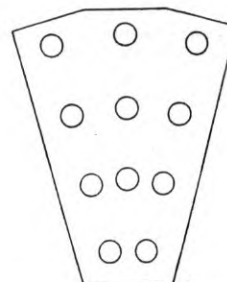
Connecting Strips & Flat Angle Plates



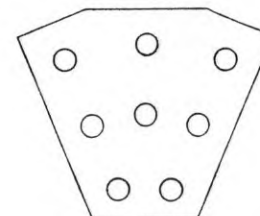
01.219 Slot + hole strip
66 x 12 x 1.5 mm
Sb



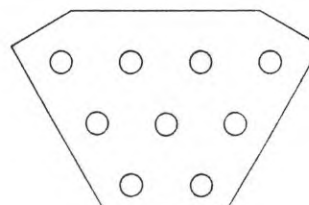
01.220 Flat angle plate 120°
83 x 44 x 2 mm
Aa



01.230 Flat angle plate 30°
50 x 42 x 2 mm
Aa

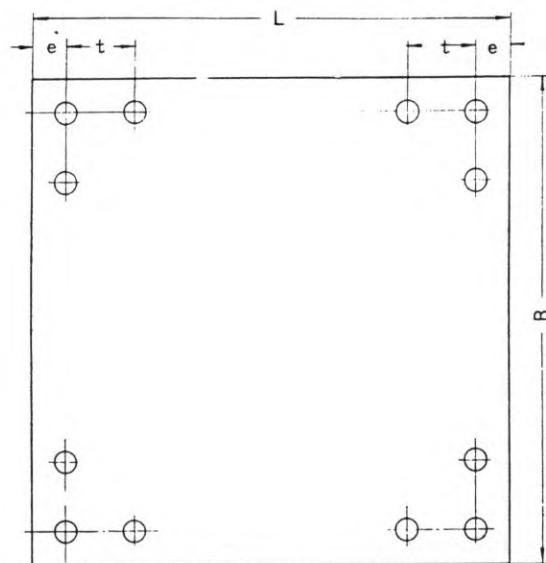


01.245 Flat angle plate 45°
46 x 38 x 2 mm
Aa



01.260 Flat angle plate 60°
56 x 37 x 2 mm
Aa

Cover Plates for Housings & Static Constructions



$e = 6.35 \text{ mm} = 1/4"$
 $t = 12.7 \text{ mm} = 1/2"$
 Hole dia = 4 mm
 Aa

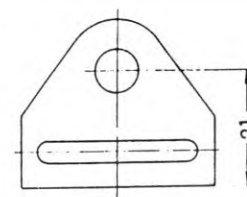
Cover plates

02.103	127x38.1x2 mm	02.505	63.5x63.5x2 mm
02.105	127x63.5x2 mm	02.520	63.5x254x2 mm
02.107	127x88.9x2 mm	02.703	88.9x38.1x2 mm
02.110	127x127x2 mm	02.705	88.9x63.5x2 mm
02.120	127x254x2 mm	02.707	88.9x88.9x2 mm
02.503	63.5x38.1x2 mm	02.720	88.9x254x2 mm

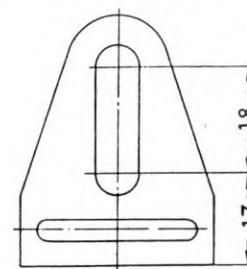
Table of center distances for AUTOMAT-spur gears pinions in mm

$n_1 + n_2$	12	18	24	30	36	48	50	54	60	72	81	90	96	108	120	144
12	9.00															
18	11.25	13.50														
24	13.50	15.70	18.00													
30	15.75	18.00	20.75	22.50												
36	18.00	20.25	22.25	24.75	27.00											
48	22.50	24.75	27.00	29.25	31.50	36.00										
50	23.25	25.50	27.75	30.00	32.25	36.75	37.50									
54	25.12	27.00	29.25	31.50	33.75	38.25	39.00	40.50								
60	27.00	29.25	31.50	33.75	36.00	40.50	41.25	42.75	45.00							
72	31.50	33.75	36.00	38.25	40.50	45.00	45.75	47.25	49.50	54.00						
81	34.87	37.12	39.37	41.62	43.87	48.37	49.12	50.62	52.87	57.37	60.75					
90	38.25	40.50	42.75	45.00	47.25	51.75	52.50	54.00	56.25	60.75	64.12	67.5				
96	40.50	42.75	45.00	47.25	49.50	54.00	54.75	56.25	58.50	63.00	66.37	69.75	72.00			
108	45.00	47.25	49.50	51.75	54.00	58.50	59.25	60.75	63.00	67.50	70.87	74.25	76.50	81.00		
120	49.50	51.75	54.00	56.25	58.50	63.00	63.75	65.25	67.50	72.00	75.37	78.75	81.00	85.50	90.00	
144	58.50	60.75	63.00	65.25	67.50	72.00	72.75	74.25	76.50	81.00	84.37	87.75	90.00	94.50	99.00	108.00

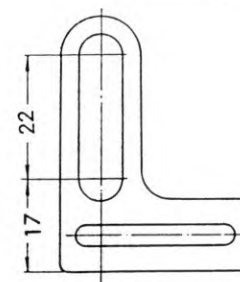
Supports for Slide Bearings, Adjustable Bearing



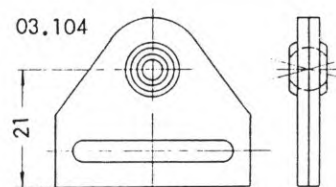
02.001 Support adjustable short
 38x30x2 mm
 Aa



02.002 Support adjustable long
 38x44x2 mm
 Aa



02.003 Support adjustable for
 corner application
 38x48x2 mm
 Aa



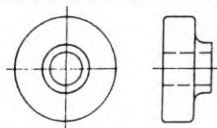
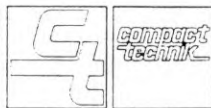
03.104 Adjustable spherical bearing
 for 4 mm shafts
 38x30x2 mm
 Sb



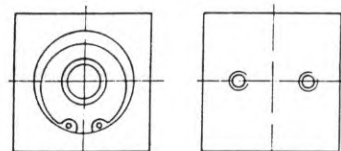
03.107 Retaining ring for 6 mm bearings
 03.108 Retaining ring for 4 mm bearings

AUTOMAT [c]: X1.3/4e

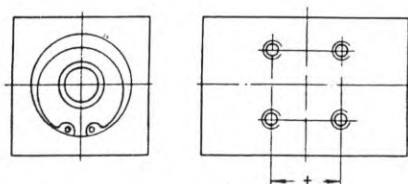
Nylon-bearing hub, Ball Bearing Housings



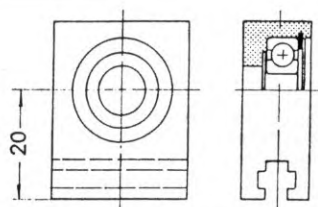
03.109 Nylon hub for 6 mm shafts
fits into housings Nos.:
03.125/138/200/300
ø 19 x 10 x 6 mm



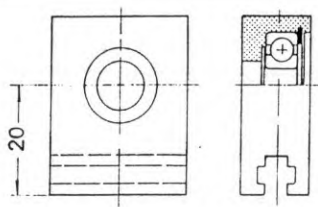
03.125 Housing for 6 mm bearings
25 x 25 x 25 mm
use 2 bearings
Aa



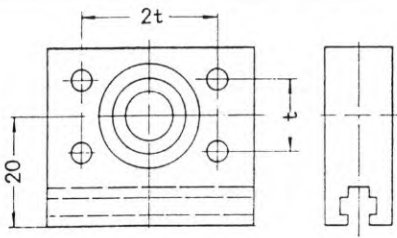
03.138 Housing for 6 mm bearings
25 x 25 x 38 mm
use 2 bearings
Aa



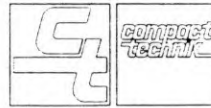
03.200 Housing for one 6 mm bearing
32 x 25 x 12.7 mm
Aa



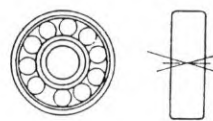
03.404 Housing for one 4 mm bearing
32 x 25 x 12.7
Aa



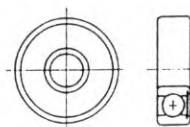
03.300 Housing for one 6 mm bearing
32 x 38 x 12.7 mm
Aa



Ball Bearings & Slide Bearings



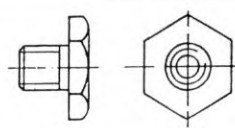
03.301 Self-aligning ball-bearing
for 6 mm shafts



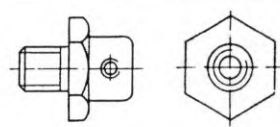
03.201 Ball Bearing for 6 mm shafts



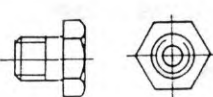
03.410 Ball Bearing for 4 mm shafts



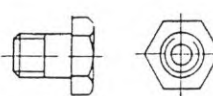
03.501 Slide Bearing short for 4 mm shafts



03.502 Slide Bearing long for 4 mm shafts, small



03.503 Slide Bearing short for 4 mm shafts, small

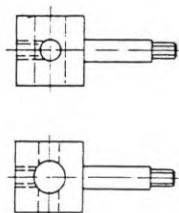
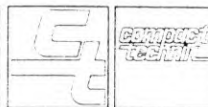


03.504 Slide Bearing long for 4 mm shafts, small

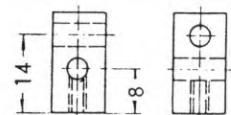


03.506 Slide Bearing for 6 mm shafts

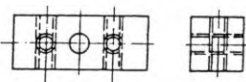
Slide Bearing Blocks, 4 and 6 mm Shafts



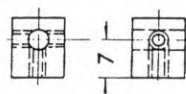
35.103 Bearing block for
4 and 6 mm shafts
12.7x12.7x32 mm
Bn



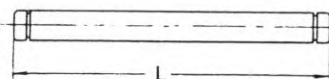
35.104 Bearing block for
4 mm shafts
10x10x18 mm
Bn



35.106 Bearing block for
4 mm shafts
10x10x25 mm
Bn



35.107 Bearing block for
4 mm shafts
10x10x11 mm
Bn

**Shafts**

ø 4 mm Ss

04.025 Shaft	4 x 25 mm	04.090 Shaft	4 x 90 mm
04.035 Shaft	4 x 35 mm	04.100 Shaft	4 x 100 mm
04.040 Shaft	4 x 40 mm	04.125 Shaft	4 x 125 mm
04.050 Shaft	4 x 50 mm	04.150 Shaft	4 x 150 mm
04.065 Shaft	4 x 65 mm	04.200 Shaft	4 x 200 mm
04.075 Shaft	4 x 75 mm	04.250 Shaft	4 x 250 mm

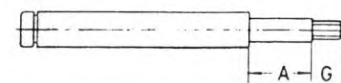
Shafts

ø 6 mm Ss

06.050 Shaft	6 x 50 mm	06.150 Shaft	6 x 150 mm
06.075 Shaft	6 x 75 mm	06.200 Shaft	6 x 200 mm
06.100 Shaft	6 x 100 mm	06.250 Shaft	6 x 250 mm
06.125 Shaft	6 x 125 mm	06.300 Shaft	6 x 300 mm

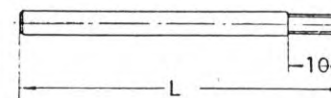


Special shafts



06.640 Shaft 6x38 mm
06.660 Shaft 6x43 mm
A = 12.7 G = M 3.5 x 6
Ss

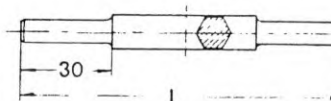
Stepped shafts Items No 06.040 and 06.660 allow free rotation of wheels on squaretube constructions using sleeves 11.705 (one wheel) or 11.709 (two wheels) + circlips 15.006.



07.070 Shaft 4 x 70 mm
07.090 Shaft 4 x 90 mm
incl. 10 mm thread M 3.5
Ss



08.036 Hollow shaft 6/4 x 36 mm
08.050 L = 50 mm 6/4 x 50 mm
08.100 L = 100 mm 6/4 x 100 mm
08.200 L = 200 mm 6/4 x 200 mm
Sb

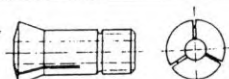


10.060 Hexagonal shaft L = 120 mm
10.120 Hexagonal shaft L = 180 mm
10.180 Hexagonal shaft L = 240 mm
Sb WAF 6 mm

Matching bushing for hex shafts are
items Nr. 41.002 + 41.003

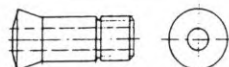
AUTOMAT [c]: X1.3/4g

4 mm Collet Chucks & Cone Sleeves



11.105 4 mm Collet Chuck
11.110
11.118
11.122
11.127
11.133

for one wheel/lever
 for two wheels
 for pinion 20.018
 for worms 24.002/3
 wheelcombinations
 wheelcombinations
 Sb

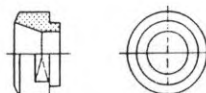


11.305 4 mm Sleeve
11.310
11.322
11.333

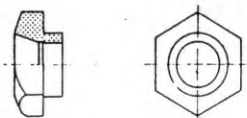
for one wheel/lever
 for two wheels
 wheelcombinations
 wheelcombinations
 Bn



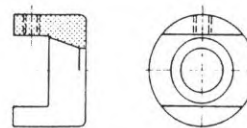
11.400 Cone sleeve without shoulder
 for all 4 mm chucks
 Bn



11.401 Cone sleeve with shoulder
 for all 4 mm chucks
 Bn



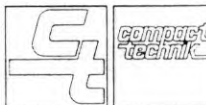
11.402 Cone sleeve with shoulder
 for all 4 mm chucks
 Standard type
 Bn



11.403 Cone sleeve to fix 4 mm shafts
 on profiles/square tubes
 Bn



11.602 Cone sleeve without shoulder
 for all 6 mm chucks
 Standard type
 Bn



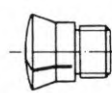
Insert Hubs, 6 mm Collect Chucks, Threaded Rods



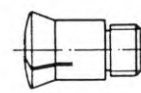
To press insert hubs into wheels use a punch press to avoid damaging the hubs bores. A base with a hole of at least 12 mm dia must be placed under the wheel to take up the protruding shoulder.

11.504 6 mm insert hub
11.505 4 mm insert hub
11.506 4 mm insert hub
11.507 4 mm insert hub
11.508 4 mm insert hub
11.509 4 mm insert hub
11.510 6 mm insert hub

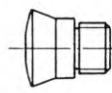
for pinions & worms
 for levers
 for pinions & worms
 for small wheels
 for sprocket wheels & Maltese Cross
 for larger wheels & handles
 for larger wheels & handles
 Aa



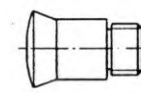
11.605 6 mm collect chuck
 for one wheel



11.609 6 mm collect chuck
 for two wheels

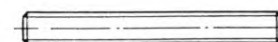


11.705 6 mm sleeve
 for one wheel



11.709 6 mm sleeve
 for two wheels

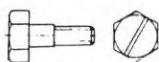
11.901 Complete collet chuck for 4 mm shafts and levers
11.902 Complete collet chuck for 4 mm shafts and smaller wheels
11.903 Complete collet chuck for 4 mm shafts standard type
11.904 Complete collet chuck für 6 mm shafts standard type



12.050 Threaded rod M 6 x 50
12.100 Threaded rod M 6 x 100
12.200 Threaded rod M 6 x 200
12.430 Threaded rod M 3.5 x 30
12.440 Threaded rod M 3.5 x 40
12.450 Threaded rod M 3.5 x 50
12.460 Threaded rod M 3.5 x 60
12.475 Threaded rod M 3.5 x 75
12.500 Threaded rod M 3.5 x 100

Sb

Screws, Bolts, Setscrews, Nuts & Washers



13.406	Hexagon head screw	M3.5 x 6
13.408	Hexagon head screw	M3.5 x 8
13.410	Hexagon head screw	M3.5 x 10
13.412	Hexagon head screw	M3.5 x 12
13.416	Hexagon head screw	M3.5 x 16
13.420	Hexagon head screw	M3.5 x 20
13.425	Hexagon head screw	M3.5 x 25
13.430	Hexagon head screw	M3.5 x 30

Bn



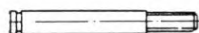
14.003	Knurled head screw	M3.5 x 15
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Sb



14.004	Hinge bolt for hinge 33.610/611	
14.008	Hinge bolt for hinge 33.610/611 triple version	

Sb



14.401	Crank pin M 3.5 x 3.5 x 23	
14.402	Crank pin M 3.5 x 3.5 x 28	
14.403	Crank pin M 3.5 x 3.5 x 31	
14.404	Crank pin M 3.5 x 3.5 x 35	

Ss



15.003	Retaining ring for 3.5 mm bolt diameter	
15.004	Retaining ring for 4 mm bolt diameter	
15.006	Retaining ring for 6 mm bolt diameter	

Sb



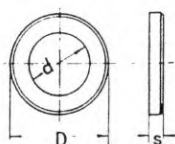
17.403	Set screw M 3.5 x 3 for stop collar 32.003	
17.404	Set screw M 3.5 x 4 for stop collar 32.001	
17.406	Set screw M 3.5 x 6 for insert hubs 15 mm dia	
17.408	Set screw M 3.5 x 8 for insert hubs 18 mm dia	

Sb



18.402	Hexagon nut	M 3.5 WAF 7
18.406	Hexagon nut	M 6 WAF 10
18.802	Hexagon nut	M 8 x 1 WAF 16
18.805	Hexagon nut	M 8 x 1 WAF 12
18.810	Hexagon nut	M 10 x 1 WAF 16

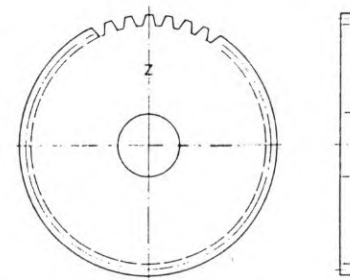
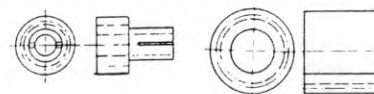
Bn



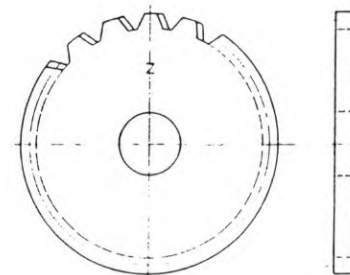
19.401	Washers	7 x 3.7 x 0.5
19.402	Washers	15 x 3.7 x 1
19.403	Washers	8 x 4.1 x 1 (PVC)
19.404	Washers	15 x 4.1 x 1
19.603	Washers	8 x 4.1 x 0.5
19.801	Washers	15 x 8.2 x 1.5
19.802	Washers	18 x 8.2 x 1.5
19.803	Washers	18 x 10.2 x 1.5
19.900	Hex. washer for flat belt-pulleys WAF 16 x 2.8	

Bn

Pinions, Gears, Timing Belt Pulleys



		No. of teeth:		
20.012	Pinion	12	Bn	m 0.75
20.018	Pinion	18	Aa	m 0.75
20.024	Spur gear	24	Aa	m 0.75
20.030	Spur gear	30	Aa	m 0.75
20.036	Spur gear	36	Aa	m 0.75
20.048	Spur gear	48	Aa	m 0.75
20.050	Spur gear	50	Aa	m 0.75
20.054	Spur gear	54	Aa	m 0.75
20.060	Spur gear	60	Aa	m 0.75
20.072	Spur gear	72	Aa	m 0.75
20.081	Spur gear	81	Aa	m 0.75
20.090	Spur gear	90	Aa	m 0.75
20.096	Spur gear	96	Aa	m 0.75
20.108	Spur gear	108	Aa	m 0.75
20.120	Spur gear	120	Aa	m 0.75
20.144	Spur gear	144	Ae	m 0.75
20.030P	Spur gear	30	PVC	m 0.75
20.036P	Spur gear	36	PVC	m 0.75



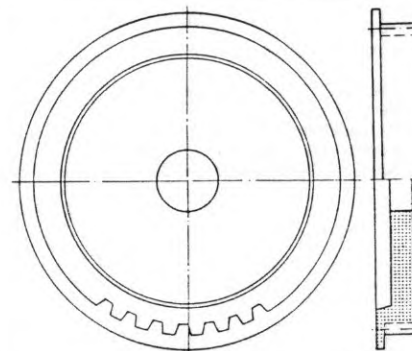
		No. of teeth:		
20.224R	Helical Gear 45°	24	righthd.	Aa
20.236R	Helical Gear 45°	36	righthd.	Aa
20.236L	Helical Gear 45°	36	lefthd.	Aa
20.248R	Helical Gear 45°	48	righthd.	Aa

All gears 4 mm width.



20.312	Timing belt pulley 12 teeth	
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5 mm pitch, Nylon

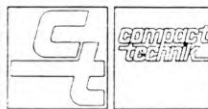


20.324	Timing belt pulley 24 teeth	
20.336	Timing belt pulley 36 teeth	
20.348	Timing belt pulley 48 teeth	

5 mm pitch, Nylon

AUTOMAT [c]: X1.3/4i

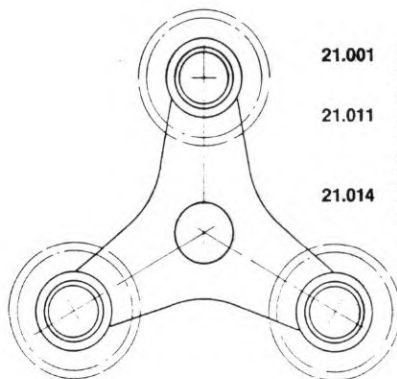
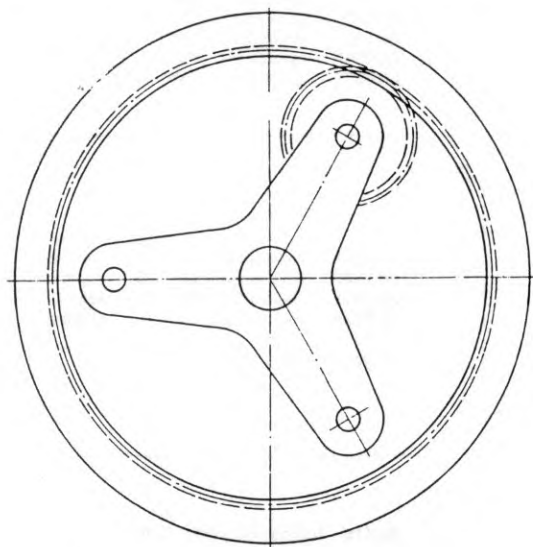
5 mm Timing Belts, Internal Gear Components



		No. of teeth:
20.540	Timing belt	40
20.544	Timing belt	44
20.549	Timing belt	49
20.556	Timing belt	56
20.566	Timing belt	66
20.578	Timing belt	78
20.584	Timing belt	84
20.600	Timing belt	100
20.782*	Timing belt	82
20.824*	Timing belt	124

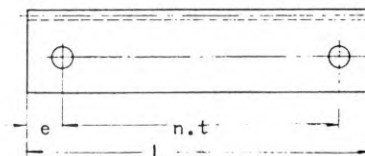
doublesided teeth
Other lengths, numbers of teeth available on request

All belts 7 mm width, 5 mm pitch

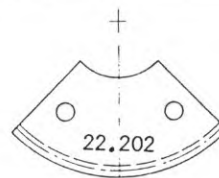


- 21.001** Internal gear
108 teeth, m 0.75
OD = 96 mm, 15 mm thick
- 21.011** Planet plate.
Use 3 spur gears 20.030 as planet wheels
and one center gear 20.048
for a complete planetary gear assembly.
- 21.014** Complete planetary gear model
assembled out of the COMPACT Model Series.

Racks, Gearsector/Segment, Sprocket Wheels & Chains

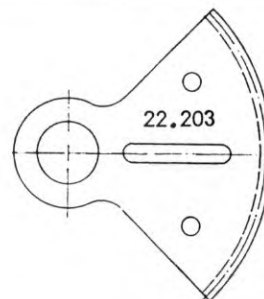


- 22.027** Rack 27 teeth, m 0.75
- 22.054** Rack 54 teeth, m 0.75
- 22.081** Rack 81 teeth, m 0.75
HxW = 15x4 mm Aa
L = 63.5/127/190.4 mm
e = 1/4" = 6.35 mm

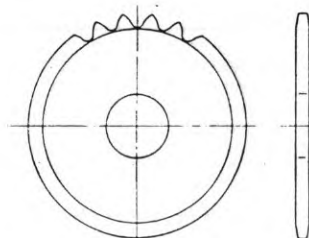


- 22.202** Toothed segment 90°
18 teeth, m 0.75
2 mm thick

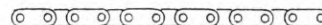
to be used with cambody 50.106
for intermitting drives Aa



- 22.203** Toothed sector 90°
24 teeth m 0.75
2 mm thick Aa

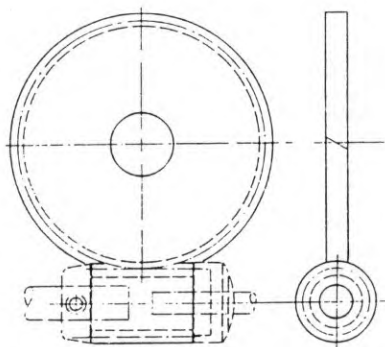


- 23.012** Sprocket wheel 12 teeth
- 23.024** Sprocket wheel 24 teeth
- 23.036** Sprocket wheel 36 teeth
- 23.012 Bn, other types Aa
pitch = 5 mm

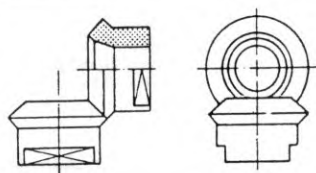


- 23.207** Roller chain
L 500 mm, 5 mm pitch
incl. end-link + clips

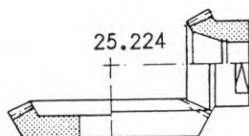
Bevel Gears, Sprocket Wheels & Pulleys



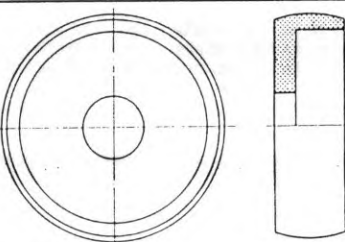
- 24.002 Worm double thread $m = 0.75$ Bn
 24.003 Worm triple thread, module $m = 0.75$ Bn
 24.224 Worm wheel double thread $n = 24$ Aa
 24.248 Worm wheel double thread $n = 48$ Aa
 24.260 Worm wheel double thread $n = 60$ Aa
 24.324 Worm triple thread $n = 24$ Aa
 24.348 Worm triple thread $n = 48$ Aa
 24.360 Worm triple thread $n = 60$ Aa



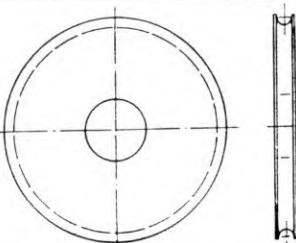
- 25.124 Bevel gear 90° $m = 0.75$ $n = 24$ Bn
 25.224 Bevel gear $m = 0.75$ $n = 24$ Bn



- 25.248 Bevel gear, $m = 0.75$ $n = 48$ Bn
 fitting to 25.224



- 26.120 Flat belt pulley 20 mm dia Aa
 26.130 Flat belt pulley 30 mm dia Aa
 26.140 Flat belt pulley 40 mm dia Aa
 26.150 Flat belt pulley 50 mm dia Aa
 26.160 Flat belt pulley 60 mm dia Aa

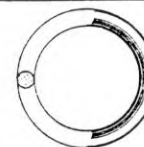


- 26.220 Round belt pulley 20 mm dia Ae
 26.230 Round belt pulley 30 mm dia Ae
 26.240 Round belt pulley 40 mm dia Ae
 26.250 Round belt pulley 50 mm dia Ae
 26.260 Round belt pulley 60 mm dia Ae

Round Belts, Ratchet Wheel & Friction Ratchet

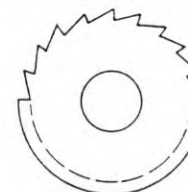


- 26.330 Flat belt 330x10x1 mm Polyurethane
 26.420 Flat belt 420x10x1 mm Polyurethane

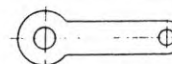


- 26.425 Round belt 25x3 mm dia
 26.460 Round belt 60x3 mm dia
 26.480 Round belt 80x3 mm dia Polyurethane

Other Flat and round belt lengths on request



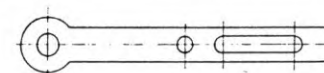
- 28.601 Ratchet wheel, 20 teeth
 PVC, 4 mm thick



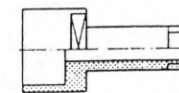
- 28.602 Lever for ratchet wheel short
 Sn



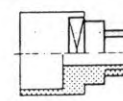
- 28.604 Pawl for ratched wheel
 Sn



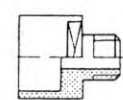
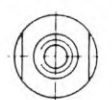
- 28.608 Lever for ratched wheel slotted
 Sn



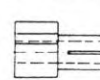
- 28.613 Friction ratchet for pinions
 Bn



- 28.612 Friction ratchet for all wheels
 Bn



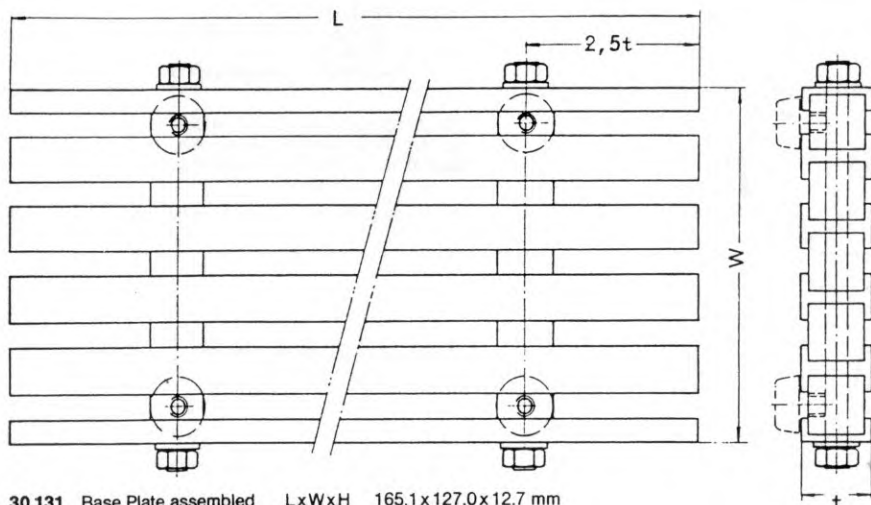
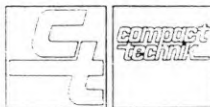
- 28.611 Friction ratchet for levers
 Bn



- 28.614 Freewheel hub Bn
 28.615 Rollers for friction ratchet
 Ss

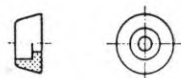
AUTOMAT [c]: X1.3/4k

Base Plates Assembled & Accessories



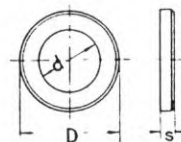
30.131	Base Plate assembled	LxWxH	165.1x127.0x12.7 mm
30.135	Base Plate assembled		165.1 x 63.5x12.7 mm
30.137	Base Plate assembled		165.1 x 88.9x12.7 mm
30.171	Base Plate assembled		215.9x127.0x12.7 mm
30.175	Base Plate assembled		215.9 x 63.5x12.7 mm
30.177	Base Plate assembled		215.9 x 88.9x12.7 mm
30.211	Base Plate assembled		266.7x127.0x12.7 mm
30.215	Base Plate assembled		266.7 x 63.5x12.7 mm
30.217	Base Plate assembled		266.7 x 88.9x12.7 mm

All base plates can be put together by means of the connectors with square ends, hinges or angle plates.

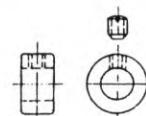


35.500 Rubber foot, dia 12 mm

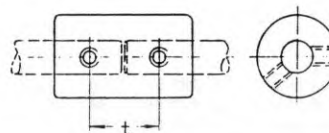
Spacers, Stop Collars & Shaft Couplings



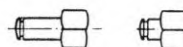
		D	x d	x s
31.001	Spacer	11.5x	6.1x	1
31.003	Spacer	11.5x	6.1x	2.5
31.005	Spacer	11.5x	6.1x	5
31.010	Spacer	11.5x	6.1x	10
31.101	Spacer	6x	3.7x	1
31.103	Spacer	6x	3.7x	2.5
31.105	Spacer	6x	3.7x	5
31.110	Spacer	6x	3.7x	10
31.120	Spacer	6x	3.7x	20
31.601	Spacer	8x	4.1x	1
31.603	Spacer	8x	4.1x	2.5
31.605	Spacer	8x	4.1x	5
31.610	Spacer	8x	4.1x	10
31.900	Spacer	18x	11.5x	1.5
31.903	Spacer	18x	11.5x	2.5
31.905	Spacer	18x	11.5x	5
31.910	Spacer	19x	11.5x	10
31.901	Spacer	11.5x	8.1x	3.7
31.916	Spacer	11.5x	8.1x	16
31.904	Spacer	18x	8.1x	2.5
	Bn			



32.001	Stop collar for 4 mm shafts (set screw 17.406)
32.003	Stop collar for 6 mm shafts (set screw 17.404)
	Bn

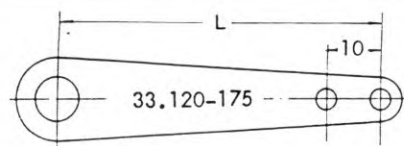
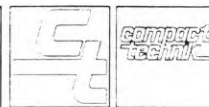


32.104	Coupling, for 4 mm shafts	dia	11.5x20x4.1
32.106	Coupling, for 6 mm shafts	dia	15x25x6.1
32.107	Coupling, for 4/6 mm shafts	dia	15x25x4.1/6.1
	Bn		

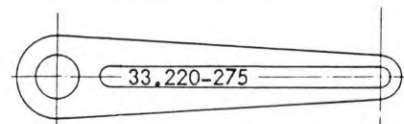


37.512	Spring bolt short
37.513	Spring bolt long
	Bw

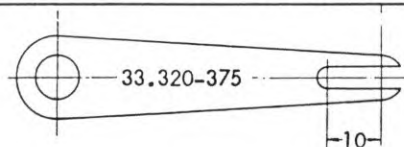
Plain, Slotted, Forked and Other Levers



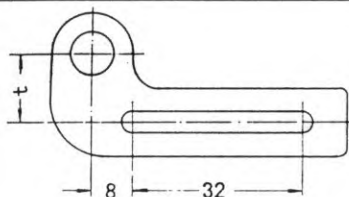
- 33.120 Plain lever punched L = 20 mm
 33.125 Plain lever punched L = 25 mm
 33.130 Plain lever punched L = 30 mm
 33.140 Plain lever punched L = 40 mm
 33.150 Plain lever punched L = 50 mm
 33.160 Plain lever punched L = 60 mm
 33.175 Plain lever punched L = 75 mm



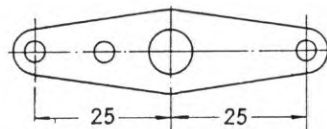
- 33.220 Slotted lever L = 20 mm
 33.225 Slotted lever L = 25 mm
 33.230 Slotted lever L = 30 mm
 33.240 Slotted lever L = 40 mm
 33.250 Slotted lever L = 50 mm
 33.260 Slotted lever L = 60 mm
 33.275 Slotted lever L = 75 mm



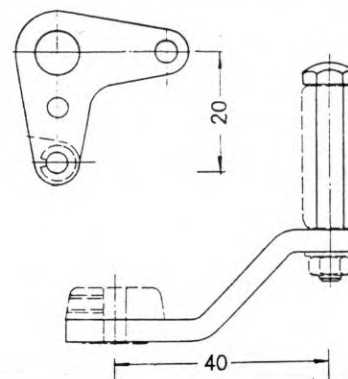
- 33.320 Forked lever L = 20 mm
 33.325 Forked lever L = 25 mm
 33.330 Forked lever L = 30 mm
 33.340 Forked lever L = 40 mm
 33.350 Forked lever L = 50 mm
 33.360 Forked lever L = 60 mm



- 34.003 Adjustable lever L = 40 mm



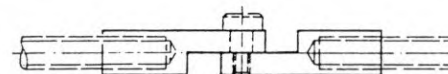
- 34.004 Symmetric lever L = 50 mm



- 34.007 90°-lever L = 20 mm
 All levers in Aa - 2 mm thick

- 34.008 Handcrank complete with handle Aa L = 40 mm

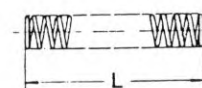
Bar Ends, Springs & Couplings



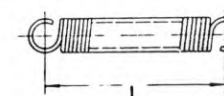
- 33.610 Bar end with M 6 thread and 4 mm pin bore Bn



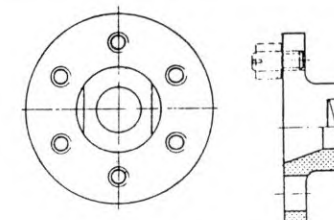
- 33.611 Bar end with M 6 thread and M 3.5 thread. use 14.004/008 bolts to fix. Bn



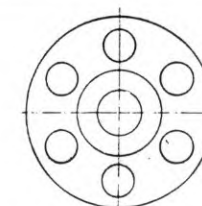
- 36.109 Compression spring L = 9 mm
 36.110 Compression spring L = 10 mm
 36.115 Compression spring L = 15 mm
 36.125 Compression spring L = 25 mm
 36.150 Compression spring L = 50 mm



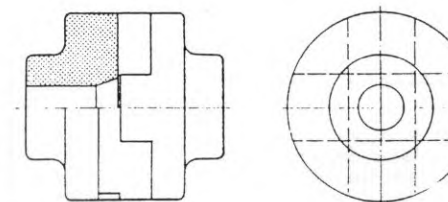
- 36.215 Tension spring L = 15 mm
 36.225 Tension spring L = 25 mm
 36.250 Tension spring L = 50 mm



- 40.007 Flange coupling threaded half, Aa use studs 40.111



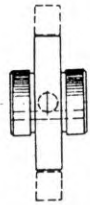
- 40.006 Flange coupling holed half, Aa



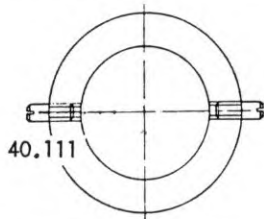
- 40.010 Oldham-coupling for 4 mm shafts use center-hexshaft 40.107 Aa

AUTOMAT [c]: X1.3/4m

Components for Switch Couplings

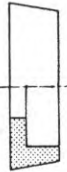


40.101 Center hub with hexagonal hole
for all switch couplings
Bn

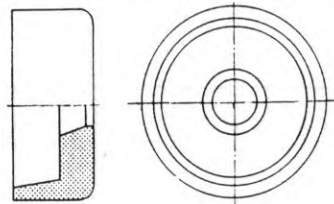


40.111

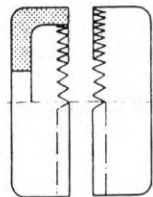
40.104 Slip ring
Bn
40.111 stud for 40.104
Sb



40.102 Cone end for cone-clutch
PVC



40.105 Outer cone ring
PVC



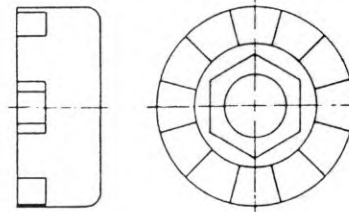
40.103 Tooth coupling ring
PVC



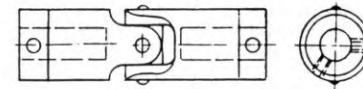
40.107 Hexagonal shaft for all
switch couplings WAF 6
shaft dia 4 mm, SS



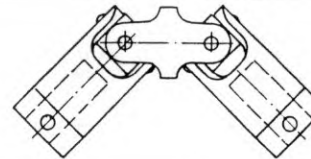
Jaw Coupling, Universal Joints, Stirrup parts



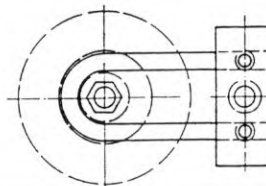
40.108 Jaw coupling half
PVC



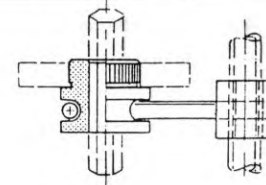
40.120 Universal joint simple 4 mm bore
9.5 dia x 38 mm
40.160 Universal joint simple 6 mm bore
12.7 dia x 46 mm



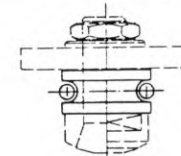
40.121 Universal joint double 4 mm bore
9.5 dia x 51 mm
40.161 Universal joint double 6 mm bore
12.7 dia x 62 mm



41.004 Stirrup block 10x10x25
Aa
41.005 U-shaped stirrup
Ss

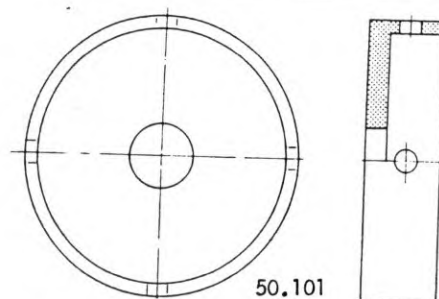
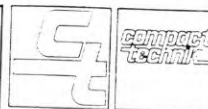


41.002 Insert hub with hexagonal
center hole
Aa

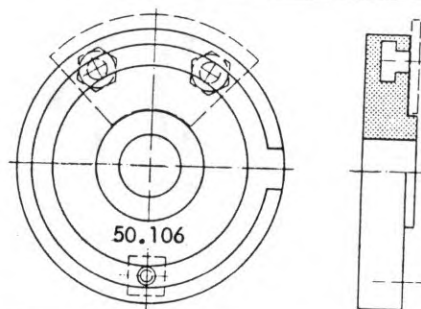


41.003 Stirrup ring
18x8.1x8
Bn

Cam Drive Components



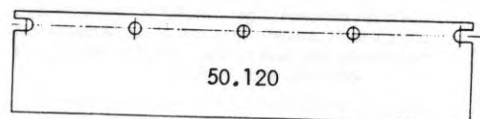
50.101 Body for bell cams
Aa



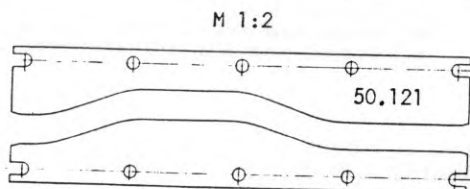
50.106 Body for flat cams
Aa



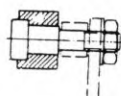
50.109 Special screw
for 50.106
Sn



50.120 Blank strip
for bell cams
Sb



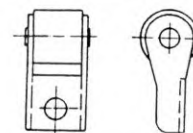
50.121 Profile strip
for bell cams
one pair -
10 mm stroke
Sb



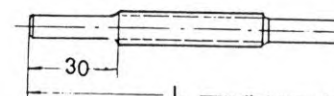
50.201 Cam roller Bw
50.301 Roller pin Sb



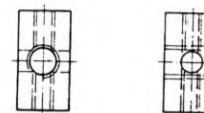
Cam Follower, Leadscrews & Nuts, Knobs & Pointers



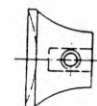
50.410 Cam follower for lever
assemblage Bn/Sn



51.001 Leadscrew M 6 L = 120 mm
51.002 Leadscrew M 6 L = 180 mm
51.003 Leadscrew M 6 L = 240 mm
both ends dia 4 mm Sb



51.004 Nut M 6 with one M 3.5 thread
10x10x19 mm
Bn



59.005 Knob, cam-follower
18 mm dia
PVC



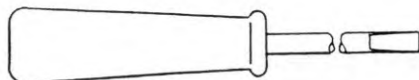
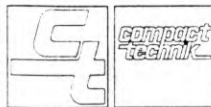
59.004 Ball button
12 mm dia
PVC



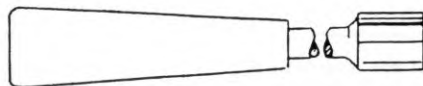
76.010 Pointer PVC L = 30 mm
76.011 Pointer PVC L = 60 mm
76.012 Pointer PVC L = 120 mm
76.016 Pointer with hub PVC L = 30 mm

AUTOMAT [c]: X1.3/4o

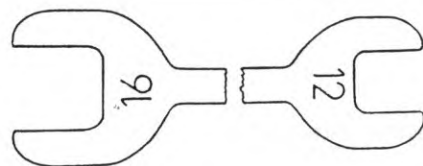
Tools & Empty Wooden Kit Cases



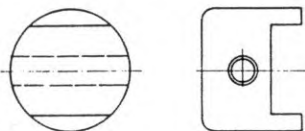
60.203 Screwdriver 3 mm
60.206 Screwdriver 6 mm



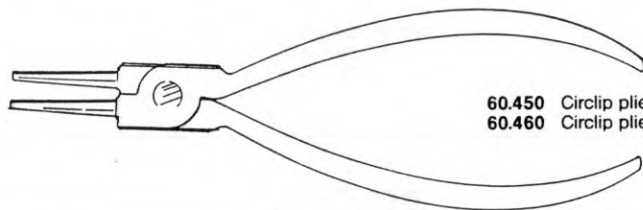
60.207 Socket wrench WAF 7



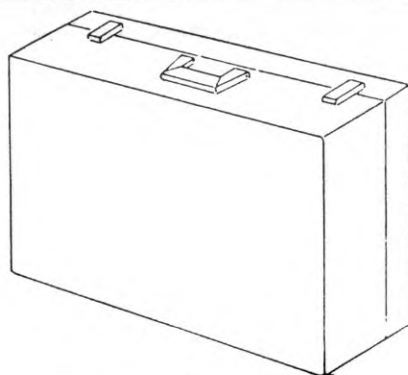
60.210 Wrench WAF 7/10 mm
60.212 Wrench WAF 12/16 mm
Sb



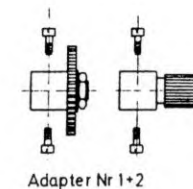
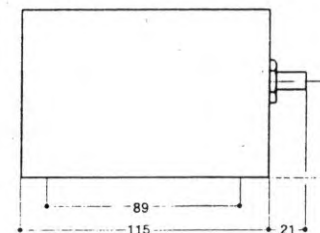
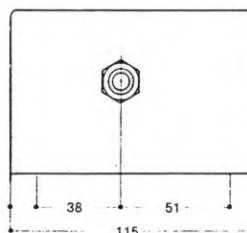
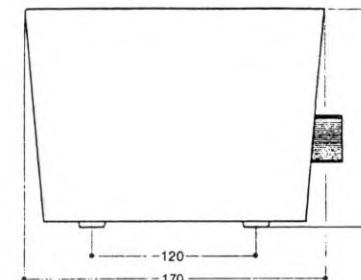
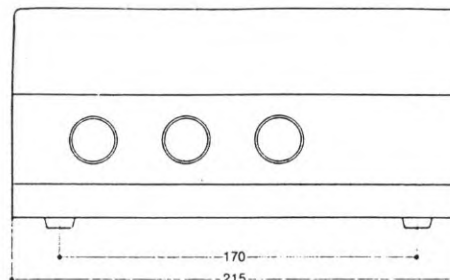
60.161 Socket wrench for pulleys
WAF 16
Sb



60.450 Circlip plier spanning
60.460 Circlip plier opening



77.100 Case empty
498 x 390 x 142 mm
77.200 Case empty
498 x 390 x 94 mm
(inside dimensions)



Adapter Nr 1+2

VARIMAT 08 + VARIMAT 16 Electronic Speed Drives

To "breath life" into all AUTOMAT prototypes, but also used separately, these two drives are offered to all practitioners.

The VARIMAT drives consist of a reversible DC gearmotor and a control unit with advanced digital electronic design.

Independent of load- and direction changes these drives supply a constant torque of 16 cmkp or 8 cmkp in the range of 1 thru 50 RPM (V16) and 3 thru 50 RPM (V08).

The main direction „right handed“ is reversible by a change-over switch. The unit is protected by a thermo-regulator and therefore can function properly through extensive endurance tests.

Adapters for AUTOMAT-components are included. Motor and control unit can be placed separately through a junction cable.

The VARIMAT units are ideal drives whenever optimal numbers of rotations must be found experimentally.

Technical data:

Range of regulation:	1 thru 50 RPM (V16), resp. 3 thru 150 RPM (V08)
Continuous output:	3.1 W (V08), resp. 6.2 W (V16) at 150 resp. 50 RPM
Torques:	8 resp. 16 cmkp
Voltage:	110/220 V AC $\pm 10\%$ at 60 resp. 50 Hz
Direction of rotation:	right/left-handed, changeable
Temperature range:	0° C - thru 40° C
Running-in period:	approx. 15 min
Weight of the unit:	approx. 7 lbs.

AUTOMAT

No manual is known from this period. This cover (68% full size) is from a 1993 Catalogue, which includes some basic constructional details.

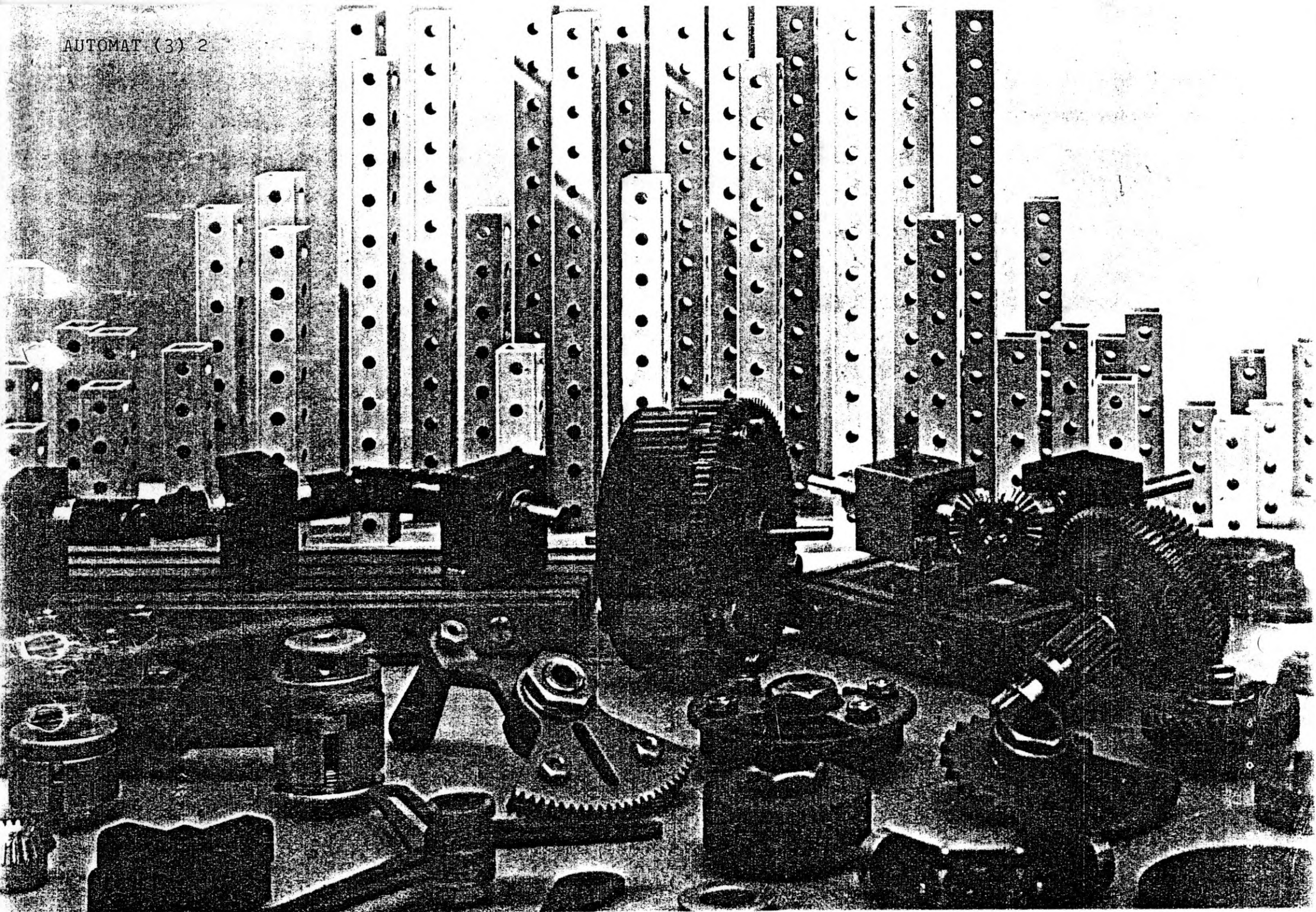
B) Bewährte Baukasten-Systeme

Type	901	je ein Baukasten	500 + 401
	1900		1400 + 500
	2001		1600 + 401
	2100		1600 + 500
	2500		2000 + 500
	3000		1600 + 1400
	3500	500 +	1600 + 1400
	3901	401 + 500 +	1600 + 1400

AUTOMAT [c]: X1.2/6

The AUTOMAT Construction Kit Programm

Type:	content:	weight lbs:
401 Structural Kit	Square tubes & connectors	42
500 Profile Kit	T-slot profiles & accessories	29
1400 Structural Kit	Basic type. All static elements except T-slot profiles	53
1600 Gear Kit	Basic Type. All dynamic elements	44
2000 Combination Kit	Structural & dynamic elements in a proven selection	40
8313 Motor Set	10 el. Gearmotors 1- 60 RPM	16
8410 Motor Set	10 el. Gearmotors 20-300 RPM	37
V 08 Variable Speed V 16 Drives	El. Speed Drive 3-150 RPM El. Speed Drive 1- 50 RPM	16 16



The AUTOMAT Component Program

A Structure-Components (kit 1400)

base plates
platines
square tubes
U-shaped struts
I-shaped struts
angle irons
slot-hole plates
gussets
connectors

B Gear & Transmission parts (kit 1600)

common bearings for 4 + 6 mm shafts
ball bearings for 4 + 6 mm shafts
spherical bearings for 4 + 6 mm shafts
shafts for 2,5 + 4 + 6 mm shafts
hexagonal shafts
flexible shafts
hollow shafts 4/2.5 mm
collet chucks for 4 + 6 mm shafts
insert hubs for 4 + 6 mm shafts
dove-tail guides
spur gears $m = 0,75$, $b = 4$ mm

gear-components contd.

internal gear 108 teeth
helical gears
bevel gears
worms 2 + 3 threaded
worm gears
sprocket wheels
roller chain 5 mm pitch
toothed pulleys
toothed belts
flat belt pulleys
flat belts
round belt pulleys
round belts
racks
toothed sector 24 teeth
toothed segment 18 teeth
chain sector 11 teeth
couplings for 4 + 6 mm shafts
universal joints for 4 + 6 mm shafts
special shaft adapters
friction clutches
stop collars
circlips

threaded bushings
threaded rods M 3,5
threaded rods M 6
bar ends for M 3,5 + M 6
spacers
cam bodies + followers
support leadscrews
nuts for leadscrews
compression springs
tension springs
pointers
dials
parts for a recording instrument
handles + knobs
crank-pins
hexag. screws M 3,5
hexag. nuts M 3,5 - M 6 - M 8x1 - M 10x1
washers
tools

uniform pitch "t" = 12,7 mm = 1/2"

uniform module "m" = 0,75

chain + timing belt pitch = 5 mm

The AUTOMAT Kit-Systems:

400

System "400"

401

System "401"

500

System "500"

401

1600

System "2001"

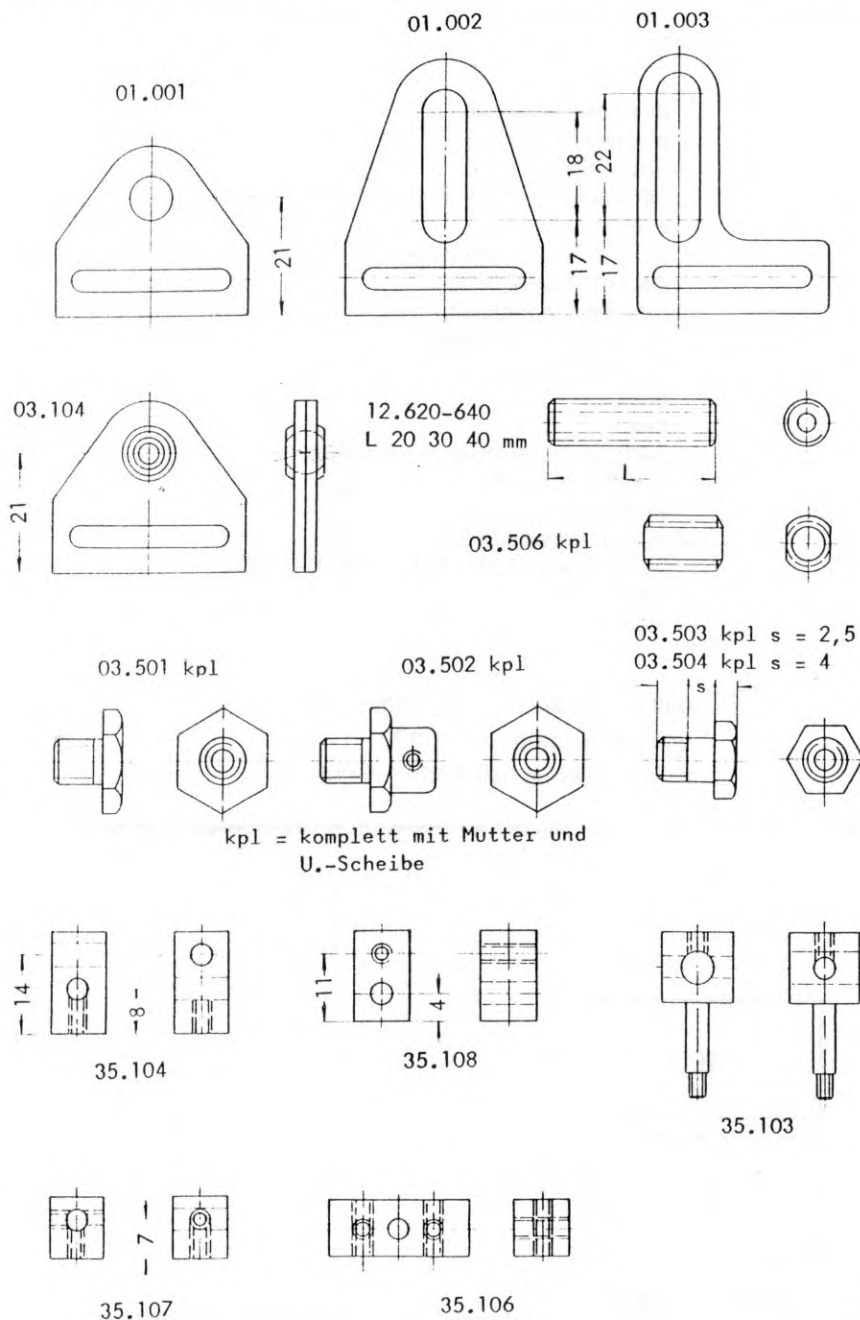
1400

1600

System "3000"

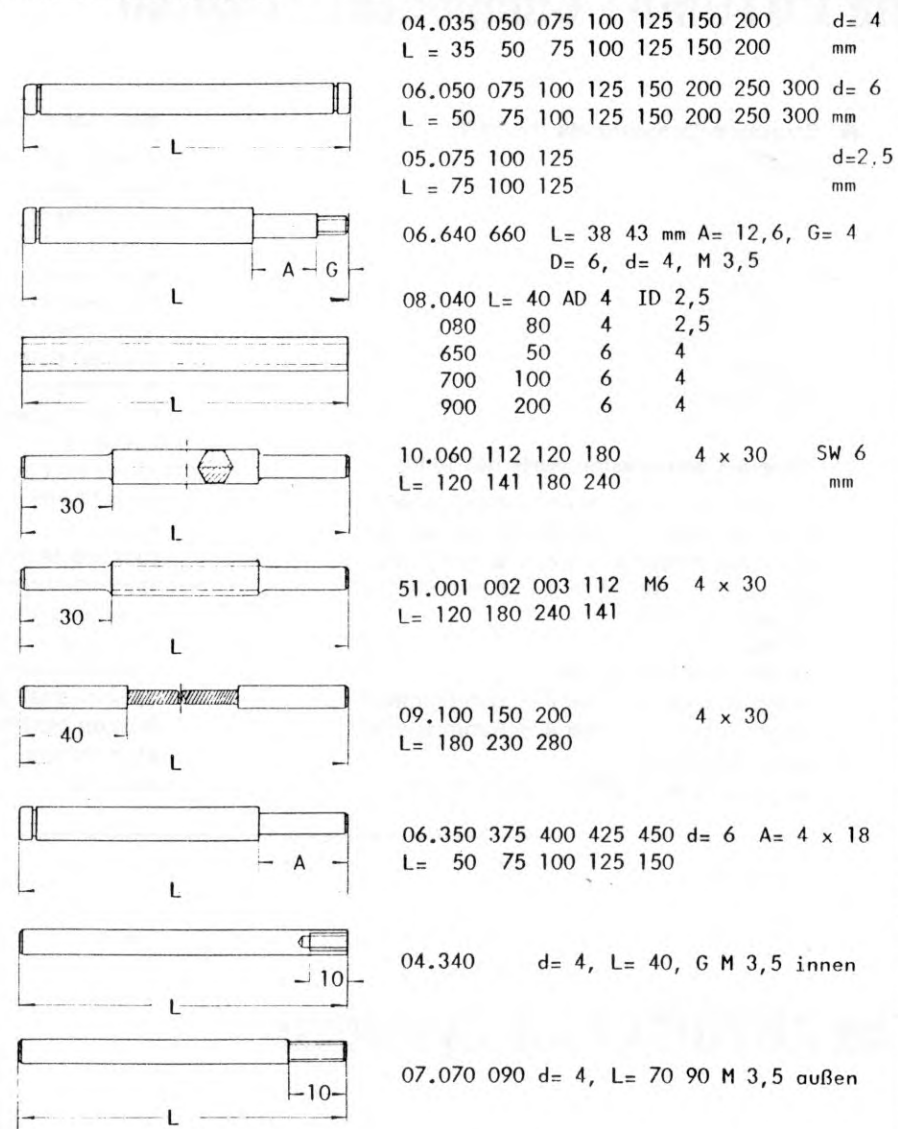
AUTOMAT

Gleitlager-Bauteile für 4 u. 6 mm Wellen 03.---

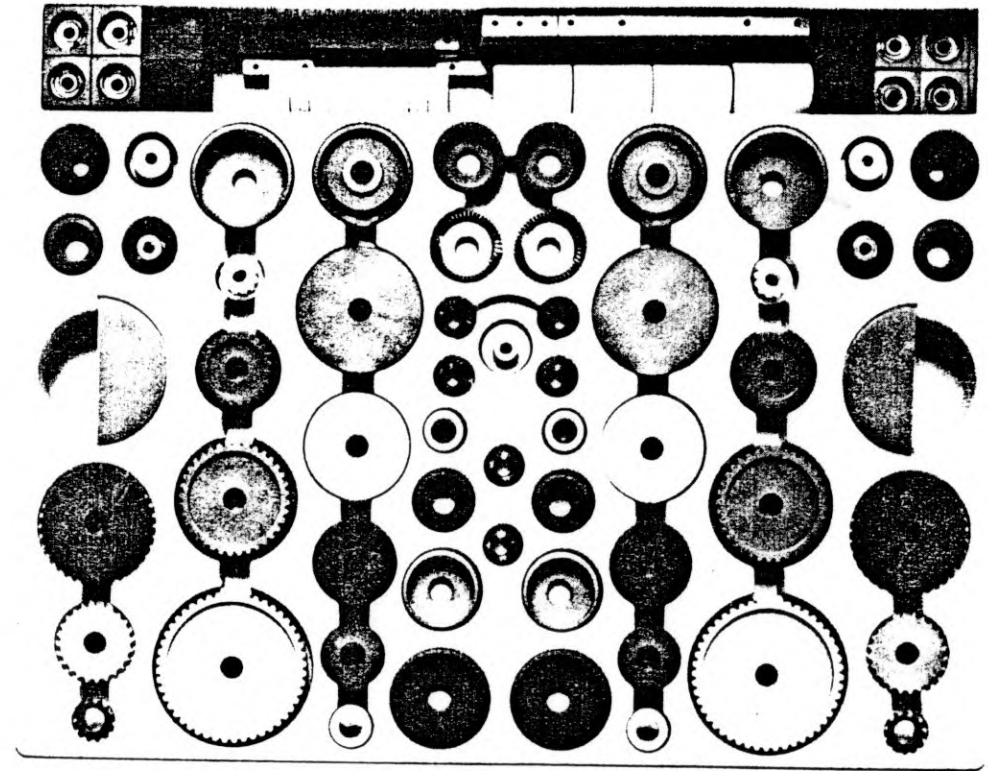
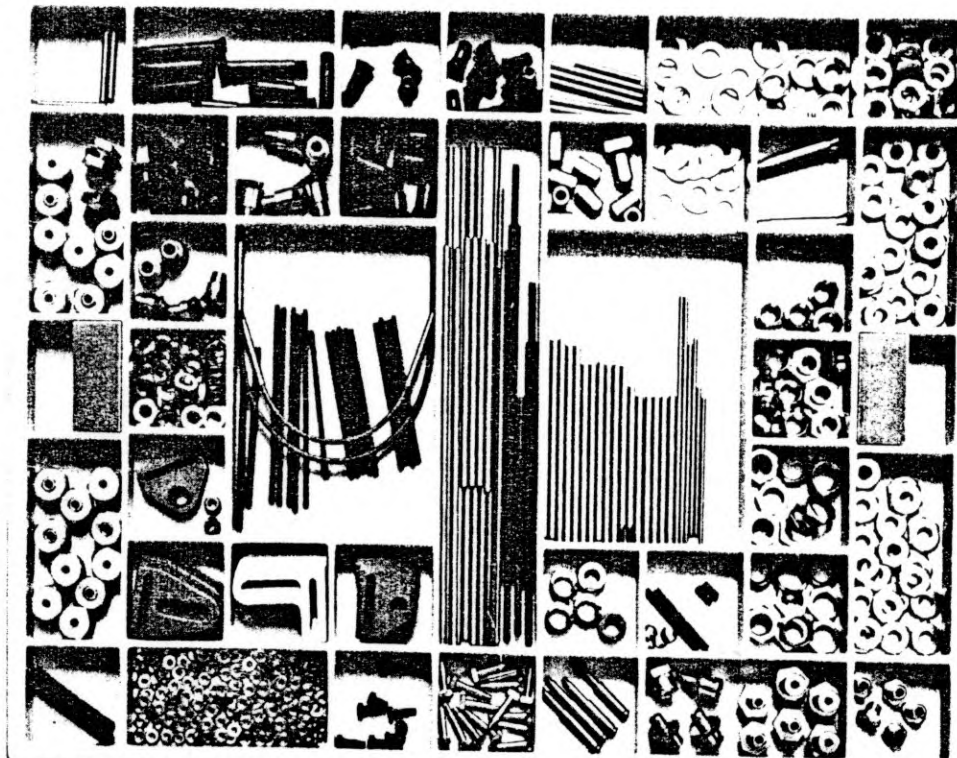
**AUTOMAT**

Wellen und Bolzen

04 + 06.---



15.003 004 006 für Welle 3,5 4,0 u. 6,0



A simple, easy-to-built recording instrument is possible with the enclosed drums diagram paper, toothed driver wheel, writing nib a.s.o

Operating elements, like buttons, handles, knobs, pointers, dials and rulers as well as the usual assembling materials, like screws, nuts, washers, springs and clips belong also to the standard content of this big kit.

Many parts have several functions to fulfill so that there is no limit to the creativity of the AUTOMAT user.

It is however essential to become familiar with the whole system in order to make the best out of its benefits.

This AUTOMAT 3000 System is rentable to every modern equipped laboratory where mechanical problems have to be solved.