

SAMP



Manufacturing programme

Gear manufacturing equipment

Hobbing S Chamfering & deburring



H 80 / 140 / 200
 Ø 80 / 140 / 200 mm
 m_n 3.5 / 5.0 mm
 Axial travel 200/350 mm



H 200 T
 Ø 200 mm
 m_n 3.5 / 5.0 mm
 Axial travel 200/350 mm
 Integrated turning

Hobbing M Chamfering & deburring



H 250 / 300 / 400
 Ø 250 / 300 / 400 mm
 m_n 6.0 / 8.0 mm
 Axial travel 400 / 600 mm



H 250 CD
 Ø 250 mm
 m_n 6.0 mm
 Axial travel 400 / 600 mm
 Integrated chamfering/
 deburring (1 station)



H 250 CDM
 Ø 250 mm
 m_n 6.0 mm
 Axial travel 400 / 600 mm
 Integrated chamfering/
 deburring (2 stations)



HR 250
 Ø 250 mm
 m_n 6.0 mm
 Axial travel 600 mm
 torque drive

Hobbing L Rotor hobbing & milling



H 600 / 800
 Ø 600 / 800 mm
 m_n 12.0 / 14.0 (milling) mm
 Axial travel 450 / 800 mm



HR 600
 Rotor hobbing/milling
 Ø 400 mm
 m_n 18.0 / 22.0 (milling) mm, profile depth 40 mm
 Axial travel 750 mm

Chamfering & deburring



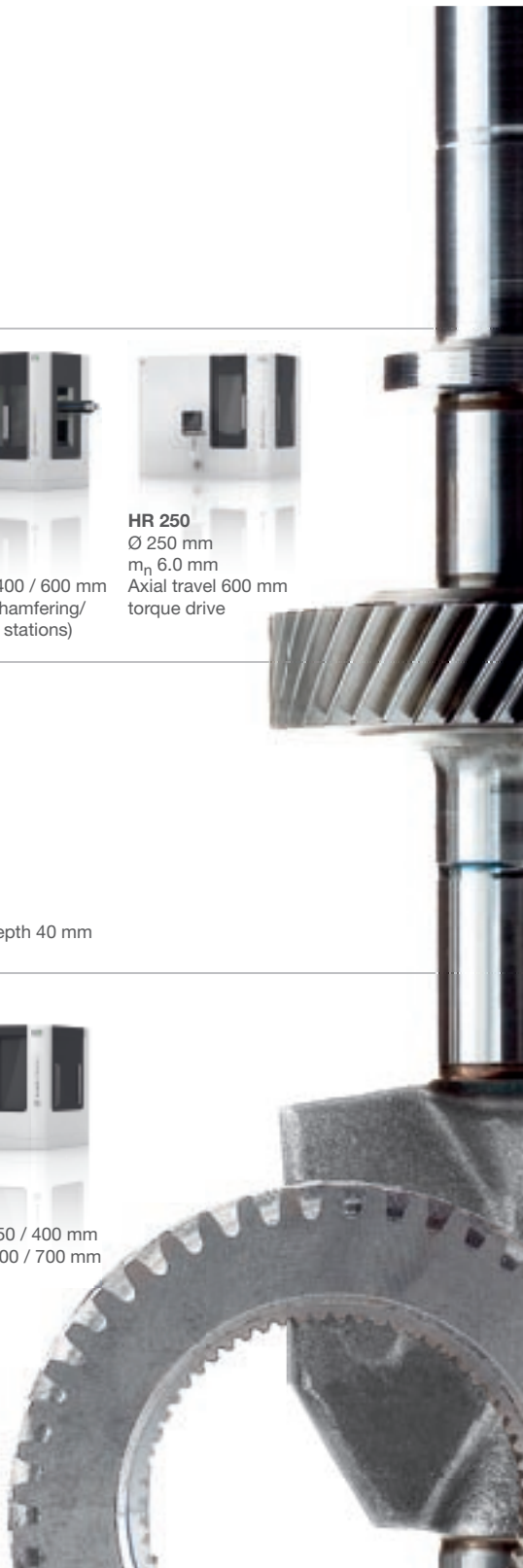
CD 350 H
 Ø 350 mm
 Face width 150 mm
 Wp length 400 mm



CDA 250 H
 Ø 250 mm
 Face width 150 mm
 Wp length 400 mm



CDX 250 H
 Ø 250 mm
 Face width 50 / 400 mm
 Wp length 400 / 700 mm



Grinding M
 Vertical workpiece axis


G 400
 Ø 380 mm
 m_n 8.0 mm
 Axial travel 400 mm

Grinding M
 Horizontal workpiece axis


G 500 H
 Ø 500 mm
 Profile depth 52 mm
 Wp length 1,250 mm



GP 500 H
 Ø 500 mm
 Profile depth 29 mm
 Wp length 1,250 mm



GT 500 H
 Ø 400 mm
 Profile depth 20 / 25* mm
 Wp length 950 mm

Grinding
 Rotors and screws


GR 500 H
 Ø 400 mm
 Profile depth 52 / 80* mm
 Wp length 1,250 mm



GRX 500 H
 Ø 400 mm
 Profile depth 80 mm
 Wp length 1,600 mm



GW 3600 H
 Ø 250 mm
 Profile depth 40 mm
 Wp length 3,600 mm

Gear centres XL
 Turn-milling, milling, hobbing,
 generating & profile grinding


HG 1200
 Ø 1,200 mm
 m_n 35.0 / 40.0** mm
 Axial travel 950 mm



HG 1600
 Ø 1,600 mm
 m_n 35.0 / 40.0** mm
 Axial travel 950 mm
 without counter column



HG 2400
 Ø 2,400 mm
 m_n 35.0 / 40.0** mm
 Axial travel 950mm



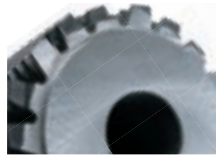
HG 1200 invento
 Ø 1,200 mm
 m_n 35.0 / 40.0** mm
 Axial travel 950 mm

Tools

Hobs



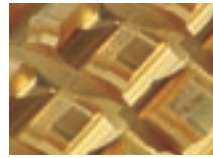
Shank-type
 m_n 0.45 - 7.0 mm
 \varnothing 30 - 200 mm



Bore-type
 m_n 0.45 - 17.0 mm
 \varnothing 30 - 210 mm
 tooth depth 34 mm,
 limited by m_n



for worm gears
 Bore- and shank-type



for special profiles
 Sprockets gears, splines,
 timing belt gears and
 rotors



for large modules
 m_n 7.0 - 22.0 mm
 \varnothing up to 400 mm

Inserted blade tools



Roughing gasher
 m_n 6.0 - 40.0 mm
 \varnothing up to 500 mm



Finishing gasher
 external/internal
 m_n 6.0 - 30.0 (50.0) mm
 \varnothing up to 500 mm



Hobs with/without protuberance
 m_n 6.0 - 22.0 (30.0) mm
 \varnothing up to 450 mm
 length up to 500 mm



Solid carbide endmills
roughing/finishing
 Design on request
 std shaft \varnothing 16/20/25 mm



Rotor Gashers
 Duplex finishing gashers
 Sprocket wheel gashers
 Endmills for radial face
 serrations

Shaper cutters



Shank-type
 m_n 0.5 - 8.0 mm
 \varnothing 12 - 300 mm



Disk-type
 m_n 0.5 - 8.0* mm
 \varnothing 300 mm
 *larger m_n on request



Deep counterbore-type
 m_n 0.7 - 8.0 mm
 \varnothing 300 mm



Special/modified profile
 for sprocket gears,
 splines, cams, timing
 belt gears

Chamfering/ deburring tools



Chamfering/deburring tools
 Special finish for long life
 Special tooth forms



Rolling tools
 to remove secondary
 burrs and smoothen tooth
 flanks

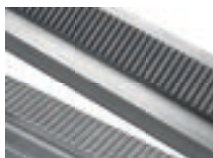


Chamfer-roller tools
 for spur/helical gears
 Patented tool



Deburring/rolling tools
 for sprocket gears

Cold forming tools



Rack cutters
 m_n 0.3 - 2.0 mm
 wp length up to 1,000 mm
 profile length up to 180 mm

XP tools express delivery



XP® hobs
 Express delivery within
 predetermined range
 m_n 1.0 - 3.0 mm
 \varnothing 70 - 115 mm



XP® shaper cutters
 Express delivery within
 predetermined range
 m_n 1.0 - 8.0 mm
 \varnothing 250 mm
 tooth height 19 mm



XP® Chamfering/ deburring/rolling tools
 Express delivery for
 urgent requests

Finishing tools


Shaving cutters
external/internal
 m_n 0.7 - 10.0 mm
 \varnothing 70 - 330 mm
face width 65 mm



Ceramic-bounded, dressable profile grinding wheels



Ceramic-bounded, dressable generating grinding worms



CBN plated profile grinding wheels
 \varnothing 25 - 240 mm
bore \varnothing 8 - 80 mm
width 10 - 35 mm



CBN plated generating grinding worms
for roughing/finishing
 \varnothing 40 - 250 mm

Master gears and gauges


Master gears
 m_n 0.7 - 6.0 mm
 \varnothing 40 - 300 mm
width 4 - 80 mm



Rolling gears
to check noise and improve surface finish



Plug gauges
 m_n 0.5 - 6.0 mm
pitch \varnothing 20 - 150 mm



Ring gauges
 m_n 0.5 - 7.0* mm
outside \varnothing 20 - 200 mm
*depending on outside \varnothing

Project consultancy


Consultancy
Application-tailored advice on efficient technology and future-safe investments



Design
Our expert staff will work closely with you to make sure you are able to meet your requirements



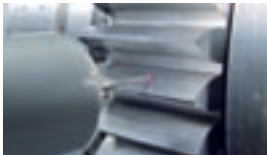
Testing
in real production environments including extensive trials on tool coatings and materials



Automation options
Integrated cells and complete production lines

Tool services


Sharpening and recoating
of hobs, shaper and shaving cutters



Master gear regrinding



CBN-grinding tool reworking
incl. stripping and replating



Experienced CMS partner
for single tools or the complete gear tool product range
Product cycle management

Tool sharpening machines


GS 400
for shaving cutters and master gears
 \varnothing 400 mm
 m_n 15.0 mm



SHR 25
for hobs
 \varnothing 250 mm
grindable length 270 mm



PTG 1
universal tool grinding
 \varnothing 254 mm
wp length 250 mm
axial travel 500 mm



UTG series
for broaches and racks
 \varnothing 254 mm
wp length up to 3,200 mm
axial travel up to 2,680 mm



SAMPINGRANAGGI

Ground & lapped
bevel gears



Ground bevel gear sets
Module 1 up to 12
Max dia. 450 mm



Lapped bevel gear sets
Module 1 up to 12
Max dia. 450 mm

High precision gears,
transmission cases, gear
reducers and rotors

Ground
cylindrical gears



Gears and pinions
Module 1 up to 8
Max dia. 400 mm



Geared shafts
Module 1 up to 8
Max dia. 400 mm



Internal gears
Module 1 up to 8
Max external dia. 370 mm

Rotors
& screws



Rotors
Production
Production gap bridging
Prototyping
Design and profile optimisation

Air compression, oil and water injected
Refrigeration purposes, oil injected
Dry applications
Air conditioning, oil injected
Pump screws

Outside dia. 370 mm
Tooth depth 45 mm
Toothed length 500 mm
Overall length 1,200 mm
Weight 150 kg

Cases
& components



Cube 1,200 x 850 x 800 mm
Material Aluminium and cast iron

Special gear
reducers



Customized angle drive



Multifunction gearbox



Hypoid angle drives



Lapped or Ground options



Wire drawing Bunching / laying-up

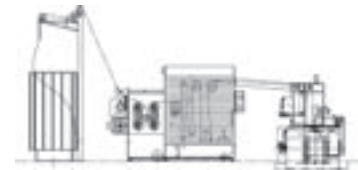
Rod breakdown



Line	RB1		RB2		RB3
Max wire inlet Ø, mm	Cu	Al/Alloys	Cu	Al/Alloys	Cu
	8.00	9.00 (12.70)	8.00	9.00 (12.70)	8.00
Wire outlet Ø range, mm	0.80-4.50	1.00-5.00	0.80-4.50	1.38-5.20	1.00-4.50
Number of wires	1-4	1-2	1-2	1-2	1-2

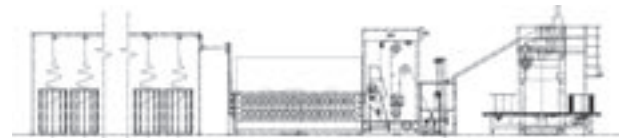
Single-wire Cu / Al / special Cu alloys

Line	SW1	SW2	SW3
Max inlet Ø (hard copper), mm	3.20	3.20	1.65
Max inlet Ø (soft copper), mm	3.20	3.50	1.80
Outlet Ø range, mm	0.32 - 1.40	0.15 - 1.40	0.10 - 0.30



Multi-wire Cu / Al

Line model	MW1	MW2	MW3	MW4
Max inlet Ø, mm	2.60	2.60	2.00	1.56
Outlet Ø range, mm	0.16 - 1.35	0.13 - 0.60	0.10 - 0.50	0.05 - 0.20
Max no. of wires	56	20	40	16




Double-twist bunching

Bunch section	0.009 / 70 m ²
Max. line speed	300 m/min
Max. twists per minute	2x10,000 tpm
Max. bobbin diameter	1,250 mm




Extrusion


Energy

Automotive insulation	Line		
	AI A1	Basic line PVC-XLPE + Stripe or Skin	
	AI A3	Automatic colour change (Stripe or Skin)	
	AI A4	Automatic colour change (Basic & Stripe or Skin)	
	AI V1	Vulcanization line XLPE + Stripe or Skin	
	AI V3	Vulcanization line XLPE + Automatic colour change	

Electronic insulation	Line		
	WI A1	Skin/stripe process	
	WI A2	For Halogen free materials	

Building insulation	Line		
	BI A1	Skin/stripe process	
	BI A2	Halogen free, high productivity	
	BI A3	Stripe/skin quick colour change	
	BI A4	AWG 14/6 THHN insulation and sheathing	
	BI A4-HS	THHN wire insulation/sheathing in line with rod break-down machine	

Building sheathing	Line		
	BS A1	Simple layer process	
	BS A2	Filling/sheathing process	

Building sheathing + SZ	Line		
	BS B1	SZ group, co-extrusion filling/sheathing system	
	BS B2	SZ group, 2 tandem extruders for tandem filling/sheathing	
	BS B3	SZ group with patented system and 2 tandem filling/sheathing extruders	

Power insulation	Line		
	PI A1	High-speed insulation (up to 120 mm²)	
	PI A2	HFFR High-speed insulation (up to 120 mm²)	
	PI B1	Insulation (up to 300 mm²)	
	PI B2	Liquid Silane (up to 300 mm²)	

Power sheathing	Line		
	PS A1	Basic Sheathing (up to 60 mm²)	
	PS A2	Filling /sheathing process (up to 60 mm²)	
	PS B1	Basic Sheathing (up to 120 mm²)	
	PS B2	Filling /sheathing process (up to 120 mm²)	



Telecom

LAN & Telephone insulation

Line	
TI A1	Solid PVC, solid PE or chemical PE foam
LI A1	Solid PE or physical PE foam
LI B1	Solid FEP or physical FEP foam



Coaxial insulation

Line	
CI A0	insulation for micro-coax cables with FEP and PE
CI A1	insulation for mini-coax cables with SRL frequency up to 1 GHz
CI A2	insulation for mini-coax cables with SRL frequency up to 3 GHz

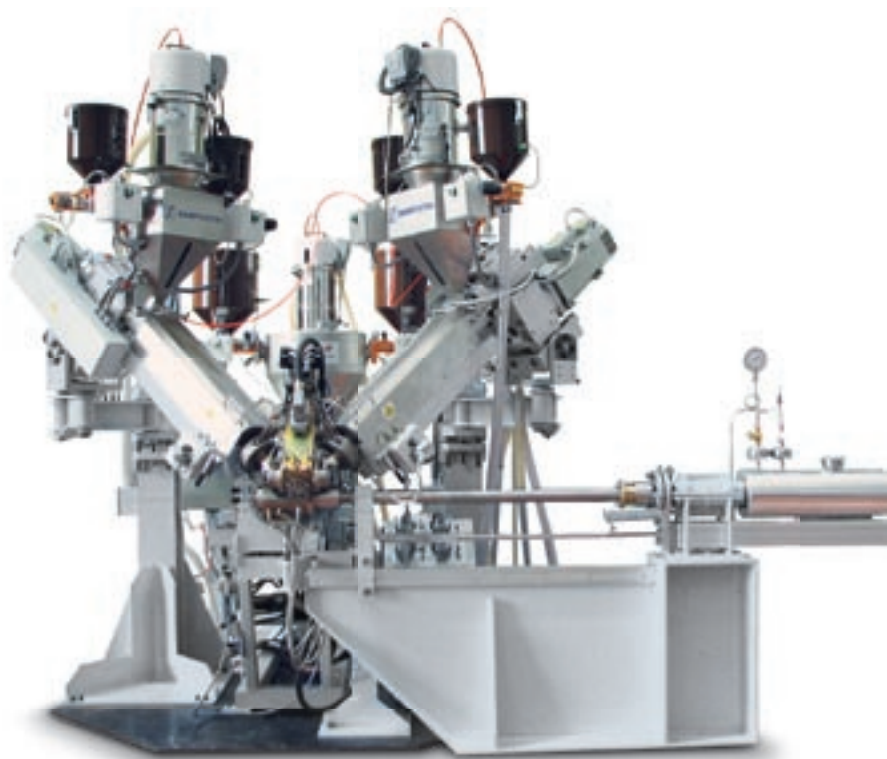


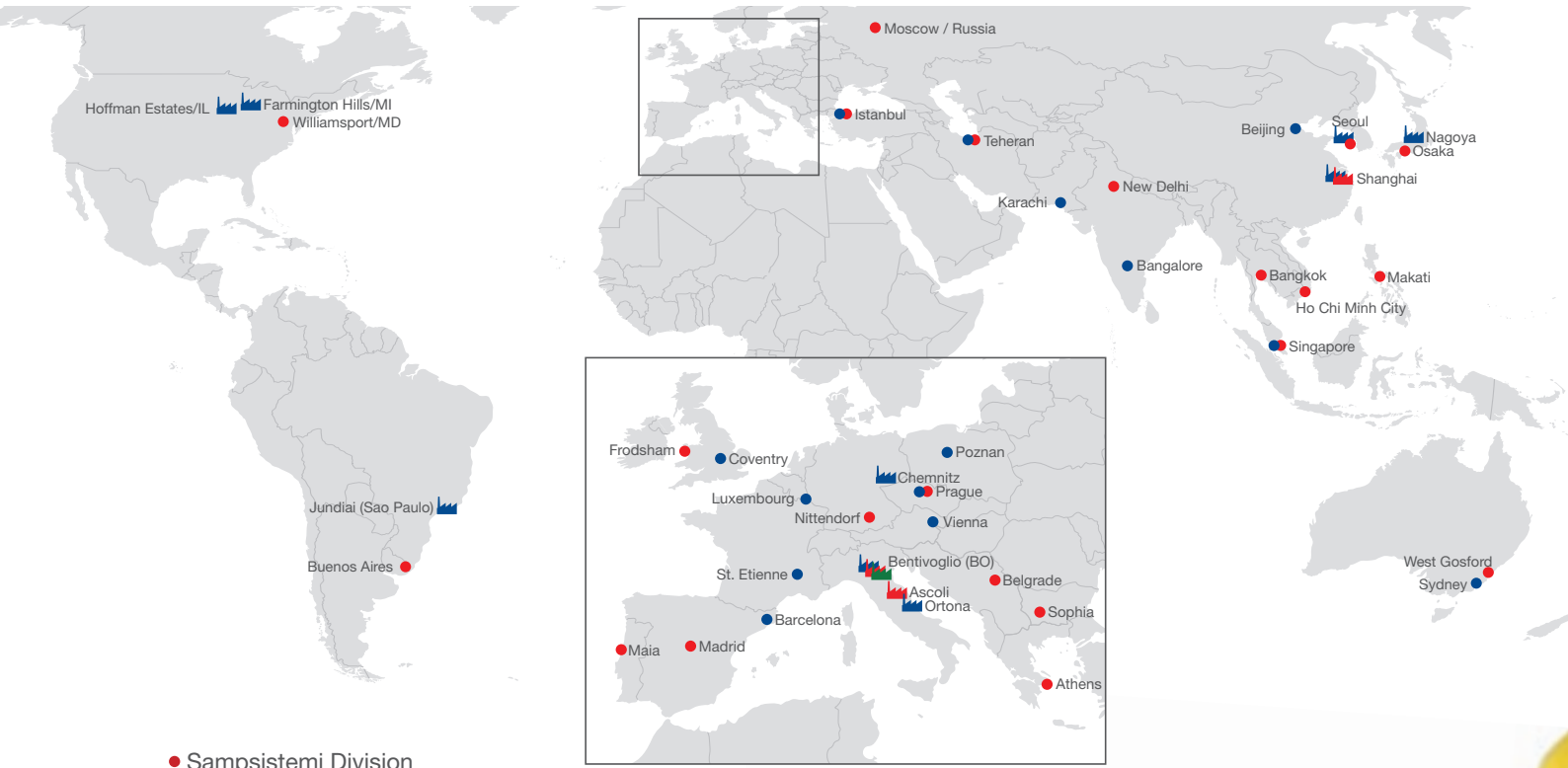
Telecom sheathing

Line	
OS A1	Basic sheathing for optical cable
TS A1	Basic sheathing for telephone cable
LS A1	Basic sheathing for LAN cable
CS A1	Basic sheathing for coaxial cable



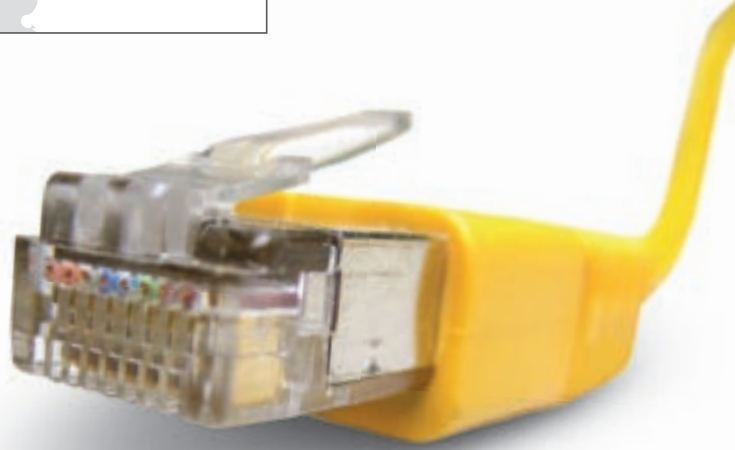
Technical data subject to change, work ranges depending on application





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