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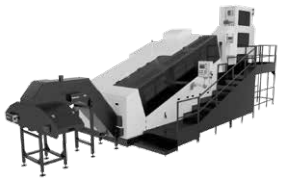
SACMA GROUP

GUIDE TO THE SYSTEM

INGRAMATIC



THE **WINNING TECHNOLOGIES**®

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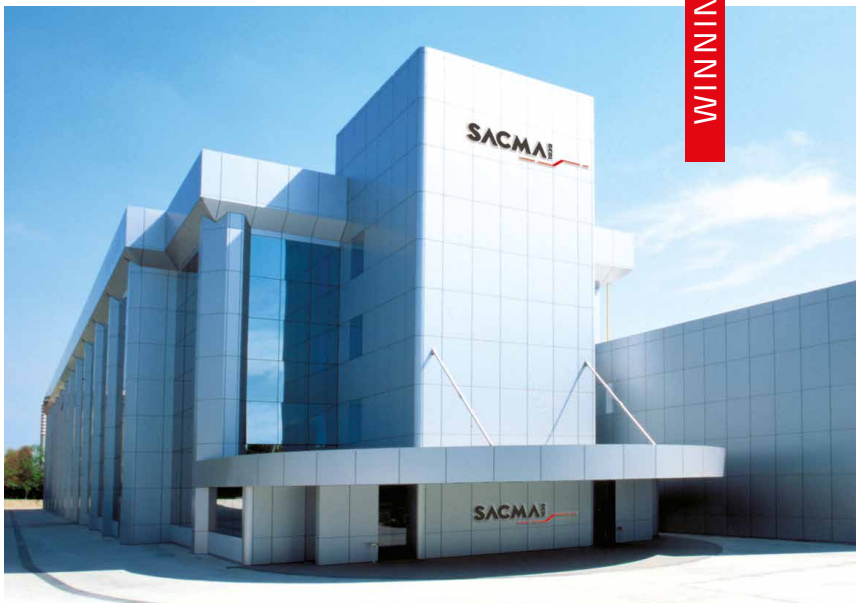
SACMA GROUP

WINNING TECHNOLOGIES®



CHOOSE EXCELLENCE TO MAKE THE DIFFERENCE

A constant focus on the future

SACMA GROUP is the ideal technology partner for the development and manufacturing of headers, thread rollers, CNC machines for post-heading and tapping operations, right through to loading and handling systems.

Customised, high-tech solutions to redefine the canons of excellence in the world of fasteners.

All the companies of the group are linked by a common philosophy and processes that allow each component to be designed and manufactured in-house. A choice that makes the difference.

THE **WINNING TECHNOLOGIES®**

- FORMING / HEADING
- ROLLING / THREADING
- TAPPING / MACHINING
- LOADING / MOVING

• 5 Production Sites • 24 Sales Agencies • 5 Sales & Technical Service Centers

Welcome to the SACMA world
so much more than just numerous dots on a map.

Our company is an international strategic network with technical centers in the USA, China, Taiwan, and Brazil, and a growing sales network across 18 countries. We have a strong presence in key European markets as well as in regions such as Canada, Argentina, Japan, India, Iran, and South Korea. Because truly being there means being reliable, not just visible.

SACMA GROUP | SACMA 1939 | INGRAMATIC | HS ASPE | TECNO LIFT

Every industry follows a unique path, shaped by challenges, ambitions, and constant change. SACMA is always there with machines designed to turn ideas and projects into reliable, long-lasting components. Our know-how, born from experience and vision, allows us to provide solutions that adapt to every need and support manufacturers worldwide in achieving excellence.

SECTORS

- AUTOMOTIVE OEM
- AUTOMOTIVE TIER ONE
- AEROSPACE
- INDUSTRIAL VEHICLES
- CONSTRUCTION
- ELECTRONICS
- WHITE GOODS
- AMMUNITION AMTEC
- OTHERS

INGRAMATIC

FORMING - HEADING

ROLLING - THREADING

TAPPING - MACHINING

LOADING - MOVING

Founded in 1966, INGRAMATIC has produced over 4,000 thread rolling machines, becoming a global market leader. Since 2004, it has been part of the SACMA GROUP, enhancing its technical and commercial capabilities. INGRAMATIC offers thread rollers for automotive, construction, electronic, and aerospace sectors, with a focus on reliability and innovation.

TECHNICAL DEPARTMENT

Producing machines that fully meet our customers' needs means reaching ever higher levels of personalisation. We're only able to do this thanks to the work of our Technical Department, which analyses every request right down to the last detail and sets up the project with the greatest professionalism.

It's here that the designs for customers' machines begin to take shape on the computer screens, in that unique logic of total integration that ensures the optimal interchangeability of all the various components.
The Technical Department creates the designs which are then sent to Production, where what has taken shape finally comes to life.

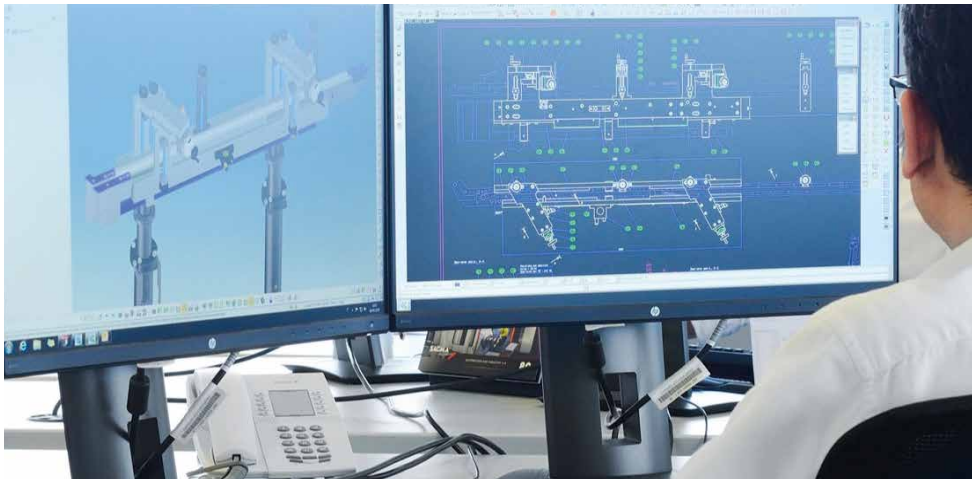
QUALITY

Every one of the mechanical parts that make up our machines has to pass a strict quality control process before it can be stored in our warehouse: only the perfect ones will become part of a machine. Each machine is then tested at its maximum performance level for at least 72 consecutive hours to decide whether it can be shipped or not. Managing a modular quality system that involves the manufacture and inspection of every single mechanical part is the only way to provide our clients with a guarantee of the highest levels of authentic, long-lasting quality that are expected of our machines.

R&D

Technology is advancing and evolving at an ever increasing speed, and we can't allow ourselves to fall behind. That's why, every day, our R&D engineers are committed to seeking out the best and most recent technological innovations on the market, so we can apply them to our machines.

It's not just about searching for - and finding - new solutions though; it's also about understanding how to successfully apply them to our production processes for the purposes of continuous improvement. To look to the future and always stay one step ahead.



CO-ENGINEERING

All companies say they are customer-orientated. Actions speak louder than words though, and in fact we are constantly investing in a global presence via the exclusive service of technical design to develop new tailor-made solutions for rolling every type of next generation workpiece. This means not only being able to create ever more complex products but also to identify - together with the customer - the best solutions to industrialise them in the most efficient way.

ASSEMBLY DIVISION

It's written as "Assembly Division" but it's read as "reliability". No mechanical components from third-party manufacturers: at INGRAMATIC we produce every single piece of our machines in-house or in the group factories and, before assembling them, we carry out a pre-assembly operation to ensure the quality of the unit that will then be installed on the machine. We do this by verifying the precision of the couplings, reducing tolerances to a minimum and perfectly calibrating the movements of the slide units. Because reliability can't be seen, but it's heard.

WAREHOUSE STORAGE AND LOGISTIC

The organisation of a mass production system can't do without the warehouse.
Holding over 700 pallets for automatic pick-up and 3000 boxes for manual pick-up, it guarantees the presence of all the components needed for the production plan and for the assistance and spare parts service.
The computerised stock control system ensures highly efficient and fast pick-up and optimum stock management.

SINGLE STARTER UNIT THREAD ROLLERS

The RP120/220/320/420 thread rollers, with a single starter unit, use dies from W1015/TR1 to W30/TR5, producing screws for various sectors. Key features include a Direct Drive motor starter unit, pearlitic spheroidal cast iron bed frame, and a high-precision planetary gear box for higher torque and precision. The machine includes motorized feeding rails adjustments, a vibratory feeder, and an automatic rejection system for N.C. parts. The modular design allows for adding one or two washer assembly units, or automatic feed-in for headless workpieces.

CHARACTERISTICS		RP120	RP220	RP220-R1	RP320	RP320-R1	RP420	RP420-R1	RP420-L	RP420-L-R1
M- Motorized Die Match					**M**	**M**	**M**	**M**	**M**	**M**
Starter Unit		**Single**	**Single**	**Single**	**Single**	**Single**	**Single**	**Single**	**Single**	**Single**
EU DIES		**TR1**	**TR2**	**TR2**	**TR3**	**TR3**	**TR4**	**TR4**	**TR5**	**TR5**
Fixed Die Length	mm	85	115	115	130	130	150	150	190	190
Moving die length	mm	95	130	130	150	150	170	170	210	210
Die thickness	mm	25	30	30	40	40	40	40	40	40
Die height	mm	65	65	65	102,5	102,5	122,5	122,5	122,5	122,5
US DIES		**W1015**	**W10**	**W10**			**W20**	**W20**	**W30**	**W30**
Fixed Die Length	mm	88,9	107,95	107,95			152,4	152,4	190,5	190,5
Moving die length	mm	101,6	127	127			171,45	171,45	215,9	215,9
Die thickness	mm	20,64	23,8	23,8			30,15	30,15	42,86	42,86
Die height	mm	65	65	65			122,5	122,5	122,5	122,5
BLANK										
Blank Diameter	mm	M2 - M6	M3 - M8	M3 - M8	M4 - M10	M4 - M10	M6 - M12	M6 - M12	M8 - M14	M8 - M14
Shank Length	mm	100	100	100	120	120	140	140	140	140
Thread length	mm	62,5	62,5	62,5	100	100	120	120	120	120
MACHINE										
Speed Range up to (rpm)°	No.	600	410	300/410**	330	300/330**	260	220/260**	260	220/260**
Motor power	kW	11	15	15	15	15	18,5	18,5	18,5	18,5
Net mass	kg	3.800	4.000	5.000	7.300	8.000	7.300	8.500	8.000	8.700

RP120

RP220

RP220-R1

RP320

RP320-R1

RP420

RP420-R1

RP420-L

RP420-L-R1

DOUBLE STARTER UNIT THREAD ROLLERS

INGRAMATIC thread rollers with double starter units feature a patented servomotor-driven system with self-learning adjustments. The reinforced bed frame and hydrostatic slide guides ensure high load capacity. Feeding options include a vibratory feeder or vertical elevator. The machines also include washer assembly units, quick adjustments, and automatic workpiece rejection.

CHARACTERISTICS		RP520	RP520-R1	RP620	RP620-R1	RP720	RP720-R1	RP820	RP820-R1
M- Motorized Die Match		**M**	**M**	**M**	**M**	**M**	**M**	**M**	**M**
Starter Unit		**Double**	**Double**	**Double**	**Double**	**Double**	**Double**	**Double**	**Double**
EU DIES		**TR5**	**TR5**	**TR6**	**TR6**	**TR7**	**TR7**	**TR8**	**TR8**
Fixed Die Length	mm	190	190	230	230	280	280	380	380
Moving die length	mm	210	210	255	255	305	305	405	405
Die thickness	mm	50	50	50	50	50	50	57	57
Die height	mm	152,5	152,5	152,5	152,5	162,5	162,5	205	205
US DIES		**W30**	**W30**	**W40**	**W40**	**W50**	**W50**	**W60**	**W60**
Fixed Die Length	mm	190,5	190,5	228,6	228,6	279,4	279,4	381	381
Moving die length	mm	215,9	215,9	254	254	304,8	304,8	406,4	406,4
Die thickness	mm	36,5	36,5	42,86	42,86	49,2	49,2	55,55	55,55
Die height	mm	152,5	152,5	152,5	152,5	162,5	162,5	205	205
BLANK									
Blank Diameter	mm	M8 - M14	M8 - M14	M10 - M16	M10 - M16	M14 - M20	M14 - M20	M18 - M27	M18 - M27
Shank Length	mm	250	250	250	250	300	250	330	250
Thread length	mm	150	150	150	150	160	160	200	200
MACHINE									
Speed Range up to (rpm)°	No.	180	150/180**	160	120/160**	120	100/120**	100	100
Motor power	kW	22	22	30	30	45	45	55	55
Net mass	kg	10.000	12.000	10.500	12.500	15.000	17.300	20.000	22.300

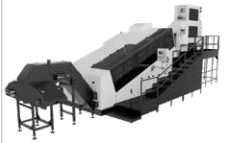
RP520

RP520-R1

RP620

RP620-R1

RP720



RP720-R1

RP820

RP820-R1

MICRO THREAD ROLLERS

The RP020, inspired by the I-Thread concept, is perfect for high-speed production of precise miniature screws. It features a torque motor-driven starter unit, high-precision feeding rails, and a transmission with double helix synchronous belt for improved torque and precision. The machine also offers self-learning adjustments and a modern sound-proof enclosure.

CHARACTERISTICS		**RP020**
M- Motorized Die Match		
Starter Unit		**Single**
EU DIES		
Fixed Die Length	mm	50
Moving die length	mm	60
Die thickness	mm	17,5
Die height	mm	32
US DIES		**00/000**
Fixed Die Length	mm	44,5
Moving die length	mm	50,8
Die thickness	mm	17,46
Die height	mm	32
BLANK		
Blank Diameter	mm	M1 - M3
Shank Length	mm	50
Thread length	mm	30
MACHINE		
Speed Range up to (rpm)°	No.	450
Motor power	kW	4
Net mass	kg	1.000

RP020

MAXI THREAD ROLLER

The RP920 (W70/TR9) maxi thread roller features a unique bed frame, heavy fixed die-holder contrast block, and a patented double starter unit. It includes an ergonomic enclosure, I-Thread features, motorized adjustments, epicycloidal gear box transmission, hydrostatic slide guides, and quick rolling diameter changeover for precise, high-resistance part production.

CHARACTERISTICS		**RP920**
M- Motorized Die Match		**M**
Starter Unit		**Double**
EU DIES		**TR9**
Fixed Die Length	mm	483
Moving die length	mm	508
Die thickness	mm	62
Die height	mm	182,5
US DIES		**W70**
Fixed Die Length	mm	482,6
Moving die length	mm	508
Die thickness	mm	61,9
Die height	mm	182,5
BLANK		
Blank Diameter	mm	M20 - M33
Shank Length	mm	350
Thread length	mm	180
MACHINE		
Speed Range up to (rpm)°	No.	80
Motor power	kW	75
Net mass	kg	45.000

RP920

WARM THREAD ROLLERS

INGRAMATIC's WF warm thread rollers blend heavy-duty design with I-Thread technology, boosting thread quality and productivity for materials like A286, Waspaloy®, Inconel®, and titanium alloys. Features include induction coils, optic pyrometer, cooled rails and tool holder, precise flow control, and quick changeovers for aerospace compliance.

CHARACTERISTICS		RP120-WF	RP220-WF	RP320-WF	RP420-WF	RP420-L-WF
M- Motorized Die Match				**M**	**M**	**M**
Starter Unit		**Single**	**Single**	**Single**	**Single**	**Single**
EU DIES		**TR1**	**TR2**	**TR3**	**TR4**	**TR5**
Fixed Die Length	mm	85	115	130	150	190
Moving die length	mm	95	130	150	170	210
Die thickness	mm	25	30	40	40	40
Die height	mm	65	65	102,5	122,5	122,5
US DIES		**W1015**	**W10**		**W20**	**W30**
Fixed Die Length	mm	88,9	107,95		152,4	190,5
Moving die length	mm	101,6	127		171,45	215,9
Die thickness	mm	20,64	23,8		30,15	42,86
Die height	mm	65	65		122,5	122,5
BLANK						
Blank Diameter	mm	M2 - M6	M3 - M8	M4 - M10	M6 - M12	M8 - M14
Shank Length	mm	100	100	120	140	140
Thread length	mm	62,5	62,5	100	120	120
Heating power	kW	12	12	24	24	24
MACHINE						
Speed Range up to (rpm)°	No.	600	410	330	260	260
Motor power	kW	11	15	15	18,5	18,5
Net mass	kg	3.800	4.000	7.300	7.300	8.000

RP120-WF

RP220-WF

RP320-WF

RP420-WF

RP420-L-WF

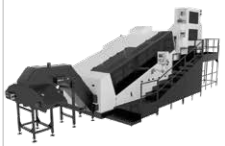
COMBINED THREADERS

The application of different forming systems on the same machine makes possible to produce multi shape parts with only one loading operation, reducing intermediate stocks and possible washing operations.
To meet this challenge, solutions are proposed that allow blank loading in a continuous and automatic manner, by passing the part first through the rotary rolling station and then through the flat die rolling unit. In this way, rolling operations with different diameters, threads and grooves can be combined, efficiently using a single production unit.

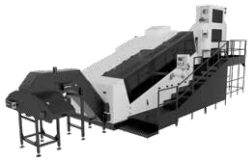
CHARACTERISTICS		RP520-RR16	RP620-RR16	RP720-RR24	RP820-RR24
M- Motorized Die Match		**M**	**M**	**M**	**M**
Starter Unit		**double**	**double**	**double**	**double**
FLAT DIES					
EU DIES		**TR5**	**TR6**	**TR7**	**TR8**
Fixed Die Length	mm	190	230	280	381
Moving die length	mm	210	255	305	405
Die thickness	mm	50	50	50	57
Die height	mm	152.5	152.5	162.5	205
US DIES		**W30**	**W40**	**W50**	**W60**
Fixed Die Length	mm	190,5	228,6	279,4	381
Moving die length	mm	215,9	254	304,8	406,4
Die thickness	mm	36,5	42,86	49.,2	55,55
Die height	mm	152,5	152,5	162,5	205
BLANK					
Blank Diameter	mm	M8 - M14	M10 - M16	M14 - M20	M18 - M27
Shank Length	mm	250	250	300	330
Thread length	mm	150	150	160	200
ROLLER SECTOR DIES					
Roller ID	mm	127	127	152,4	152,4
Sector ED	mm	340	340	380	380
Sector (sviluppo settore)	°	120	120	90	90
Die height	mm	100	100	100	100
Passaggio vite da filo superiore utensili	mm	150	150	220	220
Thread diameter, Rotative station	mm	M6 - M14	M6 - M16	M12 - M24	M12 - M24
MACHINE					
Speed Range up to (rpm)°	No.	180	160	120	100
Motor power - flat dies	kW	22	30	45	55
Motor power - Roller/Sector	kW	18,5	18,5	29	29
Net mass	kg	13.000	13.500	18.500	23.500

RP520-RR16

RP620-RR16



RP720-RR24



RP820-RR24

POINTING MACHINES

INGRAMATIC's pointing unit features a motorized spindle with adjustable height position for easy setup based on workpiece length. The workpieces are held by fingers and pointed using cutting tools. The process includes scrap ejection with cooling oil, which is filtered and recirculated. The unit can be standalone or integrated with the thread roller.

CHARACTERISTICS		**SMP12**	**SMP16**	**SMP22**
Diameter	mm	5 - 12	8 - 16	10 - 22
Length	mm	130	200	300
MACHINE				
Speed Range up to (rpm)°	Prod./1'	220	180	130
Speed rotation	rpm	0 - 8.000	0 - 8.000	0 - 6000
Motor power	kW	7,5	11	15
Cone dimension	ISO	30	40	40
Inserts dimension	mm	11x11	16x16	16x16
Net mass	kg	2.800	3.900	4.500

SMP12

SMP16

SMP22

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IT • **INGRAMATIC DIVISION**
15053 Castelnuovo Scrivia (AL) • ITALY
com@ingramatic.com

IT • **SACMA LIMBIATE S.P.A.**
20812 Limbiate (MB) • ITALY
info@sacmalimbiate.it

IT • **HS AUTOMAZIONI S.R.L.**
10073 Ciriè (TO) • ITALY
info@hsautomazioni.it

IT • **TECNO LIFT S.R.L.**
15053 Castelnuovo Scrivia (AL) • ITALY
info@tecnoliftitaly.com

USA • **SACMA MACHINERY CORPORATION**
Westlake • Ohio • USA
com@sacmagroup-usa.com

CN • **SACMA MACHINERY WUXI**
Wuxi • CHINA
info@sacma-machinery.cn

BR • **SACMA MACHINERY DO BRASIL**
Jundai • SP • BRASIL
sacma@sacma.com.br

TW • **SACMA MACHINERY TAIWAN**
Kaohsiung City • TAIWAN (R.O.C.)
info@sacmamachinery.tw

SACMAGROUP.COM

victorycommunication.it

260215INGRA_FNAM_EN