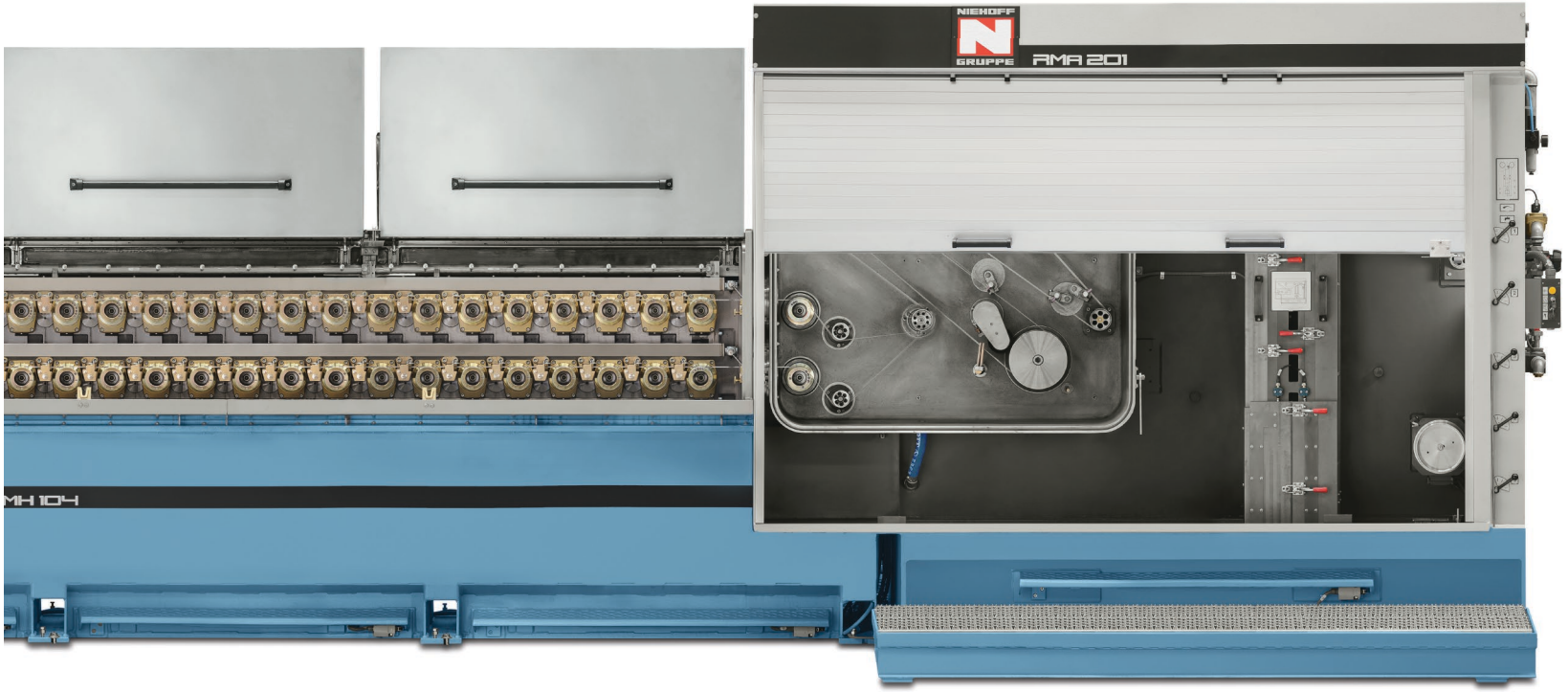


MMH 104 / RMA 201
Multiwire Drawing Line

Expertise, Customer Driven, Service – in Good Hands with NIEHOFF

NIEHOFF
GRUPPE

MMH 104

Design:

- compact design for space saving use of the production area
- vibration-damping cast iron housing for long service life
- stainless-steel drawing chamber cover and pipes
- safe and reliable separation of drawing emulsion and gear oil via mechanical labyrinth seal (long service intervals)
- integration of the capstans in the working chamber of the annealer
- user-friendly design

Increase in quality:

- extremely smooth operation and uniform load transmission by helical precision gear
- high surface quality of the wires due to the optimized wire path in the drawing machine and optimized coolant supply to the drawing dies
- high surface quality of the wires due to the optimized wire path inclination of the gearing/drawing rollers (6 x 100)

Increase in productivity:

- reduced downtime when changing the machine setup for different dimensions via multi-motor drive technology (quick drawing die change system)
- NMI (NIEHOFF Machine Interface) color touchscreen for data entry, display of production parameters and maintenance instructions
- Slip reduction via three-motor drive technology

Energy and cost efficiency:

- uniform electrical properties of the individual wires (individual wire path)
- reduced consumption of electric power per ton of manufactured wire
- cost savings for downstream processing due to the use of uniform wire bundles
- long service intervals and extended drawing tool service life minimize the requirement to stock and use spare parts
- reduced media consumption

Technical data

type		**MMH 104**
material		Al, Al-alloy (for example 1350/1370/131050/8000)
max. production speed:	m/s	31.5
	fpm	6201
max. no. of wires per level:		8
max. no. of wires per machine:		16
max. inlet dia.:	mm	2.6
	AWG	10
for max. inlet tensile strength:	N/mm^2	80 ... 200
finished dia. drawing machine:	mm	0.16 ... 0.72 (for example Al 99.5)
	AWG	34 ... 21
possible no. of drafts:		19/23
drawing capstan dia.:	mm	(6 x 100) +80
haul-off capstan dia.:	mm	80

RMA 201

Design:

- DC multi-wire resistance annealer with single-wire path
- single unit comprising drawing machine and annealer
- ergonomic machine design with openly accessible wire paths

Increase in quality:

- consistently high finished wire quality achieved through single-wire drying
- speed-controlled uniform wire annealing at speeds from 0 m/s
- contact tube cleaning device for longer service life and high wire quality in the production of tinned wires
- wire movement for longer life of the contact tubes
- individually driven contact pulleys for high wire surface quality and longer service life of the contact tubes
- encapsulated protective gas zone up to the end of the annealing process in order to avoid oxidation of the wire surface and smoke emission

Increase in productivity:

- wires can be drawn fast with the separately driven auxiliary pulley
- driven haul-off capstan (contact pulley) for constant wire tension in the annealer and reduced wire tension leading up to the downstream spooling system
- easy-to-change contact tubes with long service life
- residual lubrication layer on the annealed wires for a better subsequent processing

Energy and cost efficiency:

- quick return on investment by a high cost-benefit ratio
- high machine availability
- low energy consumption
- reduced costs of production resources and high product acceptance achieved by perfect quality

Technical data		
type		**RMA 201**
material		Al, Al-alloy (for example 1350/1370/131050/8000)
max. production speed:	m/s	31.5
	fpm	6,201
possible no. of wires:		8/16
finished dia. of the line:	mm	0.16 ... 0.72
	AWG	34 ... 21
contact pulley dia.:	mm	200
max. annealing power:	kW	120
max. annealing current:	A	4,000
annealing principle:		2-zone
separately driven auxiliary pulley:		standard
individual drives:		standard
water-cooled slip rings:		standard


NIEHOFF
GRUPPE
AMA 201
NIEHOFF
GRUPPE
MMH 104

Overall integration for superior performance

The entire line delivers technically innovative solutions for your production targets:

- convincing combinations of individual NIEHOFF components and the excellent quality standards guarantee superb line availability
- by using a freely programmable PLC control and standardized interfaces, the line can be combined very effectively with different spooling and coiling systems.

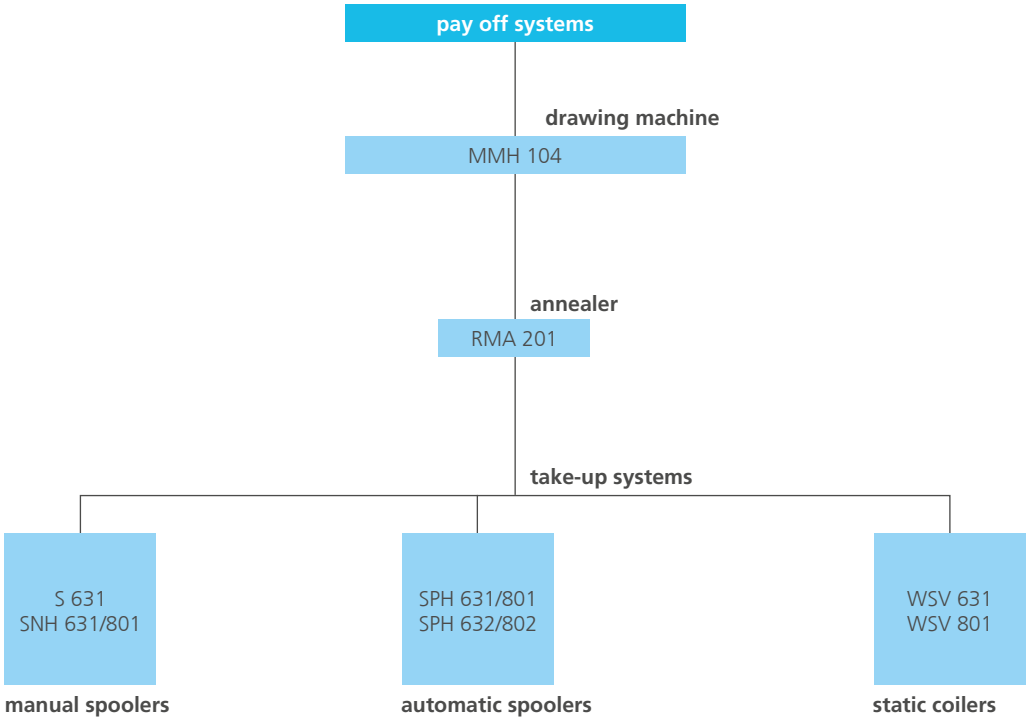
The MMH line concept already incorporates the potential for future integration of systems in overall production processes.

For example for areas such as:

- quality assurance
- operational data acquisition
- materials flow control

All possible combinations will deliver the ultimate in terms of quality and performance!

Suitable for combination and integration



(Further pay-off systems on request)

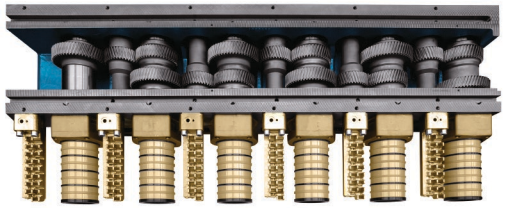
Example for NIEHOFF drawing die sequence MMH 104:

Einlauf-ø	1.250												1.194		1.182							-	1.111	MS
	1.256												1.200		1.195							Ü	1.195	DV
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	v [m/s]
2.600	2.3199	2.0701	1.8471	1.6481	1.4706	1.3122	1.1709	1.0448	0.9322	0.8318	0.7422	0.6623	0.6046	0.5519	0.5049	0.4618	0.4225	0.3865	0.3535	0.3234	0.2958	0.2706	0.2500	31.5
2.600	2.3199	2.0701	1.8471	1.6481	1.4706	1.3122	1.1709	1.0448	0.9322	0.8318	0.7422	0.6623	0.6046	0.5519	0.5049	0.4618	0.4225	0.3865	0.3535	0.3234	0.2958	0.2795	0.2600	31.5
2.600	2.3199	2.0701	1.8471	1.6481	1.4706	1.3122	1.1709	1.0448	0.9322	0.8318	0.7422	0.6623	0.6046	0.5519	0.5049	0.4618	0.4225	0.3865	0.3535				0.3200	29.0
2.600	2.3199	2.0701	1.8471	1.6481	1.4706	1.3122	1.1709	1.0448	0.9322	0.8318	0.7422	0.6623	0.6046	0.5519	0.5049	0.4618	0.4225	0.3865	0.3535				0.3400	27.0
2.600	2.3199	2.0701	1.8471	1.6481	1.4706	1.3122	1.1709	1.0448	0.9322	0.8318	0.7422	0.6623	0.6046	0.5519	0.5049	0.4618	0.4225						0.4000	22.0
2.600	2.3199	2.0701	1.8471	1.6481	1.4706	1.3122	1.1709	1.0448	0.9322	0.8318	0.7422	0.6623	0.6046	0.5519	0.5049	0.4618							0.4200	20.0
2.600	2.3199	2.0701	1.8471	1.6481	1.4706	1.3122	1.1709	1.0448	0.9322	0.8318	0.7422	0.6623	0.6046	0.5519	0.5049								0.4500	17.5
2.600	2.3199	2.0701	1.8471	1.6481	1.4706	1.3122	1.1709	1.0448	0.9322	0.8318	0.7422	0.6623	0.6046	0.5519									0.5000	14.0
2.600	2.3199	2.0701	1.8471	1.6481	1.4706	1.3122	1.1709	1.0448	0.9322	0.8318	0.7422	0.6623	0.6046										0.5500	11.5
2.600	2.3199	2.0701	1.8471	1.6481	1.4706	1.3122	1.1709	1.0448	0.9322	0.8318	0.7422	0.6623											0.6000	9.5
2.600	2.3199	2.0701	1.8471	1.6481	1.4706	1.3122	1.1709	1.0448	0.9322	0.8318	0.7422												0.6600	7.5

EINLAUFDURCHMESSER 2.60mm EC-Alu und AlFeMg 131050 16 Draehte (8 Drähte pro Etage)
Inlet Diameter 2.60mm EC-Alu 99.7 and AlFeMg 131050 16 wires (8 wires per level)

AC-MOTOREN 215kW / 38kW (mit RMA201.3000A Individualantriebe)
AC-Drives 215kW / 38kW (with RMA201.3000A and drives)

- modular system for variable number of drafts
- system modules can be arranged in up to 2 levels above each other
- variable number to 8 wires per level



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