REMAK

...Handling for Profit

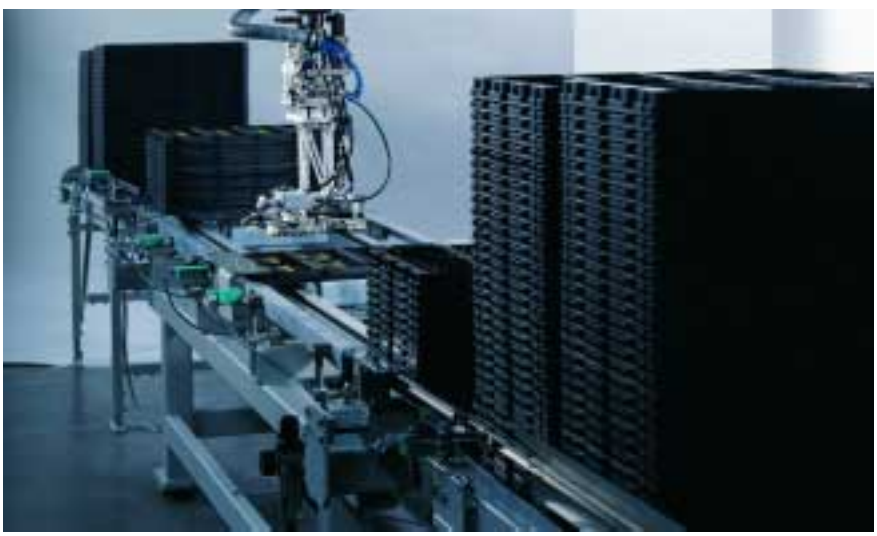
Top Form

Handling Systems
Type RF

...REMAK know-how = your profit
REMAK – your innovation team...

- standard systems and special designs (5-axis servo) for machines up to1.650 tons clamping force
- 3 groups of lifting capacities 5/10 kgs, 10/20 kgs, 15/30 kgs
- very firm framework construction–optimized via FMEA
- thousands have proven excellence and reliability in every-day production / easy to maintain
- single machines – complete production cells
- one control basis for all REMAK robot systems, CAN-Bus technology with Ethernet interface (remote diagnosis)
- REMAK operating surface: „easy - brilliant“
- consistent servo technique, digital with electronic type identification plate
- EOATs and peripheral solutions according to customers‘ specification

Top Form



tray conveyor, full stack-loading position-empty stack

rotation axes, pneumatic

...REMAK-robot-systems – our design – your advantage!

special design RE 10

programming unit PHG 16

EOAT for inserting and demolding

All machines of the RF line are of modular design. The very firm steel framework construction, low-play gearings, quality gear racks and highly precise linear guides guarantee highest stability and quietness of operation as it is required for precise inserting and demolding jobs.

rotation axes, servo motor driven

The main axes are driven by high-dynamic, maintenance-free servo motors. High accelerations and velocities allow very short take-out times. The pneumatic components feature easy access and maintenance. All energy carriers (electric, pneumatic, vacuum) are connected by plug-in type couplings. Spacious cable drag chains and a cabling with highly flexible material guarantee long-term production without parting of a cable. The flexible design permits an operation to the operator‘s side, to the non-operator side or to both sides (T-style arrangement), alternatively parallel to the machine’s centerline (part release at the end of the machine). Secondary axes, such as stacking or rotational axes, are developed as pneumatic linear drives or rotatory pneumatic drives with welldimensioned limit stops with hydraulic absorbers. As an option, the rotatory axes can be driven by three-phase AC servo motors.

As a standard, REMAK offers a 32 bit multi-tasking control – an industry-tested control system - which permits a simultaneous run of several axes. The operating and programming is done in plain text via the hand-held programming unit PHG 16 with a very simple operator guidance. Alternatively, the control system may be programmed “off-line“ (extra charge for software ROPS 16) via personal computer in plain text. Advantage: Eminent reduction of the tool setting times, program files. All programs can be optimized during the run in fully automatic operation via the PHG 16. Programming aids = soft tools as well as an extensive additional equipment – such as the patented mold chasing system (MCS) - complete our product range.

ROBOT-SYSTEMS Series RF TOP FORM
for the automation of injection molding machine production

Modular system with three groups of lifting capacities to be used on/at injection molding machines with clamping forces from 175 up to 1.650 tons. The standard modules can be combined to suit the particular application. Modifications / special designs are possible. Shortest take-out times due to high acceleration rates (option: up to 60 m/s2).

Furthermore, REMAK supplies EOATs and peripheral solutions according to the customers' specifications for the different applications and processes – also special processes such as multi-component injection, rotary tool techniques, multi-platen technology, insertion of foils, fabric molding, laser beam cutting etc. The corresponding interfaces to the involved machines have been developed and optimized.

Technical Data

REMAK-ROBOT-SYSTEM RF **ROBOT-TYPE**		**RF 5**	**RF 10**	**RF 15**
for injection molding machines up to max. lifting capacity incl. EOAT	tons kN lbs kg	- 440 [1] - 4.000 [1] **11** / 22 **5** / 10	- 880 [1] - 8.000 [1] **22** / 44 **10** / 20	- 1650 [1] - 15.000 [1] **33** / 66 **15** / 30
Z-axis = traversing stroke velocity	inch mm inch/s mm/s	**78 3/4** - 197 **2.000** - 5.000 126 3.200	**118** - 295 **3.000** - 7.500 130 3.300	**137 3/4** - 354 **3.500** - 9.000 90 2.300
Y-axis = lifting stroke Y-telescope velocity	inch mm inch mm inch/s mm/s	39 1/3 - **59** 1.000 - **1.500** 59 1.500 130 3.300	- 69 - 1.750 49.2 - **69** - 78 3/4 1.250 - **1.750** - 2.000 130 3.300	- 78 3/4 - 2.000 49.2 - **78 3/4** - 98 1/2 1.250 - **2.000** - 2.500 122 3.100
X-axis = removing stroke velocity	inch mm inch/s mm/s	**19 2/3** - 29 1/2 **500** - 750 43 1/3 1.100	**39 1/3** **1.000** 59 1.500	**49.2** **1.250** 59 1.500
positioning accuracy	mm	+ / - 0.1	+ / - 0.1	+ / - 0.1
C-axis = tilting axis pneumatic velocity	 degr. degr./s	Standard 0 - 90 100	Standard 0 - 90 100	Standard 0 - 90 100
B-axis = rotation axis pneumatic velocity	 degr. degr./s	Option 0 - 90/180 100	Option 0 -90-180 /+ 90-0-90 100	Option 0-90-180 /+ 90-0-90 100
A-axis = swivelling axis pneumatic velocity	 degr. degr./s	Option 0 - 90/180 100	Option 0 - 90/180 100	Option 0 - 90/180 100
Gripper functions (**V**acuum/**P**neum.)		1xV , 2xP	1xV , 2xP	1xV, 2xP
S-stacking axis, pneumatic stroke	 mm	Option 20	Option 20	Option 20
CNC-A / D control programming drive axes movement		alternative / standard, with hand-held programming unit (PHG 16), CAN-Bus system, Ethernet interface via PHG/Teach-in / Off-line on personal computer (ROPS program) position-controlled AC servo motors , absolute / incremental mold chasing system (MCS) simultaneous run of several axes		
Power supply compressed air normal/max. connection connected load Interface	 PSI bar	 87 / 100 continuous pressure / 135 6 / 7.5 continuous pressure / 10 230/400 / 110/480 VAC, 50/60 Hz, 16 A electrical: Euromap 12/SPI 3.0, mechanical: Euromap 18/SPI 3.0		

Subject to technical changes

[1] if necessary change safety guards

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