IRB 8400

Gantry Robot for load transfer from 25 to 2500 kg

ABB

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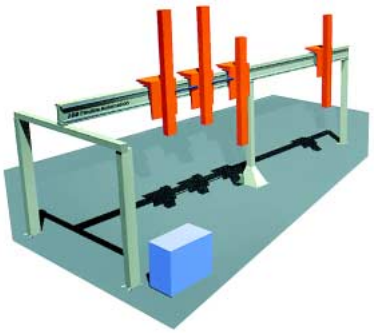


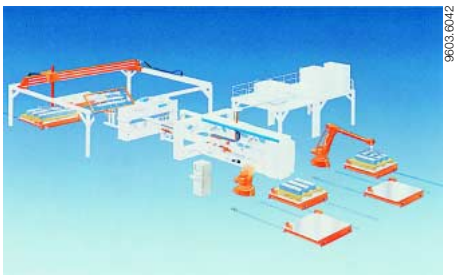
The modular IRB 8400/ZP4

9602.5726

Orderpicking of milk and yoghurt in a dairy using an IRB 8400/ZP-4

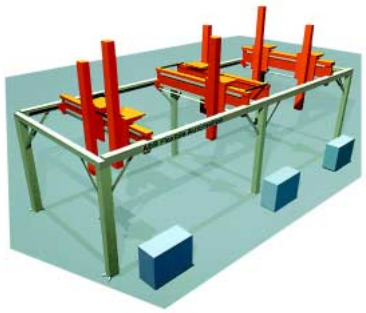
9711.70612

The wrist unit of the arm-type robot IRB 6400, with two rotating axes, used on the gantry robot IRB 8400/FP-5



9603.6042

Palettizing of tailored blanks using an IRB 8400/FP-5



The modular IRB 8400/FP

Reliability through experience

The IRB 8400 is designed to withstand the most arduous production environments. Its robust steel structure provides protection against damage from external sources within its operating environment. Reliability is assured, as the gantry robot uses a minimal number of components. The gantry robot is designed using the most advanced design tools and undergoes rigorous testing procedures before delivery.

Thus, even under the most extreme conditions, such as those of foundries, the gantry robot, IRB 8400 provides high reliability. The standard robot controller, S4Cplus, is designed for high availability, minimum maintenance and long service life, having a 50,000 hours MTBF (Mean Time Between Failures).

Standardized for global use

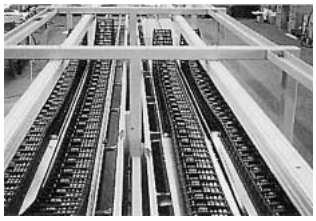
The gantry robot, IRB 8400, is supplied through ABB'S worldwide Automation Centers and Centers of Excellence, which also integrate this robot into customized solutions. The gantry robot uses components from ABB Automation's arm-type robots.

The robot controller, S4Cplus, which is used on all of the company's robots, gives the user the free-dom to handle other types of ABB robots. This means there is less cost for engineering, installation, maintenance, spare parts and training.

Transfer of engine packages in the automotive final assembly using an IRB 8400/ZP-6HD

Palletizing of casted engine blocks in a foundry using an IRB 8400/FP-5

Assembly and handling of diesel engines using an IRB 8400/FP-5



Critical components as the cabling are tested in life tests under realistic conditions

Modular design leads to flexibility

The IRB 8400 can be easily configured to different customer requirements and applications. Multiple bridges and carriages can be driven on the same gantry structure. Even small, fast and large, heavy bridges can share the same structure.

Rotation axes, which can be attached to the Z-arm, extend the flexibility further and provide the gantry robot with up to 6 axes. This, and the fact that the IRB 8400 can be adapted to meet new production needs, minimizes the capital investment costs.

Easy installation and use

The S4Cplus controller, makes start-up of the IRB 8400 easy. An off-line Program Maker™ enables programming, prior to installation. This minimizes the cost and time for on-site programming. Operator use is made easy by way of a windows style visual interface on the programming unit.

The operator is assisted by plain language messages and function keys for operation and production supervision. In addition, user information can be customized on site for every installation, thereby minimizing the risk of mistakes.

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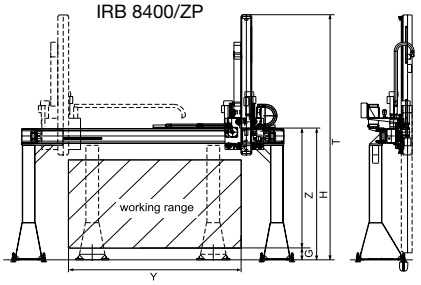
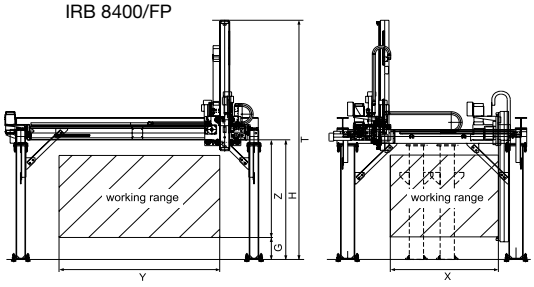
TECHNICAL DATA, GANTRY ROBOT IRB 8400

IRB 8400/ZP



IRB 8400/FP



TECHNICAL DATA

Handling capacity	25 - 2500 kg
Number of axes	2 - 6 robot axes
	Up to 6 external axes
Integrated signal supply	10-poles 50 V DC
	2-poles 250 V AC
	2 CAN Buses
Integrated air supply	max. 10 bar

PERFORMANCE

Linear gantry robot IRB8400/ Area gantry robot IRB 8400/		ZP-2	ZP-3 FP-3	ZP-4 FP-4	ZP-5 FP-5	ZP-6 FP-6	ZP-6HD FP-6HD	ZP-7 FP-7	ZP-7HD FP-7HD
Handling capacity [kg]		25	60	150	300	600	1000	1600	2500
Position repeatability [mm]		±0.2	±0.2	±0.2	±0.2	±0.4	±0.4	±0.4	±0.4
Max. velocity [m/min]	X	-	100	90	100	75	75	40	40
	Y	150	150	150	150	75	75	60	60
	Z	150	75	90	75	60	40	30	26.66
Max. acceleration [m/s^2]	X	-	2.5	2.5	1.7	1.0	1.0	0.5	0.5
	Y	4.0	4.0	4.0	2.5	1.0	1.0	0.5	0.5
	Z	4.5	3.2	3.2	2.5	1.0	1.0	0.5	0.5
Max. working range [m]	X/Y_{ZP}	30	50	50	50	50	50	50	50
	Y_{FP}	-	6	8	8	10	10	10	10
	Z	1	1.2	1.6	2.0	2.8	2.8	2.8	2.8

ELECTRICAL CONNECTIONS

Supply voltage	3 Phasen, 200 - 600V; 50/60 Hz
Rated power, supply transformer	max. 8.3 kVa

ENVIRONMENT

Ambient temperature	
– Gantry	5°C bis 50°C
– Controller S4Cplus	5°C bis 52°C
Relative humidity	max. 95%
Degree of protection	
– Gantry	IP54
– Controller S4Cplus	IP54
Noise level	max. 75dB (A)
Emission	EMC/EMI-shielded
Safety	Double circuits with supervision Emergency stops and safety functions, 3-position enable device

MACHINE INTERFACES

Inputs/Outputs	up to 1024 signals
Digital	24V DC 120V AC or relais signale
Analogue	±10V ±4-20mA
Serial channels	2x RS 232 und 1x RS 422
Network	2x Ethernet (100Mbits pro s)
Fieldbuses	Allen Bradley Remote I/O CAN/Device Net (2 channels) Interbus Profibus DP
Process interfaces	air, signals and power on Z-axis
Encoder	Interface
Diskette drive (Option)	3.5“ MS-DOS

SENSOR INTERFACES

- Search stop with automatic program shift
- Seam tracking
- Contour tracking
- Conveyor tracking

USER INTERFACES

Control panel	On cabinet or external
Control pendant	Portable and light Joystick and keypad Display 16 lines x 40 characters Windows-Style communication All programming functions available
PC	Ethernet und serial channels
Languages	Choice between 11 national languages
Safety	Double circuits with supervision, Emergency stops and safety functions, 3-position enable device

SOFTWARE

BaseWare	Robot operating System
BaseWare Options	Multitasking, advanced functions, communication
RAPID	Powerfull application programming language
On-line	FactoryWare
Off-line	S4Cplus Software (Virtual Controller™): – QuickTeach for Training – ProgramMaker for Programing – RobotStudio for Robot Simulations

OPTIONS

Rotating axes	Multiple X-bridges running on same structure
Foundry version	Multiple Y-carriages running on same Y-beam
Central lubrication	Multiple mech. linked Y-carriages
Master-Slave axes	Cantilever style gantry
Telescopic axes	
Customized solutions	

Data and dimensions may be changed without notice

Edition 04 - 2001 Realisation by Häner & Partner, CH-3600 Thun

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