CIMOTEC presented the work-piece-guided processing system ROBOCELL 200/300 having servo-controlled rotary processing units in the year 1997 in professional circles and set benchmarks from the viewpoint of the highest degree of flexibility using the least amount of space for installing the system. Grinding and polishing using industrial robots was reinvented, so to speak.

As in the case of most CIMOTEC systems, the design of this machine, too, has been based on the ROBOCELL totally enclosed systems, which have proven themselves over a period of many years, and which bring decisive benefits to the user with respect to system safety, noise and emission protection as well as enhanced transportability. With the use if industry robots having up to 150 Kg load capacity as well as a number of different servo-motor controlled rotary processing units the system can fully harness its high degree of flexibility. The most varied of work-piece guiding systems from the large CIMOTEC product range can be integrated in the systems easily and guarantee economic operation over a period of many years.

The system is very simple and can be quickly reconfigured for varying work-pieces, so that the increasing demands of “Just-in-time production” today can be handled without any problems. The user-friendly system control based on the Siemens S7 system as well as a wide range of options, by means of direct influence in the process to achieve an increasingly optimal processing result, wrap up the ROBOCELL concept.

The highest levels of reliability, maximum extent of maintenance-friendliness and with it, even the highest levels of system availability, were some of the prime considerations during the development of the ROBOCELL. We are so confident about this that we document it flourishingly with a 2-year product guarantee.
The work-piece guided model series ROBOCELL 200/300 was introduced in professional circles in the year 1997 as the solution to the ever increasing demands of grinding, polishing and brushing in modern times. Innovative, servo-controlled rotary processing units facilitate economical, highly flexible and rational handling with almost all types of work-pieces, starting from sanitary fittings to die-cast components, motor vehicle interior/exterior work-pieces, right up to the processing of door knobs or even ornamental strips.

The ROBOCELL 200/300 processing systems are available in a range of sizes, exactly as the specific processing needs demand. The model series ROBOCELL 200 distinguishes itself with a single-piece integrated ROBOCELL enclosure and a servo-controlled rotary dual processing unit. The bigger brother, however, the ROBOCELL 300 has a twin integrated ROBOCELL enclosure that can be divided for transportation purposes and two servo-controlled rotary processing units. All servo-controlled rotary and stationary processing units from the CIMOTEC range of products can be used, and combined processing tasks such as grinding/polishing or polishing/buffing can be performed with ease.

The ROBOCELL 200/300 system model series has set benchmarks: by using processing units arranged above one another the available space for installation is used more optimally, which results in very small requirement of space for installing the systems. Moreover, especially for the purpose of grinding or polishing 3-D work-pieces all over, quantum leaps have been achieved with respect to flexibility. In the case of conventional robot-based grinding or polishing systems there are always limitations on the working area for the robots on account of the stationary mounting of the processing units. This can no longer cause a problem with the ROBOCELL 200/300 model series from CIMOTEC: the user simply turns the processing unit at an angle that is more easily accessible for the robot and the problem is resolved immediately!

As a result of all these benefits the CIMOTEC ROBOCELL 200/300 model series has developed into a kind of industry standard. Nothing can be more flexible!

Series of systems consisting of many ROBOCELL 200/300 systems or even combined complete systems consisting of ROBOCELL 100, ROBOCELL 400, ROBOCELL 500 and CNC polishing systems from the CIMOTEC product range have an ever increasing demand owing to the production and cost pressure. The most varied of plant chains, adapted uniquely to the work-piece and customer requirements, have been implemented by CIMOTEC over the last 16 years of the company's history and they are in satisfactory operation to this day. Your satisfaction is our gain.
The ROBOCELL totally enclosed systems are designed as stable steel constructions and offer clear advantages with respect to system safety as well as noise and emission protection thanks to the fully integrated enclosure. They fulfil the latest workplace directive completely and comprehensively and offer, in addition, a high degree of transportability of the entire system. Relocation within the company premises can be accomplished promptly and easily, the work programs travel, so to speak, along with the system. Should the processing demand it, then the ROBOCELL enclosure can be supplied in an explosion-proof design in conformance to the ATEX Guidelines. The ROBOCELL totally enclosed systems can be supplied in the colour desired by the customer and the request for almost any colour can be complied with.

The work-piece feeding systems adapted to the requirements of the specific processing offer the flexibility required by the system:

The dual fixed table stocking system is used to place work-piece specific work-piece pallets, which are then withdrawn by the robot separately, processed and kept back again.

The pallet circulatory stocking system, in which, again, single work-piece pallets are fed in any quantity for processing. This system offers very high stocking quantity in the least possible space.

With the pallet entry stocking system also as many work-piece pallets as required can be stocked and fed. This system is the basis for customer-specific series of systems or system chains.

Other feeding systems from the CIMOTEC product range right up to system chains with successive processing are possible, for which, please get in touch with us.

The stacking mechanism is supplied depending on the requirement in various sizes and designs. Work-pieces, which cannot be gripped automatically by the robot, are placed manually outside the cell in the work-piece gripper and finally automatically gripped by the robot using the tool replacement system and fed for processing. This system is highly suitable for very sensitive and filigree type of work-pieces.
The CIMOTEC servo-controlled rotary processing units can be supplied for the most varied of tasks:

**CS 45/P-** 4x polishing units that have 4 polishing or brushing wheels each 500 mm in diameter. 2 x 7.5 KW drive power provided the required processing capacity. As an option the CS45/P can be supplied with a high-pressure paste pistol, low-pressure paste pistol or even a solid paste feeder.

**CP 60-** Powerful dual polishing unit having a 1,000 mm polishing wheel diameter and up to 1 x 11 KW drive power, a maximum polishing wheel width of 2 x 150 mm and the polishing wheel abrasion as well as the feeding of paste are adjusted automatically. This is the polishing unit of CIMOTEC that has the highest sale.

**CS 45/S-** This is a 4x grinding unit with driven contact rollers, which is why the unit has a specific and precise belt movement. It can be extended with the help of optional parts to add a second, small contact roller, grinding shoe or grinding belt. In the maximum configuration the unit has 8 contact discs in the least possible space, which is the only one of its kind in the market.

**CS 55-** Our most powerful dual grinding unit: Contact rollers having a diameter of 250 mm over which the work-piece can traverse cater to the required free space for processing. Contact disc diameters from 30 mm to 500 mm and the optional use of a second, upper contact roller further enhance the flexibility. The grinding belt, grinding shoe, up to 15 different belt geometries by simple tilting of the grinding belt cater to optimal processing results.

The system control of the ROBOCELL is a very special subject:

A touch-screen operating panel TP277, and, on request, even a mobile one, from the house of Siemens permits specific control of all required processing parameters. A user administration system having multiple levels of authorisation permits targeted adaptation of the authorisations to meet the customer’s needs. Using the work-piece administration the user can create and manage up to 250 different work-pieces, and for each work-piece a separate parameter data record, consisting of the cutting speeds, pressing forces, polishing paste cycles etc. can be stored and retrieved. Other parameters such as our cutting speed increase for grinding belt wear or polishing wheel grinding, the number of work-pieces and batch counter or the automatic pulse time display allow flexibility of processing like never before.

All basic components of the processing system are networked to one another with the help of Profibus. Thus, all operating conditions can be recorded at any time and displayed as indications. A modem for remote diagnostics can be integrated optionally, which facilitates quick assistance from our specialists in case of failures.
System chains consisting of multiple systems grouped together can be implemented with the help of the proven palette feeding system CB 20 from CIMOTEC. Our palette feeding system can be used without a problem either for chaining multiple grinding or polishing systems or for achieving a consolidated chained production starting with grinding and ending with polishing.

Component recognition using VISION systems represent the latest innovation from the house of CIMOTEC: as was the case so far, the work-pieces do not need to be inserted on expensive work-piece palettes manufactured with high precision so that they could be gripped by the robot, since this is now taken care of by a digital camera. The work-piece is only placed on a flat surface; the camera recognises the component, determines its position and transfers it to the robot. The robot then grips the component automatically and feeds it for processing.

The customer can select from two types of mounting for the contact wheel: the classical, widely used 30 mm bore adapter or the more precise CIMOTEC 90 mm four-hole adapter.

High-performance high-speed bearings permit rotary speeds of up to 25,000 rpm when using appropriate, small contact rollers of 30 mm (!!) to 120 mm diameter. In this manner, problem zones can be processed, which were not accessible with conventional contact rollers. The high-speed bearings must be used easily and quickly as the second contact roller in our grinding units or can be replaced by the main contact wheel bearings described above.

Various designs of contact shoes or contact belts once again enhance the flexibility of options that our ROBOCELL 200/300 model series can provide. Cimotec has just the right tool for your needs whether your processing requires supported loose belt grinding with the contact belt or plain evening of level surfaces.

The CIMOTEC contact shoe is available in various designs:

- **Fixed grinding plate** with pneumatic alignment in the direction of contact pressure
- **Moving grinding plate** with or without pneumatic alignment in the grinding direction

The contact belt or contact shoe, similarly, can be replaced using the same fixture against the main contact roller bearing or the high-speed bearing. Sheer flexibility, as with everything from CIMOTEC!
ROBOCELL 200 + 300, chain of multiple polishing– und grinding systems

ROBOCELL 200, 45 KG Roboter, CP 60 double polishing unit, dual fixed table stocking system, ROBOCELL- housing
ROBOCELL 300, 60 KG Roboter, 1 x CS45/S belt grinding unit, 1 x CS45/P polishing unit, Palett entry stocking system, polishing / buffing