

**Defined contact force**

Interactive compensation for surface tolerances up to 100 mm with guaranteed consistent contact force. No adaptation of the robot tracks.

**Integrated gravitation compensation**

The process force remains constant even with changing orientations. No additional application programming required.

**Passive security and high-speed control**

Mechatronic actuator and sensor element with a high degree of process security using a robust mechanical construction with integrated passive security and high-speed control.

**Simple system integration – highest quality standards**

Cleverly simple integration using standard interfaces. The constant feedback on the contact situation, position and actual force is performed smoothly by the quality inspection.

**Newest innovation  
ACF HEAVY DUTY**

- Shorter payback time
- 6 times higher load capacity
- Larger removal rate
- Low weight
- Size unchanged



**Specifications**

Product	new			new			new
	ACF 110-04	ACF 110-10	ACF 120-05	ACF 120-10	ACF 111-04 HD	ACF 121-05 HD	ACF 131-05 HD
Max. force (push/pull) [N]	100	100	500	500	200	500	800
Stroke [mm]	35	100	50	100	35	50	50
Max. overturning moment [Nm]	40	40	65	65	250	350	350
Max. torsional moment [Nm]	30	30	60	60	250	350	350
Height at stroke = 0 [mm]	190.5	253	236.5	286.5	190.5	236.5	236.5
Diameter [mm]	128	128	160	160	128	160	160
Bolt circle ISO 9409-1 standard flange [mm]	Ø 50	Ø 50	Ø 80	Ø 80	Ø 80	Ø 80	Ø 80
Dead weight [kg]	3.2	3.5	5.4	5.9	3.5	4.3	4.5
Compressed air supply	7 bar, 30 µm, ISO 8573-1 Kl.3 (oil & water free)						
Compressed air usage	5-10 l/min						
Protection class	IP 65						
Communication interface	Ethernet TCP/IP (standard), optional: Profibus, CANopen, Analog I/Os, XML,...						
Ambient temperature operation	+5 ... +45 °C						



[www.ferrobotics.com](http://www.ferrobotics.com)

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**ACF**  
Active Contact Flange



Equipment for every robot

**Robot handcraft®**

**The easy way to make it feel**

Our ACF technology instantly automates jobs with a high demand for sensitivity and flexibility. It guarantees extremely short cycle times and radical economic ROI, even with delicate applications. The ACF automates problematic handcraft and guarantees high standards of quality. It controls every robot. This even makes retrofitting unbelievably easy and persuasive.

**Surface treatment:**

Sand, strip, burrs, polish, brush, clean, laminate, remove

**All materials:**

Steel, aluminium, titanium, magnesium, carbon, plastic, wood, ceramic, coconut fibres, ...

**Contact-sensitive handling:**

Assemble, Tape, Pack, Insert, Stacking, Join, Test, Handling, Gluing ... and many more

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**Problem:** severe problems in manual grinding / polishing of car body (AUDI Q7 / Porsche Cayenne / VW Touareg )  
**Goal:** to close automation gap of highly touch-sensitive sequence with speedy contacting  
**Benefit:**

- ROI less than 6 months
- best surface results with simple integration



**Problem:** manual sprue & burr removal on cast iron part  
**Goal:** automate high process forces in touch-sensitive application  
**Benefit:**

- ROI less than 1 year
- simple integration



**Problem:** manual grinding of roof joint varying quality range  
**Goal:** excellent reproducible quality  
**Benefit:**

- top surface quality on visible parts
- maximum result in minimum time



**Problem:** semi-automated, 30% by hand grinding of Porsche car doors emission of toxic aluminum-magnesium dust  
**Goal:** automation of manual grinding sequence  
**Benefit:**

- superior surface results
- process time reduction of 70%



**Problem:** abrasive testing  
**Goal:** objective quality control  
**Benefit:**

- defined quality process
- significant test results on detailed data report



**Problem:** manual deburring of coconut fiber car seat bodies instable material behavior  
**Goal:** automation of manual process with highly sensitive process forces  
**Benefit:**

- automatic tolerance compensation
- reproducible quality



**Problem:** huge form tolerance on plastic part with complex surface  
**Goal:** automation of manual sanding for filler painting  
**Benefit:**

- highest surface quality on visible parts
- ready for top paint quality



**Problem:** preparation of wooden surface for pickling inlay surfaces only 0,3 mm  
**Goal:** automated sensitive sanding of inlay without force peaks at contact  
**Benefit:**

- manufacturer found solution after 15 years of searching
- highest possible quality on 0,3 mm furniture



**Problem:** not ergonomic, highly demanding job situation material change in shape in welding process (up to 10mm)  
**Goal:** automation of manual sanding for filler painting  
**Benefit:**

- time saving more than 75%
- cost reduction of 90% on sanding material



**Problem:** manual grinding of stainless steel bowls for food industry  
**Goal:** constant highest quality standard  
**Benefit:**

- highest possible quality on food industry standards obtained
- ACF integration ROI within 6 months



**Problem:** complexe surface  
**Goal:** automation of manual sanding for painting  
**Benefit:**

- automatic tolerance compensation
- reproducible result



**Problem:** to close car door gently to measure fugue in defined end position  
**Goal:** automation of fugue measurement constant top quality standard  
**Benefit:**

- constant optimal measuring condition
- applies on all car models



**Problem:** quality testings of bank terminal keyboards by pressing button (2 N) reports about key behavior required  
**Goal:** final quality inspection of keyboards life cycle test  
**Benefit:**

- objective data reports about mechanical stability
- reported 100% quality reliability

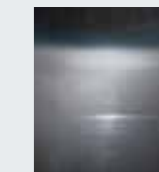


**Problem:** sensitive mounting of bottle base onto bottle body without touching the parts integrated quality control by identifying warping of bottleneck  
**Goal:** automatic assembly with integrated quality control  
**Benefit:**

- massive reduction of degraded material
- fully automated touch-free process



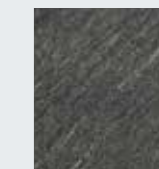
## Materials overview



steel



aluminium



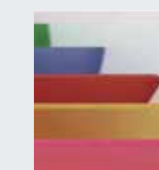
titanium



magnesium



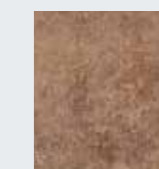
carbon



plastic



wood



ceramics



coconut fibres