

How to use Robotiq's FT 300 Force Torque Sensor in your application

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Robot abilities enabled using Robotiq FT 300 sensor	Links	Benefits in various robotic applications								
		Packing, Unpacking	Pick and Place	Machine Tending	Assembly	Finishing (Grinding, Deburring, Polishing)	Dispensing	Lifecycle Testing	Quality Assurance	Other
General applications										
Enhanced robot hand guiding	ActiveDrive	More precise and smoother hand guiding, less need for teach pendant jogging, allowing for easier and faster robot positioning and programming								
Automatic tool weight measurement and compensation	Calibration Procedure	Compensates the Force Torque Sensor's output data for tooling weight and center of gravity								
Specific applications										
Teach a complex and custom trajectory	Path Recording basics			Faster programming. Collision avoidance in confined spaces. Combining force control with path recording increases programming speed even more.	Faster programming. No need for hundreds of waypoints.					
	Example: 3D Scan Application									
Detect precisely a contact on a linear path	Linear Search Skill	Increases flexibility and robustness (detects bottom and sides of packaging).	Indicates object presence.	Repeatability (detects stoppers to position parts precisely, as a human would, i. e.: chuck probing).	Enables application, flexibility and robustness (detects surface and/or constraints)	Flexibility (detects surface and/or edge before starting process; can compensate for geometrical differences).		Enables presence validation in QA (e.g. presence of a connector or parts correctly assembled)	Error-proofing in program (poka-yoke)	
Assemble mating parts	Spiral Search Skill	Allows for tight tolerance packaging.		Allows for tight tolerance machine tending.	Enables locating features and more finer assembly tasks such as pin insertion.					
	Rotation Search Skill									
Screw / tighten mating parts	Torque Turning Skill				Enables rotational assembly (e.g. caps).			How to insert FT Sensor data in a UR Force node	Rotation force testing assurance	
Apply a precise force or torque on a part	How to insert FT Sensor data in a UR force mode (page 50)				Enables precise force-insertion assembly	Enables finishing applications where precise forces are needed		Enables lifecycle testing requiring precise loads	Enables force testing in QA	
Measure the weight of a part	Flexible part in fixture	Increase flexibility, robustness by making sure you have the right part							Error-proofing in program (Poka Yoke)	
Record and export force and torque data	Data Logging from UR Program to External PC							Records force in time, to measure product evolution.	Records exact force data and exports it to database for traceability.	
Stack / unstack parts	Stacking Parts Application Package	Increases flexibility and robustness (detects height of part or stack)								