

Selection of a Quick-change System SWS

1. Determining the Size

Quick Method:

When low or medium forces and moments act upon the SCHUNK quick-change system, you should choose a quick-change system with a payload comparable to that of your robot.

If high moments and forces act upon the SCHUNK quick-change system, please use the following method, which is more precise.

More precise Method:

Forces and moments are critical factors in choosing a suitable quick-change system. Proceed as follows to estimate the most unfavorable moment:

- Calculate the approximate center of gravity (COG) of the heaviest end effector that will be used. Calculate the distance (D) from the COG to the bottom of the quick-change adapter.
- Calculate the weight (W) of the heaviest end effector.
- Multiply W and D to find an approximate static moment (M) (or a moment based on 1 g of acceleration).
- Choose a quick-change system with a high moment load equal to or greater than M.

Due to their potentially high accelerations, robots can generate moments that are two or three times higher than M.

2. Pneumatic and electrical Systems

Determine the number of pneumatic connections and electrical contacts required. Larger quick-change systems feature a higher number of pneumatic connections and electrical contacts.

3. Temperature and Chemicals

SCHUNK quick-change systems use nitrile seals for the feed-through of pneumatics. O-rings seal the pneumatic locking mechanism. These O-rings are resistant to most chemical influences and also withstand temperatures ranging from -25 to +65 °C. Please contact us if you should need information on temperatures or chemical influences in particular environments.

4. Precision Applications

Always comply with the specifications if you work with applications that require high repeat accuracy.

Please note: A quick-change system has an influence on force and moment, payload, size, and repeat accuracy of the robot.

Sizes SWS

Designation	Recommended handling weight [kg]	Max. moment [Nm]		Pneumatic feed-throughs	Air connections locked and unlocked
		M _x and M _y	M _z		
SWS 001	1.4	2.8	3.45	4x M5	M5
SWS 005	8	37.5	51	6x M5	M5
SWS 007	16	75	102	5x M5	M5
SWS 011	16	75	102	6x M5	M5
SWS 020	25	169.5	220	12x M5	M5
SWS 021	25	169.5	230	8x G1/8"	M5
SWS 040Q	50	471	648	8x G1/8"	G1/8"
SWS 041	50	471	648	6x G3/8"; 4x G1/8"	G1/8"
SWS 046	50	678	882		G1/8"
SWS 060	75	591	326	8x G1/8"	G1/8"
SWS 071	79	1185	378	8x G1/4"	G1/8"
SWS 076	100	1626	210-3	5x G3/8"	G1/8"
SWS 110	150	2352	2352	8x G3/8"	G1/8"
SWS-160	300	7170	3800	5x G3/8"; 4x G1/2"	G1/8"
SWS-L 210	300	7600	4060		
SWS-L 310	510	9900	9600		
SWS-L 510	700	10900	10500		
SWS-L 1210	1350	13500	16200		