

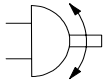
# Twin piston rotary actuators DRQD-...-ZW-RR (Spigot)

Ø 16, 20, 25, 32, angle 90°, 180° and 360°

Cleanroom class ISO 4 (FS209E class 10)

Double acting, twin piston rotary actuator with spigot rotating shaft

## DRQD-...-ZW-RR



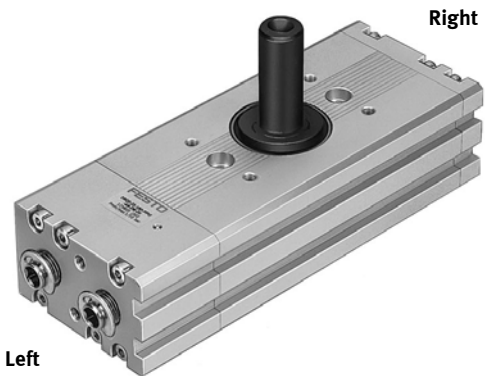
Defined interfaces, high accuracy and extremely good torsional rigidity make this rotary actuator the perfect choice for Festo's modular system for handling and assembly technology.

- 90°, 180°, 360° rotation angle
- Contact-less end-position sensing
- Twin-piston principle: Backlash-free, dynamic and powerful

- Adjustable end-position cushioning with precision adjustment for end position rotation angle with
  - PPVJ: Pneumatic end-position cushioning
  - YSRJ: Hydraulic shock absorbers
- Compressed air supply at one end cap
  - AL: Air connection on left
  - AR: Air connection on right
- Pinion variants
  - ZW: Spigot shaft
  - FW: Flanged shaft

### Selection criteria:

Refer to DK1 (Electronic catalogue) or Volume 1 of Pneumatic Drives catalogue.



### Order example:

Order no: 15024480  
Type: DRQD-20-180-YSRJ-A-AL-FW-RR

Rotary actuator at 180 ° operation, with hydraulic shock absorbers, magnetic sensing, air connection on left and flange shaft

### Accessories

Proximity sensor for fitting in 8 mm slot (Page 40)  
SME-8...



Type	Part No.	Torque at 6 bar [Nm]	Description
DRQD-16-...-PPVJ-A-AL-ZW-RR	15024475	1.6	PPVJ: Pneumatic end-position cushioning
DRQD-20-...-PPVJ-A-AL-ZW-RR	15024480	3.1	A: Magnetic sensing
DRQD-25-...-PPVJ-A-AL-ZW-RR	15024487	6.1	AL: Air connection on left
DRQD-32-...-PPVJ-A-AL-ZW-RR	15024492	12.5	ZW: Spigot shaft
DRQD-16-...-YSRJ-A-AL-ZW-RR	15024475	1.6	YSRJ: Hydraulic shock absorbers
DRQD-20-...-YSRJ-A-AL-ZW-RR	15024480	3.1	A: Magnetic sensing
DRQD-25-...-YSRJ-A-AL-ZW-RR	15024487	6.1	AL: Air connection on left
DRQD-32-...-YSRJ-A-AL-ZW-RR	15024492	12.5	ZW: Spigot shaft
DRQD-16-...-PPVJ-A-AR-ZW-RR	15024475	1.6	PPVJ: Pneumatic end-position cushioning
DRQD-20-...-PPVJ-A-AR-ZW-RR	15024480	3.1	A: Magnetic sensing
DRQD-25-...-PPVJ-A-AR-ZW-RR	15024487	6.1	AR: Air connection on right
DRQD-32-...-PPVJ-A-AR-ZW-RR	15024492	12.5	ZW: Spigot shaft
DRQD-16-...-YSRJ-A-AR-ZW-RR	15024475	1.6	YSRJ: Hydraulic shock absorbers
DRQD-20-...-YSRJ-A-AR-ZW-RR	15024480	3.1	A: Magnetic sensing
DRQD-25-...-YSRJ-A-AR-ZW-RR	15024487	6.1	AR: Air connection on right
DRQD-32-...-YSRJ-A-AR-ZW-RR	15024492	12.5	ZW: Spigot shaft

Type	Part No.	Torque at 6 bar [Nm]	Description
DRQD-16-...-PPVJ-A-AL-FW-RR	15024475	1.6	PPVJ: Pneumatic end-position cushioning
DRQD-20-...-PPVJ-A-AL-FW-RR	15024480	3.1	A: Magnetic sensing
DRQD-25-...-PPVJ-A-AL-FW-RR	15024487	6.1	AL: Air connection on left
DRQD-32-...-PPVJ-A-AL-FW-RR	15024492	12.5	FW: Flange shaft
DRQD-16-...-YSRJ-A-AL-FW-RR	15024475	1.6	YSRJ: Hydraulic shock absorbers
DRQD-20-...-YSRJ-A-AL-FW-RR	15024480	3.1	A: Magnetic sensing
DRQD-25-...-YSRJ-A-AL-FW-RR	15024487	6.1	AL: Air connection on left
DRQD-32-...-YSRJ-A-AL-FW-RR	15024492	12.5	FW: Flange shaft
DRQD-16-...-PPVJ-A-AR-FW-RR	15024475	1.6	PPVJ: Pneumatic end-position cushioning
DRQD-20-...-PPVJ-A-AR-FW-RR	15024480	3.1	A: Magnetic sensing
DRQD-25-...-PPVJ-A-AR-FW-RR	15024487	6.1	AR: Air connection on right
DRQD-32-...-PPVJ-A-AR-FW-RR	15024492	12.5	FW: Flange shaft
DRQD-16-...-YSRJ-A-AR-FW-RR	15024475	1.6	YSRJ: Hydraulic shock absorbers
DRQD-20-...-YSRJ-A-AR-FW-RR	15024480	3.1	A: Magnetic sensing
DRQD-25-...-YSRJ-A-AR-FW-RR	15024487	6.1	AR: Air connection on right
DRQD-32-...-YSRJ-A-AR-FW-RR	15024492	12.5	FW: Flange shaft

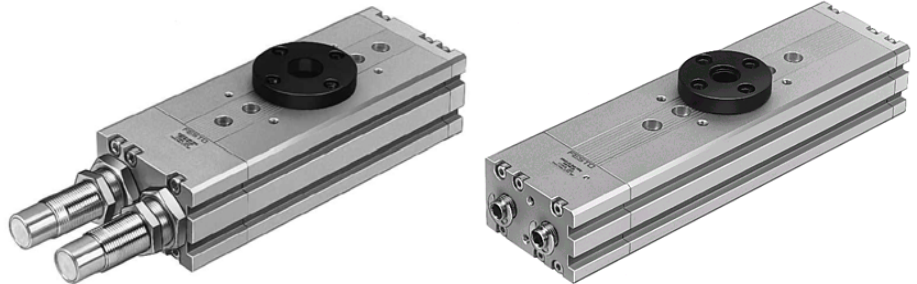
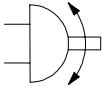
# Twin piston rotary actuators DRQD-...-FW-RR (Flange)

Ø 16, 20, 25, 32, angle 90°, 180° and 360°

Cleanroom class ISO 4 (FS209E class 10)

Double acting, twin piston rotary actuator with rotating flange

**DRQD-...-FW-RR**

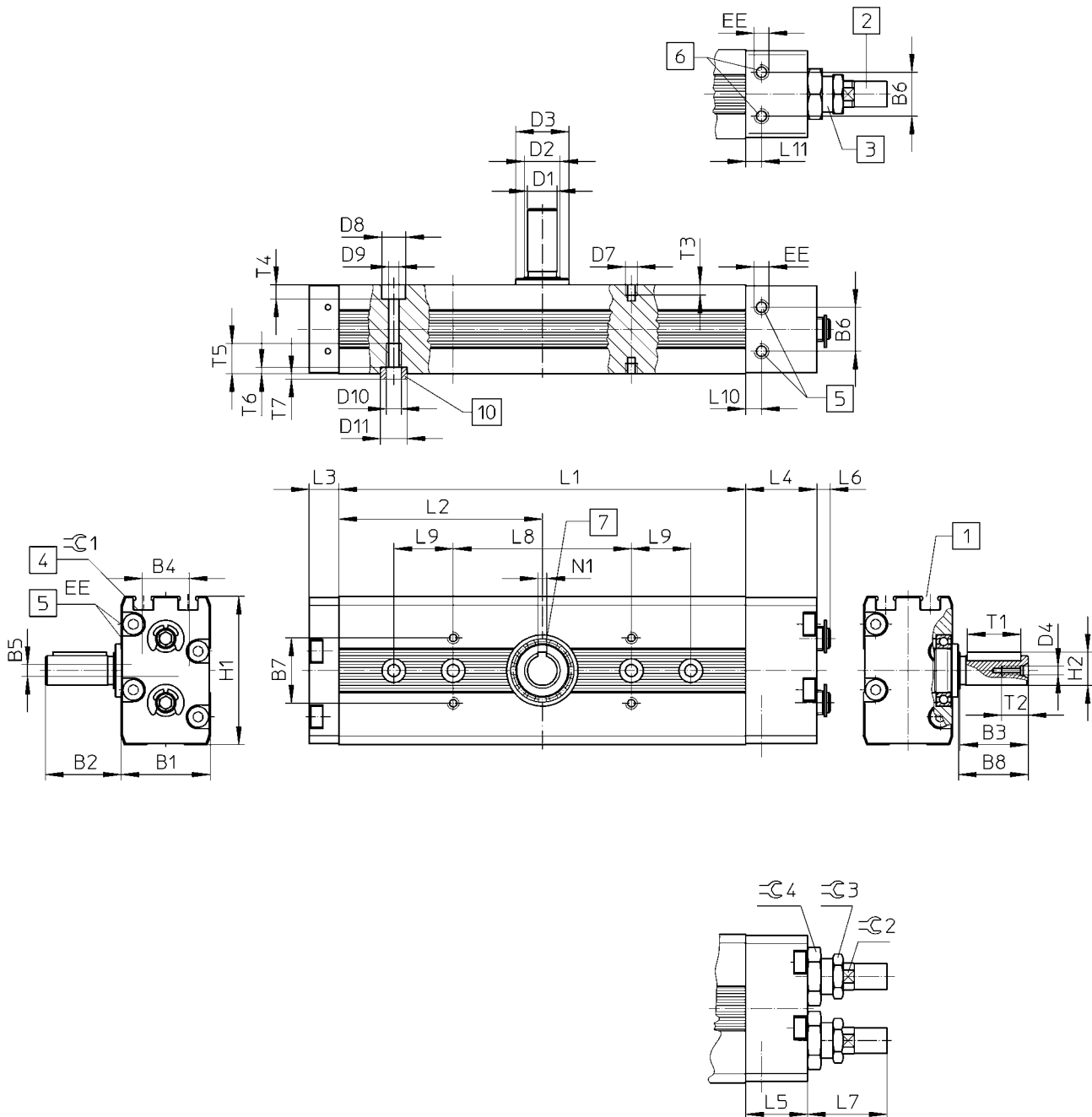


Technical data		16	20	25	32	
Ø		16 mm	20 mm	25 mm	32 mm	
Design		Rotary drive system in accordance with the rack and pinion principle				
Mounting position		Any				
Pneumatic connection		M5			G1/8	
Operating pressure range	DRQD-...-PPVJ	1 ... 10 bar				
	DRQD-...-YSRJ	2 ... 10 bar				
Max. permissible frequency (for completed cycle of motion)	DRQD-...-PPVJ	90 °	4.0 Hz	3.0 Hz	2.0 Hz	1.2 Hz
		180 °	3.0 Hz	2.2 Hz	1.3 Hz	0.8 Hz
		360 °	1.5 Hz	1.2 Hz	0.8 Hz	0.5 Hz
	DRQD-...-YSRJ*	90 °	2.0 Hz	2.0 Hz	1.5 Hz	1.2 Hz
		180 °	1.8 Hz	1.8 Hz	1.5 Hz	1.2 Hz
		360 °	1.0 Hz	1.0 Hz	0.9 Hz	0.8 Hz
* At temperatures of less than 0 °C, a maximum frequency of 1 Hz always applies to all YSRJ models.						
Max. permissible mass moments of inertia on the drive shaft	DRQD-...-PPVJ	5 x 10 <sup>-4</sup> kgm <sup>2</sup>	10 x 10 <sup>-4</sup> kgm <sup>2</sup>	20 x 10 <sup>-4</sup> kgm <sup>2</sup>	40 x 10 <sup>-4</sup> kgm <sup>2</sup>	
	DRQD-...-YSRJ	300 x 10 <sup>-4</sup> kgm <sup>2</sup>	400 x 10 <sup>-4</sup> kgm <sup>2</sup>	700 x 10 <sup>-4</sup> kgm <sup>2</sup>	1500 x 10 <sup>-4</sup> kgm <sup>2</sup>	
Rotation angle range min./max.	DRQD-...-PPVJ	Nominal rotation angle: -20° +6° (per end position)				
	DRQD-...-YSRJ					
Repetition accuracy	DRQD-...	< 0.05°				
Temperature range		-10°...+60				
Materials	Spiral tubing	Polyurethane				
	Cylinder barrel, slip disc	Anodised aluminium				
	Cap, SD transfer plate					
	Gear rack	X 5 CrNi 18 9, hardened, milled teeth				
	Pinion	X 14 CrMoS 17, hardened, treated surfaces, stamped teeth				
	Piston seal	Polyurethane				
	Screws	Galvanised steel				
	O-rings	BUNA-N				
	Threaded pin	Galvanised steel				
	Centring sleeves	X 8 CrNi 18 9				

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Ø 16, 20, 25, 32, angle 90°, 180° and 360°

Cleanroom class ISO 4 (FS209E class 10)



- 1 Sensor slots for type SME-/SMT-8-... proximity sensors
- 2 Self-adjusting shock absorbers for end position cushioning
- 3 Adjustable sleeve for end position cushioning with type DRQD-...YSRJ

- 4 Internal hex-head screw for end position adjustment with integral regulating screw for end position cushioning
- 5 Type PPVJ: Both air connections on one cap, optionally at front or side.
- 6 Type YSRJ: Both air connections on one cap, at side only.

- 7 Woodruff key position at 0°
- 10 Centering sleeves (2 ea. Included in scope of delivery)

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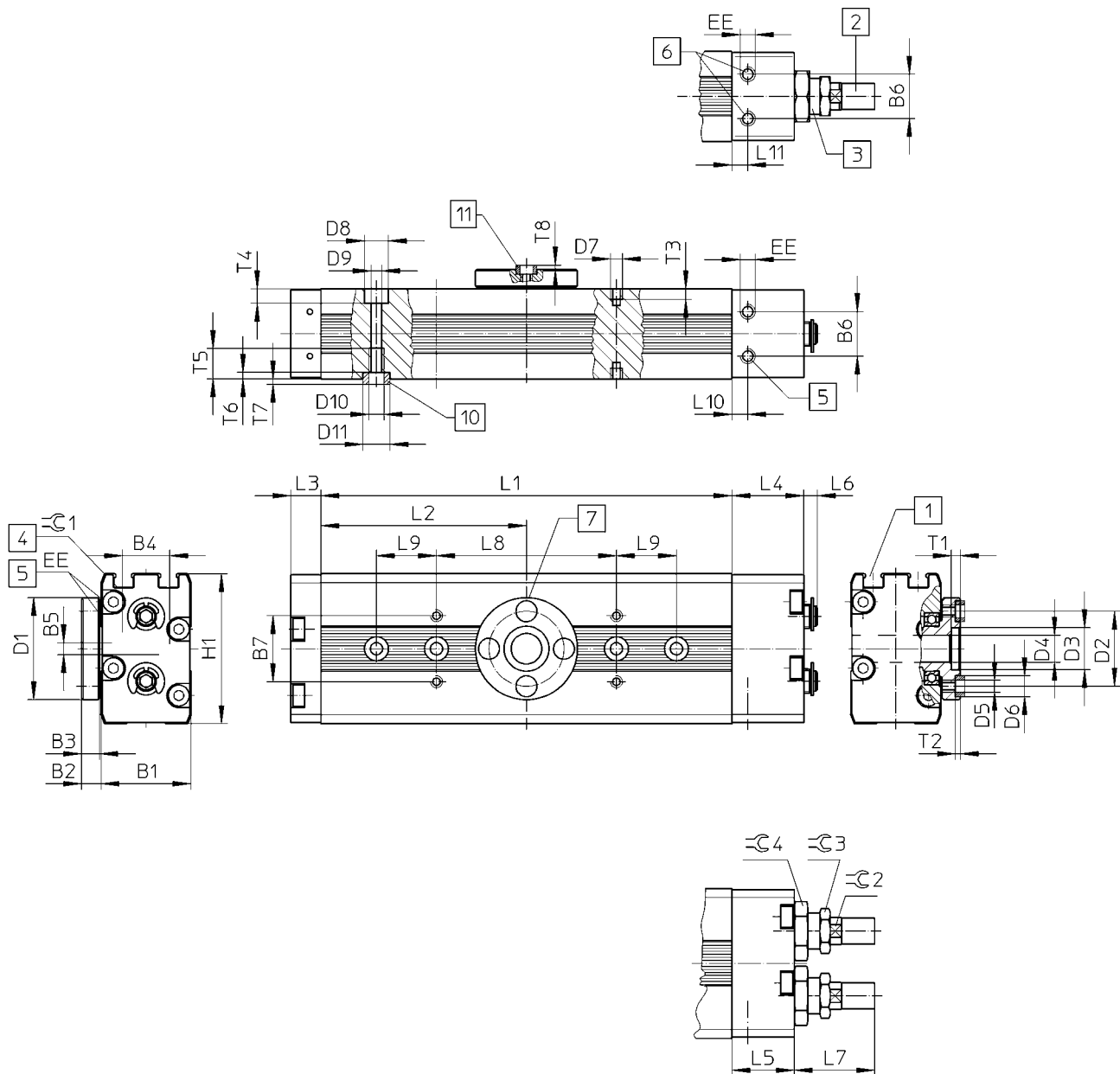
Type	B1	B2	B3	B4	B5	B6	B7	B8	D1 Ø g6	D2 Ø	D3 Ø	D4	D7	D8 Ø H13	D9 Ø	D10	D11 Ø H7	EE	H1	H2	L1	L2
DRQD-16-90-...	30	25.5	23	17.8	4	14.8	22	23.5	10	12	18	M3	M4	8	4.2	M5	9	M5	50	11.2	71	35.5
DRQD-16-180-...																					93	46.5
DRQD-16-360-...																					137	68.5
DRQD-20-90-...	36	32.5	30	21.8	4	19.8	26	30.5	12	15	24	M4	M4	8	4.2	M5	9	M5	56	13.5	78.4	39.2
DRQD-20-180-...																					104.8	52.4
DRQD-20-360-...																					157.6	78.8
DRQD-25-90-...	42	42.5	40	24.8	4	24.8	30	40.5	16	20	30	M5	M5	10	5.3	M6	9	M5	67	18	91.2	45.6
DRQD-25-180-...																					124	62
DRQD-25-360-...																					189.2	94.6
DRQD-32-90-...	51	52.5	50	29.8	2	29.8	36	50.5	20	25	35	M6	M5	10	5.3	M6	9	G	79	22.5	114.8	57.4
DRQD-32-180-...																					155.6	77.8
DRQD-32-360-...																					237.4	118.7

Type	L3	L4	L5	L6		L7		L8 ±0.03	L9 ±0.03	L10	L11	N1 P9	T1	T2	T3	T4	T5	T6	T7	=C1	=C2	=C3	=C4
				min	max	min	max																
DRQD-16-90-...	10	24	20.8	1.7	5.7	23.4	28.2	60	-	7.6	5.3	3	18.1	9	3.5	5	10	2	2	4	9	13	17
DRQD-16-180-...									-														
DRQD-16-360-...									20														
DRQD-20-90-...	10	31.5	27	2.4	7	28.6	35.9	60	-	8	5	4	25.1	10	3.5	5	12	2	2	7	11	15	19
DRQD-20-180-...									-														
DRQD-20-360-...									20														
DRQD-25-90-...	11	36.5	33	2.6	8.9	42	50.2	60	-	11	5	5	36.1	12.5	5	6	12	2	2	7	15	19	24
DRQD-25-180-...									-														
DRQD-25-360-...									20														
DRQD-32-90-...	16	39	39	4.3	11.8	59.4	70.1	80	-	13.1	8	6	45.1	16	5	6	14	2	2	8	20	27	32
DRQD-32-180-...									-														
DRQD-32-360-...									20														

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Type	B1	B2	B3	B4	B5	B6	B7	D1 Ø	D2 Ø ±0.025	D3 Ø H8	D4 Ø	D5	D6 Ø H7	D7	D8 Ø H13	D9 Ø	D10	D11 Ø H7	EE	H1	L1	L2
DRQD-16-90-...	30	6.5	6	17.8	4	14.8	22	34	25	14	9	M4	7	M4	8	4.2	M5	9	M5	50	71	35.5
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DRQD-25-360-...																					189.2	94.6
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DRQD-32-360-...																					237.4	118.7

Type	L3	L4	L5	L6		L7		L8 ±0.03	L9 ±0.03	L10	L11	T1	T2	T3	T4	T5	T6	T7	T8	≡C1	≡C2	≡C3	≡C4		
				min	max	min	max																		
DRQD-16-90-...	10	24	20.8	1.7	5.7	23.4	28.2	60	-	7.6	5.3	3	1.6	3.5	5	10	2	2	1.4	4	9	13	17		
DRQD-16-180-...									-															13	17
DRQD-16-360-...									20																
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DRQD-20-180-...									-																
DRQD-20-360-...									20																
DRQD-25-90-...	11	36.5	33	2.6	8.9	42	50.2	60	-	11	5	3	2	5	6	12	2	2	2	7	15	19	24		
DRQD-25-180-...									-																
DRQD-25-360-...									20																
DRQD-32-90-...	16	39	39	4.3	11.8	59.4	70.1	80	-	13.1	8	3	2	5	6	14	2	2	2	8	20	27	32		
DRQD-32-180-...									-																
DRQD-32-360-...									20																