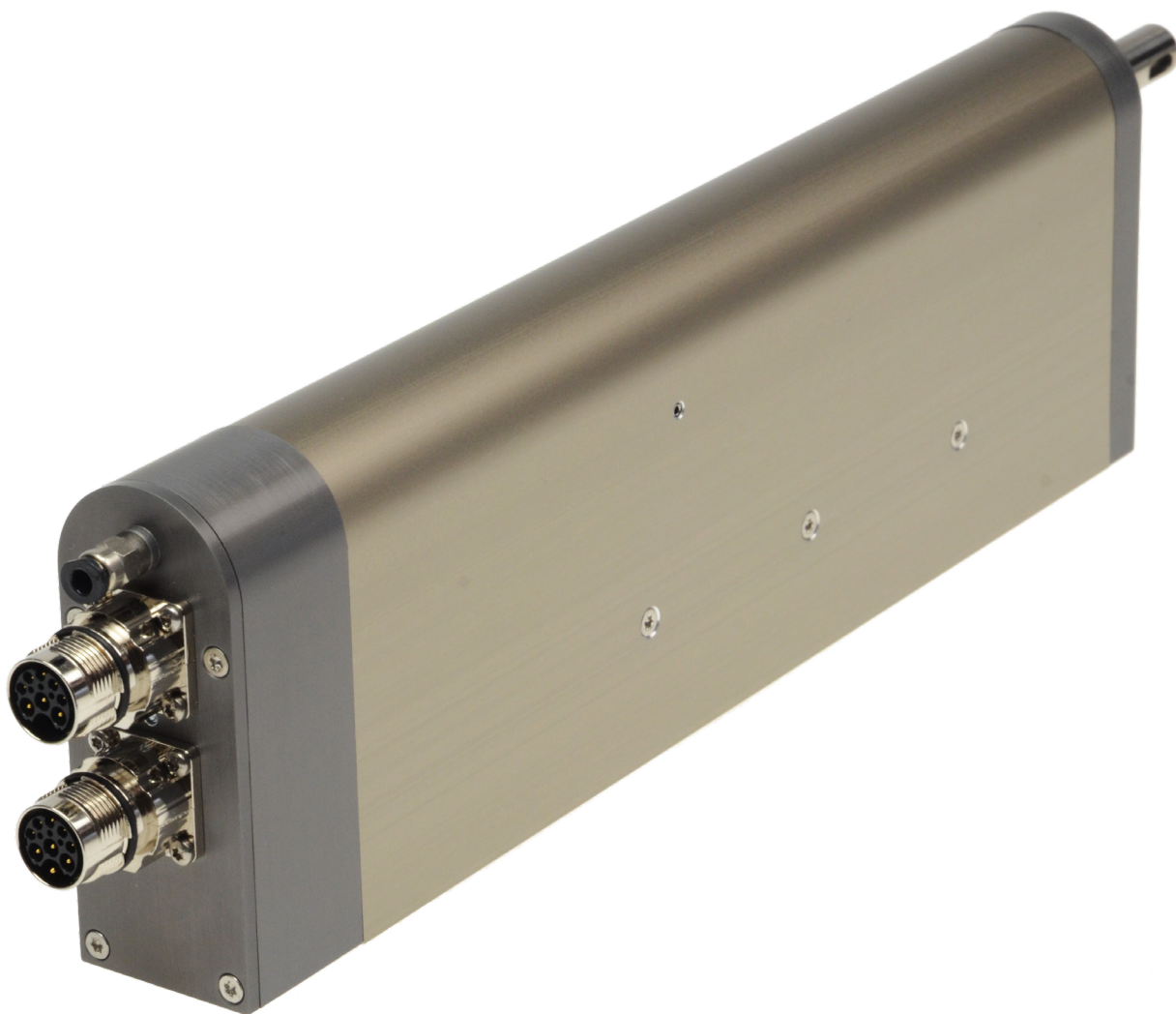


DATA SHEET

Linear Rotary Motors PR02-38

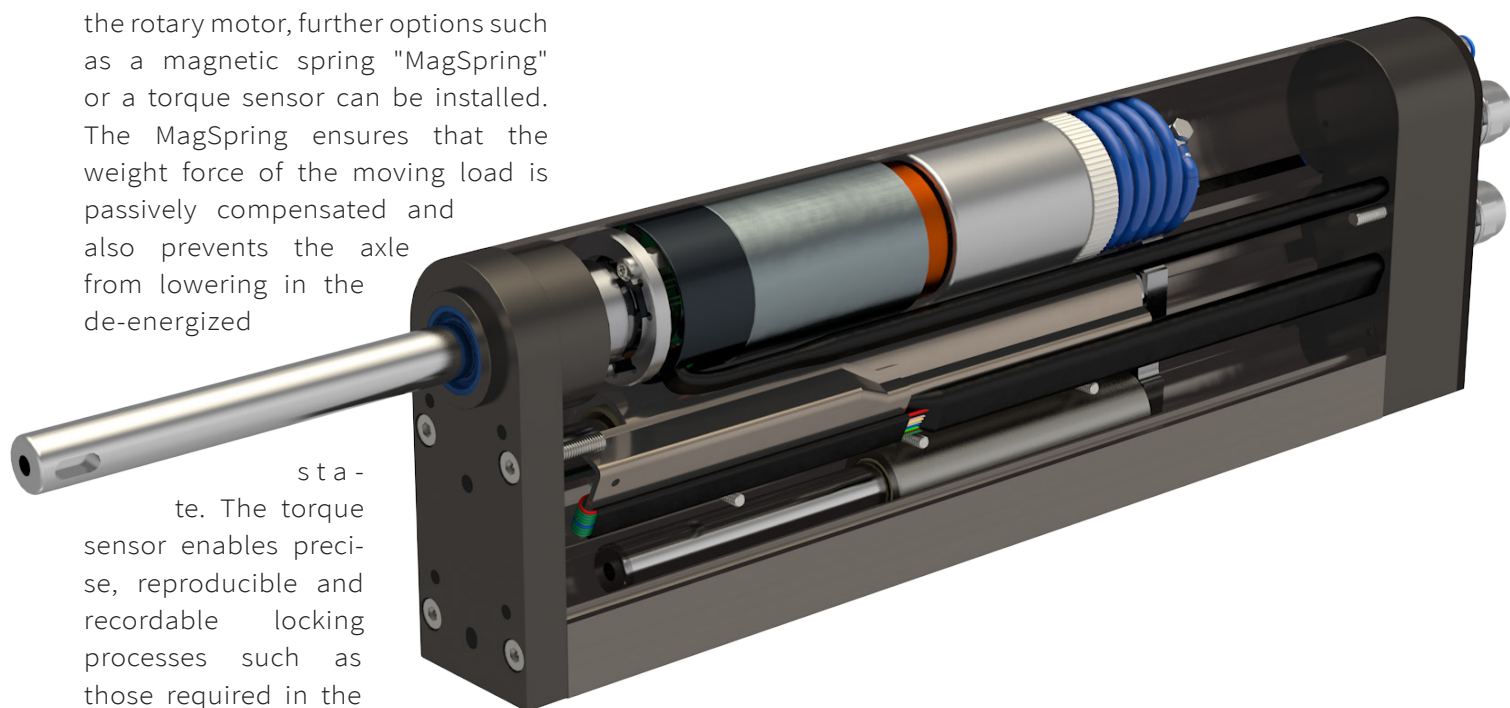


- ✓ New design principle with shorter installation length
- ✓ Option integrated MagSpring for load compensation
- ✓ Option Torque measuring shaft for high-precision
Torque control and process data logging
- ✓ Independent linear and rotary movements



Product Description

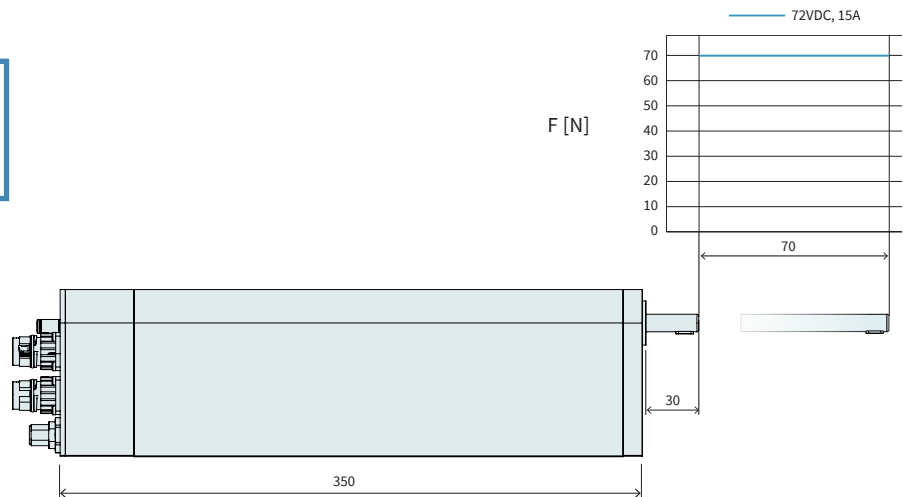
LinMot expands its product range of linear motors by a further type. The new PR02 motor series is characterised by a new design in which the motors, including additional components, are integrated in a slim housing. In addition to the linear motor and the rotary motor, further options such as a magnetic spring "MagSpring" or a torque sensor can be installed. The MagSpring ensures that the weight force of the moving load is passively compensated and also prevents the axle from lowering in the de-energized



state. The torque sensor enables precise, reproducible and recordable locking processes such as those required in the pharmaceutical industry. With the new design, the user benefits from the shorter installation length of the entire unit and the hygienic design with easy-to-clean surfaces.

PR02-38x51-R_23x80F-HP-R-70(-L)_MSxx_TSxx

Max. Stroke: 70 mm
Max. Force: 67 N
Max. Torque: 1.2 Nm



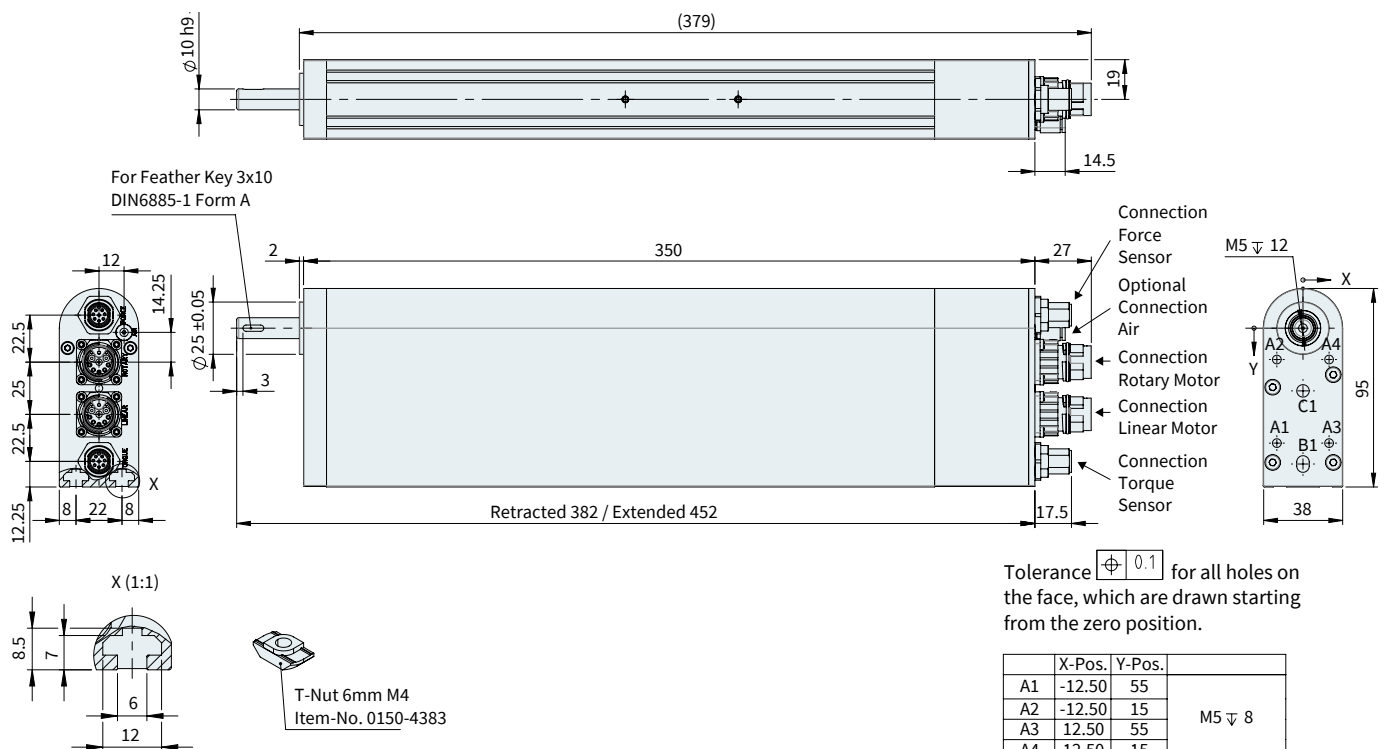
Dimensions in mm

Motor Data

Linear Motion				
Max. Stroke	mm (in)		70	(2.76)
Peak Force E12x0 - UC	N (lbf)		67.1	(15.1)
Constant Force @25°C ¹⁾	N (lbf)		24.4	(5.50)
Force Constant	N/A _{pk} (lbf/A _{pk})		8.95	(2.01)
Max. Current @ 72VDC	A _{pk}		7.5	
Max. Velocity @ 72VDC	m/s (in/s)		7.3	(289.9)
Position Repeatability	mm (in)		±0.05	(±0.0020)
Linearity	%		±0.10	
Rotary Motion				
Peak Torque (± 10%)	Nm (lbfin)		1.2	(10.6)
Constant Torque (Halt) @25°C ¹⁾	Nm (lbfin)		0.25	(2.25)
Max. Number of revolutions	rpm		1500	
Torque Constant 1	Nm/A _{tpk} (lbfin/A _{tpk})		0.07	(0.62)
Torque Constant 2	Nm/A _{rms} (lbfin/A _{rms})		0.1	(0.89)
Max. Current @ 72VDC	A _{pk} / A _{rms}		17 / 12	
Position Repeatability	°		±0.1	
Mechanical Data				
Width	mm (in)		38	(1.50)
Height	mm (in)		95	(3.74)
Length	mm (in)		379	(14.92)
Mass [without MagSpring / with MagSpring]	g (lb)		2430 / 2630	(5.36 / 5.80)
Linear moving mass [without MagSpring]	g (lb)		425	(0.94)
Linear moving mass [with MagSpring MS11 / MS12 / MS13]	g (lb)		517	(1.14)
Rotary Torque of Inertia	kgcm ² (lbft ²)		0.038	(0.000091)
Weight Compensation [Option MS11 / MS12 / MS13]	N (lbf)		11 / 17 / 22	(2.48 / 3.83 / 4.95)
Axle Diameter	mm (in)		10h9	(0.39)
Through bore-hole		Option-L: Hole diameter 2.5 mm Connection (front) M5; (back) Connector M5		
Protection Class		IP64		
		Torque Sensor (Optional)		Force Sensor (Optional)
Supply Voltage	VDC	24		24
Measuring Range	Nm (lbfin) N (lbf)	±1.2 (±10.62)		±50 (±11.24)
Boundary Frequency -3dB	kHz	1		1
Output Signal	VDC	±10		±10
Current Consumption	mA	<160		<160
Zero Offset	mV	<±100		<±200
Mechanical Overload	%	200		300
Resolution (C1200)	Bit	12		12
Linearity	Nm (lbfin) N (lbf)	±0.012 (±0.1062)		±1 (±0.2248)

1) Value depends on 2nd motor (see LinMot Designer)

DIMENSIONS

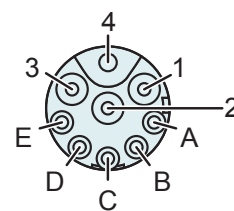


Dimensions in mm

CONNECTORS

Motor Connector Wiring	Linear Unit: R-Connector	Rotary Unit: R-Connector	Wire Color Motor Cable
Ph 1+ / Ph A	1	1	red
Ph 1- / Ph B	2	2	pink
Ph 2+ / Ph C	3	3	blue
Ph 2- / (-)	4	4 (not connected)	grey
+5VDC	A	A	white
GND	B	B	inner shield
Sin	C	C	yellow
Cos	D	D	green
Temp.	E	E	black
Shield	Housing	Housing	outer shield

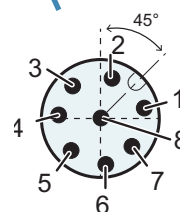
R-Connector



View: Motor connector, plug on

Connector Wiring	Torque Sensor M12 Connector	Wire Color Motor Cable
Supply GND	1	white
Supply 24V (approx. 80 mA @ 24VDC)	2	brown
Do not connect	3	green
Torque -	4	yellow
Torque +	5	grey
Do not connect	6	pink
Do not connect	7	blue
Do not connect	8	red

M12-Connector (A-coded)



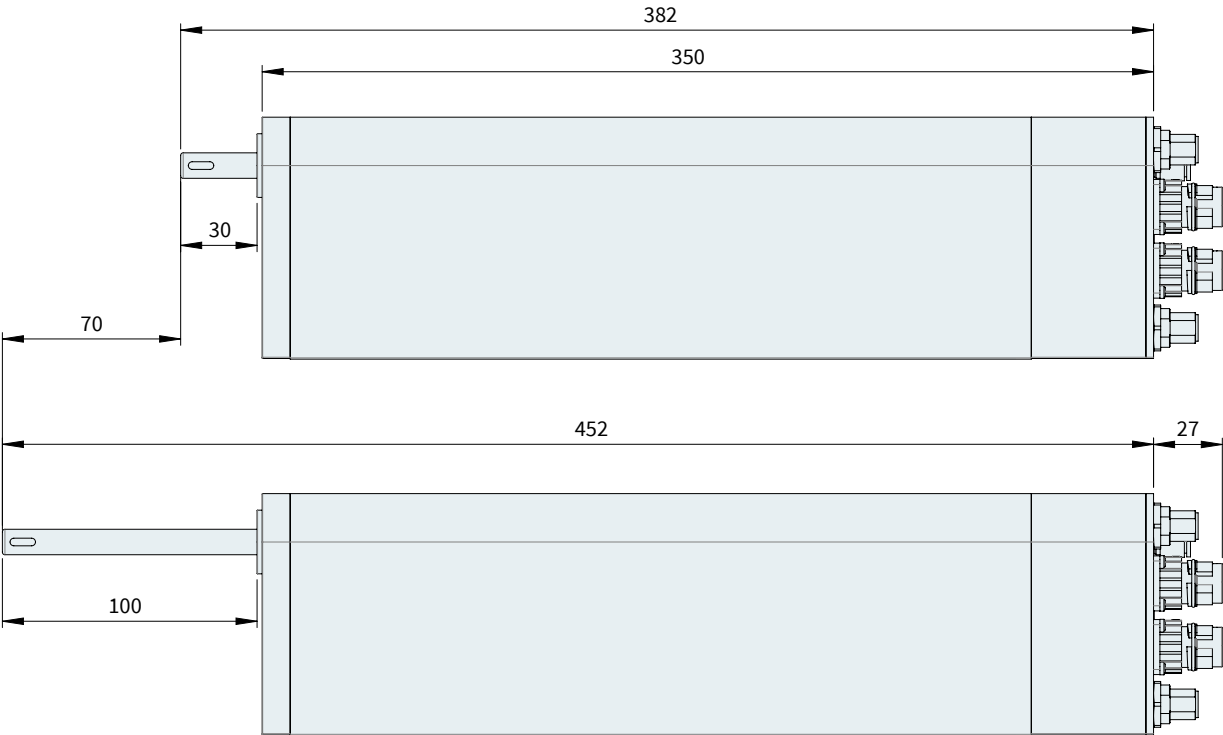
View: Motor connector, plug on

PIN 4 (torque -) and PIN 1 (ground supply) are internally galvanically isolated, bridging at the power source (not at the transducer) if required.

External EMC circuitry

External EMC circuitry
A ceramic capacitor 100nF / 50V can be soldered between pins 4 - 5 on the evaluation to avoid wire-bound interference.

MAX. STROKE



ORDERING INFORMATION

LINEAR ROTARY MOTORS PR02		
Item	Description	Item-No.
PR02-38x51-R_23x80F-HP-R-70_MS00_TS00	Linear Rotary Motor	0150-4160
PR02-38x51-R_23x80F-HP-R-70_MS11_TS00	Linear Rotary Motor, MagSpring 11N	0150-4161
PR02-38x51-R_23x80F-HP-R-70_MS12_TS00	Linear Rotary Motor, MagSpring 17N	0150-4231
PR02-38x51-R_23x80F-HP-R-70_MS13_TS00	Linear Rotary Motor, MagSpring 22N	0150-4162
PR02-38x51-R_23x80F-HP-R-70-L_MS00_TS00	Linear Rotary Motor, Hollow Shaft	0150-4159
PR02-38x51-R_23x80F-HP-R-70-L_MS11_TS00	Linear Rotary Motor, Hollow Shaft, MagSpring 11N	0150-2988
PR02-38x51-R_23x80F-HP-R-70-L_MS12_TS00	Linear Rotary Motor, Hollow Shaft, MagSpring 17N	0150-4232
PR02-38x51-R_23x80F-HP-R-70-L_MS13_TS00	Linear Rotary Motor, Hollow Shaft, MagSpring 22N	0150-4158
PR02-38x51-R_23x80F-HP-R-70_MS00_TS00-R01	Linear Rotary Motor, Angle Connector	0150-4677

PRELIMINARY - LINEAR ROTARY MOTORS PR02 - WITH TORQUE MEASURING SHAFT (TS)		
Item	Description	Item-No.
PR02-38x51-R_23x80F-HP-R-70_MS00_TS03	Linear Rotary Motor, Torque Sensor	0150-4678
PR02-38x51-R_23x80F-HP-R-70_MS11_TS03	Linear Rotary Motor, MagSpring 11N, Torque Sensor	0150-4679
PR02-38x51-R_23x80F-HP-R-70_MS12_TS03	Linear Rotary Motor, MagSpring 17N, Torque Sensor	0150-4680
PR02-38x51-R_23x80F-HP-R-70_MS13_TS03	Linear Rotary Motor, MagSpring 22N, Torque Sensor	0150-4681
PR02-38x51-R_23x80F-HP-R-70-L_MS00_TS03	Linear Rotary Motor, Hollow Shaft, Torque Sensor	0150-4682
PR02-38x51-R_23x80F-HP-R-70-L_MS11_TS03	Linear Rotary Motor, Hollow Shaft, MagSpring 11N, Torque Sensor	0150-4683
PR02-38x51-R_23x80F-HP-R-70-L_MS12_TS03	Linear Rotary Motor, Hollow Shaft, MagSpring 17N, Torque Sensor	0150-4684
PR02-38x51-R_23x80F-HP-R-70-L_MS13_TS03	Linear Rotary Motor, Hollow Shaft, MagSpring 22N, Torque Sensor	0150-4685

PRELIMINARY - LINEAR ROTARY MOTORS PR02 - WITH FORCE MEASURING SHAFT (FS)		
Item	Description	Item-No.
PR02-38x51-R_23x80F-HP-R-70-L_MS00_TS00_FS03	Linear Rotary Motor, Hollow Shaft, Force Sensor	0150-4686
PR02-38x51-R_23x80F-HP-R-70-L_MS13_TS00_FS03	Linear Rotary Motor, Hollow Shaft, MagSpring 22N, Force Sensor	0150-4687
PR02-38x51-R_23x80F-HP-R-70-L_MS00_TS03_FS03	Linear Rotary Motor, Hollow Shaft, Torque Sensor, Force Sensor	0150-4688
PR02-38x51-R_23x80F-HP-R-70-L_MS11_TS03_FS03	Linear Rotary Motor, Hollow Shaft, MagSpring 11N, Torque Sensor, Force Sensor	0150-4689
PR02-38x51-R_23x80F-HP-R-70-L_MS12_TS03_FS03	Linear Rotary Motor, Hollow Shaft, MagSpring 17N, Torque Sensor, Force Sensor	0150-4690
PR02-38x51-R_23x80F-HP-R-70-L_MS13_TS03_FS03	Linear Rotary Motor, Hollow Shaft, MagSpring 22N, Torque Sensor, Force Sensor	0150-4691

ACCESSORIES

Item	Description	Item-No.
K05-W/R-2	Motor Cable W/R, 2 m	0150-2119
K05-W/R-4	Motor Cable W/R, 4 m	0150-2120
K05-W/R-6	Motor Cable W/R, 6 m	0150-2121
K05-W/R-8	Motor Cable W/R, 8 m	0150-2122
K05-W/R-	Motor Cable K05-W/R, Custom length	0150-3262
K05-Y/R-2	Motor Cable Y/R, 2 m	0150-2421
K05-Y/R-4	Motor Cable Y/R, 4 m	0150-2422
K05-Y/R-6	Motor Cable Y/R, 6 m	0150-2423
K05-Y/R-8	Motor Cable Y/R, 8 m	0150-2424
K05-Y-Fe/R-	Motor Cable K05-Y-Fe/R, Custom length	0150-3501
KS05-W/R-4	Trailing Chain Cable W/R, 4 m	0150-2106
KS05-W/R-6	Trailing Chain Cable W/R, 6 m	0150-2131
KS05-W/R-8	Trailing Chain Cable W/R, 8 m	0150-2107
KS05-W/R-	Trailing Chain Cable KS05-W/R, Custom length	0150-3256
KS05-Y/R-4	Trailing Chain Cable Y/R, 4 m	0150-2433
KS05-Y/R-6	Trailing Chain Cable Y/R, 6 m	0150-2434
KS05-Y/R-8	Trailing Chain Cable Y/R, 8 m	0150-2435
KS05-Y-Fe/R-	Trailing Chain Cable KS05-Y-Fe/R, Custom length	0150-3507
KR05-W/R-	Robot Cable KR05-W/R, Custom length	0150-3336
KR05-Y-Fe/R-	Robot Cable KR05-Y-Fe/R, Custom length	0150-3512
KSS014-06-X4/SM	Sensor Cable für PR02	0150-4610
RS01-SS10x20	Shaft-hub clamping for 10mm shaft	0150-4531
Hammer Nut N6/M4	Hammer Nut N6 / M4	0150-4383

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