PNCE



The electric cylinder is based on the standard ISO 15552. Its outer design and dimensions are very similar to pneumatic cylinders.

The precision ball screw with reduced backlash of the ball nut and non-rotating piston rod offers high performance. Preload is available on request.

The excellent sealing of the components in the cylinder protects the interior of the cylinder from dust, water and other contaminants.

Note!
All the data of the dynamic load capacities (ball screw drive) stated in the table are theoretical without considering any safety factor. The safety factor depends on the application and its requested safety and service life. We recommend a minimum safety factor $f_s = 5,0$, where f_s is defined as $f_s = C / F_m$. (Dynamic load capacity refers to the capacity of the ball screw drive.)

The max. axial load value needs to be considered when using the piston rod or mounting attachments' accessories.

Maximum travel speed depends on the absolute stroke of the PNCE.

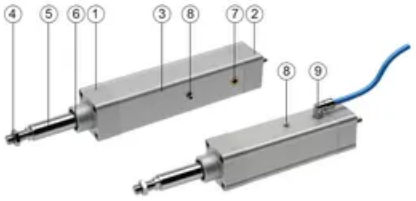
Contact us for further information.

Dimensions in mm.

Axial Backlash (mm): 0.02
Max. Acceleration (m/s): 20
Operating Temperature (°C): 0 ~ +60
Protection Class: IP40, IP65
Accuracy: C5 (integrated ball screw)

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1. Front cap
2. Drive cap
3. Smooth cylinder profile
4. Hex nut
5. Piston rod (stainless steel) with an anti-rotation device
6. Piston rod seal
7. Pressure compensation
8. Lubrication nipple
9. Connection for pressure compensation



General Data

* The moved mass is already considered in the equation for calculating the mass of the electirc cylinder m_{PNCE} and the mass moment of inertia J_{PNCE}. The moved mass includes the mass of the piston rod with the internal anti-rotation device and ball nut.

m_{load}	Applied mass to be moved	[kg]
E	Extended piston rod	[mm]
Absolute stroke		[mm]

Designation	Ball Screw (d x l)	Dynamic Load Capacity C (N)	Max. Axial Load Fmax (N)	Max. Drive Torque M_p (Nm)	Max. Travel Speed Vmax (m/s)
PNCE32-12x5	12 × 5 mm	5000	2540	2.2	0.48
PNCE32-12x10	12 × 10 mm	3800	1270	2.2	0.97
PNCE40-16x5	16 × 5 mm	13150	6020	5.3	0.35
PNCE40-16x10	16 × 10 mm	11550	3010	5.3	0.7
PNCE40-16x16	16 × 16 mm	8170	1880	5.3	1.12
PNCE50-20x5	20 × 5 mm	14800	14600	12.9	0.28
PNCE50-20x10	20 × 10 mm	15900	7830	13.9	0.55
PNCE50-20x20	20 × 20 mm	16250	3900	13.9	1.1
PNCE50-20x50	20 × 50 mm	13000	1560	13.9	2.5
PNCE63-25x5	25 × 5 mm	16700	16500	14.6	0.23
PNCE63-25x10	25 × 10 mm	15800	15800	28	0.45
PNCE63-25x25	25 × 25 mm	16700	7940	35.1	1.13
PNCE80-32x5	32 × 5 mm	18850	18850	16.7	0.18
PNCE80-32x10	32 × 10 mm	37000	25000	44.2	0.5
PNCE80-32x20	32 × 20 mm	22950	17160	60.7	1
PNCE80-32x32	32 × 32 mm	15500	10725	60.7	1.6
PNCE100-40x5	40 × 5 mm	23800	23800	21	0.18
PNCE100-40x10	40 × 10 mm	38000	29000	51.3	0.37
PNCE100-40x20	40 × 20 mm	33300	29000	102.6	0.73
PNCE100-40x40	40 × 40 mm	35000	22980	162.6	1.47

Designation	Max. Rotational Speed nmax (min^{-1})	No Load Torque M_0 (Nm)	Min. Stroke Smin (mm)	Max. Stroke Smax (mm)	Moved Mass (kg)	Mass of the Electric Cylinder mPNCE (kg)
PNCE32-12x5	5800	0.1	30	800	0.32 + 0.0010 × (Absolute stroke + E)	1.10 + 0.0043 × Absolute stroke + 0.0010 × E
PNCE32-12x10	5800	0.15	30	800	0.32 + 0.0010 × (Absolute stroke + E)	1.10 + 0.0043 × Absolute stroke + 0.0010 × E
PNCE40-16x5	4200	0.15	40	900	0.44 + 0.0007 × (Absolute stroke + E)	1.45 + 0.0051 × Absolute stroke + 0.0007 × E

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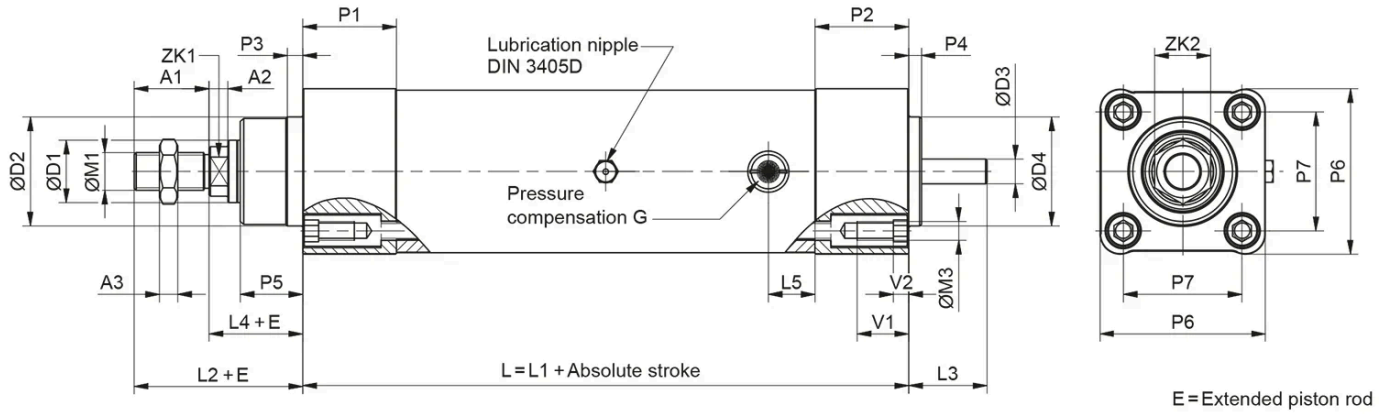
Designation	Max. Rotational Speed nmax (min^{-1})	No Load Torque M_0 (Nm)	Min. Stroke Smin (mm)	Max. Stroke Smax (mm)	Moved Mass (kg)	Mass of the Electric Cylinder mPNCE (kg)
PNCE40-16x10	4200	0.2	35	900	0.44 + 0.0007 × (Absolute stroke + E)	1.45 + 0.0051 × Absolute stroke + 0.0007 × E
PNCE40-16x16	4200	0.25	35	900	0.44 + 0.0007 × (Absolute stroke + E)	1.45 + 0.0051 × Absolute stroke + 0.0007 × E
PNCE50-20x5	3300	0.3	50	1000	0.95 + 0.0012 × (Absolute stroke + E)	2.50 + 0.0073 × Absolute stroke + 0.0012 × E
PNCE50-20x10	3300	0.35	55	1000	0.95 + 0.0012 × (Absolute stroke + E)	2.50 + 0.0073 × Absolute stroke + 0.0012 × E
PNCE50-20x20	3300	0.4	50	1000	0.95 + 0.0012 × (Absolute stroke + E)	2.50 + 0.0073 × Absolute stroke + 0.0012 × E
PNCE50-20x50	3000	0.5	30	1000	0.88 + 0.0012 × (Absolute stroke + E)	2.43 + 0.0073 × Absolute stroke + 0.0012 × E
PNCE63-25x5	2700	0.5	40	1200	1.00 + 0.0011 × (Absolute stroke + E)	3.05 + 0.0097 × Absolute stroke + 0.0011 × E
PNCE63-25x10	2700	0.55	40	1200	1.00 + 0.0011 × (Absolute stroke + E)	3.05 + 0.0097 × Absolute stroke + 0.0011 × E
PNCE63-25x25	2700	0.65	30	1200	0.98 + 0.0011 × (Absolute stroke + E)	3.03 + 0.0097 × Absolute stroke + 0.0011 × E
PNCE80-32x5	2150	0.65	60	1500	2.15 + 0.0028 × (Absolute stroke + E)	6.48 + 0.0156 × Absolute stroke + 0.0028 × E
PNCE80-32x10	3000	0.7	60	1500	2.15 + 0.0028 × (Absolute stroke + E)	6.48 + 0.0156 × Absolute stroke + 0.0028 × E
PNCE80-32x20	3000	0.75	70	1500	2.15 + 0.0028 × (Absolute stroke + E)	6.48 + 0.0156 × Absolute stroke + 0.0028 × E
PNCE80-32x32	3000	0.9	70	1500	2.15 + 0.0028 × (Absolute stroke + E)	6.48 + 0.0156 × Absolute stroke + 0.0028 × E
PNCE100-40x5	2200	1	45	1500	3.21 + 0.0047 × (Absolute stroke + E)	10.12 + 0.0245 × Absolute stroke + 0.0047 × E
PNCE100-40x10	2200	1.1	55	1500	3.21 + 0.0047 × (Absolute stroke + E)	10.12 + 0.0245 × Absolute stroke + 0.0047 × E
PNCE100-40x20	2200	1.2	65	1500	3.21 + 0.0047 × (Absolute stroke + E)	10.12 + 0.0245 × Absolute stroke + 0.0047 × E
PNCE100-40x40	2200	1.4	80	1500	3.54 + 0.0047 × (Absolute stroke + E)	10.61 + 0.0245 × Absolute stroke + 0.0047 × E

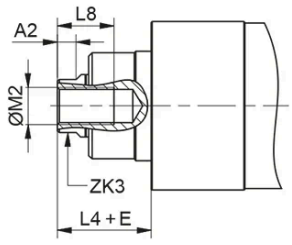
Designation	Mass Moment of Inertia JPNCE (10^{-6} kg m^2)
PNCE32-12x5	2.15 + 0.0128 × Absolute stroke + 0.0006 × E + 0.6333 × mload
PNCE32-12x10	2.75 + 0.0147 × Absolute stroke + 0.0025 × E + 2.5330 × mload
PNCE40-16x5	4.50 + 0.0395 × Absolute stroke + 0.0004 × E + 0.6333 × mload
PNCE40-16x10	5.35 + 0.0408 × Absolute stroke + 0.0018 × E + 2.5330 × mload
PNCE40-16x16	7.10 + 0.0436 × Absolute stroke + 0.0046 × E + 6.4846 × mload
PNCE50-20x5	17.75 + 0.0817 × Absolute stroke + 0.0007 × E + 0.6333 × mload

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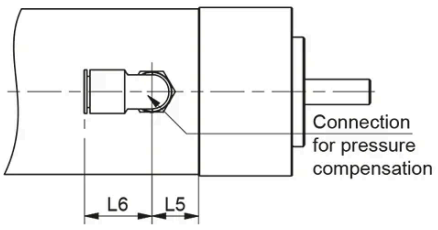
Designation	Mass Moment of Inertia JPNCE (10^{-6} kg m²)
PNCE50-20x10	19.55 + 0.0839 × Absolute stroke + 0.0030 × E + 2.5330 × mload
PNCE50-20x20	26.75 + 0.0928 × Absolute stroke + 0.0118 × E + 10.1321 × mload
PNCE50-20x50	73.80 + 0.1549 × Absolute stroke + 0.0740 × E + 63.3257 × mload
PNCE63-25x5	32.55 + 0.2358 × Absolute stroke + 0.0007 × E + 0.6333 × mload
PNCE63-25x10	34.45 + 0.2378 × Absolute stroke + 0.0028 × E + 2.5330 × mload
PNCE63-25x25	47.30 + 0.2523 × Absolute stroke + 0.0172 × E + 15.8314 × mload
PNCE80-32x5	118.14 + 0.6514 × Absolute stroke + 0.0018 × E + 0.6333 × mload
PNCE80-32x10	122.23 + 0.6567 × Absolute stroke + 0.0071 × E + 2.5330 × mload
PNCE80-32x20	138.60 + 0.6781 × Absolute stroke + 0.0285 × E + 10.1321 × mload
PNCE80-32x32	172.65 + 0.7227 × Absolute stroke + 0.0731 × E + 25.9382 × mload
PNCE100-40x5	342.17 + 1.6613 × Absolute stroke + 0.0030 × E + 0.6333 × mload
PNCE100-40x10	348.27 + 1.6701 × Absolute stroke + 0.0118 × E + 2.5330 × mload
PNCE100-40x20	372.67 + 1.7056 × Absolute stroke + 0.0473 × E + 10.1321 × mload
PNCE100-40x40	483.41 + 1.8476 × Absolute stroke + 0.1893 × E + 40.5285 × mload

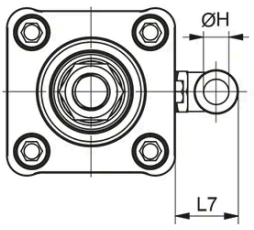
Dimensions





Female thread





IP65, IP65CR, FI

Designation	L1	L2	L3	L4	L5	L6	L7	L8	P1
PNCE32-12x5	136 (+0.2/-1.4)	48	21	26 (+1.9/-0.8)	15	22.5	20	15	30
PNCE32-12x10	136 (+0.2/-1.4)	48	21	26 (+1.9/-0.8)	15	22.5	20	15	30
PNCE40-16x5	144 (+0.2/-1.4)	54	25	30 (+1.9/-0.8)	15	22.5	20	18	30
PNCE40-16x10	144 (+0.2/-1.4)	54	25	30 (+1.9/-0.8)	15	22.5	20	18	30
PNCE40-16x16	144 (+0.2/-1.4)	54	25	30 (+1.9/-0.8)	15	22.5	20	18	30
PNCE50-20x5	180 (+0.2/-1.4)	69	32	37 (+1.9/-0.8)	15	22.5	20	25	36
PNCE50-20x10	180 (+0.2/-1.4)	69	32	37 (+1.9/-0.8)	15	22.5	20	25	36
PNCE50-20x20	180 (+0.2/-1.4)	69	32	37 (+1.9/-0.8)	15	22.5	20	25	36

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Designation	L1	L2	L3	L4	L5	L6	L7	L8	P1
PNCE50-20x50	180 (+0.2/-1.4)	69	32	37 (+1.9/-0.8)	15	22.5	20	25	36
PNCE63-25x5	171 (+0.2/-1.4)	69	38	37 (+1.9/-0.8)	15	22.5	20	25	38
PNCE63-25x10	171 (+0.2/-1.4)	69	38	37 (+1.9/-0.8)	15	22.5	20	25	38
PNCE63-25x25	171 (+0.2/-1.4)	69	38	37 (+1.9/-0.8)	15	22.5	20	25	38
PNCE80-32x5	204 (+0.2/-1.4)	86	40	46 (+1.9/-0.8)	15	22.5	20	30	40
PNCE80-32x10	204 (+0.2/-1.4)	86	40	46 (+1.9/-0.8)	15	22.5	20	30	40
PNCE80-32x20	204 (+0.2/-1.4)	86	40	46 (+1.9/-0.8)	15	22.5	20	30	40
PNCE80-32x32	204 (+0.2/-1.4)	86	40	46 (+1.9/-0.8)	15	22.5	20	30	40
PNCE100-40x5	224 (+0.2/-1.4)	91	50	46 (+1.9/-0.8)	15	22.5	20	30	42
PNCE100-40x10	224 (+0.2/-1.4)	91	50	51 (+1.9/-0.8)	25	28.5	28	30	42
PNCE100-40x20	224 (+0.2/-1.4)	91	50	51 (+1.9/-0.8)	25	28.5	28	30	42
PNCE100-40x40	239 (+0.2/-1.4)	91	50	51 (+1.9/-0.8)	25	28.5	28	30	42

Designation	P2	P3	P4	P5	P6	P7	G	D1	D2	D3
PNCE32-12x5	30	5	4 (±0.1)	18 (±0.1)	47	32.5	G 1/8	Ø 18 (f8)	Ø 30 (d11)	Ø 6 (h7)
PNCE32-12x10	30	5	4 (±0.1)	18 (±0.1)	47	32.5	G 1/8	Ø 18 (f8)	Ø 30 (d11)	Ø 6 (h7)
PNCE40-16x5	30	5	4 (±0.1)	20 (±0.1)	54	38	G 1/8	Ø 20 (f8)	Ø 35 (d11)	Ø 8 (h7)
PNCE40-16x10	30	5	4 (±0.1)	20 (±0.1)	54	38	G 1/8	Ø 20 (f8)	Ø 35 (d11)	Ø 8 (h7)
PNCE40-16x16	30	5	4 (±0.1)	20 (±0.1)	54	38	G 1/8	Ø 20 (f8)	Ø 35 (d11)	Ø 8 (h7)
PNCE50-20x5	37	5	4 (±0.1)	25 (±0.1)	65	46.5	G 1/8	Ø 25 (f8)	Ø 40 (d11)	Ø 11 (h7)
PNCE50-20x10	37	5	4 (±0.1)	25 (±0.1)	65	46.5	G 1/8	Ø 25 (f8)	Ø 40 (d11)	Ø 11 (h7)
PNCE50-20x20	37	5	4 (±0.1)	25 (±0.1)	65	46.5	G 1/8	Ø 25 (f8)	Ø 40 (d11)	Ø 11 (h7)
PNCE50-20x50	37	5	4 (±0.1)	25 (±0.1)	65	46.5	G 1/8	Ø 25 (f8)	Ø 40 (d11)	Ø 11 (h7)
PNCE63-25x5	38	5	4 (±0.1)	25 (±0.1)	75	56.5	G 1/8	Ø 30 (f8)	Ø 45 (d11)	Ø 15 (h7)
PNCE63-25x10	38	5	4 (±0.1)	25 (±0.1)	75	56.5	G 1/8	Ø 30 (f8)	Ø 45 (d11)	Ø 15 (h7)
PNCE63-25x25	38	5	4 (±0.1)	25 (±0.1)	75	56.5	G 1/8	Ø 30 (f8)	Ø 45 (d11)	Ø 15 (h7)
PNCE80-32x5	40	18	14 (±0.1)	31 (±0.1)	93	72	G 1/8	Ø 40 (f8)	Ø 60 (d11)	Ø 18 (h7)
PNCE80-32x10	40	18	14 (±0.1)	31 (±0.1)	93	72	G 1/8	Ø 40 (f8)	Ø 60 (d11)	Ø 18 (h7)
PNCE80-32x20	40	18	14 (±0.1)	31 (±0.1)	93	72	G 1/8	Ø 40 (f8)	Ø 60 (d11)	Ø 18 (h7)
PNCE80-32x32	40	18	14 (±0.1)	31 (±0.1)	93	72	G 1/8	Ø 40 (f8)	Ø 60 (d11)	Ø 18 (h7)
PNCE100-40x5	42	20	18 (±0.1)	34 (±0.1)	110	89	G 3/8	Ø 50 (f8)	Ø 70 (d11)	Ø 25 (h7)
PNCE100-40x10	42	20	18 (±0.1)	34 (±0.1)	110	89	G 3/8	Ø 50 (f8)	Ø 70 (d11)	Ø 25 (h7)
PNCE100-40x20	42	20	18 (±0.1)	34 (±0.1)	110	89	G 3/8	Ø 50 (f8)	Ø 70 (d11)	Ø 25 (h7)
PNCE100-40x40	42	20	18 (±0.1)	34 (±0.1)	110	89	G 3/8	Ø 50 (f8)	Ø 70 (d11)	Ø 25 (h7)

Designation	D4	M1	M2	M3	H	A1	A2	A3	ZK1	ZK2
PNCE32-12x5	Ø 30 (g7)	Ø M10 × 1.25	Ø M10 × 1.25	M6	Ø 8	22	5	5	10	17
PNCE32-12x10	Ø 30 (g7)	Ø M10 × 1.25	Ø M10 × 1.25	M6	Ø 8	22	5	5	10	17
PNCE40-16x5	Ø 35 (g7)	Ø M12 × 1.25	Ø M12 × 1.25	M6	Ø 8	24	6	6	13	19
PNCE40-16x10	Ø 35 (g7)	Ø M12 × 1.25	Ø M12 × 1.25	M6	Ø 8	24	6	6	13	19
PNCE40-16x16	Ø 35 (g7)	Ø M12 × 1.25	Ø M12 × 1.25	M6	Ø 8	24	6	6	13	19
PNCE50-20x5	Ø 40 (g7)	Ø M16 × 1.5	Ø M16 × 1.5	M8	Ø 8	32	8	8	17	24
PNCE50-20x10	Ø 40 (g7)	Ø M16 × 1.5	Ø M16 × 1.5	M8	Ø 8	32	8	8	17	24
PNCE50-20x20	Ø 40 (g7)	Ø M16 × 1.5	Ø M16 × 1.5	M8	Ø 8	32	8	8	17	24
PNCE50-20x50	Ø 40 (g7)	Ø M16 × 1.5	Ø M16 × 1.5	M8	Ø 8	32	8	8	17	24
PNCE63-25x5	Ø 45 (g7)	Ø M16 × 1.5	Ø M16 × 1.5	M8	Ø 8	32	8	8	17	24

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Designation	D4	M1	M2	M3	H	A1	A2	A3	ZK1	ZK2
PNCE63-25x10	Ø 45 (g7)	Ø M16 × 1.5	Ø M16 × 1.5	M8	Ø 8	32	8	8	17	24
PNCE63-25x25	Ø 45 (g7)	Ø M16 × 1.5	Ø M16 × 1.5	M8	Ø 8	32	8	8	17	24
PNCE80-32x5	Ø 60 (g7)	Ø M20 × 1.5	Ø M12	M10	Ø 8	40	8	10	22	30
PNCE80-32x10	Ø 60 (g7)	Ø M20 × 1.5	Ø M12	M10	Ø 8	40	8	10	22	30
PNCE80-32x20	Ø 60 (g7)	Ø M20 × 1.5	Ø M12	M10	Ø 8	40	8	10	22	30
PNCE80-32x32	Ø 60 (g7)	Ø M20 × 1.5	Ø M12	M10	Ø 8	40	8	10	22	30
PNCE100-40x5	Ø 60 (g7)	Ø M20 × 1.5	Ø M12	M10	Ø 12	40	8	10	22	30
PNCE100-40x10	Ø 70 (g7)	Ø M20 × 1.5	Ø M12	M10	Ø 12	40	6	10	22	30
PNCE100-40x20	Ø 70 (g7)	Ø M20 × 1.5	Ø M12	M10	Ø 12	40	6	10	22	30
PNCE100-40x40	Ø 70 (g7)	Ø M20 × 1.5	Ø M12	M10	Ø 12	40	6	10	22	30

Designation	ZK3	V1	V2
PNCE32-12x5	16	16	4.5
PNCE32-12x10	16	16	4.5
PNCE40-16x5	17	16	4.5
PNCE40-16x10	17	16	4.5
PNCE40-16x16	17	16	4.5
PNCE50-20x5	22	18	4.5
PNCE50-20x10	22	18	4.5
PNCE50-20x20	22	18	4.5
PNCE50-20x50	22	18	4.5
PNCE63-25x5	27	18	4.5
PNCE63-25x10	27	18	4.5
PNCE63-25x25	27	18	4.5
PNCE80-32x5	32	17	/
PNCE80-32x10	32	17	/
PNCE80-32x20	32	17	/
PNCE80-32x32	32	17	/
PNCE100-40x5	40	17	/
PNCE100-40x10	40	17	/
PNCE100-40x20	40	17	/
PNCE100-40x40	40	17	/

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