

LOW-BACKLASH PLANETARY GEARS



RGM Made in Germany
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Type: RPS060	Ratio: i=4
Serial-No.: 000001	
Lubricated for Life	



RUHRGETRIEBE

RPS PLANETARY GEARS

- Large range of transmission ratios $i = 3$ to $i = 512$ (24 transmission ratios possible)
- High performance density
- Very quiet running
- High overload capacity
- Low weight



RPS PLANETARY GEARS

Diameter of the gear housing (mm)	40	60	80
Nominal output torque (Nm)	14 - 16	26 - 39	64 - 92
Acceleration torque (Nm)	23 - 25	52 - 68	128 - 184
Emergency stop torque (Nm)	34 - 36	70 - 88	172 - 236
Transmission ratio	1-stage	4, 5, 7, 8	3, 4, 5, 7, 8
	2-stage	16, 20, 25, 28, 32, 35, 40, 49, 56, 64	12, 15, 16, 20, 25, 32, 40, 49, 56, 64
	3-stage		80, 100, 125, 160, 200, 256, 512
Circumferential backlash (arcmin)	1-stage	≤ 15	≤ 10
	2-stage	≤ 19	≤ 12
	3-stage		≤ 15

WHAT CAN WE DO FOR YOU?

We will be pleased to assist you personally and look forward to working on joint challenges and projects:

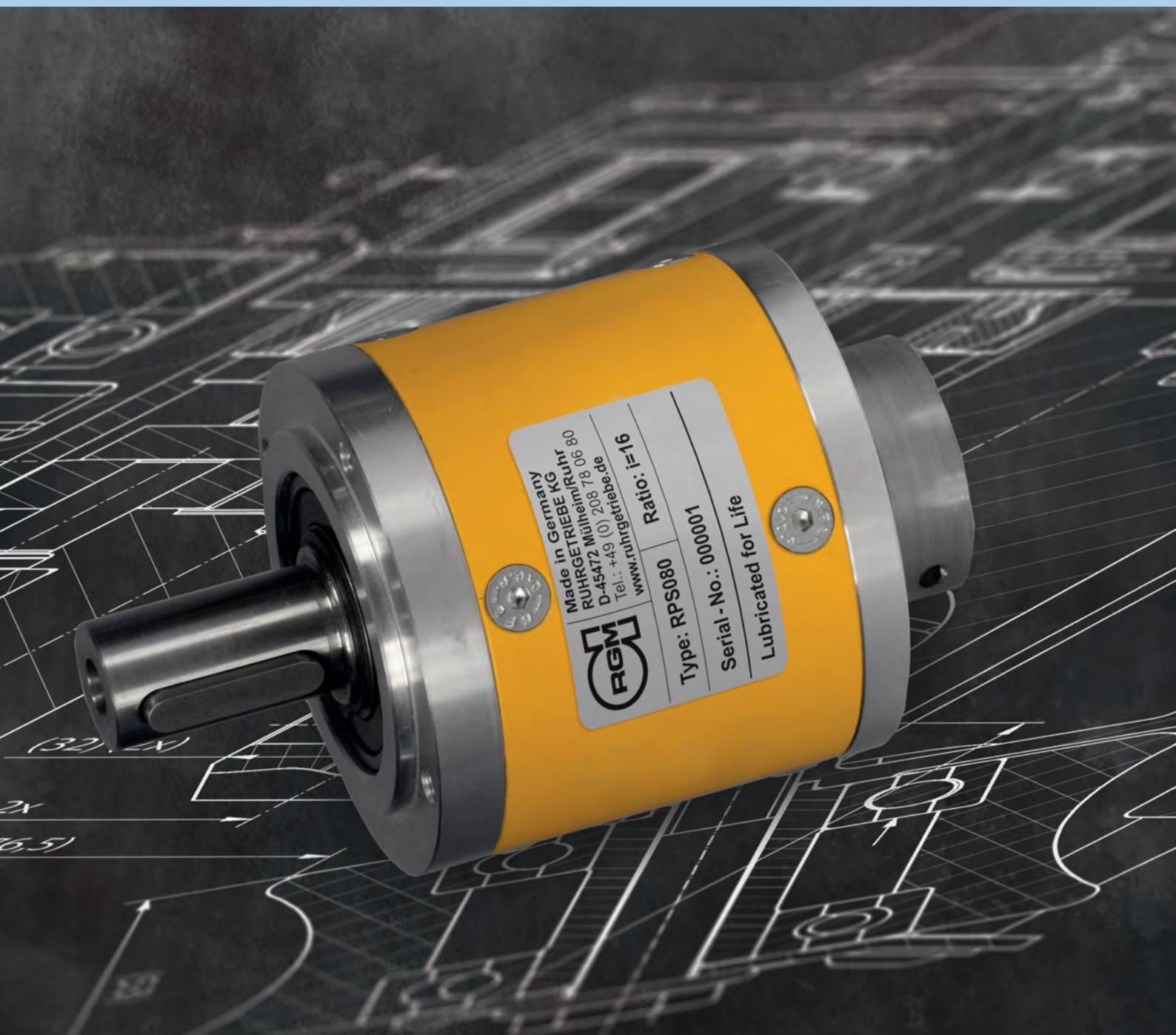
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RPS PLANETARY GEARS



STRENGTHS OF THE RPS RANGE:

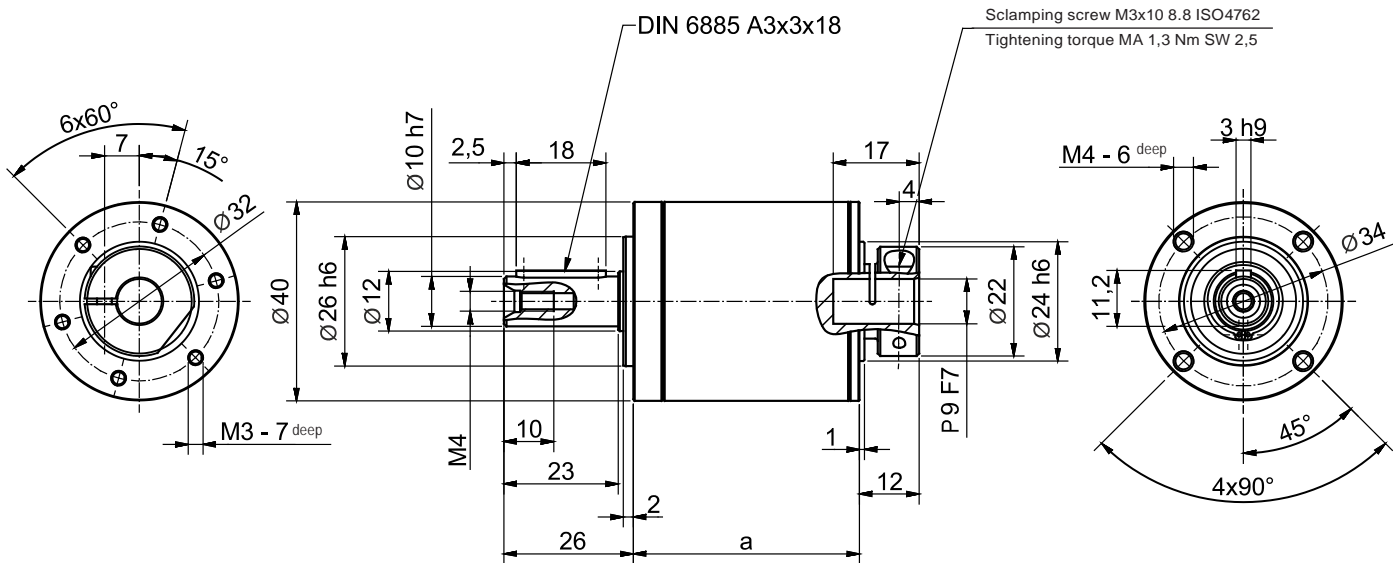
The special feature of the RPS range is its low dead weight. This enables high power densities to be achieved.

These planetary gears are also suitable for applications with high weight requirements, such as axle movements during dynamic operation.

Up to three planetary stages ensure a large selection of gear ratios.

You can select from transmission ratios from $i = 3$ to $i = 512$.

Is your installation space limited? If so, you can choose from the versions with a 40 mm, 60 mm and 80 mm outer diameter.



RPS040 Planetary Gear

Dimensions with gear stages	a	Weight
1-stage	45,5 mm	0,3 kg
2-stage	67 mm	0,4 kg

RPS040 Performance Data

i tot.	Stages	Nominal drive speed n_1 [rpm]	Max. drive speed n_1 max. [rpm]	Nominal torque T_{2N}^{*1} [Nm]	Max. acceleration torque T_{2B}^{*2} [Nm]	Emergency stop torque T_{2EMG}^{*3} [Nm]	Circumferential backlash jt [arcmin]	Efficiency level η [%]	Torsional stiffness c_t [Nm/arcmin]	Mass moment of inertia J_1^{*4} [kgcm ²]
4	1	4500	8000	16	25	36	≤ 15	> 97	1	0,022
5	1	4500	8000	14	23	34	≤ 15	> 97	1	0,019
7	1	4500	8000	14	23	34	≤ 15	> 97	1	0,018
8	1	4500	8000	14	23	34	≤ 15	> 97	1	0,017
16	2	4500	8000	16	25	36	≤ 19	> 94	1,1	0,022
20	2	4500	8000	16	25	36	≤ 19	> 94	1,1	0,019
25	2	4500	8000	14	23	34	≤ 19	> 94	1,1	0,019
28	2	4500	8000	16	25	36	≤ 19	> 94	1,1	0,017
32	2	4500	8000	16	25	36	≤ 19	> 94	1,1	0,017
35	2	4500	8000	14	23	34	≤ 19	> 94	1,1	0,017
40	2	4500	8000	14	23	34	≤ 19	> 94	1,1	0,016
49	2	4500	8000	14	23	34	≤ 19	> 94	1,1	0,018
56	2	4500	8000	14	23	34	≤ 19	> 94	1,1	0,017
64	2	4500	8000	14	23	34	≤ 19	> 94	1,1	0,016

*1 Service life 20,000 h, $n_2 = 100$ rpm

*2 (max. 1000 cycles an hour. T_{2B} share $< 5\%$ of the total running time)

*3 (max. 1000 cycles during the lifetime of the gears)

*4 relative to the drive shaft

Fluid grease lubrication (lifetime-lubricated)

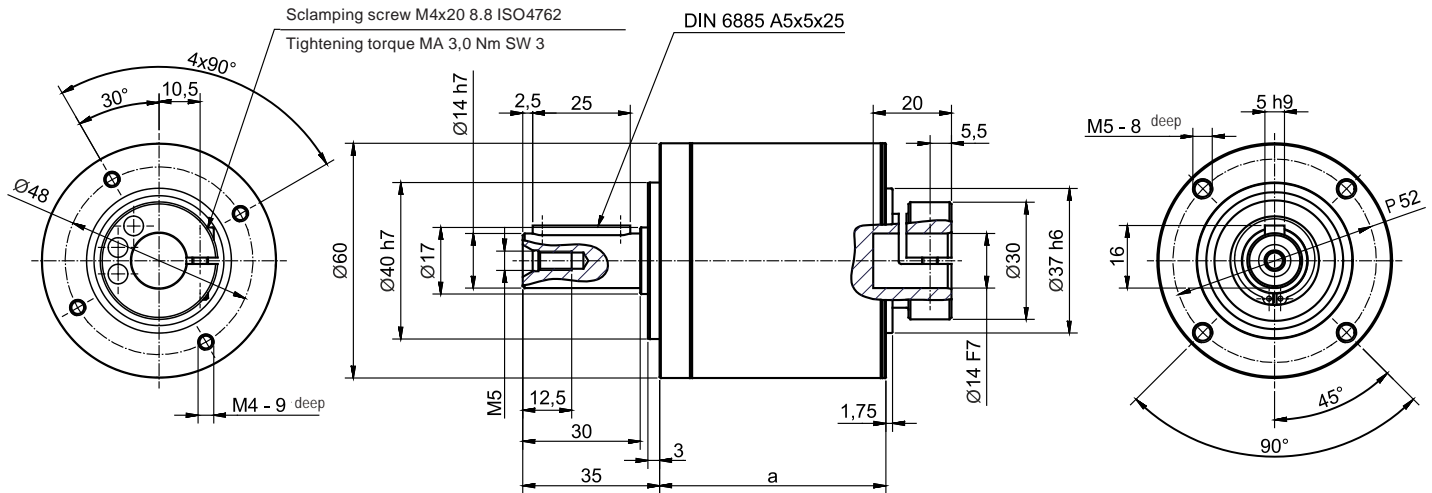
Any installation position

Sound pressure level at a distance of 1 m, measured at a drive speed of 3000 rpm < 65 db(A)

Max. axial force relative to the centre of the output shaft: 200 N, $n_2 = 100$ rpm

Max. radial force relative to the centre of the output shaft: 200 N, $n_2 = 100$ rpm

Temperature range: -25 °C to $+90$ °C



RPS060 Planetary Gear

Dimensions with gear stages	a	Weight
1-stage	58 mm	0,9 kg
2-stage	83 mm	1,2 kg
3-stage	108 mm	1,6 kg

RPS060 Performance Data

i tot.	Stages	Nominal drive speed	Max. drive speed	Nominal torque	Max. acceleration torque	Emergency stop torque	Circumferential backlash	Efficiency level	Torsional stiffness	Mass moment of inertia
		n_1 [rpm]	n_1 max. [rpm]	T_{2N}^{*1} [Nm]	T_{2B}^{*2} [Nm]	T_{2EMG}^{*3} [Nm]	jt [arcmin]	η [%]	c_t [Nm/arcmin]	J_1^{*4} [kgcm ²]
3	1	3000	6000	30	60	80	<= 10	> 97	1,5	0,17
4	1	3000	6000	39	68	88	<= 10	> 97	1,5	0,13
5	1	3000	6000	28	56	74	<= 10	> 97	1,5	0,11
7	1	3000	6000	26	52	70	<= 10	> 97	1,5	0,1
8	1	3000	6000	27	54	72	<= 10	> 97	1,5	0,1
12	2	3000	6000	30	60	80	<= 12	> 94	1,5	0,17
15	2	3000	6000	30	60	80	<= 12	> 94	1,5	0,11
16	2	3000	6000	39	68	88	<= 12	> 94	1,5	0,13
20	2	3000	6000	39	68	88	<= 12	> 94	1,5	0,11
25	2	3000	6000	28	56	74	<= 12	> 94	1,5	0,11
32	2	3000	6000	39	68	88	<= 12	> 94	1,5	0,1
40	2	3000	6000	28	56	74	<= 12	> 94	1,5	0,1
49	2	3000	6000	26	52	70	<= 12	> 94	1,5	0,1
56	2	3000	6000	26	52	70	<= 12	> 94	1,5	0,1
64	2	3000	6000	27	54	72	<= 12	> 94	1,5	0,1
80	3	3000	6000	39	68	88	<= 15	> 91	1,5	0,11
100	3	3000	6000	39	68	88	<= 15	> 91	1,5	0,11
125	3	3000	6000	28	56	74	<= 15	> 91	1,5	0,11
160	3	3000	6000	39	68	88	<= 15	> 91	1,5	0,1
200	3	3000	6000	28	56	74	<= 15	> 91	1,5	0,1
256	3	3000	6000	39	68	88	<= 15	> 91	1,5	0,1
512	3	3000	6000	27	54	72	<= 15	> 91	1,5	0,1

*1 Service life 20,000 h, $n_2 = 100$ rpm

*2 (max 1000 cycles an hour. T2B share <5% of the total running time)

*3 (max. 1000 cycles during the lifetime of the gears)

*4 relative to the drive shaft

Fluid grease lubrication (lifetime-lubricated)

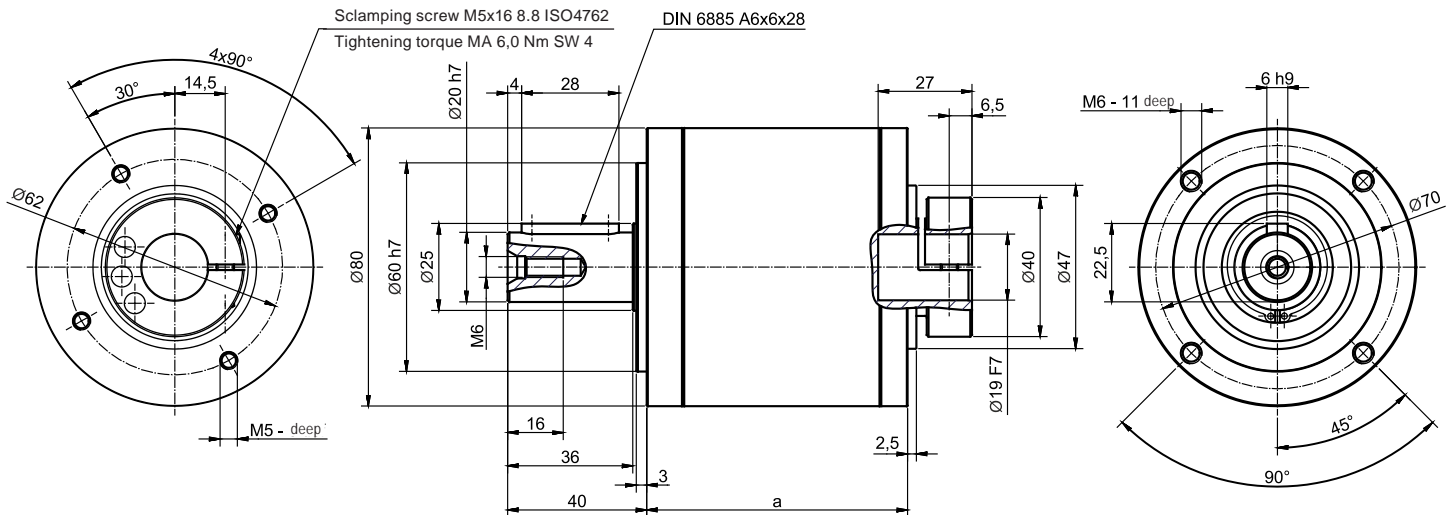
Any installation position

Sound pressure level at a distance of 1 m, measured at a drive speed of 3000 rpm < 65 db(A)

Max. axial force relative to the centre of the output shaft: 500 N, $n_2 = 100$ rpm

Max. radial force relative to the centre of the output shaft: 400 N, $n_2 = 100$ rpm

Temperature range: -25 °C to +90 °C



RPS080 Planetary Gear

Dimensions with gear stages	a	Weight
1-stage	75 mm	1,9 kg
2-stage	104 mm	2,6 kg
3-stage	133 mm	3,4 kg

RPS080 Performance Data

i tot.	Stages	Nominal drive speed n_1 [rpm]	Max. drive speed n_1 max. [rpm]	Nominal torque T_{2N}^{-1} [Nm]	Max. acceleration torque T_{2B}^{-2} [Nm]	Emergency stop torque T_{2EMG}^{-3} [Nm]	Circumferential backlash jt [arcmin]	Efficiency level η [%]	Torsional stiffness c_t [Nm/arcmin]	Mass moment of inertia J_1^{-4} [kgcm ²]
3	1	3500	6000	70	140	190	≤ 7	> 97	5,8	0,7
4	1	3500	6000	92	184	236	≤ 7	> 97	6	0,53
5	1	3500	6000	67	134	181	≤ 7	> 97	5,6	0,44
7	1	3500	6000	65	130	175	≤ 7	> 97	5,5	0,39
8	1	3500	6000	64	128	172	≤ 7	> 97	5,5	0,37
12	2	3500	6000	70	140	190	≤ 9	> 94	6	0,7
15	2	3500	6000	70	140	190	≤ 9	> 94	5,8	0,45
16	2	3500	6000	92	184	236	≤ 9	> 94	6	0,53
20	2	3500	6000	92	184	236	≤ 9	> 94	6	0,44
25	2	3500	6000	67	134	181	≤ 9	> 94	5,6	0,44
32	2	3500	6000	92	184	236	≤ 9	> 94	6	0,37
40	2	3500	6000	67	134	181	≤ 9	> 94	5,6	0,37
49	2	3500	6000	65	130	175	≤ 9	> 94	5,5	0,39
56	2	3500	6000	65	130	175	≤ 9	> 94	5,5	0,39
64	2	3500	6000	64	128	172	≤ 9	> 94	5,5	0,37
80	3	3500	6000	92	184	236	≤ 11	> 91	6	0,45
100	3	3500	6000	92	184	236	≤ 11	> 91	6	0,44
125	3	3500	6000	67	134	181	≤ 11	> 91	5,6	0,44
160	3	3500	6000	92	184	236	≤ 11	> 91	6	0,37
200	3	3500	6000	67	134	181	≤ 11	> 91	5,6	0,37
256	3	3500	6000	92	184	236	≤ 11	> 91	6	0,37
512	3	3500	6000	64	128	172	≤ 11	> 91	5,5	0,37

*1 Service life 20,000 h, $n_2 = 100$ rpm

*2 (max. 1000 cycles an hour. T2B share $< 5\%$ of the total running time)

*3 (max. 1000 cycles during the lifetime of the gears)

*4 relative to the drive shaft

Fluid grease lubrication (lifetime-lubricated)

Any installation position

Sound pressure level at a distance of 1 m, measured at a drive speed of 3000 rpm < 65 db(A)

Max. axial force relative to the centre of the output shaft: 1000 N, $n_2 = 100$ rpm

Max. radial force relative to the centre of the output shaft: 750 N, $n_2 = 100$ rpm

Temperature range: -25 °C to $+90$ °C



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