PRODUCT OVERVIEW & CONFIGURATION

TNR60 • Precision Planetary Gear Reducer



MOTOR COMPATIBILITY

NEMA23 (57mm) Stepper Motors

60mm Servo Motors

INPUT SHAFT OPTIONS

8mm input - NEMA23 stepper configuration

14mm input - 60mm servo configuration

L1: 4:1 to 10:1 | L2: 20:1 to 70:1

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TECHNICAL SPECIFICATIONS

Parameter	L1 - Single Stage	L2 - Two Stages
Gearbox length	75mm	90mm
Reduction ratios	4:1 / 5:1 / 7:1 / 10:1	20:1 / 25:1 / 35:1 / 40:1 / 50:1 / 70:1
Backlash	≤8arcmin	≤12arcmin
Full-load efficiency	≥96%	≥94%
Rated input speed	3000rpm	3000rpm
Maximum input speed	6000rpm	6000rpm
Allowable radial load	450N	450N
Allowable axial load	220N	220N
Operating temperature	-20°C to +80°C	-20°C to +80°C
Noise	58dB	58dB
Service life	20000h	20000h
Protection rating	IP54	IP54

OUTPUT TORQUE & OPERATING INSTRUCTIONS

OUTPUT TORQUE BY REDUCTION RATIO

Reduction ratio	4:1	5:1	7:1	10:1	20:1	25:1	35:1	40:1	50:1	70:1
Rated torque (Nm)	40	40	34	16	40	40	34	40	40	34
Fault-stop torque (Nm)	80	80	68	32	80	80	68	80	80	68

INSTALLATION

1. Confirm the motor interface and gearbox input shaft diameter.
2. Inspect motor shaft, mounting flange, and mating surfaces.
3. Align the motor shaft with the gearbox input without forcing the fit.
4. Secure mounting fasteners evenly and verify the assembly is aligned.
5. Rotate the system slowly and confirm smooth operation before full load.

STARTUP, USE & MAINTENANCE

- Start at low speed and increase speed gradually.
- Keep input speed within 3000rpm rated and 6000rpm maximum.
- Operate within the specified radial and axial load limits.
- Check mounting bolts, vibration, noise, and temperature regularly.
- Use the specified permanent lubrication arrangement; avoid opening the sealed reducer.

TNR60 Planetary Gearbox



Core Specifications

Technical level	L1 Stage	L2 Stage
L length	75 mm	90 mm
Reduction ratio	4 / 5 / 7 / 10	20 / 25 / 35 / 40 / 50 / 70
Rated output torque	3 – 9 Nm	5 – 9 Nm
Maximum output torque	6 – 18 Nm	10 – 18 Nm
Efficiency	≥ 96%	≥ 94%
Standard gap	≤ 8 arcmin	≤ 12 arcmin

- Planetary Structure
- Stable Transmission
- Multiple Reduction Ratios
- IP54 Protection

Performance Parameters

Rated input speed	3000 rpm
Maximum input speed	6000 rpm
Allowable radial force	450 N
Allowable axial force	220 N

Other Specifications

Usage temperature	–20°C ~ +80°C
Installation method	Arbitrary
Average life span	Long life lubrication
Lubrication method	Permanent Lubrication
Service life	20000 h
Protection grade	IP54
Noise	58 dB

Output Torque Reference

Reduction ratio	4	5	7	10	20	25	35	40	50	70
Nominal output torque (Nm)	40	40	34	16	40	40	34	40	40	34
Fault stop torque (Nm)	80	80	68	32	80	80	68	80	80	68

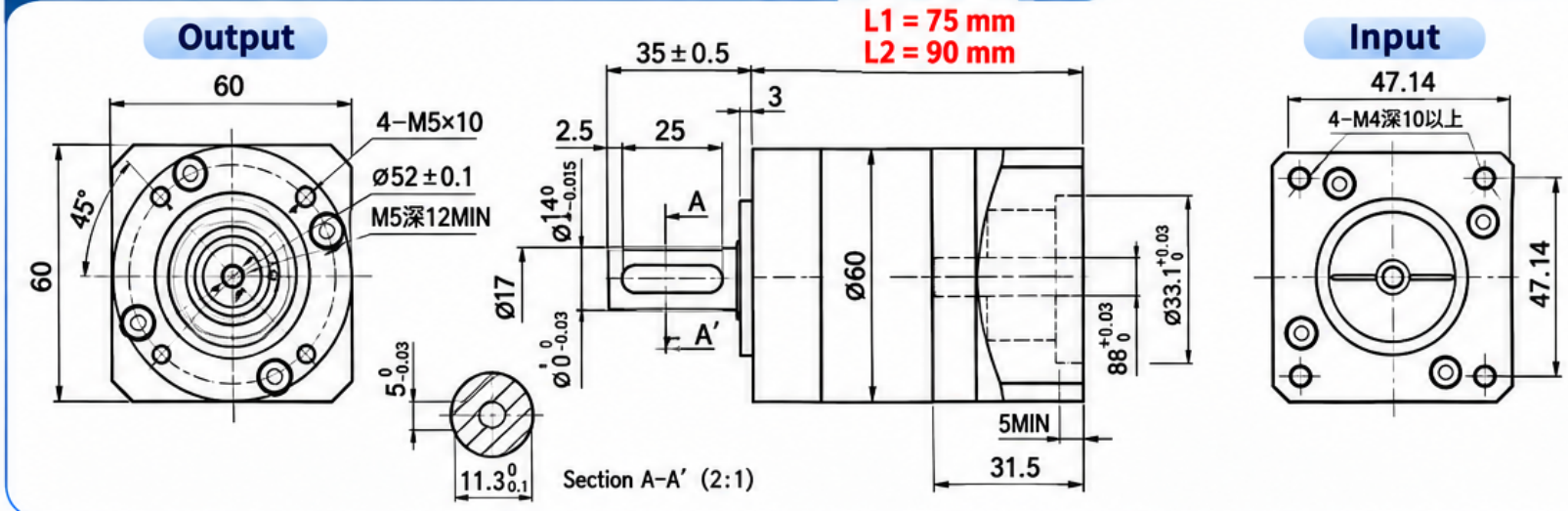
TNR60 Planetary Gearbox Dimension Drawings



- Planetary Structure
- Stable Transmission
- Multiple Reduction Ratios
- IP54 Protection

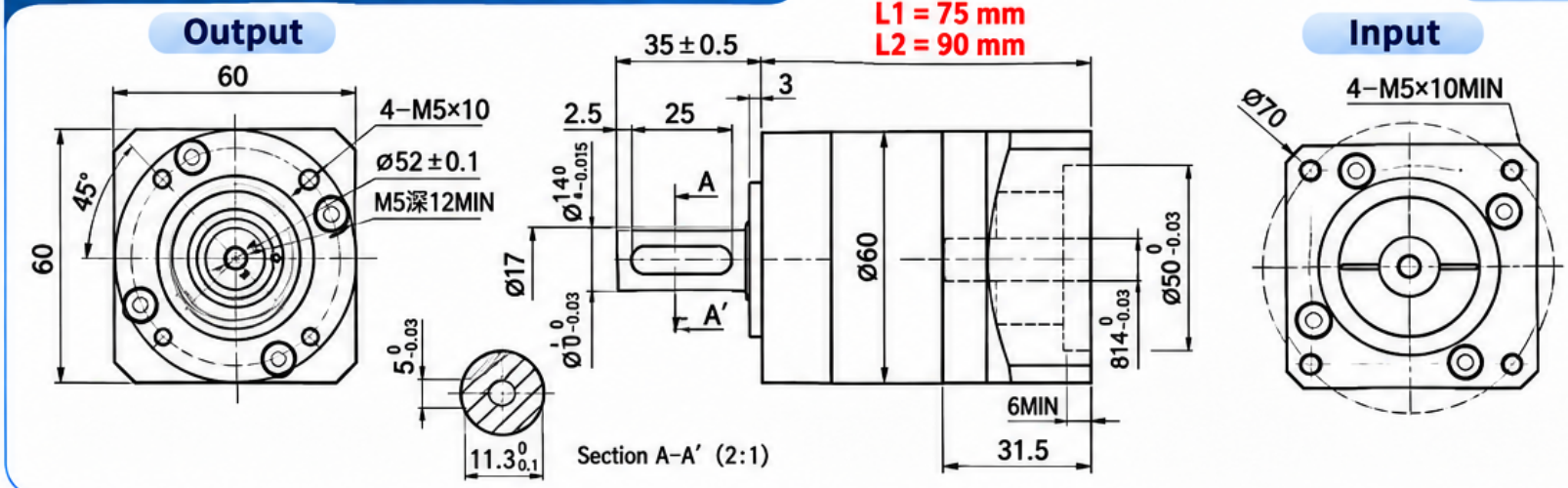
8mm Input for NEMA23 57mm Flange Stepper Motor

Unit: mm



14mm Input for 60mm Servo Motor

Unit: mm



Speed Ratio

L1 Stage speed ratio: 4:1, 5:1, 7:1, 10:1

L2 Stage speed ratio: 20:1, 25:1, 35:1, 40:1, 50:1, 70:1