

Precision Planetary Reducer

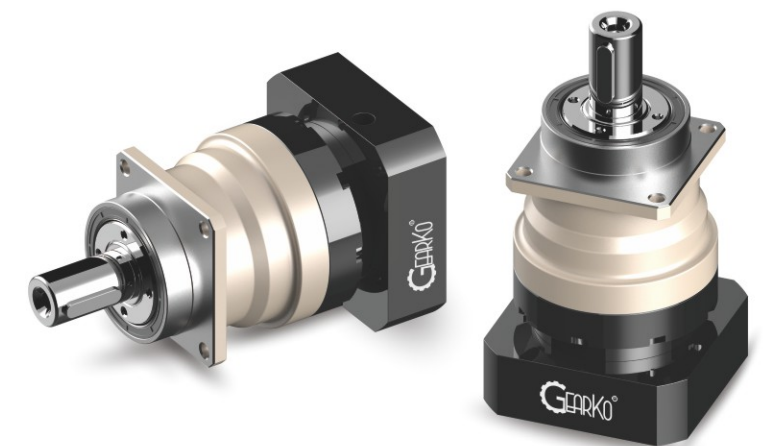


TF series planetary reducer has the characteristics of high rigidity, high precision (single stage can achieve less than 1 arcmin), high transmission efficiency (single stage at 97% -98%), high torque / volume ratio, and lifetime maintenance-free.

GEARKO[®]

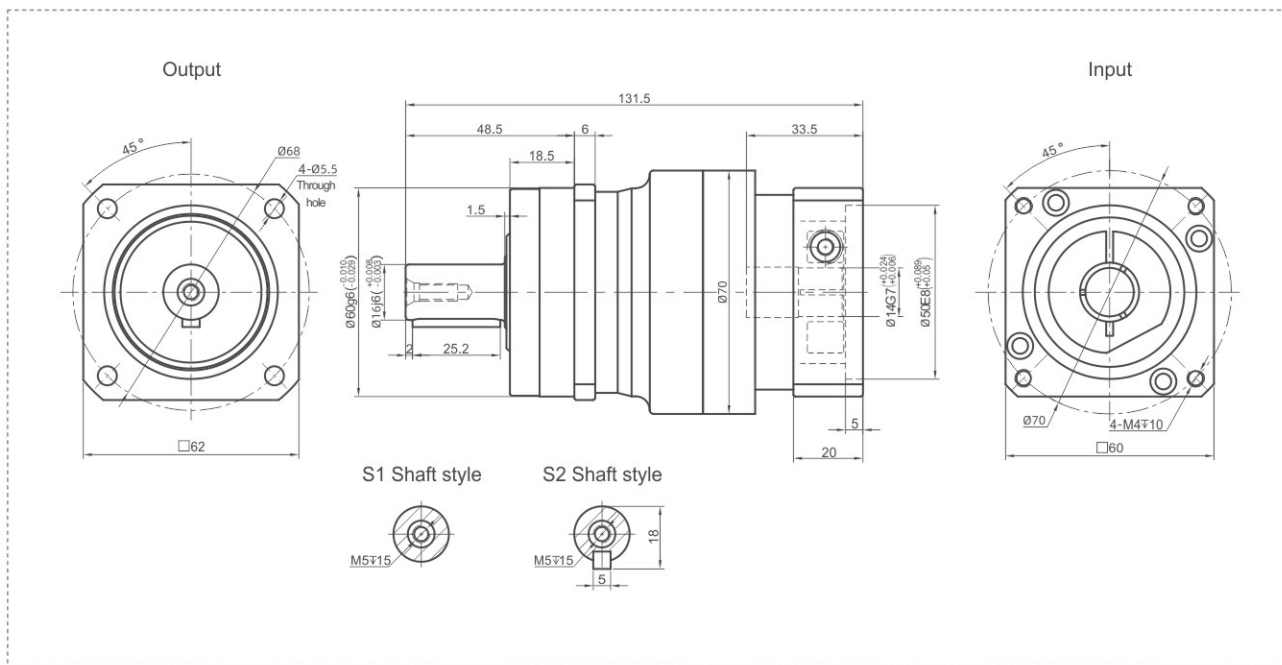
DRIVES

THE PRECISION

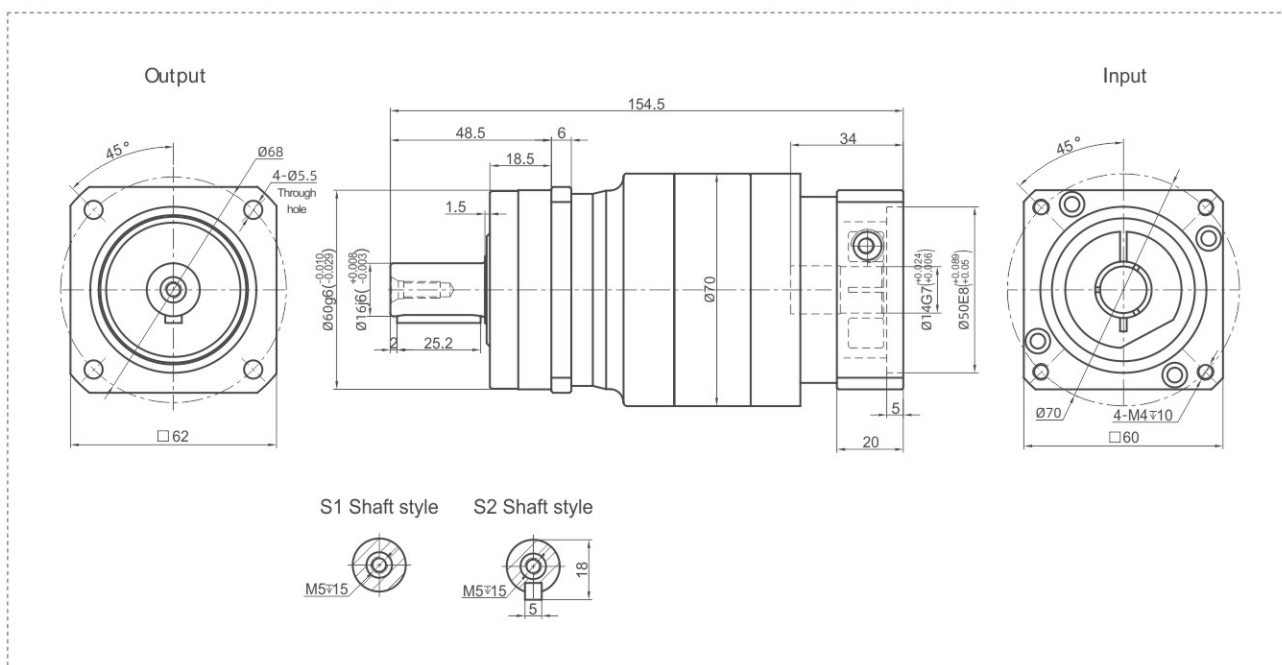


TF060 Series

TF060 One Stage



TF060 Two Stage



Performance Data

The TF series reducer targets those applications requiring extremely smooth operation even at high axial or radial load at high speed. The enhanced load bearing capacity guarantees its design precision at almost any demanding condition.

TF060		One Stage										Two Stage										
Speed Ratio	i	3	4	5	6	7	8	9	10	15	20	25	30	35	40	50	60	70	80	100		
Nominal Output Torque	T_1	Nm	52	50	58	55	50	45	-	42	52	50	58	55	50	45	58	55	50	45	42	
Emergency Stop Torque	T_2	Nm	$T_1 \times 3$										$T_1 \times 3$									
Nominal Input Speed	S_1	rpm	5000										5000									
Maximum Input Speed	S_2	rpm	10000										10000									
Maximum Output Torque	T_4	Nm	$T_1 \times 3 \times 60\%$										$T_1 \times 3 \times 60\%$									
Maximum Radial Force	F_a	N	1400										1400									
Maximum Axial Force	F_b	N	1100										1100									
Torsional Rigidity	-	Nm/arcmin	7										7									
Efficiency	η	%	≥ 97										≥ 94									
Service Life	-	h	30000										30000									
Noise	-	dB	≤ 58										≤ 60									
Weight	-	Kg	1.6										2.1									
Backlash	P0	-	-										-									
	P1	arcmin	≤ 3										≤ 5									
	P2	-	≤ 5										≤ 7									
Operating Temperature	-	$^{\circ}\text{C}$	$-20 \sim 90$										$-20 \sim 90$									
Lubrication	-	-	Synthetic Grease										Synthetic Grease									
Protection Class	-	-	IP65										IP65									
Mounting Position	-	-	Any Direction										Any Direction									
Moment of Inertia	J	kg.cm ²	0.16					0.14					0.13					0.13				

Notes:

- Speed ratio ($i = S_{in}/S_{out}$)
- When the output speed is 100 rpm, it acts on the center of the output shaft.
- For continuous operation, the service life is no less than 10,000 hours.
- The noise value was measured based on the input rotational speed of 3000 rpm, $i=10$.

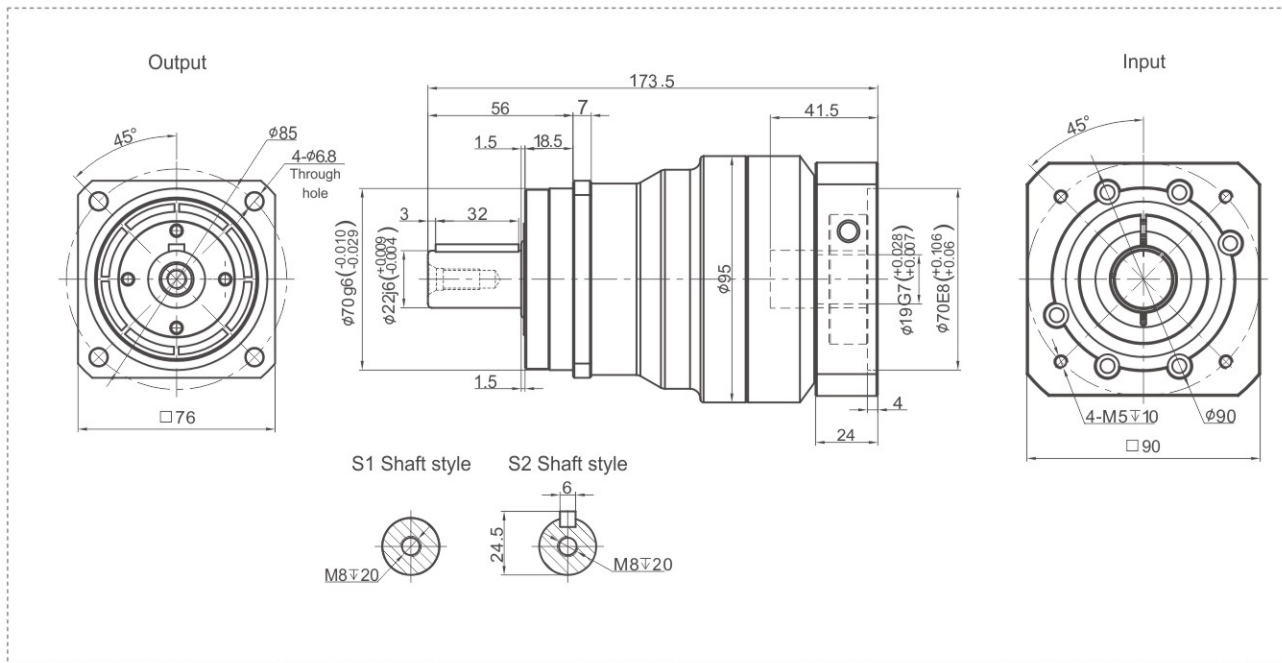
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TF Series - High-end Design and Premium Performance

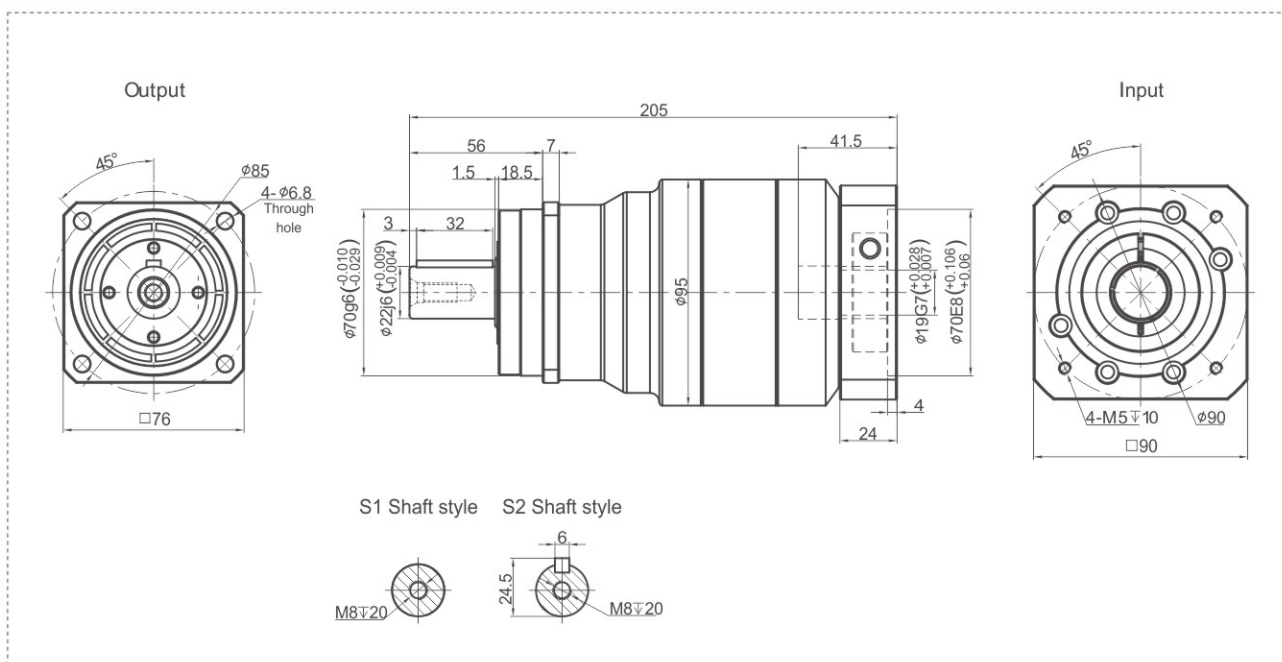


TF075 Series

TF075 One Stage



TF075 Two Stage



Performance Data

The TF series reducer targets those applications requiring extremely smooth operation even at high axial or radial load at high speed. The enhanced load bearing capacity guarantees its design precision at almost any demanding condition.

TF075		One Stage										Two Stage										
Speed Ratio	i	3	4	5	6	7	8	9	10	15	20	25	30	35	40	50	60	70	80	100		
Nominal Output Torque	T_1	Nm	130	140	160	148	140	123	-	102	130	140	160	148	140	123	160	148	140	123	102	
Emergency Stop Torque	T_2	Nm	$T_1 \times 3$										$T_1 \times 3$									
Nominal Input Speed	S_1	rpm	4000										4000									
Maximum Input Speed	S_2	rpm	8000										8000									
Maximum Output Torque	T_4	Nm	$T_1 \times 3 \times 60\%$										$T_1 \times 3 \times 60\%$									
Maximum Radial Force	F_a	N	4100										4100									
Maximum Axial Force	F_b	N	3700										3700									
Torsional Rigidity	-	Nm/arcmin	14										14									
Efficiency	η	%	≥ 97										≥ 94									
Service Life	-	h	30000										30000									
Noise	-	dB	≤ 60										≤ 60									
Weight	-	Kg	3.9										5.1									
Backlash	P0		≤ 1										-									
	P1	arcmin	≤ 3										≤ 5									
	P2		≤ 5										≤ 7									
Operating Temperature	-	$^{\circ}\text{C}$	-20-90										-20-90									
Lubrication	-		Synthetic Grease										Synthetic Grease									
Protection Class	-		IP65										IP65									
Mounting Position	-		Any Direction										Any Direction									
Moment of Inertia	J	kg.cm ²	0.61	0.48	0.47	0.45	0.44					0.47								0.44		

Notes:

- Speed ratio ($i = S_{in}/S_{out}$)
- When the output speed is 100 rpm, it acts on the center of the output shaft.
- For continuous operation, the service life is no less than 10,000 hours.
- The noise value was measured based on the input rotational speed of 3000 rpm, $i=10$.

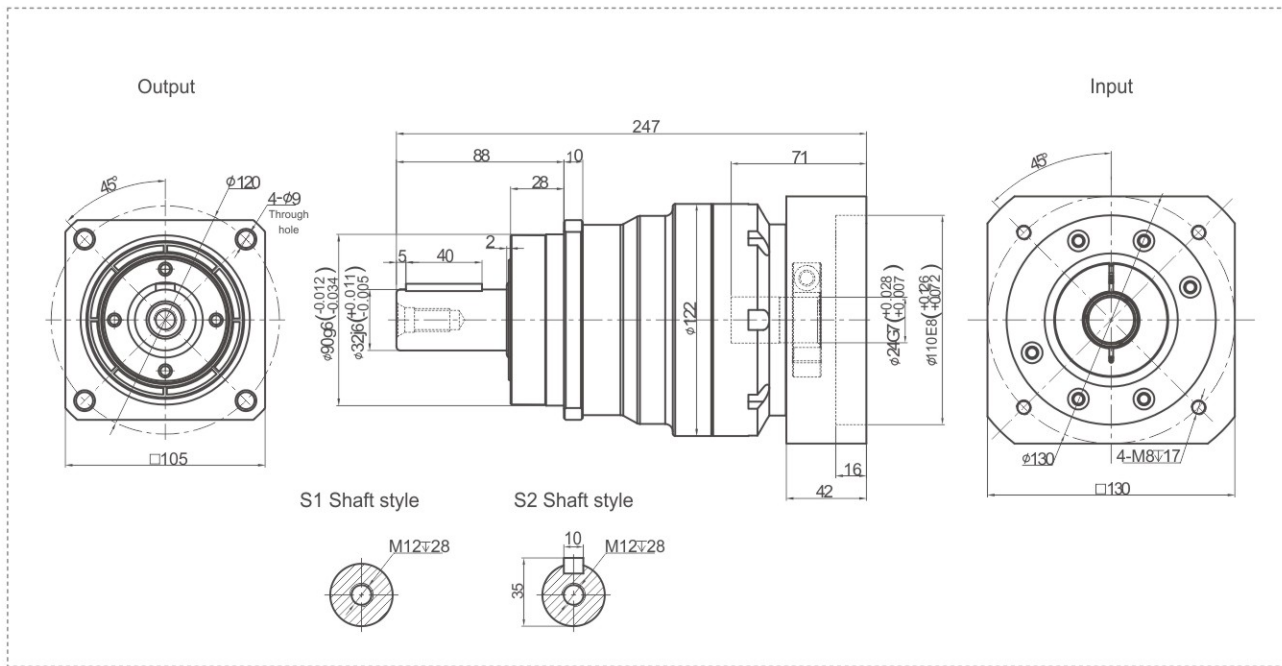
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TF Series - High-end Design and Premium Performance

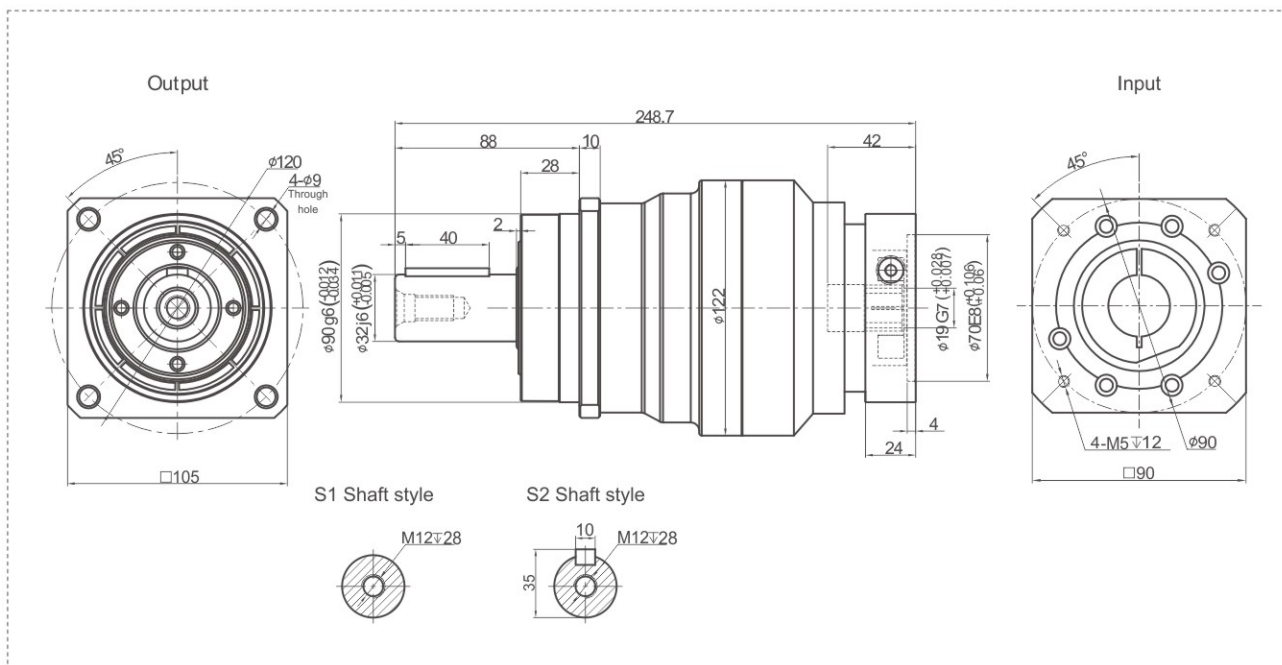


TF100 Series

TF100 One Stage



TF100 Two Stage



Performance Data

The TF series reducer targets those applications requiring extremely smooth operation even at high axial or radial load at high speed. The enhanced load bearing capacity guarantees its design precision at almost any demanding condition.

TF100		One Stage										Two Stage										
Speed Ratio	i	3	4	5	6	7	8	9	10	15	20	25	30	35	40	50	60	70	80	100		
Nominal Output Torque	T_1	Nm	210	290	333	310	300	260	-	235	210	290	333	310	300	260	333	310	300	260	235	
Emergency Stop Torque	T_2	Nm	$T_1 \times 3$										$T_1 \times 3$									
Nominal Input Speed	S_1	rpm	4000										4000									
Maximum Input Speed	S_2	rpm	8000										8000									
Maximum Output Torque	T_4	Nm	$T_1 \times 3 \times 60\%$										$T_1 \times 3 \times 60\%$									
Maximum Radial Force	F_a	N	9200										9200									
Maximum Axial Force	F_b	N	5820										5820									
Torsional Rigidity	-	Nm/arcmin	25										25									
Efficiency	η	%	≥ 97										≥ 94									
Service Life	-	h	30000										30000									
Noise	-	dB	≤ 63										≤ 63									
Weight	-	Kg	8.9										8.1									
Backlash	P0		≤ 1										≤ 3									
	P1	arcmin	≤ 3										≤ 5									
	P2		≤ 5										≤ 7									
Operating Temperature	-	$^{\circ}\text{C}$	-20-90										-20-90									
Lubrication	-		Synthetic Grease										Synthetic Grease									
Protection Class	-		IP65										IP65									
Mounting Position	-		Any Direction										Any Direction									
Moment of Inertia	J	kg.cm ²	3.25	2.74	2.71	2.65	2.62	2.58	-	2.57	0.47										0.44	

Notes:

- Speed ratio ($i = S_{in}/S_{out}$)
- When the output speed is 100 rpm, it acts on the center of the output shaft.
- For continuous operation, the service life is no less than 10,000 hours.
- The noise value was measured based on the input rotational speed of 3000 rpm, $i=10$.

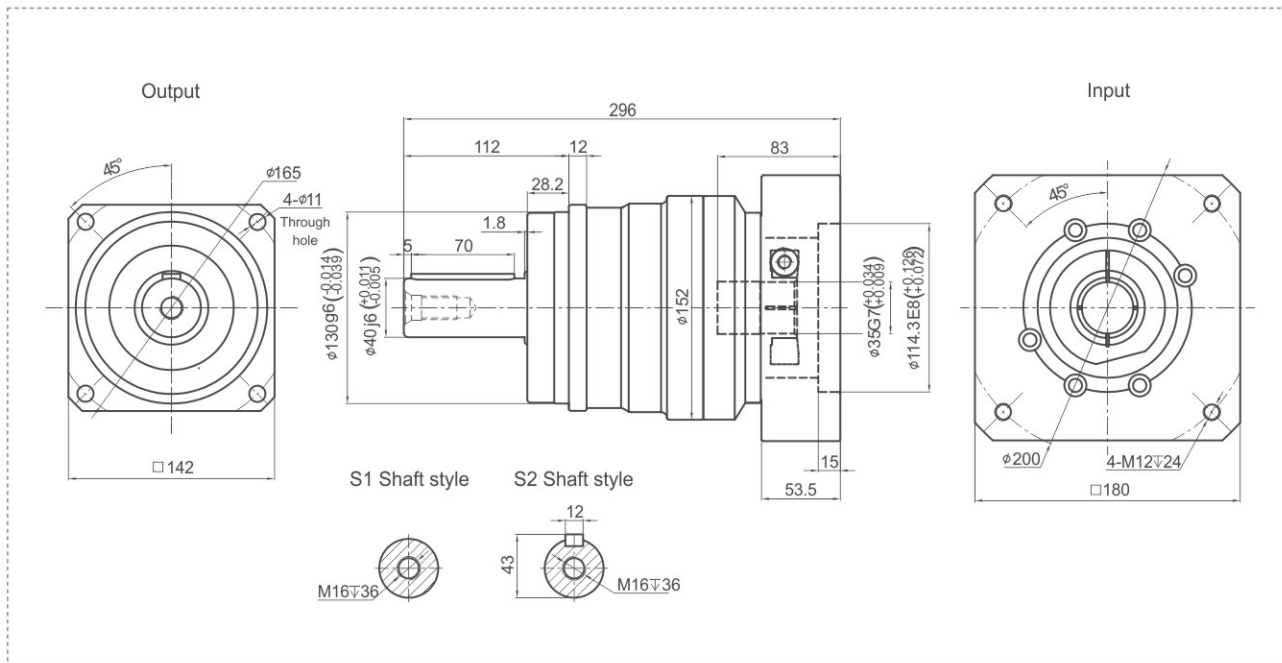
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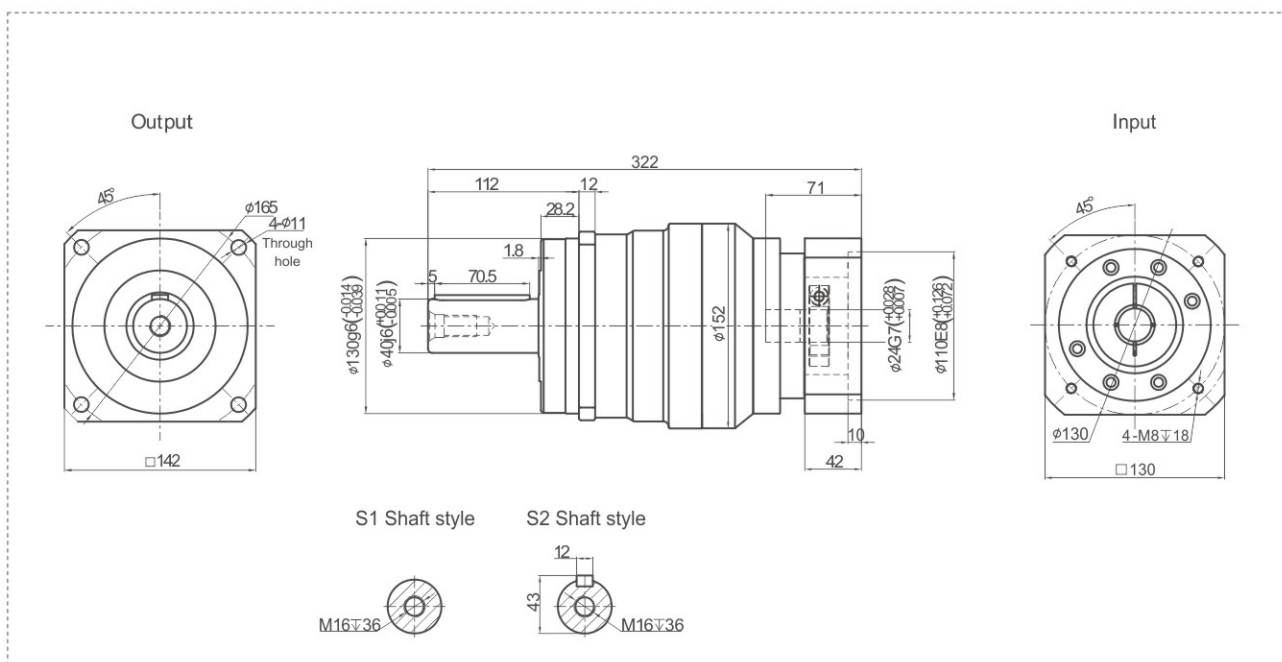


TF140 Series

TF140 One Stage



TF140 Two Stage



Performance Data

The TF series reducer targets those applications requiring extremely smooth operation even at high axial or radial load at high speed. The enhanced load bearing capacity guarantees its design precision at almost any demanding condition.

TF140		One Stage										Two Stage										
Speed Ratio	i	3	4	5	6	7	8	9	10	15	20	25	30	35	40	50	60	70	80	100		
Nominal Output Torque	T_1	Nm	340	545	650	600	555	500	-	460	340	545	650	600	555	500	650	600	555	500	460	
Emergency Stop Torque	T_2	Nm	$T_1 \times 3$										$T_1 \times 3$									
Nominal Input Speed	S_1	rpm	3000										3000									
Maximum Input Speed	S_2	rpm	6000										6000									
Maximum Output Torque	T_4	Nm	$T_1 \times 3 \times 60\%$										$T_1 \times 3 \times 60\%$									
Maximum Radial Force	F_a	N	14000										14000									
Maximum Axial Force	F_b	N	11400										11400									
Torsional Rigidity	-	Nm/arcmin	50										50									
Efficiency	η	%	≥ 97										≥ 94									
Service Life	-	h	30000										30000									
Noise	-	dB	≤ 65										≤ 65									
Weight	-	Kg	18										16.6									
Backlash	P0		≤ 1										≤ 3									
	P1	arcmin	≤ 3										≤ 5									
	P2		≤ 5										≤ 7									
Operating Temperature	-	$^{\circ}\text{C}$	-20-90										-20-90									
Lubrication	-		Synthetic Grease										Synthetic Grease									
Protection Class	-		IP65										IP65									
Mounting Position	-		Any Direction										Any Direction									
Moment of Inertia	J	kg.cm ²	9.2	7.5	7.4	7.2	7.1	7.0	-	7.0			2.71							2.57		

Notes:

- Speed ratio ($i = S_{in}/S_{out}$)
- When the output speed is 100 rpm, it acts on the center of the output shaft.
- For continuous operation, the service life is no less than 10,000 hours.
- The noise value was measured based on the input rotational speed of 3000 rpm, $i=10$.

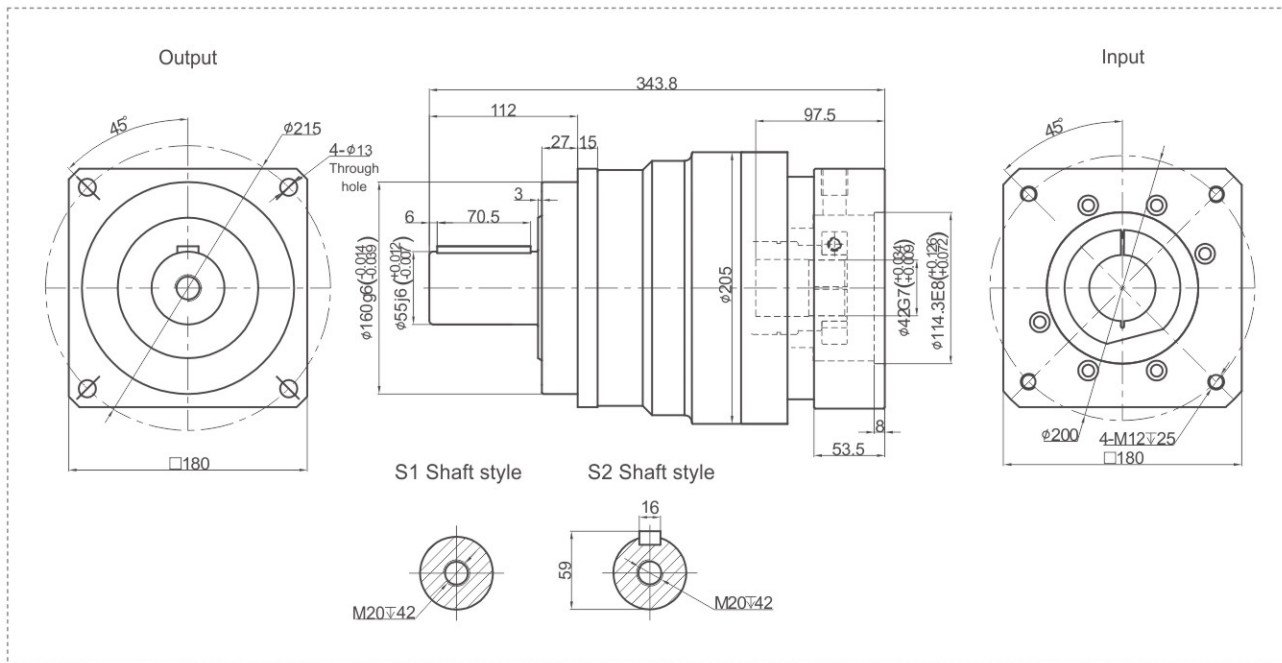
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TF Series - High-end Design and Premium Performance

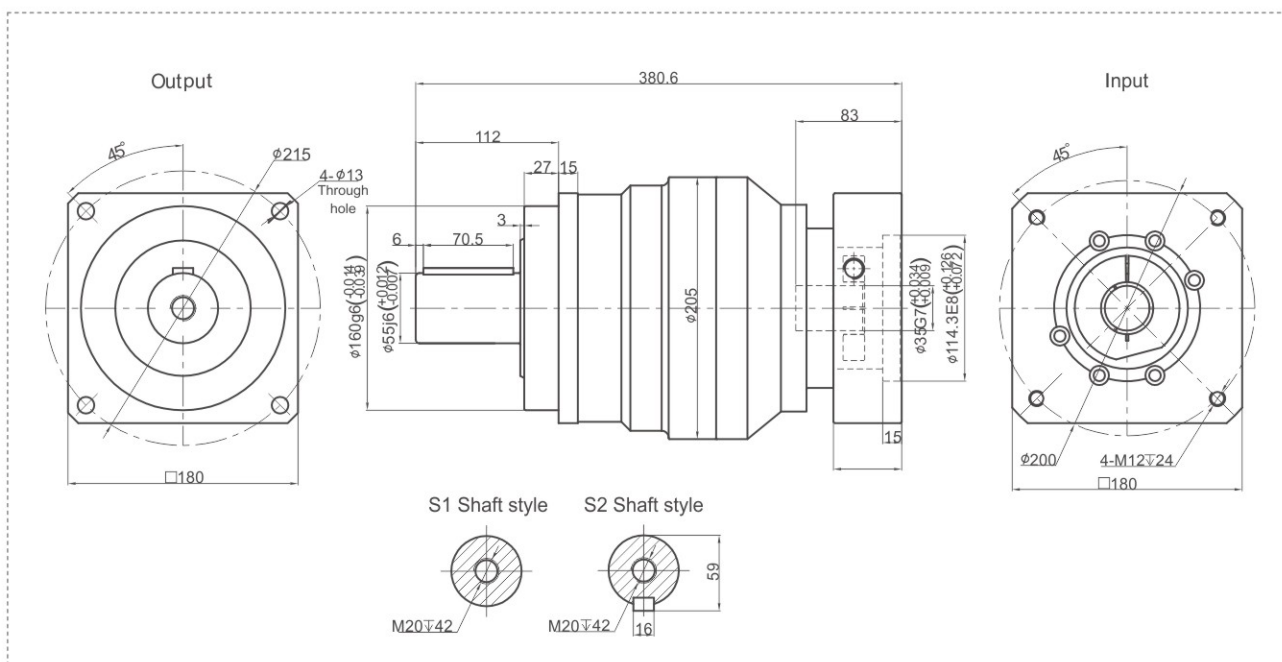


TF180 Series

TF180 One Stage



TF180 Two Stage



Performance Data

The TF series reducer targets those applications requiring extremely smooth operation even at high axial or radial load at high speed. The enhanced load bearing capacity guarantees its design precision at almost any demanding condition.

TF180		One Stage										Two Stage									
Speed Ratio	i	3	4	5	6	7	8	9	10	15	20	25	30	35	40	50	60	70	80	100	
Nominal Output Torque	T_1 Nm	590	1050	1200	1108	1100	1000	-	910	590	1050	1200	1108	1100	1000	1200	1108	1100	1000	910	
Emergency Stop Torque	T_2 Nm	$T_1 \times 3$										$T_1 \times 3$									
Nominal Input Speed	S_1 rpm	3000										3000									
Maximum Input Speed	S_2 rpm	6000										6000									
Maximum Output Torque	T_4 Nm	$T_1 \times 3 \times 60\%$										$T_1 \times 3 \times 60\%$									
Maximum Radial Force	F_a N	18000										18000									
Maximum Axial Force	F_b N	19500										19500									
Torsional Rigidity	- Nm/arcmin	145										145									
Efficiency	η %	≥ 97										≥ 94									
Service Life	- h	30000										30000									
Noise	- dB	≤ 67										≤ 67									
Weight	- Kg	35.5										42									
Backlash	P0	≤ 1										≤ 3									
	P1	≤ 3										≤ 5									
	P2	≤ 5										≤ 7									
Operating Temperature	- °C	-20-90										-20-90									
Lubrication	-	Synthetic Grease										Synthetic Grease									
Protection Class	-	IP65										IP65									
Mounting Position	-	Any Direction										Any Direction									
Moment of Inertia	J kg.cm ²	28.98	23.67	23.29	22.75	22.48	22.59	-	22.51	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.03

Notes:

- Speed ratio ($i = S_{in}/S_{out}$)
- When the output speed is 100 rpm, it acts on the center of the output shaft.
- For continuous operation, the service life is no less than 10,000 hours.
- The noise value was measured based on the input rotational speed of 3000 rpm, $i=10$.

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