

## Precision Planetary Reducer

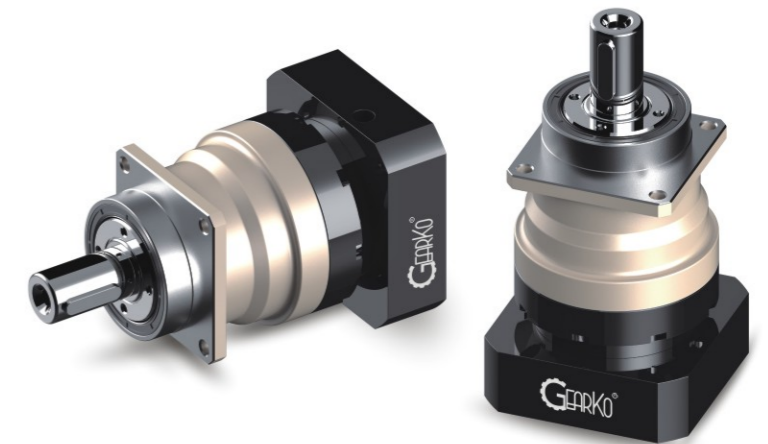


TF series planetary reducer has the characteristics of high rigidity, high precision (single stage can achieve less than 1 arcmin), high transmission efficiency (single stage at 97% -98%), high torque / volume ratio, and lifetime maintenance-free.

# GEARKO<sup>®</sup>

## DRIVES

# THE PRECISION

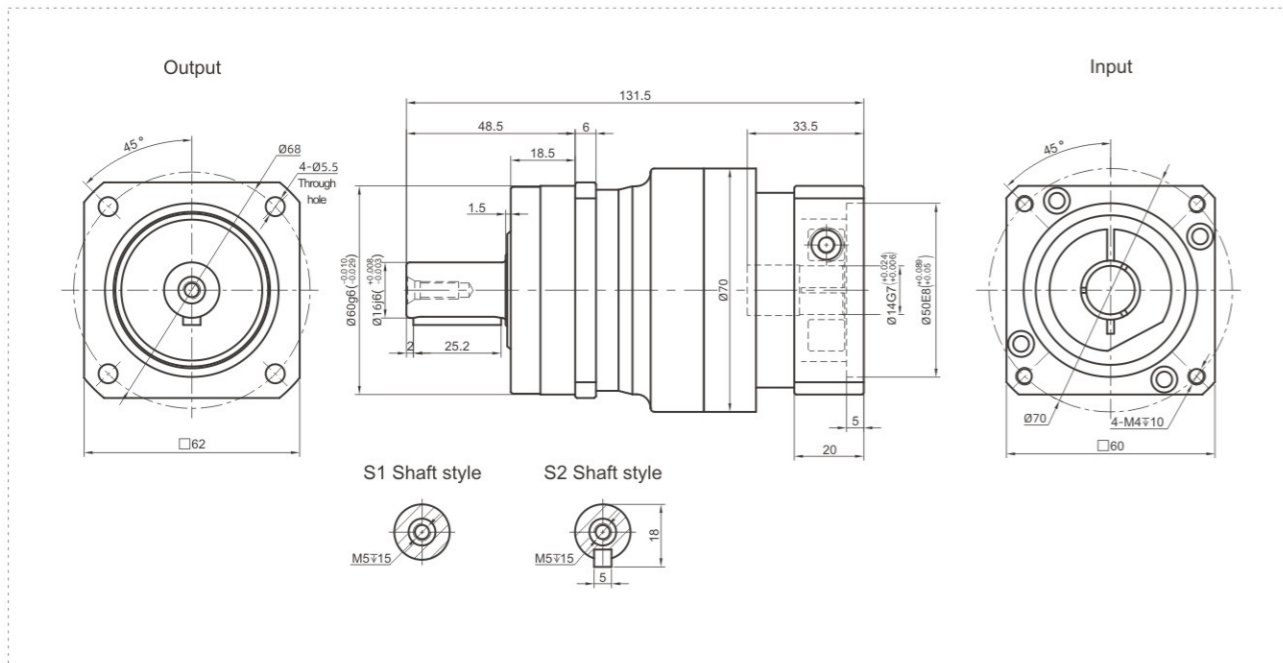


# TF Series - High-end Design and Premium Performance

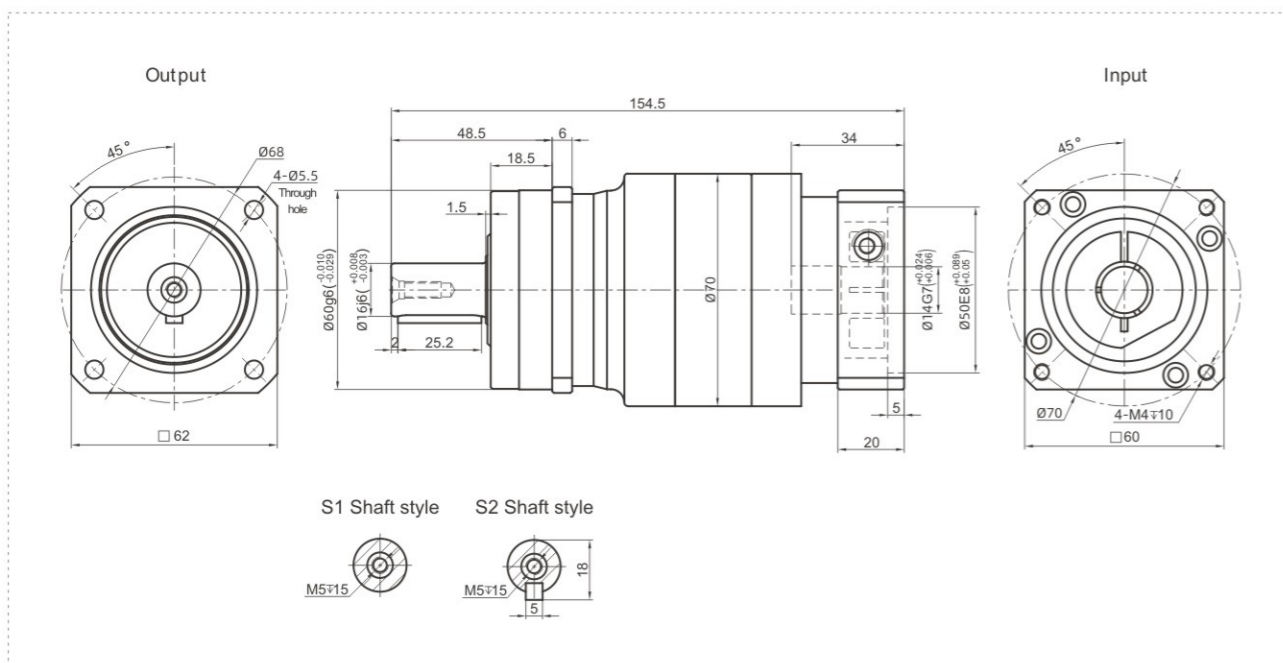


## TF060 Series

### 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	$\eta$	%	$\geq 97$										$\geq 94$									
Service Life	-	h	30000										30000									
Noise	-	dB	$\leq 58$										$\leq 60$									
Weight	-	Kg	1.6										2.1									
Backlash	P0	-	-										-									
	P1	arcmin	$\leq 3$										$\leq 5$									
	P2	-	$\leq 5$										$\leq 7$									
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 <sup>2</sup>	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,  $i=10$ .

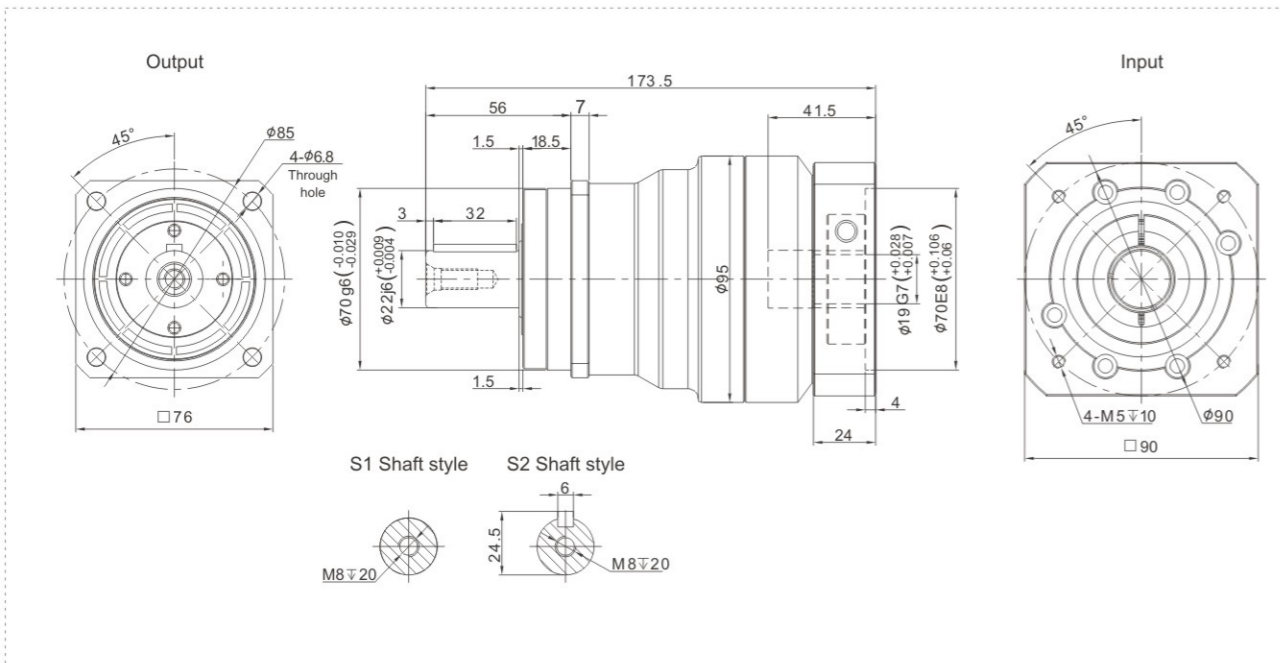
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# TF Series - High-end Design and Premium Performance

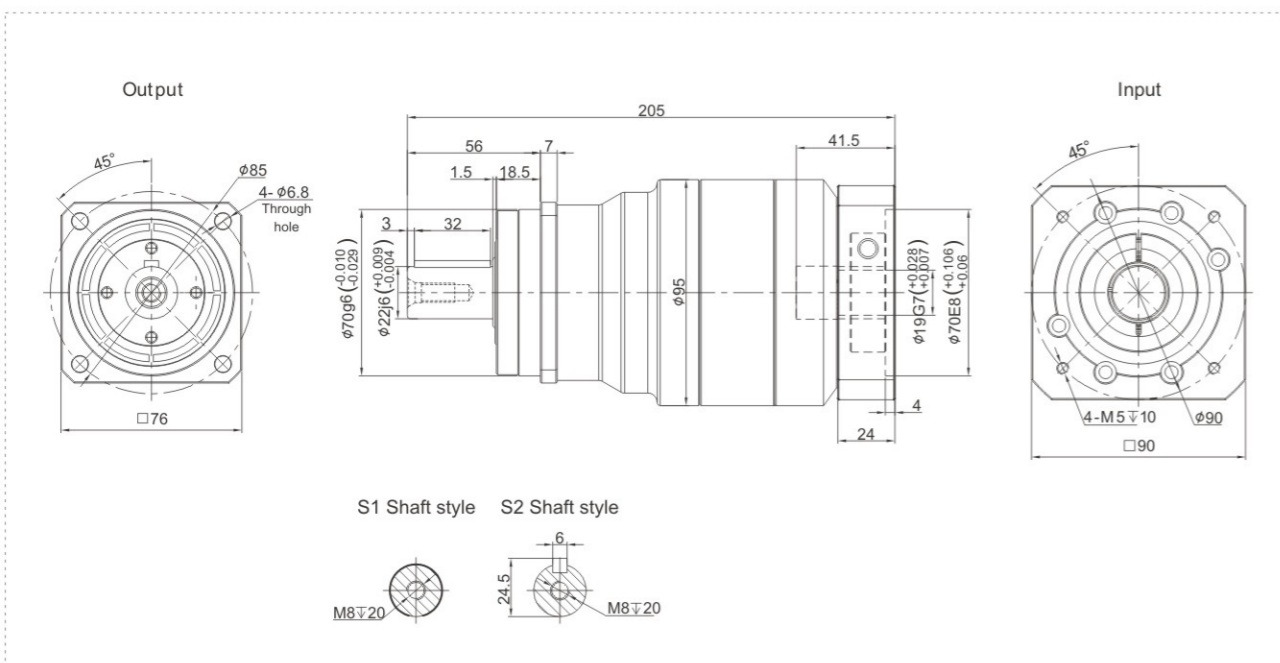


## TF075 Series

### 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	$\eta$	%	$\geq 97$										$\geq 94$									
Service Life	-	h	30000										30000									
Noise	-	dB	$\leq 60$										$\leq 60$									
Weight	-	Kg	3.9										5.1									
Backlash	P0		$\leq 1$										-									
	P1	arcmin	$\leq 3$										$\leq 5$									
	P2		$\leq 5$										$\leq 7$									
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 <sup>2</sup>	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,  $i=10$ .

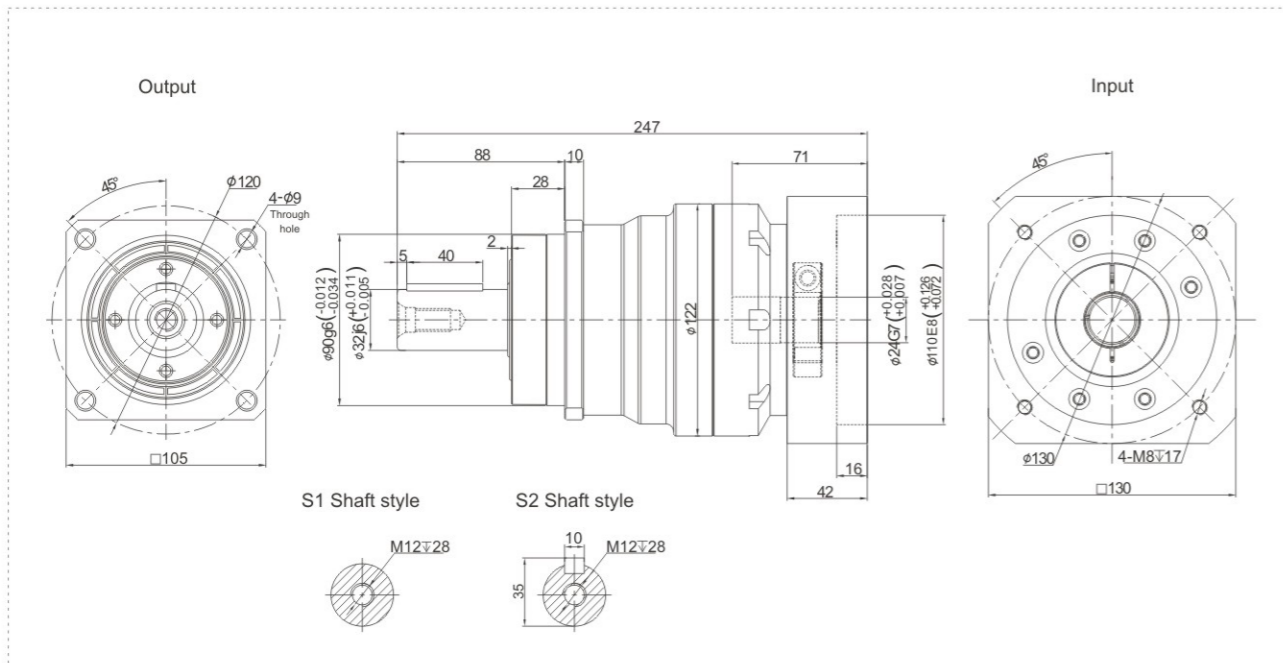
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# TF Series - High-end Design and Premium Performance

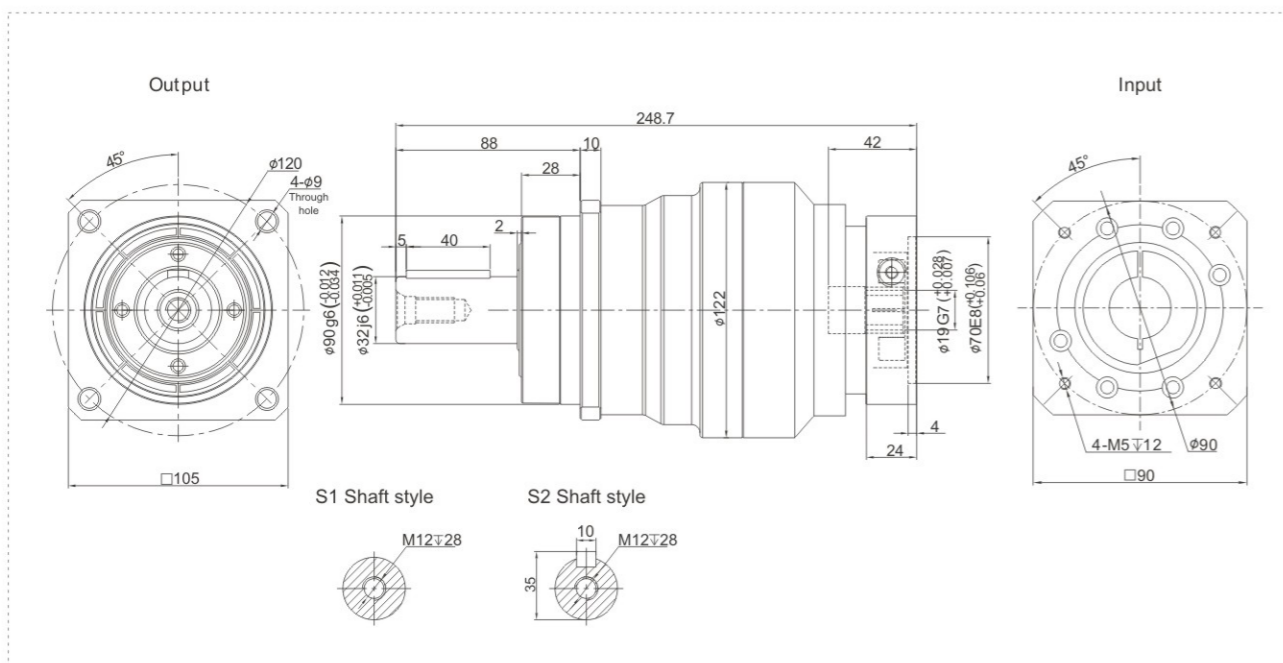


## TF100 Series

### 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	$\eta$	%	$\geq 97$										$\geq 94$									
Service Life	-	h	30000										30000									
Noise	-	dB	$\leq 63$										$\leq 63$									
Weight	-	Kg	8.9										8.1									
Backlash	P0		$\leq 1$										$\leq 3$									
	P1	arcmin	$\leq 3$										$\leq 5$									
	P2		$\leq 5$										$\leq 7$									
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 <sup>2</sup>	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,  $i=10$ .

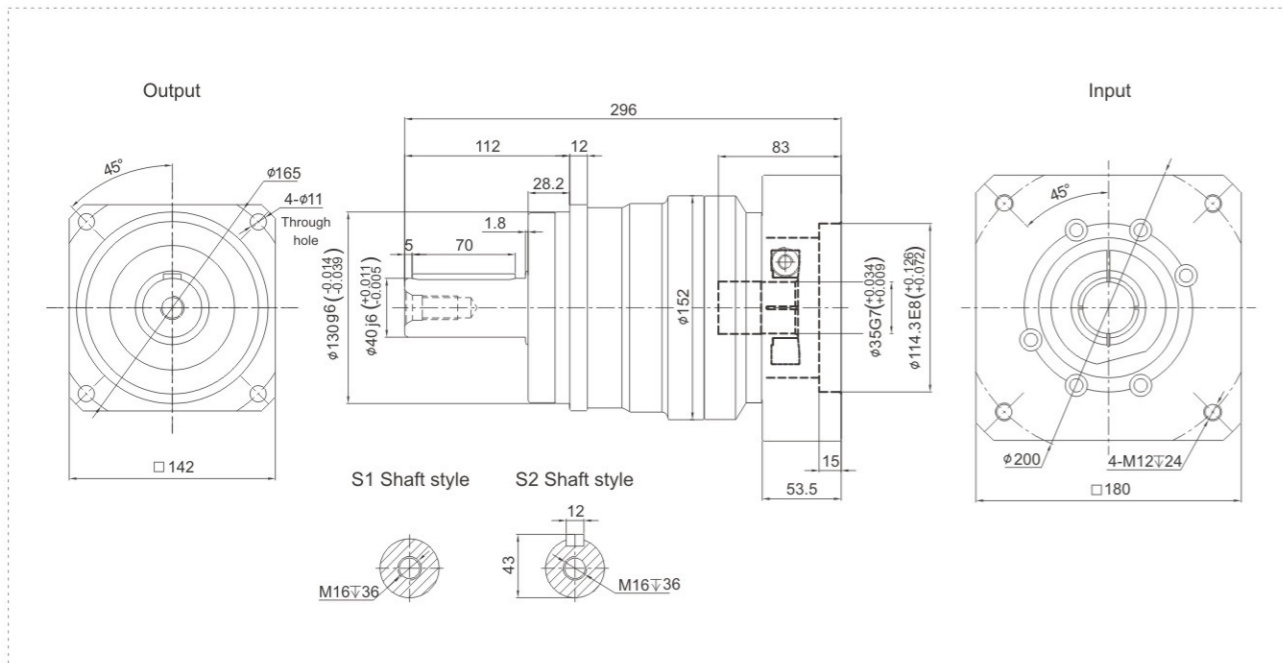
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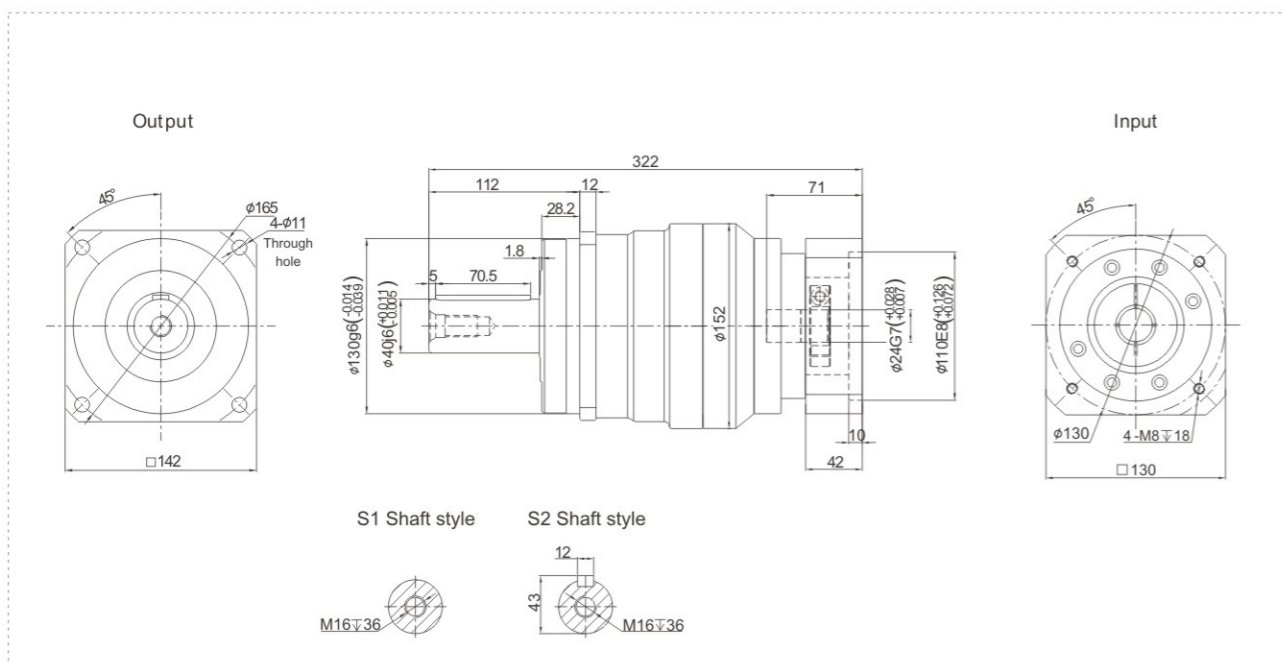


## TF140 Series

### 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	$\eta$	%	$\geq 97$												$\geq 94$									
Service Life	-	h	30000												30000									
Noise	-	dB	$\leq 65$												$\leq 65$									
Weight	-	Kg	18												16.6									
Backlash	P0		$\leq 1$												$\leq 3$									
	P1	arcmin	$\leq 3$												$\leq 5$									
	P2		$\leq 5$												$\leq 7$									
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 <sup>2</sup>	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,  $i=10$ .

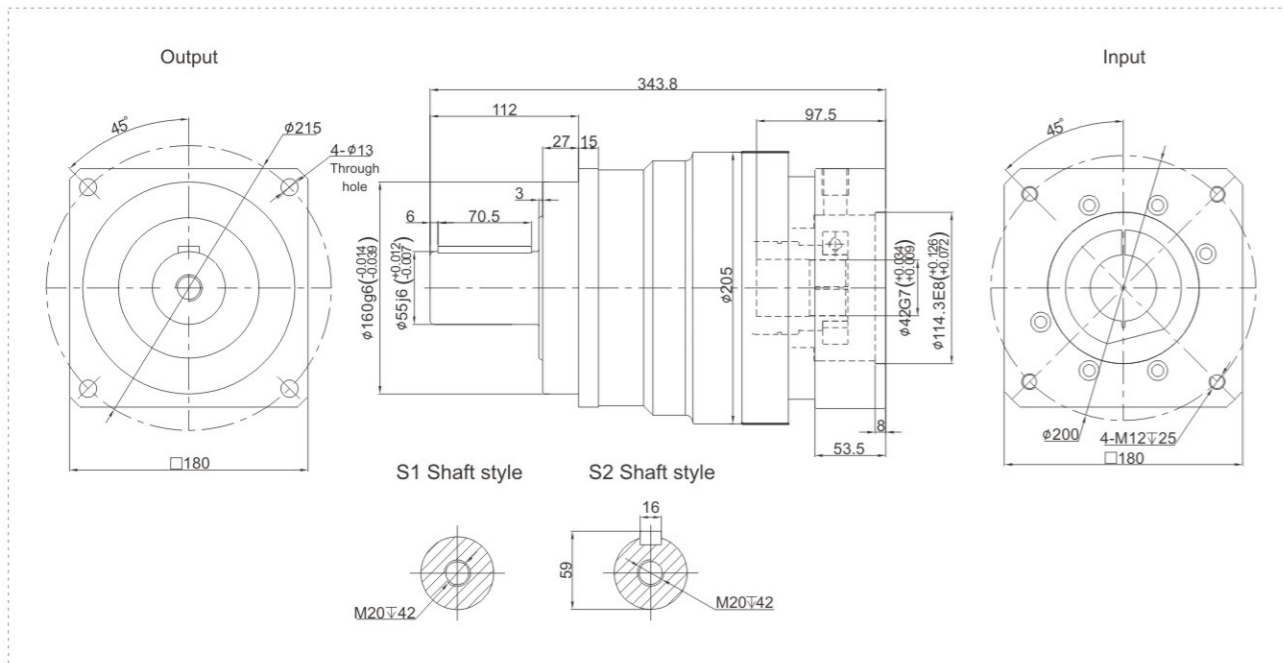
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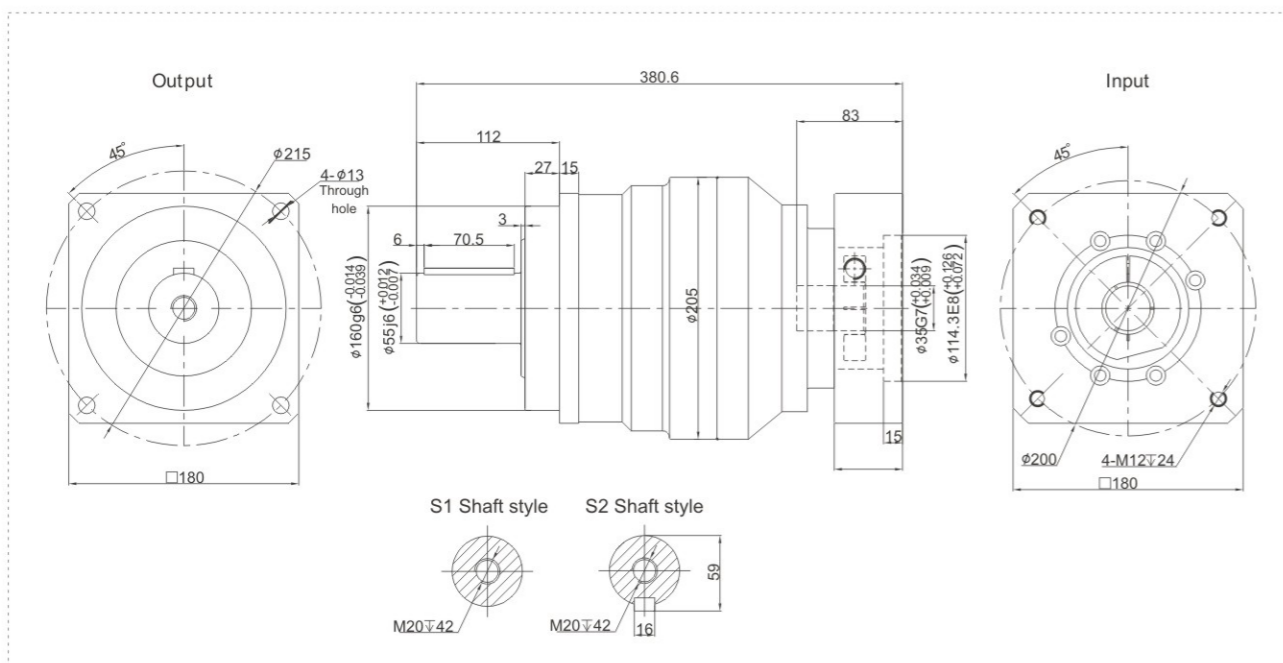


## TF180 Series

### 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	$\eta$	%	$\geq 97$										$\geq 94$									
Service Life	-	h	30000										30000									
Noise	-	dB	$\leq 67$										$\leq 67$									
Weight	-	Kg	35.5										42									
Backlash	P0	arcmin	$\leq 1$										$\leq 3$									
	P1	arcmin	$\leq 3$										$\leq 5$									
	P2	arcmin	$\leq 5$										$\leq 7$									
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 <sup>2</sup>	28.98	23.67	23.29	22.75	22.48	22.59	-	22.51	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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