

# Precision Planetary Reducer



TCB/TCBR/TCE series planetary reducer backlash is low and its transmission capacity is strong, the input end can be matched with servo, stepping and any other motors.

# GEARKO®

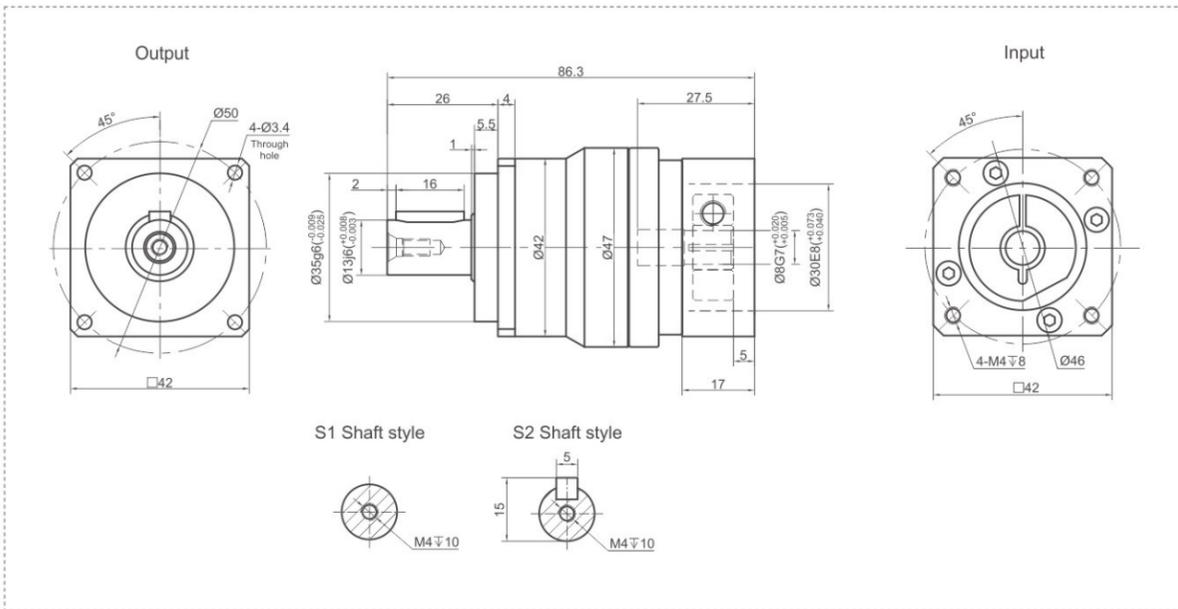
# DRIVES

# THE PRECISION

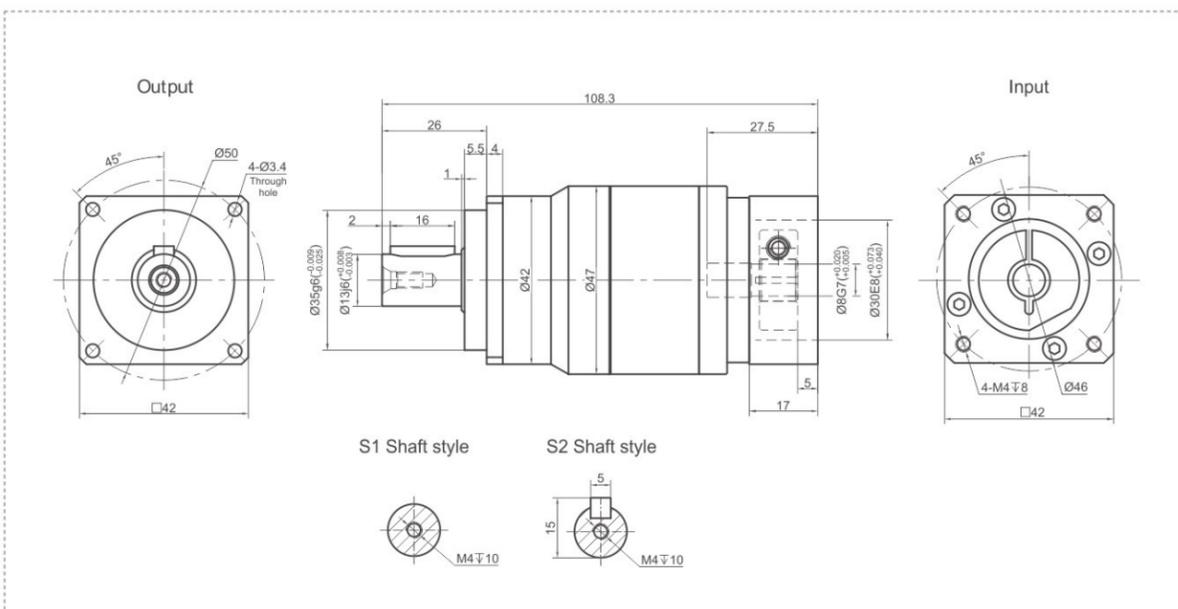


## TCB042 Series

### TCB042 One Stage



### TCB042 Two Stage



## Performance Data

TCB series planetary reducer has modular design compact structure with high reliability and efficiency. It is a perfect optimization of both performance and cost.

TCB042		One Stage										Two Stage										
Speed Ratio	i	-	4	5	6	7	8	9	10	-	20	25	30	35	40	50	60	70	80	100		
Nominal Output Torque	$T_1$	Nm	-	17	19	18	19	16	-	14	-	17	19	18	18	16	19	18	18	16	14	
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	760										760									
Maximum Axial Force	$F_b$	N	380										380									
Torsional Rigidity	-	Nm/arcmin	3										3									
Efficiency	$\eta$	%	$\geq 97$										$\geq 94$									
Service Life	-	h	20000										20000									
Noise	-	dB	$\leq 56$										$\leq 56$									
Weight	-	Kg	0.5										0.7									
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>	0.03										0.03									

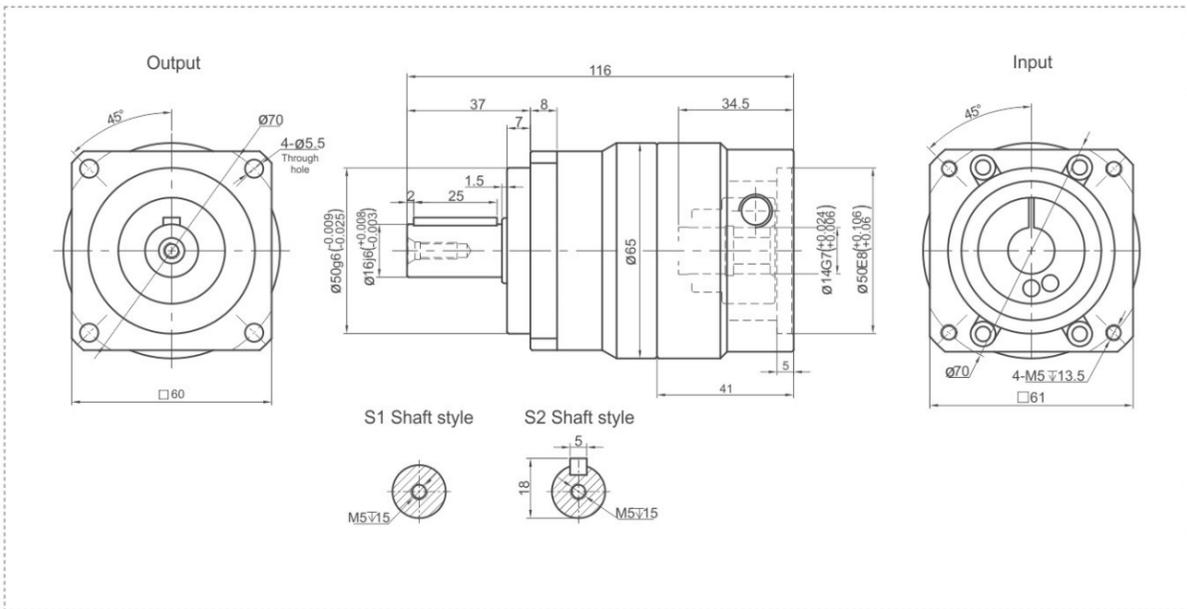
### Notes:

- ① Speed ratio ( $i = \text{Sin}/\text{Sout}$ )
- ② When the output speed is 100 rpm, it acts on the center of the output shaft.
- ③ For continuous operation, the service life is no less than 10,000 hours.
- ④ The noise value was measured based on the input rotational speed of 3000 rpm,  $i=10$ .

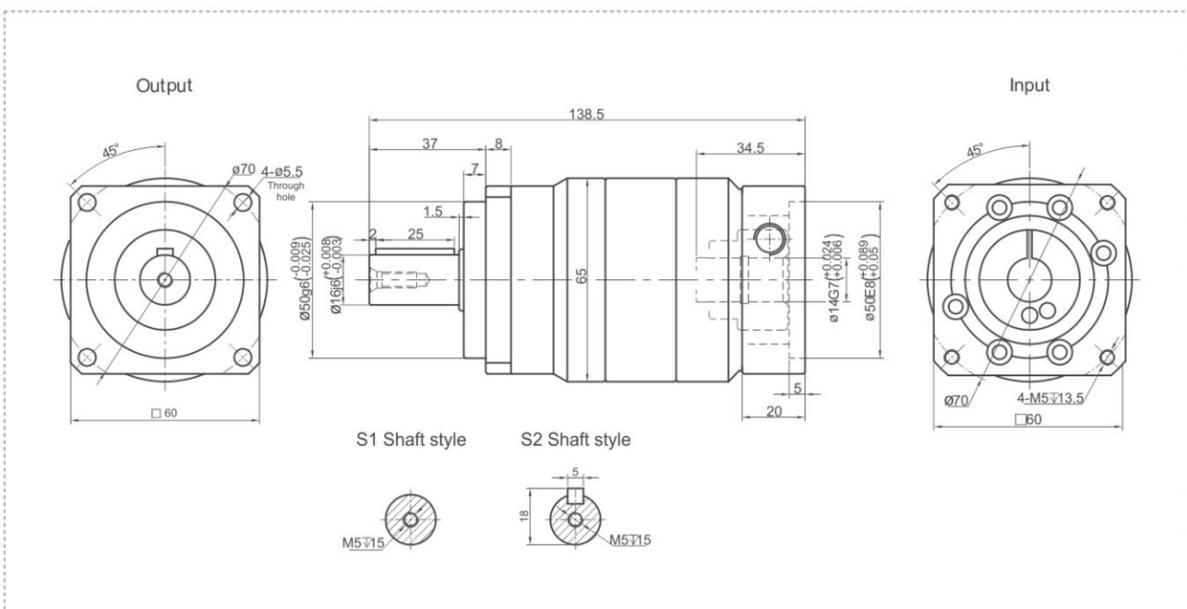
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## TCB060 Series

### TCB060 One Stage



### TCB060 Two Stage



## Performance Data

TCB series planetary reducer has modular design compact structure with high reliability and efficiency. It is a perfect optimization of both performance and cost.

TCB060		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 <sub>1</sub>	Nm	40	45	55	50	45	45	-	35	40	45	55	50	45	45	55	50	45	45	35	
Emergency Stop Torque	T <sub>2</sub>	Nm	T <sub>1</sub> × 3										T <sub>1</sub> × 3									
Nominal Input Speed	S <sub>1</sub>	rpm	3000										3000									
Maximum Input Speed	S <sub>2</sub>	rpm	6000										6000									
Maximum Output Torque	T <sub>4</sub>	Nm	T <sub>1</sub> × 3 × 60%										T <sub>1</sub> × 3 × 60%									
Maximum Radial Force	F <sub>a</sub>	N	1530										1530									
Maximum Axial Force	F <sub>b</sub>	N	765										765									
Torsional Rigidity	-	Nm/arcmin	7										7									
Efficiency	η	%	≥97										≥94									
Service Life	-	h	20000										20000									
Noise	-	dB	≤58										≤58									
Weight	-	Kg	1.3										1.7									
Backlash	P0	-	-										-									
	P1	arcmin	≤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 <sup>2</sup>	0.16;0.14					0.13					0.13									

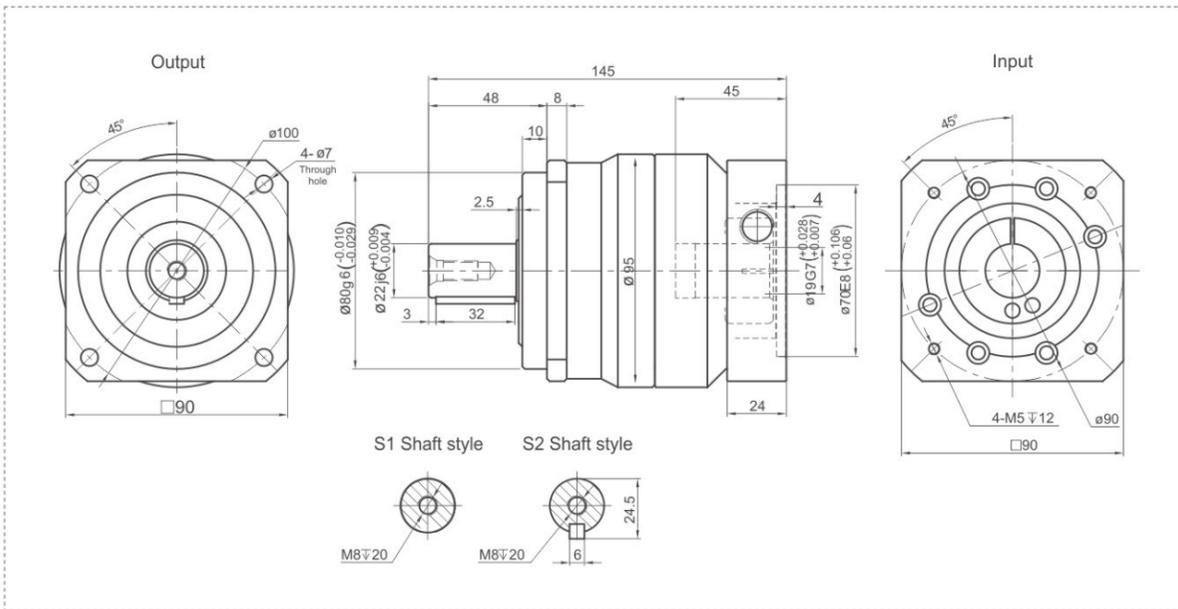
### Notes:

- ① Speed ratio (i=Sin/Sout)
- ② When the output speed is 100 rpm, it acts on the center of the output shaft.
- ③ For continuous operation, the service life is no less than 10,000 hours.
- ④ The noise value was measured based on the input rotational speed of 3000 rpm, i=10.

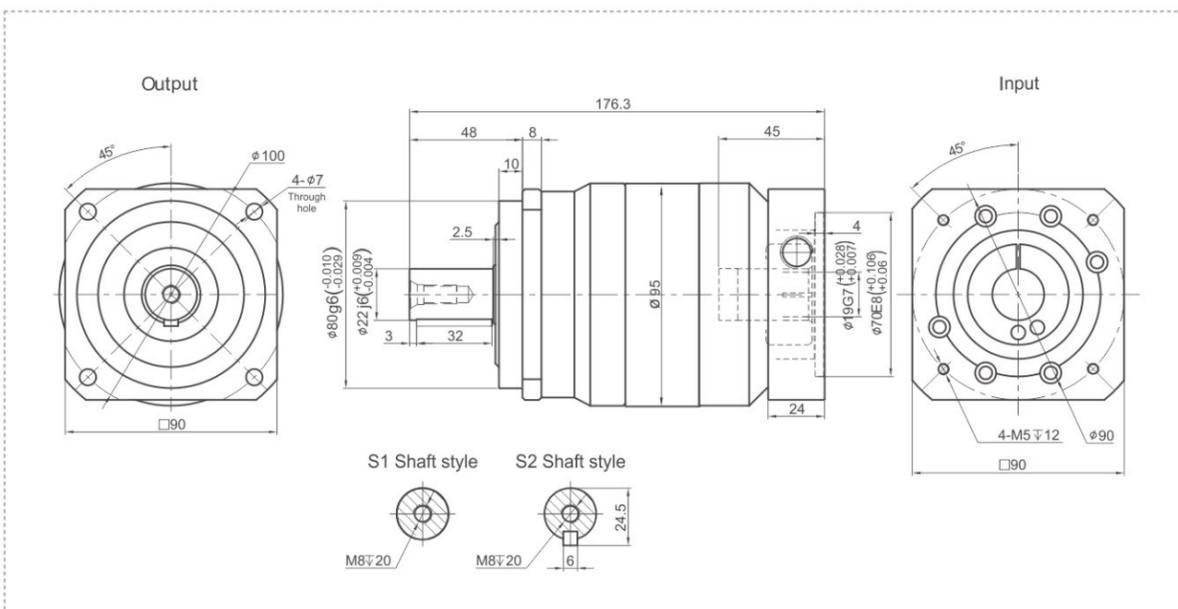
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## TCB090 Series

### TCB090 One Stage



### TCB090 Two Stage



## Performance Data

TCB series planetary reducer has modular design compact structure with high reliability and efficiency. It is a perfect optimization of both performance and cost.

TCB090		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	100	110	150	140	135	120	-	100	100	110	150	140	135	120	150	140	135	120	100	
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	3250										3250									
Maximum Axial Force	$F_b$	N	1625										1625									
Torsional Rigidity	-	Nm/arcmin	14										14									
Efficiency	$\eta$	%	$\geq 97$										$\geq 94$									
Service Life	-	h	20000										20000									
Noise	-	dB	$\leq 60$										60									
Weight	-	Kg	3.5										5.1									
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>	0.61	0.48	0.47	0.45	0.45	0.44	-	0.44	0.47					0.44						

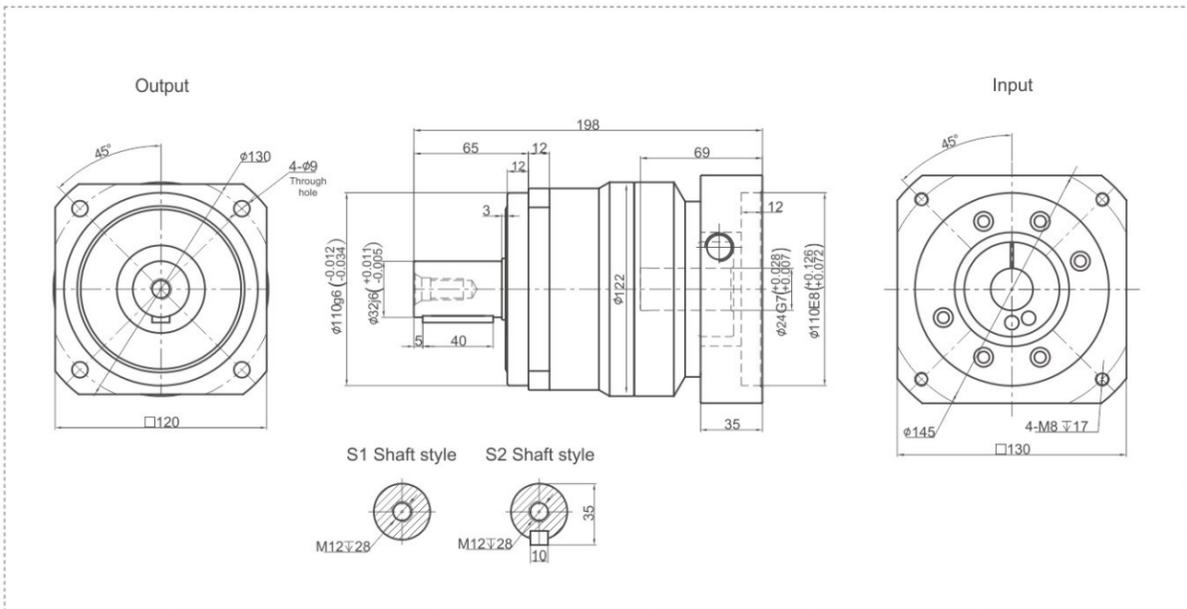
### Notes:

- ① Speed ratio ( $i = S_{in}/S_{out}$ )
- ② When the output speed is 100 rpm, it acts on the center of the output shaft.
- ③ For continuous operation, the service life is no less than 10,000 hours.
- ④ The noise value was measured based on the input rotational speed of 3000 rpm,  $i=10$ .

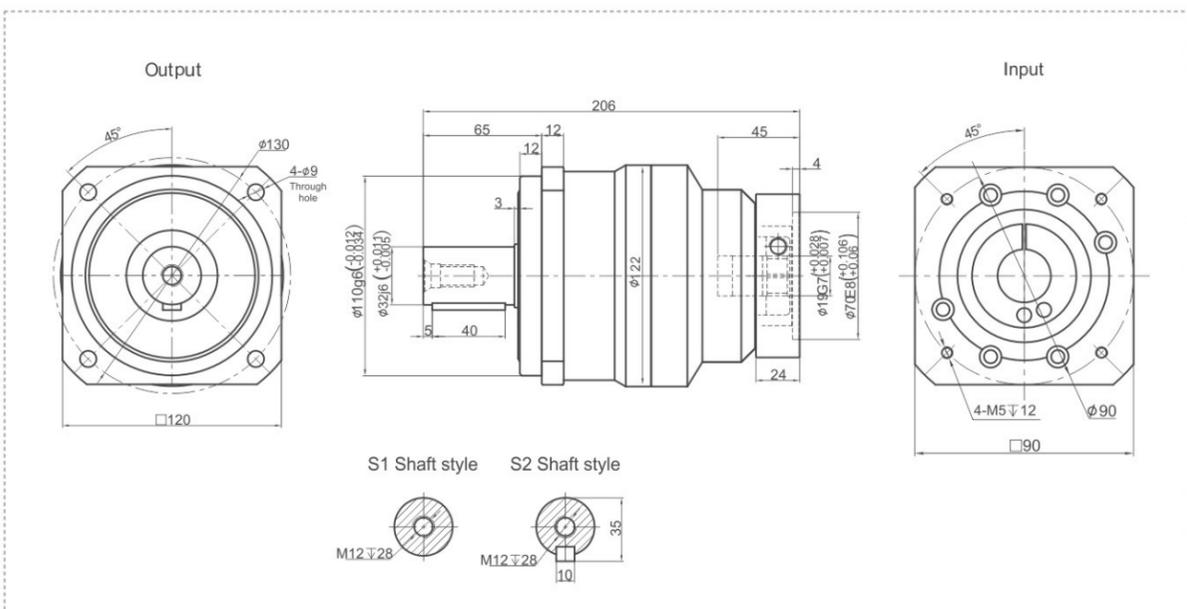
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## TCB120 Series

### TCB120 One Stage



### TCB120 Two Stage



## Performance Data

TCB series planetary reducer has modular design compact structure with high reliability and efficiency. It is a perfect optimization of both performance and cost.

TCB120		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	200	280	320	310	300	255	-	220	200	280	320	310	300	255	320	310	300	255	220	
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	$F_r$	N	6700										6700									
Maximum Axial Force	$F_a$	N	3350										3350									
Torsional Rigidity	-	Nm/arcmin	25										25									
Efficiency	$\eta$	%	$\geq 97$										$\geq 94$									
Service Life	-	h	20000										20000									
Noise	-	dB	$\leq 63$										$\leq 63$									
Weight	-	Kg	8										9.5									
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>	3.25	2.74	2.71	2.65	2.62	2.58	-	2.57	0.47					0.44						

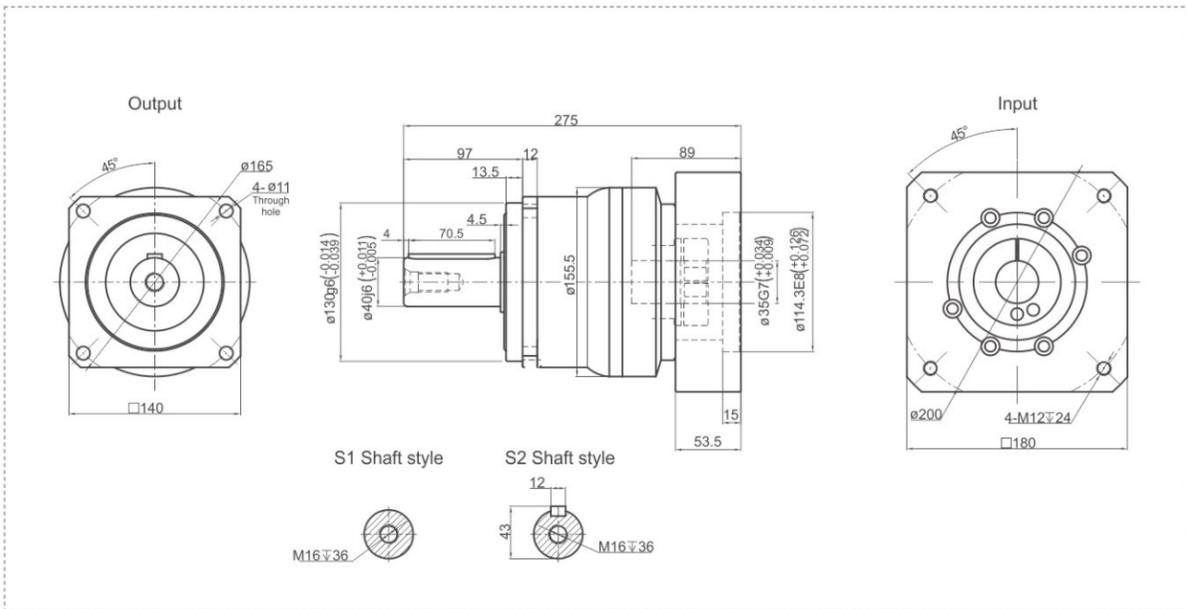
### Notes:

- ① Speed ratio ( $i = \text{Sin}/\text{Sout}$ )
- ② When the output speed is 100 rpm, it acts on the center of the output shaft.
- ③ For continuous operation, the service life is no less than 10,000 hours.
- ④ The noise value was measured based on the input rotational speed of 3000 rpm,  $i=10$ .

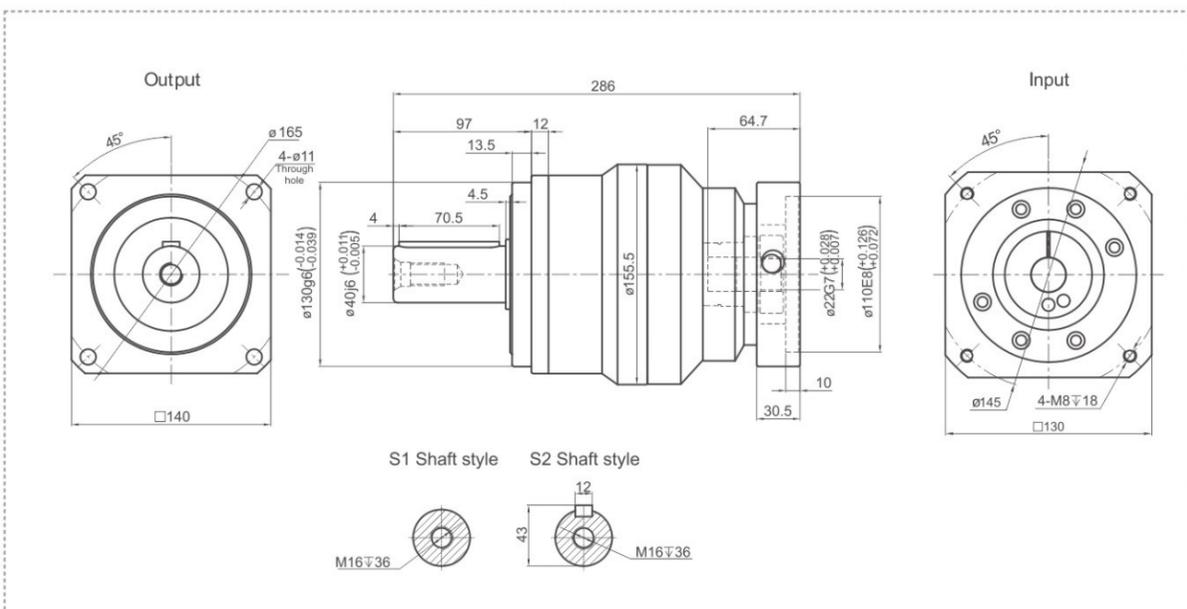
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## TCB140 Series

### TCB140 One Stage



### TCB140 Two Stage



## Performance Data

TCB series planetary reducer has modular design compact structure with high reliability and efficiency. It is a perfect optimization of both performance and cost.

TCB140		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 <sub>1</sub>	Nm	340	535	650	600	550	500	-	445	340	535	650	600	550	500	650	600	550	500	445	
Emergency Stop Torque	T <sub>2</sub>	Nm	T <sub>1</sub> × 3										T <sub>1</sub> × 3									
Nominal Input Speed	S <sub>1</sub>	rpm	2000										2000									
Maximum Input Speed	S <sub>2</sub>	rpm	4000										4000									
Maximum Output Torque	T <sub>4</sub>	Nm	T <sub>1</sub> × 3 × 60%										T <sub>1</sub> × 3 × 60%									
Maximum Radial Force	F <sub>a</sub>	N	9400										9400									
Maximum Axial Force	F <sub>b</sub>	N	4700										4700									
Torsional Rigidity	-	Nm/arcmin	50										50									
Efficiency	η	%	≥97										≥94									
Service Life	-	h	20000										20000									
Noise	-	dB	≤65										≤65									
Weight	-	Kg	17										19.8									
Backlash	P0	-	-										-									
	P1	arcmin	≤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 <sup>2</sup>	9.21	7.54	7.42	7.25	7.14	7.07	-	7.03	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.71	2.57

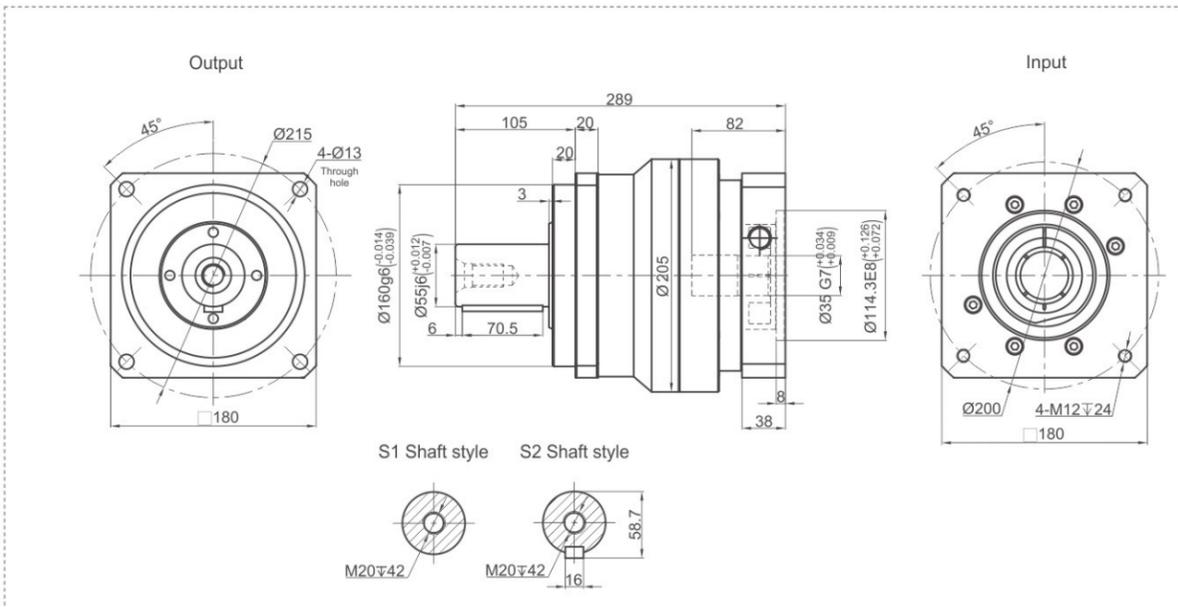
### Notes:

- Speed ratio (i=Sin/Sout)
- 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.

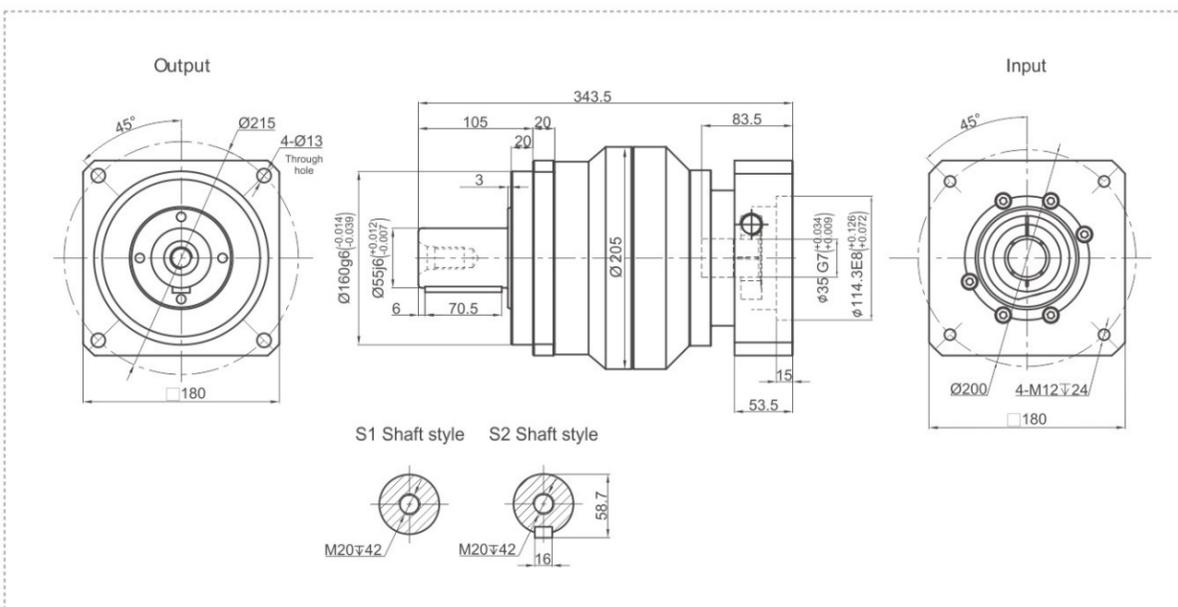
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## TCB180 Series

### TCB180 One Stage



### TCB180 Two Stage



## Performance Data

TCB series planetary reducer has modular design compact structure with high reliability and efficiency. It is a perfect optimization of both performance and cost.

TCB180		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	580	1020	1180	1050	1050	970	-	870	580	1020	1180	1050	1050	970	1180	1050	1050	970	870	
Emergency Stop Torque	$T_2$	Nm	$T_1 \times 3$										$T_1 \times 3$									
Nominal Input Speed	$S_1$	rpm	2000										2000									
Maximum Input Speed	$S_2$	rpm	4000										4000									
Maximum Output Torque	$T_4$	Nm	$T_1 \times 3 \times 60\%$										$T_1 \times 3 \times 60\%$									
Maximum Radial Force	$F_a$	N	14100										14100									
Maximum Axial Force	$F_b$	N	7050										7050									
Torsional Rigidity	-	Nm/arcmin	140										140									
Efficiency	$\eta$	%	$\geq 97$										$\geq 94$									
Service Life	-	h	20000										20000									
Noise	-	dB	$\leq 67$										$\leq 67$									
Weight	-	Kg	20.7										27									
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>	28.98	23.67	23.29	22.75	22.48	22.59	-	22.51	7.42					7.03						

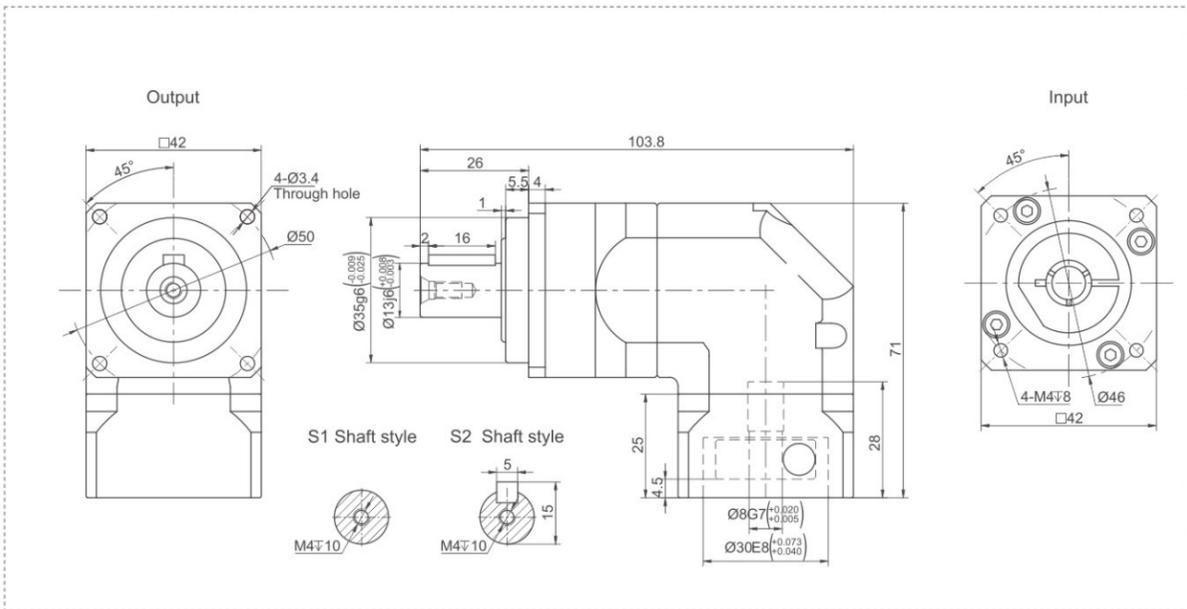
### Notes:

- 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,  $i=10$ .

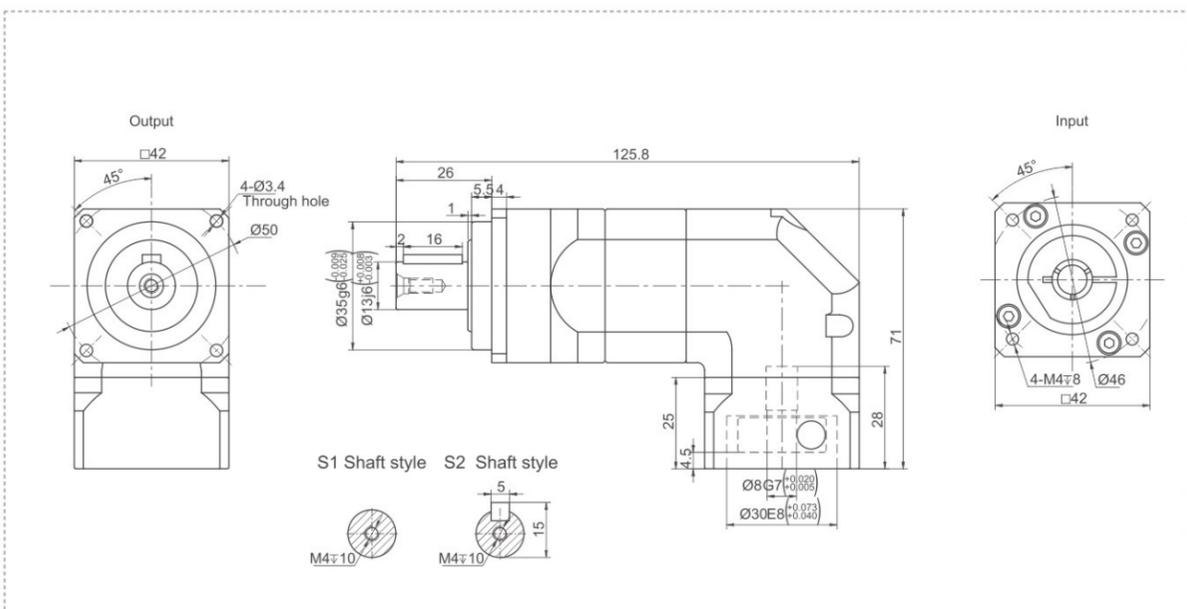
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## TCBR042 Series

### TCBR042 One Stage



### TCBR042 Two Stage



## Performance Data

TCBR series planetary reducer has modular design compact structure with high reliability and efficiency. It is a perfect optimization of both performance and cost.

TCBR042		One Stage										Two Stage								
Speed Ratio	$i$	-	4	5	6	7	8	10	20	25	30	35	40	50	60	70	80	100		
Nominal Output Torque	$T_1$ Nm	-	11	13	16	17	15	13	13	13	16	17	15	13	16	17	15	13		
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	-	760										760							
Maximum Axial Force	$F_b$ N	-	380										380							
Torsional Rigidity	- Nm/arcmin	-	3										3							
Efficiency	$\eta$ %	-	$\geq 95$										$\geq 92$							
Service Life	- h	-	20000										20000							
Noise	- dB	-	$\leq 63$										$\leq 63$							
Weight	- Kg	-	0.9										1.1							
Backlash	$P_0$	-	-										-							
	$P_1$ arcmin	-	$\leq 6$										$\leq 9$							
	$P_2$	-	$\leq 8$										$\leq 12$							
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 <sup>2</sup>	-	0.09										0.09							

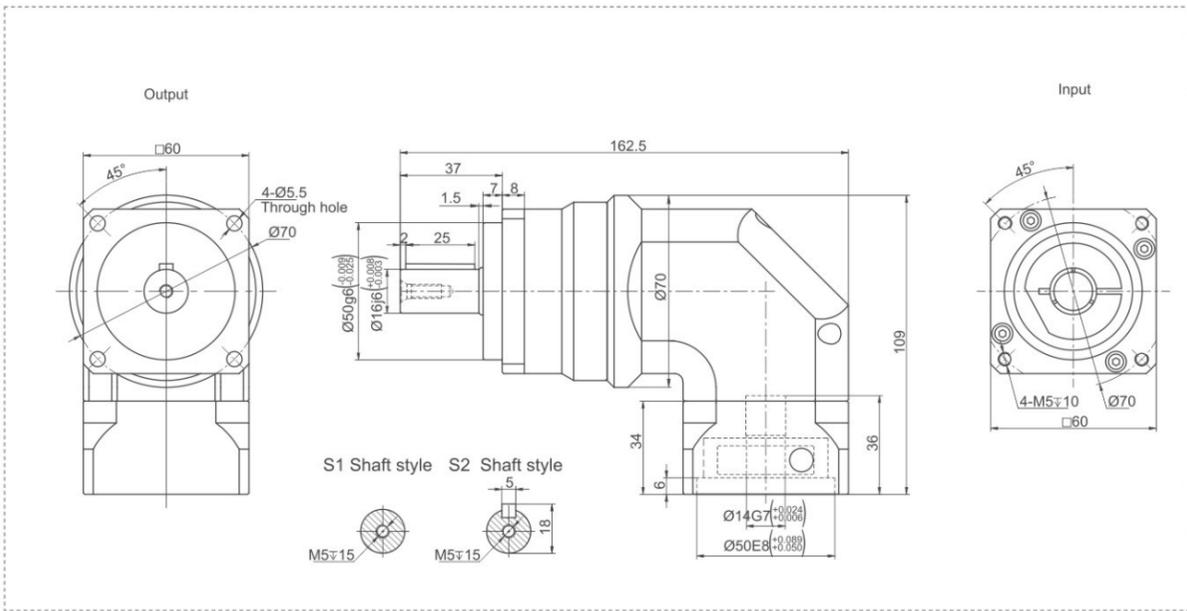
### Notes:

- 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,  $i=10$ .

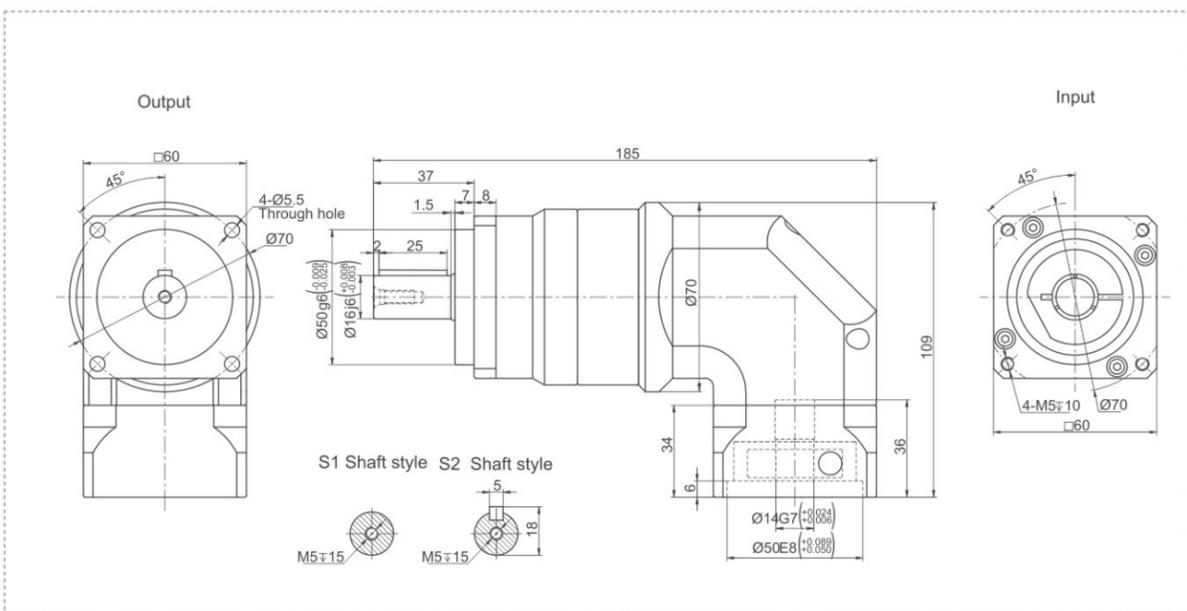
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## TCBR060 Series

### TCBR060 One Stage



### TCBR060 Two Stage



## Performance Data

TCBR series planetary reducer has modular design compact structure with high reliability and efficiency. It is a perfect optimization of both performance and cost.

TCBR060		One Stage														Two Stage													
Speed Ratio	i	3	4	5	6	7	8	10	12	14	16	20	25	30	35	40	50	60	70	80	100	120	140	160	200				
Nominal Output Torque: $T_1$	Nm	35	45	55	50	46	43	40	50	40	43	40	55	50	46	43	55	50	46	43	40	50	46	43	40				
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	1450														1450													
Maximum Axial Force: $F_b$	N	724														724													
Torsional Rigidity	- Nm/arcmin	6														6													
Efficiency	$\eta$ %	$\geq 95$														$\geq 92$													
Service Life	- h	20000														20000													
Noise	- dB	$\leq 66$														$\leq 66$													
Weight	- Kg	1.5														2.1													
Backlash	P0	-														-													
	P1	$\leq 6$														$\leq 9$													
	P2	$\leq 8$														$\leq 12$													
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	0.35							0.07							0.09							0.09						
	kg·cm <sup>2</sup>	0.35							0.07							0.09							0.09						

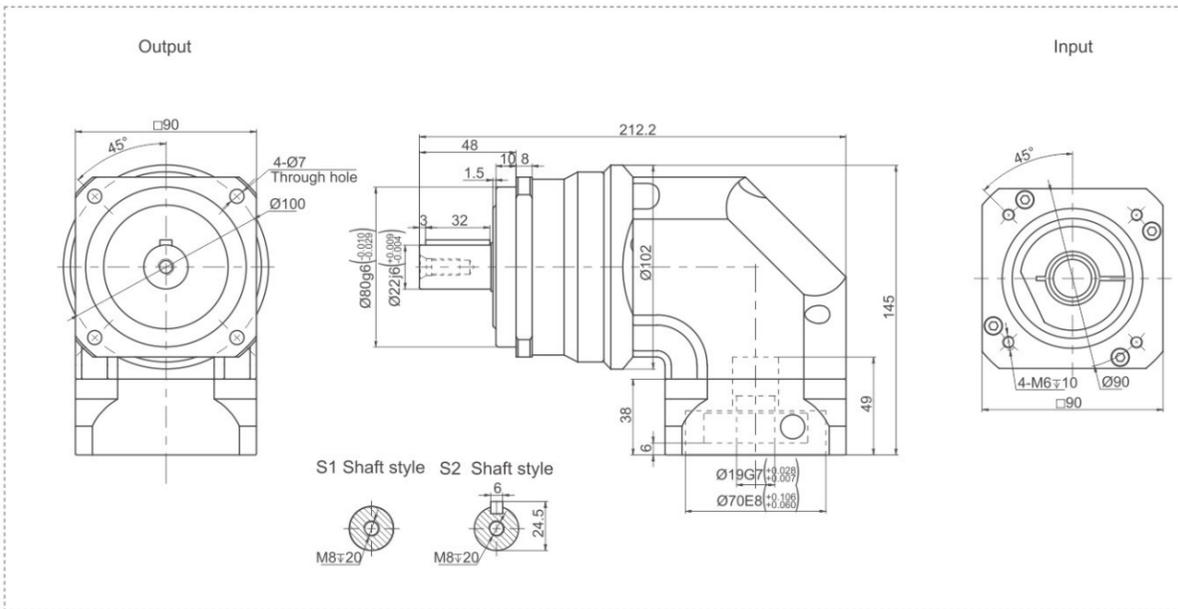
### Notes:

- 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,  $i=10$ .

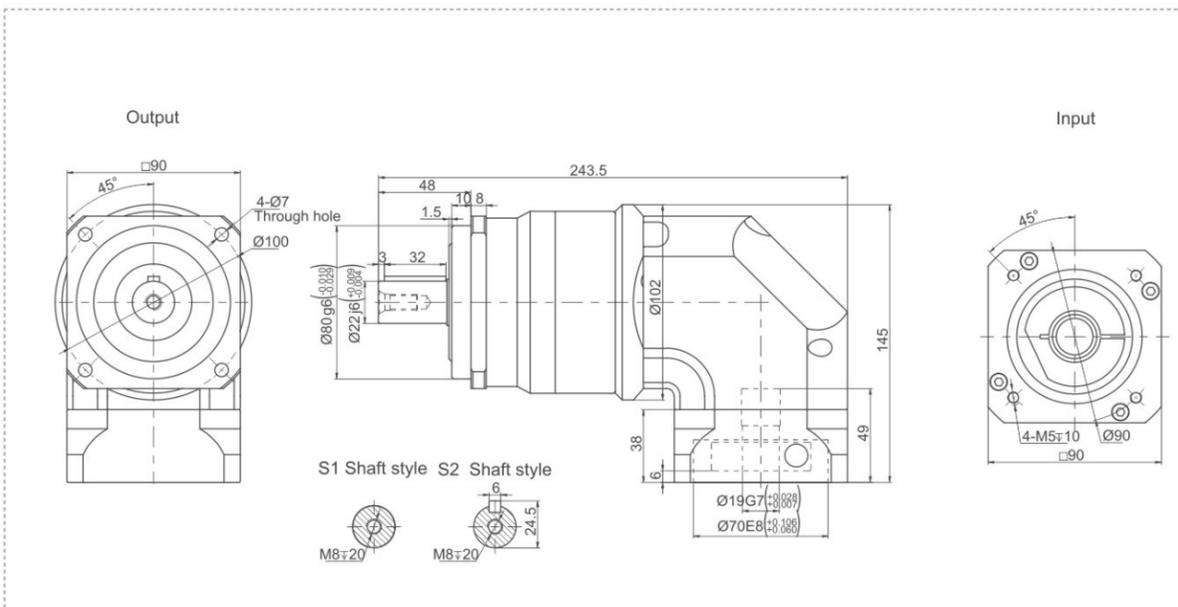
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## TCBR090 Series

### TCBR090 One Stage



### TCBR090 Two Stage



## Performance Data

TCBR series planetary reducer has modular design compact structure with high reliability and efficiency. It is a perfect optimization of both performance and cost.

TCBR090		One Stage														Two Stage													
Speed Ratio	i	3	4	5	6	7	8	10	12	14	16	20	25	30	35	40	50	60	70	80	100	120	140	160	200				
Nominal Output Torque: $T_1$	Nm	85	115	140	140	135	115	97	140	135	115	97	140	140	135	115	140	140	135	115	140	140	135	115	97	140	135	115	97
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	3200														3200													
Maximum Axial Force: $F_b$	N	1600														1600													
Torsional Rigidity	- Nm/arcmin	14														14													
Efficiency: $\eta$	%	$\geq 95$														$\geq 92$													
Service Life	- h	20000														20000													
Noise	- dB	$\leq 67$														$\leq 67$													
Weight	- Kg	6.4														7.7													
Backlash	$P_0$	$\leq 4$														$\leq 7$													
	$P_1$	$\leq 6$														$\leq 9$													
	$P_2$	$\leq 8$														$\leq 12$													
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 <sup>2</sup>	2.25							1.87							0.35							0.31						

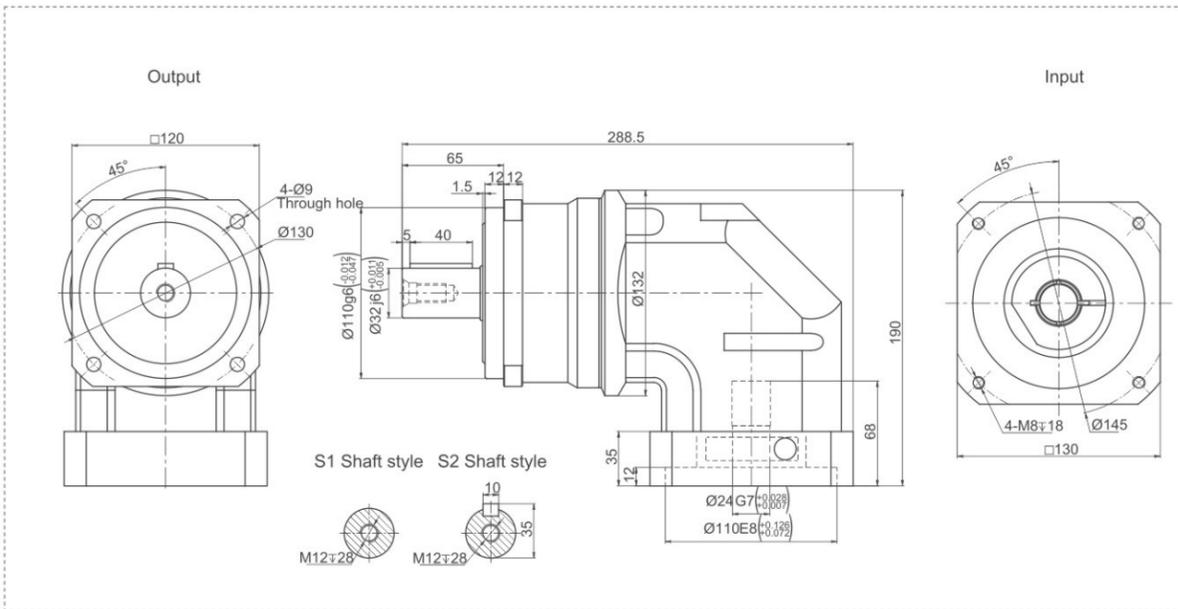
### Notes:

- 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,  $i=10$ .

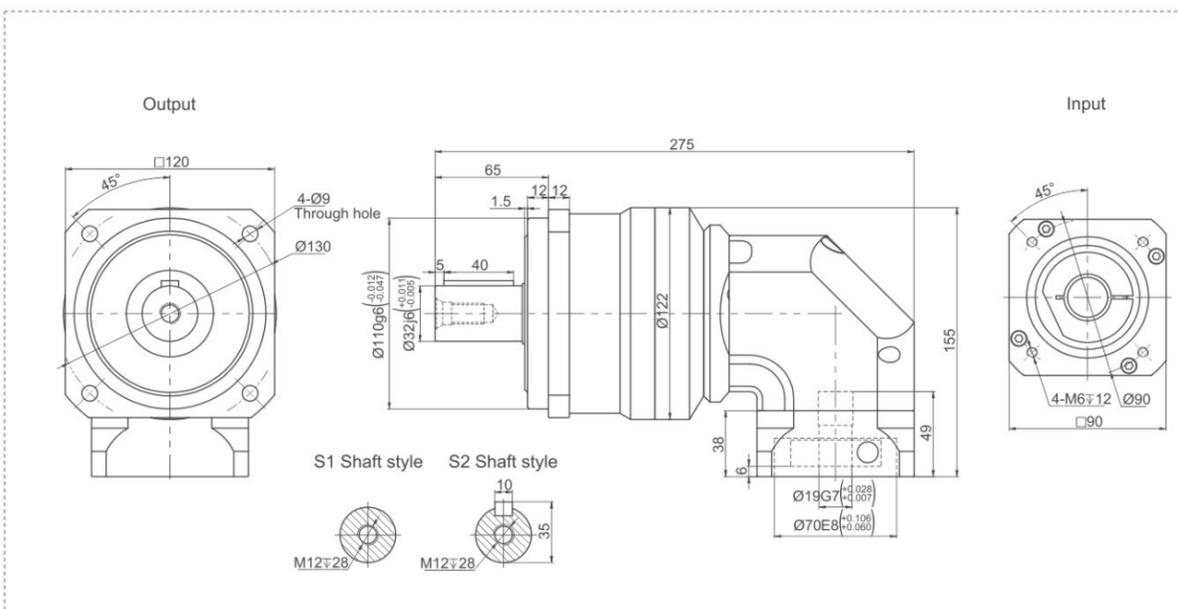
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## TCBR120 Series

### TCBR120 One Stage



### TCBR120 Two Stage



## Performance Data

TCBR series planetary reducer has modular design compact structure with high reliability and efficiency. It is a perfect optimization of both performance and cost.

TCBR120	One Stage														Two Stage											
	Speed Ratio	i	3	4	5	6	7	8	10	12	14	16	20	25	30	35	40	50	60	70	80	100	120	140	160	200
Nominal Output Torque	$T_1$	Nm	190	245	315	305	290	255	225	305	290	255	225	315	305	290	255	315	305	290	255	225	305	290	255	225
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	5000														5000									
Maximum Output Torque	$T_4$	Nm	$T_1 \times 3 \times 60\%$														$T_1 \times 3 \times 60\%$									
Maximum Radial Force	$F_a$	N	6600														6600									
Maximum Axial Force	$F_b$	N	3200														3200									
Torsional Rigidity	-	Nm/arcmin	25														25									
Efficiency	$\eta$	%	$\geq 95$														$\geq 92$									
Service Life	-	h	20000														20000									
Noise	-	dB	$\leq 70$														$\leq 70$									
Weight	-	Kg	13														14									
Backlash	P0	arcmin	$\leq 4$														$\leq 7$									
	P1	arcmin	$\leq 6$														$\leq 9$									
	P2	arcmin	$\leq 8$														$\leq 12$									
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	kgm <sup>2</sup>	6.84							6.25							2.25			1.87						

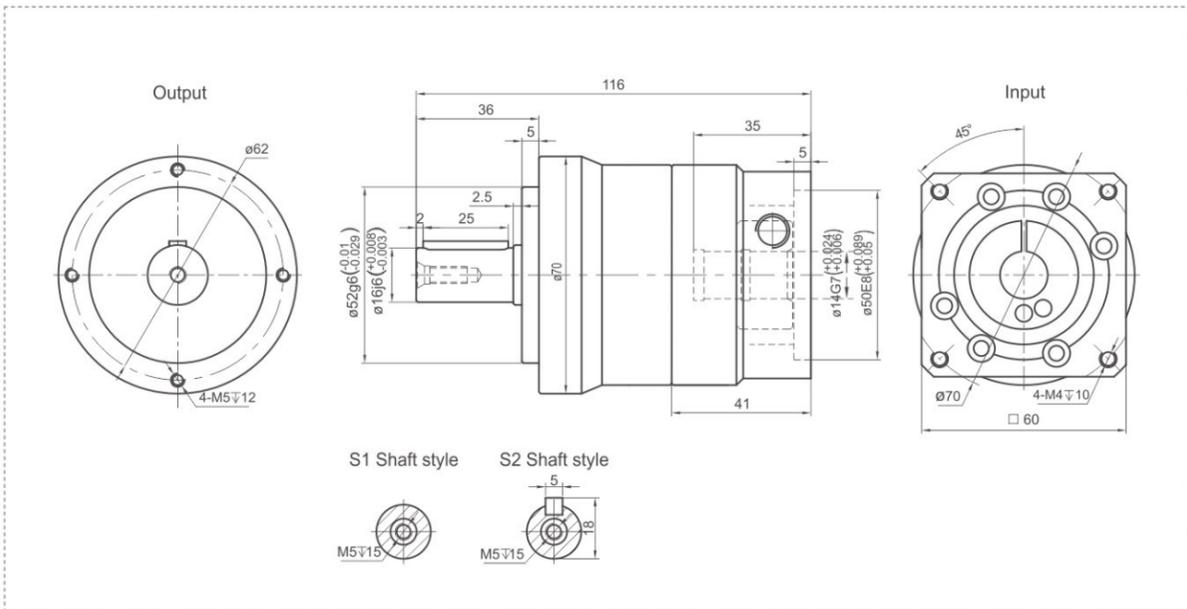
### Notes:

- Speed ratio ( $i = \text{Sin/Sout}$ )
- 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,  $i=10$ .

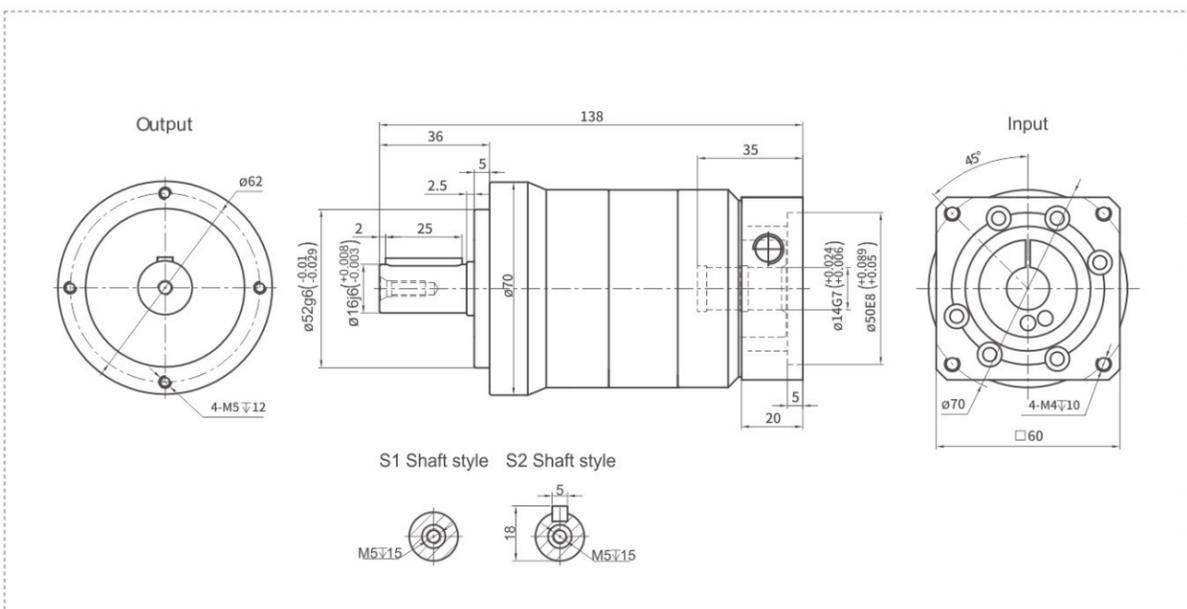
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## TCE070 Series

### TCE070 One Stage



### TCE070 Two Stage



## Performance Data

TCE series planetary reducer has modular design compact structure with high reliability and efficiency. It is a perfect optimization of both performance and cost.

TCE070		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	40	45	55	50	45	45	-	35	40	45	55	50	45	45	55	50	45	45	35	
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	$F_r$ N	1530										1530									
Maximum Axial Force	$F_a$ N	765										765									
Torsional Rigidity	- Nm/arcmin	7										7									
Efficiency	$\eta$ %	$\geq 97$										$\geq 94$									
Service Life	- h	20000										20000									
Noise	- dB	$\leq 58$										$\leq 58$									
Weight	- Kg	1.6										1.9									
Backlash	P0	-										-									
	P1	$\leq 3$										$\leq 5$									
	P2	$\leq 5$										$\leq 7$									
Operating Temperature	- °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	0.16	0.14	0.13						0.13											

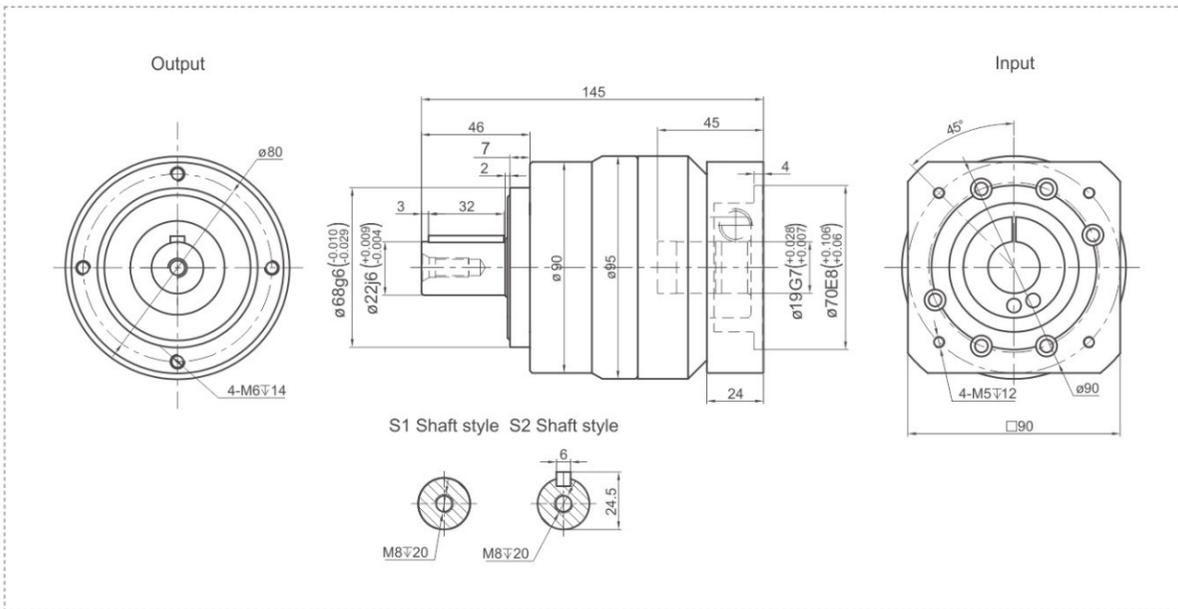
### Notes:

- 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,  $i=10$ .

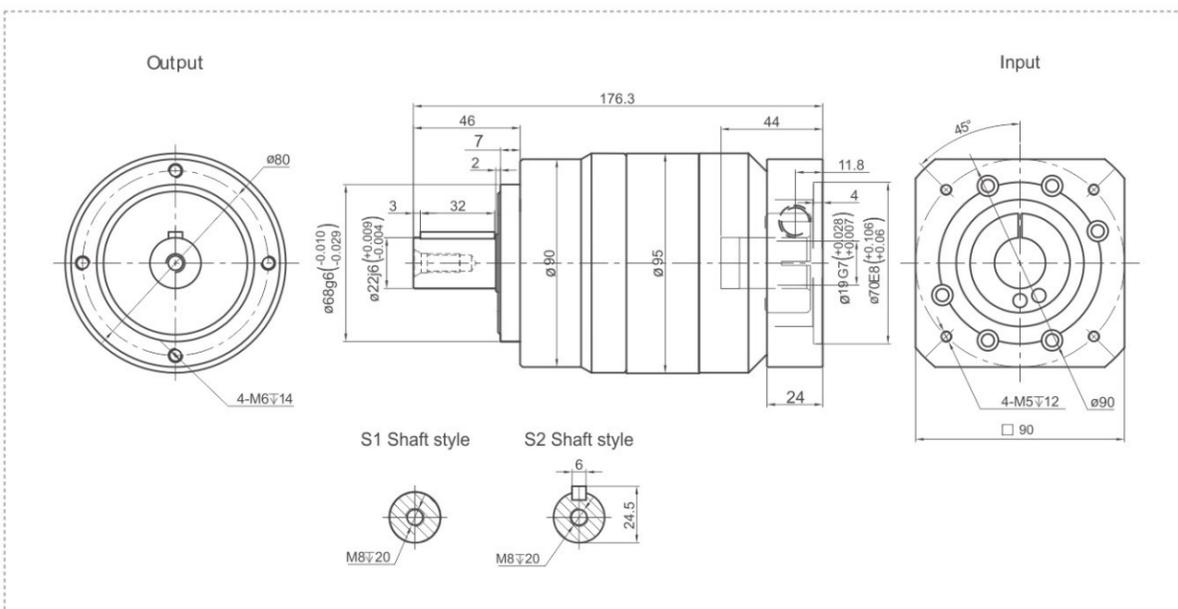
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## TCE090 Series

### TCE090 One Stage



### TCE090 Two Stage



## Performance Data

TCE series planetary reducer has modular design compact structure with high reliability and efficiency. It is a perfect optimization of both performance and cost.

TCE090		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	100	110	150	140	135	120	-	100	100	110	150	140	135	120	150	140	135	120	100	
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	3250										3250									
Maximum Axial Force	$F_b$ N	1625										1625									
Torsional Rigidity	- Nm/arcmin	14										14									
Efficiency	$\eta$ %	$\geq 97$										$\geq 94$									
Service Life	- h	20000										20000									
Noise	- dB	$\leq 60$										$\leq 60$									
Weight	- Kg	3.4										5.2									
Backlash	P0	-										-									
	P1 arcmin	$\leq 3$										$\leq 5$									
	P2	$\leq 5$										$\leq 7$									
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	0.61	0.48	0.47	0.45	0.45	0.44	-	0.44	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47

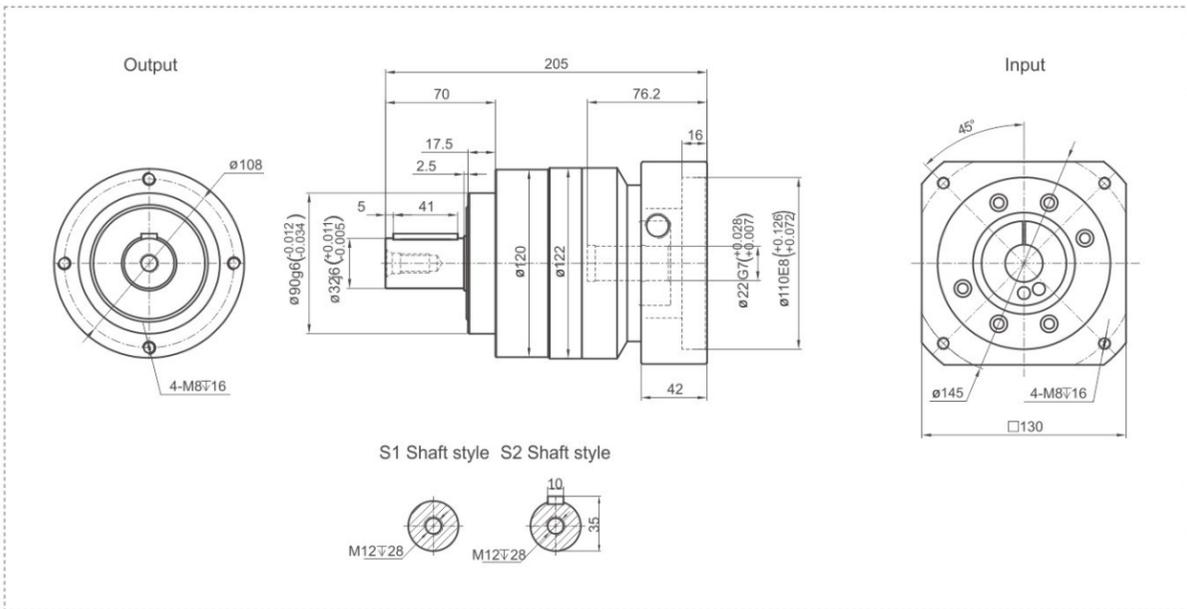
### Notes:

- ① Speed ratio ( $i = S_{in}/S_{out}$ )
- ② When the output speed is 100 rpm, it acts on the center of the output shaft.
- ③ For continuous operation, the service life is no less than 10,000 hours.
- ④ The noise value was measured based on the input rotational speed of 3000 rpm,  $i=10$ .

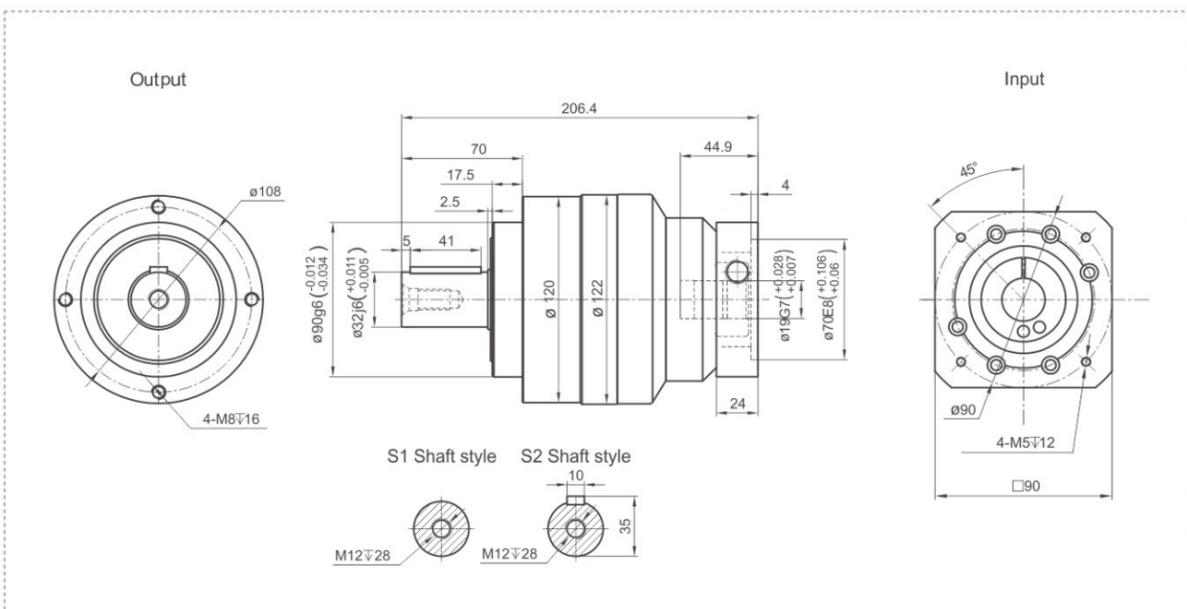
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## TCE120 Series

### TCE120 One Stage



### TCE120 Two Stage



## Performance Data

TCE series planetary reducer has modular design compact structure with high reliability and efficiency. It is a perfect optimization of both performance and cost.

TCE120		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	200	280	320	310	300	255	-	220	200	280	320	310	300	255	320	310	300	255	220				
Emergency Stop Torque	$T_2$	Nm	$T_1 \times 3$																						
Nominal Input Speed	$S_1$	rpm	3000																						
Maximum Input Speed	$S_2$	rpm	6000																						
Maximum Output Torque	$T_4$	Nm	$T_1 \times 3 \times 60\%$																						
Maximum Radial Force	$F_r$	N	6700																						
Maximum Axial Force	$F_a$	N	3350																						
Torsional Rigidity	-	Nm/arcmin	25																						
Efficiency	$\eta$	%	$\geq 97$																						
Service Life	-	h	20000																						
Noise	-	dB	$\leq 63$																						
Weight	-	Kg	7.8																						
Backlash	P0		-																						
	P1	arcmin	$\leq 3$																						
	P2		$\leq 5$																						
Operating Temperature	-	$^{\circ}\text{C}$	$-20 \sim 90$																						
Lubrication	-		Synthetic Grease																						
Protection Class	-		IP65																						
Mounting Position	-		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													

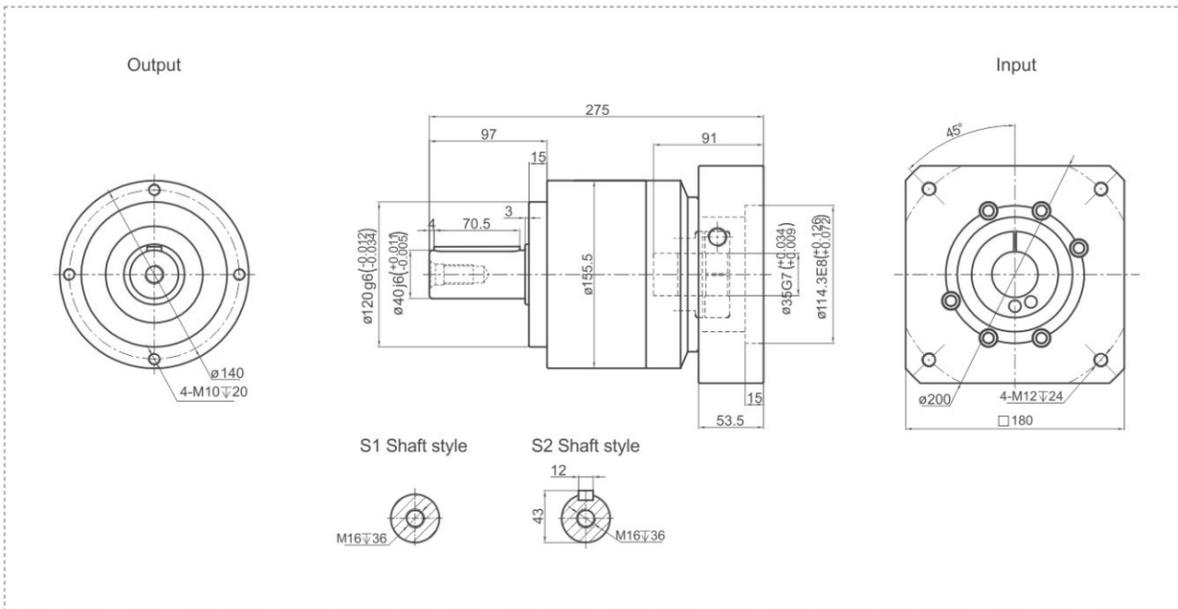
### Notes:

- Speed ratio ( $i = \text{Sin/Sout}$ )
- 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,  $i=10$ .

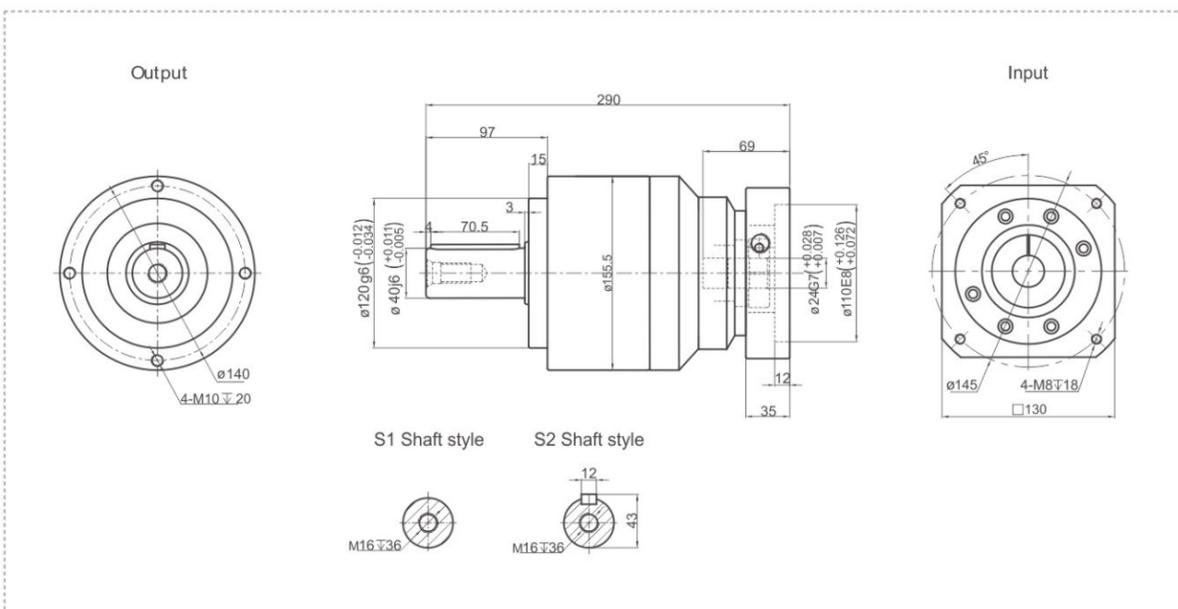
Any product models and parameters in this sample are subject to change without prior notice. Please confirm with the company before ordering.

## TCE155 Series

### TCE155 One Stage



### TCE155 Two Stage



## Performance Data

TCE series planetary reducer has modular design compact structure with high reliability and efficiency. It is a perfect optimization of both performance and cost.

TCE155		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	535	650	600	550	500	-	445	340	535	650	600	550	500	650	600	550	500	445	
Emergency Stop Torque	$T_2$	Nm	$T_1 \times 3$										$T_1 \times 3$									
Nominal Input Speed	$S_1$	rpm	2000										2000									
Maximum Input Speed	$S_2$	rpm	4000										4000									
Maximum Output Torque	$T_4$	Nm	$T_1 \times 3 \times 60\%$										$T_1 \times 3 \times 60\%$									
Maximum Radial Force	$F_a$	N	9400										9400									
Maximum Axial Force	$F_b$	N	4700										4700									
Torsional Rigidity	-	Nm/arcmin	50										50									
Efficiency	$\eta$	%	$\geq 97$										$\geq 94$									
Service Life	-	h	20000										20000									
Noise	-	dB	$\leq 65$										$\leq 65$									
Weight	-	Kg	19										20									
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	$\text{kg}\cdot\text{cm}^2$	9.21	7.54	7.42	7.25	7.14	7.07	-	7.03	2.71										2.57	

### Notes:

- Speed ratio ( $i = \text{Sin}/\text{Sout}$ )
- 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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