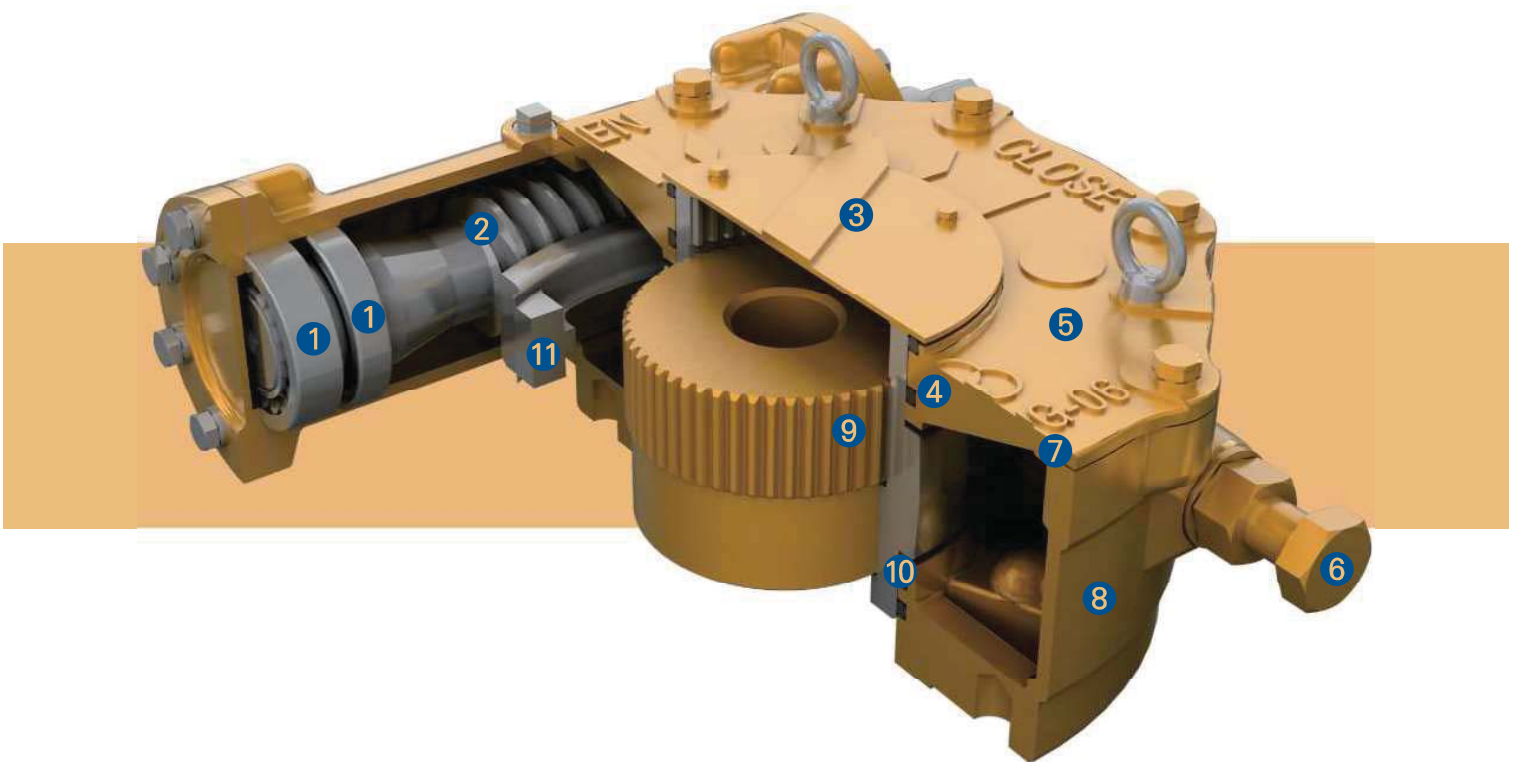


# Worm Gear Actuators

## Special View & Features



### ① Tapered Roller & Ball Bearings

The Worm is supported on tapered roller bearings which support both the axial and radial forces generated by the gearings. They have excellent load bearing capacity.

### ② Worm

1045 heat treated steel, with ground and polished worm threads. Precision cutting of the threads provides minimum backlash between the worm gear and worm.

### ③ Indicator Plate

Pointer provides positive position indication. The pointer can easily be re-positioned if required.

#### ④ Sealing

The drive sleeve is supplied with a oil seal at the top and large cross-section o-ring at the bottom. This sealing method allows the units to be rated for submersible service to Ip67 standards.

#### ⑤ Cover

Legends, 'Close-Open-Close' are cast directly on the cover. This permits operation in either direction with position indication.

#### ⑥ External Adjustable Stops

The stop bolts allow for position accuracy of  $\pm 5^\circ$ .

Each bolt also includes Buna-N sealing washers or prevent water intrusion

#### ⑦ Gaskets

Each end of the worm assembly is equipped with special design material(non-asbestos), which are completely water resistant.

## This series of Worm Gears range from 360N.m (260ft-lbf) to 970,000N.m (710,000 ft-lbf)

Units are available with single, double and triple reduction spur gear.  
Other options available are : vertical input

#### ⑧ Housing

All external castings are Ductile Iron. Class 65-45-12, Tensile Strength of 65,000 psi

#### ⑨ Splined Bushings

All units furnished with removable splined bushings to permit accurate position between the gear drive and the valve shaft.

#### ⑩ Thrust Washer

The drive sleeve is furnished with hardened steel thrust washers above and below worm gear. This minimizes frictional looseness between the gear and the ductile iron castings.

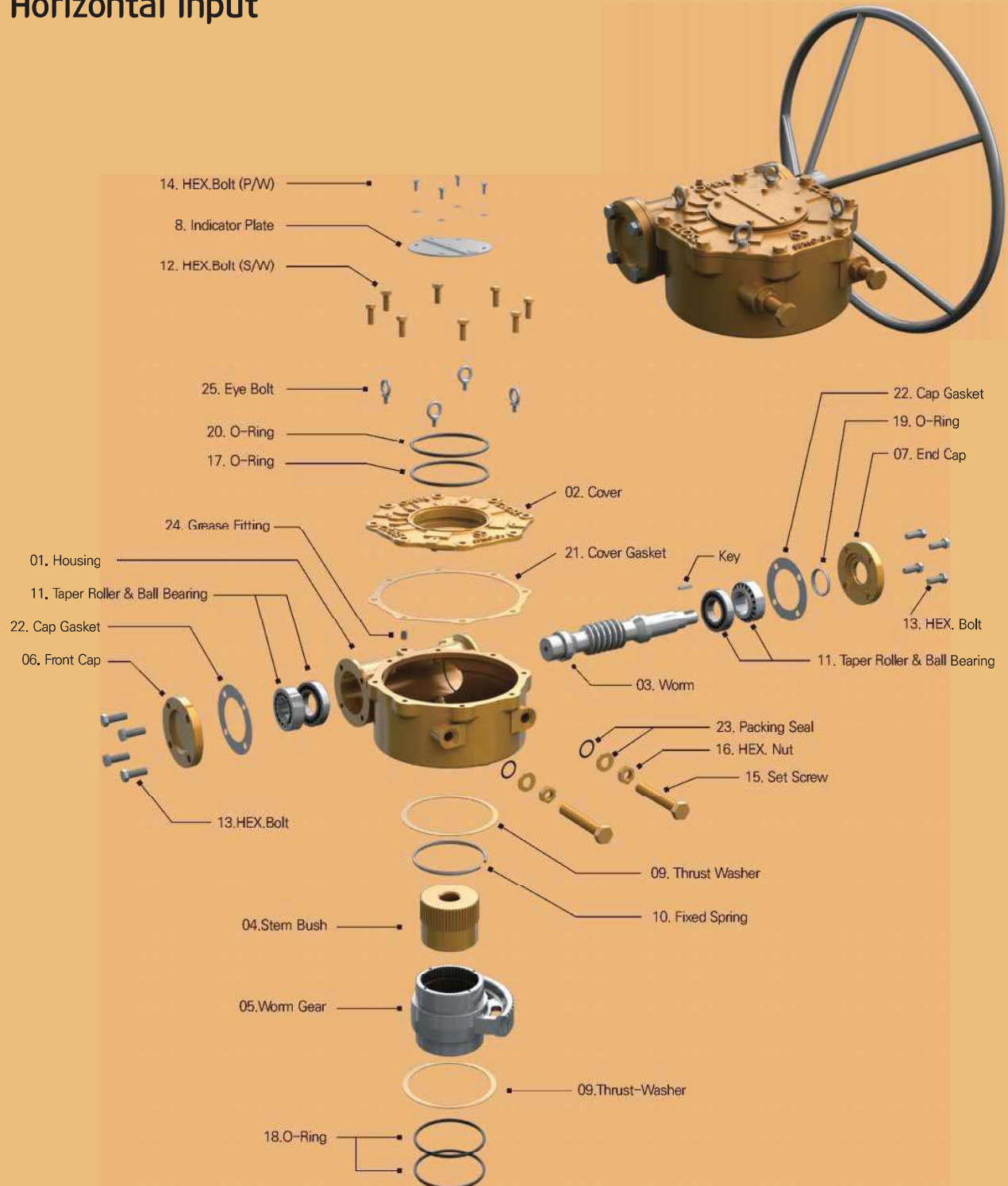
#### ⑪ Worm Gear

Standard material is Ductile Iron, Grade 80-55-06, Suitable most industrial applications.  
Option is aluminum bronze having a tensile strength of 85,000 psi.  
Normally required for motorized applications involving modulating service and is also a requirement to meet the AWWA standards.

# Worm Gear Actuator Assembly

## STANDARD TYPE-A

### Horizontal Input



## ❖ Part List & Material

	NO	DESCRIPTION	MATERIAL			REMARK
			NAME	JIS	ASTM	
STANDARD	1	Housing	Ductile Iron	FCD-450	A536-65-45-12	NOTE. 1
	2	Cover	Ductile Iron	FCD-450	A536-65-45-12	NOTE. 1
	3	Worm	Carbon Steel	S45C	A576-1045	NOTE. 2
	4	Stem Bush	Ductile Iron	FCD-450	A536-65-45-12	
	5	Worm Gear	Ductile Iron	FCD-600	A536-80-55-06	B148-C95800(ALBC3)
	6	Front Cap	Ductile Iron	FCD-450	A536-65-45-12	
	7	End Cap	Ductile Iron	FCD-450	A536-65-45-12	
	8	Indicator Plate	Steel + EP			
	9	Thrust Washer	Steel			
	10	Fixed Spring	Steel			
	11	Taper Roller & Ball Bearing	Special Steel	SUJ2	A295-52100	
	12	HEX. Bolt	Alloy Steel	SCM435	A322-4135	
	13	HEX. Bolt	Alloy Steel	SCM435	A322-4135	
	14	HEX. Bolt (P/W)	Stainless Steel			
	15	Set Screw	Carbon Steel	S45c	A576-1045	
	16	HEX. Nut	Carbon Steel	S45c	A576-1045	
	17	O-Ring	Buna N	NBR		NOTE. 3
	18	O-Ring	Buna N	NBR		
	19	O-Ring	Buna N	NBR		
	20	O-Ring	Buna N	NBR		
	21	Cover Gasket	Non - Asbestos			VALQUA 6601
	22	Cap Gasket	Non - Asbestos			
	23	Packing Seal	Bunan	NBR		
	24	Grease Fitting	Steel + Galvanizing			
	25	Eye Bolt	Steel + Galvanizing			
OPTION	OP-01.	Hand Wheel	Steel Pipe	SGP	A53	HANDLE PART NOTE. 4
	OP-02.	Key	Carbon Steel	S45C	A576-1045	
	OP-03.	Name Plate	Stainless Steel			
	OP-04.	Washer	Stainless Steel			
	OP-05.	HEX.Bolt (S/W)	Stainless Steel			

## ❖ Material Detail : Option and Material Changes

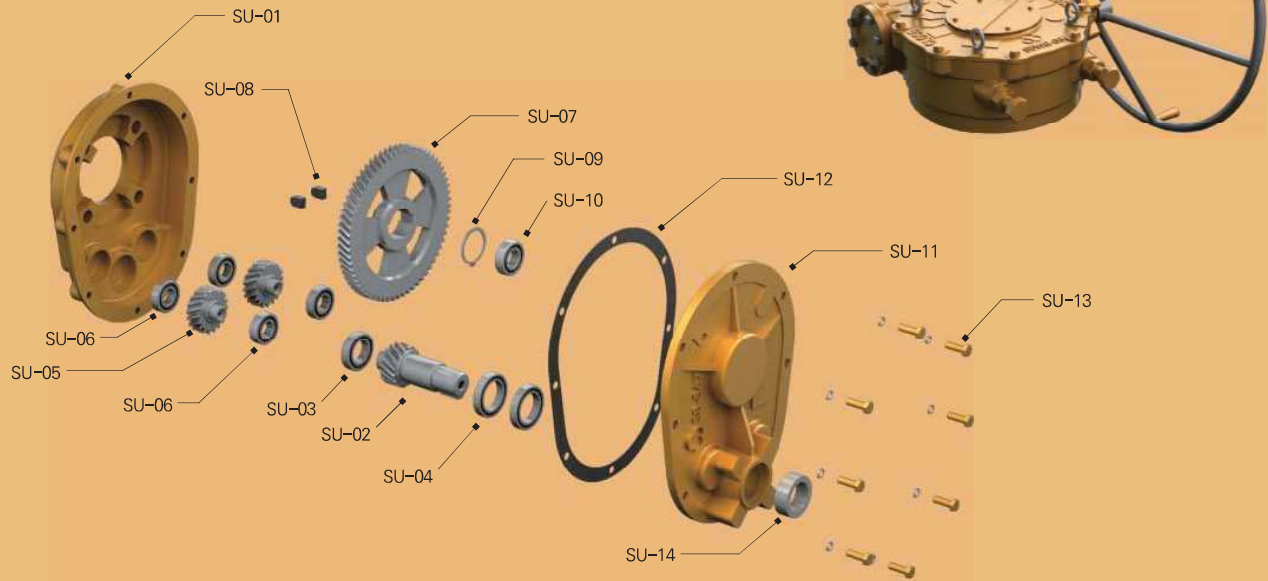
- All castings are Ductile Iron, FCD-450 (ASTM Class 65-45-12)
- In case of option for special request, it can be worked Nickel coating, high tensile stainless.
- Also, the material can be changed as ALBC3(Aluminium Bronze), steel(A576-1045), A439 Gr D2C (Austenitic ductile iron casting) and etc.
- O-Ring Seal & Lubricant : Standard is Buna "N", temperature range -20°C to +120°C (-4°F to +248°F).  
Standard lubricant is Zenith EPSB 2, temperature Range -20°C to +200°C (-4°F to +392°F).  
Other option are : High Temperature Viton O-Ring Grade V75, Temperature Range -30°C to +200°C (-22°F to +392°F)  
Lubricant - Zenith SYN WS2 Temperature Range -30°C~400°C (-22°F 752°F)  
Low Temperature Silicon O-Ring, Temperature Range -60°C to + 150°C(-76°F to 302°F)  
Lubricant - Zenith SLP402, Temperature Range -60°C~140°C (-76°F 284°F)
- SAMBO offers a wide variety of Handwheels, Chainwheels, Input Shaft, Locking Devices and etc.
- SAMBO offers a wide variety of stem cover, stainless steel, Polycarbonate.  
Paint : Unless specified, units are supplied with vp184 Red epoxy primer. SAMBO can provide finish coating upon request.

Size and component specification in this catalogue are subject to change without prior notice for quality improvement.

# Worm Gear Actuator Assembly

## STANDARD TYPE-A

Horizontal Input  
with Single Reduction Gear Attachment



### Part List & Material

NO	DESCRIPTION	MATERIAL			REMARK	NO	DESCRIPTION	MATERIAL			REMARK
		NAME	JIS	ASTM				NAME	JIS	ASTM	
1	Housing	Ductile Iron	FCD-450	A536-65-45-12	NOTE. 1	23	Packing Seal	Buna N	NBR		
2	Cover	Ductile Iron	FCD-450	A536-65-45-12	NOTE. 1	24	Grease Fitting	Steel + Galvanizing			
3	Worm	Carbon Steel	S45C	A576-1045	NOTE. 2	25	Eye Bolt	Steel + Galvanizing			
4	Stem Bush	Ductile Iron	FCD-450	A536-65-45-12		SU-01	Support Housing	Ductile Iron	FCD-450	A536-65-45-12	
5	Worm Gear	Ductile Iron	FCD-600	A536-80-55-06	B148-96800(ALBC3)	SU-02	Helical Pinion	Carbon Steel	S45C	A576-1045	
6	Front Cap	Ductile Iron	FCD-450	A536-65-45-12		SU-03	Radial Ball B/R	Special Steel	SUJ2	A295-52100	
7	End Cap	Ductile Iron	FCD-450	A536-65-45-12		SU-04	Radial Ball B/R	Special Steel	SUJ2	A295-52100	
8	Indicator Plate	Steel + EP				SU-05	Idle Gear	Carbon Steel	S45C	A576-1045	
9	Thrust Washer	Steel				SU-06	Radial Ball B/R	Special Steel	SUJ2	A295-52100	
10	Fixed Spring	Steel				SU-07	Helical Gear	Carbon Steel	S45C	A576-1045	
11	Taper Roller Bearing	Special Steel	SUJ2	A295-52100		SU-08	Key (1R)	Carbon Steel	S45C	A576-1045	
12	HEX. Bolt (S/W)	Alloy Steel	SCM435	A322-4135		SU-09	Snap Ring	Carbon Steel	S45C	A576-1045	
13	HEX. Bolt	Alloy Steel	SCM435	A322-4135		SU-10	Radial Ball B/R	Special Steel	SUJ2	A295-52100	
14	HEX. Bolt (P/W)	Stainless Steel				SU-11	Support Cover	Ductile Iron	FCD-450	A536-65-45-12	
15	Set Screw	Carbon Steel	S45c	A576-1045		SU-12	S-Cover Gasket	Nonasbestos		VALQUA6601	
16	HEX. Nut	Carbon Steel	S45c	A576-1045		SU-13	HEX. Bolt (S/W)	Alloy Steel	SCM435	A322-4135	
17	O-Ring	Buna N	NBR		NOTE. 3	SU-14	Oil-Seal	Buna N	NBR		
18	O-Ring	Buna N	NBR			OP-01	Hand Wheel	Steel Pipe	SGP	A53	OPTION HANDLE PART
19	O-Ring	Buna N	NBR			OP-02	Key(1R)	Carbon Steel	S45C	A576-1045	
20	O-Ring	Buna N	NBR			OP-03	Name Plate	Stainless Steel			
21	Cover Gasket	Non - Asbestos			OP-04	Washer	Stainless Steel				
22	Cap Gasket	Non - Asbestos			OP-05	HEX. Bolt (S/W)	Stainless Steel				

# Worm Gear Actuator Assembly

## STANDARD TYPE-A

Horizontal Input  
with Double Reduction Gear Attachment



### Part List & Material

NO	DESCRIPTION	MATERIAL			REMARK	NO	DESCRIPTION	MATERIAL			REMARK	
		NAME	JIS	ASTM				NAME	JIS	ASTM		
1	Housing	Ductile Iron	FCD-450	A536-65-45-12	NOTE. 1	23	Packing Seal	Buna N	NBR			
2	Cover	Ductile Iron	FCD-450	A536-65-45-12	NOTE. 1	24	Grease Fitting	Steel + Galvanizing				
3	Worm	Carbon Steel	S45C	A576-1045	NOTE. 2	25	Eye Bolt	Steel + Galvanizing				
4	Stem Bush	Ductile Iron	FCD-450	A536-65-45-12		SU-01	Support Housing	Ductile Iron	FCD-450	A536-65-45-12		
5	Worm Gear	Ductile Iron	FCD-600	A536-80-55-06	B148-95800(ALBC3)	SU-02	Helical Gear	Carbon Steel	S45C	A576-1045		
6	Front Cap	Ductile Iron	FCD-450	A536-65-45-12		SU-03	Key (1R)	Carbon Steel	S45C	A576-1045		
7	End Cap	Ductile Iron	FCD-450	A536-65-45-12		SU-04	Snap Ring	Carbon Steel	S45C	A576-1045		
8	Indicator Plate	Steel + EP				SU-05	Idle Gear	Carbon Steel	S45C	A576-1045		
9	Thrust Washer	Steel				SU-06	Radial Ball B/R	Special Steel	SUJ2	A295-52100		
10	Fixed Spring	Steel				SU-07	Key (1R)	Carbon Steel	S45C	A576-1045		
11	Taper Roller Bearing	Special Steel	SUJ2	A295-52100		SU-08	Radial Ball B/R	Special Steel	SUJ2	A295-52100		
12	HEX. Bolt (S/W)	Alloy Steel	SCM435	A322-4135		SU-09	Helical Pinion	Carbon Steel	S45C	A576-1045		
13	HEX. Bolt	Alloy Steel	SCM435	A322-4135		SU-10	Radial Ball B/R	Special Steel	SUJ2	A295-52100		
14	HEX. Bolt (P/W)	Stainless Steel				SU-11	Radial Ball B/R	Special Steel	SUJ2	A295-52100		
15	Set Screw	Carbon Steel	S45c	A576-1045		SU-12	Support Cover	Ductile Iron	FCD-450	A536-65-45-12		
16	HEX. Nut	Carbon Steel	S45c	A576-1045		SU-13	S-Cover Gasket	Nonasbestos			VALQUA6601	
17	O-Ring	Buna N	NBR		NOTE. 3	SU-14	HEX. Bolt (S/W)	Stainless	SCM435	A322-4135		
18	O-Ring	Buna N	NBR			SU-15	Oil-Seal	Buna N	NBR			
19	O-Ring	Buna N	NBR			OP-01	Hand Wheel	Steel Pipe	SGP	A53	OPTION HANDLE PART	
20	O-Ring	Buna N	NBR			OP-02	Key (1R)	Carbon Steel	S45C	A576-1045		
21	Cover Gasket	Non - Asbestos				OP-03	Name Plate	Stainless Steel				
22	Cap Gasket	Non - Asbestos			OP-04	Washer	Stainless Steel					
					OP-05	HEX. Bolt (S/W)	Stainless Steel					

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### Handwheel Type(SE-Series)

TYPE	D	H
WS-200	200	70
WS-300	300	110
WS-400	400	130
WS-500	500	160
WS-600	600	190
WS-700	700	210
WS-800	800	230
WS-900	900	250
WS-1000	1000	270



Global Leader  
**SAMBO**  
 WORM GEAR ACTUATORS

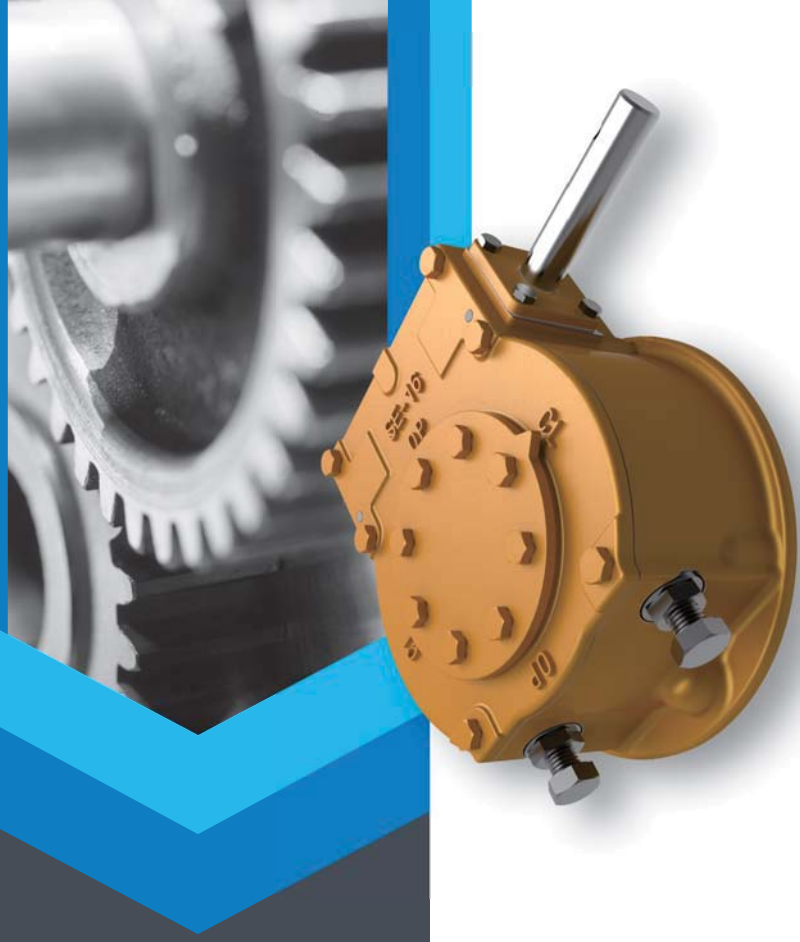
# SE series Quarter-Turn >>>

## Innovation & Change for Customer **SAMBO GEAR ACTUATORS**

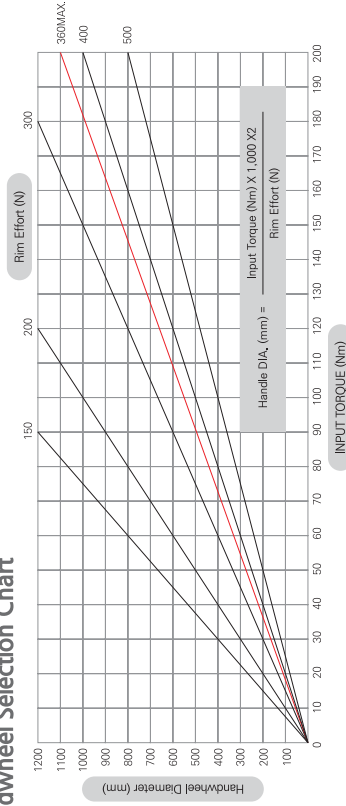
### High Quality Gear Actuators High Performance & Efficiency

We promise to make development through challenge mind, young passion and long experience of management. We will do our best to make No.1 priority company all over the world.

In the future, we would be highly appreciated if you supply any advice for our improvement.



### Handwheel Selection Chart



#11, Saebyeok-ro 215 beon-gil, Sasang-gu, Busan, Korea  
 TEL 82-51-316-2882 FAX 82-51-316-2880  
 Web site <http://www.sambo21.com> E-mail [sambo21.com](mailto:sambo21.com)

## SE Series Quarter-turn Gear Actuators

- The Sambo SE series is designed to meet stringent requirements and provide the necessary durability and reliability.
- All castings are spherical graphite cast iron, and CLASS 65-45-12 has high strength and impact resistance.
- All products use integral worm shafts and high strength bearings to support axial and radial loads.
- Two types of separable bushing and integral type make maintenance easy.
- It has double sealing structure and excellent waterproof and dust proof capability.
- Finish painting is Kovynyl wash primer.

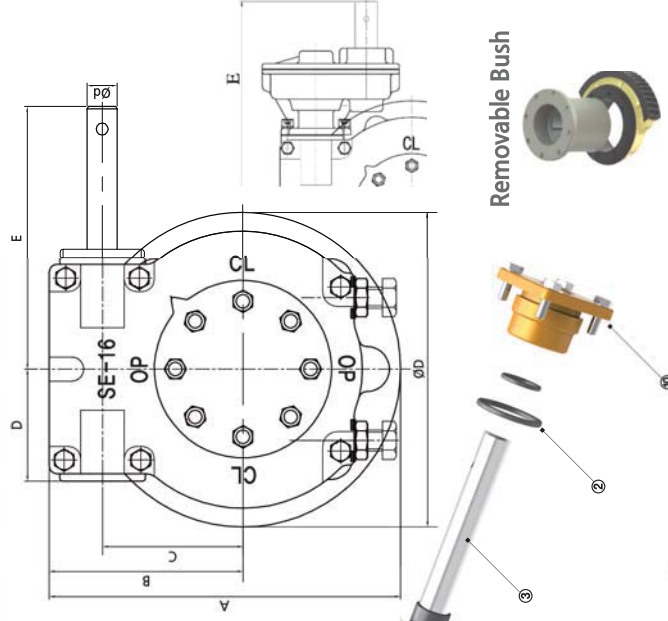
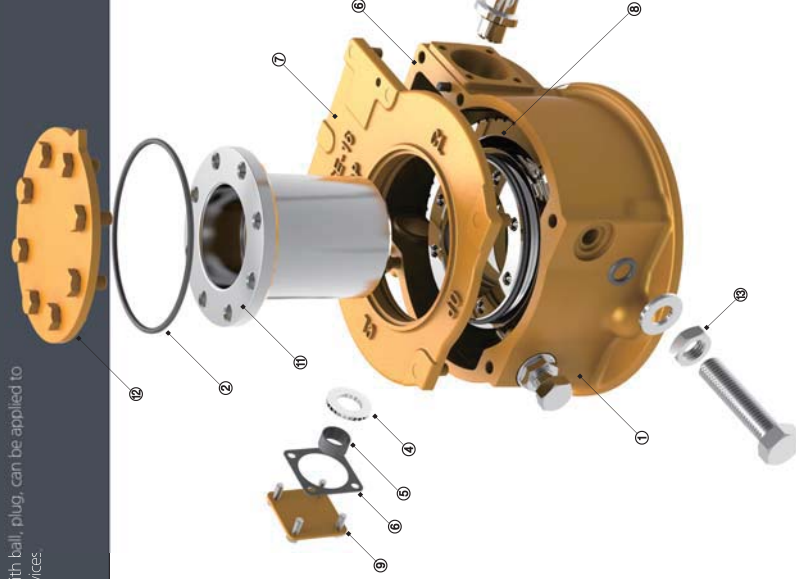
## Application

- The Sambo SE series is a 1/4 turn gear actuator with ball, plug, can be applied to butterfly valves, it can also be used for general devices.

## Material List SE-series

No.	Description	Material	Note
1	Housing	Ductile iron	65-45-12
2	O-ring	NBR	
3	Worm	Carbon steel	S45C
4	Needle bearing	Special Steel	
5	DU Bushing	Special Steel	
6	Gasket	Liquid seal / Nonasbestos	
7	Cover	Ductile iron	65-45-12
8	Worm Wheel	Ductile iron	80-55-06
9	Front Cap	Steel	
10	End cap	Steel	
11	Stem bush	Ductile iron	FCD450
12	Position Indicator	Steel	
13	Stop bolt	Alloy steel	10.9 Gr.D

- Material may be changed to improve product performance.



## Removable Bush



## Integral Bush



## Dimension

Model	A	B	C	D	E	F	G	ØD	Ød
SE-10	129	69	43.5	52.5	121	36	69.5	12	12
SE-12	155	82	55	61.5	129	43	80.5	14	14
SE-14	192.5	105	72.5	73	167	52	93	16	16
SE-16	234	129	92	86.5	176	58	102	20	20
SE-20	272	147	107	95.5	180	63	115.5	25	25
SE-20-1S					242.5			25	25
SE-25	316	166	122.5	105.5	190	65	120	25	25
SE-25-1S					252.5			25	25

Model	Ratio	Torque (N.m)		M.A	+10%	Valve Connection (Iso5211)		Max. Stem (mm)		Weight (kg)
		Output	Input			std.	option	Bore	Square	
SE-10	38:1	300	27.0	11.1	F10	F07,F05	25	20	62	
SE-12	42:1	600	52.6	11.4	F12	F10,F07	35	28	72	
SE-14	46:1	1400	106.1	13.2	F14	F12,F10	43	35	85	
SE-16	50:1	2400	161.1	14.9	F16	F14,F12,F10	58	46	95	
SE-20	54:1	3500	224.4	15.6	F20	F16, F14,F12	68	54	105	
SE-20-1S	135:1		97.2	36						
SE-25	58:1	4800	289.2	16.6	F25	F20,F16, F14	80	62	108	
SE-25-1S	145:1		125.7	38.2						

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unit : mm



# Worm Gear Actuators Technical Data



Model	Ratio	Max. Output Torque		Mechanical Advantage (±10%)	Max. Input Torque (N·m)	Turns to Close (REV)	Bore Diameter (Stem. Max)	Mounting Flange (ISO5210/1)
		(N·m)	(Ft·lbf)					
SBWG-BF	32 :1	360	266	11.6	30.9	8	20 (6x6)	F-07
SBWG-BFTN						32		
SBWG-BFMT								
SBWG-BFDC	29 :1	320	236	10.9	29.4	8	20 (6x6)	F-07
SBWG-BFDCM								
SBWG-0	36:1	780	575	13.4	58.1	9	28 (8x7)	F-10 F-07 (OPTION)
SBWG-0TN								
SBWG-0MT								
SBWG-0DC	34 :1	680	502	13.3	51.1	8.5	28 (8x7)	F-10 F-07 (OPTION)
SBWG-0DCM								
SBWG-00	40 :1	1200	885	14.1	85.0	10	36 (10x8)	F-12 F-10 (OPTION)
SBWG-00TN						40		
SBWG-00MT								
SBWG-00-1S	80 :1	1200	885	26.0	46.2	20	36 (10x8)	F-12 F-10 (OPTION)
SBWG-00TN-1S						80		
SBWG-00MT-1S								
SBWG-00-1ST	P-40:1	1200	885	14.1	85.0	10	36 (10x8)	F-12 F-10 (OPTION)
	S-80:1					20		
SBWG-00-1SD	160 :1					1200		
SBWG-00TN-1SD		160						
SBWG-00MT-1SD								
SBWG-00-1SDT	P-80:1	1200	885	26.0	46.2	20	36 (10x8)	F-12 F-10 (OPTION)
	S-160:1					40		
SBWG-00-2SD	320 :1					1200		
SBWG-00-1S2B	160 :1	40						
SBWG-00-1SD2B	320 :1	80						
SBWG-00-2B	80 :1	1200	885	26.8	44.8	20	36 (10x8)	F-12 F-10 (OPTION)
SBWG-00-2BD	160 :1					40		
SBWG-00-3W	1440 :1					360		
SBWG-00-3W2B	1440 :1	360						
SBWG-00DC	38 :1	980	723	14.1	69.3	9.5	36 (10x8)	F-12 F-10 (OPTION)
SBWG-00DCM								
SBWG-00DC-1S	67 :1	980	723	22.8	43.1	16.6	36 (10x8)	F-12 F-10 (OPTION)
SBWG-00DCM-1S								
SBWG-00DC-2SD	266 :1	980	723	77.0	12.7	66.5	36 (10x8)	F-12 F-10 (OPTION)
SBWG-00DCM-2SD								
Remark	● Ratio & Base specification to be changeable.							
	● Max Output Torque includes safety factor.							
	● If any request requirement, please contact us any time.							

# Worm Gear Actuators Technical Data



Model	Ratio	Max. Output Torque		Mechanical Advantage (±10%)	Max. Input Torque (N·m)	Turns to Close (REV)	Bore Diameter (Stem. Max)	Mounting Flange (ISO5210/1)
		(N·m)	(Ft·lbf)					
SBWG-01	44 :1	2000	1475	15.1	132.2	11	46 (14x9)	F-14 F-12, F-10 (OPTION)
SBWG-01TN						44		
SBWG-01MT						22		
SBWG-01-1S	88 :1			27.8	71.8	88		
SBWG-01TN-1S				22				
SBWG-01MT-1S	11							
SBWG-01-1ST	P-44:1			15.1	132.2	11		
	S-88:1			27.8	71.8	22		
SBWG-01-1SD	176 :1			51.2	39.0	44		
SBWG-01TN-1SD				176				
SBWG-01MT-1SD				22				
SBWG-01-1SDT	P-88:1			27.8	71.8	22		
	S-176:1	51.2	39.0	44				
SBWG-01-2SD	352 :1	94.3	21.2	88				
SBWG-01-1S2B	176 :1	52.9	37.8	44				
SBWG-01-1SD2B	352 :1	97.3	20.5	88				
SBWG-01-2B	88 :1	28.8	69.6	22				
SBWG-01-2BD	176 :1	54.6	36.6	44				
SBWG-01-3W	1584 :1	203.0	9.9	396				
SBWG-01-3W2B	1584 :1	188.8	10.6	396				
SBWG-01DC	43 :1	1600	1180	15.0	106.8	10.8	60 (18x11)	F-16 F-14, F-12 (OPTION)
SBWG-01DCM								
SBWG-01DC-1S	75 :1			26.1	61.2	18.8		
SBWG-01DCM-1S				87.9	18.2	74.5		
SBWG-01DC-2SD	298:1			87.9	18.2	74.5		
SBWG-01DCM-2SD								
SBWG-02	48 :1	2800	2065	15.9	176.1	12	60 (18x11)	F-16 F-14, F-12 (OPTION)
SBWG-02TN						48		
SBWG-02MT						30.4		
SBWG-02-1S	121.6 :1			37.1	75.6	121.6		
SBWG-02TN-1S				30.4				
SBWG-02TM-1S	12							
SBWG-02-1ST	P-48:1			15.9	176.1	30.4		
	S-121.6:1			37.1	75.6	77		
SBWG-02-1SD	308.1 :1			86.4	32.4	308.1		
SBWG-02TN-1SD				30.4				
SBWG-02MT-1SD				77				
SBWG-02-1SDT	P-121.6:1			37.1	75.6	30.4		
	S-308.1:1	86.4	32.4	77				
SBWG-02-2SD	616.1 :1	158.9	17.6	154				
SBWG-02-1S2B	243.2 :1	70.4	39.8	60.8				
SBWG-02-1SD2B	616.1 :1	164.1	17.1	154				
SBWG-02-2B	120 :1	37.8	74.1	30				
SBWG-02-2BD	240 :1	71.7	39.0	60				
SBWG-02-3W	1920 :1	224.4	12.5	480				
SBWG-02-3W2B	1920 :1	208.7	13.4	480				
SBWG-02DC	46 :1	2500	1844	15.9	157.4	11.5	60 (18x11)	F-16 F-14, F-12 (OPTION)
SBWG-02DCM								
SBWG-02DC-1S	107 :1			34.0	73.5	26.8		
SBWG-02DCM-1S				115.4	21.7	107.3		
SBWG-02DC-2SD	429 :1			115.4	21.7	107.3		
SBWG-02DCM-2SD								
Remark	<ul style="list-style-type: none"> <li>• Ratio &amp; Base specification to be changeable.</li> <li>• Max Output Torque includes safety factor.</li> <li>• If any request requirement, please contact us any time.</li> </ul>							

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# Worm Gear Actuators Technical Data



Model	Ratio	Max. Output Torque		Mechanical Advantage (±10%)	Max. Input Torque (N·m)	Turns to Close (REV)	Bore Diameter (Stem. Max)	Mounting Flange (ISO5210/1)		
		(N·m)	(Ft·lbf)							
SBWG-03	52 :1	4300	3172	16.9	253.7	13	75 (20x12)	(F-20) F-16, F-14 (OPTION)		
SBWG-03TN						52				
SBWG-03MT	131.7 :1			39.5	108.9	32.9				
SBWG-03-1S						131.7				
SBWG-03TN-1S	P-52:1			16.9	253.7	13				
SBWG-03MT-1S						S-131.7:1			32.9	
SBWG-03-1ST	333.7 :1			92.1	46.7	83.4				
SBWG-03-1SD						333.7				
SBWG-03TN-1SD	P-131.7:1			39.5	108.9	32.9				
SBWG-03MT-1SD						S-333.7:1			83.4	
SBWG-03-1SDT	667.4 :1			169.4	25.4	166.9				
SBWG-03-2SD						263.5 :1			75.0	65.9
SBWG-03-1S2B	667.4 :1			174.9	24.6	166.9				
SBWG-03-1SD2B						130 :1			40.2	32.5
SBWG-03-2B	260 :1			76.5	56.2	65				
SBWG-03-2BD						260 :1			233.1	18.4
SBWG-03-3W	2080 :1			216.8	19.8	520				
SBWG-03-3W2B						2080 :1			16.9	224.6
SBWG-03DC	50 :1			3800	2803	36.4			104.3	29.3
SBWG-03DCM						117 :1			123.0	30.9
SBWG-03DC-1S	467 :1	6100	4499	17.4	350.5	13	80 (22x14)	F-25, (F-20) F-16 (OPTION)		
SBWG-03DCM-1S						52				
SBWG-35	52 :1			40.6	150.4	32.9				
SBWG-35TN						131.7 :1			131.7	
SBWG-35MT	P-52:1			17.4	350.5	13				
SBWG-35-1S						S-131.7:1			32.9	
SBWG-35TN-1S	333.7 :1			94.5	64.5	83.4				
SBWG-35MT-1S						333.7				
SBWG-35-1ST	P-131.7:1			40.6	150.4	32.9				
SBWG-35-1SD						S-333.7:1			83.4	
SBWG-35TN-1SD	667.4 :1			173.9	35.1	166.9				
SBWG-35MT-1SD						263.5 :1			77.1	65.9
SBWG-35-1SDT	667.4 :1			179.6	34.0	166.9				
SBWG-35-2SD						130 :1			41.3	32.5
SBWG-35-1S2B	260 :1			78.5	77.7	65				
SBWG-35-1SD2B						260 :1			263.3	23.2
SBWG-35-2B	2288 :1			244.9	24.9	572				
SBWG-35-2BD						2288 :1			20.1	278.6
SBWG-35-3W	52 :1			5600	4130	41.9			133.6	29.5
SBWG-35-3W2B						52 :1			141.9	39.5
SBWG-35DC	118 :1	471 :1								
SBWG-35DCM							118 :1			
SBWG-35DC-1S	471 :1									
SBWG-35DCM-1S							471 :1			
SBWG-35DC-2SD										
SBWG-35DCM-2SD										

Remark

- Ratio & Base specification to be changeable.
- Max Output Torque includes safety factor.
- If any request requirement, please contact us any time.

# Worm Gear Actuators Technical Data



Model	Ratio	Max. Output Torque		Mechanical Advantage (±10%)	Max. Input Torque (N·m)	Turns to Close (REV)	Bore Diameter (Stem. Max)	Mounting Flange (ISO5210/1)		
		(N·m)	(Ft·lbf)							
SBWG-04	56 :1	10400	7671	18.3	569.8	14	95 (25x14)	F-25 (F-20), F-16 (OPTION)		
SBWG-04TN						56				
SBWG-04MT						42				
SBWG-04-1S	168 :1			206.5	168					
SBWG-04TN-1S				14						
SBWG-04MT-1S	42									
SBWG-04-1ST	P-56:1			18.3	569.8	14				
	S-168:1			50.4	206.5	42				
SBWG-04-1SD	504 :1			139.0	74.8	126				
SBWG-04TN-1SD				504						
SBWG-04MT-1SD		42								
SBWG-04-1SDT	P-168:1	50.4	206.5	42						
	S-504:1	139.0	74.8	126						
SBWG-04-2SD	1276.8 :1	324.0	32.1	319.2						
SBWG-04-1S2B	420 :1	119.6	86.9	105						
SBWG-04-1SD2B	1260 :1	330.2	31.5	315						
SBWG-04-2B	168 :1	52.0	199.9	42						
SBWG-04-2BD	420 :1	123.5	84.2	105						
SBWG-04-3W	2688 :1	290.2	35.8	672						
SBWG-04-3W2B	3360 :1	337.3	30.8	840						
SBWG-04DC	56 :1	9600	7081	21.2	452.7	14				
SBWG-04DCM						37.3				
SBWG-04DC-1S	149.3 :1			52.0	184.5	37.3				
SBWG-04DCM-1S				239.5						
SBWG-04DC-2SD	958 :1			282.5	34.0	239.5				
SBWG-04DCM-2SD										
SBWG-05	60:1			15900	11727	19.6	813.1	15	115 (32x18)	F-30 F-25 (OPTION)
SBWG-05TN								60		
SBWG-05MT								45		
SBWG-05-1S	180:1					294.6	180			
SBWG-05TN-1S		15								
SBWG-05MT-1S	45									
SBWG-05-1ST	P-60:1	19.6	813.1			15				
	S-180:1	54.0	294.6			45				
SBWG-05-1SD	540 :1	149.0	106.7			135				
SBWG-05TN-1SD		540								
SBWG-05MT-1SD		45								
SBWG-05-1SDT	P-180:1	54.0	294.6	45						
	S-540:1	149.0	106.7	135						
SBWG-05-2SD	1368:1	347.2	45.8	342						
SBWG-05-1S2B	450:1	128.2	124.0	112.5						
SBWG-05-1SD2B	1350:1	353.8	44.9	337.5						
SBWG-05-2B	180:1	55.7	285.3	45						
SBWG-05-2BD	450:1	132.4	120.1	112.5						
SBWG-05-3W	2880:1	305.9	52.0	720						
SBWG-05-3W2B	3600:1	355.6	44.7	900						
SBWG-05DC	60:1	14400	10621	22.4	644.0	15				
SBWG-05DCM						40				
SBWG-05DC-1S	160:1			54.9	262.5	40				
SBWG-05DCM-1S				256.6						
SBWG-05DC-2SD	1026:1			297.9	48.3	256.6				
SBWG-05DCM-2SD										
Remark	<ul style="list-style-type: none"> <li>Ratio &amp; Base specification to be changeable.</li> <li>Max Output Torque includes safety factor.</li> <li>If any request requirement, please contact us any time.</li> </ul>									

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# Worm Gear Actuators Technical Data



Model	Ratio	Max. Output Torque		Mechanical Advantage (±10%)	Max. Input Torque (N·m)	Turns to Close (REV)	Bore Diameter (Stem. Max)	Mounting Flange (ISO5210/1)					
		(N·m)	(Ft·lbf)										
SBWG-55	62:1	23500	17333	20.8	1129.8	15.5	125 (32x18)	F-30 F-25 (OPTION)					
SBWG-55TN						62							
SBWG-55MT						62							
SBWG-55-1S	186:1	23500	17333	57.4	409.3	46.5	125 (32x18)	F-30 F-25 (OPTION)					
SBWG-55TN-1S						186							
SBWG-55MT-1S						186							
SBWG-55-1ST	P-62:1	23500	17333	20.8	1129.8	15.5	125 (32x18)	F-30 F-25 (OPTION)					
	S-186:1					57.4			409.3	46.5			
SBWG-55-1SD	558:1					23500			17333	158.5	148.3	139.5	125 (32x18)
SBWG-55TN-1SD		558											
SBWG-55MT-1SD		558											
SBWG-55-1SDT	P-186:1	23500	17333	57.4	409.3	46.5	125 (32x18)	F-30 F-25 (OPTION)					
	S-558:1					158.5			148.3	139.5			
SBWG-55-2SD	1413.6:1					369.3			63.6	353.4			
SBWG-55-1S2B	465:1	23500	17333	136.3	172.4	116.3	125 (32x18)	F-30 F-25 (OPTION)					
SBWG-55-1SD2B	1395:1					376.3			62.4	348.8			
SBWG-55-2B	186:1					59.3			396.4	46.5			
SBWG-55-2BD	465:1	23500	17333	140.8	166.9	116.3	125 (32x18)	F-30 F-25 (OPTION)					
SBWG-55-3W	3224:1					352.5			66.7	806			
SBWG-55-3W2B	4030:1					409.8			57.3	1007.5			
SBWG-55DC	62:1	21150	15599	23.6	897.5	15.5	125 (32x18)	F-30 F-25 (OPTION)					
SBWG-55DCM						165:1			21150	15599	57.8	365.8	41.3
SBWG-55DC-1S													
SBWG-55DC-2SD	1061:1	21150	15599	313.9	67.4	265.2	125 (32x18)	F-30 F-25 (OPTION)					
SBWG-55DCM-2SD						SBWG-55DCM-2SD							
SBWG-06	64:1	32800	24192	20.2	1627.5	16	140 (36x20)	F-35 F-30, F-25 (OPTION)					
SBWG-06TN						64							
SBWG-06MT						64							
SBWG-06-1S	256:1	32800	24192	74.2	442.2	64	140 (36x20)	F-35 F-30, F-25 (OPTION)					
SBWG-06TN-1S						256							
SBWG-06MT-1S						256							
SBWG-06-1ST	P-64:1	32800	24192	20.2	1627.5	16	140 (36x20)	F-35 F-30, F-25 (OPTION)					
	S-256:1					74.2			442.2	64			
SBWG-06-1SD	1024:1					32800			24192	272.9	120.2	256	140 (36x20)
SBWG-06TN-1SD		1024											
SBWG-06MT-1SD		1024											
SBWG-06-1SDT	P-256:1	32800	24192	74.2	442.2	64	140 (36x20)	F-35 F-30, F-25 (OPTION)					
	S-1024:1					272.9			120.2	256			
SBWG-06-2SD	3072:1					753.3			43.5	768			
SBWG-06-1S2B	768:1	32800	24192	211.4	155.2	192	140 (36x20)	F-35 F-30, F-25 (OPTION)					
SBWG-06-1SD2B	3072:1					777.9			42.2	768			
SBWG-06-2B	256:1					76.6			428.3	64			
SBWG-06-2BD	768:1	32800	24192	218.3	150.3	192	140 (36x20)	F-35 F-30, F-25 (OPTION)					
SBWG-06-3W	3328:1					350.7			93.5	832			
SBWG-06-3W2B	4160:1					407.7			80.4	1040			
SBWG-06DC	64:1	29520	21773	23.3	1267.2	16	140 (36x20)	F-35 F-30, F-25 (OPTION)					
SBWG-06DCM						232:1			29520	21773	77.7	380.0	58
SBWG-06DC-1S													
SBWG-06DC-2SD	2088:1	29520	21773	591.8	49.9	522	140 (36x20)	F-35 F-30, F-25 (OPTION)					
SBWG-06DCM-2SD						SBWG-06DCM-2SD							
Remark	<ul style="list-style-type: none"> <li>Ratio &amp; Base specification to be changeable.</li> <li>Max Output Torque includes safety factor.</li> <li>If any request requirement, please contact us any time.</li> </ul>												

# Worm Gear Actuators Technical Data



Model	Ratio	Max. Output Torque		Mechanical Advantage (±10%)	Max. Input Torque (N·m)	Turns to Close (REV)	Bore Diameter (Stem. Max)	Mounting Flange (ISO5210/1)				
		(N·m)	(Ft·lbf)									
SBWG-07	68:1	51100	37689	22.0	2323.0	17	180 (45x25)	F-40 F-35, F-30 (OPTION)				
SBWG-07TN						68						
SBWG-07MT						68						
SBWG-07-1S	272:1			80.9	631.3	68						
SBWG-07TN-1S						272						
SBWG-07MT-1S						17						
SBWG-07-1ST	P-68:1			22.0	2323.0	17						
	S-272:1					68						
						272						
SBWG-07-1SD	1088:1			297.9	171.5	272						
SBWG-07TN-1SD						1088						
SBWG-07MT-1SD						68						
SBWG-07-1SDT	P-272:1	80.9	631.3	68								
	S-1088:1			272								
				272								
SBWG-07-2SD	3264:1	822.2	62.2	816								
SBWG-07-1S2B	816:1	230.7	221.5	204								
SBWG-07-1SD2B	3264:1	849.0	60.2	816								
SBWG-07-2B	272:1	83.6	611.3	68								
SBWG-07-2BD	816:1	238.2	214.5	204								
SBWG-07-3W	3536:1	382.8	133.5	884								
SBWG-07-3W2B	4420:1	445.0	114.8	1105								
SBWG-07DC	68:1	45000	33190	25.0	1802.9	17	210 (50x28)	F-48 F-40, F-35 (OPTION)				
SBWG-07DCM						83.2			540.6	61.6		
SBWG-07DC-1S											247:1	83.2
SBWG-07DCM-1S	2218:1			633.9	71.0							
SBWG-07DC-2SD						633.9			71.0	554.5		
SBWG-07DCM-2SD												
SBWG-75	66:1	81500	60111	23.1	3532.3		16.5	210 (50x28)			F-48 F-40, F-35 (OPTION)	
SBWG-75TN						66						
SBWG-75MT						66						
SBWG-75-1S	330:1			106.1	767.9	82.5						
SBWG-75TN-1S						330						
SBWG-75MT-1S						16.5						
SBWG-75-1ST	P-66:1			106.1	767.9	82.5						
	S-330:1					412.5						
						1650						
SBWG-75-1SD	1650:1			488.2	166.9	412.5						
SBWG-75TN-1SD						1650						
SBWG-75MT-1SD						82.5						
SBWG-75-1SDT	P-330:1	106.1	767.9	82.5								
	S-1650:1			412.5								
				412.5								
SBWG-75-2SD	6600:1	1796.7	45.4	1650								
SBWG-75-1S2B	1320:1	403.3	202.1	330								
SBWG-75-1SD2B	6600:1	1855.3	43.9	1650								
SBWG-75-2B	330:1	109.6	743.6	82.5								
SBWG-75-2BD	1072.5:1	338.4	240.9	268.1								
SBWG-75-3W	3696:1	421.1	193.5	924								
SBWG-75-3W2B	5544:1	587.4	138.7	1386								
SBWG-75DC	65:1	73350	54100	25.7	2856.0	16.3	210 (50x28)	F-48 F-40, F-35 (OPTION)				
SBWG-75DCM						105.5			695.0	72.6		
SBWG-75DC-1S											290:1	105.5
SBWG-75DCM-1S	4645:1			1429.3	51.3							
SBWG-75DC-2SD						1429.3			51.3	1161.3		
SBWG-75DCM-2SD												
Remark	<ul style="list-style-type: none"> <li>Ratio &amp; Base specification to be changeable.</li> <li>Max Output Torque includes safety factor.</li> <li>If any request requirement, please contact us any time.</li> </ul>											

# Worm Gear Actuators Technical Data



Model	Ratio	Max. Output Torque		Mechanical Advantage (±10%)	Max. Input Torque (N·m)	Turns to Close (REV)	Bore Diameter (Stem. Max)	Mounting Flange (ISO5210/1)							
		(N·m)	(Ft·lbf)												
SBWG-08	66:1	121000	89245	24.3	4978.0	16.5	250 (56x32)	F-48 F-40 (OPTION)							
SBWG-08TN						66									
SBWG-08MT						82.5									
SBWG-08-1S	330:1			111.8	1082.2	330									
SBWG-08TN-1S				24.3	4978.0	16.5									
SBWG-08MT-1S				111.8	1082.2	82.5									
SBWG-08-1ST	P-66:1			121000	89245	24.3			4978.0	16.5	250 (56x32)	F-48 F-40 (OPTION)			
SBWG-08-1SD	S-330:1									111.8			1082.2	82.5	
	1650:1									514.3			235.3	412.5	
SBWG-08TN-1SD	P-330:1					111.8			1082.2	82.5					
SBWG-08MT-1SD						S-1650:1			514.3	235.3			412.5		
SBWG-08-2SD	6600:1					1892.8			63.9	1650					
SBWG-08-1S2B	1320:1	424.9	284.8			330									
SBWG-08-1SD2B	6600:1	1954.5	61.9			1650									
SBWG-08-2B	363:1	127.0	952.7			90.8									
SBWG-08-2BD	1270.5:1	422.3	286.5			317.6									
SBWG-08-3W	3960:1	475.3	254.6			990									
SBWG-08-3W2B	5940:1	663.1	182.5			1485									
SBWG-08DC	65:1	108900		26.4	4120.7	16.3	250 (56x32)	F-48 F-40 (OPTION)							
SBWG-08DCM															
SBWG-08DC-1S															
SBWG-08DCM-1S				290:1	108.6	1002.8			72.6						
SBWG-08DC-2SD				4645:1	1470.7	74.0			1161.3						
SBWG-08DCM-2SD															
SBWG-09	66:1	192500	141981	25.9	7429.6	16.5	280 (63x32)	F-60 F-48 (OPTION)							
SBWG-09TN						66									
SBWG-09MT						82.5									
SBWG-09-1S	330:1			119.2	1615.1	330									
SBWG-09TN-1S				25.9	7429.6	16.5									
SBWG-09MT-1S				119.2	1615.1	82.5									
SBWG-09-1ST	P-66:1			192500	141981	25.9			7429.6	16.5	280 (63x32)	F-60 F-48 (OPTION)			
SBWG-09-1SD	S-330:1												119.2	1615.1	82.5
	1650:1												548.3	351.1	412.5
SBWG-09TN-1SD	P-330:1					119.2			1615.1	82.5					
SBWG-09MT-1SD						S-1650:1			548.3	351.1			412.5		
SBWG-09-2SD	6600:1					2017.6			95.4	1650					
SBWG-09-1S2B	1320:1	452.9	425.0			330									
SBWG-09-1SD2B	6600:1	2083.4	92.4			1650									
SBWG-09-2B	396:1	147.7	1303.4			99									
SBWG-09-2BD	1584:1	561.2	343.0			396									
SBWG-09-3W	4092:1	538.9	357.2			1023									
SBWG-09-3W2B	6138:1	751.8	256.0			1534.5									
SBWG-09DC	64:1	178000	131286	27.0	6604.5	16	280 (63x32)	F-60 F-48 (OPTION)							
SBWG-09DCM															
SBWG-09DC-1S															
SBWG-09DCM-1S				286:1	110.8	1607.2			71.5						
SBWG-09DC-2SD				4574:1	1499.9	118.7			1143.5						
SBWG-09DCM-2SD															
Remark	<ul style="list-style-type: none"> <li>Ratio &amp; Base specification to be changeable.</li> <li>Max Output Torque includes safety factor.</li> <li>If any request requirement, please contact us any time.</li> </ul>														

# Worm Gear Actuators Technical Data



Model	Ratio	Max. Output Torque		Mechanical Advantage (±10%)	Max. Input Torque (N·m)	Turns to Close (REV)	Bore Diameter (Stem. Max)	Mounting Flange (ISO5210/1)				
		(N·m)	(Ft·lbf)									
SBWG-10	64:1	275000	202830	24.3	11313.4	16	320 (70x36)	F-60				
SBWG-10TN						64						
SBWG-10MT						80						
SBWG-10-1S	320:1			111.8	2459.4	320						
SBWG-10TN-1S				80								
SBWG-10MT-1S				16								
SBWG-10-1ST	P-64:1			24.3	11313.4	16						
	S-320:1			111.8	2459.4	80						
SBWG-10-1SD	1600:1			514.3	534.7	400						
SBWG-10TN-1SD				1600								
SBWG-10MT-1SD				80								
SBWG-10-1SDT	P-320:1			111.8	2459.4	400						
	S-1600:1			514.3	534.7	1600						
SBWG-10-2SD	8000:1			2366.0	116.2	2000						
SBWG-10-1S2B	1600:1			531.1	517.8	400						
SBWG-10-1SD2B	8000:1			2443.1	112.6	2000						
SBWG-10-2B	416:1			150.1	1832.1	104						
SBWG-10-2BD	2080:1			713.0	385.7	520						
SBWG-10-3W	4096:1	489.9	561.3	1024								
SBWG-10-3W2B	8192:1	911.2	301.8	2048								
SBWG-10DC	62:1	253000	186600	25.1	10075.7	15.5	360 (80x40)	F-60				
SBWG-10DCM						66.5						
SBWG-10DC-1S						66.5						
SBWG-10DCM-1S						1662.5						
SBWG-10DC-2SD						1662.5						
SBWG-10DCM-2SD						1662.5						
SBWG-11	68:1	442000	326002	26.2	16882.0	17	360 (80x40)	F-60				
SBWG-11TN						68						
SBWG-11MT						85						
SBWG-11-1S	340:1			120.4	3670.0	340						
SBWG-11TN-1S				85								
SBWG-11MT-1S				17								
SBWG-11-1ST	P-68:1			26.2	16882.0	17						
	S-340:1			120.4	3670.0	85						
SBWG-11-1SD	1700:1			554.0	797.8	425						
SBWG-11TN-1SD				1700								
SBWG-11MT-1SD				85								
SBWG-11-1SDT	P-340:1			120.4	3670.0	425						
	S-1700:1			554.0	797.8	1700						
SBWG-11-2SD	8500:1			2548.4	173.4	2125						
SBWG-11-1S2B	1700:1			572.1	772.6	425						
SBWG-11-1SD2B	8500:1			2631.5	168.0	2125						
SBWG-11-2B	442:1			161.7	2733.9	110.5						
SBWG-11-2BD	2210:1			767.9	575.6	552.5						
SBWG-11-3W	4624:1			575.9	767.5	1156						
SBWG-11-3W2B	9248:1			1071.2	412.6	2312						
Remark	● Ratio & Base specification to be changeable.											
	● Max Output Torque includes safety factor.											
	● If any request requirement, please contact us any time.											

Size and component specification in this catalogue are subject to change without prior notice for quality improvement.



# Worm Gear Actuators Technical Data



Model	Ratio	Max. Output Torque		Mechanical Advantage (±10%)	Max. Input Torque (N·m)	Turns to Close (REV)	Bore Diameter (Stem. Max)	Mounting Flange (ISO5210/1)				
		(N·m)	(Ft·lbf)									
SBWG-12	70 :1	610000	449913	27.1	22546.0	17.5	400 (90x45)	F-80 F-60 (OPTION)				
SBWG-12TN						70						
SBWG-12MT						70						
SBWG-12-1S	350 :1	610000	449913	124.5	4901.3	87.5	400 (90x45)	F-80 F-60 (OPTION)				
SBWG-12TN-1S						87.5						
SBWG-12MT-1S						350						
SBWG-12-1ST	P-70:1	610000	449913	27.1	22546.0	17.5	400 (90x45)	F-80 F-60 (OPTION)				
	S-350:1					124.5						
SBWG-12-1SD	1750 :1					610000			449913	572.5	1065.5	437.5
SBWG-12TN-1SD		437.5										
SBWG-12MT-1SD		1750										
SBWG-12-1SDT	P-350:1	610000	449913	124.5	4901.3	87.5	400 (90x45)	F-80 F-60 (OPTION)				
	S-1750:1					572.5						
SBWG-12-2SD	8750 :1					610000			449913	2633.5	231.6	2187.5
SBWG-12-1S2B	1925 :1	650.3										
SBWG-12-1SD2B	9625 :1	2991.3										
SBWG-12-2B	490 :1	610000	449913	179.9	3390.4	122.5	400 (90x45)	F-80 F-60 (OPTION)				
SBWG-12-2BD	2695 :1					940.1						
SBWG-12-3W	4620 :1					624.3						
SBWG-12-3W2B	11550 :1	610000	449913	1451.4	420.3	2887.5	400 (90x45)	F-80 F-60 (OPTION)				
SBWG-13	72 :1					970000			715435	28.0	34640.7	18
SBWG-13TN												72
SBWG-13MT		72										
SBWG-13-1S	360 :1	970000	715435	128.8	7530.6	90	450 (100x50)	F-80 F-60 (OPTION)				
SBWG-13TN-1S						90						
SBWG-13MT-1S						360						
SBWG-13-1ST	P-72:1	970000	715435	28.0	34640.7	18	450 (100x50)	F-80 F-60 (OPTION)				
	S-360:1					128.8						
SBWG-13-1SD	1800 :1					970000			715435	592.5	1637.1	450
SBWG-13TN-1SD		450										
SBWG-13MT-1SD		1800										
SBWG-13-1SDT	P-360:1	970000	715435	128.8	7530.6	90	450 (100x50)	F-80 F-60 (OPTION)				
	S-1800:1					592.5						
SBWG-13-2SD	9000 :1					2725.6						
SBWG-13-1S2B	2160 :1	970000	715435	734.2	1321.2	540	450 (100x50)	F-80 F-60 (OPTION)				
SBWG-13-1SD2B	10800 :1					3377.3						
SBWG-13-2B	544 :1					201.0						
SBWG-13-2BD	3264 :1	970000	715435	1145.6	846.7	816	450 (100x50)	F-80 F-60 (OPTION)				
SBWG-13-3W	4752 :1					680.6						
SBWG-13-3W2B	13068 :1					1740.7						
Remark	● Ratio & Base specification to be changeable.											
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