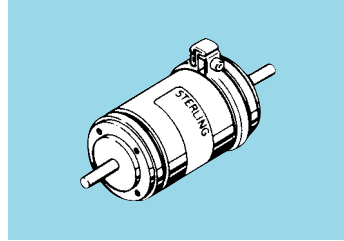
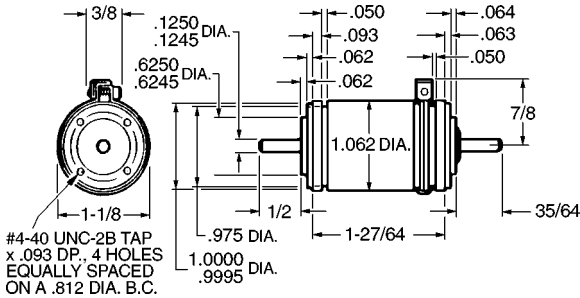


■ 1-1/16 INCH OUTSIDE DIAMETER

■ PAT. NO. 2,892,357



S Precision Component

SPECIFICATIONS:

Maximum Backlash – 0°30'
 Maximum Starting Torque – .01 oz. in.
 Rated Output Torque – 30 oz. in.

CATALOG NUMBER DESIGNATION:

S 9 1 1 1 A - T 6 0 1 7 -

Insert Dash No. from table below.

Example: S9111A-T6017-16 has a 40.15: 1 ratio.

NOTES: (1) "S" indicates output rotates in the same direction as input; "R" denotes opposite rotation.
 (2) Ball bearings used throughout.

Dash No.	Ratio To 1	Rotation
- 01	5.29	S
- 02	6.83	S
- 03	9.00	S
- 04	10.44	S
- 05	11.89	R
- 06	13.80	R
- 07	15.38	R
- 08	17.84	R
- 09	20.25	R
- 10	23.50	R
- 11	27.27	R
- 12	26.76	S
- 13	31.05	S
- 14	34.59	S
- 15	36.04	S
- 16	40.15	S
- 17	45.56	S
- 18	46.59	S
- 19	52.88	S
- 20	61.36	S
- 21	71.21	S
- 22	60.21	R
- 23	69.87	R

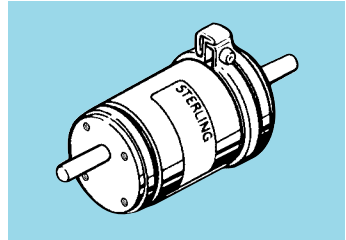
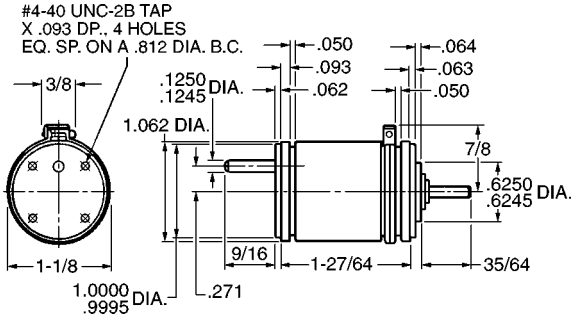
Dash No.	Ratio To 1	Rotation
- 24	77.84	R
- 25	81.08	R
- 26	90.33	R
- 27	94.10	R
- 28	102.52	R
- 29	104.83	R
- 30	118.97	R
- 31	121.65	R
- 32	138.06	R
- 33	160.22	R
- 34	185.94	R
- 35	135.47	S
- 36	157.21	S
- 37	175.13	S
- 38	182.44	S
- 39	203.24	S
- 40	211.72	S
- 41	230.66	S
- 42	235.86	S
- 43	245.70	S
- 44	267.68	S
- 45	273.71	S
- 46	310.64	S

Dash No.	Ratio To 1	Rotation
- 47	317.64	S
- 48	360.50	S
- 49	418.35	S
- 50	485.50	S
- 51	304.80	R
- 52	353.72	R
- 53	394.04	R
- 54	410.49	R
- 55	457.29	R
- 56	476.37	R
- 57	518.99	R
- 58	530.68	R
- 59	552.83	R
- 60	602.28	R
- 61	615.85	R
- 62	641.55	R
- 63	698.94	R
- 64	714.69	R
- 65	811.12	R
- 66	829.39	R
- 67	941.30	R
- 68	1092.37	R
- 69	1267.69	R

Zero backlash, lower backlash, exact ratios, etc., are available on special order.

For additional information, see preceding technical data and special speed reducer pages.

■ 1-1/16 INCH OUTSIDE DIAMETER



SPECIFICATIONS:

Maximum Backlash – 0°30'
Maximum Starting Torque – .01 oz. in.
Rated Output Torque – 30 oz. in.

CATALOG NUMBER DESIGNATION:

S 9 1 1 1 A - T 6 0 1 8 -

Insert Dash No. from table below.

Example: S9111A-T6018-16 has a 40.15: 1 ratio.

NOTES: (1) "S" indicates output rotates in the same direction as input; "R" denotes opposite rotation.
 (2) Ball bearings used throughout.

Dash No.	Ratio To 1	Rotation
-01	5.29	S
-02	6.83	S
-03	9.00	S
-04	10.44	S
-05	11.89	R
-06	13.80	R
-07	15.38	R
-08	17.84	R
-09	20.25	R
-10	23.50	R
-11	26.76	S
-12	27.27	R
-13	31.05	S
-14	34.59	S
-15	36.04	S
-16	40.15	S
-17	45.56	S

Dash No.	Ratio To 1	Rotation
-18	46.59	S
-19	52.88	S
-20	60.21	R
-21	61.36	S
-22	69.87	R
-23	71.21	S
-24	77.84	R
-25	81.08	R
-26	90.33	R
-27	94.10	R
-28	102.52	R
-29	104.83	R
-30	118.97	R
-31	121.65	R
-32	135.47	S
-33	138.06	R
-34	157.21	S

Dash No.	Ratio To 1	Rotation
-35	160.22	R
-36	175.13	S
-37	182.44	S
-38	185.94	R
-39	203.24	S
-40	211.72	S
-41	230.66	S
-42	235.86	S
-43	245.70	S
-44	267.68	S
-45	273.71	S
-46	310.64	S
-47	317.64	S
-48	360.50	S
-49	418.35	S
-50	485.50	S

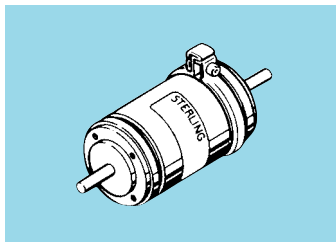
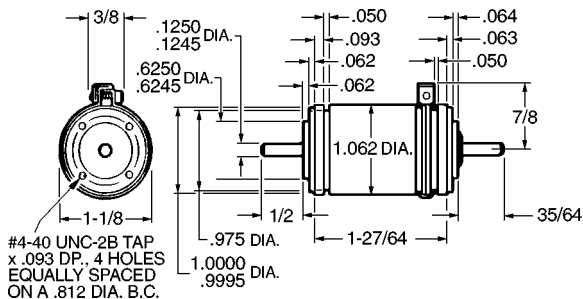
Zero backlash, lower backlash, exact ratios, etc., are available on special order.

For additional information, see preceding technical data and special speed reducer pages.

S INCH Zero-Backlash Speed Reducers Bu-Ord Size 11

■ 1-1/16 INCH OUTSIDE DIAMETER

■ PAT. NO. 3,396,594



The S9111A-T6019 series is an extremely low backlash Bu-Ord Size 11 speed reducer for servo applications. All backlash components due to gear-induced factors are eliminated. Hence, the name "Zero-Backlash Speed Reducer" has been applied. The zero-backlash feature will remain fully effective up to the Z-B torque limit. In the Size 11 units, the Z-B torque limit (in oz. in.) is approximately 1/2 of the ratio. If the load torque exceeds the Z-B torque limit, backlash is introduced. The backlash will be eliminated when the load torque decreases below the Z-B limit. No permanent damage will occur providing the load torque does not exceed the unit's maximum rated torque. The angular compliance (not to be confused with backlash) is approximately 1 arc minute per ounce inch.

SPECIFICATIONS:

- Backlash** – Zero with load torque less than Z-B torque limit
- Z-B Torque Limit** – Approximately 1/2 of the ratio (oz. in.)
- Angular Compliance** – .015%/oz. in.
- Starting Torque** – .20 oz. in. max.
- Rated Output Torque** – 30 oz. in.

CATALOG NUMBER DESIGNATION:

S 9 1 1 1 A - T 6 0 1 9 -

Insert Dash No. from table below.
Example: S9111A-T6019-16 has a 40.15: 1 ratio.

- NOTES:** (1) "S" indicates output rotates in the same direction as input; "R" denotes opposite rotation.
(2) Ball bearings used throughout.

Dash No.	Ratio To 1	Rotation
-01	5.29	S
-02	6.83	S
-03	9.00	S
-04	10.44	S
-05	11.89	R
-06	13.80	R
-07	15.38	R

Dash No.	Ratio To 1	Rotation
-08	17.84	R
-09	20.25	R
-10	23.50	R
-11	26.76	S
-12	27.27	R
-13	31.05	S
-14	34.59	S

Dash No.	Ratio To 1	Rotation
-15	36.04	S
-16	40.15	S
-17	45.56	S
-18	46.59	S
-19	52.88	S
-21	61.36	S
-23	71.21	S

For additional information, see preceding technical data and special speed reducer pages.