WINSMITH

SE ENCORE™

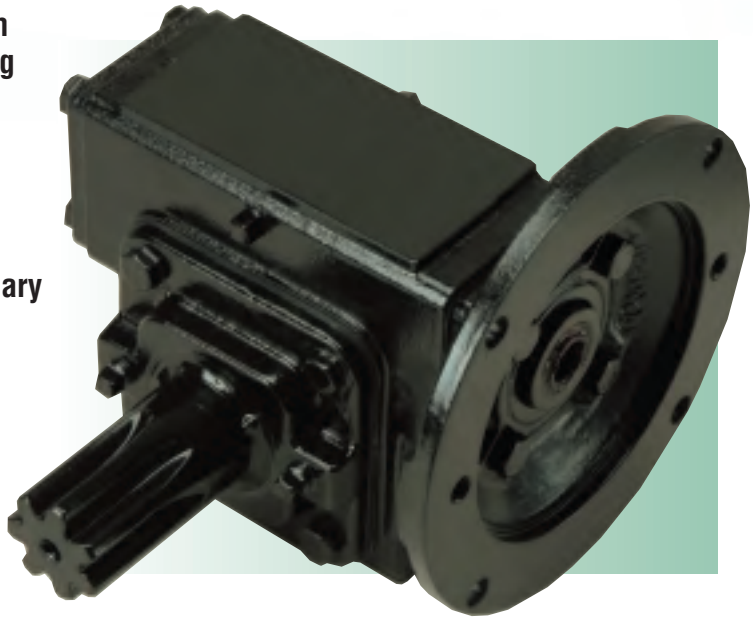
Unique, Powerful Performance

WORM GEAR SPEED REDUCERS

SE Encore Modified Worm Gear Speed Reducers

AVAILABLE IN 1 – 8 WEEKS*

- **WinGuard™ Black or White Epoxy Coating System Exceeds ASTM B-117 1000 hour Salt Spray Testing**
- **Quill, Coupled, or Hydraulic Input Adaptors**
- **Solid Input Shafts**
- **Solid and Hollow Output Shafts (Bored to Size or with Bushings)**
- **Base and Bracket Kits Increase Mounting Options**
- **Double Reduction Integrated Worm or Helical Primary**
- **Special Shaft Sizes and Lengths**
- **Special Ratios**
- **Special Mountings and Brackets**
- **Special Housings**
- **Special Gearing and Materials**
- **Special Seals and Bearings**



Modified

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SE ENCORE – MODIFIED

SE Encore Modified worm gear speed reducers are created to exacting and unique customer application specifications that encompass a variety of special reduction combinations, options, input adaptor configurations, and other modifications.** Some examples of SE Encore Modified product configurations include: hydraulic motor adaptors, special gear reductions and gearing geometries, special keys, shaft sizes, housings, metric shafts and flanges, drywell configurations, and many more. Please contact Winsmith for special modifications not listed in this catalog section.

The lubricant in an SE Encore Modified product is filled to a level determined by the reducer's intended mounting position for optimal performance. Additionally, SE Encore Modified worm gear speed reducers can operate sealed, but are supplied with an open-close vent kit.***

* Typical availability.
** Winsmith will mount customer supplied motors.
*** See "Appendix" section of this catalog for more details.

SE Encore Modified Worm Gear Speed Reducers

MODIFIED CONFIGURATION PROCEDURE

SIZE

Identify the three digit nomenclature for size appearing in the selection pages of this catalog section.
Example: 1HP input, 30:1 gear reduction, 1750 RPM 125 service factor yields a 2.375" center distance speed reducer. The nomenclature for the size of this unit is “E24.”

MODEL

There are a wide variety of models available in the Modified product offering. Each is identified at the top of the corresponding dimension page in this section by a complete description and by the four letter (e.g. MDNS) model nomenclature.

MODEL	DESCRIPTION
CSYD	Drywell coupled input adaptor; hollow output shaft, double reduction
CSFD	Coupled input adaptor; flange mount, hollow output shaft, double reduction

RATIO

Identify the required ratio in full format (i.e. 30:1), or in brief format (i.e. 30). A list of available standard and special ratios appears on page 133.

ASSEMBLY

The assembly of a Modified product is described by the relative positions of the input and output shaft. Refer to the dimension pages in this catalog section for the assembly possibilities associated with each speed reducer model.
Example: The nomenclature for a size E20 reducer of model XDNS and assembled with two standard output shaft extensions is stated as “E20 XDNS LR.”
Example: The nomenclature of a size E43 reducer of model CDSS with output flange to the right of the input is stated as “E43 CDSS DLR.”

INPUT ADAPTOR

Identify the input adaptor for the motor flange being mounted to the Modified product. The dimension pages in this section contain the possible input adaptor selections for each speed reducer size. If an input bushing is desired, specify the desired adaptor size assembled with bushing. These bushings will be factory installed prior to shipment.
Example: The nomenclature for a NEMA 56C adaptor flange is “56C.”

HOLLOW OUTPUT SHAFT BORE SIZE

Identify the hollow output shaft bore size of an MDSS using the tables on page xx. Express the bore size as a decimal (Example = 1.438"). Specify a standard bore unit, the desired hollow output bore size, and the output shaft bushing kit part number if an output bore bushing kit is required.
Example: To include an output bushing kit on an E20 CDSS that creates a 0.750" output bore, chose kit number WKE850638 or specify, “Bush output to 0.750" bore.”

ACCESSORIES

Identify the required Modified product accessory either by “kit” part number or by description. All accessories in this section of the catalog, except output bushing kits, are factory mounted prior to shipment.
Example: To include an output bushing kit on an E20 CDNS that creates a 0.750" output bore, chose kit number WKE850638 or specify, “Bush output to 0.750" bore.”

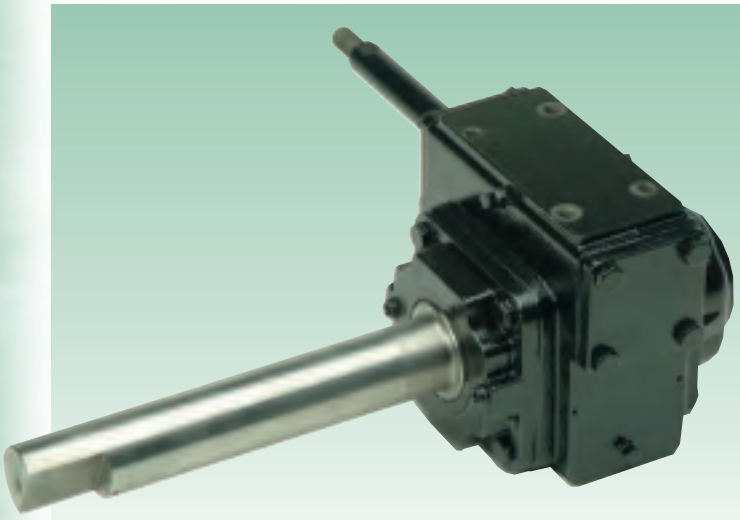
SPECIAL MOUNTINGS AND LUBRICANT LEVEL

Identify the proper lubricant level for the desired mounting position from the table on pages 108-109. The choices are *Standard, Inverted, Input shaft horizontal, or Input shaft vertical.*

MODIFIED PRODUCT NOMENCLATURE EXAMPLES

SIZE	MODEL	RATIO	ASSEMBLY	INPUT ADAPTOR	HOLLOW OUTPUT SHAFT BORE SIZE	ACCESSORY And MOUNTING	COMPLETE NOMENCLATURE
E17	CSFS	50	L	56C	1.000"	Coupling L 075 100046	E17 CSFS 50 L 56C with Coupling L 075
E24	MDSD	60	DLR	56C	1.000"	WKE850653	E24 MDSD 60 DLR 56C 1.000" Output Bushing for 1.500" Output Bore
E26	XDVD	500	LU-RD	140TC			E26 XDVD 500 LURD 140TC
E30	MDSS	5	DLR	180TC	1.938"	Inverted Mount	E30 MDSS 5 DLR 180TC 1.938 Inverted Mount
E26	CDSS	12.5	DLR	56C	1.438"	YKIT9810176	E26 CDSS 12.5:1 56C 1.438" with Hydraulic Motor Adaptor Ring for SAE-B

Modified Worm Gear Speed Reducers



E20 XDNS

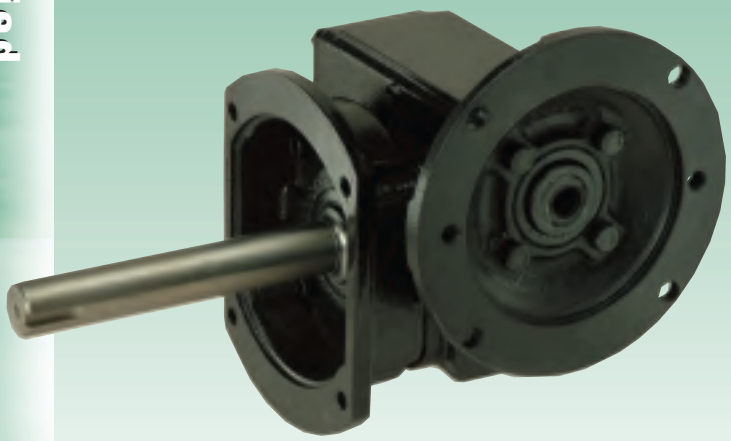
R Assembly

- Input Shaft Designed for Hand Crank
- Extended and Oversized Output Shaft
- Adjustable Internal Slip Clutch
- Single Reduction

E17 MDNS

2R Assembly 56C

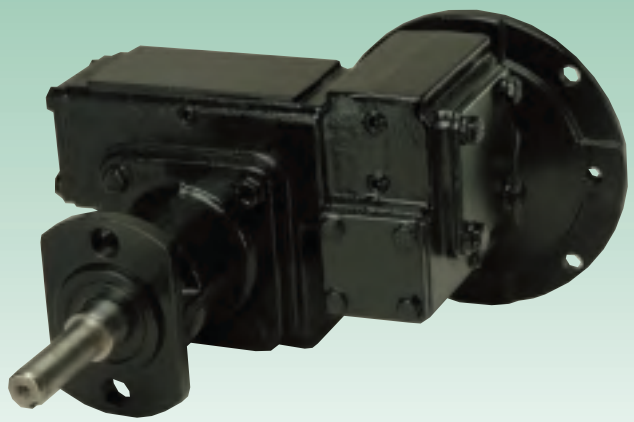
- Double Extended with Quill Input Adaptor
- Brake Mounting Flange
- Solid Output Shaft
- Single Reduction



E17 MSFS

L Assembly 56C

- Quill Input Adaptor
- Flange Mount
- Extended Solid Output Shaft
- Single Reduction



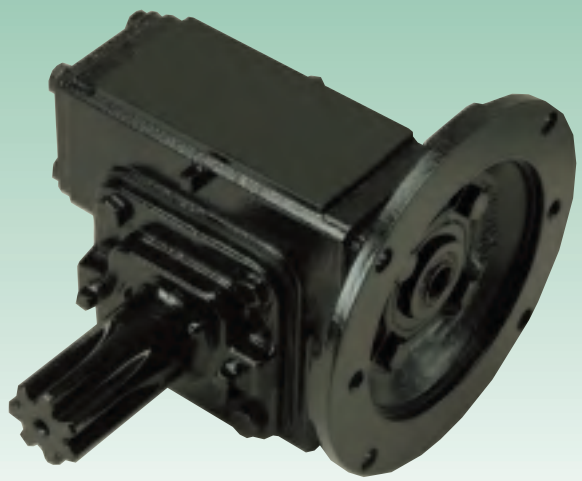
E17 MDND

RD-L Assembly 56C

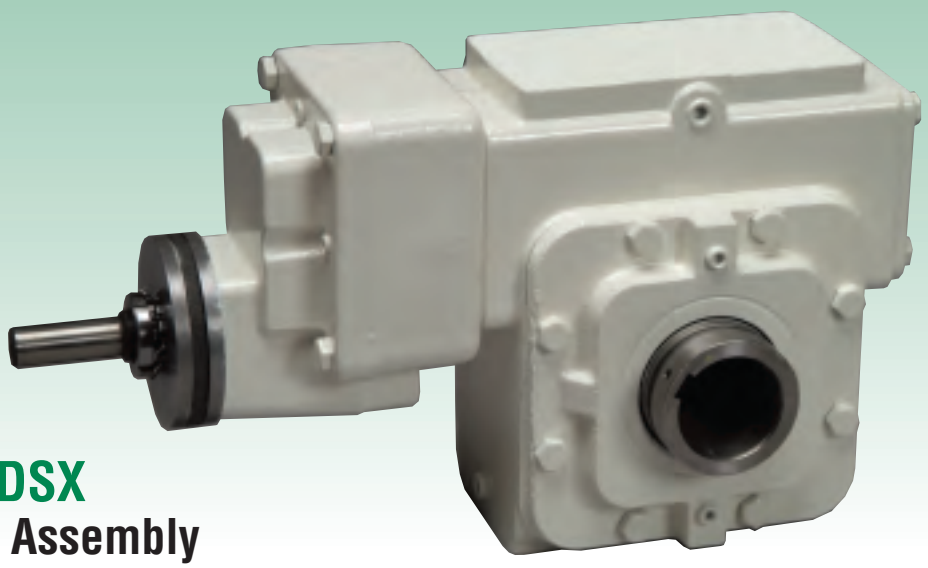
- Quill Input Adaptor
- Special Output Flange
- Worm/Worm Double Reduction

Modified Worm Gear Speed Reducers

E24 MDSS
DR Assembly 56C
- Quill Input Adaptor
- Hollow Output Shaft with a Single QD® Bushing (Split Tapered Bushing)
- Single Reduction



E17 MDNS
L Assembly 56C
- Quill Input Adaptor
- Solid Output Shaft with Integral Pinion or External Spline
- Single Reduction

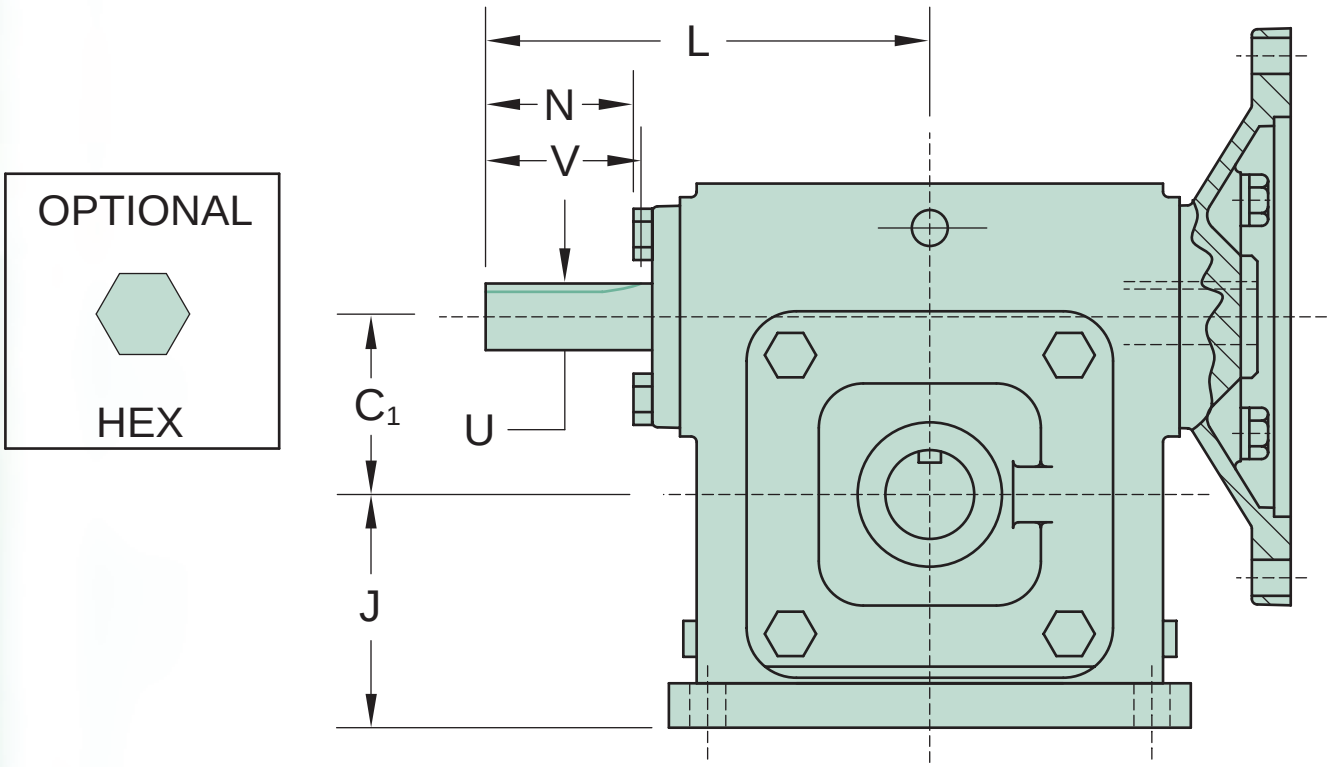


E30 XDSX
D-DLR Assembly
- Variable Resistance Solid Input Shaft
- Hollow Output Shaft
- Helical/Worm Double Reduction
- White Epoxy Coating

Double Extended Input Shafts

Double extended input shafts with keys accommodate manually driven application requirements. The extended shaft is offered with a hex (strong connection method), but alternative configurations such as special lengths, drilled & tapped shaft ends, step down shafts, or threaded shafts are available. Please contact Winsmith for specific specifications of hex or other special shaft extensions.

DOUBLE EXTENDED INPUT



Size	C_1	D	J	L	INPUT SHAFT DIMENSIONS			
					U*	N	V	KEYWAY
E13	1.333	3.33	2.00	4.13	.625	2.00	1.63	3/16 x 3/32
E17	1.750	4.19	2.44	4.75	.750	1.94	1.69	3/16 x 3/32
E20	2.000	4.63	2.63	5.00	.750	2.19	1.75	3/16 x 3/32
E24	2.375	5.63	3.25	6.50	1.000	2.75	2.38	1/4 x 1/8
E26	2.625	6.13	3.50	6.50	1.000	2.75	2.38	1/4 x 1/8
E30	3.000	7.00	4.00	7.00	.875	3.06	2.38	3/16 x 3/32
E35	3.500	8.00	4.50	7.38	1.000	2.31	2.50	1/4 x 1/8
E43	4.250	9.25	5.00	8.19	1.250	2.31	2.50	1/4 x 1/8

* Shaft diameter tolerances +.000 -.001
Dimensions shown are for construction purposes only. Please contact Winsmith for certified dimension sheets.

Modified

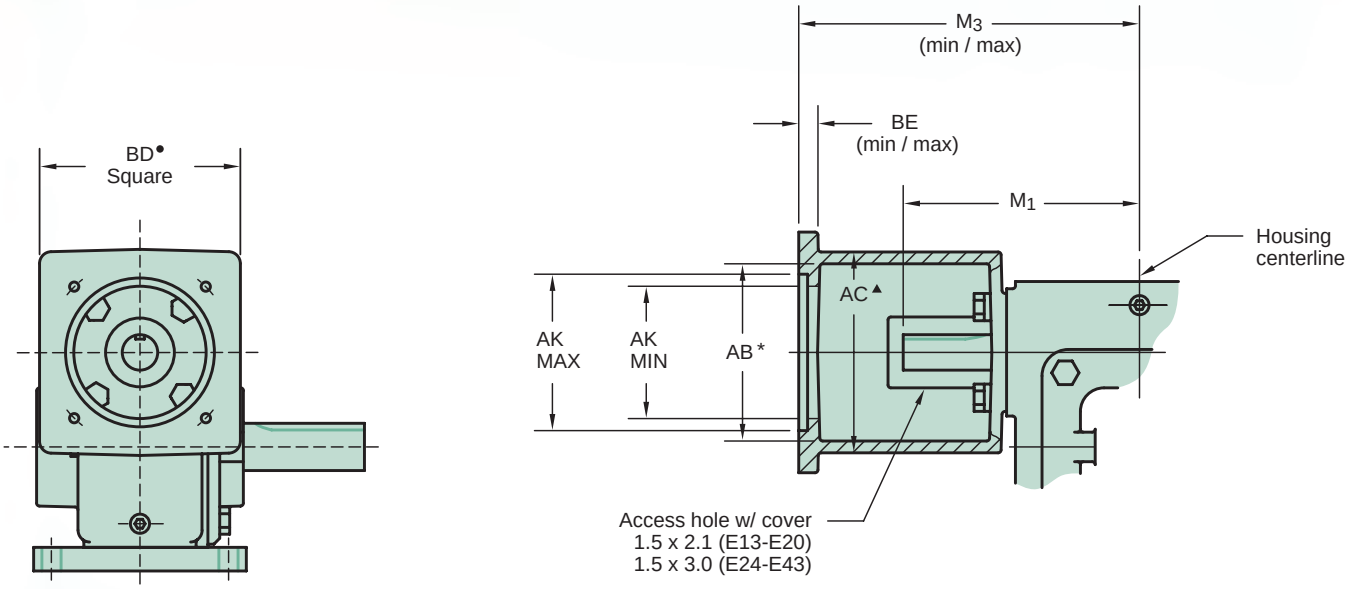
Servo Motor Adaptors

The SE Encore series of worm gear speed reducers offers round and square flanged servo adaptors. The oversized adaptor flange design can be modified for most servo motors available in the market. The outline drawings in this section show minimum and maximum base adaptor dimensions. The flange perimeter (BD) and register (AK) are machined to the specific motor interface dimensions. The actual motor mounting dimensions are required when specifying this servo adaptor flange. The servo adaptor design generally uses a coupling connection between the servo motor shaft and the input shaft of the reducer. If the servo motor flange dimensions exceed those shown, contact Winsmith for the required adaptor spacer.

Commonly Available Servo Motor Suppliers

ABB	Cincinatti Milacron	Fenner	Infranor	Ragonot
AEG	CMC	Festo	Isoflux	Reliance Electric
Allen Bradley	Control Techniques	Fimet	Japan Servo	Seiberco
Alltel	Cool Muscle	Fuji	Kollmorgen Inland	SEM
Alsthom	Daewoo	Fukuta	Magnetek Mavilor	Servo Products
Anilam	Danaher	GE Fanuc	Minertia	Servotek
Axor	Drive Tech	GEC	Mitsubishi	Siemens
B&R	Dynetic	Getty	Modicon	Sigma
Baldor	EG&G	Giddings & Lewis	Moog	Stober
Baumuller	ElectroCraft Emerson	Glentech	MFM	Superior Electric
Bautz	Emoteq	Goldline	Omron	Toshiba
Beckhoff	Eurotherm	Gould	Pacific Scientific	Whedco
Berger Lahr	EW HOF	Groschopp	Parvex	Vexta
Bosch	Exlar	Hitachi	Peerless-Winsmith	Vickers
Bridgeport	Fabbrica	Indramat Bosch	PMI	Yaskawa
Brusatori	Fanuc	Industrial Drives	Porter Peerless	
C-Jac	Faulhaber	Industrial Motors	QMC	

Servo Motor Adaptor Capability - Square Face



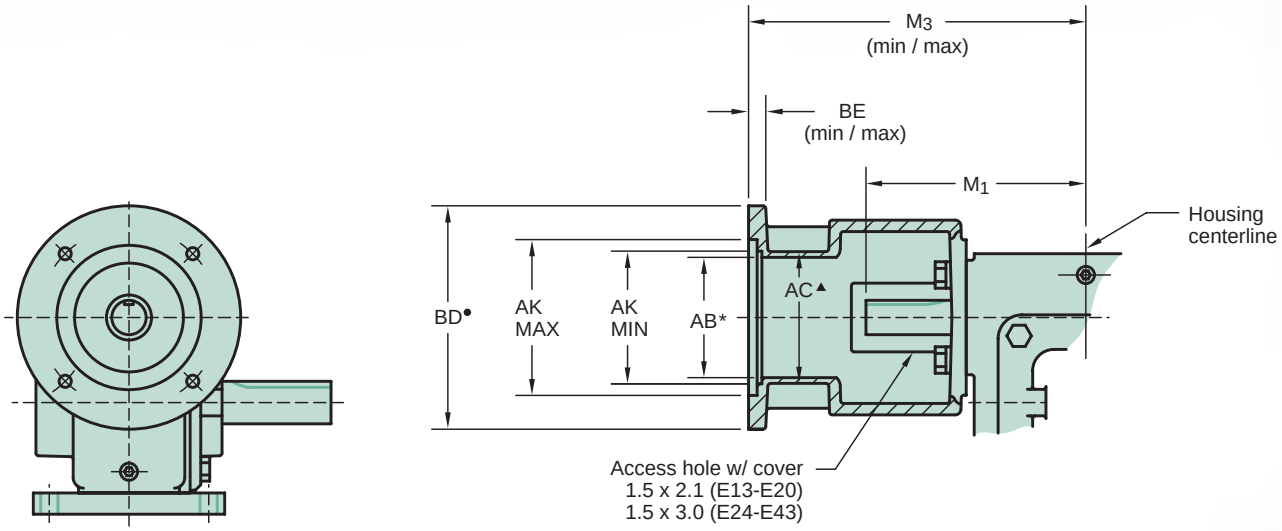
SERVO MOTOR ADAPTOR DIMENSION CAPABILITIES, SQUARE FACE (dimensions in parenthesis are mm)

SIZE	AB* (ID)	AC▲	AK		BD•	BE		M_1	M_3	
			MIN.	MAX.		MIN.	MAX.		MIN.	MAX.
E13	2.50	3.63	2.00 (51)	4.50 (115)	4.75 (120)	.38	.75	4.12	6.31	6.69
E17	3.00	4.26	2.38 (60)	5.31 (135)	5.56 (140)	.38	.75	4.75	7.19	7.56
E20	3.00	4.26	2.38 (60)	5.31 (135)	5.56 (140)	.38	.75	5.00	7.19	7.56
E24	4.00	5.26	2.75 (70)	6.25 (160)	6.50 (165)	.38	.63	6.50	9.00	9.25
E26	4.00	5.26	2.75 (70)	6.25 (160)	6.50 (165)	.38	.63	6.50	9.00	9.25
E30	3.88	5.38	3.75 (95)	7.25 (184)	7.50 (190)	.38	.75	7.00	9.88	10.25
E35	3.88	5.38	3.75 (95)	7.25 (184)	7.50 (190)	.38	.75	7.38	10.81	11.19
E43	3.88	5.38	3.75 (95)	7.25 (184)	7.50 (190)	.38	.75	8.19	11.62	12.00

* Clearance diameter for coupling inside the adaptor. Coupling OD must also clear the register diameter (AK).
▲ For thru holes in adaptor, motor fastener head must clear this diameter.
• Square flange can be reduced to match motor. To convert from bolt circle diameter to horizontal or vertical distance between mounting holes, divide by 1.41.

Modified

Servo Motor Adaptor Capability - Round Face



SERVO MOTOR ADAPTOR DIMENSION CAPABILITIES, ROUND FACE (dimensions in parenthesis are mm)

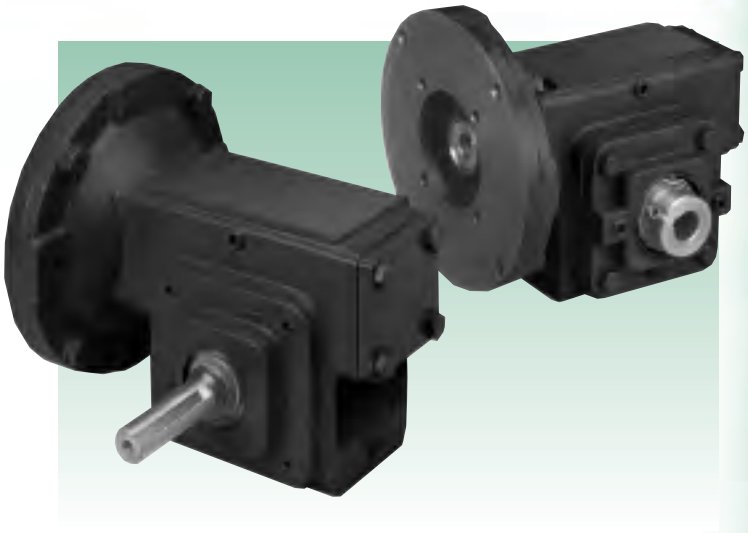
SIZE	ADAPTOR	AB* (ID)	AC▲	AK		BD•	BE		M_1	M_3	
				MIN.	MAX.		MIN.	MAX.		MIN.	MAX.
E13	One adaptor available for each of these sizes	2.47	2.84	2.38 (60)	6.00 (150)	6.50 (165)	.38	.41	4.12	6.81	6.84
E17		2.47	2.84	2.38 (60)	6.00 (150)	6.50 (165)	.38	.41	4.75	7.56	7.59
E20		2.47	2.84	2.38 (60)	6.00 (150)	6.50 (165)	.38	.41	5.00	7.56	7.59
E24		3.63	4.13	3.88 (100)	7.00 (175)	7.50 (190)	.38	.47	6.50	9.68	9.77
E26		3.63	4.13	3.88 (100)	7.00 (175)	7.50 (190)	.38	.47	6.50	9.68	9.77
E30	Small	3.15	3.65	3.88 (100)	6.00 (150)	6.50 (165)	.38	.54	7.00	10.38	10.54
	Large	4.25	4.88	4.50 (115)	9.38 (238)	9.88 (251)	.38	.66		10.81	10.88
E35	Small	3.15	3.65	3.88 (100)	6.00 (150)	6.50 (165)	.38	.54	7.38	11.31	11.34
	Large	4.25	4.88	4.50 (115)	9.38 (238)	9.88 (251)	.38	.66		11.75	11.81
E43	Small	3.15	3.65	3.88 (100)	6.00 (150)	6.50 (165)	.38	.54	8.19	12.12	12.15
	Large	4.25	4.88	4.50 (115)	9.38 (238)	9.88 (251)	.38	.66		12.56	12.62

* Clearance diameter for coupling inside the adaptor. Coupling OD must also clear the register diameter (AK).
▲ For thru holes in adaptor, motor fastener head must clear this diameter.
● Square flange can be reduced to match motor. To convert from bolt circle diameter to horizontal or vertical distance between mounting holes, divide by 1.41.

Notes

Metric Speed Reducers

SE Encore worm gear speed reducers are available with a metric input adaptor that mates to most IEC B5 and B14 flanges. Additionally, these reducers can be equipped with either a metric solid or hollow output shaft (supplied with a keyed metric bore, including the drive key and locking set screws). All models can be modified with additional options and accessories as depicted in this catalog. IEC motor flange interface dimensions are available on pages 120-121 of this catalog.



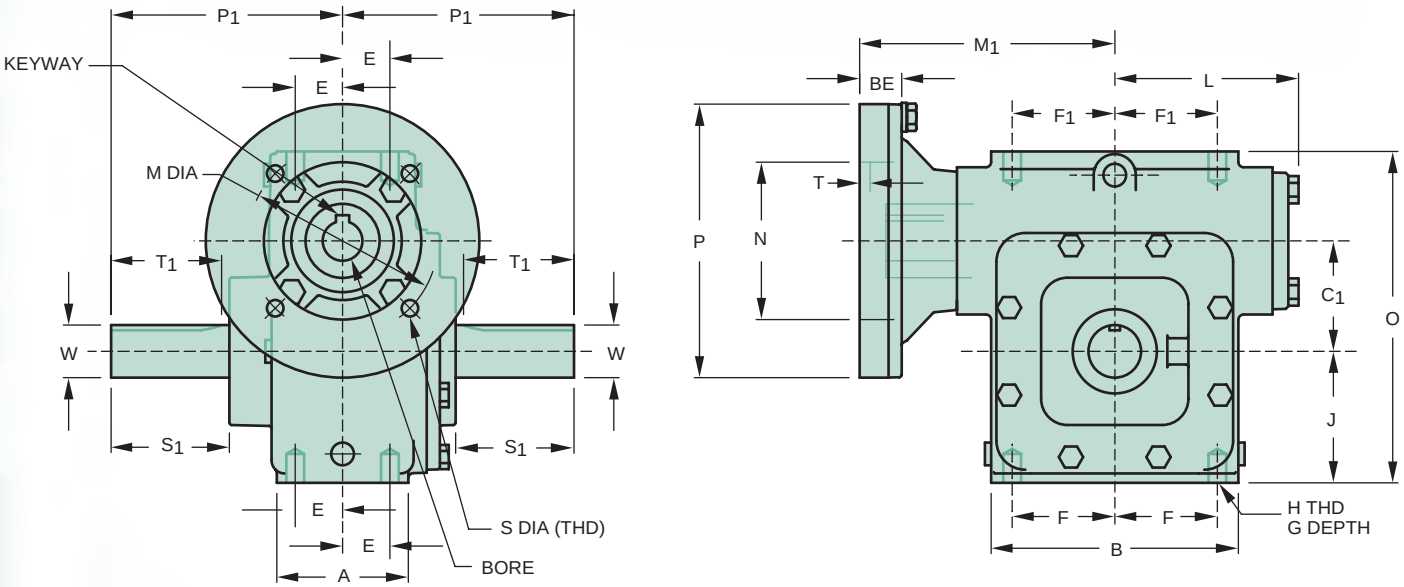
SE Encore worm gear speed reducers are available with IEC compatible B5 or B14 input adaptors and metric shafts.

COMMON METRIC CONVERSIONS

1 watt = 0.0013 HP	
KILOWATTS TO HORSEPOWER	
KW	HP
0.12	0.16
0.18	0.24
0.25	0.34
0.37	0.50
0.55	0.74
0.75	1.01
1.10	1.48
1.50	2.01
2.20	2.95
3.00	4.02
4.00	5.36
5.50	7.38
7.50	10.10
9.20	12.30
11.00	14.80
15.00	20.10
18.50	24.80
22.00	29.50

1 Newton meter = 8.851 lbf-in	
NEWTON METERS TO POUND INCHES	
Nm	lbf-in
20	177
40	354
60	531
80	708
100	885
125	1,106
150	1,328
175	1,549
200	1,770
250	2,213
300	2,655
400	3,540
500	4,425
600	5,310
700	6,196
800	7,081
1,000	8,851
1,200	10,620

SOLID SHAFT DIMENSIONS



	IEC FRAME (mm)							
	B14 FLANGE						B5 FLANGE	
	63	71	80	90	100/112	132	100/112	132
M	75	85	100	115	130	165	215	265
N	60	70	80	95	110	130	180	230
T	6	6	6	6	6	6	6	6
P	165	165	165	165	165	230	250	300
BE	19	19	19	25	25	33	21	22
S	5.8	7	7	10	10	12	M12	M12
KEYWAY	5x2.3	5x2.3	6x2.8	8x3.3	8x3.3	10x3.3	8x3.3	10x3.3
BORE(1)	14	14	19	24*	28	38	28	38

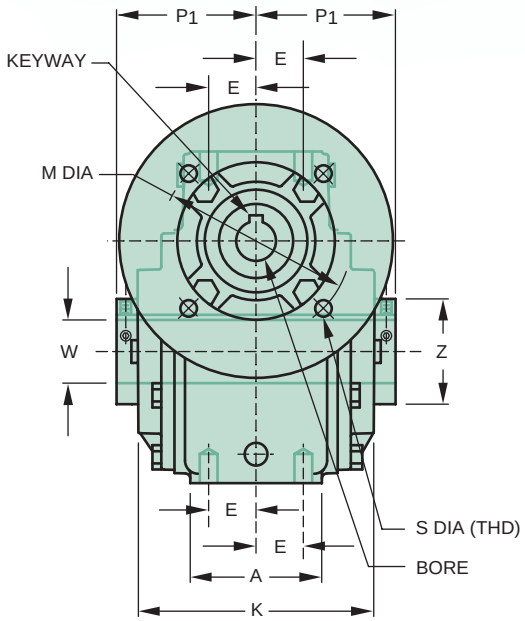
(1) Bore tolerance 14mm up to and including 28mm is +.020 to +.046
Bore tolerance for 38mm is +.030 to +.056
* Note: 24mm bore on sizes E17 & E20, keyway size is 8 x 2.3

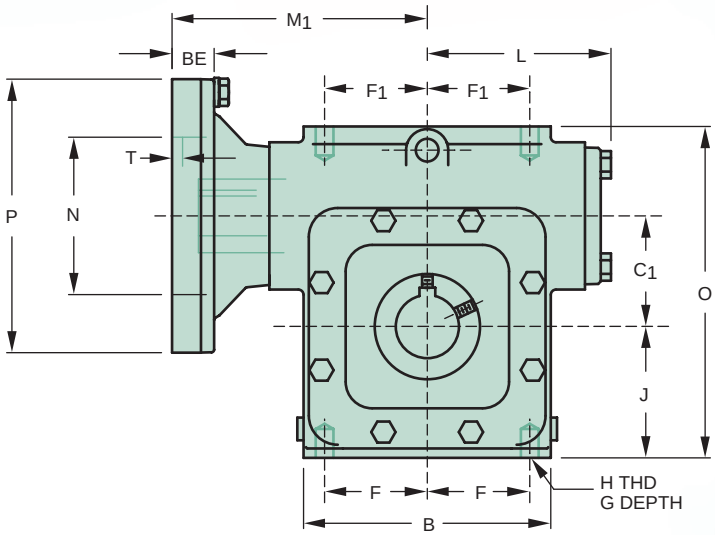
Size	DIMENSION (in)												M_1 DIMENSION (in)								OUTPUT SHAFT DIMENSIONS (mm)			
													B14 FLANGE						B5 FLANGE					
	A	B	C_1 in/mm	E	F	F_1	G DEPTH	H THD	J	L	O	P_1	63	71	80	90	100/112	132	100/112	132	W*	S_1	T_1	KEYWAY
E17	2.38	4.63	1.750/44.5	.88	1.94	1.69	.56	3/8 -16	2.13	3.44	5.38	4.75	4.50	4.50	4.50	4.75					18	65	56	6 x 3.5
E20	2.38	5.25	2.000/50.8	.88	2.19	1.69	.56	3/8 -16	2.13	3.44	5.63	4.75		4.50	4.50	4.75					25	65	56	8 x 4.0
E26	3.13	5.88	2.625/66.7	1.13	2.44	2.44	.63	1/2 -13	3.13	4.50	7.88	5.50		5.81	5.81	6.06	6.06		6.19		25	71	62	8 x 4.0
E30	3.50	6.62	3.000/76.2	1.31	2.75	2.75	.75	1/2 -13	3.50	4.63	9.00	5.88			6.00	6.25	6.25	6.50	6.38	6.69	28	73	64	8 x 4.0
E35	3.75	7.69	3.500/88.9	1.31	3.25	3.25	1.00	5/8 -11	4.00	5.46	10.13	7.00			6.25	6.50	6.50	6.75	6.63	6.94	35	95	86	10 x 5.0
E43	4.38	8.75	4.250/108.0	1.63	3.75	3.75	1.00	5/8 -11	4.38	6.28	11.50	8.00				7.31	7.31	7.56	7.44	7.75	42	111	102	12 x 5.0

* Shaft diameter tolerances +0.000 -0.025mm
Dimensions shown are for construction purposes only. Please contact Winsmith for certified dimension sheets.

Metric Speed Reducers

HOLLOW SHAFT DIMENSIONS





	IEC FRAME (mm)							
	B14 FLANGE						B5 FLANGE	
	63	71	80	90	100/112	132	100/112	132
M	75	85	100	115	130	165	215	265
N	60	70	80	95	110	130	180	230
T	6	6	6	6	6	6	6	6
P	165	165	165	165	165	230	250	300
BE	19	19	19	25	25	33	21	22
S	5.8	7	7	10	10	12	M12	M12
KEYWAY	5x2.3	5x2.3	6x2.8	8x3.3	8x3.3	10x3.3	8x3.3	10x3.3
BORE(1)	14	14	19	24*	28	38	28	38

(1) Bore tolerance 14mm up to and including 28mm is +.020 to +.046
Bore tolerance for 38mm is +.030 to +.056
* Note: 24mm bore on sizes E17 & E20, keyway size is 8 x 2.3

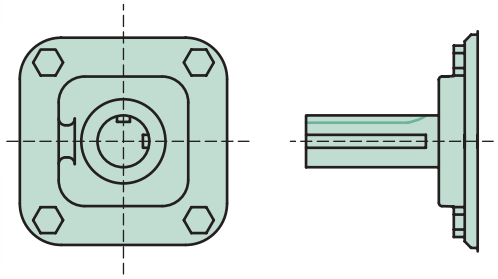
Size	DIMENSION (in)														M_1 DIMENSION (in)								HOLLOW SHAFT OUTPUT BORE (mm)	
	A	B	C_1 in/mm	E	F	F_1	G DEPTH	H THD	J	K	L	O	P_1	Z	B14 FLANGE						B5 FLANGE		W*	KEYWAY
															63	71	80	90	100/112	132	100/112	132		
E17	2.38	4.63	1.750/44.5	.88	1.94	1.69	.56	3/8 -16	2.13	2.44	3.44	5.38	3.13	1.49	4.50	4.50	4.50	4.75					18	6 x 2.8
E20	2.38	5.25	2.000/50.8	.88	2.19	1.69	.56	3/8 -16	2.13	2.63	3.44	5.63	3.31	2.00		4.50	4.50	4.75					25	8 x 3.3
E26	3.13	5.88	2.625/66.7	1.13	2.44	2.44	.63	1/2 -13	3.13	2.81	4.50	7.88	3.50	2.50		5.81	5.81	6.06	6.06		6.19		25	8 x 3.3
E30	3.50	6.62	3.000/76.2	1.31	2.75	2.75	.75	1/2 -13	3.50	3.00	4.63	9.00	3.69	2.63			6.00	6.25	6.25	6.50	6.38	6.69	28	8 x 3.3
E35	3.75	7.69	3.500/88.9	1.31	3.25	3.25	1.00	5/8 -11	4.00	3.38	5.46	10.13	4.13	2.87			6.25	6.50	6.50	6.75	6.63	6.94	35	10 x 3.3
E43	4.38	8.75	4.250/108.0	1.63	3.75	3.75	1.00	5/8 -11	4.38	3.63	6.28	11.50	4.38	3.88				7.31	7.31	7.56	7.44	7.75	42	12 x 3.3

* Bore tolerances +0.000 -.050mm
Dimensions shown are for construction purposes only. Please contact Winsmith for certified dimension sheets.

Modified Output Shaft Options

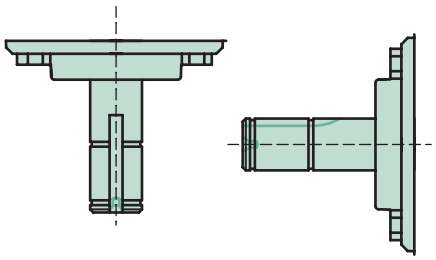
SE Encore worm gear speed reducer output shafts can be modified to suit the requirements of most applications. These examples depict some of the more commonly requested modifications. Please contact Winsmith for additional output shaft modification capabilities and requirements.

SOLID OUTPUT SHAFT EXTENSIONS AND MODIFICATIONS



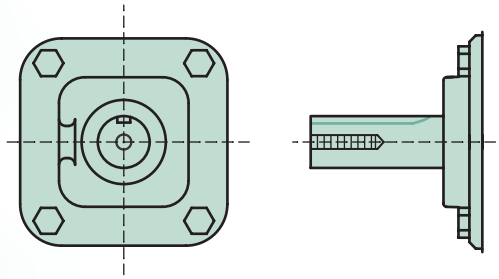
Extra Keyway at 90°

- Secure connection for applications where direction changes are common



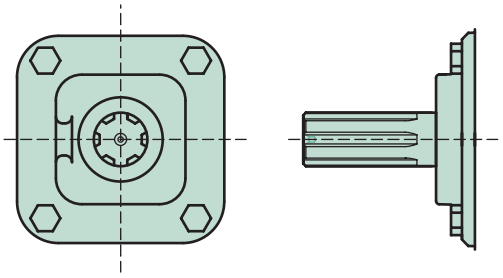
Snap Ring Groove

- Strong position control for attachments



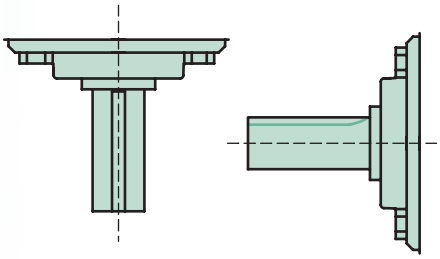
Drilled and Tapped Ends

- Secures end plates or keeper plates to the shaft

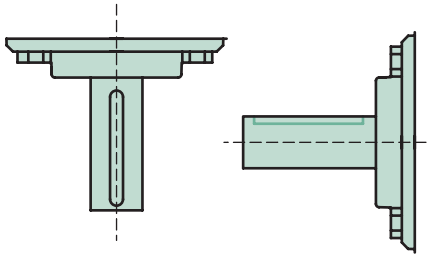


External Spline

- For frequent fitting/dismantling, starts or direction changes



Turned Down Shaft

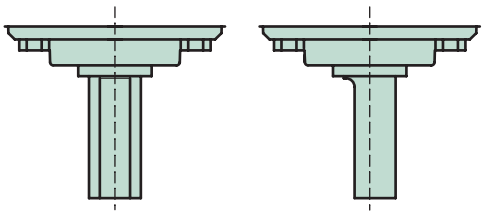


End Milled Keyway

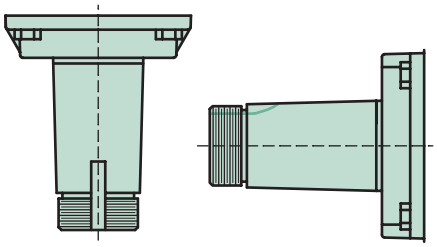
- Captured key for ease of installing the mating components

Modified

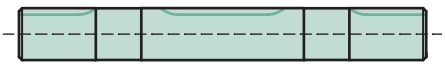
Modified Output Shaft Options



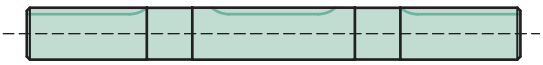
Shaft Flats
- Accommodate a flat in the driven machine



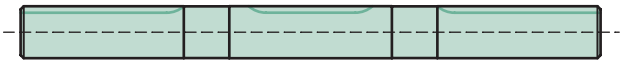
Taper with External Threads
- Eliminates fretting corrosion between two mating shafts



Shorter than Standard

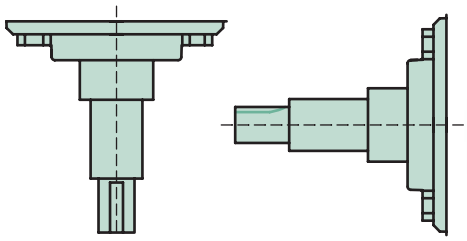


Standard Length



Longer than Standard Length

Custom Shaft Lengths
- As required by an application



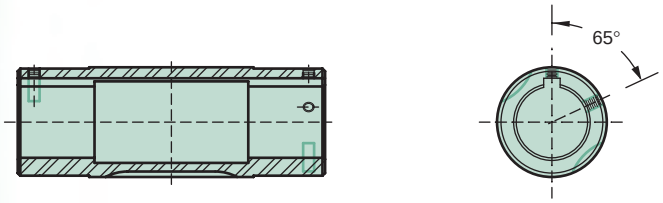
Multiple Step/Turned Down Shafts
- For consistent attachment positioning (pulleys or sprockets)

Optional Materials, Platings & Coatings

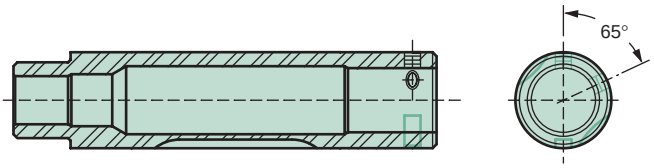
Bronze
4140 Hardened Steel
Stainless Steel
Hard Chrome
Thin Dense Chrome
Electroless Nickel

Modified Output Shaft Options

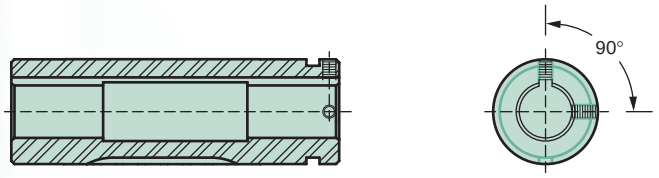
HOLLOW OUTPUT SHAFT MODIFICATIONS



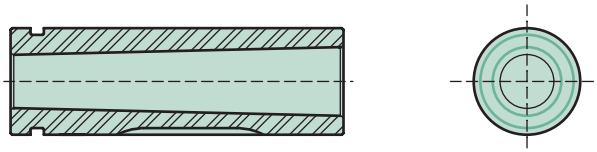
Standard Double Extended (Symmetrical)
- In non-standard sizes including metric dimensions



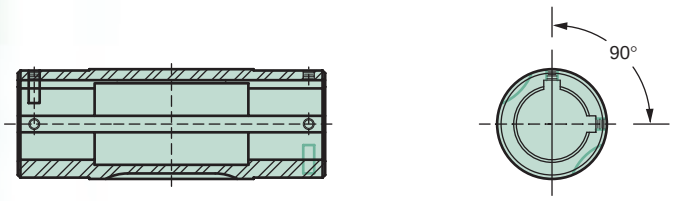
Stepped Shaft for Shrink Disc
- For a shaft locking device



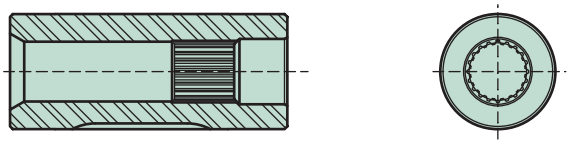
Single Extensions (Asymmetrical)
- Used when a double extended (symmetrical) shaft creates interference



Self Locking Taper
- Eliminates fretting corrosion between two mating shafts

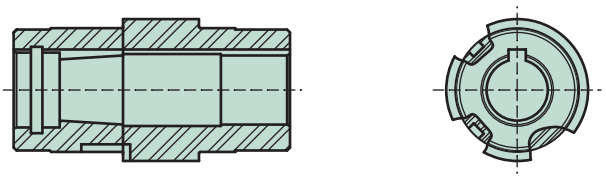


Extra Keyway 90°
- For a more secure connection (for applications where direction changes are common)

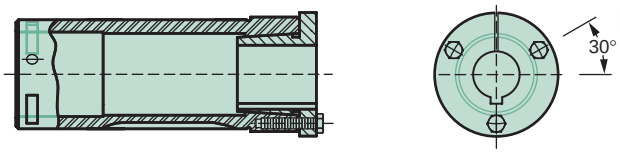


Internal Spline
- For frequent fitting and dismantling or for frequent starts or direction changes

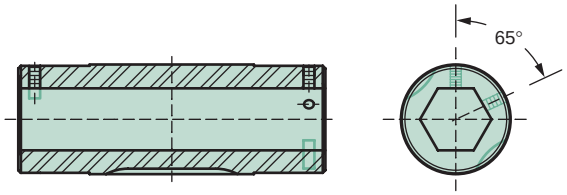
Modified Output Shaft Options



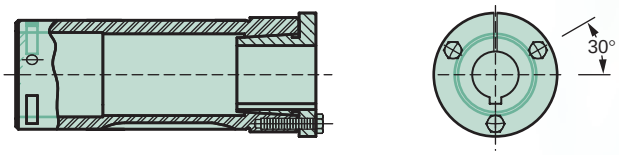
Step Bores, Tapered & Grooved
- Accommodates special shaft requirements



Tapered Bushing Connection
- Provides a rigid shaft connection (see page 128)

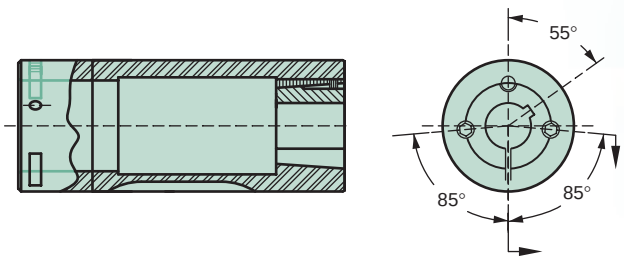


Hex Broach
- Provides shaft engagement without a keyway and easy assembly to standard hex stock



QD® Type Bushing (see page 128)

Optional Materials, Platings & Coatings
Stainless Steel
Hard Chrome
Thin Dense Chrome
Electroless Nickel



Taper-Lock® Bushing (see page 128)

Taper-Lock® is a registered trademark of Baldor Electric Company.

SHRINK DISK

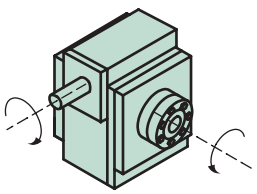
SE Encore hollow output shaft worm gear speed reducers can be equipped with a wide range of shrink disc mounting systems. Shrink disc mounting systems provide a high strength keyless connection between the reducer output shaft and the driven machine shaft. They convert the mechanical/axial force of the bolts to a compressive force, tightening the reducer hollow shaft onto the driven shaft. This “shrinking” creates a “zero” backlash frictional connection between the reducer and the driven shaft that eliminates stress concentrations, coupling backlash, and vulnerability of fatigue failure that is inherent in a keyed connection. Shrink disc mounting systems simplify installation and removal because the high level of surface contact greatly reduces the possibility of fretting corrosion. Additionally, they provide a superior level of torque transmission over a traditional keyed interface. They can be supplied with a key or keyway, mounting directly to the driven shaft, using B-LOC® or another brand.

SE ENCORE WITH SHRINK DISK

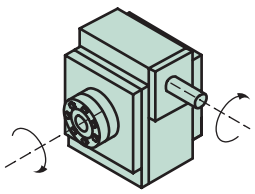
Modified

AVAILABLE SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS

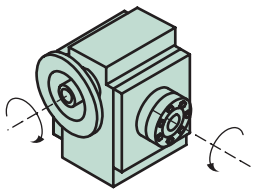
XDSS WITH SHRINK DISC



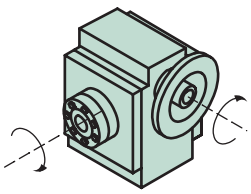
XDSS WITH SHRINK DISC



MDSS WITH SHRINK DISC

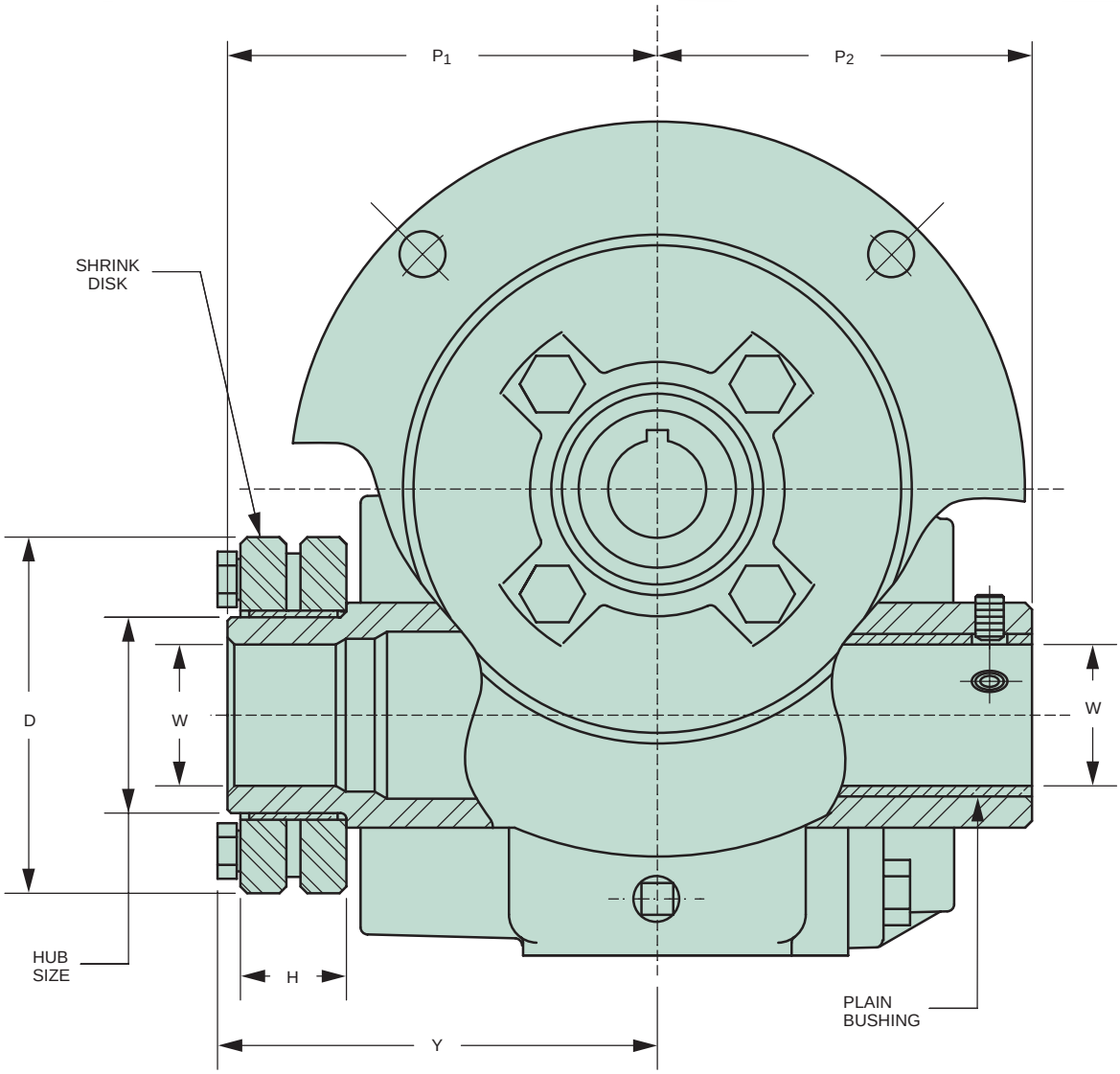


MDSS WITH SHRINK DISC



B-Loc® is a registered trademark of Fenner U.S., Incorporated.

Shrink Disks

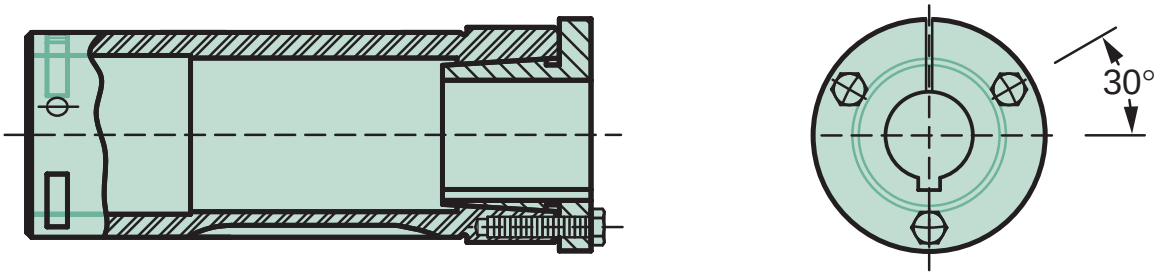


UNIT SIZE	W STANDARD BORES	SHRINK DISK W/S P.N.	SD-10 SHRINK DISK SIZE	SCREW SIZE	SHAFT HUB SIZE +0.002	D	H	P_1	P_2	Y MAX
E17	.750	52209	30-10	M5X18	1.181	2.36	.79	3.47	3.13	3.50
E20	1.125 1.188 1.250	52210	44-10	M6X20	1.732	3.15	.94	3.81	3.31	3.85
E24	1.375 1.438	52211	50-10	M6X22	1.969	3.54	1.02	4.01	3.44	4.06
E26	1.375 1.438	52211	50-10	M6X22	1.969	3.54	1.02	4.08	3.50	4.12
E30	1.500 1.625 1.688 1.750	52213	55-10	M6X25	2.165	3.94	1.14	4.38	3.69	4.24
E35	1.875 1.938 2.000	52214	68-10	M6X25	2.677	4.53	1.14	4.78	4.13	4.80
E43	2.438 2.500	52215	80-10	M8X25	3.150	5.71	1.22	5.12	4.38	5.20

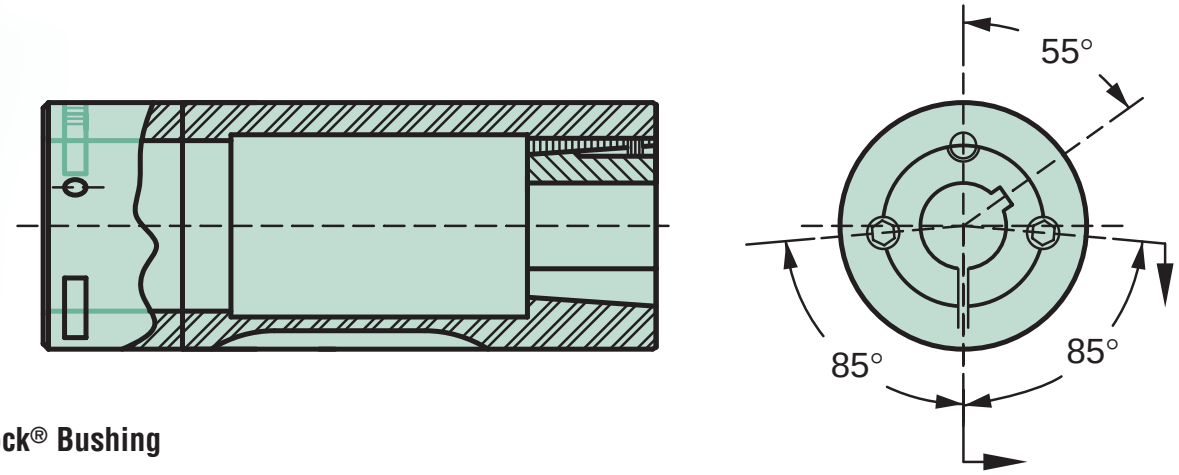
Tapered and TAPER-Lock® Bushings

Two common types of tapered bushings are QD® and Taper-Lock®. Both use tapered wedging to lock onto the shaft. The main difference is that QD bushings have a flange around the outside diameter, while taper lock bushings have straight sides on the outside diameter.

QD bushings are flanged with an internal keyway and are completely split, allowing easy assembly & disassembly. The tapered surface improves grip and minimizes axial movement. Taper-Lock bushings, with their straight sides, use an internal hex head cap screw to drive the bushing into the bore of the hollow shaft.



QD® Type (Quick Disconnect) Bushing



Taper-Lock® Bushing

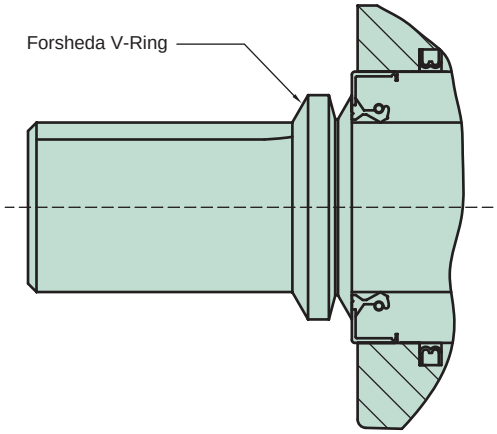
Modified

Seal Modifications And Combinations

SE Encore worm gear speed reducers incorporate a single seal design that provides superior service for a majority of applications. SE Encore products can also be equipped with specially designed seals made from a variety of materials, for applications with severe requirements.

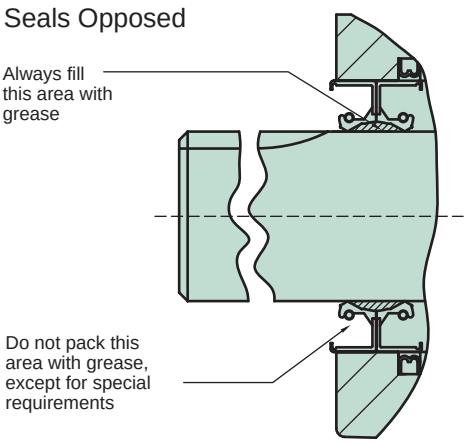
V-RING SHAFT SEALS

V-ring shaft seals are external flinger seals that protect a primary seal from external contamination. They effectively keep contamination from reaching the primary seal lip thereby extending the primary seal life in harsh environments. The V-ring moves with the shaft providing a “flinger effect” created by centrifugal forces that develop from the shaft rotation. V-ring seals are available on any shaft having enough uninterrupted shaft surface in front of the primary seal to allow proper installation.



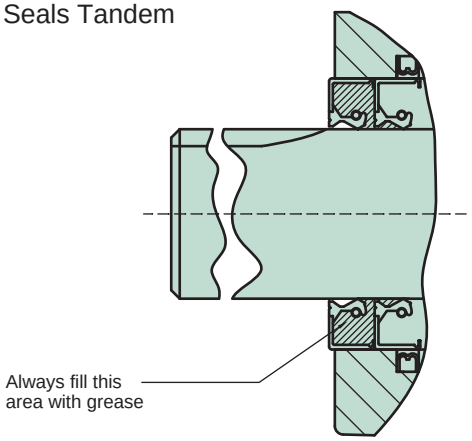
OPPOSED SEALS

In special cases where V-ring shaft seals can not be used, Winsmith recommends double seals in an “opposed” mounting configuration for protection from external contamination. The inner seal faces the bearing and acts as a retainer for the lubricant inside the reducer. The second seal, facing the opposite direction, works to exclude contaminants. Packing the area between the two seals with grease ensures lubrication of the exterior seal.



TANDEM SEALS – NOT RECOMMENDED

Winsmith does not recommend the use of tandem seals because this configuration is only proven partially effective as a preventative practice. Further, the use of more than one seal on the input shaft is not recommended because the additional friction created by the second seal increases heat generation, reducing seal life.



Seal Modifications And Combinations

BEARING ISOLATORS

Bearing isolators are dynamic seals that provide bearing protection and no leakage of lubricant during operation. They also provide total exclusion of outside contaminants. They are comprised of a rotor (rotating) and stator (stationary) member designed with labyrinth type or O-ring construction. Bearing isolators must be used in conjunction with a lip seal. Please contact Winsmith for availability.

OPTIONAL SEAL MATERIALS

A variety of seal materials for applications with excessive requirements are available on SE Encore worm gear speed reducers.

FLUOROELASTOMER (aka, Viton®)

Seals made of Fluroelastomer materials are designed for improved chemical resistance and higher temperature capabilities when compared to seals made of NBR materials. These seals can be used on any shaft in the SE Encore product line.

PTFE (aka Teflon®)

Seals made from PTFE (Polytetrafluoroethylene) provide a very low coefficient of friction against the shaft and are inert to most chemicals and fluids. Additionally, PTFE seals operate within a wide temperature range and can be augmented with fillers for enhanced wear resistance properties.

OTHER MODIFICATIONS

LONG TERM STORAGE

SE Encore worm gear speed reducers are normally prepared to go into service within a few months of the manufacture date. Products that will be put into storage for six months or more should be prepared for long term storage. This option includes:

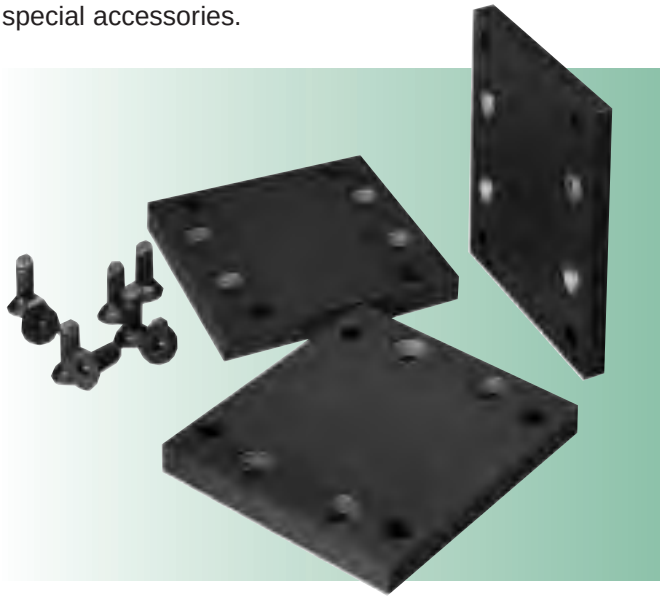
- 100% filled with Mobil Glygoyle 460 lubricant. Instructions are provided for draining to the proper operating level prior start-up.
- Shafts and bores are covered with a rust preventative.

SOLID LUBRICANT BEARINGS

In certain speed reducer mounting positions, when there is a concern that some bearings will not receive proper lubrication, a grease fitting is installed to allow external maintenance of these bearings. Occasionally, the application and mounting prohibit accessibility to the lubrication port. In these cases, the bearing can be impregnated with a solid lubricant that will provide adequate lubrication for extended operation. Solid lubricant bearings are available for output shafts only.

Modified Accessories

An assortment of special base and bracket mounts are offered in conjunction with the standard mounting accessories that are detailed in the Multimount and Integral sections of this catalog. All SE Encore base mounts, plates, and bracket mounts are covered with the WinGuard Epoxy Coating System. Please contact Winsmith for specific details of these special accessories.



Base Modified to Customer Specifications

Special Hanger Bracket

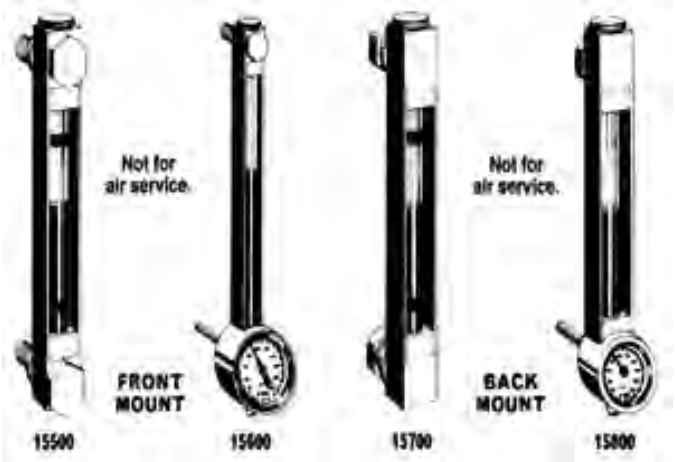
Custom Bases

COLUMN AND BUTTON VIEW GAUGES

View gauges allow lubricant level monitoring while the speed reducer is in service.

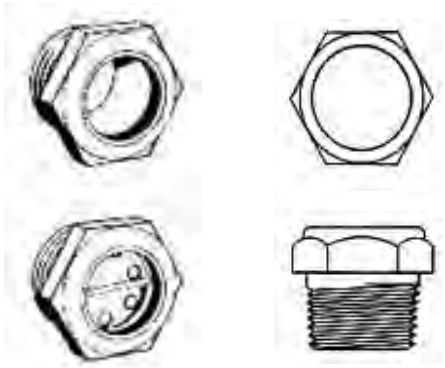
COLUMN VIEW

Column View gauges are constructed of aluminum with a full length view window.



BUTTON (PORTHOLE) GAUGE

Button or Porthole Gauges with NPT tapered threads provide a method for checking the lubricant level in a reducer. An optional internal reflector enhances viewing clarity.

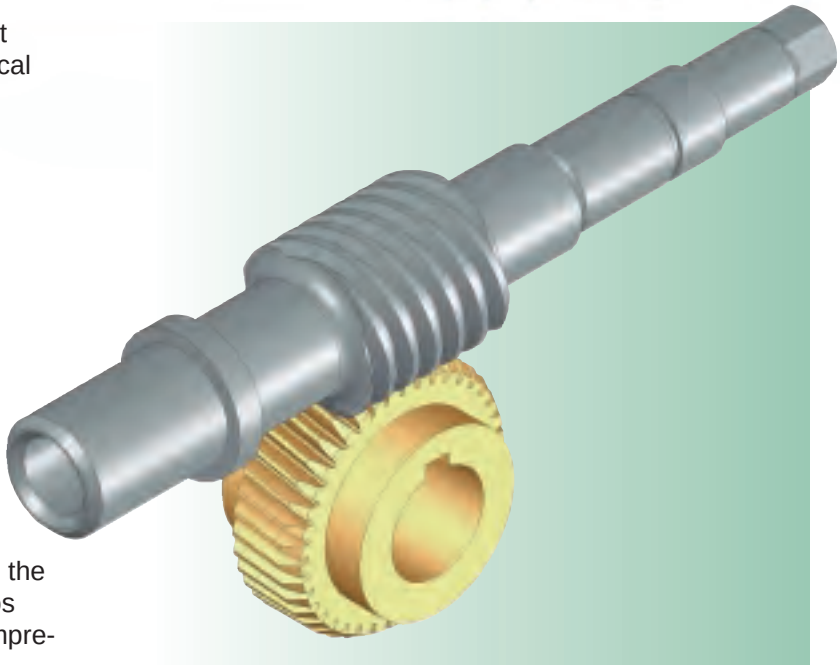


*Images are courtesy of Gits Manufacturing Co.

Special Ratios, Geometry, and Left Hand Gearing

Special ratios offered with the SE Encore product line afford design flexibility that goes beyond typical industry standards. These ratios use unique geometries to achieve a multitude of design requirements including:

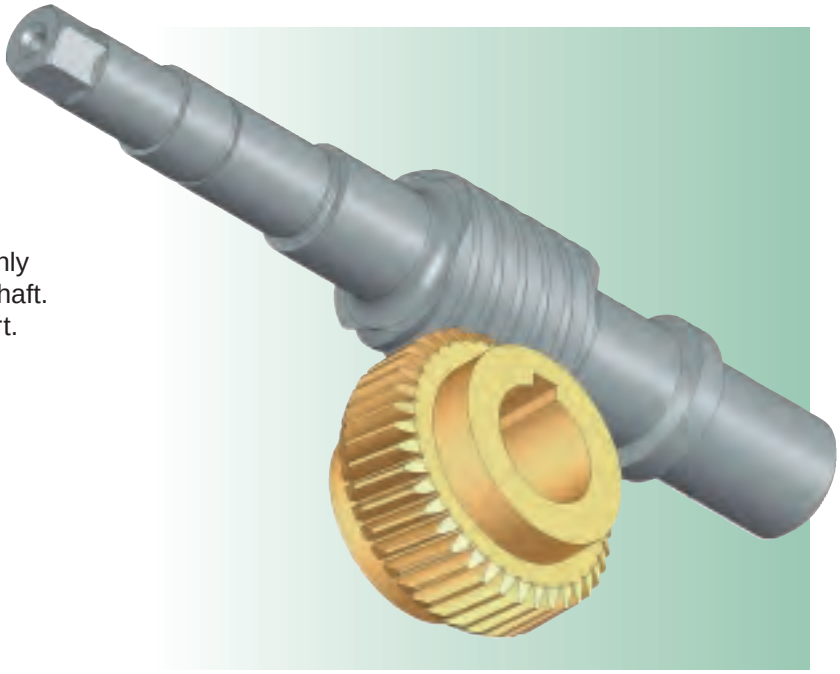
- Self-locking,
- Enhanced back driving,
- High shock load tolerance,
- Reduced backlash,
- Hunting tooth. (A special gear geometry that insures any given gear tooth recesses when viewed from a fixed input revolution count. It is often used in fixed, repetitive start/stop applications, where uniform worm gear tooth wear is desired).



A 4:1 reduction is a frequently used special ratio; the ratings are on pages 134-135. Other special ratios include 12.5:1 and 18:1. Page 133 contains a comprehensive chart of special ratios and gear designs available in the SE Encore product line. In addition to the ratios shown, other special ratios and gearing designs are available by contacting Winsmith.

LEFT HAND GEARING

Left hand gearing reverses the rotational direction of an output shaft and is used when other methods, such as changing the motor rotation, are ineffective. Left hand gearing is particularly useful when facilitating a dual drive split power design. The SE Encore ratings are not affected by choosing left hand gearing: the only difference is the rotation direction of the output shaft. Available left hand gearing are shown in the chart.



Special Ratios, Geometry, and Left Hand Gearing

SINGLE REDUCTION

RATIO	Size							
	E13	E17	E20	E24	E26	E30	E35	E43
3.5								
4								
4.1666								
5								
6								
6.3333								
6.4								
7								
7.5								
7.75								
8								
8.5								
9								
11								
12								
12.5								
13								
14								
15								
16								
17								
18								
20								
23								
24								
25								
29.5								
30								
31								
32								
35								
36								
37								
39								
40								
45								
50								
53								
57								
60								
70								
71								
82								
84								
90								

DOUBLE REDUCTION (HELICAL / WORM)

RATIO	Size							
	E13	E17	E20	E24	E26	E30	E35	E43
38								
44.5								
45.6								
126.7								
151.9								
355.7								
405								
405.3								
486.1								
506.6								
592.9								
607.6								

DOUBLE REDUCTION (WORM / WORM)

RATIO	Size							
	E13	E17	E20	E24	E26	E30	E35	E43
20								
25								
30								
37.5								
40								
56.25								
60								
73								
75								
80								
85								
90								
100								
112.5								
120								
125								
150								
187.5								
200								
225								
240								
250								
300								
350								
360								
375								
400								
450								
500								
540								
600								
625								
700								
735								
750								
800								
830								
900								
1000								
1200								
1250								
1500								
1600								
1660								
1800								
2000								
2400								
2460								
2475								
2500								
3000								
3200								
3500								
3600								
3960								
4000								
4100								
4800								
4920								
5000								
7920								
8000								
8200								

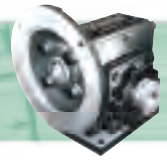
LEGEND: SPECIAL RATIO SPECIAL GEOMETRY LEFT HAND GEARING

Modified

Special **Ratios**

4:1 SINGLE REDUCTION

With Mobil Glygoyle 460 Lubricant



4:1 RATIO			HORSEPOWER AND TORQUE RATINGS										OVERHUNG LOAD CAPACITIES (lb)			THRUST LOAD CAPACITIES (lb)	
			MECHANICAL								THERMAL		INPUT SHAFT	OUTPUT SHAFT[3,4]		OUTPUT SHAFT[5]	
SIZE	INPUT RPM[2]	OUTPUT RPM	1.00 SERVICE FACTOR			1.25 SERVICE FACTOR		1.50 SERVICE FACTOR		1.00 SERVICE FACTOR			ALL SHAFT INPUT MODELS	SOLID[2] SHAFT (e.g. MDNS)	HOLLOW SHAFT (e.g. MDSS)	SOLID SHAFT (e.g. MDNS)	HOLLOW SHAFT (e.g. MDSS)
			INPUT HP	OUTPUT TORQUE (lbf·in.)	EFF	INPUT HP	OUTPUT TORQUE (lbf·in.)	INPUT HP	OUTPUT TORQUE (lbf·in.)	INPUT HP	OUTPUT TORQUE (lbf·in.)						
E13	2500	625	1.30	122	94	1.04	98	0.87	81	1.30	122		200	290	n/a	594	n/a
	1750	438	1.10	149	94	0.88	119	0.73	99	1.10	149						
	1160	290	0.88	179	93	0.70	143	0.59	119	0.88	179						
	870	218	0.73	196	93	0.58	157	0.49	131	0.73	196						
	600	150	0.55	213	92	0.44	170	0.37	142	0.55	213						
	300	75	0.31	233	91	0.25	186	0.21	155	0.31	233						
	100	25	0.11	248	89	0.09	198	0.07	165	0.11	248						
E17	2500	625	2.30	219	95	1.84	175	1.53	146	2.30	219		200	700	700	776	1218
	1750	438	1.98	269	94	1.58	215	1.32	179	1.98	269						
	1160	290	1.65	337	94	1.32	270	1.10	225	1.65	337						
	870	218	1.42	383	93	1.14	306	0.95	255	1.42	383						
	600	150	1.11	431	92	0.89	345	0.74	287	1.11	431						
	300	75	0.65	492	91	0.52	394	0.43	328	0.65	492						
	100	25	0.24	538	88	0.19	430	0.16	359	0.24	538						
E20	2500	625	3.49	335	95	2.79	268	2.33	223	3.19	307		300	700	1100	865	1440
	1750	438	3.00	411	95	2.40	329	2.00	274	3.00	411						
	1160	290	2.50	515	95	2.00	412	1.67	343	2.50	515						
	870	218	2.15	586	94	1.72	469	1.43	391	2.15	586						
	600	150	1.68	660	94	1.34	528	1.12	440	1.68	660						
	300	75	0.98	754	92	0.78	603	0.65	503	0.98	754						
	100	25	0.36	824	90	0.29	659	0.24	549	0.36	824						
E24	2500	625	5.68	548	96	4.54	438	3.79	365	5.68	548		350	1250	1689	909	1909
	1750	438	4.74	653	96	3.79	522	3.16	435	4.74	653						
	1160	290	4.05	840	95	3.24	672	2.70	560	4.05	840						
	870	218	3.45	950	95	2.76	760	2.30	633	3.45	950						
	600	150	2.69	1066	94	2.15	853	1.79	711	2.69	1066						
	300	75	1.55	1212	93	1.24	970	1.03	808	1.55	1212						
	100	25	0.57	1320	92	0.46	1056	0.38	880	0.57	1320						

Note: Ratio shown (4:1) is exact ratio

1. If input speed is below 1160 RPM, please specify speed and mounting position to ensure proper lubrication.
2. Overhung load given at a distance equal to one shaft diameter from the face of the output seal.
3. Overhung load is based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung loads are based on the output shaft and output bearing capacities only. Check Overhung Load Section for other considerations.
5. Overhung load and thrust load ratings are computed independent of each other. For combined load applications contact Winsmith.

Mechanical ratings shaded above exceed speed reducer thermal limitations under continuous duty conditions. See the thermal limit columns for continuous duty thermal limit ratings.

Modified

4:1 SINGLE REDUCTION

With Mobil Glygoyle 460 Lubricant

Special **Ratios**

4:1 RATIO			HORSEPOWER AND TORQUE RATINGS										OVERHUNG LOAD CAPACITIES (lb)			THRUST LOAD CAPACITIES (lb)	
			MECHANICAL								THERMAL		INPUT SHAFT	OUTPUT SHAFT[3,4]		OUTPUT SHAFT[5]	
SIZE	INPUT RPM[2]	OUTPUT RPM	1.00 SERVICE FACTOR			1.25 SERVICE FACTOR		1.50 SERVICE FACTOR		1.00 SERVICE FACTOR			ALL SHAFT INPUT MODELS	SOLID[2] SHAFT (e.g. MDNS)	HOLLOW SHAFT (e.g. MDSS)	SOLID SHAFT (e.g. MDNS)	HOLLOW SHAFT (e.g. MDSS)
			INPUT HP	OUTPUT TORQUE (lbf•in.)	EFF	INPUT HP	OUTPUT TORQUE (lbf•in.)	INPUT HP	OUTPUT TORQUE (lbf•in.)	INPUT HP	OUTPUT TORQUE (lbf•in.)						
E26	2500	625	7.20	695	96	5.76	556	4.80	463	6.32	609						
	1750	438	6.19	852	96	4.95	682	4.13	568	6.19	852						
	1160	290	5.13	1061	95	4.10	849	3.42	707	5.13	1061						
	870	218	4.58	1257	95	3.66	1006	3.05	838	4.58	1257		500	1250	2177	901	2160
	600	150	3.72	1471	94	4.98	1177	2.48	981	3.72	1471						
	300	75	2.25	1751	93	1.80	1401	1.50	1167	2.25	1751						
	100	25	0.86	1967	90	0.69	1574	0.57	1311	0.86	1967						
E30	2500	625	10.80	1051	96	8.64	841	7.20	701	8.85	859						
	1750	438	9.30	1289	96	7.44	1031	6.20	859	8.66	1199						
	1160	290	7.62	1585	96	6.10	1268	5.08	1057	7.62	1585						
	870	218	6.91	1908	95	5.53	1526	4.61	1272	6.91	1908		560	1450	2475	1071	2800
	600	150	5.70	2268	95	4.56	1814	3.80	1512	5.70	2268						
	300	75	3.51	2748	93	2.81	2198	2.34	1832	3.51	2748						
	100	25	1.36	3123	91	1.09	2498	0.91	2082	1.36	3123						
E35	2500	625	15.40	1499	97	12.32	1199	10.27	999	13.20	1290						
	1750	438	13.20	1838	97	10.56	1470	8.80	1225	12.70	1766						
	1160	290	11.10	2324	96	8.88	1859	7.40	1549	11.10	2324						
	870	218	9.78	2714	96	7.82	2171	6.52	1809	9.78	2714		750	2550	3600	1777	4000
	600	150	8.25	3298	95	6.60	2638	5.50	2199	8.25	3298						
	300	75	5.20	4095	94	4.16	3276	3.47	2730	5.20	4095						
	100	25	2.05	4730	92	1.64	3784	1.37	3153	2.05	4730						
E43	2500	625	23.80	2334	97	19.04	1867	15.87	1556	21.00	2061						
	1750	438	20.50	2861	97	16.40	2289	13.67	1907	19.80	2766						
	1160	290	17.20	3618	97	13.76	2894	11.47	2412	17.20	3618						
	870	218	15.10	4198	96	12.08	3358	10.07	2799	15.10	4198		1000	3300	3810	2156	4500
	600	150	12.90	5183	96	10.32	4146	8.60	3455	12.90	5183						
	300	75	8.25	6550	95	6.60	5240	5.50	4368	8.25	6550						
	100	25	3.29	7658	92	2.63	6126	2.19	5105	3.29	7658						

Note: Ratio shown (4:1) is exact ratio

1. If input speed is below 1160 RPM, please specify speed and mounting position to ensure proper lubrication.
2. Overhung load given at a distance equal to one shaft diameter from the face of the output seal.
3. Overhung load is based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung loads are based on the output shaft and output bearing capacities only. Check Overhung Load Section for other considerations.
5. Overhung load and thrust load ratings are computed independent of each other. For combined load applications contact Winsmith.

Mechanical ratings shaded above exceed speed reducer thermal limitations under continuous duty conditions. See the thermal limit columns for continuous duty thermal limit ratings.

Notes

Worm Gear Ratio Multiplier

The Worm Gear Ratio Multiplier features a machined register output flange and shaft that duplicate NEMA C face flange/shaft dimensions. The Worm Gear Ratio Multiplier is available with a solid input shaft, a quill input adaptor or a coupled input adaptor. The following output flange/shaft dimensions are available:

- Sizes E13 and E17 are available with NEMA 56C output flange/shaft dimensions.
- Sizes E17, E20, E24, and E26 are available with NEMA 140TC output flange/shaft dimensions.
- Sizes E24, E26 and E30 are available with NEMA 180TC output flange/shaft dimensions.
- Size E35 is available with NEMA 210TC output flange/shaft dimensions.
- The larger diameter Winsmith standard speed reducer output shafts can also be supplied.
- Register diameter is machined to a NEMA tolerance of 0.003 inches, providing a precision interface with the driven equipment, which can be very useful especially in motion control applications.
- Available in 4, 5, 7.5, 10, 15, 20, 25, 30, 40, 50, 60, 80 and 100:1 ratios and configurable as either a left (L) or a right (R) assembly.
- Completely self-contained ratio multiplier and includes an open-close vent, Mobil Glygoyle 460 lubricant, and the WinGuard Epoxy Coating System.

Coupling the Worm Gear Ratio Multiplier to the input of another NEMA C face reducer provides additional reduction. It also offers an easy method of creating a double reduction reducer on location or when mounting to another piece of NEMA C face equipment such as a brake or a clutch. Various assemblies can be created by mounting it in any one of four positions.

WORM GEAR RATIO MULTIPLIER NOMENCLATURE OVERVIEW

SIZE (Center Distance)	MODEL	RATIO	ASSEMBLY DESIGNATION	QUILL INPUT ADAPTOR	OUTPUT FLANGE
E13 – 1.333"	XDDS	4	Solid Output Shaft	42C	56C
E17 – 1.750"	MDDS	5	R - Right	48C	140TC
E20 – 2.000"	CDDS	7.5	L - Left	56C	180TC
E24 – 2.375"		10		140TC	210TC
E26 – 2.625"		15		180TC	
E30 – 3.000"		20			
E35 – 3.500"		25			
		30			
		40			
		50			
		60			
		80			
		100			

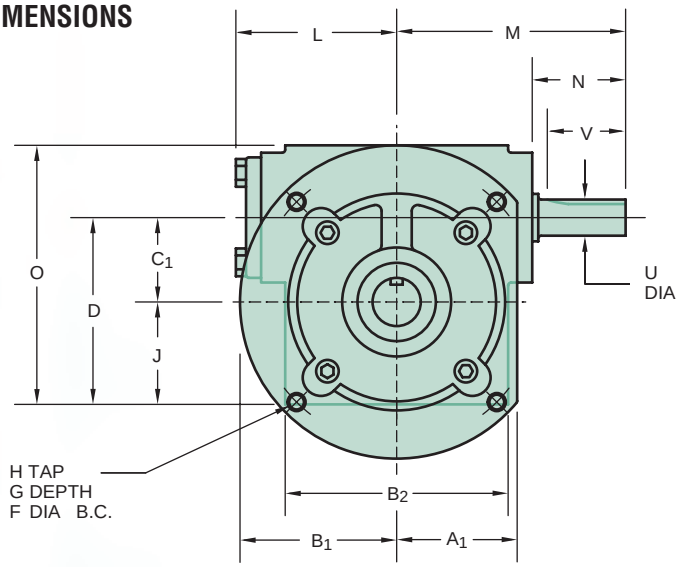
XDDS Worm Gear Ratio Multiplier

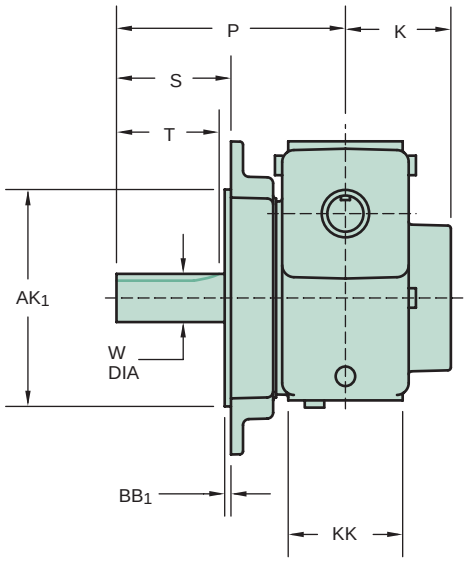
SHIPPING WEIGHTS (lb.) ◆					
MODEL	E13	E17	E20	E24	E26
XDDS	18	22	26	45	49
MDDS	21	25	29	48	52
CDDS	24	29	32	57	62
All motorized weights are for 48C to 140TC adaptor sizes. Add 10% for 180TC/210TC adaptor sizes.					

◆ Weights are approximate and include shipping carton.

XDDS
Solid Input Shaft
Solid Output Shaft
Flange Mount – NEMA
4.50 Inch Diameter Register

DIMENSIONS



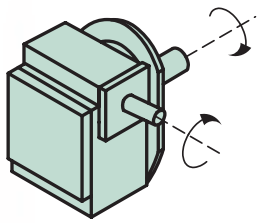


SPEED REDUCER DIMENSIONS (in.)

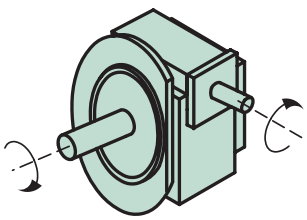
Size	A_1	AK_1**	B_1	B_2	BB_1	C_1	D	F DIA	G DEPTH	H TAP	J	K	KK	L	M	O	P	INPUT SHAFT U*	INPUT SHAFT N	INPUT SHAFT V	INPUT SHAFT KEYWAY	OUTPUT SHAFT W*	OUTPUT SHAFT S	OUTPUT SHAFT T	OUTPUT SHAFT KEYWAY
E13	2.38	4.500	3.25	3.88	.13	1.333	3.08	5.88	.75	3/8-16	1.75	1.94	2.00	2.83	4.12	4.33	4.56	.625	1.81	1.63	3/16x3/32	.625	2.06	1.81	3/16x3/32
E17	2.50	4.500	3.25	4.63	.13	1.750	3.88	5.88	.88	3/8-16	2.13	2.19	2.38	3.44	4.75	5.38	4.44	.750	1.94	1.69	3/16x3/32	.625°	2.06	1.81	3/16x3/32
E20	2.50	4.500	3.25	5.25	.13	2.000	4.13	5.88	.88	3/8-16	2.13	2.19	2.38	3.44	5.00	5.63	4.50	.750	2.19	1.75	3/16x3/32	.875	2.13	2.00	3/16x3/32
E24	3.25	4.500	3.25	5.38	.13	2.375	5.25	5.88	.75	3/8-16	2.88	2.69	3.13	4.50	6.50	7.25	4.50	1.000	2.75	2.38	1/4x1/8	.875	2.13	2.00	3/16x3/32
E26	3.25	4.500	3.25	5.88	.13	2.625	5.75	5.88	.75	3/8-16	3.13	2.69	3.13	4.50	6.50	7.88	5.50	1.000	2.75	2.38	1/4x1/8	.875°°	2.13	2.25	3/16x3/32

* Shaft diameter tolerance =.000 -.001 Dimensions shown are for construction purposes only. Please contact Winsmith for certified dimension sheets.
** Register diameter tolerance +.000-.003"
° Catalog output torque limited to 575 lbf·in.
°° Catalog output torque limited to 1578 lbf·in.

AVAILABLE SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY R



ASSEMBLY L

OPTIONAL OUTPUT SHAFT DIAMETERS (WINSMITH STANDARD)

Size	P	OUTPUT SHAFT W*	S	T	KEYWAY
E13	4.00	.750	2.06	1.81	3/16x3/32
E17	4.75	1.000	2.06	1.81	1/4x1/8
E20	4.75	1.000	2.13	2.00	1/4x1/8
E24	5.50	1.250	2.13	2.00	1/4x1/8
E26	5.50	1.250	2.13	2.25	1/4x1/8

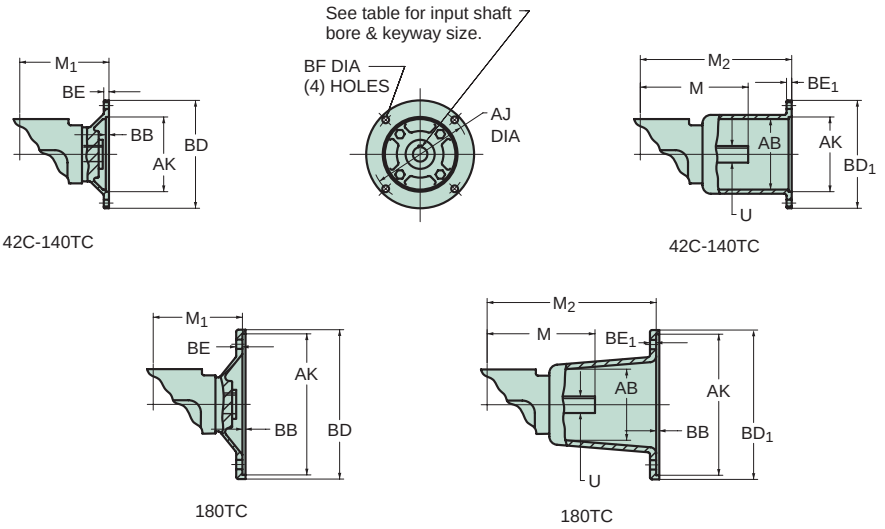
Modified

MDDS - CDDS

MDDS
Quill Input Adaptor
Solid Output Shaft
Flange Mount – NEMA
4.50 Inch Diameter Register

CDDS
Coupled Input Adaptor
Solid Output Shaft
Flange Mount – NEMA
4.50 Inch Diameter Register

DIMENSIONS

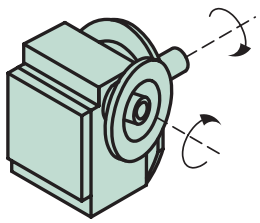


Modified

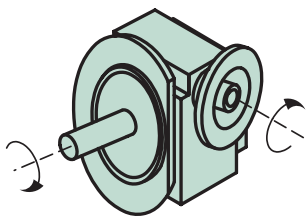
Size	QUILL INPUT ADAPTOR			COUPLED INPUT ADAPTOR											
	M_1 42C-48C	M_1 56C-140TC	M_1 180TC	42C-48TC			56C-140TC			180TC			M	U	KEYWAY
				AB	M_2	BE_1	AB	M_2	BE_1	AB	M_2	BE_1			
E13	3.56	3.63▪	NA	2.50	6.81	.38	3.00	6.75	.31	NA			4.13	.625	3/16 x 3/32
E17	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	4.75	.750	3/16 x 3/32
E20	4.06	4.06	NA	2.50	7.56	.38	3.75	7.50	.38	3.75	8.44	.50	5.00	.750	3/16 x 3/32
E24	NA	5.38	5.38	NA	NA	NA	4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	1/4 x 1/8
E26	NA	5.38	5.38	NA	NA	NA	4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	1/4 x 1/8

▪ 56C adaptor only

AVAILABLE SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY R



ASSEMBLY L

INPUT ADAPT. DIM.	42C 48C	56C	140TC	180TC
AJ	3.75	5.88	5.88	7.25
AK	3.00	4.50	4.50	8.50
BB	.19	.19	.19	.19
BD	4.50	6.50	6.50	9.00
BD_1	4.50	6.63	6.63	9.00
BE	.34	.31	.31	.38
BF	.281	.406	.406	.531
KEYWAY	1/8 x 1/16	3/16 x 3/32		1/4 x 1/8
BORE $^{+.001}_{-.000}$	.5005▪	.6255	.8755	1.1255

▪ 42C adaptor has .3755 bore, 3/32 x 3/64 keyway

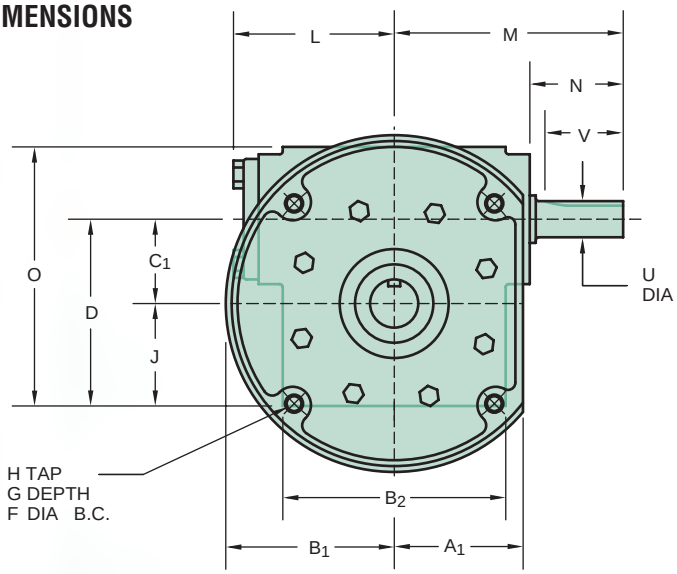
XDDS Worm Gear Ratio Multiplier

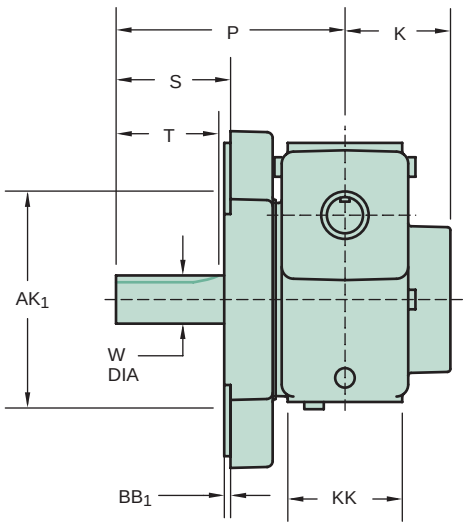
SHIPPING WEIGHTS (lb.) ◆				
MODEL	E24	E26	E30	E35
XDDS	49	53	54	71
MDDS	52	56	58	75
CDDS	61	66	64	75
All motorized weights are for 48C to 140TC adaptor sizes. Add 10% for 180TC/210TC adaptor sizes.				

◆ Weights are approximate and include shipping carton.

XDDS
Solid Input Shaft
Solid Output Shaft
Flange Mount – NEMA
8.50 Inch Diameter Register

DIMENSIONS



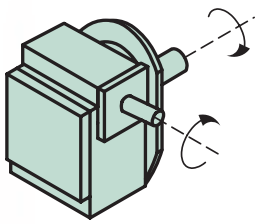


SPEED REDUCER DIMENSIONS (in.)

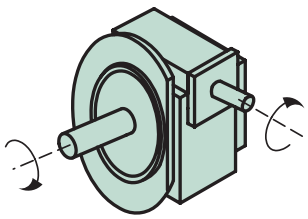
Size	A_1	AK_1**	B_1	B_2	BB_1	C_1	D	F DIA	G DEPTH	H TAP	J	K	KK	L	M	O	P	INPUT SHAFT U*	INPUT SHAFT N	INPUT SHAFT V	INPUT SHAFT KEYWAY	OUTPUT SHAFT W*	OUTPUT SHAFT S	OUTPUT SHAFT T	OUTPUT SHAFT KEYWAY
E24	3.50	8.500	4.50	5.38	.31	2.375	5.25	7.25	.75	1/2-13	2.88	2.69	3.13	4.50	6.50	7.25	6.13	1.000	2.75	2.38	1/4x1/8	1.125	2.63	3.00	1/4x1/8
E26	3.50	8.500	4.50	5.88	.31	2.625	5.75	7.25	.75	1/2-13	3.13	2.69	3.13	4.50	6.50	7.88	6.13	1.000	2.75	2.38	1/4x1/8	1.125	2.63	3.00	1/4x1/8
E30	3.75	8.500	4.50	6.62	.31	3.000	6.50	7.25	.75	1/2-13	3.50	3.00	3.50	4.63	7.00	9.00	5.88	1.000	3.06	2.38	1/4x1/8	1.125°°	2.63	2.50	1/4x1/8
E35	4.13	8.500	4.50	7.69	.31	3.500	7.50	7.25	.75	1/2-13	4.00	3.25	3.75	5.06*	7.38	10.13	7.00	1.000	2.31	2.50	1/4x1/8	1.375	3.13	3.38	5/16x5/32

* Shaft diameter tolerance = .000 -.001 Dimensions shown are for construction purposes only. Please contact Winsmith for certified dimension sheets.
** Register diameter tolerance +.000 -.003"
▲ L Dimension equals 5.46 on MDDS model
°° Catalog output torque limited to 2200 lbf•in.

AVAILABLE SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY R



ASSEMBLY L

OPTIONAL OUTPUT SHAFT DIAMETERS (WINSMITH STANDARD)

Size	P	OUTPUT SHAFT W*	S	T	KEYWAY
E24	5.50	1.250	2.00	2.63	1/4x1/8
E26	5.50	1.250	2.00	2.63	1/4x1/8
E30	5.88	1.375	2.63	2.75	5/16x5/32
E35	7.00	1.750	3.13	3.63	3/8x3/16

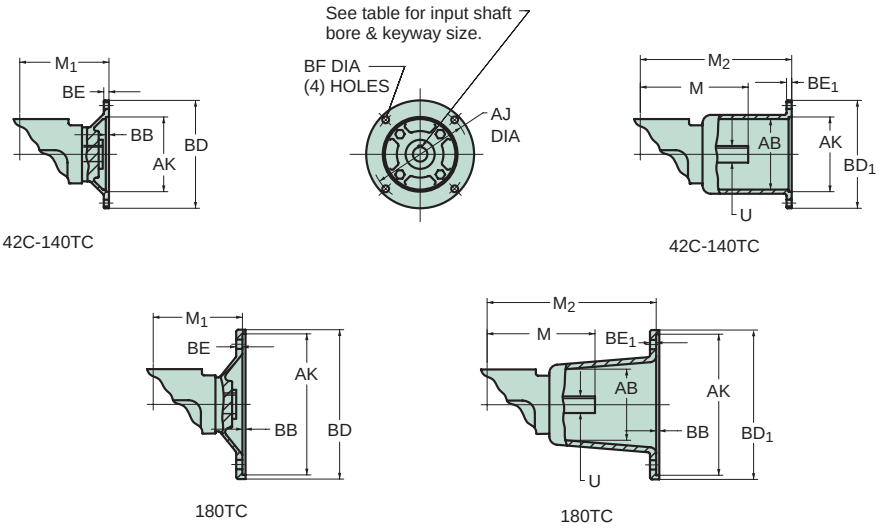
Modified

MDDS - CDDS

MDDS
Quill Input Adaptor
Solid Output Shaft
Flange Mount – NEMA
8.50 Inch Diameter Register

CDDS
Coupled Input Adaptor
Solid Output Shaft
Flange Mount – NEMA
8.50 Inch Diameter Register

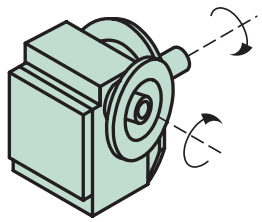
DIMENSIONS



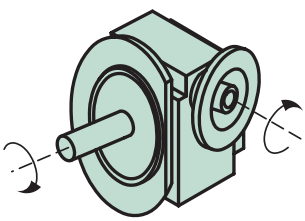
Modified

Size	QUILL INPUT ADAPTOR		COUPLED INPUT ADAPTOR								
	M_1 56C-140TC	M_1 180TC	56C-140TC			180TC			M	U	KEYWAY
			AB	M_2	BE_1	AB	M_2	BE_1			
E24	5.38	5.38	4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	1/4 x 1/8
E26	5.38	5.38	4.13	9.13	.38	4.25	10.19	.50	6.50	1.000	1/4 x 1/8
E30	5.56	5.56	4.13	9.13	.38	4.75	10.88	.50	7.00	1.000	1/4 x 1/8
E35	5.81	5.81	4.13	9.13	.38	4.75	11.13	.50	7.38	1.000	1/4 x 1/8

AVAILABLE SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY R



ASSEMBLY L

INPUT ADAPT. DIM.	56C	140TC	180TC
AJ	5.88	5.88	7.25
AK	4.50	4.50	8.50
BB	.19	.19	.19
BD	6.50	6.50	9.00
BD_1	6.63	6.63	9.00
BE	.31	.31	.38
BF	.406	.406	.531
KEYWAY	3/16 x 3/32		1/4 x 1/8
BORE $^{+.001}_{-.000}$	.6255	.8755	1.1255

Notes

Drywell

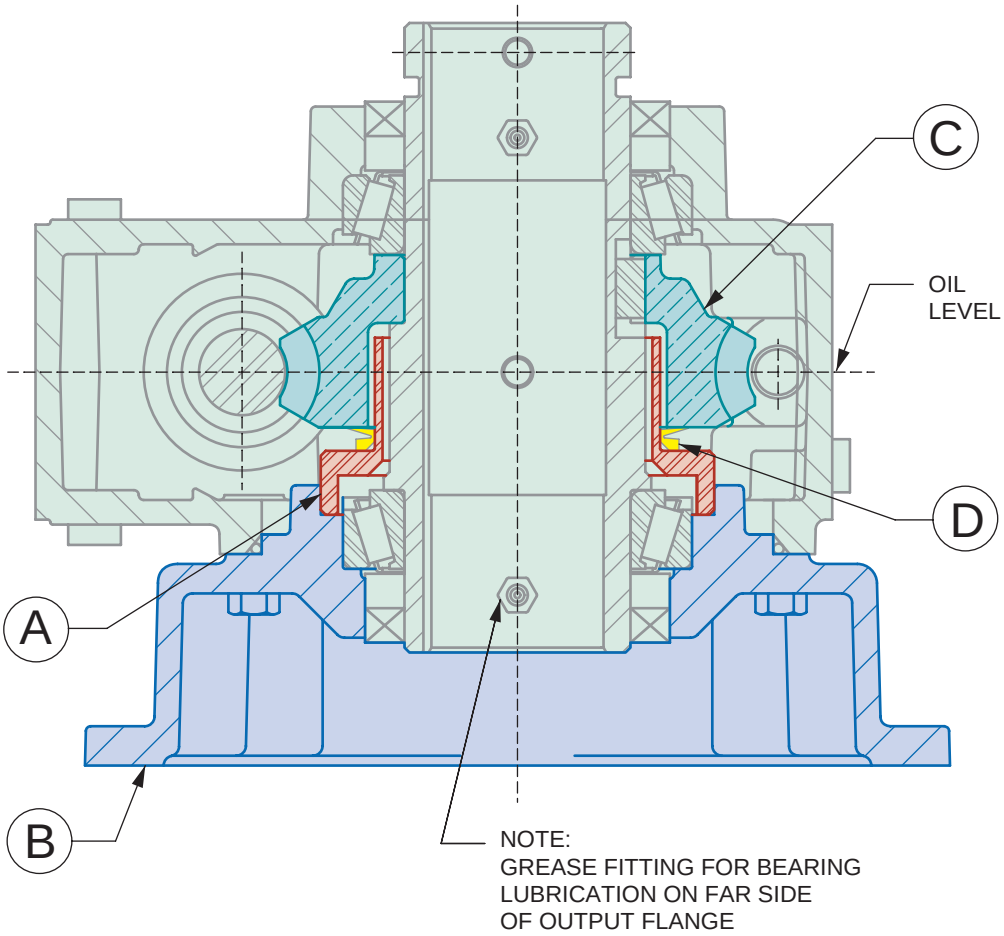
The SE Encore Drywell utilizes a proven vertical hollow shaft design to ensure that lubricant inside the reducer stays inside the reducer. The internal rotating components are exposed to lubrication while the internal drywell design prevents the oil from contacting the lower output seal or bearing area.

The Drywell reducer configuration is available in three case sizes: E30, E35 & E43. Available ratios are noted in the table at right. Ratings for the three Drywell sizes are included on tables in this section. The lubricant is not factory installed and is shipped in a separate container with the speed reducer ensuring that the drywell area is not contaminated during transit.

Size	Available Ratio's*
E30	10:1 to 100:1
E35	5:1 to 100:1
E43	5:1 to 100:1

* For other ratios, please contact Winsmith.

DRYWELL CROSS SECTION



A DRYWELL FLANGE SLEEVE

B OUTPUT FLANGE

C WORM GEAR

D V-RING

Modified

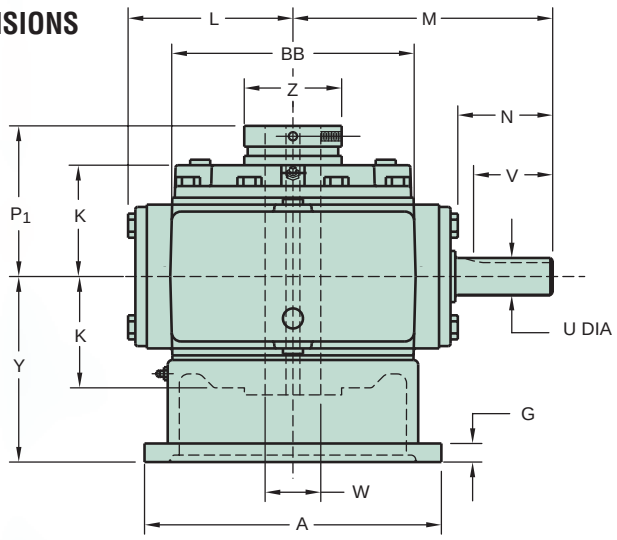
XSYS Drywell

SHIPPING WEIGHTS (lb.) ◆			
MODEL	E30	E35	E43
XSYS	71	95	148
MSYS	75	99	153
CSYS	81	105	158
All motorized weights are for 48C to 140TC adaptor sizes. Add 10% for 180TC/210TC adaptor sizes.			

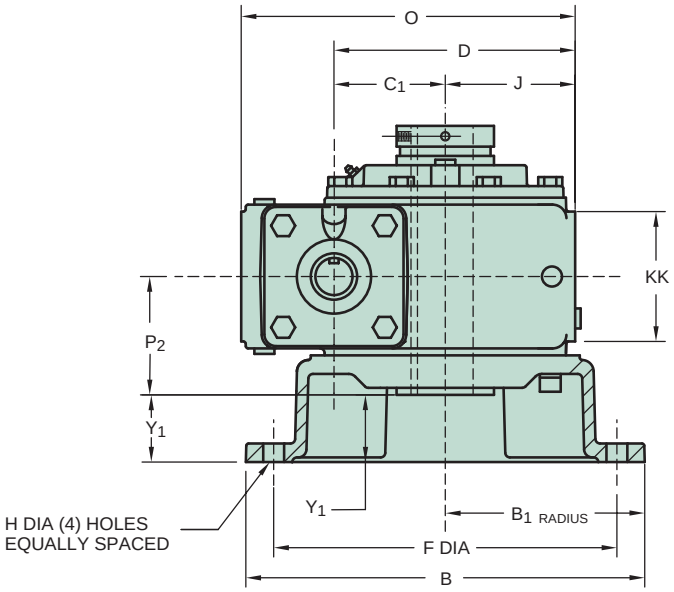
◆ Weights are approximate and include shipping carton.

XSYS
Flange
Solid Input Shaft
Hollow Output Shaft
Flange Mount

DIMENSIONS



UNITS MAY BE TILTED UP TO 10 DEGREES.
SEE INSTALLATION BULLETIN FOR MORE INFORMATION

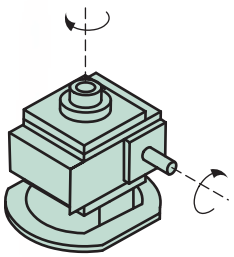


SPEED REDUCER DIMENSIONS (in.)

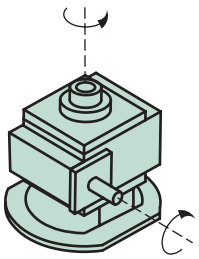
Size	A	B	B_1	BB	C_1	D	F DIA	G	H	J	K	KK	L	M	O	P_1	P_2	Y	Y_1	Z	OUTPUT SHAFT			
																					U*	N	V	KEYWAY
E30	8.00	10.75	5.38	6.62	3.000	6.50	9.250	.50	.563	3.50	3.00	3.50	4.63	7.00	9.00	4.06	3.19	5.00	1.81	2.63	1.000	3.06	2.38	1/4x1/8
E35	9.00	11.00	5.50	7.69	3.500	7.50	10.000	.50	.563	4.00	3.38	3.75	5.06+	7.38	10.13	4.44	3.56	5.00	1.44	2.87	1.000	2.31	2.50	1/4x1/8
E43	10.50	13.00	6.50	8.75	4.250	4.38	11.500	.63	.688	4.38	4.25	4.38	5.88++	8.19	11.50	5.00	4.75	5.75	1.00	3.63	1.250	2.31	2.50	1/4x1/8

* Shaft diameter tolerance +.000 -.001
Dimensions shown are for construction purposes only. Please contact Winsmith for certified dimension sheets.
\+ L dimension equals 5.46 on E35 MSYS
++ L dimension equals 6.28 on E43 MSYS

AVAILABLE SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



ASSEMBLY DR



ASSEMBLY DL

HOLLOW OUTPUT SHAFT BORES

(S) Standard Bore (M) Machined to Size Bore (B) Bushing*
*Bushing for use with standard bore only

W**		KEYWAY	E30	E35	E43
1.250	1-1/4	1/4x1/8	M/B	M/B	
1.375	1-3/8	5/16x5/32	B		
1.438	1-7/16	3/8x3/16	B	M/B	
1.500	1-1/2	3/8x3/16	M/B	M/B	B
1.625	1-5/8	3/8x3/16			S
1.688	1-11/16	3/8x3/16	M/B	S	S
1.750	1-3/4	3/8x3/16	B	B	B
1.875	1-7/8	1/2x1/4		S	B
*1.938	1-15/16	1/2x1/4	S	M/B	M/B
2.000	2	1/2x1/4		M/B	S
*2.188	2-3/16	1/2x1/4		S	M/B
2.250	2-1/4	1/2x1/4			B
2.438	2-7/16	5/8x5/16			M/B
2.500	2-1/2	5/8x5/16			B
2.750	2-3/4	5/8x5/16			S

** Bore tolerances +.000 +.002
Two puller slots opposed on all hollow output shafts
* Bore size 1.938 on size E30: keyway is 1/2x3/16
* Bore size 2.188 on size E35: keyway is 1/2x1/8
Contact Winsmith for other bore sizes

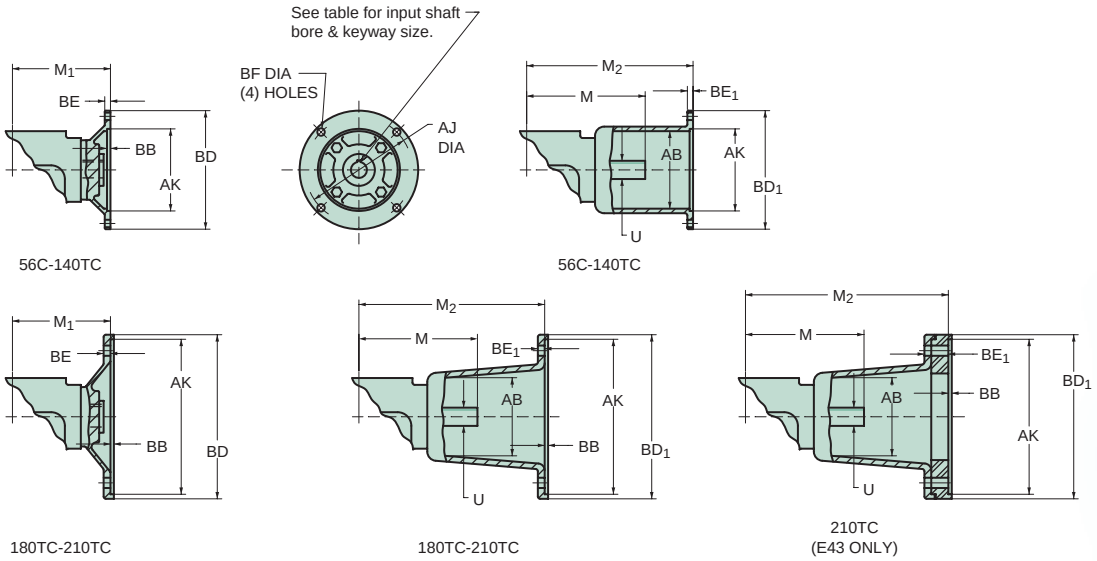
Modified

MSYS - CSYS

MSYS
Flange
Quill Input Adaptor
Hollow Output Shaft
Flange Mount

CSYS
Flange
Coupled Input Adaptor
Hollow Output Shaft
Flange Mount

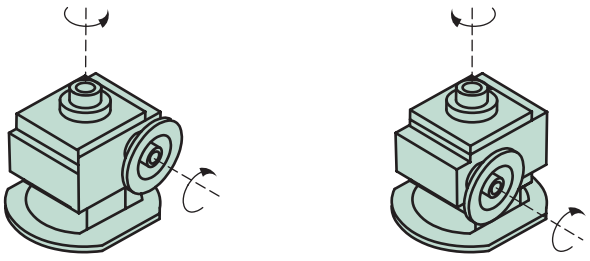
DIMENSIONS



Size	QUILL INPUT ADAPTOR			COUPLED INPUT ADAPTOR										
	M_1 56C-140TC	M_1 180TC	M_1 210TC	56C-140TC			180TC			210TC*			M_2	U	KEYWAY
				AB	M_2	BE_1	AB	M_2	BE_1	AB	M_2	BE_1			
E30	5.56	5.56	NA	4.13	9.75	.38	4.75	10.88	.50	4.75	10.88	.50	7.00	1.000	1/4x1/8
E35	5.81	5.81	NA	4.13	10.00	.38	4.75	11.13	.50	4.75	11.13	.50	7.38	1.000	1/4x1/8
E43	6.63	6.63	6.63	4.13	10.81	.38	4.75	11.94	.50	4.75	12.88	1.44	8.19	1.250	1/4x1/8

* Adaptor ring furnished with motor adaptor on size E43

AVAILABLE SHAFT ARRANGEMENTS AND RELATIVE SHAFT ROTATIONS



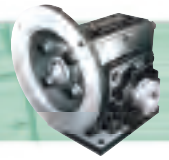
ASSEMBLY DR

ASSEMBLY DL

INPUT ADAPT. DIM.	56C	140TC	180TC	210TC
AJ	5.88	5.88	7.25	7.25
AK	4.50	4.50	8.50	8.50
BB	.19	.19	.19	.19
BD	6.50	6.50	9.00	9.00
BD_1	6.63	6.63	9.00	9.00
BE	.31	.31	.38	.38
BF	.406	.406	.531	.531
KEYWAY	3/16x3/32		1/4x1/8	5/16x5/32
BORE $^{+.001}_{-.000}$	.6255	.8775	1.1255	1.3755

DRYWELL
E30

DRYWELL SINGLE REDUCTION
With Mobil Glygoyle 460 Lubricant



3.000 CENTER DISTANCE			HORSEPOWER AND TORQUE RATINGS									HOLLOW OUTPUT SHAFT OVERHUNG LOAD CAPACITIES (lb)[3,4,5]	HOLLOW OUTPUT SHAFT THRUST LOAD CAPACITIES (lb)[5]
			MECHANICAL							THERMAL			
			1.00 SERVICE FACTOR			1.25 SERVICE FACTOR		1.50 SERVICE FACTOR		1.00 SERVICE FACTOR			
RATIO[1]	INPUT RPM[2]	OUTPUT RPM	INPUT HP	OUTPUT TORQUE (lbf·in.)	EFF	INPUT HP	OUTPUT TORQUE (lbf·in.)	INPUT HP	OUTPUT TORQUE (lbf·in.)	INPUT HP	OUTPUT TORQUE (lbf·in.)		
10	2500	250	6.05	1440	94	4.84	1152	4.03	960	6.05	1440	1368	2365
	1750	175	5.16	1748	94	4.13	1398	3.44	1165	5.16	1748		
	1160	116	4.26	2163	94	3.41	1730	2.84	1442	4.26	2163		
	870	87	3.57	2401	93	2.86	1921	2.38	1601	3.57	2401		
	600	60	2.73	2647	92	2.18	2118	1.82	1765	2.73	2647		
	300	30	1.55	2949	91	1.24	2359	1.03	1966	1.55	2949		
	100	10	0.57	3170	88	0.46	2536	0.38	2113	0.57	3170		
15	2500	167	4.49	1570	92	3.59	1256	2.99	1047	4.49	1570	1583	2711
	1750	117	3.84	1910	92	3.07	1528	2.56	1273	3.84	1910		
	1160	77	3.16	2346	91	2.53	1877	2.11	1564	3.16	2346		
	870	58	2.64	2595	91	2.11	2076	1.76	1730	2.64	2595		
	600	40	2.02	2851	90	1.62	2281	1.35	1901	2.02	2851		
	300	20	1.15	3166	88	0.92	2533	0.77	2111	1.15	3166		
	100	7	0.42	3394	85	0.34	2715	0.28	2263	0.42	3394		
20	2500	125	3.52	1609	91	2.82	1287	2.35	1073	3.52	1609	1750	2800
	1750	88	3.01	1959	90	2.41	1567	2.01	1306	3.01	1959		
	1160	58	2.44	2367	89	1.95	1894	1.63	1578	2.44	2367		
	870	44	2.02	2597	89	1.62	2078	1.35	1731	2.02	2597		
	600	30	1.54	2831	88	1.23	2265	1.03	1887	1.54	2831		
	300	15	0.87	3116	86	0.70	2493	0.58	2077	0.87	3116		
	100	5	0.32	3322	83	0.26	2658	0.21	2215	0.32	3322		
25	2500	100	2.80	1571	89	2.24	1257	1.87	1047	2.80	1571	1890	2800
	1750	70	2.47	1968	89	1.98	1574	1.65	1312	2.47	1968		
	1160	46	1.97	2349	88	1.58	1879	1.31	1566	1.97	2349		
	870	35	1.63	2563	87	1.30	2050	1.09	1709	1.63	2563		
	600	24	1.24	2780	86	0.99	2224	0.83	1853	1.24	2780		
	300	12	0.69	3042	84	0.55	2434	0.46	2028	0.69	3042		
	100	4	0.25	3230	81	0.20	2584	0.17	2153	0.25	3230		
30	2500	83	2.49	1634	87	1.99	1307	1.66	1089	2.49	1634	2020	2800
	1750	58	2.14	1989	86	1.71	1591	1.43	1326	2.14	1989		
	1160	39	1.75	2429	85	1.40	1943	1.17	1619	1.75	2429		
	870	29	1.47	2680	84	1.18	2144	0.98	1787	1.47	2680		
	600	20	1.13	2936	83	0.90	2349	0.75	1957	1.13	2936		
	300	10	0.64	3250	80	0.51	2600	0.43	2167	0.64	3250		
	100	3	0.24	3478	77	0.19	2782	0.16	2319	0.24	3478		

1. Exact ratio
2. If input speed is below 1160 RPM, please specify speed and mounting position to ensure proper lubrication.
3. Overhung load is based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load limits are based on the output shaft and bearing capacities. Check overhung load section for other considerations.
5. Overhung load and thrust load ratings are computed independent of each other. For combined load applications, contact Winsmith.

Modified

DRYWELL SINGLE REDUCTION

With Mobil Glygoyle 460 Lubricant

DRYWELL
E30

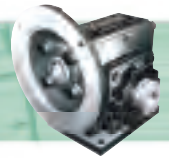
3.000 CENTER DISTANCE			HORSEPOWER AND TORQUE RATINGS									HOLLOW OUTPUT SHAFT OVERHUNG LOAD CAPACITIES (lb)[3,4,5]	HOLLOW OUTPUT SHAFT THRUST LOAD CAPACITIES (lb)[5]
			MECHANICAL							THERMAL			
			1.00 SERVICE FACTOR			1.25 SERVICE FACTOR		1.50 SERVICE FACTOR		1.00 SERVICE FACTOR			
RATIO[1]	INPUT RPM[2]	OUTPUT RPM	INPUT HP	OUTPUT TORQUE (lbf•in.)	EFF	INPUT HP	OUTPUT TORQUE (lbf•in.)	INPUT HP	OUTPUT TORQUE (lbf•in.)	INPUT HP	OUTPUT TORQUE (lbf•in.)		
40	2500	63	1.91	1616	84	1.53	1293	1.27	1077	1.91	1616	2220	2800
	1750	44	1.64	1967	83	1.31	1574	1.09	1311	1.64	1967		
	1160	29	1.33	2367	82	1.06	1894	0.89	1578	1.33	2367		
	870	22	1.11	2593	81	0.89	2074	0.74	1729	1.11	2593		
	600	15	0.85	2822	80	0.68	2258	0.57	1881	0.85	2822		
	300	8	0.48	3101	77	0.38	2481	0.32	2067	0.48	3101		
	100	3	0.18	3301	74	0.14	2641	0.12	2201	0.18	3301		
50	2500	50	1.49	1523	81	1.19	1218	0.99	1015	1.49	1523	2350	2800
	1750	35	1.31	1902	81	1.05	1522	0.87	1268	1.31	1902		
	1160	23	1.05	2264	79	0.84	1811	0.70	1509	1.05	2264		
	870	17	0.87	2467	78	0.70	1974	0.58	1645	0.87	2467		
	600	12	0.66	2673	77	0.53	2138	0.44	1782	0.66	2673		
	300	6	0.37	2921	74	0.30	2337	0.25	1947	0.37	2921		
	100	2	0.14	3099	71	0.11	2479	0.09	2066	0.14	3099		
60	2500	42	1.23	1452	78	0.98	1162	0.82	968	1.23	1452	2580	2800
	1750	29	1.07	1796	78	0.86	1437	0.71	1197	1.07	1796		
	1160	19	0.85	2124	77	0.68	1699	0.57	1416	0.85	2124		
	870	15	0.70	2306	76	0.56	1845	0.47	1537	0.70	2306		
	600	10	0.53	2490	74	0.42	1992	0.35	1660	0.53	2490		
	300	5	0.30	2712	72	0.24	2170	0.20	1808	0.30	2712		
	100	2	0.11	2798	69	0.09	2238	0.07	1865	0.11	2798		
80	2500	31	0.83	1206	72	0.66	965	0.55	804	0.83	1206	2580	2800
	1750	22	0.71	1478	73	0.57	1182	0.47	985	0.71	1478		
	1160	15	0.56	1734	72	0.45	1387	0.37	1156	0.56	1734		
	870	11	0.46	1876	71	0.37	1501	0.31	1251	0.46	1876		
	600	8	0.34	2018	70	0.27	1614	0.23	1345	0.34	2018		
	300	4	0.18	2050	67	0.14	1640	0.12	1367	0.18	2050		
	100	1	0.06	2050	64	0.05	1640	0.04	1367	0.06	2050		
100	2500	25	0.57	951	66	0.46	761	0.38	634	0.57	951	2580	2800
	1750	18	0.48	1160	67	0.38	928	0.32	773	0.48	1160		
	1160	12	0.37	1356	67	0.30	1085	0.25	904	0.37	1356		
	870	9	0.31	1464	66	0.25	1171	0.21	976	0.31	1464		
	600	6	0.23	1572	65	0.18	1258	0.15	1048	0.23	1572		
	300	3	0.13	1696	63	0.10	1357	0.09	1131	0.13	1696		
	100	1	0.04	1696	61	0.03	1357	0.03	1131	0.04	1696		

1. Exact ratio
2. If input speed is below 1160 RPM, please specify speed and mounting position to ensure proper lubrication.
3. Overhung load is based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung load limits are based on the output shaft and bearing capacities. Check overhung load section for other considerations.
5. Overhung load and thrust load ratings are computed independent of each other. For combined load applications, contact Winsmith.

Modified

DRYWELL
E35

DRYWELL SINGLE REDUCTION
With Mobil Glygoyle 460 Lubricant



3.500 CENTER DISTANCE			HORSEPOWER AND TORQUE RATINGS									HOLLOW OUTPUT SHAFT OVERHUNG LOAD CAPACITIES (lb)[3,4,5]	HOLLOW OUTPUT SHAFT THRUST LOAD CAPACITIES (lb)[5]
			MECHANICAL							THERMAL			
			1.00 SERVICE FACTOR			1.25 SERVICE FACTOR		1.50 SERVICE FACTOR		1.00 SERVICE FACTOR			
RATIO[1]	INPUT RPM[2]	OUTPUT RPM	INPUT HP	OUTPUT TORQUE (lbf·in.)	EFF	INPUT HP	OUTPUT TORQUE (lbf·in.)	INPUT HP	OUTPUT TORQUE (lbf·in.)	INPUT HP	OUTPUT TORQUE (lbf·in.)		
5	2500	500	13.48	1637	96	10.78	1310	8.99	1091	12.71	1543	1447	2246
	1750	350	11.60	2007	96	9.28	1606	7.73	1338	11.60	2007		
	1160	232	9.78	2539	96	7.82	2031	6.52	1693	9.78	2539		
	870	174	8.63	2972	95	6.90	2378	5.75	1981	8.63	2972		
	600	120	7.18	3559	94	5.74	2847	4.79	2373	7.18	3559		
	300	60	4.46	4348	93	3.57	3478	2.97	2899	4.46	4348		
	100	20	1.74	4969	91	1.39	3975	1.16	3313	1.74	4969		
7.5	2500	333	10.47	1895	96	8.38	1516	6.98	1263	10.47	1895	1582	2612
	1750	233	9.02	2323	95	7.22	1858	6.01	1549	9.02	2323		
	1160	155	7.55	2917	95	6.04	2334	5.03	1945	7.55	2917		
	870	116	6.60	3379	94	5.28	2703	4.40	2253	6.60	3379		
	600	80	5.26	3875	94	4.21	3100	3.51	2583	5.26	3875		
	300	40	3.12	4512	92	2.50	3610	2.08	3008	3.12	4512		
	100	13	1.18	4993	90	0.94	3994	0.79	3329	1.18	4993		
10	2500	250	8.57	2048	95	6.86	1638	5.71	1365	8.57	2048	1734	2903
	1750	175	7.38	2511	94	5.90	2009	4.92	1674	7.38	2511		
	1160	116	6.19	3152	94	4.95	2522	4.13	2101	6.19	3152		
	870	87	5.36	3612	93	4.29	2890	3.57	2408	5.36	3612		
	600	60	4.23	4101	92	3.38	3281	2.82	2734	4.23	4101		
	300	30	2.48	4722	91	1.98	3778	1.65	3148	2.48	4722		
	100	10	0.94	5187	88	0.75	4150	0.63	3458	0.94	5187		
15	2500	167	6.31	2217	93	5.05	1774	4.21	1478	6.31	2217	1998	3339
	1750	117	5.45	2717	92	4.36	2174	3.63	1811	5.45	2717		
	1160	77	4.57	3408	91	3.66	2726	3.05	2272	4.57	3408		
	870	58	3.95	3887	91	3.16	3110	2.63	2591	3.95	3887		
	600	40	3.12	4394	90	2.50	3515	2.08	2929	3.12	4394		
	300	20	1.83	5035	87	1.46	4028	1.22	3357	1.83	5035		
	100	7	0.69	5514	84	0.55	4411	0.46	3676	0.69	5514		
20	2500	125	4.95	2278	91	3.96	1822	3.30	1519	4.95	2278	2204	3660
	1750	88	4.18	2730	91	3.34	2184	2.79	1820	4.18	2730		
	1160	58	3.57	3477	90	2.86	2782	2.38	2318	3.57	3477		
	870	44	3.04	3917	89	2.43	3134	2.03	2611	3.04	3917		
	600	30	2.38	4376	88	1.90	3501	1.59	2917	2.38	4376		
	300	15	1.38	4949	85	1.10	3959	0.92	3299	1.38	4949		
	100	5	0.52	5373	82	0.42	4298	0.35	3582	0.52	5373		
25	2500	100	4.05	2296	90	3.24	1837	2.70	1531	4.05	2296	2371	4000
	1750	70	3.45	2774	89	2.76	2219	2.30	1849	3.45	2774		
	1160	46	2.91	3479	88	2.33	2783	1.94	2319	2.91	3479		
	870	35	2.46	3889	87	1.97	3111	1.64	2593	2.46	3889		
	600	24	1.91	4314	86	1.53	3451	1.27	2876	1.91	4314		
	300	12	1.10	4841	83	0.88	3873	0.73	3227	1.10	4841		
	100	4	0.41	5227	80	0.33	4182	0.27	3485	0.41	5227		

1. Exact ratio
2. If input speed is below 1160 RPM, please specify speed and mounting position to ensure proper lubrication.
3. Overhung load is based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung loads are based on the output shaft and output bearing capacities only. Check overhung load section for other considerations.
5. Overhung load and thrust load ratings are computed independent of each other. For combined load applications contact Winsmith.

Mechanical ratings shaded above exceed speed reducer thermal limitations under continuous duty conditions. See the thermal limit columns above for continuous duty thermal ratings.

Modified

DRYWELL SINGLE REDUCTION

With Mobil Glygoyle 460 Lubricant

DRYWELL
E35

3.500 CENTER DISTANCE			HORSEPOWER AND TORQUE RATINGS									HOLLOW OUTPUT SHAFT OVERHUNG LOAD CAPACITIES (lb)[3,4,5]	HOLLOW OUTPUT SHAFT THRUST LOAD CAPACITIES (lb)[5]
			MECHANICAL							THERMAL			
			1.00 SERVICE FACTOR			1.25 SERVICE FACTOR		1.50 SERVICE FACTOR		1.00 SERVICE FACTOR			
RATIO[1]	INPUT RPM[2]	OUTPUT RPM	INPUT HP	OUTPUT TORQUE (lbf•in.)	EFF	INPUT HP	OUTPUT TORQUE (lbf•in.)	INPUT HP	OUTPUT TORQUE (lbf•in.)	INPUT HP	OUTPUT TORQUE (lbf•in.)		
30	2500	83	3.48	2297	87	2.78	1838	2.32	1531	3.48	2297	2528	4000
	1750	58	3.01	2816	87	2.41	2253	2.01	1877	3.01	2816		
	1160	39	2.54	3528	85	2.03	2822	1.69	2352	2.54	3528		
	870	29	2.20	4013	84	1.76	3210	1.47	2675	2.20	4013		
	600	20	1.74	4524	83	1.39	3619	1.16	3016	1.74	4524		
	300	10	1.03	5168	80	0.82	4134	0.69	3445	1.03	5168		
	100	3	0.40	5648	76	0.32	4518	0.27	3765	0.40	5648		
40	2500	63	2.67	2283	85	2.14	1826	1.78	1522	2.67	2283	2784	4000
	1750	44	2.27	2741	84	1.82	2193	1.51	1827	2.27	2741		
	1160	29	1.94	3479	83	1.55	2783	1.29	2319	1.94	3479		
	870	22	1.66	3912	81	1.33	3130	1.11	2608	1.66	3912		
	600	15	1.30	4363	80	1.04	3490	0.87	2909	1.30	4363		
	300	8	0.77	4925	77	0.62	3940	0.51	3283	0.77	4925		
	100	3	0.29	5339	73	0.23	4271	0.19	3559	0.29	5339		
50	2500	50	2.14	2217	82	1.71	1774	1.43	1478	2.14	2217	3025	4000
	1750	35	1.83	2681	82	1.46	2145	1.22	1787	1.83	2681		
	1160	23	1.54	3354	80	1.23	2683	1.03	2236	1.54	3354		
	870	17	1.31	3744	79	1.05	2995	0.87	2496	1.31	3744		
	600	12	1.02	4148	77	0.82	3318	0.68	2765	1.02	4148		
	300	6	0.60	4649	74	0.48	3719	0.40	3099	0.60	4649		
	100	2	0.23	5015	70	0.18	4012	0.15	3343	0.23	5015		
60	2500	42	1.74	2103	80	1.39	1682	1.16	1402	1.74	2103	3186	4000
	1750	29	1.49	2552	79	1.19	2042	0.99	1701	1.49	2552		
	1160	19	1.25	3162	78	1.00	2530	0.83	2108	1.25	3162		
	870	15	1.06	3513	77	0.85	2810	0.71	2342	1.06	3513		
	600	10	0.82	3874	75	0.66	3099	0.55	2583	0.82	3874		
	300	5	0.48	4320	72	0.38	3456	0.32	2880	0.48	4320		
	100	2	0.18	4645	68	0.14	3716	0.12	3097	0.18	4645		
80	2500	31	1.16	1738	75	0.93	1390	0.77	1159	1.16	1738	3357	4000
	1750	22	0.99	2115	74	0.79	1692	0.66	1410	0.99	2115		
	1160	15	0.81	2588	73	0.65	2070	0.54	1725	0.81	2588		
	870	11	0.68	2858	72	0.54	2286	0.45	1905	0.68	2858		
	600	8	0.53	3135	71	0.42	2508	0.35	2090	0.53	3135		
	300	4	0.30	3474	68	0.24	2779	0.20	2316	0.30	3474		
	100	1	0.11	3720	64	0.09	2976	0.07	2480	0.11	3720		
100	2500	25	0.79	1367	69	0.63	1094	0.53	911	0.79	1367	3357	4000
	1750	18	0.67	1665	69	0.54	1332	0.45	1110	0.67	1665		
	1160	12	0.54	2022	69	0.43	1618	0.36	1348	0.54	2022		
	870	9	0.45	2224	68	0.36	1779	0.30	1483	0.45	2224		
	600	6	0.35	2431	67	0.28	1945	0.23	1621	0.35	2431		
	300	3	0.20	2684	64	0.16	2147	0.13	1789	0.20	2684		
	100	1	0.07	2867	61	0.06	2294	0.05	1911	0.07	2867		

1. Exact ratio
2. If input speed is below 1160 RPM, please specify speed and mounting position to ensure proper lubrication.
3. Overhung load is based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung loads are based on the output shaft and output bearing capacities only. Check overhung load section for other considerations.
5. Overhung load and thrust load ratings are computed independent of each other. For combined load applications contact Winsmith.

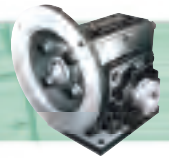
Mechanical ratings shaded above exceed speed reducer thermal limitations under continuous duty conditions. See the thermal limit columns above for continuous duty thermal ratings.

Modified

DRYWELL
E43

DRYWELL SINGLE REDUCTION

With Mobil Glygoyle 460 Lubricant



3.500 CENTER DISTANCE			HORSEPOWER AND TORQUE RATINGS									HOLLOW OUTPUT SHAFT OVERHUNG LOAD CAPACITIES (lb)[3,4,5]	HOLLOW OUTPUT SHAFT THRUST LOAD CAPACITIES (lb)[5]
			MECHANICAL							THERMAL			
			1.00 SERVICE FACTOR			1.25 SERVICE FACTOR		1.50 SERVICE FACTOR		1.00 SERVICE FACTOR			
RATIO[1]	INPUT RPM[2]	OUTPUT RPM	INPUT HP	OUTPUT TORQUE (lbf·in.)	EFF	INPUT HP	OUTPUT TORQUE (lbf·in.)	INPUT HP	OUTPUT TORQUE (lbf·in.)	INPUT HP	OUTPUT TORQUE (lbf·in.)		
5	2500	500	20.91	2556	97	16.73	2045	13.94	1704	18.92	2311	2320	3955
	1750	350	17.99	3133	97	14.39	2506	11.99	2089	17.69	3081		
	1160	232	15.16	3963	96	12.13	3170	10.11	2642	15.16	3963		
	870	174	13.35	4635	96	10.68	3708	8.90	3090	13.35	4635		
	600	120	11.19	5594	95	8.95	4475	7.46	3729	11.19	5594		
	300	60	6.99	6894	94	5.59	5515	4.66	4596	6.99	6894		
	100	20	2.74	7924	92	2.19	6339	1.83	5283	2.74	7924		
7.5	2500	333	16.08	2920	96	12.86	2336	10.72	1947	14.48	2628	2660	4500
	1750	233	13.85	3580	96	11.08	2864	9.23	2387	13.51	3493		
	1160	155	11.34	4392	95	9.07	3514	7.56	2928	11.34	4392		
	870	116	10.31	5300	95	8.25	4240	6.87	3533	10.31	5300		
	600	80	8.54	6312	94	6.83	5050	5.69	4208	8.54	6312		
	300	40	5.28	7665	92	4.22	6132	3.52	5110	5.28	7665		
	100	13	2.06	8725	90	1.65	6980	1.37	5817	2.06	8725		
10	2500	250	13.12	3146	95	10.50	2517	8.75	2097	11.67	2795	2930	4500
	1750	175	11.31	3857	95	9.05	3086	7.54	2571	10.89	3712		
	1160	116	9.33	4761	94	7.46	3809	6.22	3174	9.33	4761		
	870	87	8.44	5707	93	6.75	4566	5.63	3805	8.44	5707		
	600	60	6.96	6756	92	5.57	5405	4.64	4504	6.96	6756		
	300	30	4.29	8150	90	3.43	6520	2.86	5433	4.29	8150		
	100	10	1.67	9235	88	1.34	7388	1.11	6157	1.67	9235		
15	2500	167	9.62	3391	93	7.70	2713	6.41	2261	8.39	2951	3340	4500
	1750	117	8.31	4157	93	6.65	3326	5.54	2771	7.84	3923		
	1160	77	6.90	5151	92	5.52	4121	4.60	3434	6.90	5151		
	870	58	6.23	6144	91	4.98	4915	4.15	4096	6.23	6144		
	600	40	5.13	7242	90	4.10	5794	3.42	4828	5.13	7242		
	300	20	3.17	8692	87	2.54	6954	2.11	5795	3.17	8692		
	100	7	1.24	9816	84	0.99	7853	0.83	6544	1.24	9816		
20	2500	125	7.56	3500	92	6.05	2800	5.04	2333	6.99	3228	3660	4500
	1750	88	6.54	4290	91	5.23	3432	4.36	2860	6.53	4283		
	1160	58	5.49	5365	90	4.39	4292	3.66	3577	5.49	5365		
	870	44	4.89	6307	89	3.91	5046	3.26	4205	4.89	6307		
	600	30	3.98	7332	88	3.18	5866	2.65	4888	3.98	7332		
	300	15	2.43	8668	85	1.94	6934	1.62	5779	2.43	8668		
	100	5	0.95	9691	81	0.76	7753	0.63	6461	0.95	9691		
25	2500	100	6.18	3485	90	4.94	2788	4.12	2323	5.40	3034	3950	4500
	1750	70	5.35	4272	89	4.28	3418	3.57	2848	5.08	4052		
	1160	46	4.46	5287	87	3.57	4230	2.97	3525	4.46	5287		
	870	35	4.05	6318	86	3.24	5054	2.70	4212	4.05	6318		
	600	24	3.36	7457	84	2.69	5966	2.24	4971	3.36	7457		
	300	12	2.10	8965	81	1.68	7172	1.40	5977	2.10	8965		
	100	4	0.84	10136	77	0.67	8109	0.56	6757	0.84	10136		

1. Exact ratio
2. If input speed is below 1160 RPM, please specify speed and mounting position to ensure proper lubrication.
3. Overhung load is based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung loads are based on the output shaft and output bearing capacities only. Check overhung load section for other considerations.
5. Overhung load and thrust load ratings are computed independent of each other. For combined load applications contact Winsmith.

Mechanical ratings shaded above exceed speed reducer thermal limitations under continuous duty conditions. See the thermal limit columns above for continuous duty thermal ratings.

Modified

DRYWELL SINGLE REDUCTION

With Mobil Glygoyle 460 Lubricant

DRYWELL
E43

3.500 CENTER DISTANCE			HORSEPOWER AND TORQUE RATINGS									HOLLOW OUTPUT SHAFT OVERHUNG LOAD CAPACITIES (lb)[3,4,5]	HOLLOW OUTPUT SHAFT THRUST LOAD CAPACITIES (lb)[5]
			MECHANICAL							THERMAL			
			1.00 SERVICE FACTOR			1.25 SERVICE FACTOR		1.50 SERVICE FACTOR		1.00 SERVICE FACTOR			
RATIO[1]	INPUT RPM[2]	OUTPUT RPM	INPUT HP	OUTPUT TORQUE (lbf•in.)	EFF	INPUT HP	OUTPUT TORQUE (lbf•in.)	INPUT HP	OUTPUT TORQUE (lbf•in.)	INPUT HP	OUTPUT TORQUE (lbf•in.)		
30	2500	83	5.27	3504	88	4.22	2803	3.51	2336	4.74	3144	4260	4500
	1750	58	4.57	4295	87	3.66	3436	3.05	2863	4.47	4201		
	1160	39	3.83	5334	86	3.06	4267	2.55	3556	3.83	5334		
	870	29	3.47	6344	84	2.78	5075	2.31	4229	3.47	6344		
	600	20	2.87	7457	83	2.30	5966	1.91	4971	2.87	7457		
	300	10	1.79	8922	79	1.43	7138	1.19	5948	1.79	8922		
	100	3	0.71	10057	75	0.57	8046	0.47	6705	0.71	10057		
40	2500	63	4.06	3499	86	3.25	2799	2.71	2333	3.99	3439	4578	4500
	1750	44	3.53	4289	84	2.82	3431	2.35	2859	3.53	4289		
	1160	29	2.98	5368	83	2.38	4294	1.99	3579	2.98	5368		
	870	22	2.67	6299	81	2.14	5039	1.78	4199	2.67	6299		
	600	15	2.19	7310	80	1.75	5848	1.46	4873	2.19	7310		
	300	8	1.35	8625	76	1.08	6900	0.90	5750	1.35	8625		
	100	3	0.53	9631	72	0.42	7705	0.35	6421	0.53	9631		
50	2500	50	3.26	3410	83	2.61	2728	2.17	2273	3.26	3410	4915	4500
	1750	35	2.83	4180	82	2.26	3344	1.89	2787	2.83	4180		
	1160	23	2.41	5246	80	1.93	4197	1.61	3497	2.41	5246		
	870	17	2.14	6105	79	1.71	4884	1.43	4070	2.14	6105		
	600	12	1.74	7030	77	1.39	5624	1.16	4687	1.74	7030		
	300	6	1.07	8223	73	0.86	6578	0.71	5482	1.07	8223		
	100	2	0.41	8906	69	0.33	7125	0.27	5937	0.41	8906		
60	2500	42	2.65	3243	81	2.12	2594	1.77	2162	2.65	3243	5210	4500
	1750	29	2.31	3976	80	1.85	3181	1.54	2651	2.31	3976		
	1160	19	1.96	4994	78	1.57	3995	1.31	3329	1.96	4994		
	870	15	1.74	5779	77	1.39	4623	1.16	3853	1.74	5779		
	600	10	1.41	6620	75	1.13	5296	0.94	4413	1.41	6620		
	300	5	0.86	7699	71	0.69	6159	0.57	5133	0.86	7699		
	100	2	0.32	7993	67	0.26	6394	0.21	5329	0.32	7993		
80	2500	31	1.76	2691	76	1.41	2153	1.17	1794	1.76	2691	5231	4500
	1750	22	1.52	3299	75	1.22	2639	1.01	2199	1.52	3299		
	1160	15	1.30	4144	74	1.04	3315	0.87	2763	1.30	4144		
	870	11	1.14	4760	72	0.91	3808	0.76	3173	1.14	4760		
	600	8	0.92	5417	70	0.74	4334	0.61	3611	0.92	5417		
	300	4	0.56	6254	67	0.45	5003	0.37	4169	0.56	6254		
	100	1	0.21	6560	63	0.17	5248	0.14	4373	0.21	6560		
100	2500	25	1.19	2122	71	0.95	1698	0.79	1415	1.19	2122	5231	4500
	1750	18	1.02	2601	71	0.82	2081	0.68	1734	1.02	2601		
	1160	12	0.87	3264	69	0.70	2611	0.58	2176	0.87	3264		
	870	9	0.76	3734	68	0.61	2987	0.51	2489	0.76	3734		
	600	6	0.61	4232	67	0.49	3386	0.41	2821	0.61	4232		
	300	3	0.37	4864	63	0.30	3891	0.25	3243	0.37	4864		
	100	1	0.14	5337	60	0.11	4270	0.09	3558	0.14	5337		

1. Exact ratio
2. If input speed is below 1160 RPM, please specify speed and mounting position to ensure proper lubrication.
3. Overhung load is based on maximum bore size. Use of smaller driven shaft diameter may limit OHL capacity.
4. Overhung loads are based on the output shaft and output bearing capacities only. Check overhung load section for other considerations.
5. Overhung load and thrust load ratings are computed independent of each other. For combined load applications contact Winsmith.

Mechanical ratings shaded above exceed speed reducer thermal limitations under continuous duty conditions. See the thermal limit columns above for continuous duty thermal ratings.

Modified

SE Maximizer Series

SE Maximizer worm gear speed reducers deliver two advanced levels of protection over and above the standard SE Encore. The SE Maximizer Plus is designed for wash down environments featuring our white Winguard Epoxy Coating System and stainless output shaft. The premium level SE Maximizer Stainless Steel reducer is designed for severe environments where no rust is tolerated. Both SE Maximizer designs ensure long, contaminate free performance with minimal maintenance. All are factory filled with Mobil Glygoyle 460 food grade synthetic (PAG) lubricant.

INDUSTRIES SERVED

- Food Processing and Handling
- Beef
- Poultry Meat and Eggs
- Pork
- Seafood
- Produce and Vegetables
- Baking
- Cereal and Grains
- Snack Food
- Beverage
- Pharmaceutical
- Chemical Processing
- Petroleum Processing
- Carwash
- Mixer Drives
- Pump Drives

SE MAXIMIZER PLUS – WASH DOWN

The SE Maximizer Plus product line incorporates a stainless steel output shaft, stainless steel fasteners and plugs, food duty white Winguard Epoxy Coating System, plastic plugs for threaded holes and a Forsheda V-Ring® on solid output shaft reducers. All of these features combined with the already uncompromising and durable SE Encore worm design provide outstanding performance and value in corrosive and wash down environments. The SE Maximizer Plus worm gear speed reducer is offered as an upgrade to the entire SE Encore product range from 1.33 inch to 4.25 inch center distances. This includes all standard single and double reduction ratios, all kits and modifications including the stand-alone helical and worm ratio multipliers. The WINSHELD exclusionary barrier seal is also available on select sizes of the SE Maximizer Plus.

SE MAXIMIZER STAINLESS STEEL

The SE Maximizer Stainless Steel product line is designed with 316 stainless steel covers and housings that are contoured and self-draining, facilitating easy wash down and preventing bacteria entrapment. The patented WINSHIELD exclusionary barrier seal provides five separate barriers ensuring that the lubricant stays in and contaminants stay out. Designed to withstand the harshest wash down, chemical and food processing environments, the clean design of the SE Maximizer Stainless Steel speed reducer eliminates the possibility of reducer contamination. The SE Maximizer Stainless Steel reducer complies with all USDA and NSF standards. They are available in three center distances (sizes) with all standard ratios and product configurations including stand-alone helical gear ratio multiplier which expands torque and ratio capabilities.

Forsheda V-Ring® is a registered trademark of Trelleborg AB

Modified

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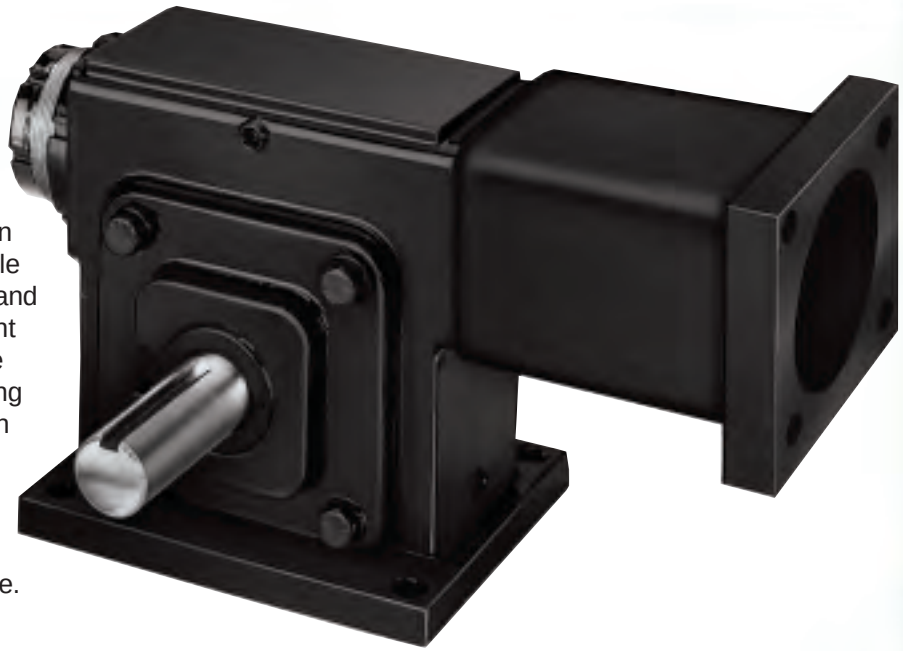
2D DRAWINGS & 3D MODELS www.WINSMITH.com

WINSMITH

Motion Control “S-Eliminator”

Very Low Backlash Worm Gear Speed Reducers with Easy Adjustment

The patented low backlash S-Eliminator is adjusted to a maximum of 2 arc-minutes backlash at assembly. A pre-loaded bearing cartridge located on the outside of the housing holds a variable lead worm in mesh with a precision gear and allows for convenient backlash adjustment without taking the unit out of service. The backlash is adjusted by loosening a locking collar and rotating the cartridge. Backlash levels in the range of arc-seconds are achievable with proper run-in. Due to the “wear-in” characteristics of worm gears, this level of fine adjustment must be made after the unit has been in service.



APPLICATIONS

- Machine tools
- Tension control
- Indexing operations
- Rotary tables
- Converting equipment
- Servo positioning
- Robotic positioning
- Medical machines
- Antenna positioning

STANDARD CENTER DISTANCES

- 1.33" – 3.5”

RATIO RANGE

- Single Reduction — 4:1 – 60:1

AVAILABLE MODELS

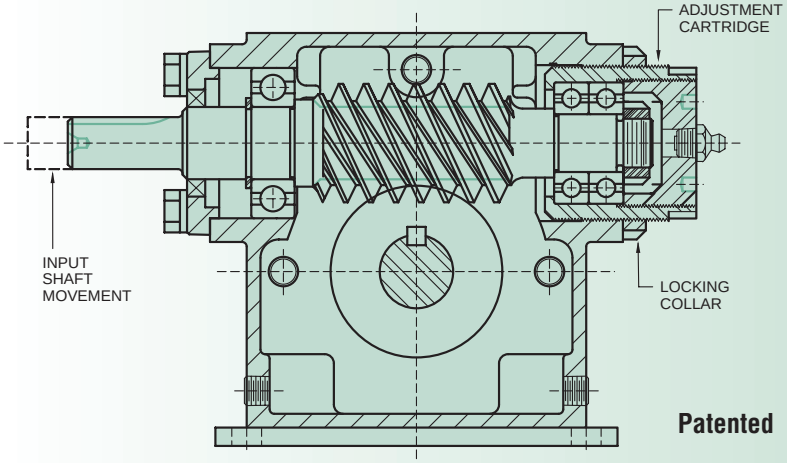
- NEMA C-Face Input adaptors
- Servo motor Input adaptors
- Non-motorized (single reduction only)

BACKLASH SPECIFICATIONS

- Factory adjusted for a maximum of 2 arc-minutes movement.

OUTPUT TORQUE

- 149 - 2450 lbf•in, depending on the center distance and the reduction.



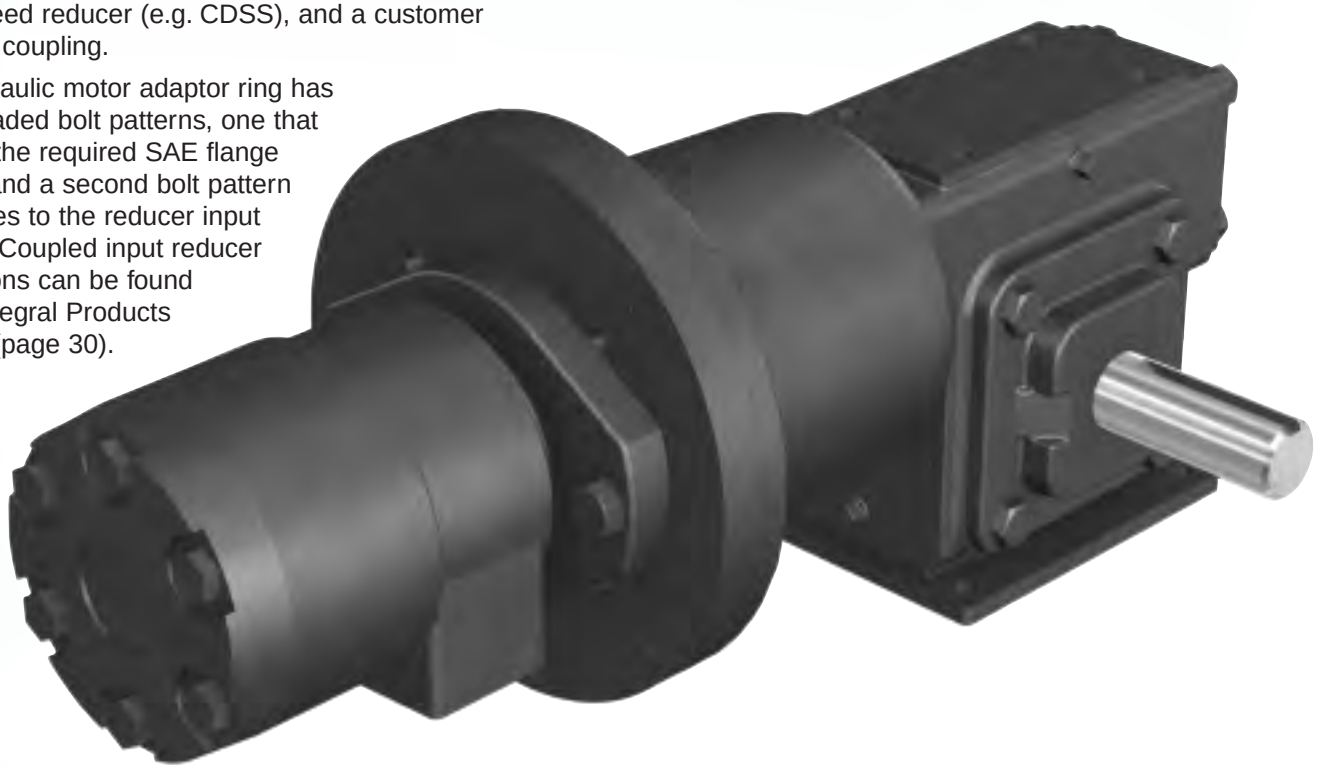
For this and other low backlash Motion Control Products, please visit www.WINSMITH.com and download the WINSMITH MOTION CONTROL CATALOG.

Modified

Hydraulic Motor Input Adaptor Rings

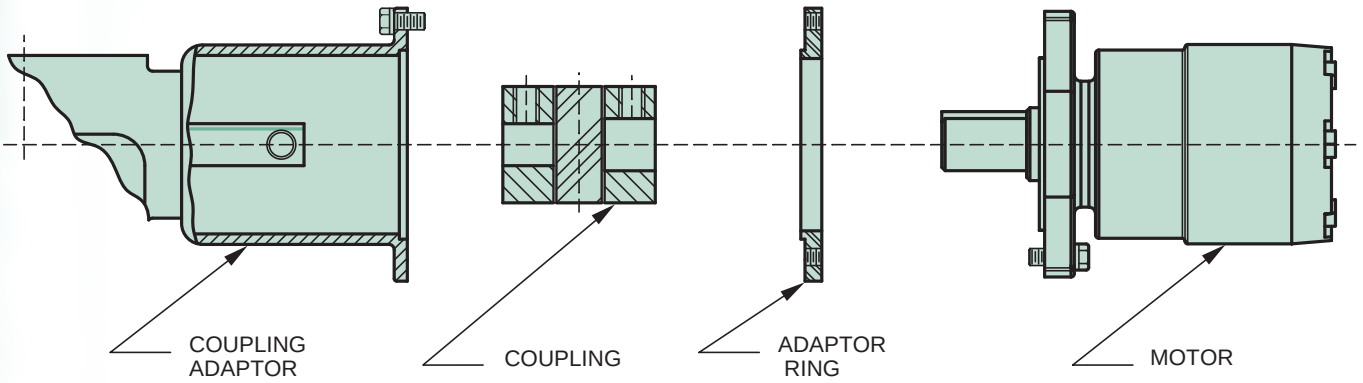
SE Encore products accommodate hydraulic motors by using an adaptor ring that interfaces with an SAE 2 or SAE 4 bolt motor mounting flange, a coupled input speed reducer (e.g. CDSS), and a customer supplied coupling.

The hydraulic motor adaptor ring has two threaded bolt patterns, one that match's the required SAE flange pattern and a second bolt pattern that mates to the reducer input adaptor. Coupled input reducer dimensions can be found in the Integral Products Section (page 30).



Modified

EXPLODED VIEW



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Coupled Input Adaptor/Adaptor Ring Dimensions

DIMENSIONS

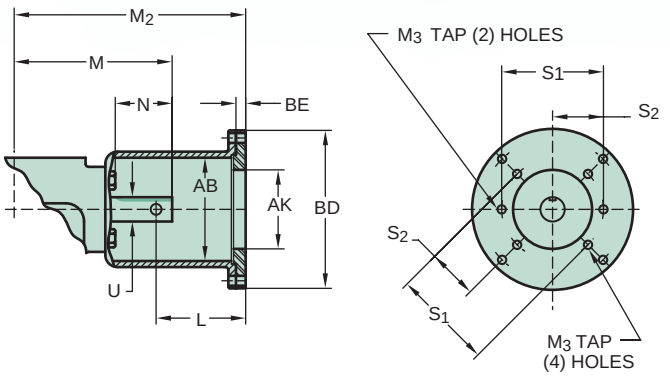


FIGURE 1
82-2, 82-4 / SAE A 2 & 4 BOLT
MOTOR MOUNTING

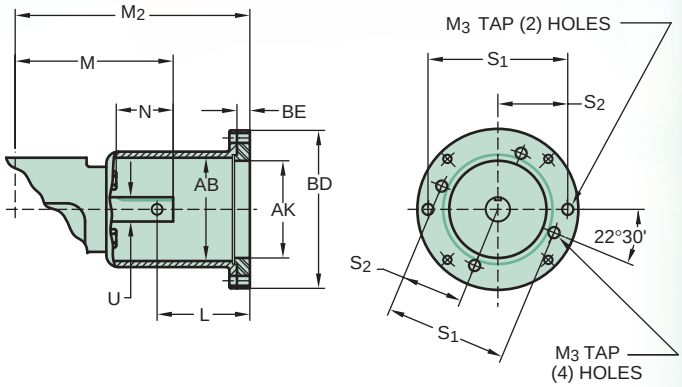


FIGURE 2
101-2, 101-4 / SAE B 2 & 4 BOLT
MOTOR MOUNTING

(NOTE: 101-4 / SAE B 4 BOLT MOTOR MOUNTS @ 22.5° ANGLE
CONTACT FACTORY IF MOTOR FLANGE THICKNESS IS NOT
BETWEEN .51-.57" TO INSURE PROPER BOLT ENGAGEMENT)

UNIT SIZE	FLANGE		FIG.	AB	AK	BE	BD	M	M_2	N	L SET SCREW ACCESS	S_1	S_2	M_3 TAP & DEPTH	U	KEYWAY	RECOMMENDED COUPLING	
	SAE	ISO/NFPA															LL SHAFT▲	LS SHAFT
E17	A 2-Bolt	82-2	1	3.75	3.25	.40	6.63	4.75	7.90	1.25	3.65	4.188	2.094	.375-16 x .40	.750	3/16 x 3/32	L 100	L 100
	A 4-Bolt	82-4	1		3.25	.40						4.125	2.063					
	B 2-Bolt	101-2	2		4.00	.59			8.09		3.84	5.750	2.875	.500-13 x .53			L 099	
	B 4-Bolt	101-4	2		4.00	.59						5.000	2.500					
E20	A 2-Bolt	82-2	1	3.75	3.25	.40	6.63	5.00	7.90	1.50	3.65	4.188	2.094	.375-16 x .40	.750	3/16 x 3/32	L 100	L 100
	A 4-Bolt	82-4	1		3.25	.40						4.125	2.063					
	B 2-Boltt	101-2	2		4.00	.59			8.09		3.84	5.750	2.875	.500-13 x .53			L 099*	
	B 4-Bolt	101-4	2		4.00	.59						5.000	2.500					
E24	A 2-Bolt	82-2	1	4.13	3.25	.40	6.63	6.50	9.53	2.00	3.78	4.188	2.094	.375-16 x .40	1.00	1/4 x 1/8	L 100■	L 100
	A 4-Bolt	82-4	1		3.25	.40						4.125	2.063					
	B 2-Bolt	101-2	2		4.00	.59			9.72		3.97	5.750	2.875	.500-13 x .53				L 110
	B 4-Bolt	101-4	2		4.00	.59						5.000	2.500					
E26	A 2-Bolt	82-2	1	4.13	3.25	.40	6.63	6.50	9.53	2.00	3.78	4.188	2.094	.375-16 x .40	1.00	1/4 x 1/8	L 100■	L 100
	A 4-Bolt	82-4	1		3.25	.40						4.125	2.063					
	B 2-Bolt	101-2	2		4.00	.59			9.72		3.97	5.750	2.875	.500-13 x .53				L 110
	B 4-Bolt	101-4	2		4.00	.59						5.000	2.500					
E30	A 2-Bolt	82-2	1	4.13	3.25	.40	6.63	7.00	10.15	2.13	3.90	4.188	2.094	.375-16 x .40	1.00	1/4 x 1/8	L 100	L 100
	A 4-Bolt	82-4	1		3.25	.40						4.125	2.063					
	B 2-Bolt	101-2	2		4.00	.59			10.86		4.09	5.750	2.875	.500-13 x .53				L 110
	B 4-Bolt	101-4	2		4.00	.59						5.000	2.500					
E35	A 2-Bolt	82-2	1	4.13	3.25	.40	6.63	7.38	10.40	2.25	3.90	4.188	2.094	.375-16 x .40	1.00	1/4 x 1/8	L 100■	L 110
	A 4-Bolt	82-4	1		3.25	.40						4.125	2.063					
	B 2-Bolt	101-2	2		4.00	.59			10.59		4.09	5.750	2.875	.500-13 x .53				
	B 4-Bolt	101-4	2		4.00	.59						5.000	2.500					
E43	A 2-Bolt	82-2	1	4.13	3.25	.40	6.63	8.19	11.21	2.25	3.90	4.188	2.094	.375-16 x .40	1.25	1/4 x 1/8	CJ 38/45	CJ 38/45
	A 4-Bolt	82-4	1		3.25	.40						4.125	2.063					
	B 2-Bolt	101-2	2		4.00	.59			11.40		4.09	5.750	2.875	.500-13 x .53				L 110
	B 4-Bolt	101-4	2		4.00	.59						5.000	2.500					

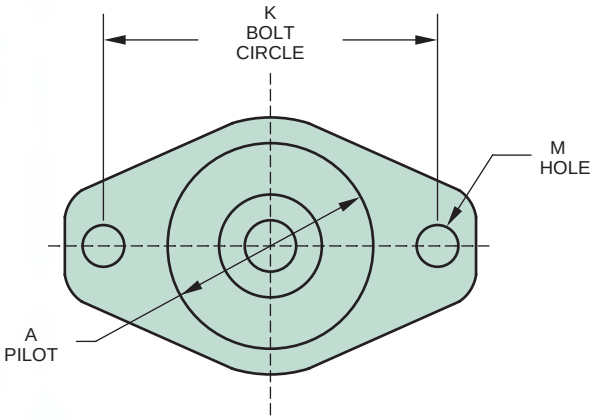
* Only available in shaft id code 22-1; 25-1 has interference with worm shaft.
▲ Winsmith recommends use of optional long length (LL) shaft due to longer length of engagement.
■ Use open spider on coupling.

Modified

Coupled Input Adaptor/Adaptor Ring Dimensions

DIMENSIONS AND IDENTIFCATION CODE FOR MOUNTING FLANGES AND SHAFT ENDS IN ACCORDANCE WITH SAE J744-1996 AND ISO 3019-1:2001*

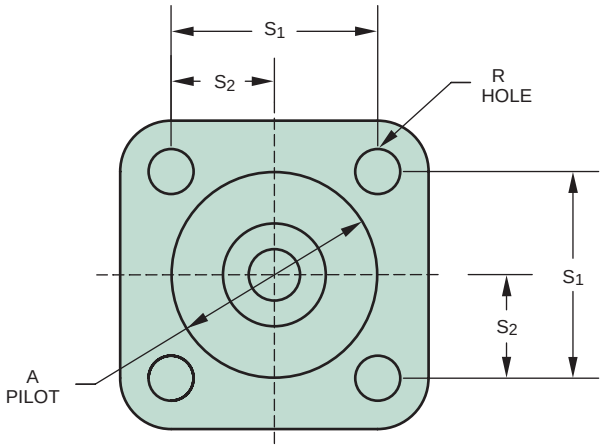
SAE 2-BOLT MOUNTING FLANGES



2-Bolt Mounting Flange Data

MOUNTING FLANGE		PILOT DIMENSIONS	FLANGE DIMENSIONS	
ISO/NFPA	SAE	A	K	M
82-2	A	3.250 - 3.248	4.188	.438
101-2	B	4.000 - 3.998	5.750	.562

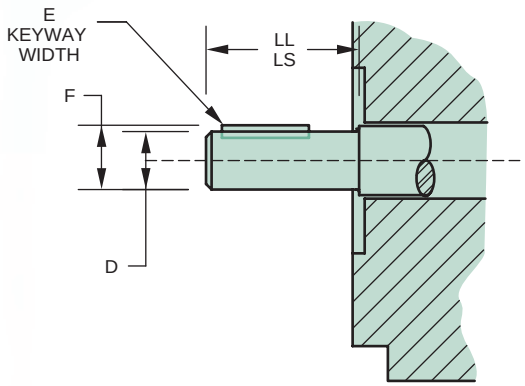
SAE 4-BOLT MOUNTING FLANGES



4-Bolt Mounting Flange Data

MOUNTING FLANGE		PILOT DIMENSIONS	FLANGE DIMENSIONS		
ISO/NFPA	SAE	A	S_1	S_2	R
	A	3.250 - 3.248	2.917	1.458	.438
101-4	B	4.000 - 3.998	3.536	1.768	.562

STRAIGHT SHAFT



Straight Shaft Dimensions

SHAFT I.D. CODE		+.001 -.001	±.005		
	D	E	F	LL	LS
16-1	.625 .624	.1563	.693	2.00	.938
19-1	.750 .749	.188	.831	2.00	.938
22-1	.875 .874	.250	.982	2.50	1.312
25-1	1.000 .998	.250	1.106	2.75	1.500

Tolerances – 2 place dimensions ±.030
3 place dimensions ±.010

Motor Adaptor Ring Kits

HYDRAULIC MOTOR FLANGE	KIT #
SAE-A 2 OR 4 BOLT	YKIT9810175
SAE-B 2 OR 4 BOLT	YKIT9810176

Flange/Shaft Combinations

FLANGE SERIES	SHAFT SERIES
82-	16-
82-	19-
101-	22-
101-	22-

* Redesignation of ANSI/(NFPA) T3.9.2 R2-1990

Modified

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