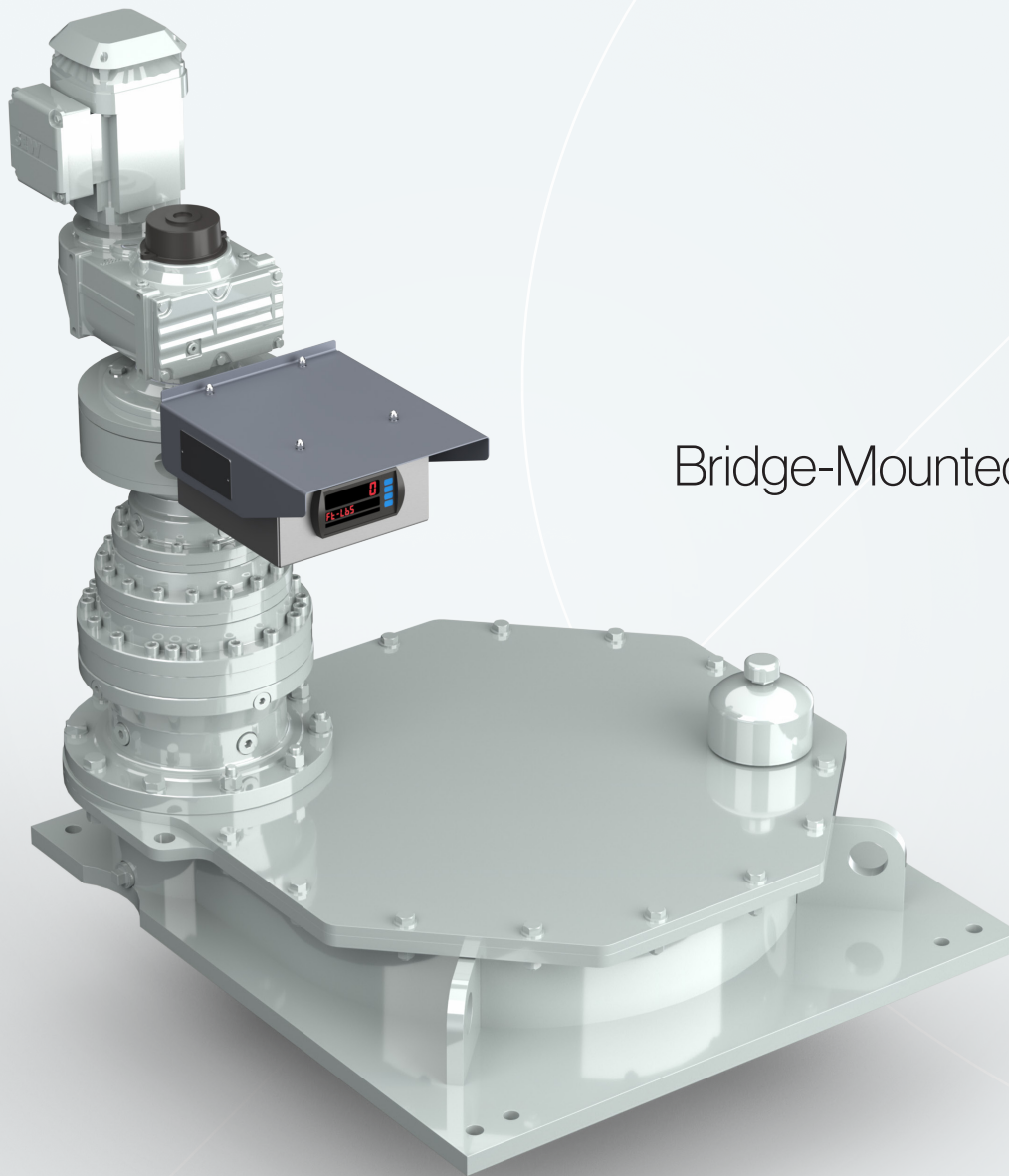


# DBS MANUFACTURING

ENGINEERED FIRSTS | BUILT TO LAST



Bridge-Mounted | Drive Units

## DBS MANUFACTURING, INC.

DBS Manufacturing is a successful, privately held business that designs, manufactures, and provides application engineering for products sold to original equipment manufacturers, end users, and municipal and industrial facilities around the world.

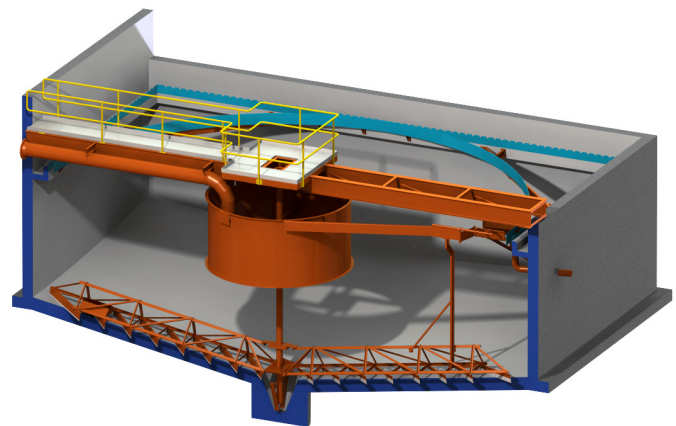
### Bridge-Mounted Drive Units

These drive units offer a robust low-speed, high-torque gear drive with overload protection. Ideal for industrial, municipal, and mining clarifiers and thickeners, they feature a fully enclosed design supported by a bridge that spans the tank and include a central output shaft to drive the rakes.

Designed for tanks ranging from 10 to 100 feet (3 to 30 meters) in diameter, the units include a forged alloy steel main gear and pinion designed for a 20-year lifespan. They also feature a precision, four-point-contact main bearing with a 10-year warranty and an accurate torque gauge calibrated in your preferred units.

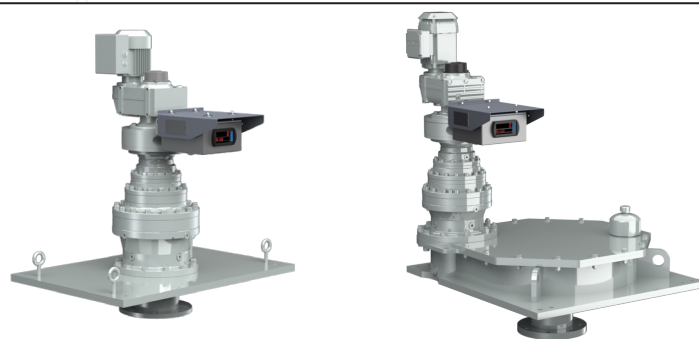
For protection, each unit comes with alarm and cutoff switches in addition to mechanical torque limiting with a shear pin or pressure relief valve. The design also eliminates the lower pinion-bearing, a common failure point, and ensures minimal maintenance with a permanently lubricated intermediate reducer.

In summary, these drive units combine durability, precision, and safety to deliver reliable performance and low maintenance.



## MODEL SELECTION

Engineered for clarifiers and thickeners, this unit features a full-span bridge and a central drive shaft. It comes in a range of models to meet varying torque requirements.



## Torque Capacity — Bridge-Mounted Drive Units

Model	Continuous		Maximum Overload		Yield	
	ft-lbf	N-m	ft-lbf	N-m	ft-lbf	N-m
SX-A*	3,000	4,100	6,000	8,200	8,100	11,000
SX-B*	6,000	8,200	12,000	16,400	16,200	22,000
SX-C*	10,000	14,000	20,000	28,000	27,000	36,500
S25-A*	14,000	19,000	28,000	38,000	54,000	73,000
S34-A*	18,500	25,000	37,000	50,000	120,000	163,000
S34-B*	27,000	36,500	54,000	73,000	120,000	163,000
S44-B*	35,000	47,500	70,000	95,000	195,000	264,000
S44-C*	51,000	70,000	100,000	140,000	195,000	264,000
S60-C*	65,000	88,000	130,000	180,000	440,000	600,000
S60-D*	125,000	169,500	250,000	340,000	440,000	600,000
S70-E*	250,000	340,000	500,000	680,000	750,000	1,020,000
S44-B*2	70,000	95,000	140,000	190,000	390,000	530,000
S44-C*2	102,000	140,000	204,000	280,000	390,000	530,000
S60-C*2	130,000	180,000	260,000	350,000	880,000	1,194,000
S60-D*2	250,000	340,000	500,000	680,000	880,000	1,194,000
S70-E*2	500,000	680,000	1,000,000	1,360,000	1,500,000	2,034,000

Replace the \* with the primary reducer option selected.

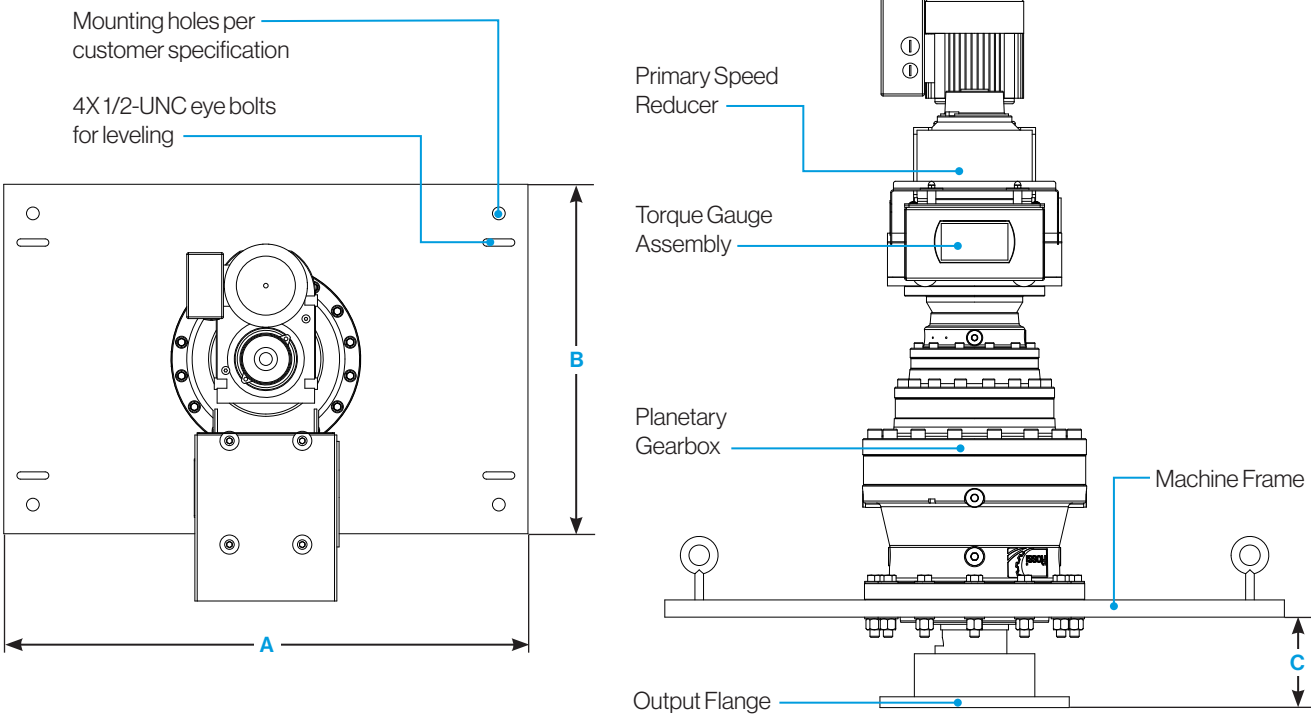
Continuous: Torque at which main gear will have a life in excess of 20 years at normal operating speeds.

Maximum Overload: The maximum safe, short term operating torque.

Yield: The structural maximum torque based on the minimum yield strength of the main gear.

SX-SERIES DIMENSIONS

Designed for smaller tanks with a full span bridge and a center drive shaft, the SX-Series drives feature a planetary gearbox with large, tapered roller-bearings to carry thrust and moment loads.

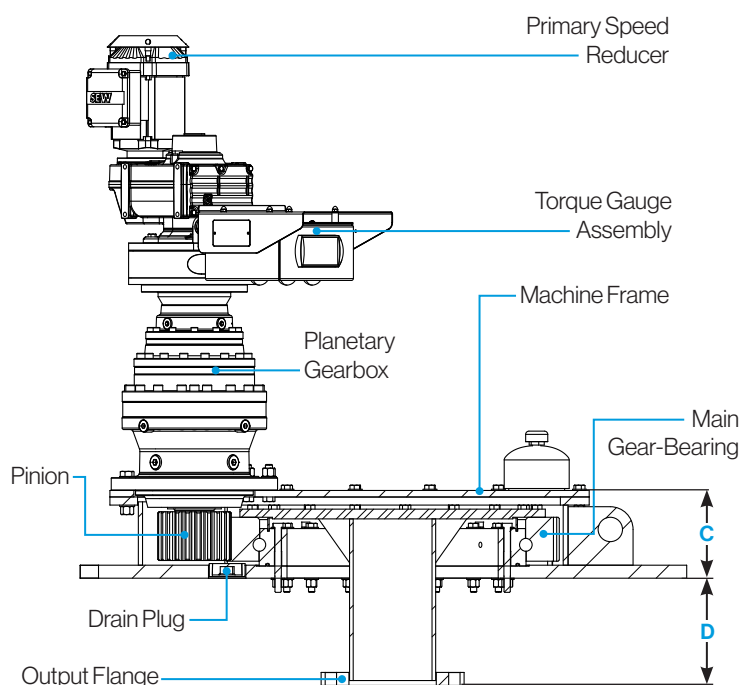
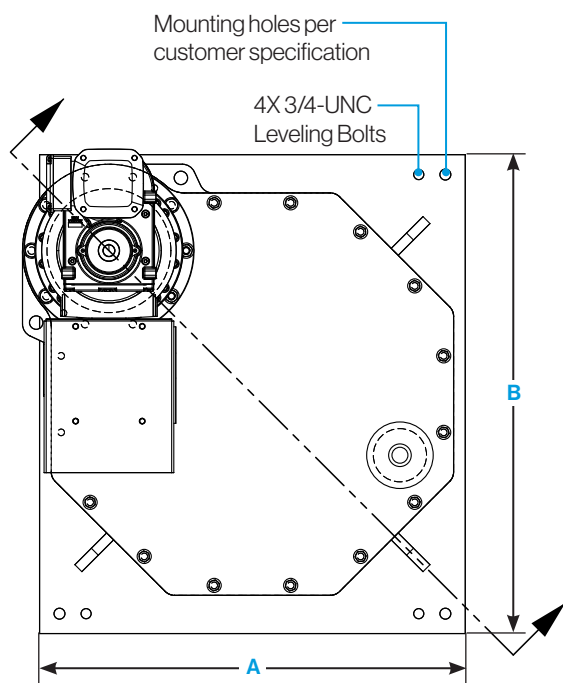
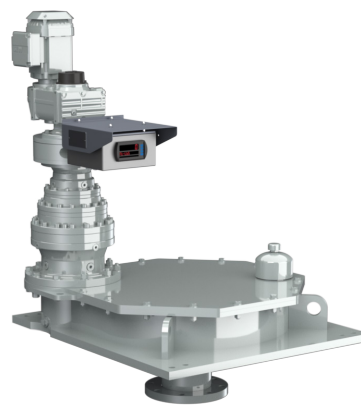


Model	A		B		C		Output Flange <sup>1</sup>	Weight	
	<i>in</i>	<i>mm</i>	<i>in</i>	<i>mm</i>	<i>in</i>	<i>mm</i>	<i>Inch</i>	<i>lb</i>	<i>kg</i>
SX-A*	36	914	24	610	4.3	110	4	700	318
SX-B*	36	914	24	610	6.25	159	6	900	408
SX-C*	36	914	24	610	11.2	284	6	1200	544

<sup>1</sup> Metric flanges are available.  
Replace \* with the primary reducer option selected.

## S-SERIES DIMENSIONS

Designed for large tanks with a full span bridge and a center drive shaft, the S-Series drives feature a precision high-capacity integral gear-bearing.

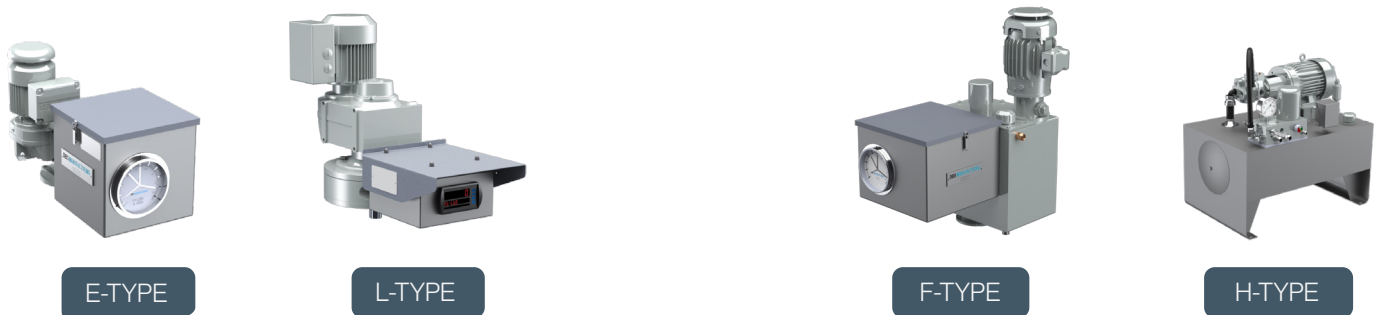


Model	A		B		C		D		Mounting Flange <sup>1</sup>	Weight	
	in	mm	in	mm	in	mm	in	mm	Inch	lb	kg
S25-A*	32	813	36	914	7.4	188	8	203	6	1,340	608
S34-A*	39.5	1,003	43.5	1,105	8.1	206	8	203	8	1,940	881
S34-B*	42.5	1,080	46.5	1,181	9.4	239	8	203	8	2,340	1,061
S44-B*	50	1,270	55	1,397	9.3	236	10	254	10	2,920	1,325
S44-C*	54	1,372	59	1,499	11.3	287	10	254	10	3,500	1,588
S60-C*	66	1,676	70	1,778	11.5	292	12	305	18	5,000	2,268
S60-D*	68	1,727	73	1,854	10.1	257	12	305	18	5,600	2,540
S70-E*	80	2,032	80	2,032	13.5	343	N/A	N/A	24	9,300	4,220

<sup>1</sup> Metric flanges are available.  
Replace \* with the primary reducer option selected.

## PRIMARY REDUCER OPTIONS

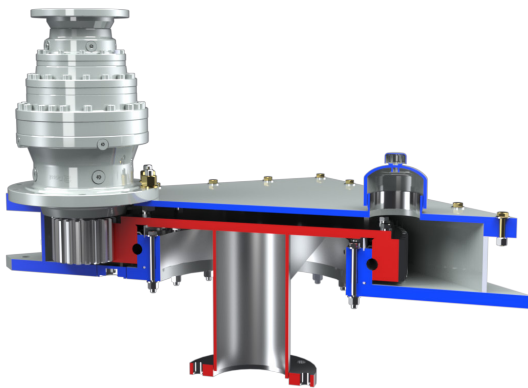
DBS drive units consist of several reducers: primary, secondary, and a final reduction unit that includes a pinion and integral gear-bearing for larger mechanisms. All reducers are directly coupled. A range of primary reduction units is available to meet customer requirements.



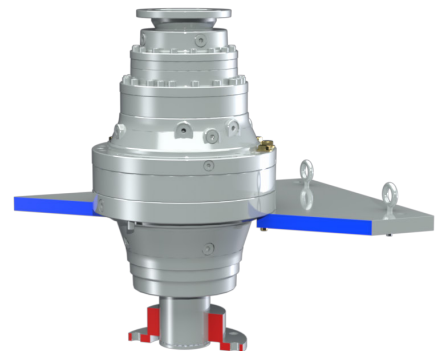
### PRIMARY REDUCER OPTIONS

One of the reducers *above* will be assembled with one of the drive units *below*.

#### S-SERIES



#### SX-SERIES



## PRIMARY SPEED REDUCER OPTIONS

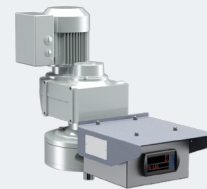
### E-Type

The E-type design uses helical gears for speed reduction and includes alarm and cutoff switches, as well as a shear pin, providing triple protection for the drive unit. This design is employed when the output speed exceeds the limits of the F-type primary speed reducers or when an electro-mechanical drive unit is preferred.



### L-Type

The L-type design features a helical gearbox for speed reduction, along with a digital torque meter and a solid-state torque sensor with no moving parts. It incorporates all the features of the E-type reducer and includes a 4-20 mA torque transducer as standard. This design is suitable for all applications.



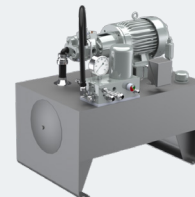
### F-Type

The F-type design utilizes a hydraulic pump-motor combination for speed reduction. It features alarm and cutoff switches, as well as hydraulic relief, to provide triple protection for the drive unit. The design is positive torque-limiting and will operate under stalled and semi-stalled conditions. Optional reversing rotation and variable speed are also available.



### H-Type

The H-type design incorporates all the features of the F-type primary speed reducer and uses a stand-alone industrial hydraulic power unit. This design is suitable for higher horsepower and multiple pinion drive applications.



## Primary Speed Reducer Option Comparison

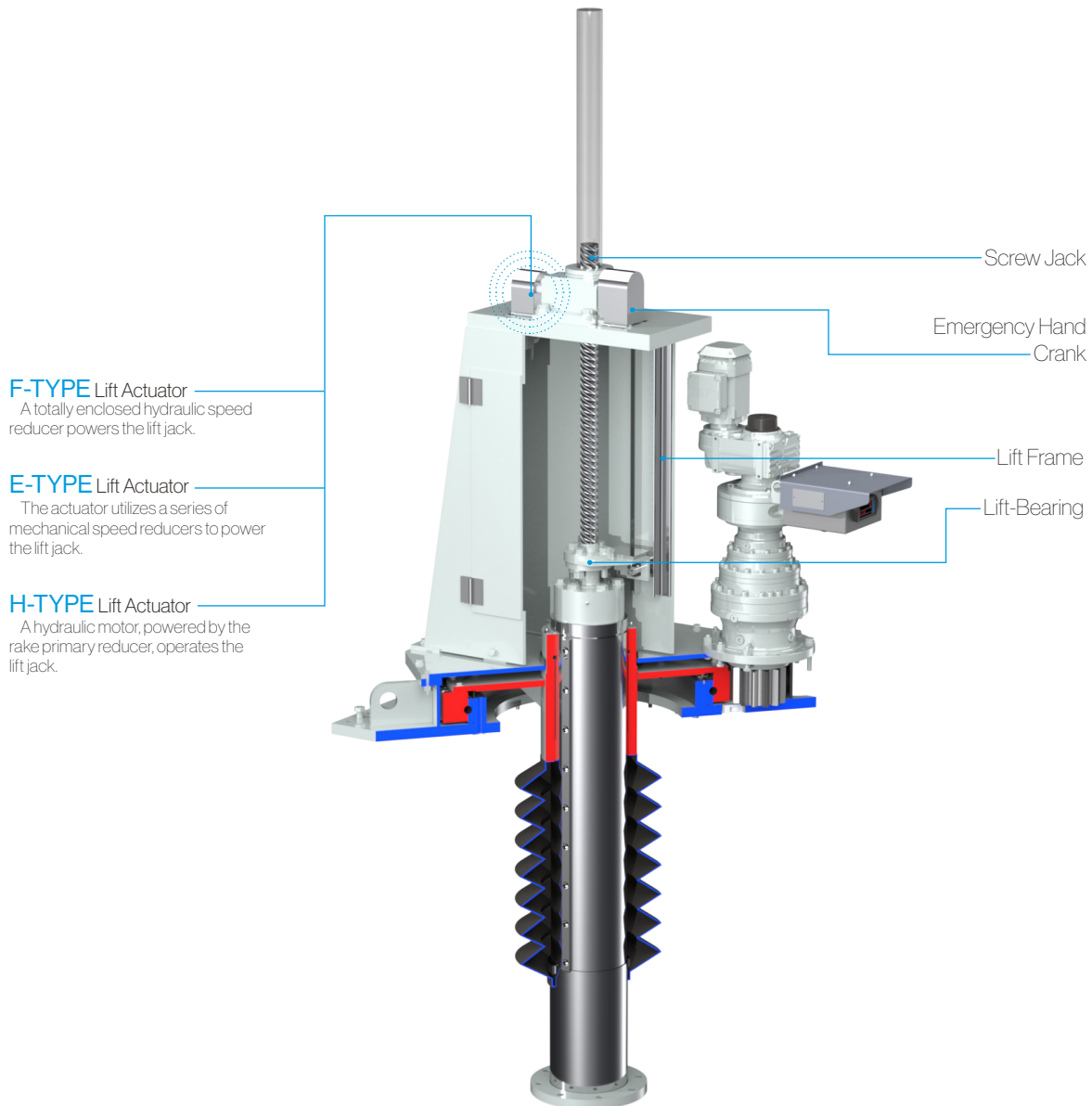
Features	E-Type	L-Type	F-Type	H-Type
Drive Train	Helical Gearing	Helical Gearing	Hydraulic	Hydraulic
Display	6" Analog Gauge	6 Digit LED	6" Analog Gauge	4" Analog Gauge
Display Unit	Ft-lbs or N-m	Ft-lbs or N-m	Ft-lbs or N-m	PSI or Pa
Inaccuracy	<5%	<3%	<10%	<10%
Alarm Switch	Standard	Standard	Standard	Standard
Cutoff Switch	Standard	Standard	Standard	Standard
4-20 mA Signal	Adder	Standard	Adder	Adder
Overload Protection	Shear-pin	Shear-pin	Relief valve	Relief valve
HP Limitation	≤3 hp	No limit	≤5 hp	>3 hp
Noise Level	< 70 dB	< 70 dB	<78 dB	<80 dB
Bi-Directional	No	Standard	Optional	Standard
Efficiency	0.94	0.94	0.74	0.74
Variable Speed	Optional	Optional	Optional	Standard
Maintenance Interval	5 Years	5 Years	1 Year	1 Year



## LIFT MECHANISM OPTIONS

The lift mechanism is fully contained within the drive unit and can raise and lower the rakes up to 36 inches (914 millimeters) by raising the lift shaft into the drive unit. The lift mechanism does not rotate, so there are no rotary electrical slip rings to maintain.

The powered lift mechanism provides positive lift force control to prevent damage to the rakes or the screw jack.





## ORDERING INFORMATION

Contact DBS or a DBS representative for assistance in deciding your equipment requirements.

### DBS MANUFACTURING

[dbsmfg.com/contact](https://dbsmfg.com/contact)

404.768.2131

[sales@dbsmfg.com](mailto:sales@dbsmfg.com)

Bridge Mounted Drive Unit Model Number					Lift Option Specification Extension			
Series	Rake Gear Pitch Diameter (Inches)	Secondary Speed Reducer	Primary Speed Reducer	Number of Pinions	Lift Option	Lift Capacity (Tons)	Lift Travel (Inches)	Lift Actuator Options
SX	X for no final gear-bearing	A	E F H L	N/A	L	5	12 24	M, E, F
		B			N/A	N/A	N/A	N/A
		C						
S	25	A	E F H L	1 (omit)	L	5	12 24 36	M E F H
	34	A		2		10		
		B				15		
	44	B		1 (omit)		5		
		C		2		20		
	60	C		3		25		
	70	D		4		35		
		E				50		
Consult Factory for S70-E								

#### Example:

**MODEL S34-AF-L1012F** is for a bridge-mounted drive unit; 34 is the size of the final gear pitch diameter in inches; A is the size of the secondary speed reducer; F is the primary reducer type; L is for a lift mechanism; 10 is the lift capacity in tons; 12 is the lift travel in inches; F is the lift actuator type.

## Features

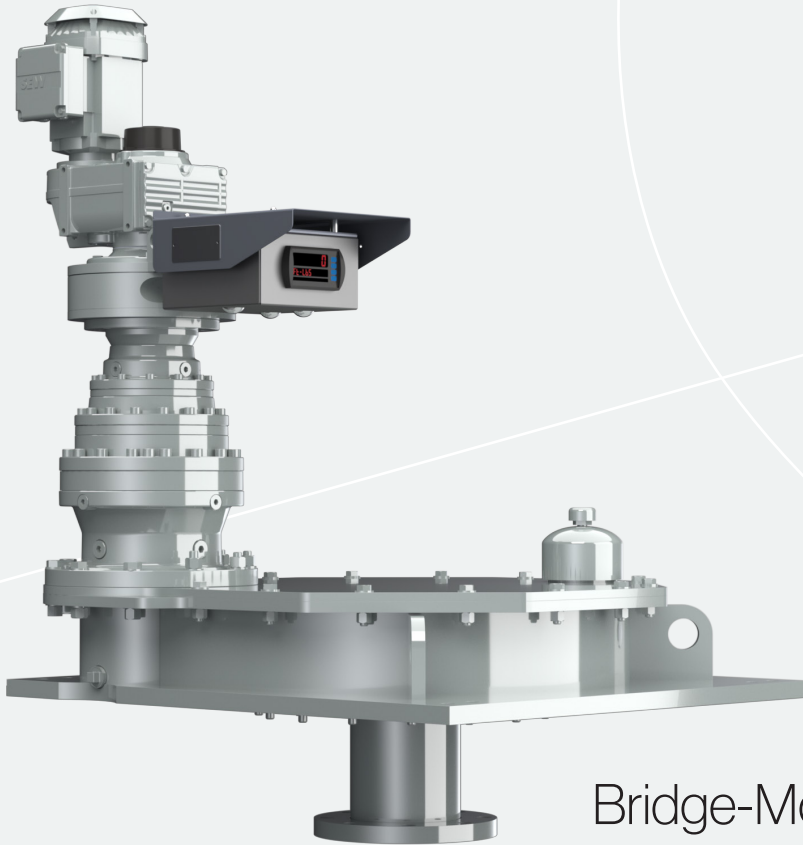
DBS bridge-mounted drive units come standard with alarm and cutoff switches for enhanced safety, a PDF O&M manual, and 6-inch torque gauge that accurately indicates real torque on E and F-type primary reducers. The L-type reducer includes a digital torque display for precise torque measurement.

DBS also offers a range of optional features, including 4-20 mA torque and lift position transducers, bi-directional operation for L, F, and H-type reducers, loss motion switches, variable speed control, explosion proof switches, and special coatings. Additional options include an oil heater for F and H-type reducers, an oil temperature switch, and stainless steel construction for enhanced durability.

Visit [dbsmfg.com](https://dbsmfg.com) for more information.

# DBS<sup>®</sup> MANUFACTURING

- Clarifier & Thickener Drives
- Hyperbolic Mixers
- Low-Speed Surface Aerators
- Rotary Distributor Center Mechanisms



Bridge-Mounted Drive Units | S-SERIES  
MODEL S25-AL

[dbsmfg.com](http://dbsmfg.com)  
404.768.2131  
[sales@dbsmfg.com](mailto:sales@dbsmfg.com)

45 South Woods Parkway  
Atlanta, Georgia 30354