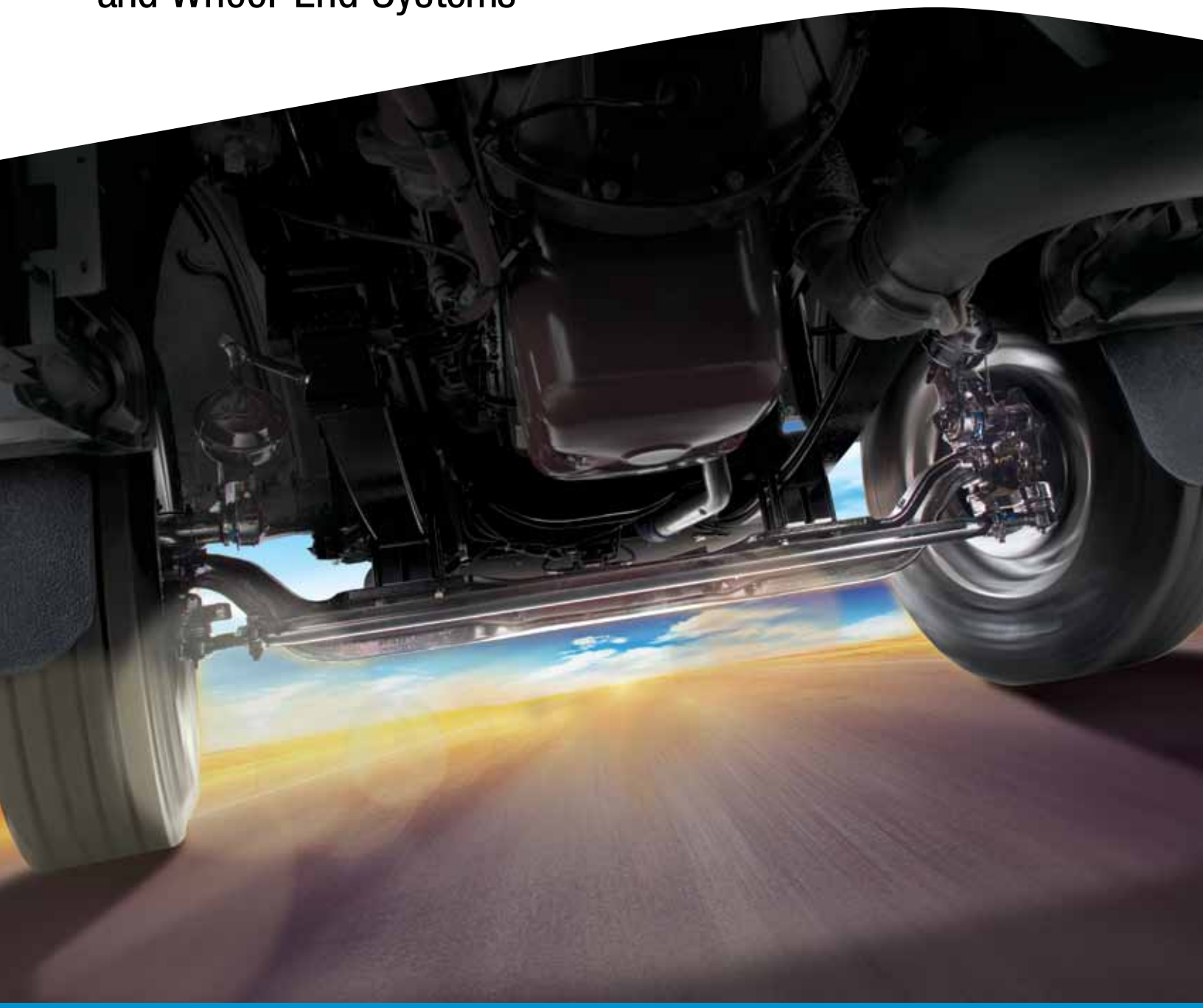
Spicer® Axle, Driveshaft, Tire Management Systems, and Wheel-End Systems

DANA SPICER®
Drivetrain Products



Specifications Guide

Specifications Guide

Drive Axle

Steer Axle

Driveshaft

Tire Management Systems

Wheel-End Systems

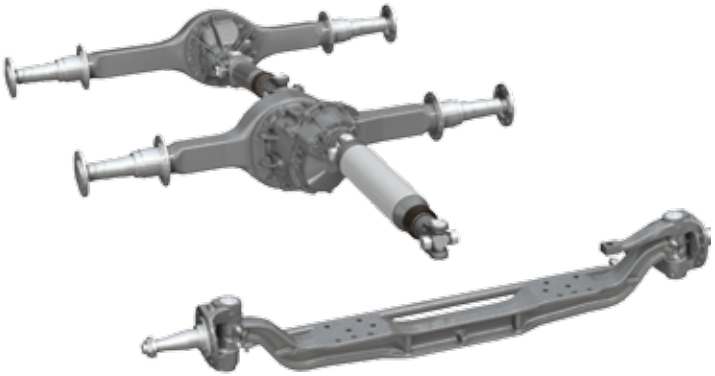
Service & Support

EFFICIENCY
THROUGH
INNOVATION

Our Innovation Keeps You Moving

Efficiency Through Innovation

As the world leader in drivetrain technology, Dana is focused on keeping your business optimized and running strong. From breakthrough, patented technologies to industry-leading innovations, our commercial-vehicle products increase durability, reliability, and efficiency. See us in action at www.dana.com/cv.



Reducing Operating Costs to Increase Bottom Lines

Armed with cutting-edge information and superior under-the-vehicle knowledge, our Dana Nationwide Support Team is committed to helping customers increase efficiencies to increase profits. From supplying the latest information and technical support tools to servicing your drivelines quickly and cost efficiently, you'll be happy we're on your side.

Download the app that brings these innovative products to life!

Dana extras™

1. Download the Dana extras™ app to your mobile device.
2. Point your phone at the Spicer® component above.
3. See dynamic augmented reality 360° views, exploded views, watch installation videos, and more.

Download the FREE Dana extras™ app from the app store to get started.

EFFICIENCY THROUGH INNOVATION

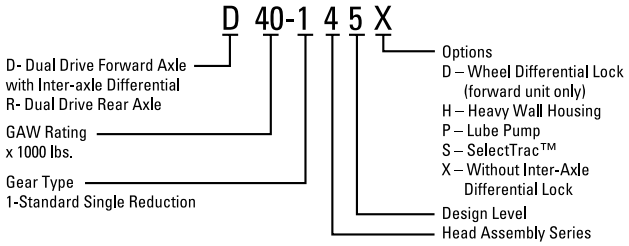
Drive Axle

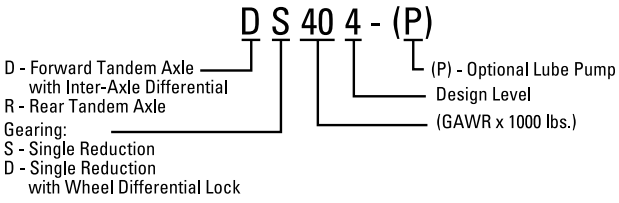
General Information – Heavy- and Medium-Duty

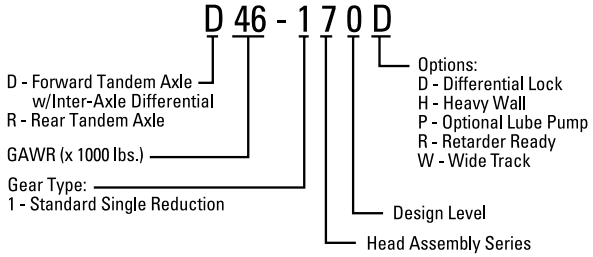
As the world leader in innovative axle technology, Dana provides a full line of the most efficient light-duty, medium-duty, heavy-duty, and specialty rear axle products available for commercial-vehicle applications. Our exclusive combination of patented technologies and designs ensures long service life, reduced maintenance, and more durable axle products.

Nomenclature

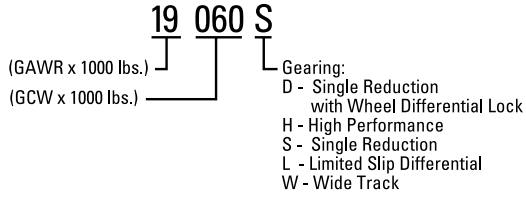
Tandem Drive Axle

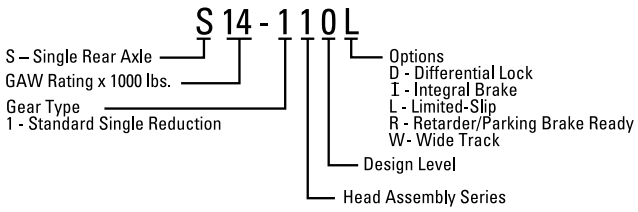


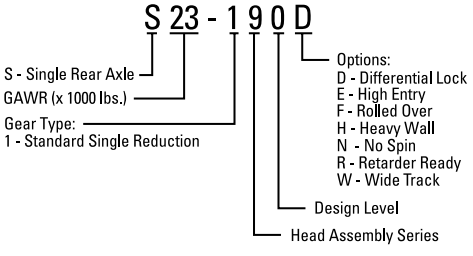




Single Drive Axle







Drive Axle

Applications – Heavy- and Medium-Duty

Tandem Drive Axles

Model	Description	Max GAW lbs. [kg]	Linehaul	Heavy Haul	Logging	Mining	Oil Field	Construction	City Delivery	School Bus	Rescue	Refuse	Recreational	Intercity Coach
DS344	Medium-Duty	34,000 [15,420]	■						■					
DS404	Highway	40,000 [18,141]	■						■					
DS405	Vocational	40,000 [18,141]	■		■	■	■	■	■			■		
DST40	Torsionally Tuned-40	40,000 [18,141]	■						■					
DST41	Torsionally Tuned-40	40,000 [18,141]	■		■	■	■	■	■			■		
DSH40	High Performance-40	40,000 [18,141]	■		■	■	■	■	■			■		
DSH44	High Performance-44	44,000 [19,995]	■				■	■				■		
D40-170	Super 40	40,000 [18,141]	■		■	■	■	■	■			■		
D46-170	D170 Series	46,000 [20,862]	■	■	■	■	■	■			■	■		
D50-170	D170 Series	50,000 [22,676]		■	■	■	■	■			■	■		
D52-190	D190 Series	52,000 [23,583]		■	■	■	■	■			■	■		
D60-190	D190 Series	60,000 [27,211]		■	■	■	■	■			■	■	■	

Dual Range

DT463-P	Two-Speed	46,000 [20,862]	■	■	■	■	■	■				■		
DT521-P	Two-Speed	52,000 [23,583]	■	■	■	■	■	■				■		

Double Reduction

D46-590P	Helical	46,000 [20,862]	■	■	■	■	■	■				■		
D52-590P	Helical	52,000 [23,583]	■	■	■	■	■	■				■		
D60-590P	Helical	60,000 [27,272]	■	■	■	■	■	■				■		
D70-590P	Helical	70,000 [31,818]	■	■	■	■	■	■				■		

Tridem

T69-170HP	Heavy-Duty	69,000 [31,364]	■	■	■	■	■							
T78-190P	Heavy-Duty	78,000 [35,455]	■	■	■	■	■							
T78-590P	Heavy-Duty	78,000 [35,455]	■	■	■	■	■							

BLUE AREAS INDICATE AVAILABILITY.

Drive Axle

Applications – Heavy- and Medium-Duty

Single Drive Axles

Model	Description	Max GAW lbs. [kg]	Linehaul	Heavy Haul	Logging	Mining	Oil Field	Construction	City Delivery	School Bus	Rescue	Refuse	Recreational	Intercity Coach
S14-110	Medium-Duty	13,500 [6,123]						■	■	■			■	
S16-130	Medium-Duty	16,500 [7,500]						■	■	■			■	
S19-140	Medium-Duty	19,000 [8,618]						■	■	■			■	
17060S	Medium-Duty	17,000 [7,727]						■	■	■			■	
19060S	Medium-Duty	19,000 [8,617]						■	■	■			■	
21060S	Medium-Duty	21,000 [9,524]	■					■	■	■		■	■	
22060S	Medium-Duty	22,000 [9,977]	■					■	■	■		■	■	■
S21-170	Heavy-Duty	21,000 [9,524]	■					■	■	■		■	■	
S23-170	Heavy-Duty	23,000 [10,431]	■					■	■	■	■	■		■
S23-190	Heavy-Duty	23,000 [10,431]	■					■	■		■	■		■
S25-170	Heavy-Duty	25,000 [11,338]						■	■		■	■		■
S26-190	Heavy-Duty	26,000 [11,791]						■			■	■		■
S30-190	Heavy-Duty	30,000 [13,605]						■			■	■		

Two-Speed

19060T	Medium-Duty	19,000 [8,617]						■	■					
21060T	Medium-Duty	21,000 [9,524]						■	■					
22060T	Medium-Duty	22,000 [9,979]						■	■					
23082T	Heavy-Duty	23,000 [10,431]						■	■					
26082T	Heavy-Duty	26,000 [11,791]						■						

Double Reduction

S23-590	Heavy-Duty	23,000 [10,431]						■						
S26-590	Heavy-Duty	26,000 [11,791]						■						
S30-590	Heavy-Duty	30,000 [13,605]						■				■		
S35-590	Heavy-Duty	35,000 [15,873]						■				■		

BLUE AREAS INDICATE AVAILABILITY.

Drive Axle

Heavy-Duty Drive Axle

Spicer® Single Reduction Single Drive Axles

Axle Model	Ratings		Ratios	Axle Shaft			Ring Gear Dia. in. [mm]	Axle Housing			Weight lbs. [kg] (Nominal)	Spindle Type	Options				
	Max. GAW lbs. [kg]	Max. GCW lbs. HWY [kg]		Body Diameter in. [mm]	Number of Splines	Spline Diameter in. [mm]		Box Section Width	Box Section Height	Wall thickness at spring seat			LMS™ Hub	Central Tire Inflation System (CTIS)	Differential Lock	Electromagnetic Retarder	No Spin
S21-170	21,000 [9,525]	100,000 [45,359]	3.07, 3.21, 3.42, 3.58, 3.73, 3.91, 4.10, 4.30, 4.56, 4.78, 5.25, 5.38, 5.57, 6.14, 6.83, 7.17	2.06 [52]	46	2.35 [60]	17.7 [450]	4.61 [117]	5.24 [133]	0.43 [11]	735 [333]	R					
S21-190	21,000 [9,525]	125,000 [56,699]	2.53, 2.69, 2.87, 2.93, 3.07, 3.21, 3.42, 3.58, 3.73, 3.91, 4.10, 4.30, 4.56, 4.78, 5.25, 5.38, 5.57, 6.14, 6.83, 7.17, 7.83				18.5 [470]				777 [352]						
S23-170	23,000 [10,433]	100,000 [45,359]	3.07, 3.21, 3.42, 3.58, 3.73, 3.91, 4.10, 4.30, 4.56, 4.78, 5.25, 5.38, 5.57, 6.14, 6.83, 7.17				17.7 [450]				735 [333]						
S23-190		125,000 [56,699]	2.53, 2.69, 2.87, 2.93, 3.07, 3.21, 3.42, 3.58, 3.73, 3.91, 4.10, 4.30, 4.56, 4.78, 5.25, 5.38, 5.57, 6.14, 6.83, 7.17, 7.83				18.5 [470]			0.50 [13]	809 [367]						
S25-170	25,000 [11,340]	100,000 [45,359]	3.42, 3.58, 3.73, 3.91, 4.10, 4.30, 4.56, 4.78, 5.25, 5.38, 5.57, 6.14, 6.83, 7.17	2.25 [57]			17.7 [450]				767 [348]						
S26-190	26,000 [11,793]	125,000 [56,699]	3.42, 3.58, 3.73, 3.91, 4.10, 4.30, 4.56, 4.78, 5.25, 5.38, 5.57, 6.14, 6.83, 7.17, 7.83				18.5 [470]			0.63 [16]	879 [399]						
S30-190	30,000 [13,608]							5.31 [135]	5.91 [150]		896 [406]	W					

Rating is subject to Dana engineering application approval.

Spicer High Entry Single Reduction Single Drive Axles

Axle Model	Ratings		Ratios	Axle Shaft			Ring Gear Dia. in. [mm]	Axle Housing			Weight lbs. [kg] (Nominal)	Spindle Type	Options				
	Max. GAW lbs. [kg]	Max. GCW lbs. HWY [kg]		Body Diameter in. [mm]	Number of Splines	Spline Diameter in. [mm]		Box Section Width	Box Section Height	Wall thickness at spring seat			LMS™ Hub	Central Tire Inflation System (CTIS)	Differential Lock	Electromagnetic Retarder	No Spin
S21-170E	21,000 [9,525]	100,000 [45,359]	3.07, 3.21, 3.42, 3.58, 3.73, 3.91, 4.10, 4.30, 4.56, 4.78, 5.25, 5.38, 5.57, 6.14, 6.83, 7.17	2.06 [52]	46	2.35 [60]	17.7 [450]	4.61 [117]	5.24 [133]	0.43 [11]	816 [371]	R					
S23-170E	23,000 [10,433]										837 [381]						
S23-190E		125,000 [56,699]	3.42, 3.58, 3.73, 3.91, 4.10, 4.30, 4.56, 4.78, 5.25, 5.38, 5.57, 6.14, 6.83, 7.17, 7.83				18.5 [470]			0.50 [13]	885 [402]						
S25-170E	25,000 [11,340]	100,000 [45,359]	3.42, 3.58, 3.73, 3.91, 4.10, 4.30, 4.56, 4.78, 5.25, 5.38, 5.57, 6.14, 6.83, 7.17	2.25 [57]			17.7 [450]				868 [395]						
S26-190E	26,000 [11,793]	125,000 [56,699]	3.42, 3.58, 3.73, 3.91, 4.10, 4.30, 4.56, 4.78, 5.25, 5.38, 5.57, 6.14, 6.83, 7.17, 7.83				18.5 [470]			0.63 [16]	926 [421]						
S30-190E	30,000 [13,608]							5.31 [135]	5.91 [150]		984 [447]	W					

Rating is subject to Dana engineering application approval.

BLUE AREAS INDICATE AVAILABILITY.

Drive Axle

Heavy-Duty Drive Axle

Spicer® Single Reduction Tandem Drive Axles

Axle Model	Ratings		Ratios	Axle Shaft			Ring Gear Dia. in. [mm]	Axle Housing			Weight lbs. [kg] (Nominal)	Spindle Type	Options			
	Max. GAW lbs. [kg]	Max. GCW lbs. HWY [kg]		Body Diameter in. [mm]	Number of Splines	Spline Diameter in. [mm]		Box Section Width	Box Section Height	Wall thickness at spring seat			LMS™ Hub	Central Tire Inflation System (CTIS)	Differential Lock	Pump
DS404	40,000 [18,144]	110,000 [49,895]	2.64, 2.85, 2.93, 3.08, 3.25, 3.36, 3.42, 3.55, 3.70, 3.90, 4.11, 4.33, 4.63, 4.88, 5.29, 5.57, 6.17, 6.50	1.88 [48]	41	2.10 [53]	15.4 [391]	4.61 [117]	5.24 [133]	0.37 [9.5]	1239 [562]	R	■	■	■	■
DS405										0.43 [11]	1274 [577]		■	■	■	■
DST40			2.64, 3.08, 3.25, 3.36, 3.55, 3.70, 3.90, 4.11, 4.33				15.4 [391] 16.5 [419]			0.37 [9.5]	1272 [577]		■	■	**	■
DST41										0.43 [11]	1332 [604]		■	■	**	■
DSH40			3.08, 3.25, 3.36, 3.55, 3.70, 3.90, 4.11, 4.33, 4.63, 4.88				15.75 [400]				1277 [579]		■	■	■	■
DSH44	44,000 [19,958]	72,000 [32,659] (GVW)	3.36, 3.55, 3.70, 3.90, 4.11, 4.33, 4.63, 4.88, 5.29, 5.57, 6.17, 6.50, 7.17							0.50 [12.5]	1332 [604]		■	■	■	■

Rating is subject to Dana engineering application approval. ** Forward rear axle only.

Spicer Single Reduction Heavy Tandem and Tridem Drive Axles

Axle Model	Ratings		Ratios	Axle Shaft			Ring Gear Dia. in. [mm]	Axle Housing			Weight lbs. [kg] (Nominal)	Spindle Type	Options					
	Max. GAW lbs. [kg]	Max. GCW lbs. HWY [kg]		Body Diameter in. [mm]	Number of Splines	Spline Diameter in. [mm]		Box Section Width	Box Section Height	Wall thickness at spring seat			LMS™ Hub	Central Tire Inflation System (CTIS)	Differential Lock	Pump	Electromagnetic Retarder	No Spin
D40-170	40,000 [18,144]	160,000 [72,575]	3.07, 3.21, 3.42, 3.58, 3.73, 3.91, 4.10, 4.30, 4.56, 4.78, 5.25, 5.38, 5.57, 6.14, 6.83, 7.17	2.06 [52]	46	2.35 [60]	17.7 [450]	4.61 [117]	5.24 [133]	0.43 [11]	1658 [751]	R	■	■	■	■	■	■
D46-170	46,000 [20,865]									0.50 [12.5]	1702 [771]		■	■	■	■	■	■
D50-170	50,000 [22,680]									0.63 [16]	1739 [788]		■	■	■	■	■	
D52-190P	52,000 [23,587]	225,000 [102,058]	3.42, 3.58, 3.73, 3.91, 4.10, 4.30, 4.56, 4.78, 5.25, 5.38, 5.57, 6.14, 6.83, 7.17	2.25 [57]			18.5 [470]	5.31 [135]	5.91 [150]		1903 [862]		■	■	■	STD	■	
D60-190P	60,000 [27,216]										1909 [865]	W			■		■	
T69-170HP*	69,000 [31,298]	160,000 [72,575]	3.07, 3.21, 3.42, 3.58, 3.73, 3.91, 4.10, 4.30, 4.56, 4.78, 5.25, 5.38, 5.57, 6.14, 6.83, 7.17	2.06 [52]			17.7 [450]	4.61 [117]	5.24 [133]		2701 [1228]	R	■	■	■		■	
T78-190P*	78,000 [35,454]	240,000 [108,862]	3.42, 3.58, 3.73, 3.91, 4.10, 4.30, 4.56, 4.78, 5.25, 5.38, 5.57, 6.14, 6.83, 7.17	2.25 [57]			18.5 [470]	5.31 [135]	5.91 [150]		3010 [1368]		■	■	■		■	

Rating is subject to Dana engineering application approval. * Tridem axle configuration.

BLUE AREAS INDICATE AVAILABILITY.

Drive Axle

Heavy-Duty Drive Axle

Spicer® Two-Speed and Double Reduction Single Drive Axles

Axle Model	Ratings		Ratios	Axle Shaft			Ring Gear Dia. in. [mm]	Axle Housing			Weight lbs. [kg] (Nominal)	Spindle Type	Options			
	Max. GAW lbs. [kg]	Max. GCW lbs. HWY [kg]		Body Diameter in. [mm]	Number of Splines	Spline Diameter in. [mm]		Box Section Width	Box Section Height	Wall thickness at spring seat			LMS™ Hub	Central Tire Inflation System (CTIS)	Electromagnetic Retarder	Differential Lock
23082T	23,000 [10,433]	80,000 [36,287]	3.70/5.04, 3.90/5.31, 4.11/5.60, 4.33/5.90, 4.56/6.20, 4.88/6.64, 5.43/7.39, 6.17/8.40, 6.67/9.08	2.06 [52]	36	2.31 [59]	18 [457]	4.61 [117]	5.24 [133]	0.43 [11]	759 [344]	R				
26082T	26,000 [11,793]									0.55 [14]	779 [353]					
S23-590	23,000 [10,433]	125,000 [56,699]	4.75, 4.99, 5.19, 5.44, 5.70, 5.98, 6.34, 6.65, 7.30, 7.48, 7.75, 8.55, 9.51, 9.97, 10.90	2.25 [57]	46	2.35 [60	18.5 [470]			0.50 [13]	885 [402]					
S26-590	26,000 [11,793]									0.63 [16]	926 [421]					
S30-590	30,000 [13,608]							5.31 [135]	5.91 [150]		984 [447]	W				
S35-590	35,000 [15,876]							5.63 [143]	6.73 [171]	0.87 [22]	1104 [502]					

Rating is subject to Dana engineering application approval.

Spicer Two-Speed and Double Reduction Tandem and Tridem Drive Axles

Axle Model	Ratings		Ratios	Axle Shaft			Ring Gear Dia. in. [mm]	Axle Housing			Weight lbs. [kg] (Nominal)	Spindle Type	Options			
	Max. GAW lbs. [kg]	Max. GCW lbs. HWY [kg]		Body Diameter in. [mm]	Number of Splines	Spline Diameter in. [mm]		Box Section Width	Box Section Height	Wall thickness at spring seat			LMS™ Hub	Central Tire Inflation System (CTIS)	Pump	Differential Lock
DT463-P	46,000 [20,865]	160,000 [72,575]	3.70/5.04, 3.90/5.32, 4.11/5.60, 4.33/5.90, 4.56/6.21, 4.88/6.64, 5.43/7.39, 6.17/8.40	2.06 [52]	36	2.31 [59]	18 [457]	4.61 [117]	5.24 [133]	0.56 [14]	1883 [854]	R			STD	
D46-590HP		240,000 [108,862]	4.75, 4.99, 5.19, 5.44, 5.70, 5.98, 6.34, 6.65, 7.30, 7.48, 7.75, 8.55, 9.51, 9.97, 10.90	2.25 [57]	46	2.35 [60]	18.5 [470]			0.63 [16]	1910 [868]					
D52-590P	52,000 [23,587]							5.31 [135]	5.91 [150]		2098 [954]					
D60-590P	60,000 [27,216]											W				
D70-590P	70,000 [31,751]							5.63 [143]	6.73 [171]	0.87 [22]	2238 [1017]					
T78-590P*	78,000 [35,454]							5.31 [135]	5.91 [150]	0.63 [16]	3212 [1460]	R				

Rating is subject to Dana engineering application approval. * Tridem axle configuration.

Spicer 6x2 Tag Axle Option

Axle Model	Max. GAW lbs. [kg]	Width [mm]	Height [mm]	Wall [mm]	Weight lbs. [kg]	Spindle Type	Options	
							LMS™ Hub	Central Tire Inflation System (CTIS)
S21-060B	21,000 [9,525]	4.61 [117]	5.24 [133]	0.43 [11]	260 [117]	R		
S23-070B	23,000 [10,432]			0.50 [12.5]	312 [141]			

Rating is subject to Dana engineering application approval.

BLUE AREAS INDICATE AVAILABILITY.

Drive Axle

Medium-Duty Drive Axle

Spicer® Single Reduction Single Drive Axles

Axle Model	Ratings		Ratios	Axle Shaft			Ring Gear Dia. in.	Axle Housing			Weight lbs. [kg] (Nominal)	Spindle Type	Options					
	Max. GAW lbs. [kg]	Max. GCW lbs. HWY [kg]		Body Diameter in. [mm]	Number of Splines	Spline Diameter in. [mm]		Box Section Width	Box Section Height	Wall thickness at spring seat			LMS™ Hub	Central Tire Inflation System (CTIS)	Differential Lock	Parking Brake	Limited Slip	No Spin
S14-110 ◊	14,000 [6,364]	35,000 [15,876]	3.73, 3.91, 4.10, 4.30, 4.56, 4.78, 4.88, 5.13, 5.38, 5.57, 5.86, 6.14, 6.50	1.57 [40]	34	1.75 [44]	11.8 [300]	4.25 [108]	4.25 [108]	0.31 [8]	345 [156]	Varies by OEM				■	■	
S16-130 ◊	16,000 [7,273]	40,000 [18,144]		1.61 [41]	36	1.89 [47]	12.2 [310]			0.39 [10]	367 [167]					■	■	
S17-140*	17,000 [7,711]	50,000 [22,680]	3.31, 3.58, 3.73, 3.91, 4.10, 4.30, 4.56, 4.88, 5.29, 5.57, 6.14, 6.50	1.81 [46]	39	2.00 [51]	13.4 [340]	4.61 [117]	5.24 [133]	0.39 [10]	433 [196]	L				■		
S19-140*	19,000 [8,618]	50,000 [22,680]	3.31, 3.58, 3.73, 3.91, 4.10, 4.30, 4.56, 4.88, 5.29, 5.57, 6.14, 6.50	1.81 [46]	39	2.00 [51]	13.4 [340]	4.61 [117]	5.24 [133]	0.39 [10]	433 [196]	L				■		
17060S ◊	17,000 [7,711]	60,000 [27,216]	3.08, 3.25, 3.36, 3.55, 3.70, 3.90, 4.11, 4.30, 4.33, 4.63, 4.78, 4.88, 5.29, 5.57, 6.17, 6.50, 7.17	1.81 [46]	39	2.00 [51]	15.4 [391]	4.61 [117]	5.24 [133]	0.37 [9]	519 [235]	L			■	■	■	■
19060S ◊	19,000 [8,618]														■	■	■	■
21060S ◊	21,000 [9,525]			1.89 [48]	41	2.10 [53]						R	■	■	■	■	■	■
22060S ◊	22,000 [9,979]									0.43 [11]	562 [255]		■	■	■	■	■	■

Rating is subject to Dana engineering application approval. ◊ Optional GenTech™ gearing for coach and bus applications available in this model. * GenTech™ gearing is standard for this model.

Spicer Two-Speed and Planetary Double Reduction Single Drive Axles

Axle Model	Ratings		Ratios		Axle Shaft			Ring Gear Dia. in.	Axle Housing			Weight lbs. [kg] (Nominal)	Spindle Type	Options		
	Max. GAW lbs. [kg]	Max. GCW lbs. HWY [kg]	Two Speed	Double Reduction	Body Diameter in. [mm]	Number of Splines	Spline Diameter in. [mm]		Box Section Width	Box Section Height	Wall thickness at spring seat			LMS™ Hub	Central Tire Inflation System (CTIS)	No Spin
19055T 19055P	19,000 [8,618]	60,000 [27,216]	3.90/5.32, 4.11/5.61, 4.33/5.91, 4.63/6.31, 4.88/6.65, 5.29/7.21, 5.57/7.60, 6.17/8.42, 6.50/8.87, 7.17/9.77	5.32, 5.61, 5.91, 6.31, 6.65, 7.21, 7.60, 8.42, 8.87, 9.77	1.81 [46]	39	2.00 [51]	See Note	4.61 [117]	5.24 [133]	0.37 [9]	605 [274]	L			■
21065T 21065P	21,000 [9,525]				1.89 [48]	41	2.10 [53]						R	■	■	■
22065T 22065P	22,000 [9,979]										0.43 [11]	634 [288]		■	■	■

Rating is subject to Dana engineering application approval. Note: 16" [406mm] diameter ring gear for 3.55/4.83 and 3.70/5.05 ratios only. Ring gear diameter is 16.5" [419mm] for all other ratios.

Spicer Single Reduction Tandem Drive Axles

Axle Model	Ratings		Ratios	Axle Shaft			Ring Gear Dia. in.	Axle Housing			Weight lbs. [kg] (Nominal)	Spindle Type	Options	
	Max. GAW lbs. [kg]	Max. GCW lbs. HWY [kg]		Body Diameter in. [mm]	Number of Splines	Spline Diameter in. [mm]		Box Section Width	Box Section Height	Wall thickness at spring seat			Limited Slip	No-Spin Differential
DS344	34,000 [15,422]	90,000 [40,823]	3.36, 3.55, 3.70, 3.90, 4.11, 4.33, 4.63, 4.88, 5.29, 5.57, 6.17, 6.50	1.81 [46]	39	2.00 [51]	15.4 [391]	4.61 [117]	5.24 [133]	0.37 [9]	1202 [545]	L	■	■

Rating is subject to Dana engineering application approval.

BLUE AREAS INDICATE AVAILABILITY.

Drive Axle

Lubrication Intervals – Heavy- and Medium-Duty

Spicer® Drive Axle Lubrication Intervals*

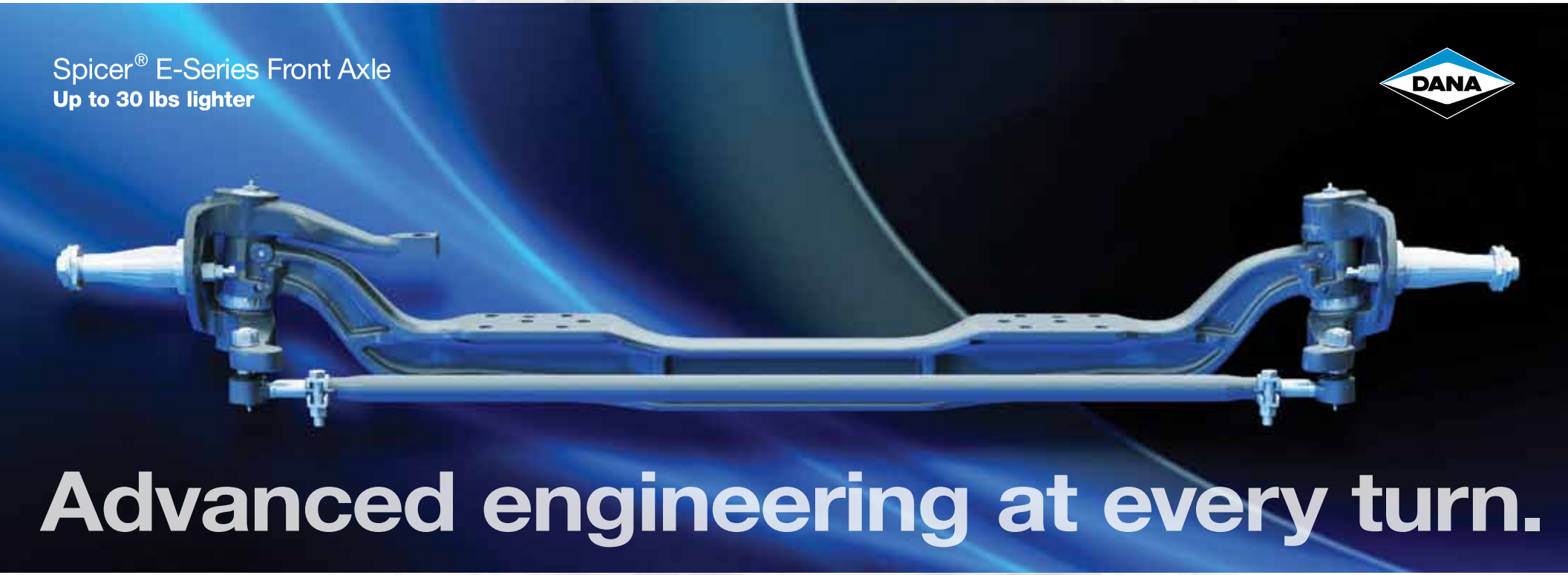
Synthetic or Mineral	Lubricant	SAE	Linehaul	On/Off-Hwy
Synthetic*	SHAES-256	75W-90	500,000 miles (800,000 km) or 5 years (whichever comes first)	120,000 miles (193,000 km) or 1 year (whichever comes first)
Synthetic**	SHAES-256	75W-90, 75W-140	250,000 miles (400,000 km) or 3 years (whichever comes first)	60,000 miles (96,500 km) or 1 year (whichever comes first)
Mineral Base	MIL-L-2105E/J02360, API GL-5 Gear oil, MIL-PRF-2105E	75W, 75W-90, 75W-140, 80W-90, 85W-140	120,000 miles (193,000 km) or 1 year (whichever comes first)	60,000 miles (96,500 km) or 1 year (whichever comes first)

*Axles using LMS wheel-end system.

**Axles using adjustable wheel bearing system.

We recommend genuine Spicer®

Notes



Download the app that brings these innovative products to life!

Dana extras™

1. Download the Dana extras™ app to your mobile device.
2. Point your phone at the Spicer® component above.
3. See dynamic augmented reality 360° views, exploded views, watch installation videos, and more.

Download the FREE Dana extras™ app from the app store to get started.

EFFICIENCY THROUGH INNOVATION

Steer Axle

General Information – Heavy- and Medium-Duty

At Dana, our world-class innovations offer the highest efficiencies in a full line of medium-duty, heavy-duty, and specialty axle products for all commercial-vehicle applications. As the world leader in front axle technology, we provide our customers with the most versatile, durable, and reliable steer axles on the market.

Nomenclature

Steer Axle

E-120 2 W

- **Series** E
- (GAWR x 100 lbs.)
- **Design Level**
  0-Standard
  1-Heavy-Duty Beam
  2-In-Line Drawkeys
  Heavy-Duty Beam
- **Beam Type**
  W - Over 96" Overall Width

EFA - 24 T 5

- **Series** EFA
- (GAWR x 1000 lbs.)
- Future Design Level
- **Beam Drop**
  1 - 1.5 in. to Tube Centerline
  4 - 3.5 in. to Spring Pad
  5 - 5.1 in. to Tube Centerline
- **Beam Type**
  F - I-Beam Standard Overall Width
  T - Tubular Beam

D-200 W

- **Series** D
- (GAWR x 100 lbs.)
- Future Design Level
- **Beam Type**
  F, SG - I-Beam Standard Overall Width
  SB - Coach Beam
  W - Over 96" Overall Width

Steer Axle

Applications – Heavy- and Medium-Duty

Steer Axles

Model	Description	Max GAW lbs. [kg]	Linehaul	Heavy Haul	Logging	Mining	Oil Field	Construction	City Delivery	School Bus	Rescue	Refuse	Recreational
D600 – D-850	Medium-Duty	8,500 [3,856]							■	■	■		■
I-100SG – I-140SG	Medium-Duty	14,600 [6,622]							■	■	■		■
E-1002 – E-1202	Linehaul	12,000 [5,443]	■					■			■		■
E1203, E1322, E1462	Linehaul/ Severe Service	14,600 [6,622]	■	■	■			■				■	■
I-100W – I-220W	Severe Service/ Wide Track	22,000 [9,979]		■	■	■		■				■	
D-2000F, D2200F	Severe Service	22,800 [10,341]		■	■	■	■	■				■	
EFA-22T – EFA-24T	On/Off Highway Tubular Beam	24,000 [10,886]		■		■	■						

BLUE AREAS INDICATE AVAILABILITY.

Steer Axle

Heavy- and Medium-Duty

Spicer® Integral Arm Steer Axles

Nominal Load Rating lbs. [kg]	Model	Beam Width** (KPI) in. [mm]	Beam Drop in [mm]			LMS™ Hub Option	Tire Pressure Management (optional)	Bearing Cone Inner / Outer*
			3.5 [89]	3.74 [95]	5.0 [127]			
10,000 [4,536]	E-1002I	69.0 [1753]	■			■		HM212049/ 3782
	E-1002W	71.0 [1803]	■			■		
		71.5 [1816]		■		■		
12,000 [5,443]	E-1202I	69.0 [1753]	■			■		
	E-1202W	71.0 [1803]	■			■		
		71.5 [1816]		■		■		
13,200 [5,987]	E-1322I	69.0 [1753]	■		■	■		
	E-1322W	71.0 [1803]	■		■	■		
		71.5 [1816]		■		■		
14,600 [6,622]	E-1462I	69.0 [1753]	■		■	■		
	E-1462W	71.0 [1803]	■		■	■		
		71.5 [1816]		■		■		

* Standard bearing numbers shown. Does not apply with LMS hub. **"W" version models provide additional turning angle. Beam width dimension contingent on vehicle manufacturer.

Spicer Conventional Arm Steer Axles

Nominal Load Rating lbs. [kg]	Model	Beam Width (KPI) in. [mm]	Beam Drop in [mm]			LMS Hub Option	Tire Pressure Management (optional)	Bearing Cone Inner/Outer*
			3.5 [89]	3.74 [95]	5.0 [127]			
6,000 [2,722]	D-600N	62.7 [1593]		■		N/A		45284/25880
7,000 [3,175]	D-700N	62.7 [1593]		■				
	D-700F	71.0 [1803]	■					JM207049A/ 25877
8,000 [3,629]	D-800F	71.0 [1803]	■					
	D-800W	72.0 [1829]	■					
8,500 [3,856]	D-850F	71.0 [1803]	■					
	D-850W	72.0 [1829]	■					
20,000 [9,072]	D-2000F	68.0 [1727]	■		■	■	■	6461A/ 555S
	D-2000W	70.66 [1795]			5.24 [133]	■	■	
22,000 [9,979]	EFA-22T2	Variable	1.5 [38]			N/A	■	
	EFA-22T5	Variable			5.1 [130]		■	
22,800 [10,342]	D-2200F	68.0 [1727]		■			■	
	D-2200W	70.66 [1795]			5.24 [133]	■	■	
24,000 [10,886]	EFA-24T2	Variable	1.5 [38]			N/A	■	
	EFA-24T5	Variable			5.1 [130]		■	

BLUE AREAS INDICATE AVAILABILITY.

Steer Axle

Lubrication Intervals – Heavy- and Medium-Duty

Spicer® Steer Axle Lubrication Intervals

Type of Lube System	Lubricant	SAE	Linehaul	On/Off-Hwy
King Pin Joint Grease/ Tie Rod Ends	Heavy-Duty Multipurpose Lithium Based*	#1 Grade** or #2 grade	25,000 miles (40,000 Km) or 6 months (whichever comes first)	Every 50 hours

* Do not mix with sodium base grease. Do not use greases other than what is indicated above.

** #1 grade is used for extra cold.

We recommend genuine Spicer®

Notes

Spicer® Diamond Series™ Driveshaft

Up to 100 lbs lighter

Stronger, longer, and lighter.

Download the app that brings these innovative products to life!

Dana extras™

1. Download the Dana extras™ app to your mobile device.
2. Point your phone at the Spicer® component above.
3. See dynamic augmented reality 360° views, exploded views, watch installation videos, and more.

Download the FREE Dana extras™ app from the app store to get started.

EFFICIENCY THROUGH INNOVATION

Driveshaft

General Information – Heavy- and Medium-Duty

At Dana, we offer a complete line of light-duty, medium-duty, heavy-duty, and specialty driveshaft products for every commercial-vehicle application. As the world leader in driveshaft technology, our innovative, industry-leading products provide the most efficient, reliable, and durable performance on the road.

- Robust, patented driveshaft technologies
- High-Power Density™ (HPD™) provides more strength
- Lighter weight than competitive products
- Service-free designs available for reduced maintenance

Nomenclature

Driveshaft

250 DS 55 001 C

- 250 — Series: 055 = SPL–55; 070 = SPL–70; 100 = SPL–100; 140 = SPL–140; 170 = SPL–170; 250 = SPL–250; 350 = SPL–350
- DS — Description: CS = Coupling Shaft; DS = Driveshaft; IA = Inter Axle; JS = Jack Shaft; SC = Short Couple
- 55 — End Fitting: 0 = No Fitting; 1 = Companion Flange; 2 = Flange Yoke; 3 = Slip Yoke; 4 = End Yoke; 5 = Cross
- 001 — Sequential Number
- C — Options: C = Spicer XL; SPL–170 & SPL–250; G = Spicer XS; SPL–55, SPL–70 & SPL–100; F = Spicer Service Free; SPL–170, SPL–250 & SPL–350

Driveshaft

High Torque, Low RPM Applications

Handling heavy loads over the long haul has never been easier or more efficient, thanks to Dana's Spicer Life® Series driveshafts. Now enhanced to offer even greater torque, durability, and savings, SPL® products offer 70 percent more power density than their nearest competitor and a 40 percent increase in bearing life. No other U-joint meets the needs of high-efficiency truck applications better than the SPL U-joint. This product is now available with a service-free option for even greater savings.

Spicer Life® Series Operating Parameters

Series	Max. momentary joint angle	Standard slip		Rotating Diameter of Shaft		Rotating Diameter of End Yoke	
SPL-140	25°	110 mm	4.33 in	160 mm	6.30 in	174 mm	6.22 in
SPL-170	25°	110 mm	4.33 in	185 mm	7.28 in	193 mm	7.60 in
SPL-170I/A	45°	150 mm	5.90 in	185 mm	7.28 in	193 mm	7.60 in
SPL-250	25°	110 mm	4.33 in	185 mm	7.28 in	193 mm	7.60 in
SPL-250HD	25°	110 mm	4.33 in	185 mm	7.28 in	193 mm	7.60 in
SPL-250 I/A	45°	150 mm	5.90 in	185 mm	7.28 in	193 mm	7.60 in
SPL-350	15°	110 mm	4.33 in	206 mm	8.11 in	219 mm	8.62 in
SPL-350HD	15°	110 mm	4.33 in	206 mm	8.11 in	219 mm	8.62 in

Tubing sizes for Spicer Life® Series

Series	Tubing OD		Wall thickness	
SPL-140	107 mm	4.21 in	3.5 mm	.138 in
SPL-140HD	110 mm	4.33 in	5 mm	.197 in
SPL-170	126 mm	4.96 in	3 mm	.118 in
SPL-170HD	128.5 mm	5.06 in	4.25 mm	.167 in
SPL-170I/A	116.7 mm	4.59 in	4.57 mm	.180 in
SPL-250	128.5 mm	5.06 in	4.25 mm	.167 in
SPL-250HD	130 mm	5.12 in	5 mm	.197 in
SPL-350	138.5 mm	5.45 in	4.25 mm	.167 in
SPL 350HD	140 mm	5.51 in	5 mm	.197 in

Journal Cross and Bearing Kits

Series	U-Joint Kit for Quick Disconnect™ End Yoke
SPL-140	SPL-140X
SPL-170	SPL-170-4X
SPL-170SF	SPL-170-SF4X
SPL-250	SPL-250-3X
SPL-250SF	SPL-250-SF3X
SPL-350	SPL-350X
SPL-350SF	SPL-350SFX

SF = Service Free

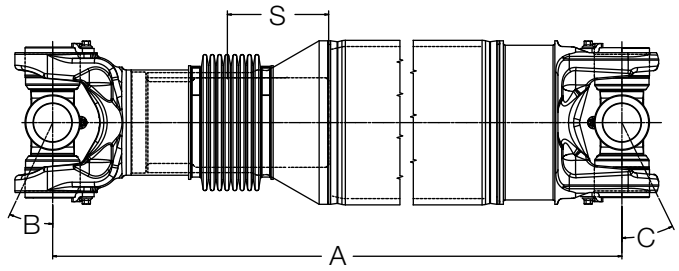
Driveshaft

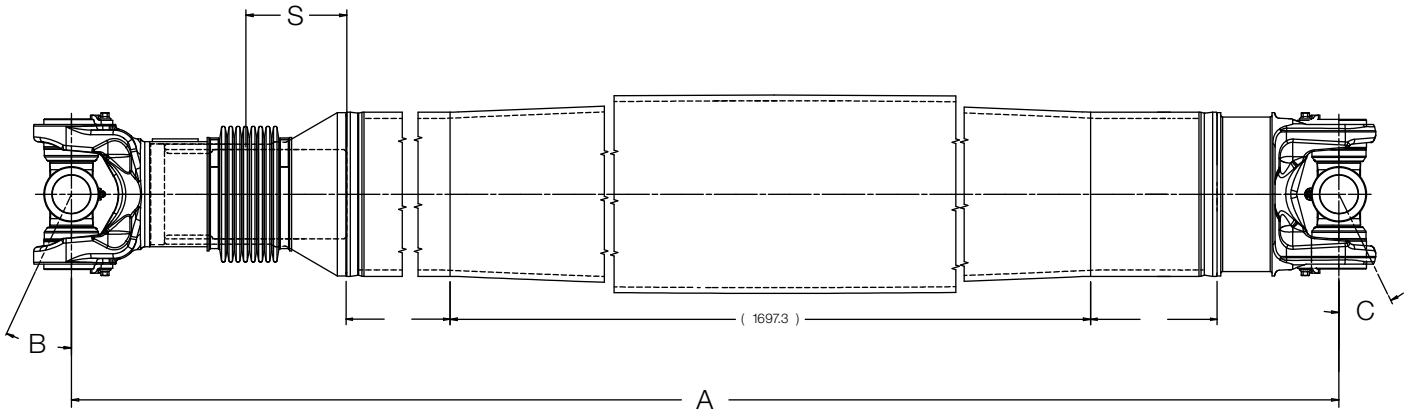
Spicer Life® Series – Heavy-Duty

Diamond Series™ Driveshafts

Driveshaft Assembly Part Number	Minimum Length Collapsed Centerline to Centerline of Cross "A"		Slip Joint End			Tight Joint End			U-Joint SPAN "F"		Bearing Cup Diameter "G"	
			Slip "S"		Maximum Angle "B"	Tube Size		Maximum Angle "C"				
	MM	IN	MM	IN		MM	IN		MM	IN	MM	IN
250DS55031C 250DS55031F	1981.9	78.0	110	4.33	25°	178.8 x 6.75 DOM	7.0 x .265 DOM	25°	163	6.42	60	2.37
250DS55032C 250DS55032F	2632.9	103.7	110	4.33	25°	215.9 x 6.75 DOM	8.5 x .265 DOM	25°	163	6.42	60	2.37

For additional configurations, contact Spicer Driveshaft Engineering for specific application information.





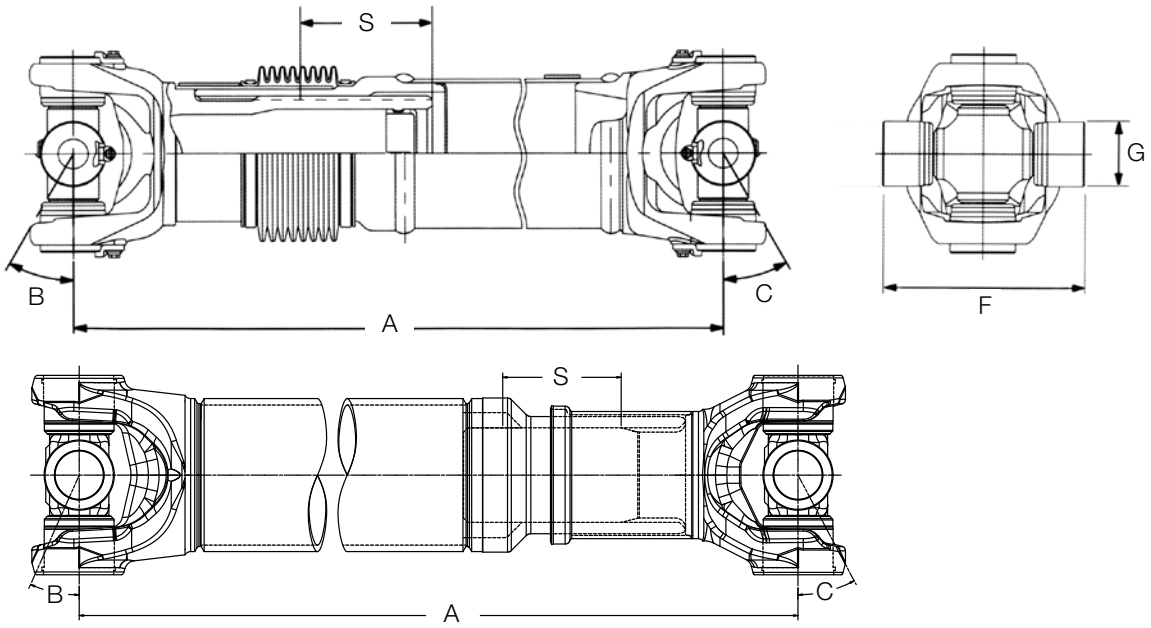
Driveshaft

Spicer Life® Series – Heavy-Duty

Slip Between Center Driveshaft

Driveshaft Assembly Part Number	Minimum Length Collapsed Centerline to Centerline of Cross "A"		Slip Joint End			Tight Joint End			U-Joint Span "F"		Bearing Cup Diameter "G"	
			Slip "S"		Maximum Angle "B"	Tube Size		Maximum Angle "C"				
	MM	IN	MM	IN		MM	IN		MM	IN	MM	IN
SPL-140 140DS55007	430	16.93	110	4.33	25°	107.0 x 3.5 DOM	4.21 x .138 DOM	25°	139	5.46	49	1.93
SPL-140HD 140DS55001						110.0 x 5.0 DOM	4.33 x .197 DOM					
SPL-170 170DS55007C 170DS55007F	440	17.34	110	4.33	25°	126.0 x 3.0 DOM	4.96 x .118 DOM	25.5°	164	6.46	55	2.16
SPL-170HD 170DS55011C 170DS55011F	440	17.34	110	4.33	25°	128.5 x 4.25 DOM	5.06 x .167 DOM	25°	164	6.46	55	2.16
SPL-170I/A 170IA55010C 170IA55010F	528.6	20.81	150	5.91	45°	116.7 x 4.57 DOM	4.59 x .180 DOM	45°	164	6.46	55	2.16
SPL-250 250DS55007C 250DS55007F	450.3	17.73	110	4.33	25°	128.5 x 4.25 DOM	5.06 x .167 DOM	25°	163	6.42	60	2.37
SPL-250HD 250DS55011C 250DS55011F	450.3	17.73	110	4.33	25°	130.0 x 5.0 DOM	5.12 x .197 DOM	25°	163	6.42	60	2.37
SPL-250 I/A 250IA55001C 250IA55001F	507.7	19.99	150	5.41	45°	128.7 x 4.25 DOM	5.07 x .167 DOM	45°	163	6.42	60	2.37
350DS55001 350DS55001F	483	19.01	110	4.33	15°	138.5 x 4.25 DOM	5.45 x .167 DOM	15°	172	6.77	65	2.56
350DS55002 350DS55002F						140.0 x 5.0 DOM	5.51 x .197 DOM					

For additional configurations, contact Spicer Driveshaft Engineering for specific application information.



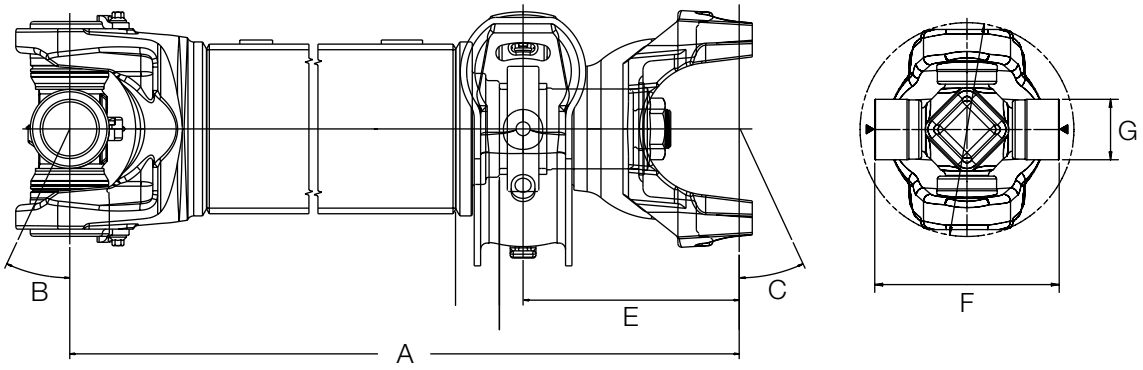
Driveshaft

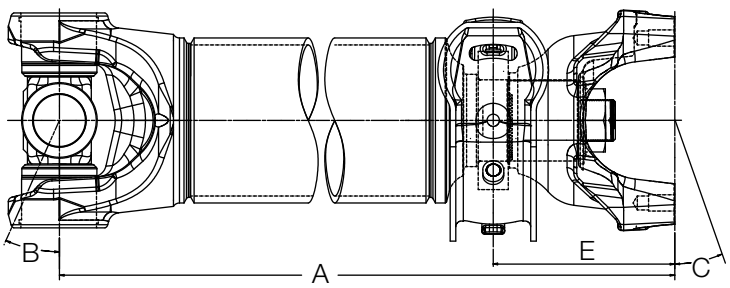
Spicer Life® Series – Heavy-Duty

Fixed Yoke Coupling Shaft Assembly with Center Bearing

Coupling Shaft Assembly Part Number	Minimum Length Centerline of Cross to Centerline of End Yoke "A"		Maximum Angle "B"	Tube Size		Centerline of Bearing to Centerline of End Yoke "E"		Maximum Angle "C"	U-Joint Span "F"		Bearing Cup Diameter "G"	
	MM	IN		MM	IN	MM	IN		MM	IN	MM	IN
SPL-140 140CS54025	350	13.79	25°	107.0 x 3.5 DOM	4.33 x .197 DOM	152	5.98	25°	139	5.46	49	1.93
SPL-140HD 140CS54013				110.0 x 5.0 DOM	4.33 x .197 DOM	154	6.08					
SPL-170 170CS54019C 170CS54019F	368	14.47	25°	126.0 x 3.0 DOM	4.96 x .118 DOM	160	6.30	25°	164	6.46	55	2.17
SPL-170HD 170CS54017C 170CS54017F	368	14.45	25°	128.5 x 4.25 DOM	5.06 x .167 DOM	160	6.30					
SPL-250 250CS54007C 250CS54007F	382	15.05	25°	128.5 x 4.25 DOM	5.06 x .167 DOM	164	6.46	25°	163	6.42	60	2.37
SPL-250HD 250CS54014C 250CS54014F				130.0 x 5.0 DOM	5.12 x .197 DOM							
350CS54001 350CS54001F	386.2	15.20	15°	138.5 x 4.25 DOM	5.45 x .167 DOM	156.2	6.15	15°	172	6.77	65	2.56
350CS54002 350CS54002F				140 x 5.0 DOM	5.51 x .197 DOM							

For additional configurations, contact Spicer Driveshaft Engineering for specific application information.





Driveshaft

Spicer Life® Series – Medium-Duty

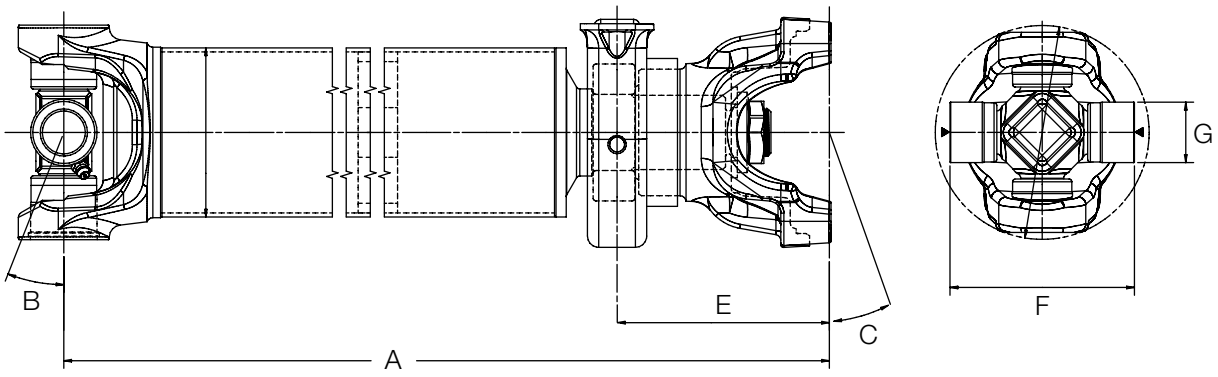
Medium-Duty Service Kits

Driveshaft Series	U-Joint Kit	Kit Type
SPL-55	SPL-55-1X	Re-Lube
SPL-55XS	SPL-55X	Pre-Lube
SPL-70	SPL-70-1X	Re-Lube
SPL-70XS	SPL-70X	Pre-Lube
SPL-100	SPL-100-1X	Re-Lube
SPL-100XS	SPL-100X	Pre-Lube

Fixed Yoke Coupling Shaft

Coupling Shaft Assembly Part Number	Minimum Length Centerline of Cross to Centerline of End Yoke "A"		Maximum Angle "B"	Tube Size		Centerline of Bearing to Centerline of End Yoke "E"		Maximum Angle "C"	U-Joint Span "F"		Bearing Cup Diameter "G"	
	MM	IN		MM	IN	MM	IN		MM	IN	MM	IN
SPL-55 055CS54006	233	9.17	21.5°	88.9 x 2.11	3.50 x .083	112	4.39	22.5°	106	4.19	35	1.37
SPL-55XS 055CS54006G												
SPL-70 070CS54004	249	9.80	26°	88.9 x 2.41	3.50 x .095	120	4.71	22.5°	126	4.96	35	1.37
SPL-70XS 070CS54004G												
SPL-100 100CS54003	289	11.39	25°	101.6 x 2.41	4.00 x .095	115	4.52	13.5°	126	4.96	41	1.63
SPL-100XS 100CS54003G												

For additional configurations, contact Spicer Driveshaft Engineering for specific application information.



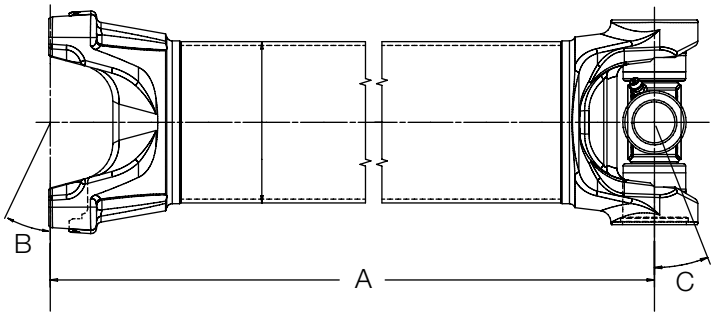
Driveshaft

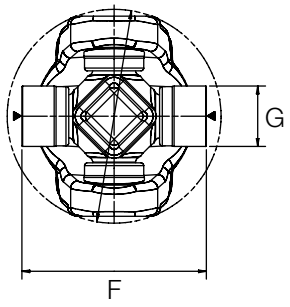
Spicer Life® Series – Medium-Duty

Driveshaft

Driveshaft Assembly Part Number	Minimum Length Centerline of Cross to End Yoke "A"		Maximum Angle "B"	Tube Size		Maximum Angle "C"	U-Joint Span "F"		Bearing Cup Diameter "G"	
	MM	IN		MM	IN		MM	IN	MM	IN
SPL-55 055DS05003	160	6.28	25°	88.9 x 2.11	3.50 x .083	21.5°	106	4.19	35	1.37
SPL-55XS 055DS05003G										
SPL-70 070DS5003	168	6.62	25°	88.9 x 2.41	3.50 x .095	26°	126	4.96	35	1.37
SPL-70XS 070DS05003G										
SPL-100 100DS05002	206	8.00	23.5°	101.6 x 2.41	4.00 x .095	14.5°	126	4.96	41	1.63
SPL-100XS 100DS05002G										

For additional configurations, contact Spicer Driveshaft Engineering for specific application information.





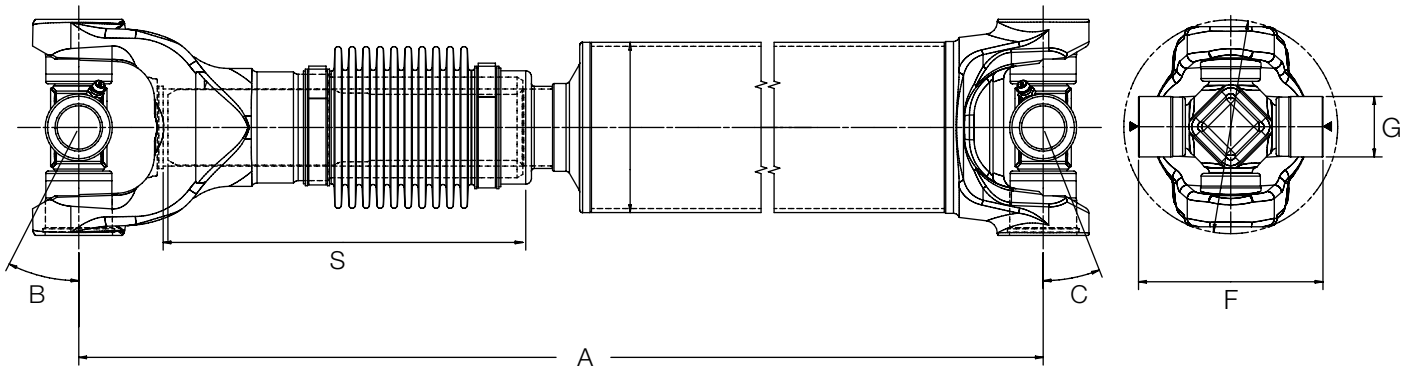
Driveshaft

Spicer Life® Series – Medium-Duty

Slip Between Center Driveshaft

Driveshaft Assembly Part Number	Minimum Length Collapsed Centerline to Centerline of Cross "A"		Slip Joint End			Tight Joint End			U-Joint Span "F"		Bearing Cup Diameter "G"	
			Slip "S"		Maximum Angle "B"	Tube Size		Maximum Angle "C"				
	MM	IN	MM	IN		MM	IN		MM	IN	MM	IN
SPL-55 055DS55006	356	14.00	110	4.33	27°	88.9 x 2.11	3.50 x .083	21.5°	106	4.19	35	1.37
SPL-55XS 055DS55006G												
SPL-70 070DS55007	366	14.41	110	4.33	25°	88.9 x 2.41	3.50 x .095	26°	126	4.96	35	1.37
SPL-70XS 070DS55007G												
SPL-100 100DS55006	421	16.58	110	4.33	25°	101.6 x 2.41	4.00 x .095	25°	126	4.96	41	1.63
SPL-100XS 100DS55006G												

For additional configurations, contact Spicer Driveshaft Engineering for specific application information.



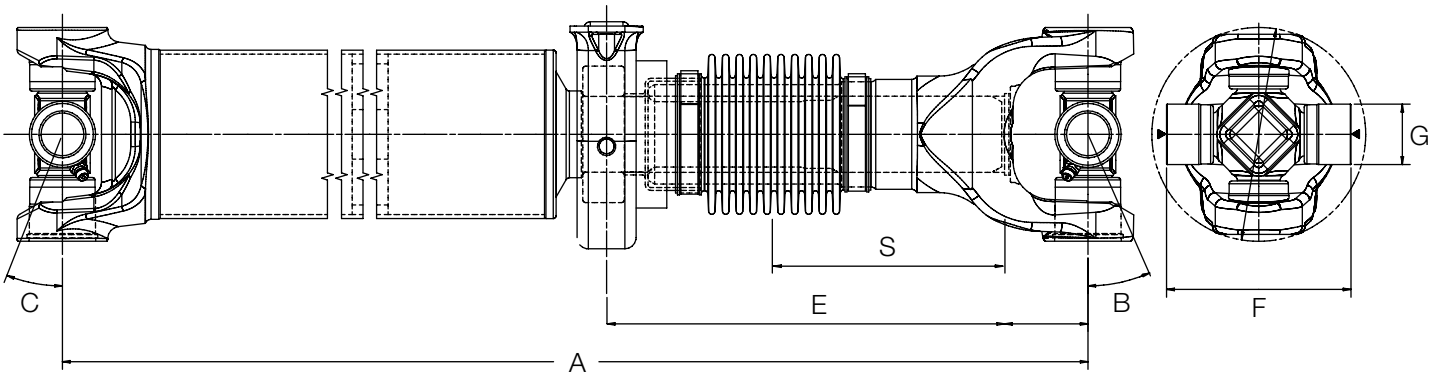
Driveshaft

Spicer Life® Series – Medium-Duty

Outboard Slip Coupling Shaft

Driveshaft Assembly Part Number	Minimum Length Collapsed Centerline to Centerline of Cross "A"		Slip Joint End			Tight Joint End					U-Joint Span "F"		Bearing Cup Diameter "G"	
			Slip "S"		Max. Angle "B"	Centerline of Bearing to Centerline of Slip Yoke Collapsed "E"		Tube Size		Max. Angle "C"				
	MM	IN	MM	IN		MM	IN	MM	IN		MM	IN	MM	IN
SPL-55 055CS55003	375	14.77	110	4.33	27°	254	9.84	88.9 x 2.11	3.50 x .083	21.5°	106	4.19	35	1.37
SPL-55XS 055CS55003G														
SPL-70 070CS55003	390	15.34	110	4.33	25°	260	10.25	88.9 x 2.41	3.50 x .095	26°	126	4.96	35	1.37
SPL-70XS 070CS55003G														
SPL-100 100CS55002	449	17.66	110	4.33	25°	273	10.75	101.6 x 2.41	4.00 x .095	25°	126	4.96	41	1.63
SPL-100XS 100CS55002G														

For additional configurations, contact Spicer Driveshaft Engineering for specific application information.



Driveshaft

Lubrication Intervals – Heavy- and Medium-Duty

Spicer® Driveshaft Lubrication Intervals*

Series	City	On-Hwy	Linehaul	On/Off-Hwy
Spicer® 10-Series™ (1480 thru 1810 & SPL-90) Slip members also require lubrication.	5,000/8,000 milesles (8,000/12,800 km) or 3 months (whichever comes first)	10,000/15,000 miles (16,000/24,000 km) or 3 months (whichever comes first)	10,000/15,000 miles (16,000/24,000 km) or 3 months (whichever comes first)	5,000/8,000 miles (8,000/12,800 km) or 3 months (whichever comes first)
Spicer Life Series®– Medium-Duty (SPL-55, 70 & 100) Slip members are booted and permanently lubricated.	25,000 miles (40,000 km) or 6 months (whichever comes first)	25,000 miles (40,000 km) or 6 months (whichever comes first)	25,000 miles (40,000 km) or 6 months (whichever comes first)	25,000 miles (40,000 km) or 6 months (whichever comes first)
Spicer Life Series®– Heavy-Duty (SPL-140) Standard Spicer Life Series U-joint. Slip members are booted and permanently lubricated.	25,000 miles (40,000 km) or 6 months (whichever comes first)	100,000 miles (160,000 km) or 6 months (whichever comes first)	100,000 miles (160,000 km) or 6 months (whichever comes first)	25,000 miles (40,000 km) or 6 months (whichever comes first)

Spicer Life XL® First Lubrication Cycle*

Spicer Life XL®– Heavy-Duty (SPL-170XL, & 250XL) Extended Lubrication U-joints. After initial miles (kilometers) or time is reached, the joints must be relubricated. Slip members are booted and permanently lubricated.	100,000 miles (160,000 km) or 1 year (whichever comes first)	350,000 miles (560,000 km) or 3 years (whichever comes first)	350,000 miles (560,000 km) or 3 years (whichever comes first)	100,000 miles (160,000 km) or 1 year (whichever comes first)

Spicer Life XL® Relubrication Cycle*

Spicer Life XL®– Heavy-Duty (SPL-170XL, & 250XL) Extended Lubrication U-joints. Once greased, this relubrication interval must be followed. Slip members are booted and permanently lubricated	25,000 miles (40,000 km) or 6 months (whichever comes first)	100,000 miles (160,000 km) or 6 months (whichever comes first)	100,000 miles (160,000 km) or 6 months (whichever comes first)	25,000 miles (40,000 km) or 6 months (whichever comes first)

***We recommend relubrication with Chevron Ultra-Duty EP-2 or a compatible lithium based grease meeting N.L.G.I. Grade 2 specifications with an operating range of +325°F/+163°C to -10°F/-23°C.**

NOTE: We recommend that all driveshafts be inspected for wear and damage every time the vehicle is serviced. This includes any scheduled and/or unscheduled maintenance that occurs within the driveshaft lube intervals.

City is defined as all applications that require a minimum of 90% of operation time within the city limits.

On-Highway is defined as all applications requiring less than 10% of operating time on gravel dirt or unpaved roads.

Linehaul is defined as 100% of operation time on smooth concrete or asphalt.

On/Off-Highway is defined as all applications operating primarily on paved roads, but requiring more than 10% of operating time on gravel, dirt or unpaved roads.

We recommend genuine Spicer®

Download the app that brings these innovative products to life!

Dana extras™

1. Download the Dana extras™ app to your mobile device.
2. Point your phone at the Spicer® component above.
3. See dynamic augmented reality 360° views, exploded views, watch installation videos, and more.

Download the FREE Dana extras™ app from the app store to get started.

EFFICIENCY THROUGH INNOVATION

Tire Management Systems

CTIS for Mobility

Dana is the world's leading supplier of enhanced mobility for government defense and vocational vehicles. With the press of a button from inside the cab, Spicer® Central Tire Inflation System (CTIS) maximizes vehicle mobility by adjusting tire pressure to provide the optimum footprint on any terrain. Whether in the field or at a construction site, Spicer CTIS promotes confidence on soft, sandy soil and other unpaved services.

Enhancing Vocational Vehicles

CTIS outperforms all-wheel drive (AWD) in soft soil applications. The performance enhancements are so great that Spicer CTIS can be used as an alternative to AWD for the majority of vocational truck applications. When used as an alternative to AWD, CTIS delivers reduced life cycle costs, as well as:

- Increased payload by eliminating 450 kg of weight
- Reduced vehicle height by 30 to 35 cm and improved stability
- Reduced overall vehicle cost, complexity, and required maintenance
- Available from all truck manufacturers for a wide range of heavy truck models and configurations
- Works with steer, drive, and trailer axles

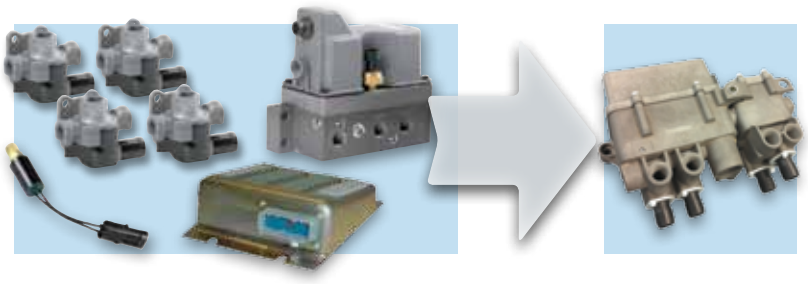
Enhancing Government Defense Vehicles

Reliability and performance are the most critical features in military applications. CTIS has been shown to significantly enhance the performance of AWD, maximizing mobility and delivering benefits, such as:

- Complete mobility optimization
- Limp home feature avoids disabling vehicle on the battlefield or other severe applications when most major tire leaks are encountered
- Wheel valves are sealed from environmental contamination
- Remote wheel-end venting for most demanding applications

New Mechatronic Control Unit (MCU) Option

Dana offers the Mechatronic Control Unit (MCU) as an option to meet the requirements of lower flow applications. The integrated system has a smaller footprint with reduced weight and less wiring complexity that allows for individual wheel control when needed. The MCU design integrates electronic, computer, and mechanical engineering into one package to bring about weight reduction and improved reliability.

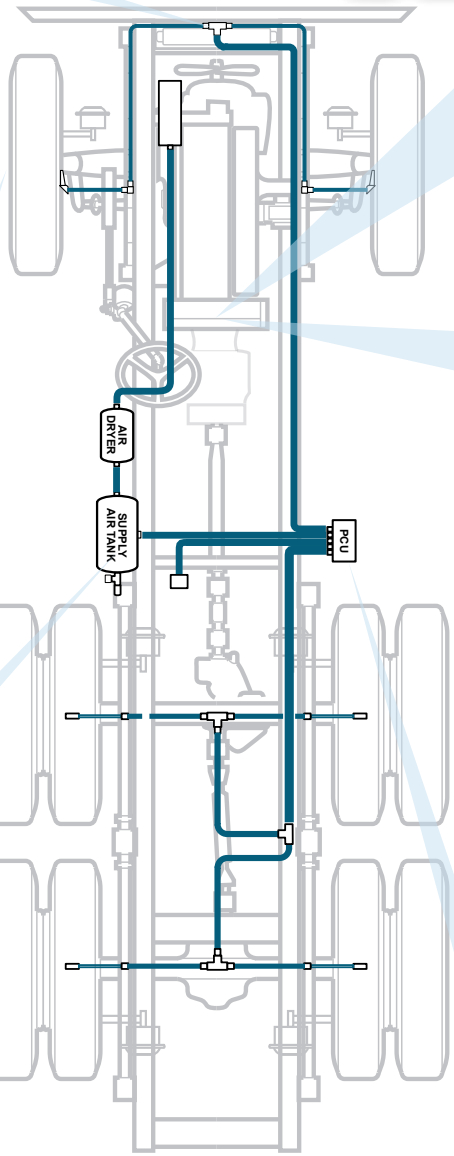


Tire Pressure Management Systems

Quick Release Valves
- Serve as a remote air exhaust port
- Can be fitted with an external hose to allow venting above deep-water fording levels

Wheel Valves
- Normally closed design isolates tires in the event of tire puncture or hose failure
- Prevents tire pressure leak-down automatically when parked
- No need for separate shut-off valves
- Available options allow for integration into aluminum wheels, eliminating the need for external hoses

Pressure Switch
- Monitors pressure of vehicle's supply air tank
- Provides air system priority to brakes, which suspends CTIS operation in the event of low truck air system pressure



Integrated Control Switch/ Driver Display Module (DDM)
- Compact rocker switches and DDM provide operator interface and are designed for instrument panel mounting
- Supports three terrain and two load selections
- Built-in diagnostic messaging
- Comes with a remote mounted ECU

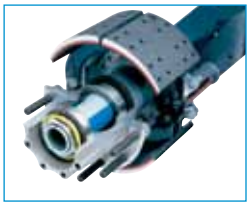
Electronic Control Unit (ECU) Option
- Microprocessor-based control center receives driver input from the DDM
- Option to communicate to the drive-train to optimize vehicle performance
- Supports industry standard diagnostic tools
- Provides operator selections for terrain and can be configured to optimize tire pressures based on axle loads
- Has ability to adjust engine speed, transmission shifting, ABS, and axle differential locks
- J1587 and J1939 data link compatible
- Built-in self diagnostics
- Field programmable

Pneumatic Control Unit (PCU)
- Solenoid-controlled manifold receives electrical commands from the Electronic Control Unit (ECU)
- Controls wheel valves to inflate, deflate, or measure tire pressures by wheel position or axle groups
- Pressurizes the system only during inflate/deflate cycles, extending air seal life

Wheel-End Systems

Eliminate Wheel Bearing Adjustment, Extend Seal Life, and Lower Life Cycle Costs at Every Wheel End with Spicer® LMS® (Low Maintenance System)

Spicer® LMS® Hub



- The Spicer LMS hub design controls bearing adjustment and eliminates installation variables that cause excessive end play leading to premature wheel seal failures
- LMS hubs extend seal life because they are built to install precisely without manual adjustment

Spicer® LMSi™ Hub

LMSi is a premium hub system combining Dana's industry leading low maintenance technology with new even lower maintenance features to save customers more time and money over the life of their vehicles.

- Standard magnetic fill plug for reduced wheel-end contaminants
- Robust aluminum design reduces weight by 20 lbs. (steel designs optional)
- Premium spacer design for improved oil flow and elimination of cone spinning
- Patented integrated nut system enables even easier assembly and disassembly through a self-extracting method
- Best-in-class seal technology provides reduced friction and optimum efficiency
- Eco-friendly performance and enhanced shop safety through controlled installation and removal of the hub
- LMS hubs combine premium seal technology to provide a wheel-end system that extends life and reduces the need for wheel-end maintenance for on-highway vehicles
- Available for drive and steer axles

Spicer® LMS® Hubcap and Vent

- New Spicer LMS hubcaps reduce and simplify maintenance, prevent contamination, and ensure the longevity of wheel-end components
- The new Spicer LMS hubcaps are lighter and stronger than aluminum hubcaps
- The vent offers a patented contaminant exclusion system through a high-precision, multi-labyrinth design. Proven to prevent water ingestion from both high-pressure washer sprays and wheel-end submersion

Blue Vent
For Spicer steer and trailer LMS hub systems only.

Black Vent
For non-LMS industry conventional adjusted steer and trailer axle wheel ends.

Wheel-End

Lubrication Intervals

Spicer® Drive Axle Wheel-End Lubrication Intervals

Product	Lubricant Type	SAE	Linehaul	On/Off-Hwy
Drive Axle LMS	Synthetic*	75W-90	500,000 miles (800,000 km) or 5 years (whichever comes first)	120,000 miles (193,000 km) or 2 years (whichever comes first)
Drive Axle (Adjusted)	Synthetic	75W-90, 75W-140	250,000 miles (400,000 km) or 3 years (whichever comes first)	60,000 miles (96,500 km) or 1 year (whichever comes first)
Drive Axle (Adjusted)	Mineral Base	75W, 75W-90, 75W-140, 80W-90, 85W-140	120,000 miles (193,000 km) or 1 year (whichever comes first)	60,000 miles (96,500 km) or 1 year (whichever comes first)

Spicer® Steer Axle Wheel-End Lubrication Intervals

Steer Axle Oil Bath LMS	Synthetic*	75W-90	500,000 miles (800,000 km) or 5 years (whichever comes first)	120,000 miles (193,000 km) or 2 years (whichever comes first)
Steer Axle Oil Bath (Adjusted)	Synthetic	75W-140, 50	120,000 miles (193,000 km) or 1 year (whichever comes first)	60,000 miles (96,500 km) or 1 year (whichever comes first)
Steer Axle Oil Bath (Adjusted)	Mineral Base	75W, 75W-90, 75W-140, 80W-90, 85W-140	120,000 miles (193,000 km) or 1 year (whichever comes first)	60,000 miles (96,500 km) or 1 year (whichever comes first)
Steer Axle Semi Fluid (Adjusted)	Semi-fluid Synthetic Grease	Delo SF, Mobil SHC 007**	120,000 miles (193,000 km) or 1 year (whichever comes first)	60,000 miles (96,500 km) or 1 year (whichever comes first)
Steer Axle Grease Pack (Adjusted)	Heavy-Duty Multipurpose Lithium Based***	#2 Grade	120,000 miles (193,000 km) or 1 year (whichever comes first)	60,000 miles (96,500 km) or 1 year (whichever comes first)

*Only approved lubricant for LMS wheel ends.
**Use of this grease requires a signed waiver from the customer.
***Do not mix with sodium base grease.

We recommend genuine Spicer®

Wheel-End

Lubrication Intervals

Spicer® Trailer Axle Wheel-End Lubrication Intervals

Product	Lubricant Type	SAE	Linehaul	On/Off-Hwy
Trailer Axle Oil Bath LMS	Synthetic***	75W-90	500,000 miles (800,000 km) or 5 years (whichever comes first)	120,000 miles (193,000 km) or 2 years (whichever comes first)
Trailer Axle Oil Bath (Adjusted)	Synthetic	75W-140, 50	120,000 miles (193,000 km) or 1 year (whichever comes first)	60,000 miles (96,500 km) or 1 year (whichever comes first)
Trailer Axle Oil Bath LMS	Mineral Base	75W, 75W-90, 75W-140	120,000 miles (193,000 km) or 1 year (whichever comes first)	60,000 miles (96,500 km) or 1 year (whichever comes first)
Trailer Axle Grease LMS	Heavy-Duty Multipurpose Lithium Based**	#2 Grade	120,000 miles (193,000 km) or 1 year (whichever comes first)	60,000 miles (96,500 km) or 1 year (whichever comes first)
Trailer Axle Grease (Adjusted)	Heavy-Duty Multipurpose Lithium Based**	#2 Grade	120,000 miles (193,000 km) or 1 year (whichever comes first)	60,000 miles (96,500 km) or 1 year (whichever comes first)
Trailer Axle Semi-fluid LMS	Semi-fluid Synthetic Grease	Chevron Delo SF***	500,000 miles (800,000 km) or 5 years (whichever comes first)	120,000 miles (193,000 km) or 2 years (whichever comes first)
Trailer Axle Semi-fluid LMS	Semi-fluid Synthetic Grease	Mobil SHC 007*	120,000 miles (193,000 km) or 1 year (whichever comes first)	60,000 miles (96,500 km) or 1 year (whichever comes first)
Trailer Axle Semi-fluid (Adjusted)	Semi-fluid Synthetic Grease	Delo SF, Mobil SHC 007*	120,000 miles (193,000 km) or 1 year (whichever comes first)	60,000 miles (96,500 km) or 1 year (whichever comes first)

*Use of this grease requires a signed waiver from the customer.
**Do not mix with sodium base grease.
***Specified by MGM-113 as only approved lubricants for LMS trailer axles.

We recommend genuine Spicer®

Notes

Service & Support

Online Support

Dana Support 24 Hours a Day on www.dana.com/cv

Our site is your "virtual" Dana support vehicle. Whether you are a truck maker, dealer, distributor, owner or driver, you can find instant answers when you need them most.

On www.dana.com/cv you can quickly and conveniently find:

- The Latest Service Updates
- The Dana Literature Library
- Approved Dana Lubricants
- Warranty Information

Information at Your Fingertips

Bookmark www.dana.com/cv to your web browser today. This will help you quickly access our comprehensive website containing valuable service material whenever you need it.

You can also sign up for the free Dana e-newsletter.
You'll receive automatic Dana drivetrain updates to keep you in the know with money saving and money making news.

Get Direct Access

Our Dana extras™ app helps you access the latest Dana product information and technologies, including 360° product views. Point your smartphone to any brochure or spec sheet and watch it come alive.

- 360° product views
- See internal elements
- Watch demos

Training

Our expert and onsite drivetrain consultants are the most experienced in the business. We're here to help you with any of your drivetrain needs.

Aftermarket

Our support team helps keep your vehicles running like new with aftermarket support. We can offer a wide range of solutions to fit your needs, from genuine to value-added replacement parts.

Specs & More

From detailed product information to unparalleled customer support, www.dana.com/cv has everything you need for your business.

EXPERT SUPPORT
- Dedicated call center
- Dedicated applications and engineering contacts
- Localized inventory for truck down support
- Training resources
- Detailed product analysis

24-HOUR AVAILABILITY
- Online access to technical and product literature
- Electronic application approval requests
- Anytime access to digital product tutorials

WARRANTY SUPPORT
- Strong coverage
- Equitable repair times
- Extended protection plan service
- Dana real-time warranty process

TECHNOLOGY LEADERS
- Direct access to the world leader in drivetrain technology
- Award-winning technologies
- Next generation support tools

Service & Support

Warranty Requirements

Warranty

From the instant you develop drivetrain specifications, the Dana team provides easy-to-understand warranty coverage based on the vehicle's intended use. Which means fairer and faster warranty administration.

Matching Coverage to Use

Dana plans set the standard for the most comprehensive drivetrain warranty coverage in the trucking industry. The Dana Warranty Manual gives a comprehensive look at what drives Dana Warranty Coverage for the U.S. and Canada. By matching the vehicle type to the job to be performed, the Dana Warranty Guide accurately and fairly aligns warranty coverage.

Warranty Claim Procedures and Guidelines

Filing a warranty claim can be a confusing process that often times leads to reduced or rejected claims if some or all of the requirements are not met. To receive your maximum reimbursement in a timely manner be sure to read through the Claim Procedures section of the Warranty Manual before you begin the warranty claim process.

Dana Real-Time Warranty

The Dana Real-Time Warranty System saves time for more than 800 dealers in the U.S. and Canada with over-the-phone warranty claim approval and online claim status tracking.
https://www.warranty.dana.com

Dana Support System

The Dana Call Center plays a major role in the support of Dana products. The Call Center is made up of two different teams: the General Tech Team and the Real-Time Warranty Team.

You can reach a Call Center Representative from anywhere in North America by dialing 1-877-777-5360.

Extended Protection Plans

Expanded Lineup of Extended Protection Plan Offerings from Dana

Keeping your truck on the road is critical to your livelihood. Dana Extended Protection Plans give you peace of mind knowing that, despite increasing parts and labor costs, or how severe the work conditions are, you can repair your truck to its original standard of quality.

Dana offers Extended Protection Plans for axles, and 100% of parts and labor on all warrantable failures. For a relatively modest investment, you can rest easy, knowing that Dana is there to support you throughout the life of your truck. You choose the protection that meets your needs.

Packages

Full coverage is provided for all Spicer® heavy- and medium-duty drive axles.

EPP - Steer Axles (PDF)

EPP - Drive Axles (PDF)

All Vocations – Extended Protection Plans cover all drivetrain components, regardless of the severity of use in your industry, including logging and mining vehicles.

Single Year Coverage Available – Dana Extended Protection Plans may be purchased for as little as a single year, so you do not have to purchase coverage for longer than you expect to own your vehicle.

Warranty Coverage for U.S. and Canada Only

Please contact your Dana Representative for additional information @ 1-877-777-5360.

Benefits

Full Warranty Protection
Full parts and labor on warrantable failures.

Service Available at All OEM Dealer Facilities
With our Extended Protection Plans, you are never far from parts and service, with over 3,500 dealers in the U.S. and Canada.

Genuine Parts
All replacement parts will be genuine Dana parts, so you know your repaired vehicle will have the same outstanding quality it had when it was first purchased.

Simple Payment Options
You can purchase a Dana Extended Protection Plan by rolling it into the financing of your new vehicle, or simply fill out the online registration form and pay by check. Peace of mind has never been easier to obtain.

Protection from Cost Inflation
Your Extended Protection Plan covers all repairs to your vehicle's drivetrain, regardless of increases in parts or labor that are certain to occur over time. One simple payment now can save you substantial repair charges in the future.

Enhanced Resale Value
Repairing your vehicle with genuine Dana parts increases its resale value. Plus, your extended warranty coverage is transferable, further enhancing your resale value.

DANA

SPICER®
Drivetrain Products

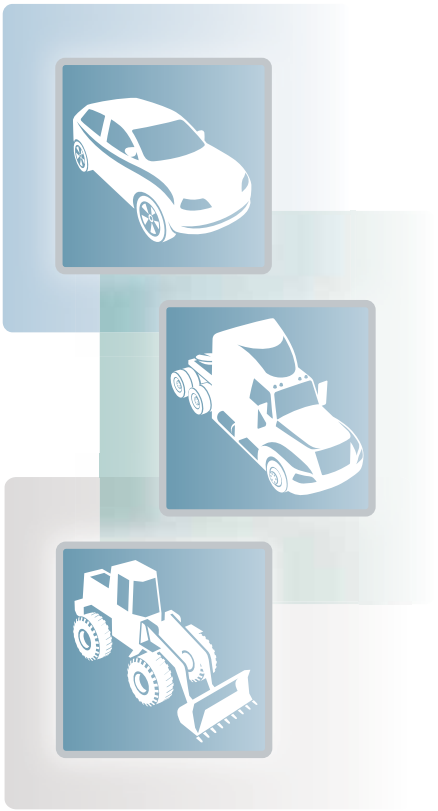
Axles
Driveshafts
Off-Highway Transmissions

VICTOR REINZ®
Sealing Products

Gaskets and Seals
Cylinder-Head Cover Modules
Thermal-Acoustic Protective Shielding

LONG®
Thermal Products

Transmission Oil Coolers
Engine Oil Coolers
Battery Coolers



About Dana Holding Corporation

Dana is a world-leading supplier of driveline, sealing, and thermal-management technologies that improve the efficiency and performance of passenger, commercial, and off-highway vehicles with both conventional and alternative-energy powertrains.

Our global network of engineering, manufacturing, and distribution facilities provides original-equipment and aftermarket customers with local product and service support. Founded in 1904, we employ thousands of people across five continents.

About Dana Commercial Vehicle Systems

Dana serves commercial-vehicle customers worldwide with over 40 facilities and five technical centers in 11 countries that design, market, and manufacture complete systems for medium and heavy-duty trucks.

We continuously illustrate our commitment to the commercial-vehicle industry by introducing new products with enhanced, award-winning technologies, including Spicer® axles, driveshafts, and tire management solutions; Victor Reinz® sealing systems; and Long® thermal-management products.

We back our offerings with world-class after-sales support and genuine service parts manufactured to the same high standards as original-equipment products to maximize the return on investment for your commercial vehicle.

For spec'ing or service assistance, call 1-877-777-5360 or visit our website at www.dana.com/cv

Dana Commercial Vehicle Driveline Technologies
3939 Technology Drive
Maumee, Ohio, USA 43537
www.dana.com/cv

DANA SERVICE AND SUPPORT · DEDICATED EXPERTS

DANA **SPICER®**
Drivetrain Products

CONSPEC32013 Printed in USA