

Material-Handling Vehicles

Innovative Drivetrain Solutions

Axles | Driveshafts | Transmissions and Controls | Complete Systems | Hybrid Solutions



SPICER®

Off-Highway Systems



Construction



Agriculture



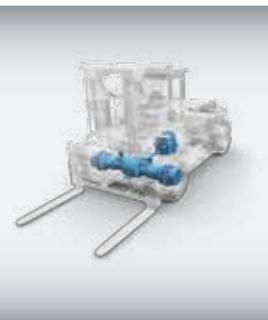
Mining



Forestry



Material Handling



Drivetrain Systems Dana develops innovative Spicer® drivetrain systems that enhance the productivity and efficiency of a wide variety of material-handling vehicles, including teleboom handlers, rough terrain cranes, forklift trucks, reach stackers, and more. As an industry leader for more than 60 years, we precision engineer each product to meet customer preferences, regional needs, and required duty cycles – all to lower operating costs and vehicle emissions while providing ultimate reliability. Even if your requirement is for individual components, we can tailor our designs to fit existing packaging requirements.

Dana brings durable system solutions for material-handling vehicles that perform under any working condition. Our products allow operators to expertly maneuver vehicles with more precision, while enhancing comfort.

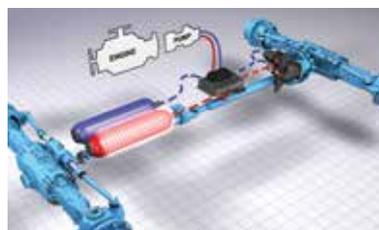
Spicer® Transmissions

Dana offers a complete suite of powershift transmissions designed for a wide range of applications used in both developed and emerging markets. With primary, value, premium, and hybrid-enabled packages, we can tailor our transmissions to meet your cost, fuel efficiency, and productivity goals. Each option comes with specific product features to upgrade your vehicle to the desired level, including additional gear speeds, freewheel, lock-up, and a high-efficiency, cast-aluminum torque converter.

Spicer® PowerBoost® Hydraulic-Hybrid System

The Spicer PowerBoost hydraulic-hybrid system is an innovative

powertrain concept for material-handling vehicles that captures wasted kinetic energy from the drivetrain and uses it to help power the vehicle. As an adaptable, scalable, modular design, this



Spicer® PowerBoost® system is the latest advancement in energy management.

advanced energy management system fits into existing vehicle designs and supports all transmission architectures to deliver optimal fuel economy.

Spicer® Axles

Spicer axles deliver maximum performance and offer easy, low-cost service. Furthermore, the full line features maintenance-free brakes and high-integrity sealing with several other custom options.

These planetary axles are available in both rigid and steer versions with a lightweight yet durable design.

Spicer® Driveshafts

Spicer driveshafts provide more power, greater efficiency, lower maintenance, and better overall performance. We offer the most extensive line of products available, including a wide variety of end-fittings, with both round and wing bearing universal joint options.

Dana Rexroth – HVT Transmissions

Targeted for use on large reach stackers, lift trucks, and other off-highway applications, the advanced HVT systems developed by Dana Rexroth meet the need for improved fuel economy, productivity, emissions, and maneuverability.



Four-Tier Strategy for Powershift Transmissions:

We will tailor our transmissions to meet customer preferences and regional requirements through various package options that allow lower ownership and operating costs.

Primary Tier

Basic functionality, simple to maintain and service at an economical cost.

Value Tier

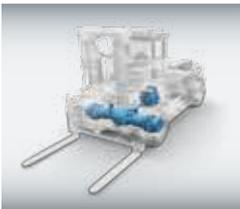
Enhanced productivity with ergonomic and operator control functionality.

Premium Tier

Optimized efficiencies for high-performance applications.

Premium Tier HYBRID-ENABLED

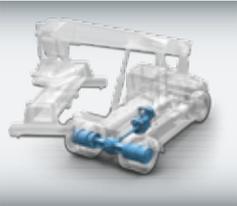
Easy integration for energy recovery/management solution.



Forklift Truck

LIFT CAPACITY	TRANSMISSIONS	AXLES	DRIVESHAFTS
4–5.5 Metric Tons	Please Inquire	 137	 5C Wing Series*
6–10 Metric Tons	 T08/TE08	 138  139	 5C/6C Wing Series*  7C Wing Series*
9–16 Metric Tons	 TE10  T24000	Please Inquire	 6C Wing Series*  7C Wing Series*  1480/1550 10 Series*
16–32 Metric Tons	 TE14  T32000	Please Inquire	 7C Wing Series*  8.5C Wing Series*  9C Wing Series*  1550/1710 10 Series*
28–35 Metric Tons	 TE17	Please Inquire	 7C Wing Series*  8.5C Wing Series*  9C Wing Series*  1550/1710 10 Series*
32–50 Metric Tons	 TE30  T36000  T40000  HVT R2 	Please Inquire	 7C Wing Series*  8.5C Wing Series*  9C Wing Series*  1550/1710 10 Series*

*Other driveshaft series and end-fitting designs available.



Reach Stacker

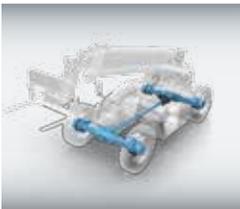
LIFT CAPACITY	TRANSMISSIONS	AXLES	DRIVESHAFTS
36–45 Metric Tons	 TE30  <small>Dana Rexroth Transmission Systems</small> HVT R2	Please Inquire	 9C Wing Series*



Crane

LIFT CAPACITY	TRANSMISSIONS	AXLES	DRIVESHAFTS
Up to 23 Metric Tons	 T12000	 223  213	 5C/6C Wing Series*
Up to 41 Metric Tons	 T20000/T24600	Please Inquire	 5C/6C Wing Series*
41–68 Metric Tons	 T/RT32000 + C330	Please Inquire	 7C Wing Series*  8.5C Wing Series*
68–82 Metric Tons	 R32000 + C5000	Please Inquire	 7C Wing Series*  8.5C Wing Series*
86+ Metric Tons	 T36000	Please Inquire	 8.5C Wing Series*  9C Wing Series*

*Other driveshaft series and end-fitting designs available.



Teleboom Handler

LIFT CAPACITY (lbs. *1,000)	TRANSMISSIONS	AXLES	DRIVESHAFTS
4-5K	 311  T12000/ VDT12000	 211	 4C/5C/6C Wing Series*  1410/1480/1550 10 Series*
6-7K	 311  357  367  318  T12000/ VDT12000	 212	 4C/5C/6C Wing Series*  1410/1480/1550 10 Series*
7-8K	 311  357  367  318  T12000/ VDT12000	 212	 4C/5C/6C Wing Series*  1410/1480/1550 10 Series*
9-10K	 311  318  360  367  T13000/ VDT13000  T20000	 223	 5C/6C Wing Series*  1480/1550 10 Series*
11-12K	 319  360  T13000/ VDT13000  T20000	 213	 5C/6C Wing Series*  1480/1550 10 Series*

*Other driveshaft series and end-fitting designs available.

AXLES

Product	Dynamic Load (Kg)	Maximum Output Torque (Nm)	Planetary Ratio	Ratio Range	Input Speed (RPM)	Flange to Flange (mm)	OHBCD (mm)
123	12,000	58,000	6	From 14 up to 25	4,000	From 1,660 up to 1,920	335
113	15,000	65,000	6	From 15 up to 25	4,000	From 1,080 up to 2,050	425
114	20,000	110,000	6	From 20 up to 22	4,000	From 1,920 up to 2,180	425
14D2149	18,160	67,800	4.941	From 19 up to 31	4,000	From 1,155 up to 2,514	511
16D2149	19,068	111,600	4.941	From 23 up to 31	4,000	From 1,472 up to 2,768	511
36S	PLEASE INQUIRE	PLEASE INQUIRE	PLEASE INQUIRE	PLEASE INQUIRE	PLEASE INQUIRE	PLEASE INQUIRE	PLEASE INQUIRE
37R-FL	PLEASE INQUIRE	PLEASE INQUIRE	PLEASE INQUIRE	PLEASE INQUIRE	PLEASE INQUIRE	PLEASE INQUIRE	PLEASE INQUIRE
42S	PLEASE INQUIRE	PLEASE INQUIRE	PLEASE INQUIRE	PLEASE INQUIRE	PLEASE INQUIRE	PLEASE INQUIRE	PLEASE INQUIRE
137	9000/12000	1500	6	12.24-26.25	3500	1015-1300	275
138	5600/6100	1420	6	12.86-16.91	3500	1118-1553	335/275
139	20500/21500	2700	6	12.86-16.91	3500	1118-1710	335/275
213	15,000	65,000	6	From 15 up to 22	4,000	From 2,050 up to 2,310	335
212	7,000	38,000	4, 2 or 6	From 10 up to 26	4,000	From 1,660 up to 2,180	275 or 335
211	5,500	20,000	4, 2 or 6	From 10 up to 26	4,000	From 1,270 up to 1,920	205 or 275
223	12,000	58,000	6	From 14 up to 22	4,000	From 2,050 up to 2,180	335

POWERSHIFT TRANSMISSIONS

Product	Power Range	Speed Number	Vertical Drop	Installation	Input Speed (RPM)	Disconnect	Parking Brake	ECU
T20000	Up to 100 Kw	2 or 3 or 6	IL-ID-LD	HR-MHR-R	3,100	YES	YES	OPTIONAL
T24000	Up to 120 Kw	3 or 4 or 6	SD-LD	HR-MHR-R	3,100	YES	YES	OPTIONAL
32000	Up to 170 Kw	3 or 4 or 6	SD-LD	HR-MHR-R	3,100	YES	YES	OPTIONAL
T36000	Up to 240 Kw	3 or 4 or 6	SD-LD	HR-MHR-R	2,800	YES	YES	OPTIONAL
TE14	140 to 190 Kw	3 or 4	SD LD	HR MHR	2800	YES	YES (Disc caliper)	YES
TE17	Up to 215 Kw	3	SD	HR	2800	YES	YES	YES
TE30	Up to 320 Kw	4	SD-LD	H-MT	2,550	—	YES	YES
6000*	Up to 300 Kw	4	LD	R	2,800	YES	NO	OPTIONAL
8000*	Up to 400 Kw	4 or 8	LD	R	2,800	YES	NO	OPTIONAL

*For use in tow tractor applications. Not recommended for use in forklift trucks or cranes.

HYDROMECHANICAL VARIABLE TRANSMISSION

Product	Speed Number	Maximum Ratio	Shifting	Input Speed (RPM)	ECU
HVT R2	CVT	1.8	CVT	1,800	YES

SPICER® WING SERIES® DRIVESHAFTS

Driveshaft	Functional Torque Limit		Swing Diameter	
	Nm	ft-lb	mm	in
4C	3,300	2,434.1	116.0	4.570
5C	5,600	4,180.3	123.0	4.840
6C	7,200	5,310.0	150.0	5.910
7C	10,700	7,892.0	158.0	6.220
8C	15,500	11,432.0	216.0	8.500
8.5C	20,300	14,972.0	175.0	6.890
9C	27,400	20,206.0	223.0	8.730

SPICER® 10 SERIES DRIVESHAFTS

Driveshaft	Functional Torque Limit		Swing Diameter	
	Nm	ft-lb	mm	in
1410	3,795	2,800	125.5	4.941
1480	4,745	3,500	134.9	5.311
1550	6,180	4,560	152.4	6.000
1610	Use Spicer Life Series® (SPL® 100)			
1710	13,800	10,200	190.5	7.500
1880	Use Spicer® Wing Series® (9C and above) Use Spicer® Compact™ (2060 or 2065) Use Spicer Life Series® (SPL350)			

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



SPICER®

Drivetrain Products

Axles
Driveshafts
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 an integral partner for virtually every major vehicle and engine manufacturer worldwide. We are a leading supplier of drivetrain, sealing, and thermal technologies to the global automotive, commercial-vehicle, and off-highway markets. Founded in 1904, we employ thousands of people across five continents.

About Dana Off-Highway Driveline Technologies

Dana Off-Highway Driveline Technologies includes research and development, manufacturing, and assembly operations in Belgium, Brazil, China, Hungary, India, Italy, Mexico, the United Kingdom, and the United States. We design, manufacture, assemble, and market Spicer® axles and transaxles, driveshafts and end-fittings, transmissions, torque converters, electronic controls, and brakes. We also provide genuine replacement parts and service.

Dana Off-Highway Driveline Technologies serves more than 1,000 vehicle assembly and manufacturing facilities in 30 countries. Construction, agriculture, forestry, underground mining, material handling, outdoor power, leisure/utility vehicles, and industrial equipment are just some of the markets that demand the quality found in Spicer products and genuine service parts.

dana.com/oh/contact



SPICER®

Off-Highway Systems

Application Policy

Capacity ratings, features, and specifications vary depending upon the model and type of service. Application approvals must be obtained from Dana; contact your representative for application approval. We reserve the right to change or modify our product specifications, configurations, or dimensions at any time without notice.