

Off-Highway Systems

Transmissions, Axles, Torque Converters,
Electronic Controls, and Driveshafts



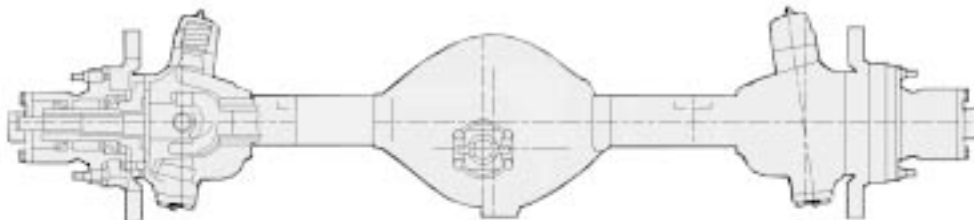
SPICER

TABLE OF CONTENTS

SINGLE REDUCTION AND NON-DRIVE AXLES	2
Steering Drive	2
Rigid Drive	2
Steering Non-Drive	3
INDEPENDENT CARRIERS	3
GENERIC PLANETARY AXLE MODEL NUMBER NOMENCLATURE	4
PLANETARY AGRICULTURAL AXLES	4
AGRICULTURAL TRANSMISSIONS	5
PORTAL AXLES	6
2WD ADJUSTABLE AXLES	6
INDUSTRIAL PLANETARY AXLES	7
Planetary Rigid	7
Planetary Steer	8
BOGIE AXLES	9
TRANSFER CASES (OFF-HIGHWAY)	10
POWERSHIFT TRANSMISSIONS	11
HYDROSTATIC POWERSHIFT TRANSMISSIONS	17
TORQUE CONVERTERS	18
ELECTRONIC SHIFT CONTROLS	18
DRIVESHAFTS	19
Spicer Ayra-Cardan™	19
Spicer 10 Series™	20
Spicer Italcardano™	21
Spicer Life Series®	22
Spicer Compact 2000™	23

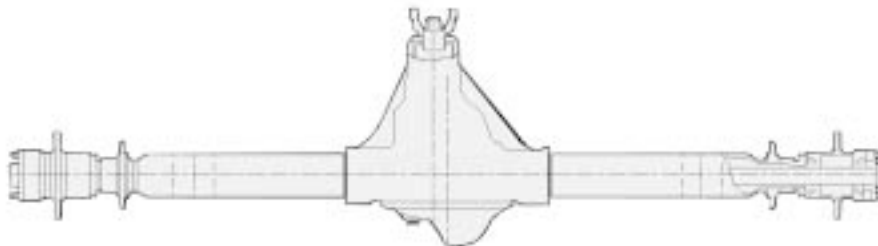
SINGLE REDUCTION AND NON-DRIVE AXLES

STEERING DRIVE Model 70BF Shown



MODEL	NOMINAL G.A.W. RATING	AVAILABLE RATIO RANGE (OVERALL)	TYPICAL TRACK WIDTH	STANDARD WHEEL MOUNTING BOLT CIRCLE	BRAKES TYPE AND SIZE	DIFF RING GEAR DIAMETER
44-F	3,300 Lbs 1,500 Kg	3.540 to 5.890	40.0" to 70.0" 1016 mm to 1778 mm	5 on 5.50" / 139.7 mm or 8 on 6.50" / 165.1 mm	Disc 11.72" Dia. (5-Bolt) Disc 12.50" Dia. (8-bolt)	8.500" / 216 mm
60-F	4,300 Lbs 1,950 Kg	3.540 to 7.170	44.7" to 74.0" 1135 mm to 1880 mm	8 on 6.50" / 165.1 mm	Disc 12.88" Dia	9.750" / 248 mm
70BF	5,700 lbs 2,580 Kg	4.100 to 6.170	51.1" to 84.0" 1298 mm to 2135.6 mm	8 on 6.50" / 165.1 mm	Disc 12.88" Dia.	10.500" / 267 mm

RIGID DRIVE Model 70HD Shown



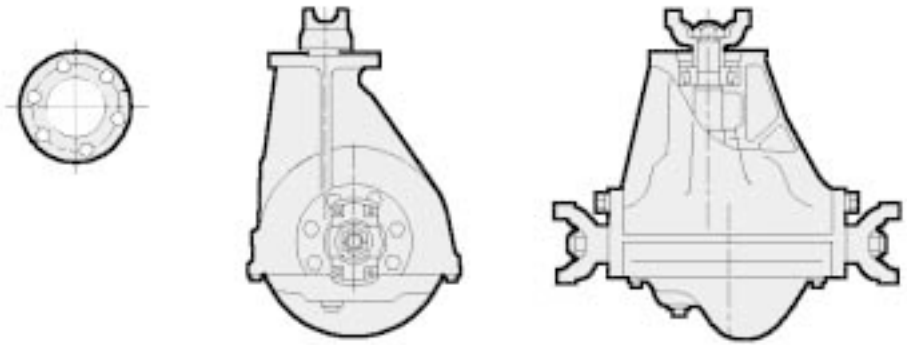
MODEL	NOMINAL G.A.W. RATING	AVAILABLE RATIO RANGE (OVERALL)	TYPICAL TRACK WIDTH	STANDARD WHEEL MOUNTING BOLT CIRCLE	BRAKES TYPE AND SIZE	DIFF RING GEAR DIAMETER
44-SF	3,300 Lbs 1,500 Kg	3.070 to 5.890	32.0" / 813 mm to 68.0" / 1727 mm	5 on 5.50" / 140 mm	Hyd. Drum 11.00 X 2.25	8.500" / 216 mm
60-SF	4,200 Lbs 1,900 Kg	3.540 to 7.170	42.2" / 1072 mm to 58.2" / 1478 mm	5 on 5.00" / 127 mm	N/A	9.750" / 248 mm
60-FF	5,900 Lbs 2,700 Kg	3.540 to 7.170	42.0" / 1067 mm to 70.0" / 1778 mm	8 on 6.50" / 165.1 mm	Hyd. Drum 12.00 X 2.50	9.7500" / 248 mm
70-B	7,500 Lbs 3,400 Kg	3.540 to 7.170	60.0" / 1524 mm to 70.0" / 1778 mm	8 on 6.50" / 165.1 mm	Hyd. Drum 12.00 X 3.00	10.500" / 267 mm
70-HDOS	7,500 Lbs 3,400 Kg	9.730 to 19.720	54.8" / 1392 mm to 70.0" / 1778 mm	8 on 6.50" / 165.1 mm	Hyd. Disc 13.00" Dia.	10.500" / 267 mm
70-HD	10,000 Lbs 4,500 Kg	3.540 to 7.170	54.8" / 1392 mm 70.0" / 1778 mm	6 on 8.75" / 222.2 mm	Hyd. Disc 14.75" Dia.	10.500" / 267 mm
80	11,500 Lbs 5,200 Kg	3.310 to 5.130	60.0" / 1524 mm 70.0" / 1778 mm	6 on 8.75" / 222.2 mm	Hyd. Disc 14.75" Dia.	11.250" / 286 mm

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STEERING NON-DRIVE (Cont.)

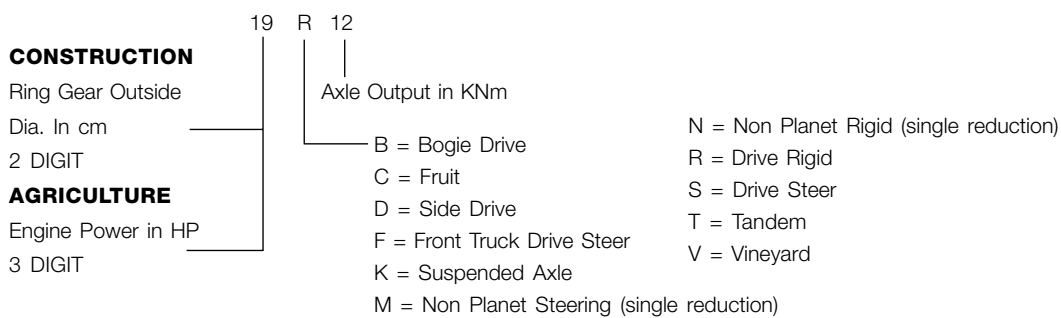
MODEL	NOMINAL G.A.W RATING	TYPICAL TRACK WIDTH	STANDARD WHEEL MOUNTING BOLT CIRCLE	BRAKES TYPE AND SIZE
44-DF	3,300Lbs 1,500 Kg	Variable	5 on 5.50" / 139.7 mm or 8 on 6.50" / 165.1 mm	Disc 11.720" Dia. (5-Bolt) Disc 12.500" Dia. (8-Bolt)
70-DF	5,700 Lbs 2,600 Kg	Variable	8 on 6.50" / 165.1 mm	Disc 12.88" Dia.

INDEPENDENT CARRIERS

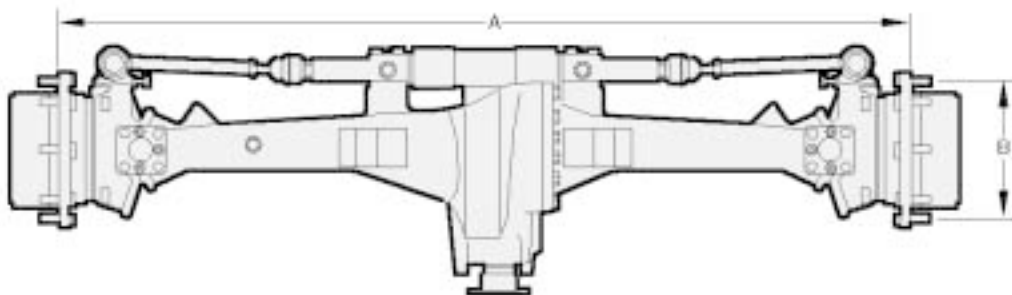


MODEL	AVAILABLE RATIO RANGE (OVERALL)	DIFF RING GEAR DIAMETER
44-IC	2.730 to 5.890	8.500" / 216 mm
70-IC	3.540 to 7.170	10.500" / 267 mm

GENERIC PLANETARY AXLE MODEL NUMBER NOMENCLATURE



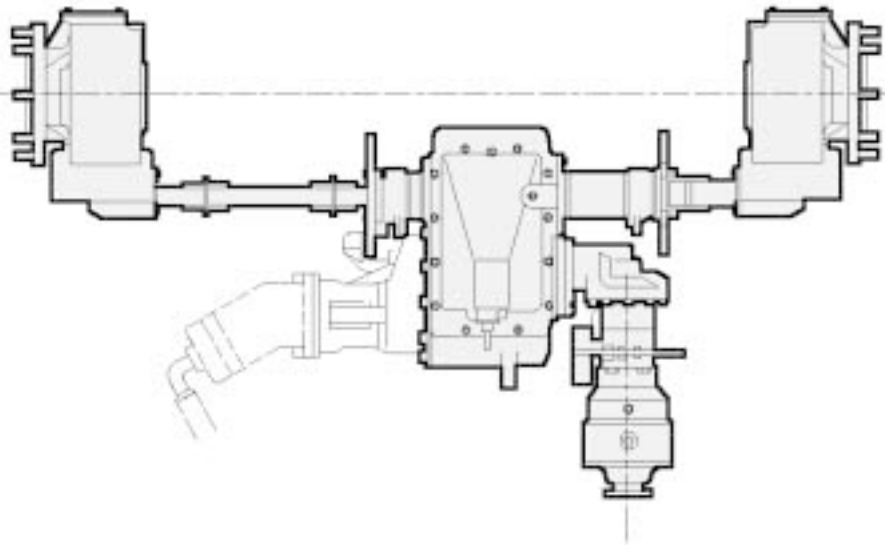
PLANETARY AGRICULTURAL AXLES



GENERIC MODEL	MODEL NUMBER DESIGNATION	ENGINE HP	MAX OUTPUT		AVAILABLE PLANETARY RATIO	RATIO RANGE (OVERALL)	STEER ANGLE	FLANGE TO FLANGE	BCD	BRAKES	SUSP. VERSION	MULTIDISC DIFF LOCK
			lbf-ft	N-m								
055S09	712	55	7,000	9,490	4.150	10 to 19	52°	1360 mm/54.540 In	275	No	No	No
095S18	715	95	13,250	17,970	4.250	11.07	52°	1450 mm/57.090 In	205	No	No	No
100S22	720	100	16,200	21,960	6.000	12 to 26	55°	1580 mm to 1760 mm 62.200 In to 69.290 In	275	Yes	Yes	Yes
120S28	730	120	20,650	27,960	6.000	11.7 to 26	55°	1669 mm to 1800 mm 65.690 In to 70.870 In	275	Yes	Yes	Yes
125S32	733	125	23,600	32,000	6.000	13 to 26	55°	1680 mm to 1800 mm 66.140 In to 70.870 In	275	Yes	Yes	Yes
135S38	735	135	28,000	37,960	6.000	11.7	52°	1860 mm/ 73.730 In	275	Yes	Yes	Yes
160S42	740	160	30,950	41,960	6.000	15.69	52°	1780 mm/70.080 In	335	Yes	Yes	Yes
180S42	745	180	30,950	41,960	6.000	13.6	52°	1780 mm/ 70.080 In	335	Yes	Yes	Yes
210S56	750	210	41,250	55,930	6.000	13 to 26	52°	1892 mm/74.490 In	335	Yes	Yes	Yes
250S62	755	250	45,700	61,960	6.000	13 to 26	52°	1892 mm/74,490 In	335	Yes	Yes	Yes
280S65	760	280	47,900	64,940	6.400	17.37	52°	1892 mm/74.490 In	425	No	Yes	Yes
310S72	770	310	53,050	71,930	7.070	17.44	52°	1892 mm/74.490 In	425	No	Yes	Yes

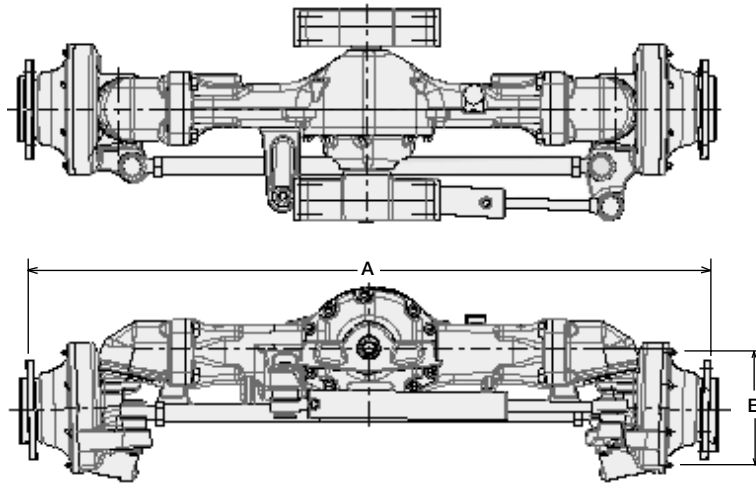
GENERIC MODEL	MODEL NUMBER DESIGNATION	ENGINE HP	MAX OUTPUT		AVAILABLE PLANETARY RATIO	RATIO RANGE (OVERALL)	STEER ANGLE	A		B	
			lbf-ft	N-m				In	mm	In	mm
230K50	70AG(SUSP)	230	36,200	49,080	5.250	21.530	55°	74.090	1882	13.190	335
300K60	70AG-HD(SUSP)	300	43,425	58,880	5.780	21.540	55°	74.090	1882	16.730	425
230S50	70AG	230	36,200	49,080	5.250	21.530	55°	74.090	1882	13.090	325
300S60	70AG-HD	300	43,425	58,880	5.780	21.540	55°	74.090	1882	16.730	425

AGRICULTURAL TRANSMISSIONS



MODEL	SPEED	RATIO	DIFFERENTIAL	MAX INPUT RPM	HP
820	3 Frwd. - 1 Rev.	1st - 14.110 2nd - 6.620 3rd - 2.680 Rev. - 11.350	Limited Slip	4000	225
830	4 Frwd. - 1 Rev.	1st - 14.110 2nd - 6.620 3rd - 4.200 4th - 2.420 Rev. - 11.350	Limited Slip	4000	225
835	3	1st - 14.110 2nd - 6.620 3rd - 2.680	Limited Slip	4000	225
840	4	1st - 14.110 2nd - 6.620 3rd - 4.200 4th - 2.4200	Limited Slip	4000	225
8-75	8 Frwd. + 2 Rev.	3.500 - 26	Hydr. Lock	4000	75
8-110	8 Frwd. + 2 Rev.	3.500 - 26	Hydr. Lock	4000	110
KR7	1	10.770	Hydr. Lock	1500	---
KR9	1	10.660	Hydr. Lock	1500	---

PORTAL AXLES



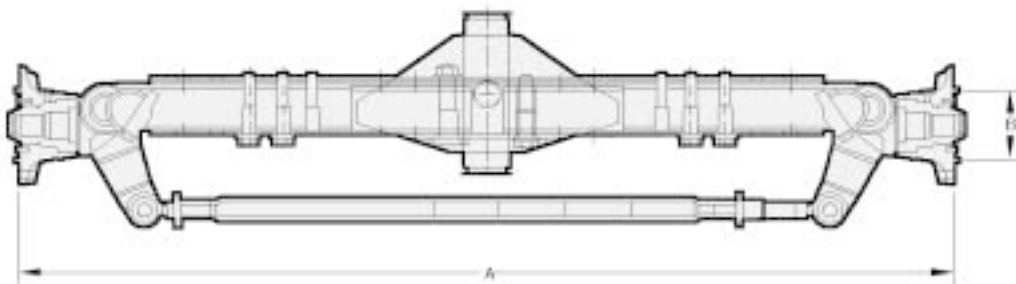
GENERIC MODEL	MODEL NUMBER DESIGNATION	ENGINE HP	MAX OUTPUT		AVAILABLE PLANETARY RATIO	RATIO RANGE (OVERALL)	STEER ANGLE	A		B	
			lbf-ft	N-m				In	mm	In	mm
025S05	025*	25	3,850	5,220	4.275	21.380	62°	48.840	1241	6.000	152.4
035S08	035*	35	6,000	8,140	4.275	15.950	62°	54.480	1384	6.000	152.4
050S10	050*	50	7,400	10,010	4.260	15.900	62°	54.480	1384	6.000	152.4

***NOTES:**

The CUT axles are double reduction with bevel gear wheel ends, not planetaries.
 HP rating are maximum engine HP offerings in current tractor.
 (SUSP) - Suspended Axle Design

GENERIC MODEL	MODEL NUMBER DESIGNATION	ENGINE HP	MAX OUTPUT		AVAILABLE PLANETARY RATIO	RATIO RANGE (OVERALL)	STEER ANGLE	FLANGE TO FLANGE	BCD	BRAKES	SUSP. VERSION	MULTIDISC DIFF LOCK
			lbf-ft	N-m								
070V08	707	70	6,250	8,609	4.230	14.120	52°	1400mm/55.12 In	205	No	No	No
090V12	708	90	8,850	11,999	4.230	9.880	58°	925 mm to 1025 mm 36.42 In to 40.35 In	205	No	No	No
090C14	709	90	10,300	13,965	4.230	11.070	58°	1250 mm to 1450 mm 49.21 In to 57.09 In	205	No	No	No

2WD ADJUSTABLE AXLES

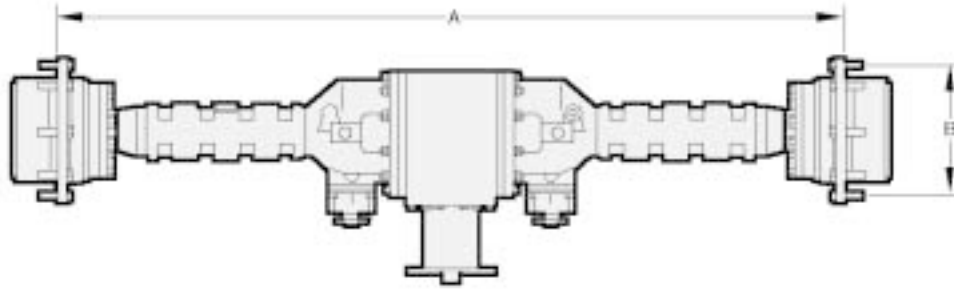


MODEL	ENGINE HP	STEERING ANGLE	A		B	
			In	mm	In	mm
505W	65	55°	43.890/59.640	1115/1515	6.000	152.4
510W	80	55°	56.450/76.180	1435/1935	6.000	152.4
700W	55	55°	51.770/71.450	1315/1815	6.000	152.4
700/102W*	55	55°	51.770	1315	6.000	152.4

* Not Adjustable

INDUSTRIAL PLANETARY AXLES

PLANETARY RIGID



GENERIC MODEL	MODEL NUMBER DESIGNATION	NOMINAL G.A.W RATING		MAX OUPUT		PLANETARY RATIO	RANGE (OVERALL)	INPUT RPM	A		B	
		Kg	Lb	lbf-ft	N-m				In	mm	In	mm
19R14	111	5,500	12,375	10,318	13,990	4.235	10.400 to 15.400	4000	39.760-75.590	1010-1920	8.070	205
19R20	111HD	5,500	12,375	14,740	19,990	6.000	14.800 to 20.600	4000	39.760-75.590	1010-1920	10.830	275
23R27	112	8,000	18,000	19,899	26,980	6.000	12.800 to 23.300	4000	55.120-80.710	1400-2050	10.830	275
23R34	112HD	8,000	18,000	25,058	33,970	6.000	12.800 to 23.300	4000	55.120-80.710	1400-2050	10.830	275-335
23R27	162	8,000	18,000	19,899	26,980	6.000	14.800 to 22.000	4000	75.590	1920	10.830	275
24R34	192	8,000	18,000	25,058	33,970	6.000	43.714	3000	50.000	1270	10.830	275
24R28	192LD	8,000	18,000	20,636	27,980	6.000	43.714	3000	50.000	1270	10.830	275
26R53	192HD	9,000	20,250	39,061	52,960	6.000	43.714	3000	65.350	1660	13.190	335
23R34	162HD	10,000	22,500	25,058	33,970	6.000	14.800 to 22.000	4000	75.590	1920	10.830-13.190	275-335
30R53	193	10,000	22,500	39,061	52,960	6.000	65.500 to 108.900	3000	65.350	1660	13.190	335
29R53	194	10,000	22,500	39,061	52,960	6.000	43.714	3000	65.350	1660	13.190	335
26R53	163	11,500	25,875	39,061	52,960	6.000	14.800 to 22.000	4000	72.830	1850	13.190	335
26R53	123	12,000	27,000	39,061	52,960	6.000	14.800 to 22.000	4000	70.470-80.710	1790-2050	13.190	335
26R47	176	12,000	27,000	34,639	46,960	5.230 - 6.23	11.250 to 32.930	4000	55.120-75.590	1400-1920	13.190	335
26R57	176HD	12,000	27,000	42,009	56,960	6.230	15.340 to 27.690	4000	58.270-85.040	1480-2160	16.730	425
30R92	193HD	12,000	27,000	67,804	91,930	6.000	65.500 to 108.900	3000	68.500	1740	16.730	425
30R70	113	15,000	33,750	51,590	69,950	6.000	14.800 to 22.000	4000	75.590-80.710	1920-2050	13.190-16.730	335-425
26R65	163HD	15,000	33,750	47,905	64,950	6.000	14.800 to 22.000	4000	72.830	1850	13.190	335
37R116	37R116	20,000	44,000	85,000	115,250	6.000	24.600 to 27.300	4000	84.000	2134	19.685	500
37R118	37R118	20,000	44,000	87,000	117,960	6.000	24.600 to 27.300	4000	84.000	2134	19.685	500
39T80	D91-17-16	17,000	37,400	60,000	81,360	4.941	15.280 to 30.470	3000	Variable		19.685	500
35R68	14D2149	18,140	40,000	50,000	67,790	4.940	19.216 to 31.059	4000	45.460-98.960	1154.7*-2513.6*	20.120	511
42R112	16D2149	19,050	42,000	80,976	109,790	4.941	16.171 to 31.059	4000	53.300-104.300	1353.0*-2649.0*	20.120	511
43R138	D102-25-32S	24,000	52,800	100,000	135,580	4.941	14.220 to 26.120	3000	Variable		19.750	502
43R175	43R175	27,270	60,000	129,600	175,710	6.000	24.600 to 27.300	3500	84.000-99.000	2134-2515	19.685	500

* Available Track Range

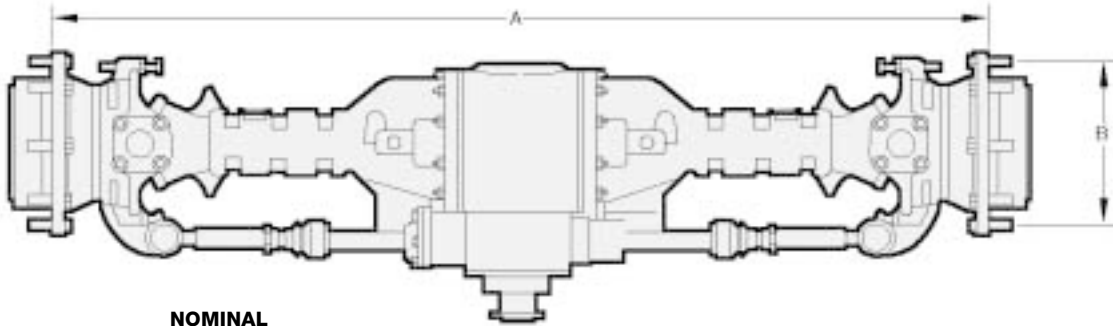
INDUSTRIAL PLANETARY AXLES

PLANETARY RIGID (Cont)

GENERIC MODEL	MODEL NUMBER DESIGNATION	NOMINAL G.A.W RATING		MAX OUPUT		PLANETARY RATIO	RATIO RANGE (OVERALL)	INPUT RPM	A		B	
		Kg	Lb	lbf-ft	N-m				In	mm	In	mm
48R151	19D3847	27,240	60,000	110,833	150,270	4.667	25.337 to 32.002	4000	105.440 114.07 0	2678.2* 2897.4*	19.500	495
53R211	21D3847	29,964	66,000	155,583	210,940	4.667	19.131 to 30.660	4000	70.440 121.740	1789.2* 3092.2*	19.500	495
53R300	53R300	50,000	110,000	208,000	282,010	6.250	25.625 to 41.069	4000	74.540 125.840	1893.3* 3196.3*	20.000	508
53R312	53R312	54,480	120,000	230,416	312,400	6.833	28.015 to 44.900	4000	107.130 131.110	2721.0 3330.0	27.375	695
58R397	58R397	54,480	120,000	294,166	398,840	6.474	29.496 to 35.147	3000	110.940	2817.9	23.375	695
63R492	25D8860	68,100	150,000	362,500	491,480	6.000	22.364 to 37.714	2500	100.120 154.500	2543.0* 3924.3*	33.000	838

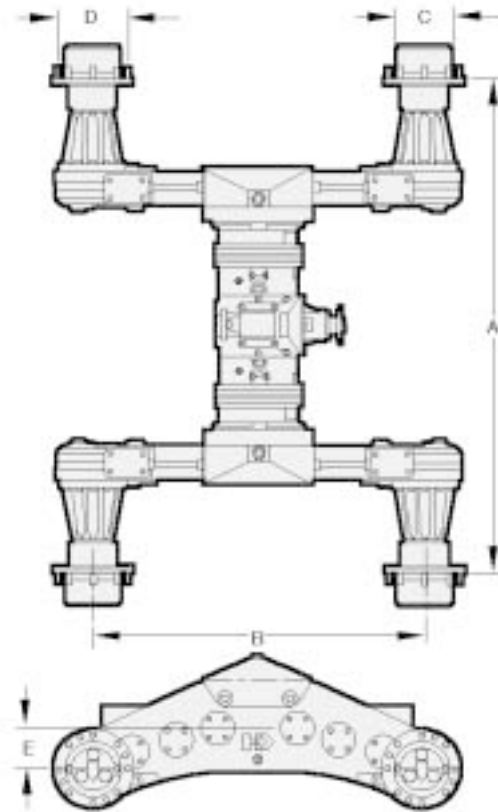
* Available Track Range

PLANETARY STEER



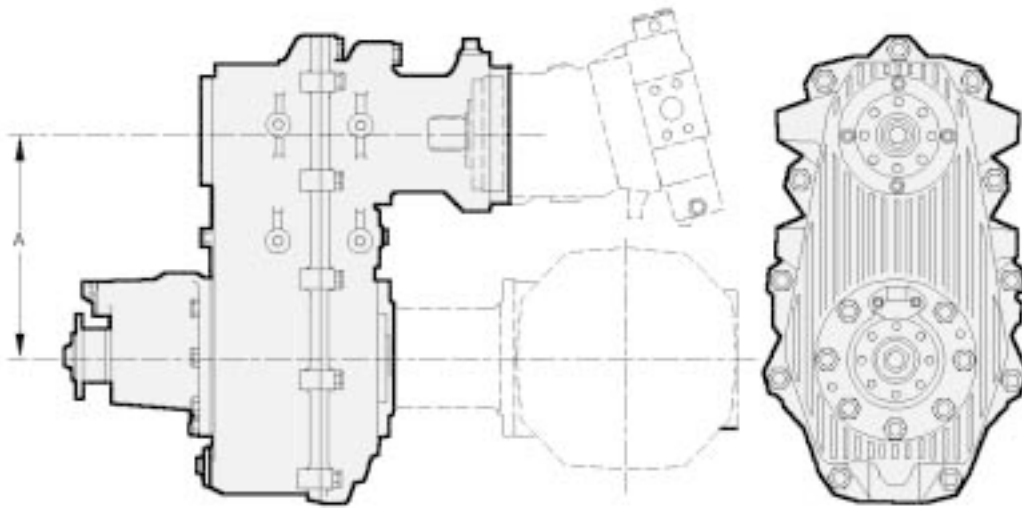
GENERIC MODEL	MODEL NUMBER DESIGNATION	NOMINAL G.A.W RATING		MAX OUPUT		PLANETARY RATIO	RATIO RANGE (OVERALL)	INPUT RPM	A		B	
		Kg	Lb	lbf-ft	N-m				In	mm	In	mm
19S12	416S	2,800	6,300	8,844	11,990	3.780	8.900 to 14.000	4000	40.160	1020	8.070	205
19S14	211	5,000	11,250	10,318	13,990	4.250	11.900 to 15.400	4000	55.120- 75.590	1400- 1920	8.070	205
19S20	211HD	6,000	13,500	14,740	19,990	6.000	14.800 to 21.800	4000	55.120- 75.590	1400- 1920	10.830	275
23S27	212	8,000	18,000	19,899	26,980	6.000	12.800 to 23.300	4000	65.350- 85.830	1660- 2180	10.830	275
23S34	212HD	8,000	18,000	25,058	33,970	6.000	12.800 to 23.300	4000	65.350- 85.830	1660- 2180	10.830- 13.190	275- 335
23S27	262	8,000	18,000	19,899	26,980	6.000	14.800 to 22.000	4000	75.590	1920	10.830	275
23S34	262HD	10,000	22,500	25,058	33,970	6.000	14.800 to 22.000	4000	75.590	1920	10.830- 13.190	275- 335
23S34	212HY	11,000	24,750	25,058	33,970	6.000	12.800 to 23.300	4000	75.590- 85.830	1920- 2180	13.190	335
26S53	263	11,500	25,875	39,061	52,960	6.000	14.800 to 22.000	4000	72.830	1850	13.190	335
26S47	276	12,000	27,000	34,639	46,960	5.230 - 6.230	11.250 to 32.930	4000	72.830- 85.830	1850- 2180	13.190	335
26S47	276HD	12,000	27,000	34,639	46,960	6.230	15.340 to 27.690	4000	75.980- 88.980	1930- 2260	16.730	425
26S53	223	13,000	29,250	39,061	52,960	6.000	14.800 to 22.000	4000	75.590- 85.830	1920- 2180	13.190	335
29S65	213	15,000	33,750	47,905	64,950	6.000	14.800 to 22.000	4000	80.710- 85.830	2050- 2180	13.190	335
26S65	263HD	15,000	33,750	47,905	64,950	6.000	14.800 to 22.000	4000	72.830	1850	13.190	335

BOGIE AXLES



MODEL	NOMINAL G.A.W RATING		MAX OUTPUT		PLANETARY RATIO	TOTAL RATIO	A		B		C		D		E	
	Lb	Kg	lbf-ft	N-m			In	mm	IN	MM	In	mm	In	mm	In	mm
150R	33,000	15,000	30,900	54,097	6.000	14.640 to 25.070	76.400	1940	51.200	1300	11.000	280	13.200	335	7.870	200
151R	46,200	21,000	51,590	69,965	6.000	16.840 to 30.400	84.250	2140	59.100	1500	14.600	370	16.700	425	5.910	150

TRANSFER CASES (OFF-HIGHWAY)



MODEL	CONTINUOUS INPUT TORQUE		SHIFT TYPE	SPEEDS	MAX INPUT RPM	RATIO RANGE		A		WEIGHT	
	lbf-ft	N-m				1ST	2ND	In	mm	Lb	Kg
302	442	599	---	1	4500	.890 to 3.250		5.950	151	88	40
305	516	691	---	1	4500	.890 to 6.370		10.900	276	154	70
314	707	959	Summary Motors	1	4500	*		---	*	265	120
311	433	587	---	1	4500	0.970 to 2.460		6.770	172	132	60
315	433	587	---	1	4500	1.700 to 2.2300		6.690	170		* *
317	289	392	---	1	4500	2.030 to 2.750		6.300	160	132	60
355	707	959	Synchronized	2	4500	2.690 to 5.140	1.170 to 1.860	10.630	270	353	160
357	442	599	Mech. or Hyd.	2	4500	1.930 to 3.250	1.120 to 1.600	6.300	160	132	60
360	368	499	Hyd.	2	5000	3.280 to 7.075	8180 to 1.750	11.540	293	265	120
602	442	599	---	1	4500	1.610 to 2.130		5.950	151		* * *
603	433	587	---	1	4500	0.970 to 2.460		6.770	172		* * * *

* Consult Spicer Engineering for specifications
 ** Drop Box only sold attached to axle assembly
 *** = Integrated to the 212 axle
 **** = Integrated to the 211 axle

POWERSHIFT TRANSMISSIONS

CONFIGURATIONS

HR Model

The HR arrangement is an integral transmission and converter assembly mounted directly to the engine. As a single compact package, it minimizes external piping and eliminates a drive shaft.



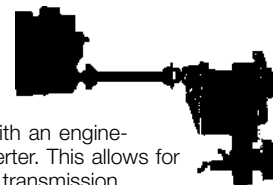
MHR Model

The MHR or midship mounting is an integral transmission and converter assembly mounted remote from the engine. This assembly allows for installation flexibility while minimizing external piping.



R Model

The R model is a remote-mounted transmission with an engine-mounted converter. This allows for flexibility of the transmission installation.



T12000 Series 50 to 110 hp (37 to 82 kW)

This full powershift transmission is designed for up to 110 horsepower for smaller off-highway machines.

The Spicer T12000 Series is designed for versatile equipment that requires the power and performance of a rugged powershift transmission. It is ideal for applications such as backhoes, trenchers, small loaders, small graders, telescopic boom handlers and rough terrain lift trucks.

Design Features

- 3, 4, and 6-speed Full Powershifted Transmissions
- Short, Intermediate, and Long Drops
- Variable (lateral) Drop (VDT)
- Engine and Mid-ship Mountings
- Integral Converter-Transmission Unit
- 11" Converter Wheels
- Available in Wide Range of Ratios

Standard Features on All Models

- Clutch Modulation
- Electric Controls
- Auxiliary Pump Drive
- Externally Mounted Charging Pump and filter

Options Available on All Models

- Converter Freewheel
- Integral or Remote Filter
- Inching
- Variable Drop (VDT)
- Disc Parking Brakes
- Electric Declutch
- Automatic Shift

Maximum Engine Power (kW)	75 kW
Speeds (Fwd X Rev)	3 X 3, 4 X 3, 6 X 3
SAE Flywheel Housing	3
Drop	
Short	138 mm
Intermediate	321 mm
Long	459 mm
Inline	
Lateral Offset	511.8 mm, 648.4 mm
Configurations	HR, MHR

T13000 Series 90 to 140 hp (67 to 104 kW)

This full powershift transmission is for use with engines up to 140 horsepower.

The Spicer T13000 Series has the capacity to meet the needs of 140 horsepower machines and is designed primarily for the telescopic boom handler market.

Design Features

- 4 and 6-speed Full Powershifted Transmissions
- Intermediate Drop
- Variable (lateral) Drop (VDT)
- Engine and Mid-ship Mountings
- Integral Converter-Transmission Unit
- 12" Converter Wheels
- Available in Wide Range of Ratios

Standard Features on All Models

- Clutch Modulation
- Electric Controls
- Auxiliary Pump Drive
- Externally Mounted Charging Pump and filter

Options Available on All Models

- Converter Freewheel
- Integral or Remote Filter
- Inching
- Variable Drop (VDT)
- Disc Parking Brakes
- Electric Declutch
- Automatic Shift

Maximum Engine Power (kW)	104 kW
Speeds (Fwd X Rev)	4 X 3, 6 X 3
SAE Flywheel Housing	3
Drop	
Short	
Intermediate	321 mm
Long	
Inline	
Lateral Offset	511.8 mm, 648.4 mm
Configurations	HR, MHR

(TRANSMISSIONS Cont.)

T16000 Series 70 to 110 hp (51 to 81 kW)

Electronically modulated Full Powershift Transmission

The Spicer T16000 Series is designed for Loader Backhoe, RT Lift Trucks, and Telescopic Boom handlers.

Design Features

- 4 speed Full Powershifted (2 spd reverse)
- 11" & 12" Converters w/#3 Flywheel housing
- Helical/High contact ratio gearing
- SAE C (2 or 4 bolt mounting)
- 12.17" Drop Front and Rear
- Electric Shift / Electronic modulation

Front Axle Disconnect

For vehicles that require road travel, the hydraulically activated front axle disconnect options offer increased road speeds and decreased tire wear.

Modulation

A clutch modulation valve provides smooth directional and range shifts, allowing increased operator productivity and drive-line protection.

	Gear	Upper Output	Rear Output
Forward	1st	4.863	4.626
	2nd	2.571	2.446
	3rd	1.284	1.221
	4th	.679	.648
Reverse	1st	4.085	3.885
	2nd	2.160	2.055

Other Options Available on All Models

- Optional 6.22" Rear Output
- Disc Parking Brake, positioned on Front or Rear Output
- Electronic Gear Selector (EGS), Designed and Engineered to provide a Smooth Efficient Shifting Operation via Predetermined Gear Selection
- Automatic Powershift Control (APC 73), which greatly improves Vehicle and Operator Performance by Allowing the Transmission to Shift Automatically at Predetermined Speeds and/or Load Points.

Options Available on Some Models

- Electronic Speed Sensor
- Electronic Turbine Control

Maximum Engine Power (kW)	81 kW
Speeds (Fwd X Rev)	4 X 2
SAE Flywheel Housing	3
Drop	
L = Lower, U = Upper	L=309 mm, U=158 mm
Short	
Intermediate	
Long	
Inline	
Configurations	HR

T20000 Series 90 to 130 hp (887 to 97kW)

Proven long life components engineered to your application

The T20000 Series is ideally suited for applications such as rough terrain lift trucks, wheel loaders, small scrapers, and other mining, industrial, and construction machinery.

Design Features

- 2, 3, 4, and 6-speed Full Powershifted Transmissions and 6-speed Range Shift
- Inline, Short, Intermediate, and Long Drops
- Externally-mounted Control Valves, Pumps, and Filters
- Helical Gearing
- Available in a Wide Range of Ratios
- SAE "B" Pump Drive
- Flex Plate Drive

Options Available

- SAE "C" Pump Drive
- Electric or Mechanical Shift
- Clutch Release: Air or Hydraulic
- Inching Valve: Manual or Hydraulic

- Horizontal or Vertical Control Mount
- Clutch Modulation
- Remote or Integral Mounted Oil Filter
- Converter Freewheel
- Speedometer Drive
- Remote Control Valve
- Ground Driven Pump Drive
- Axle Disconnect
- Vehicle Towing Disconnect (Internal)
- Parking Brake: Mechanical or SAHR

Maximum Engine Power (kW)	97 kW
Speeds (Fwd X Rev)	2 X 2, 3 X 3, 6 X 3, 6 X 6
SAE Flywheel Housing	3
Drop	
Short	155 mm
Intermediate	311 mm
Long	508 mm
Inline	0 mm
Configurations	HR, MHR, R

(TRANSMISSIONS Cont.)

HR24000 Series 130 to 160 (97 to 119 kW)

A full powershift transmission

The HR24000 Series has been designed for heavy-duty applications, including lift trucks, rough terrain lift trucks, wheel loaders, rough terrain cranes, and other mining, construction, and industrial machinery.

Design Features

- 3, 4, and 6-speed Full Powershifted Transmissions
- Long Drop , Short Drop
- Helical Gears
- Engine Driven Auxiliary Pump Drives
- Available in a Wide Range of Ratios
- SAE “B” Pump Drive
- Flex Plate Drive

Options Available

- 90-degree Control Valve
- Remote Mechanical Control Valve
- Clutch Release: Air or Hydraulic
- Converter Lock Up: Manual or Auto
- Engine and Ourput Speed Sensors

- Unidirectional PTO
- Parking Brake (Drum or Disc)
- Inching Valve
- Emergency Steering Pump Drive
- Front or Rear Disconnect
- Trans. Hydraulic Brakes
- Provision for Variable Displacement Pumps

Maximum Engine Power (kW)	118 kW
Speeds (Fwd X Rev)	3 X 3, 4 X 3, 6 X 3
SAE Flywheel Housing	3
Drop	
Short	311 mm
Intermediate	
Long	508 mm
Inline	
Configurations	HR, MHR, R

HR32000 Series 150 to 225 hp (112 to 168 kW)

Proven, dependable full powershift transmissions

The HR32000 Series is designed for vehicles used in the construction, logging, underground mining, material handling, and other industrial applications.

Design Features

- 3, 4, Speed Full Powershifted Transmissions
- 6, 8, Speed Range Shift: 6 Speed Full Powershift (S32)
- 12” 13” Converter Wheels
- Flex Plate Drive
- Helical Output Gears

Options Available

- Auxiliary Pump Drives
- Offset Pump Drives
- Modulation
- Remote Filter
- 90-degree Control Valve
- Remote Mechanical Control Valve
- Electric Shift
- Clutch Release: Air or Hydraulic

- Converter Lock-up: Manual or Auto
- Engine and Output Speed Sensors
- Unidirectional PTO
- Parking Brake: Drum or Disc
- Inching Valve
- Emergency Steering Pump
- Front or Rear Axle Disconnect
- Trans. Hydraulic Brake
- Provision for Variable Displacement Pumps

Maximum Engine Power (kW)	167 kW
Speeds (Fwd X Rev)	3 X 3, 4 X 4, 8 X 4
SAE Flywheel Housing	3
Drop	
Short	245 mm
Intermediate	
Long	470 mm
Inline	
Configurations	HR, MHR, R

(TRANSMISSIONS Cont.)

TE13 Series To 220 hp (165 kW)
TE17 Series 220 to 266 hp (165 to 215 kW)

The TE13 and TE17 Series full powershift transmissions are engineered specifically to meet the needs for improved productivity and reliability in the material handling market. They are 3-speed powershifts which incorporate the latest in manufacturing and the next generation electronic control systems resulting in the smoothest operation in the market.

Design Features

- Helical Gearing
- Flex Plate Drive
- Short Drop Only
- Dual Auxilliary Pump Drives
- Engine, Midship or Remote Mount
- Electronically Controlled Modulation
- CAN-BUS Interface Capabillity

Options Available

- Electronically Controlled Inching
- SAHR Parking Brake
- Automatic Shifting

	TE13	TE17
Maximum Engine Power (kW)	170 kW	200 kW
Speeds (Fwd X Rev)	3 X 3	3 X 3
SAE Flywheel Housing		
Drop		
L = Lower, U = Upper		
Short	225 mm	225 mm
Intermediate		
Long		
Inline		
Lateral Offset		
Configurations	TE, MTE	TE, MTE

TE27 Series 290 to 360 hp (215 TO 270 kW)
TE32 Series 360 to 430 hp (270 to 320 kW)

The TE27 and TE 32 Series are designed to serve material handling, wheel loader, mining and construction market segments. These are 4-speed full powershift transmissions with helical gearing and the next generation electronic controlled technology featuring electronically controlled modulation with overlap control.

Design Features

- Helical Gearing
- Flex Plate Drive
- Long Drop and Short Drop Versions
- Engine, Midship or Remote Mount
- Electronically Controlled Modulation
- CAN-BUS Interface

Options Available

- SAHR parking Brakes
- Electronically Controlled Inching
- Automatic Shifting

	TE27	TE32
Maximum Engine Power (kW)	270 kW	325 kW
Speeds (Fwd X Rev)	4 X 4	4 X 4
SAE Flywheel Housing		
Drop	1	1
Short	318 mm	318 mm
Intermediate		
Long	625 mm	625 mm
Inline		
Configurations	TE	TE

HYDROSTATIC POWERSHIFT TRANSMISSIONS

HSE2+3 268 hp (200 kW)

A new concept in transmissions, the HSE2+3 is designed for front end loaders and other high duty cycle applications. New shift strategies from the use of newly developed hydrostatic component technology result in shock-free shifting during the total speed range of the vehicle. The HSE2+3 features a 304 mm drop with 3 speeds forward and 3 speeds reverse with ratios of 6.103-1st / 3.033-2nd and 1.342-3rd

Benefits

- Better fuel economy
- Increased vehicle performance
- Better shift quality
- Increased driver comfort
- Reduced vehicle noise
- Reduced axle braking requirements
- Reduced cooling requirements

Options Available

- Parking Brake
- Different Flanges



HSE07 134 hp (100kW) Up to 107 cc Hydrostatic Motor Capacity

HSE09 167 hp (125 kW) Up to 160 cc Hydrostatic Motor Capacity

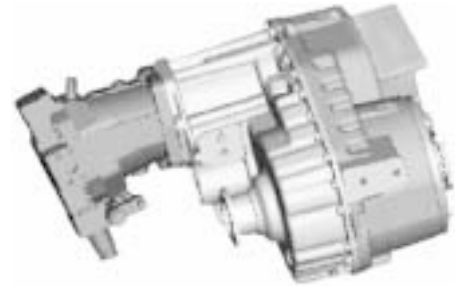
A two-speed powershift designed for use with a direct mounted hydrostatic motor. Electronic Clutch Modulation, ECM, means smooth shifting. It can be remote or direct mounted to the rear axle. The HSE07 was designed for 19.5 ton wheel excavators; the HSE09 is designed for wheel excavators up to 25 tons. This new hydrostatic transmission can be considered for other applications as well.

Benefits

- Electronically modulated for smooth shifting
- Increased vehicle performance
- Simplified vehicle installation
- Increased drive comfort
- Downshift protection standard

Options

- Ratios - Std 6.44:1, 1.85:1
Optional - 5.43:1, 1.71:1
- Remote or axle mounted
- SAHR parking brake
- Flanges - Std. DIN 120, other flanges available



354 Series 135 hp (100 kW)

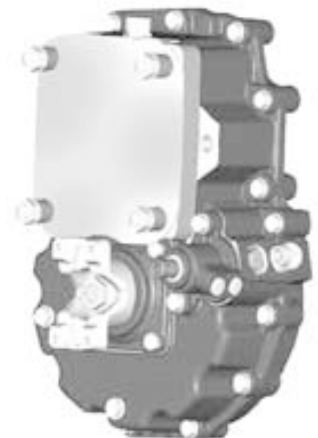
The 354 Powershift drop-box is specially designed for vehicles with hydrostatic transmission where constant torque is required throughout the entire speed range of the vehicle. To optimize gear changes the Model 354 powershift two-speed drop-box is hydraulically actuated through two multidisc oil immersed clutches and controlled by an electronic valve, thus protecting both the hydrostatic and mechanical transmissions.

Features

- 270 mm Drop
- 4000 RPM Input
- 95 daNm maximum input torque

Options

- Ratios: 1st-2.69 to 6.63 / 2nd-1.17 to 1.86
- Hydrostatic motor input
- Output flange disconnect
- Remote or "Flanged to Axle" mounting
- Park brake provision
- Electronic or Hydraulic Shift
- Speedometer port



TORQUE CONVERTERS

Spicer torque converters teamed with Spicer powershift transmissions provide high operating efficiency for virtually any application.

Spicer Torque Converters are engineered specifically for off-highway equipment using optimized cast blading, resulting in high efficiencies.

Spicer has 36 torque converter wheel configurations with stall torque ratios to match most engine requirements.

All Spicer torque converters are built with at least three pump drives. One is used for charging and two for mounting accessory drive pumps. The C330 has four pump drives with in-line output only.

Available Features	C270	C320	C330	C2000	C5000	C8000	C9000	C16000
Straight Through Drive	X	X	X	X	X		X	X
Offset Drive	X	X		X	X	X	X	X
Turbine Tachometer Drive					X	X		X
SAE A, B & C Pump Mounting	X	X	X	X	X	X	X	X
Lock-up	X	X			X	X	X	X
Engine Inductive Sensor	X	X	X	X	X	X	X	X
Turbine Inductive Sensor	X	X		X	X	X	X	X
Flex Plate Drive	X	X	X	X	X	X	X	
Variable Displacement Pump Drive		X	X					
Free Wheel	X							

ELECTRONIC SHIFT CONTROLS

Spicer's electronic shift control systems are designed and engineered to provide smooth and efficient operations. They are available with integrated shiftablever (EGS) and without shiftablever (APC). They feature advanced built-in diagnostics field programmability and CAN-BUS interface capability.

APC - Automatic Powershift Control

Spicer's Automatic Powershift Controls improve vehicle performance so the operator is free to concentrate on the machine task rather than on the mechanical function of the drivetrain. The APC interfaces with any dashboard mounted shiftablever (Also with the EGS).

A variety of models covers a wide range of transmissions as shown in the matrix below.

Advantages of Electronic Control

- Increases vehicle performance, productivity and efficiency
- Extends life of drivetrain components
- Reduces improper operation of the vehicle
- Reduces driver fatigue
- Reduces driver training requirements
- Integrated display
- Integration with existing vehicle networks using CAN
- Built in trouble shooting tools

TRANSMISSION MODEL	CONTROLLER		
	APC70	APC160	APC200
T12000	X	X	
T13000	X	X	
T16000	X	X	
T20000	X	X	
T24000	X	X	
T32000	X	X	
T33000	X	X	
T36000	X	X	
T40000	X	X	
TE10			X
TE13			X
TE15			X
TE17			X
TE27			X
T32			X
1000 Series	X	X	
354	X	X	

Note: The APC160 can be used to control the transmissions and other vehicle functions as well.

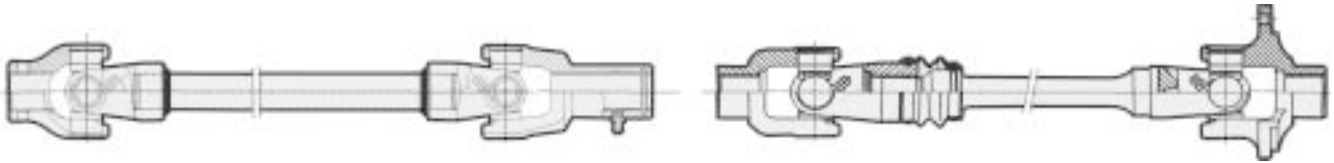
DRIVESHAFTS

SPICER AYRA-CARDAN™

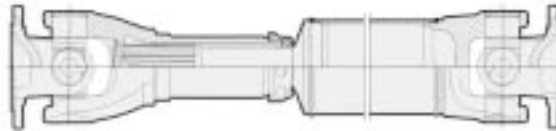
The newest addition to the Spicer family of products allows Spicer to target smaller application such as the All-Terrain Vehicles (ATVs) and leisure/utility vehicles. With torque capacities ranging from 825 Nm to 2400 Nm, Spicer Ayra-Cardan has the right driveshaft to fit your smallest application.

Design Features

- Reduced Weight
- Maintenance Free
- Smaller Swing Diameter
- Improved Retention: Circlip and Staked



DRIVESHAFT SERIES	TORSIONAL RATING MIN. ELASTIC LIMIT		MAX. SWING DIA.	
	lbf-ft	N-m	In.	mm
S.100	608	825	1.870	60.0
S.103	738	1,000	2.160	65.0



DRIVESHAFT SERIES	TORSIONAL RATING MIN. ELASTIC LIMIT		MAX. SWING DIA.	
	lbf-ft	N-m	In.	mm
S.1120	1,033	1,400	2.420	76.0
S.1125	1,328	1,800	2.520	84.0
S.1300	1,770	2,400	2.940	90.0

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

Available on Request

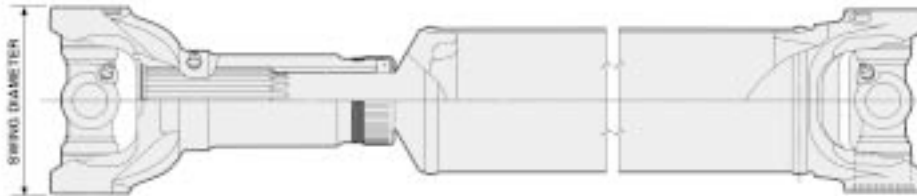
- Paint on Request
- Special Types
- SAE & DIN Adapters
- Permanent Lubrication for High and Low Temperatures

SPICER 10 SERIES™

The Spicer 10 Series Driveshafts have been an industry standard for more than 50 years and are ideal for the rigorous demands for most mobile off-highway applications. With sizes ranging from 1000 Series to 1880 Series, Spicer has the right driveshaft to fit all your needs in the construction, mining, irrigation, forestry, material handling, speciality chassis and agriculture markets.

Design Features

- Extended Spline Life
- Reduced Thrust Load under Pressure
- Lower Friction under Load
- Superior Needle Bearing Retention
- Easy to Service Universal Joints



DRIVESHAFT SERIES	TORSIONAL RATING				SWING DIAMETER	
	SHORT DURATION		MINIMUM ELASTIC		In.	mm
	lbf-ft	N-m	lbf-ft	N-m		
1310	800	1,080	1,250	1,700	4.000	101.6
1350	1,240	1,680	2,060	2,800	4.560	115.8
1410	1,500	2,033	2,350	3,200	4.940	125.5
1480	2,000	2,700	3,000	4,070	5.310	134.9
1550	2,400	3,250	3,900	5,290	6.000	152.4
1610	3,650	4,950	5,700	7,730	7.120	180.8
1710	4,800	6,500	7,700	10,440	7.880	200.2
1710 HD	4,800	6,500	10,200	13,830	7.880	200.2
1760	5,800	7,860	10,200	13,830	8.680	220.5
1760 HD	5,800	7,860	12,200	16,540	8.680	220.5
1810	6,500	8,800	12,200	16,540	9.250	235.0
1810 HD	6,500	8,800	16,500	22,370	9.250	235.0
1880	8,500	11,500	21,200	28,750	9.880	250.9

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

Available on Request

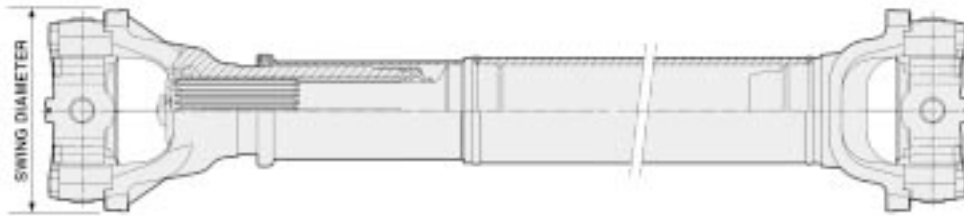
- DIN Adapters
- SAE Adapters
- Paint on Request
- Special Types
- Extended Lubrication
- Permanent Lubrication

SPICER ITALCARDANO™

Spicer wing bearing style driveshafts are designed for longer life, minimal maintenance and lower operating costs. Spicer is capable of offering the most comprehensive range of wing style driveshafts today. With torque capacities ranging from 800 Nm to more than 62,000 Nm and lubrication packages ranging from extended to permanently lubricated; Spicer has the right driveshaft to fit all your Off-Highway needs.

Design Features

- Cold Forged Cross
- Induction Hardening Process for Strength
- Sealed Slip Spline System
- Triple Lip Seal, Thrust Washer and Seal Guard Package
- Reduced Maintenance
- Increased Torque Capacity



TORSIONAL RATING

DRIVESHAFT SERIES	SHORT DURATION		MINIMUM ELASTIC LIMIT		SWING DIAMETER	
	lbf-ft	N-m	lbf-ft	N-m	In.	m m
2C	590	800	1,180	1,600	3.430	87.0
4C	1,100	1,500	2,210	3,000	4.570	116.0
5C	1,950	2,650	4,200	5,700	4.840	123.0
6C	2,500	3,400	5,380	7,300	5.910	150.0
7C	4,200	5,700	8,330	11,300	6.220	158.0
8.5C	10,320	14,000	15,400	20,900	6.890	175.0
9C	13,700	18,600	20,780	28,200	8.780	223.0
10C	19,160	26,000	29,990	40,600	8.860	225.0
15C	29,400	39,900	57,120	77,500	10.670	271.0
12.5C	31,690	43,000	62,280	84,500	11.620	295.0
14.5C	45,690	62,000	81,440	110,500	12.830	326.0

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

Available on Request

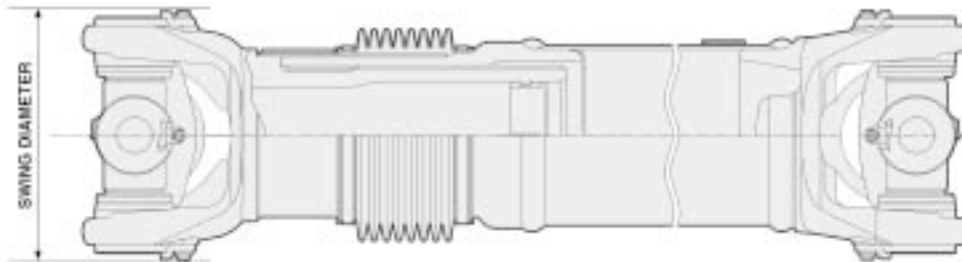
- Paint on Request
- Special Types
- Permanent Lubrication for High and Low Temperatures

SPICER LIFE SERIES®

The Spicer Life Series Driveshaft takes our industry standard Spicer 10-Series one better. Spicer Life Series offers features such as longer life, reduced maintenance and Quick Disconnect End-Yokes that can provide operating benefits to our customers. With torque capacities ranging from 55 Nm to 250 Nm Spicer has the right driveshaft to fit all your needs in the construction, mining, forestry, material handling and specialty chassis markets.

Design Features

- Larger Diameter Slip Member with Longer Splines
- Two Boot Options; Thermoplastic Hytel™ or Seal Can Style
- Smaller Swing Diameter
- Centrally Located Grease Fitting
- Permanently Lubricated Slip Spline
- Increased Torque Capacity



DRIVESHAFT SERIES	TORSIONAL RATING				SWING DIAMETER	
	SHORT DURATION		MINIMUM ELASTIC LIMIT		In.	m m
	lbf-ft	N-m	lbf-ft	N-m		
SPL55	2,000	2,700	3,000	4,068	5.310	134.9
SPL70	2,400	3,250	3,900	5,290	6.000	152.4
SPL100	3,650	4,950	5,700	7,730	6.060	154.0
SPL140	4,950	6,720	7,375	10,000	7.640	194.0
SPL140 HD	4,950	6,720	10,330	14,000	7.640	194.0
SPL170	6,020	8,200	12,550	17,000	7.600	193.0
SPL250	8,850	12,000	16,220	22,000	7.600	193.0
SPL250 HD	8,850	12,000	18,450	25,000	7.600	193.0

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

Available on Request

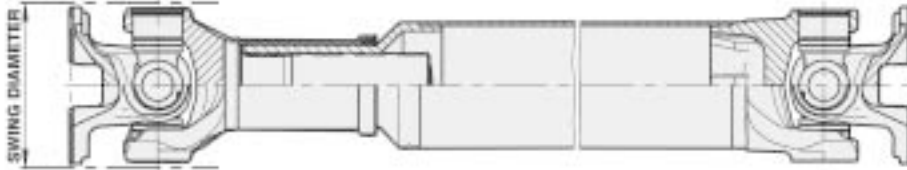
- DIN Adapters
- SAE Adapters
- Paint on Request
- Special Types
- Extended Lubrication
- Permanent Lubrication

SPICER COMPACT 2000™

Previously an industry standard in Europe to the commercial vehicle market, the Spicer-Compact 2000 offers a wide variety of end fittings from SAE to DIN and Cross Serrated allowing Spicer driveshaft to attach to nearly any axle or transmission. With torque capacities ranging from 2400 Nm to 35,000 Nm Spicer has the right driveshaft to fit all your on or off-highway needs.

Design Features

- Smaller Swing Diameters
- Bearing Package with Reduced Maintenance or Maintenance Free Options
- Increased Torque Capacity



DRIVESHAFT SERIES	TORSIONAL RATING FUNCTIONAL LIMIT		MAX. SWING DIA.	
	lbf-ft	N-m	In.	mm
PEP2	1,770	2,400	3.540	90.0
PEP3	2,580	3,500	3.860	98.0
PEP4	3,690	5,000	4.440	113.0
PEP5	4,800	6,500	5.000	127.0
PEP6	7,380	10,000	5.670	142.0±2
2040	10,330	14,000	6.300	158.0±2
2045	12,540	17,000	6.850	172.0±2
2047	14,010	19,000	6.850	172.0±2
2055	18,440	25,000	7.010	176.0±2
2060	22,130	30,000	7.720	194.0±2
2065	25,810	35,000	8.110	204.0±2

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

Available on Request

- Paint on Request
- Special Types
- Serrated Adapters (XS)
- Permanent Lubrication for High and Low Temperatures

Off-Highway Systems

Asia Pacific (China): 86 2 153 831100

Asia Pacific (Korea): 82 2 563 9451

Europe (Italy): 39 0464 580227

North America (USA): 704 878 5886

South America (Brazil): 55 15 3238 6092

Application Policy

Capability ratings, features, and specifications vary depending upon the model, type of application, and type of service. Application approvals must be obtained from Spicer. We reserve the right to change or modify our products or our product specifications, configurations, or dimensions at any time without notice.



People Finding A Better Way®