

LiquidSpring Application Guide: Bus, p/n D11358 Rev J

Model	Model Years	Rear Axle GAWR (either Axle or Susp) (lbs)	Rear Axle Model(s)	Cab	WB (in)	CA (in)	Frame	Engine	Fuel Tank Location	Brakes	OEM Susp. GAWR Type	On Spot Avail?	LiquidSpring Kit / Max Rating (lbs)	Comments
Ford														
E-Series														
E350	2006-Current	8500	n/a	Cutaway, Strip	158, 176	100, 118	n/a	Any	Mid*, Rear	n/a	n/a	No	DS85FS2 8500	* Mid ship fuel tank may require relocation of power module
E450	2006-Current	9600	n/a	Cutaway, Strip	158, 176	100, 118	n/a	Any	Mid*, Rear	n/a	n/a	No	DS96FS2 9600	* Mid ship fuel tank may require relocation of power module
F550 Cab Chassis														
F550 Cab Chassis 17500 GVW	2017-Current	13660	n/a	Reg, Reg, Reg, Ext, CC	169.3, 193.3, 205.3, 191.9, 205.3	84, 108, 120, 84, 84	n/a	Any	Mid (gas), Rear	n/a	n/a	Yes	DS147FS3 14704	System does not fit on chassis with diesels mid-ship fuel tanks on 84" and 108" CA.
	2011-2016	13660	n/a	Reg, Reg, Reg, Ext, CC	164.8, 188.8, 200.8, 185.8, 200.2	84, 108, 120, 84, 84	n/a	Any	Mid*, Rear	n/a	n/a	Yes	DS137FS2 13660	* Mid ship fuel tank may require relocation of OEM DEF tank on 84" and 108" CA vehicles.
	2008-2010	13660	n/a	Reg, Reg, Reg, Ext, CC	164.8, 188.8, 200.8, 185.8, 200.2	84, 108, 120, 84, 84	n/a	Any	Mid*, Rear	n/a	n/a	Yes	DS137FS2-10 13660	* Mid ship fuel tank may require relocation of OEM DEF tank on 84" and 108" CA vehicles.
F550 Cab Chassis 19500 GVW	2017-Current	14706	n/a	Reg, Reg, Reg, Ext, CC	169.3, 193.3, 205.3, 191.9, 205.3	84, 108, 120, 84, 84	n/a	Any	Mid (gas), Rear	n/a	n/a	Yes	DS147FS3 14704	System does not fit on chassis with diesels mid-ship fuel tanks on 84" and 108" CA.
	2011-2016	14706	n/a	Reg, Reg, Reg, Ext, CC	164.8, 188.8, 200.8, 185.8, 200.2	84, 108, 120, 84, 84	n/a	Any	Mid*, Rear	n/a	n/a	Yes	DS147FS2 14704	* Mid ship fuel tank may require relocation of OEM DEF tank on 84" and 108" CA vehicles.
F650														
F650 Straight Rail Frame	2016-Current	17500-19000 (13500)	Dana S140	Any	158+	84+	n/a	Any	Any	Hydraulic Only	19000-21000 Leaf Springs	TBD	DS135F650SR-SHF 13500	Volumes forward, PM forward LH inboard frame (designed for bus)
	2016-Current	17500-19000 (13500)	Dana S140	Any	158+	84+	n/a	Diesel	Any	Hydraulic Only	19000-21000 Air Ride	TBD	DS135F650SR-AH 13500	Volumes forward, PM forward LH inboard frame (ride optimized for 13500 GAWR)
	2016-Current	17500-19000 (13500)	Dana S140	Any	158+	84+	n/a	Diesel	Any	Hydraulic Only	19000-21000 Air Ride	TBD	DS190F650SR-AH 19000	Volumes forward, PM forward LH inboard frame
F53														
F53 16K GVW	2009-Current	11000	Dana 80	n/a	158.3, 176.3, 190.3	n/a	n/a	n/a	n/a	n/a	Steel Leaf 11000	No	DS120F53 12000	158" WB will require 11468 to mount PM in rear
F53 18K GVW	2009-Current	12000	Dana 80	n/a	178.2, 190.2, 208.2, 228.2	n/a	n/a	n/a	n/a	n/a	Steel Leaf 12000	No	DS120F53 12000	

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F53 20.5K GVW	2009-Current	13500	Dana S13-110	n/a	208.2 228.2	n/a	n/a	n/a	n/a	n/a	Steel Leaf 13500	No	DS150F53 15000	
F53 22K GVW	2009-Current	15000	Dana S16-110	n/a	208.2 228.2 242.3	n/a	n/a	n/a	n/a	n/a	Steel Leaf 15000	No	DS150F53 15000	
F53 24K GVW	2009-Current	15500	Dana 17060S	n/a	242.3 252.3	n/a	n/a	n/a	n/a	n/a	Steel Leaf 15500	No	DS175F53 17500	
F53 26K GVW	2009-Current	17500	Dana 17060S	n/a	242.3 252.3	n/a	n/a	n/a	n/a	n/a	Steel Leaf 17500	No	DS175F53 17500	
Freightliner														
M2-106	2012-Current	Up to 15000 (15000)	Meritor: MS-17-14X Detroit: RS-17.5-4 RS-17.5-2 RS-15.0-2**	Any	n/a	84+	546-020 546-021 546-094 546-093 546-099 546-100	Cummins	Forward Only	Hydraulic***	Steel Leaf: 622-1MA (10K) 622-1MB (12.5K) 622-1MC (16K) 622-1MD (18K) 622-1ME (18K) 622-1MT (18K)	Yes	DS150FR-S 15000	Volumes and PM behind rear axle. ** Kit 11337 needed with DA RS 15.0-2 axle *** Air brakes can be used if s-cams and s-cam tubes are converted to air ride compatible versions.
	2012-Current	Up to 15000 (15000)	Meritor: MS-17-14X Detroit: RS-17.5-4 RS-17.5-2 RS-15.0-2**	Any	n/a	84+	546-020 546-021 546-094 546-093 546-099 546-100	Cummins	Any	Hydraulic***	Steel Leaf: 622-1MA (10K) 622-1MB (12.5K) 622-1MC (16K) 622-1MD (18K) 622-1ME (18K) 622-1MT (18K)	Yes	DS150FR-SS 15000	Volumes forward, PM behind rear axle. ** Kit 11337 needed with DA RS 15.0-2 axle *** Air brakes can be used if s-cams and s-cam tubes are converted to air ride compatible versions.
	2012-Current	Up to 15000 (15000)	Meritor: MS-17-14X Detroit: RS-17.5-4 RS-17.5-2 RS-15.0-2**	Any	n/a	84+	546-020 546-021 546-094 546-093 546-099 546-100	Cummins	Forward Only	Air, Hydraulic	Air Susp: 622-1CW (10K) 622-1CX (12K) 622-1CY (15K)	Yes (hyd brks)	DS150FR-A 15000	Volumes and PM behind rear axle. ** Kit 11337 needed with DA RS 15.0-2 axle
	2012-Current	Up to 15000 (15000)	Meritor: MS-17-14X Detroit: RS-17.5-4 RS-17.5-2 RS-15.0-2**	Any	n/a	84+	546-020 546-021 546-094 546-093 546-099 546-100	Cummins	Any	Air, Hydraulic	Air Susp: 622-1CW (10K) 622-1CX (12K) 622-1CY (15K)	Yes (hyd brks)	DS150FR-AS 15000	Volumes forward and PM behind rear axle. ** Kit 11338 needed with DA RS 15.0-2 axle
	2012-Current	Up to 15000	Meritor: MS-17-14X Detroit: RS-17.5-4 RS-17.5-2 RS-15.0-2**	Any	n/a	84+	546-020 546-021 546-094 546-093 546-099 546-100	Cummins	Any	Air, Hydraulic	Air Susp: 622-1CW (10K) 622-1CX (12K) 622-1CY (15K)	Yes (hyd brks)	DS150FR-AR 15000	Volumes forward, PM forward RH inside of frame. Only use on forward exhaust routed down driver side. (Kit not recommended due to aux. equipment mounted by OEM). ** Kit 11338 needed with DA RS 15.0-2 axle
	2012-Current	Up to 15000 (15000)	Meritor: MS-17-14X Detroit: RS-17.5-4 RS-17.5-2 RS-15.0-2**	Any	n/a	84+	546-020 546-021 546-094 546-093 546-099 546-100	Cummins	Any	Air, Hydraulic	Air Susp: 622-1CW (10K) 622-1CX (12K) 622-1CY (15K)	Yes (hyd brks)	DS150FR-AREP 15000	Volumes forward, PM forward LH inside of frame. Only use on forward exhaust routed down passenger side. (Kit not recommended due to aux. equipment mounted by OEM). ** Kit 11338 needed with DA RS 15.0-2 axle

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Vehicle Interface Lighting (one of these locations): 353-022 Vehicle interface wiring with body builder connector mounted back of cab. 353-023 Vehicle interface wiring with body builder connector mounted end of frame. 353-026 Vehicle interface wiring and PDM with body builder connector back of cab. 353-027 Vehicle interface wiring and PDM with body builder connector end of frame. Transmission Interface Connector (one of these locations): 34C-001 Transmission Interface Harness at front fire wall 34C-002 Transmission Interface Harness at back of cab														
Freightliner Custom Chassis														
S2C, S2	2012-Current	Up to 15000	Meritor: MS-17-14X Detroit: RS-17.5-4 RS-17.5-2 RS-15.0-2**	n/a	n/a	84+	n/a	Cummins	Any	Hydraulic Only	10K-20K Steel Leaf	TBD	DS150FRC-SB 15000	Volumes and PM forward LH inside frame. Designed for 19.5" tires
	2012-Current	Up to 15000	Meritor: MS-17-14X Detroit: RS-17.5-4 RS-17.5-2 RS-15.0-2**	Any	n/a	84+	546-020 546-021 546-094 546-093 546-099 546-100	Cummins	Side	Hydraulic Only	10K-20K Steel Leaf	Yes	DS150FRC-SBX 15000	Volumes rear, PM forward LH inside frame. Designed for 22.5" tires
General Motors (Chevrolet/GMC)														
Express/Savana G-Series Cutaway														
G3500: G33503 G33803 G33903	2018-Current	8600	n/a	Cutaway	139, 159, 177	80, 100, 118	n/a	Gas	Midship	n/a	n/a	No	DS96GM3-AM 9600	PM rear mount
	2013-2017	8600	n/a	Cutaway	139, 159, 177	80, 100, 118	n/a	Gas	Midship	n/a	n/a	No	DS96GM2-AM 9600	PM rear mount (speed different for 2018)
	2018-Current	8600	n/a	Cutaway	139, 159, 177	80, 100, 118	n/a	Gas	Rear	n/a	n/a	No	DS96GM3-AR 9600	PM forward, LH inside frame
	2013-2017	8600	n/a	Cutaway	139, 159, 177	80, 100, 118	n/a	Gas	Rear	n/a	n/a	No	DS96GM2-AR 9600	PM forward, LH inside frame (speed different for 2018)
G4500: G33803 G33903	2018-Current	9600	n/a	Cutaway	139, 159, 177	80, 100, 118	n/a	Gas	Midship	n/a	n/a	No	DS96GM3-AM 9600	PM rear mount
	2013-2017	9600	n/a	Cutaway	139, 159, 177	80, 100, 118	n/a	Gas	Midship	n/a	n/a	No	DS96GM2-AM 9600	PM rear mount (speed different for 2018)
	2018-Current	9600	n/a	Cutaway	139, 159, 177	80, 100, 118	n/a	Gas	Rear	n/a	n/a	No	DS96GM3-AR 9600	PM forward, LH inside frame

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	2013-2017	9600	n/a	Cutaway	139, 159, 177	80, 100, 118	n/a	Gas	Rear	n/a	n/a	No	DS96GM2-AR 9600	PM forward, LH inside frame (speed different for 2018)
International (Navistar)														
TerraStar														
TerraStar 4x2	2010-2015	10000-13500 (13500)	Dana	Any	n/a	84+	n/a	MaxxFORCE	Rear	Hydraulic Only	10K-13.5K Steel Leaf	Yes	DS135N-A 13500	Volumes double stacked LH inboard frame. PM LH below frame. Recommend code 12VYL for speed signal.
	2010-2015	10000-13500 (13500)	Dana	Any	n/a	84+	n/a	MaxxFORCE	Front (under cab)	Hydraulic Only	10K-13.5K Steel Leaf	Yes	DS135N-AF 13500	Volumes double stacked LH inboard frame. PM LH below frame. Includes extra rear crossmember. Recommend code 12VYL for speed signal.
	2010-2015	10000-13500 (13500)	Dana	Any	n/a	84+	n/a	MaxxFORCE	Front (under cab)	Hydraulic Only	10K-13.5K IROS Air Ride	Yes	DS135N-AA 13500	Volumes double stacked LH inboard frame. PM LH below frame. Recommend code 12VYL for speed signal.
TerraStar 4x4	2010-2015	10000-13500 (13500)	Dana	Any	n/a	84+	n/a	MaxxFORCE	Rear	Hydraulic Only	10K-13.5K Steel Leaf	No	DS135NT4 13500	Recommend code 12VYL for speed signal.
DuraStar 4300 Low Profile (Taper Frame)														
	2008-Current	13500-15500 (13500)	Dana S14-130 S16-130	Any	n/a	84+	n/a	MaxxFORCE	Any	Hydraulic	10K-13.5K Steel Leaf 14SAC, 14SAE, 14SAH	Yes	DS135ND-S130 13500	Volumes double stacked LH inboard frame. PM LH below frame. Recommend code 12VYL for speed signal.
	2008-Current	13500-15500 (13500)	Dana S14-130 S16-130	Any	n/a	84+	n/a	Cummins	Any	Hydraulic	10K-13.5K Steel Leaf 14SAC, 14SAE, 14SAH	Yes	DS135ND-S130C 13500	Volumes double stacked LH inboard frame. PM LH below frame. Different speed signal.
	2008-Current	13500-15500 (13500)	Dana S14-130 S16-130	Any	n/a	84+	n/a	MaxxFORCE	Any	Hydraulic or Air	10K-13.5K IROS Air Ride 14TBL, 14TBM, 14TBN	Yes, Hyd. Brk only	DS135ND-A130 13500	Volumes double stacked LH inboard frame. PM LH below frame. Recommend code 12VYL for speed signal.
	2008-Current	13500-15500 (13500)	Dana S14-130 S16-130	Any	n/a	84+	n/a	Cummins	Any	Hydraulic or Air	10K-13.5K IROS Air Ride 14TBL, 14TBM, 14TBN	Yes, Hyd. Brk only	DS135ND-A130C 13500	Volumes double stacked LH inboard frame. PM LH below frame. Different speed signal.
	2008-Current	13500-17500 (13500)	Dana: S17-140 S19-140 17060S / D Meritor: MS-17-14X	Any	n/a	84+	n/a	MaxxFORCE	Any	Hydraulic***	10K-13.5K Steel Leaf 14SAC, 14SAE, 14SAH	Yes	DS135ND-S 13500	Volumes double stacked LH inboard frame. PM LH below frame. Recommend code 12VYL for speed signal. *** Air brakes can be used if s-cams and s-cam tubes are converted to air ride compatible versions.
	2008-Current	13500-17500 (13500)	Dana: S17-140 S19-140 17060S / D Meritor: MS-17-14X	Any	n/a	84+	n/a	Cummins	Any	Hydraulic***	10K-13.5K Steel Leaf 14SAC, 14SAE, 14SAH	Yes	DS135ND-SC 13500	Volumes double stacked LH inboard frame. PM LH below frame. Different speed signal. *** Air brakes can be used if s-cams and s-cam tubes are converted to air ride compatible versions.

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4300 Low Profile Tapered Frame	2008-Current	13500-17500 (13500)	Dana: S17-140 S19-140 17060S / D Meritor: MS-17-14X	Any	n/a	84+	n/a	MaxxForce	Any	Hydraulic or Air	10K-13.5K IROS Air Ride 14TBL, 14TBM, 14TBN	Yes, Hyd. Brk only	DS135ND-A 13500	Volumes double stacked LH inboard frame. PM LH below frame. Recommend code 12VYL for speed signal.
	2008-Current	13500-17500 (13500)	Dana: S17-140 S19-140 17060S / D Meritor: MS-17-14X	Any	n/a	84+	n/a	Cummins	Any	Hydraulic or Air	10K-13.5K IROS Air Ride 14TBL, 14TBM, 14TBN	Yes, Hyd. Brk only	DS135ND-AC 13500	Volumes double stacked LH inboard frame. PM LH below frame. Different speed signal.
	2008-Current	13500-17500 (15500)	Dana: S17-140 S19-140 17060S / D Meritor: MS-17-14X	Any	n/a	84+	n/a	MaxxForce	Any	Hydraulic***	10K-13.5K Steel Leaf 14SAE, 14SAH	Yes	DS155NDLP-S 15500	Volumes double stacked LH inboard frame. PM LH below frame. Recommend code 12VYL for speed signal. *** Air brakes can be used if s-cams and s-cam tubes are converted to air ride compatible versions.
	2008-Current	13500-17500 (15500)	Dana: S17-140 S19-140 17060S / D Meritor: MS-17-14X	Any	n/a	84+	n/a	Cummins	Any	Hydraulic***	10K-13.5K Steel Leaf 14SAE, 14SAH	Yes	DS155NDLP-SC 15500	Volumes double stacked LH inboard frame. PM LH below frame. Different speed signal. *** Air brakes can be used if s-cams and s-cam tubes are converted to air ride compatible versions.
	2008-Current	13500-17500 (15500)	Dana: S17-140 S19-140 17060S / D Meritor: MS-17-14X	Any	n/a	84+	n/a	MaxxForce	Any	Hydraulic or Air	10K-15.5K IROS Air Ride 14TBL, 14TBM, 14TBN	Yes, Hyd. Brk only	DS155NDLP-A 15500	Volumes double stacked LH inboard frame. PM LH below frame. Recommend code 12VYL for speed signal.
	2008-Current	13500-17500 (15500)	Dana: S17-140 S19-140 17060S / D Meritor: MS-17-14X	Any	n/a	84+	n/a	Cummins	Any	Hydraulic or Air	10K-15.5K IROS Air Ride 14TBL, 14TBM, 14TBN	Yes, Hyd. Brk only	DS155NDLP-AC 15500	Volumes double stacked LH inboard frame. PM LH below frame. Different speed signal.
DuraStar 4300 Straight Rail														
	2008-Current	13500-21000 (15500)	Dana: S17-140 S19-140 17060S / D 19060S / D Meritor: MS-17-14X MS-19-14X MS-21-14X	Any	n/a	84+	n/a	Cummins	Any	Hydraulic	13.5K-20K Steel Leaf	TBD	DS155NDSR-S 15500	Volumes along side frame rail, PM inside frame on LH side.

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4300 Straight Rail	2008-Current	13500-21000 (18500)	Dana: S17-140 S19-140 17060S / D 19060S / D Meritor: MS-17-14X MS-19-14X MS-21-14X	Any	n/a	84+	n/a	Cummins	Any	Hydraulic	13.5K-20K Steel Leaf	TBD	DS185NDSR-S 18500	Volumes along side frame rail, PM inside frame on LH side.
	2008-Current	13500-21000 (20000)	Dana: S17-140 S19-140 17060S / D 19060S / D Meritor: MS-17-14X MS-19-14X MS-21-14X	Any	n/a	84+	n/a	Cummins	Any	Hydraulic	13.5K-20K Steel Leaf	TBD	DS200NDSR-S 20000	Volumes along side frame rail, PM inside frame on LH side.
	2008-Current	13500-21000 (15500)	Dana: S17-140 S19-140 17060S / D 19060S / D Meritor: MS-17-14X MS-19-14X MS-21-14X	Any	n/a	84+	n/a	Cummins	Any	Hydraulic or Air	13.5K-20K IROS Air Ride	TBD	DS155NDSR-A 15500	Volumes along side frame rail, PM inside frame on LH side.
	2008-Current	13500-21000 (18500)	Dana: S17-140 S19-140 17060S / D 19060S / D Meritor: MS-17-14X MS-19-14X MS-21-14X	Any	n/a	84+	n/a	Cummins	Any	Hydraulic or Air	13.5K-20K IROS Air Ride	TBD	DS185NDSR-A 18500	Volumes along side frame rail, PM inside frame on LH side.
	2008-Current	13500-21000 (20000)	Dana: S17-140 S19-140 17060S / D 19060S / D Meritor: MS-17-14X MS-19-14X MS-21-14X	Any	n/a	84+	n/a	Cummins	Any	Hydraulic or Air	13.5K-20K IROS Air Ride	TBD	DS200NDSR-A 20000	Volumes along side frame rail, PM inside frame on LH side.

DuraStar kits include brackets to work with the following steering gearboxes: TRW TAS-40, TRW THP-45, Sheppard M100, Sheppard HD94 (also requires 11136-007 kit). Do not use LiquidSpring suspensions with TRW TAS-66 or TRW THP-60 gearboxes.

Ram

5500 Cab Chassis

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5500 Cab Chassis	2014-Current	13500	n/a	Reg, Reg, Reg, CC	168.5 192.5 204.5 197.4	84 108 120 84	n/a	Any	Rear	n/a	n/a	Yes	DS135RS2A 13500	Must include the XXS VSIM option (included in ambulance prep). Volumes double stacked inside of frame rails, LH side.
	2014-Current	13500	n/a	Reg, Reg, Reg, CC	168.5 192.5 204.5 197.4	84 108 120 84	n/a	Any	Mid, Rear	n/a	n/a	Yes	DS135RS2AF 13500	Must include the XXS VSIM option (included in ambulance prep). Volumes outside frame rails, each side.