



Sutphen Mission Statement:

To build the safest, most reliable, fire apparatus in the world through innovation and customer focus.

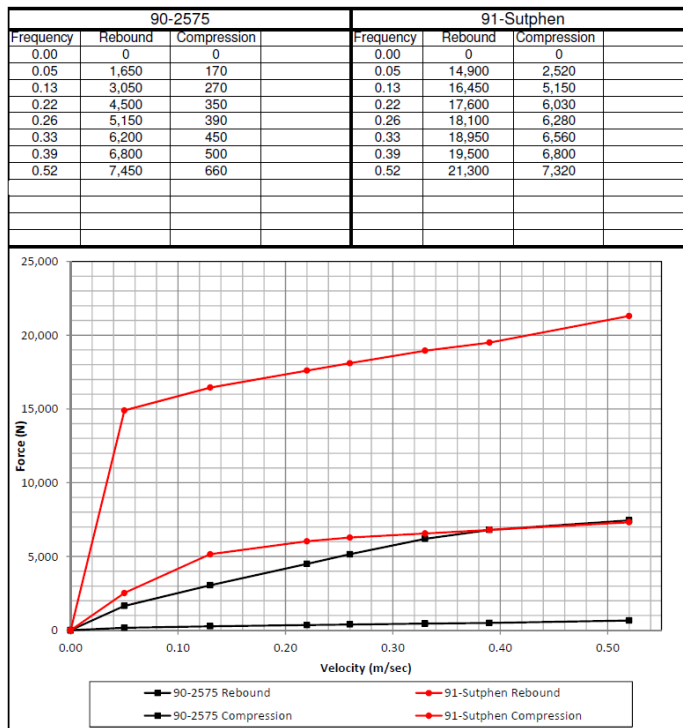
91 Series - Front Shocks

Custom designed for Sutphen
4x dampening of the 90 Series
Developed to manage heavy loads

Seen some failures on the lower mounts

Currently using the 90 series (red) shocks
Thicker lower mounts in production

Plan to return to the 91 series (black) shocks
Different lower mount – closer to axle
Change the upper mount also



Dana Tube Axle Rating - Industrial

Axle:

CHF-5583

Same as Dana EFA24T5 502501 – except:
Tie rod arms 820497/820498 (40 degree max)

Steering arms 820509/820511

78.5" KPI

89.5" track

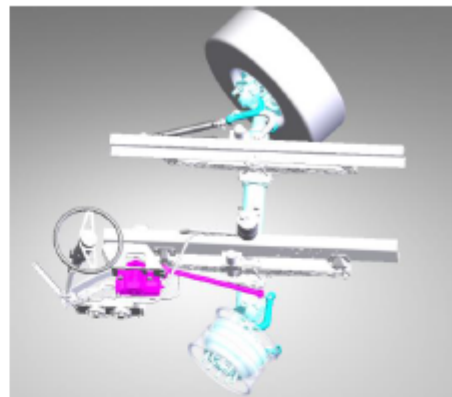
33" Suspension mounting centers

Reference Dana Approval AE0003984SA

(RAC 19feb5) 25,500 lbs. rating

Reference Dana Approval AE0008081BR

ES16507S 30x6 long stroke chamber ref test E5526



Must be Coordinated with details on page 2.

STEER AXLE BUILD SHEET W/DUM BRAKES

"CUSTOMER" PART NUMBER	CHF-5583
TRACK	89.5"
WHEELBASE	275"
AXLE MODEL	EFA24T5
STEER AXLE APPROVAL #	AE0003984SA
BEAM NUMBER IF POSSIBLE	SA 972893
BEAM DROP	
KING PIN INTERSECTION	78.5"
SPRING MOUNTING CENTERS	32.5
SPRING PAD HOLE SPACING (INWARD-OUTWARD/FRONT-REAR)	
SPRING PAD HOLES DIA	0.813"
SPRING PAD CENTER HOLE DIA & DEPTH	0.75"
TIE ROD ARMS PART NUMBERS IF POSSIBLE	RH820497 LH820498
TIE ROD ARM "H", "G", DROP	6.60"
STEERING ARM(S) PART NUMBERS IF POSSIBLE	LH820509, RH820511
LH STEER ARM - FRONT OR REAR ENTRY	Rear
BALL POSITION LH "K", BALL LOCATION and "M" DIAMETER	
RH STEER ARM - FRONT OR REAR ENTRY	Rear
BALL POSITION LH "K", BALL LOCATION and "M" DIAMETER	
BRAKE DATA *****	
BRAKE APPROVAL #	AE0008081BR
BRAKE MODEL ES16570	LH329812 RH329813
BRAKE DRUM SIZE	
CAM SHAFT ROTATION (FWD/REAR AND ANGLE)	FWD 57 DEGREES
CAM SHAFT LENGTH (BRAKE CENTER - AC CENTER)	
CHAMBER BRKT. ANGLE	
CHAMBER SIZE	30X6 long stroke chambers
LINING	
AUTO ADJ. SLACKS ** YES/NO ** LENGTH	5.5"
DUST SHIELDS ** YES/NO	No
ABS ** YES/NO ** SENSOR WIRE LENGTH	Yes WABCO
HUB DATA *****	
WHEEL END MTG ** # STUDS & BOLT CIRCLE	10 Stud / Hub Pilot / 11.25" circle
WHEEL TYPE ** STEEL OR ALUMINUM	Aluminum
WHEEL NUTS ** YES/NO	YES
LUBE ** GREASE OR OIL	OIL
SIMILAR TO EXCEPT*****	502501

ECN: 10332
Date: 09/29/15
Rev. C.0
By: Rand Smith

Dana Tube Axle Rating - Industrial

Wheels:

Alcoa Wheel 83462x 22.5x13 5.30" inset (25,600 lbs. @ 130 psi.) or equal

Suspension:

Standens SUS3160 (25, 500 lbs.) or equal

Tires:

Goodyear

Rating – 24,600 lbs. Top speed 60 mph

Goodyear G296A SS 445/65R22.5 Nominal Rating (120 psi / 24,600 lbs.) or equal

Rating – 25,500 lbs. Intermittent Service Speed Rating*

Goodyear G296A SS 445/65R22.5 Intermittent Service Rating* (120 psi / 26,320 lbs.) or equal

Michelin

Rating – 25,500 lbs. Top speed 60 mph

Michelin XFE WIDE BASE 445/65R22.5 Nominal Rating (130 psi / 25,600lbs.) or equal

Rating – 25,500 lbs. Top speed 60 mph

Michelin XZY 3 WIDE BASE 445/65R22.5 Nominal Rating (130 psi / 25,600lbs.) or equal

Special Notes:

Use two piece metric flange nuts

Grade 8 22mm wheel studs

Torque 450-500 ftlb.

Set axle stops so tires/tie rod/tie rod ends do not cause an interference

U-bolts may need trimmed

Ref. - C:\Test1\Vendor Parts\Dana-Spicer\24T FRONT AXLE\Dana Tube Axle 255 rated

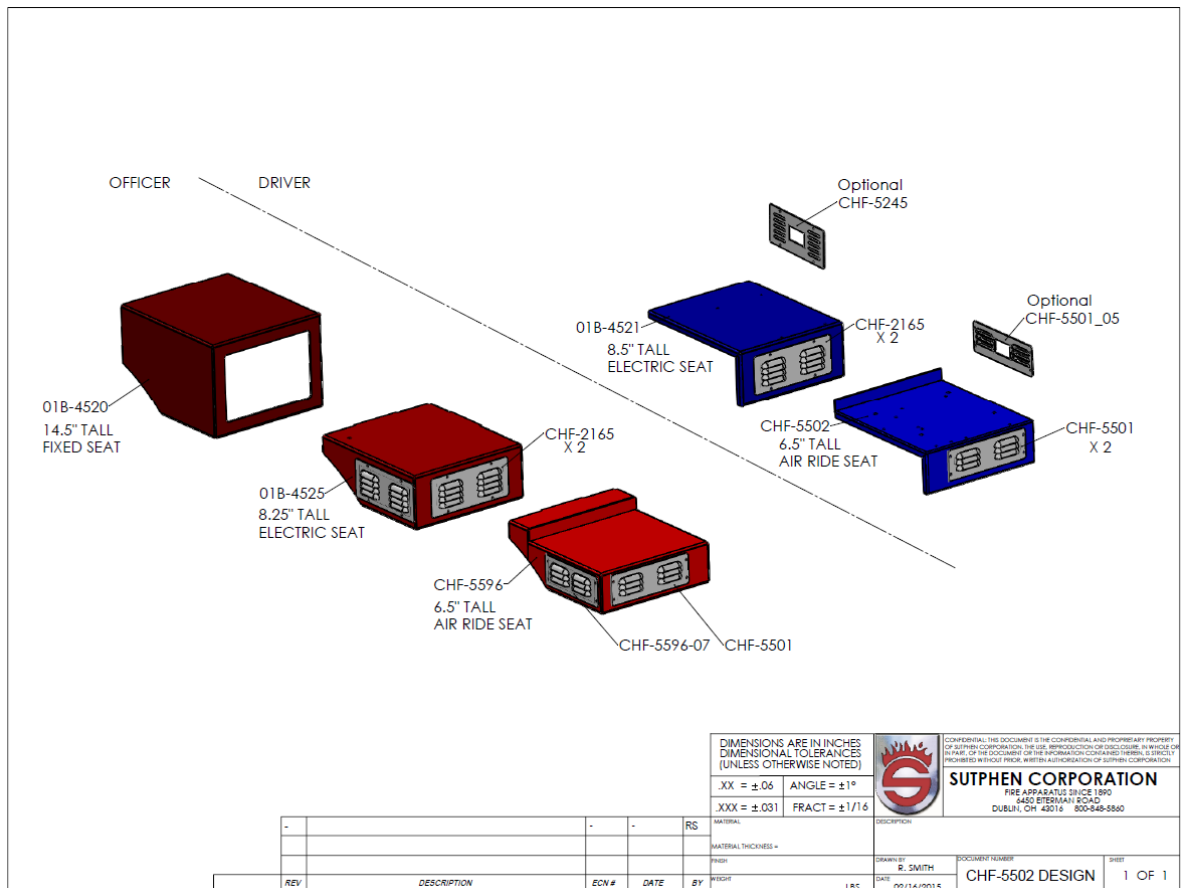
* Intermittent service is defined as no more than 50 miles of continuous operation under maximum recommended payload, or without stopping for at least 20 minutes, the emergency vehicle must reduce its speed to no more than 50 mph after the first 50 miles of travel.

Driver Seat / Seat Box

We have transitioned to a lower seat box

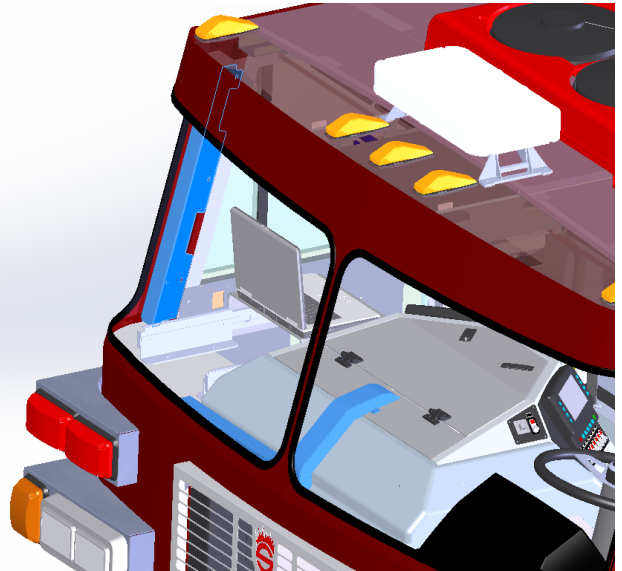
This will allow us to offer a better Air Ride seat featuring:

- ABTS
- Stronger belt retractor
- Increased dampening
- arm adjustment for front/rear
- recline option



Wire Covers

Cabs coming from Hilliard with holes in A-Pillar
Optional cover



Overhead Console Power/GND



Outset Rims/Tires 315

Outset 315 tires and wheels

The look of 385 tires with 315

Increase turn radius

Approved for 18K / 19K / 20K ratings (tire and wheel coordination required)

2015 Dealer Meeting



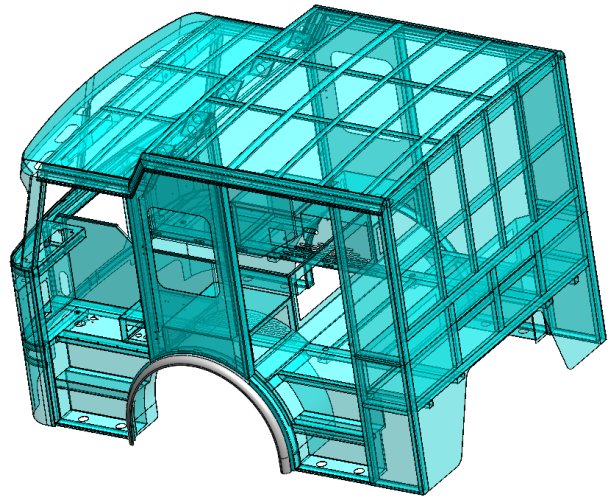
Photos courtesy
James Maddy

Cab Side Mounted Fenders

Corrosion Resistant
Fiberglass nut and flange bolts
UHMW spacer (UV stable / Moisture resistant)
Red Locktite

Vender quality improving
Less tension on bolts
Breakaway capability

Spacer thickness reduced
to limit splash



Cab Side Mounted Fenders

Rubber Fender Option



Front Suction Mud Flap Mounting

2015 Dealer Meeting



10 Crew Seating 73" Cab

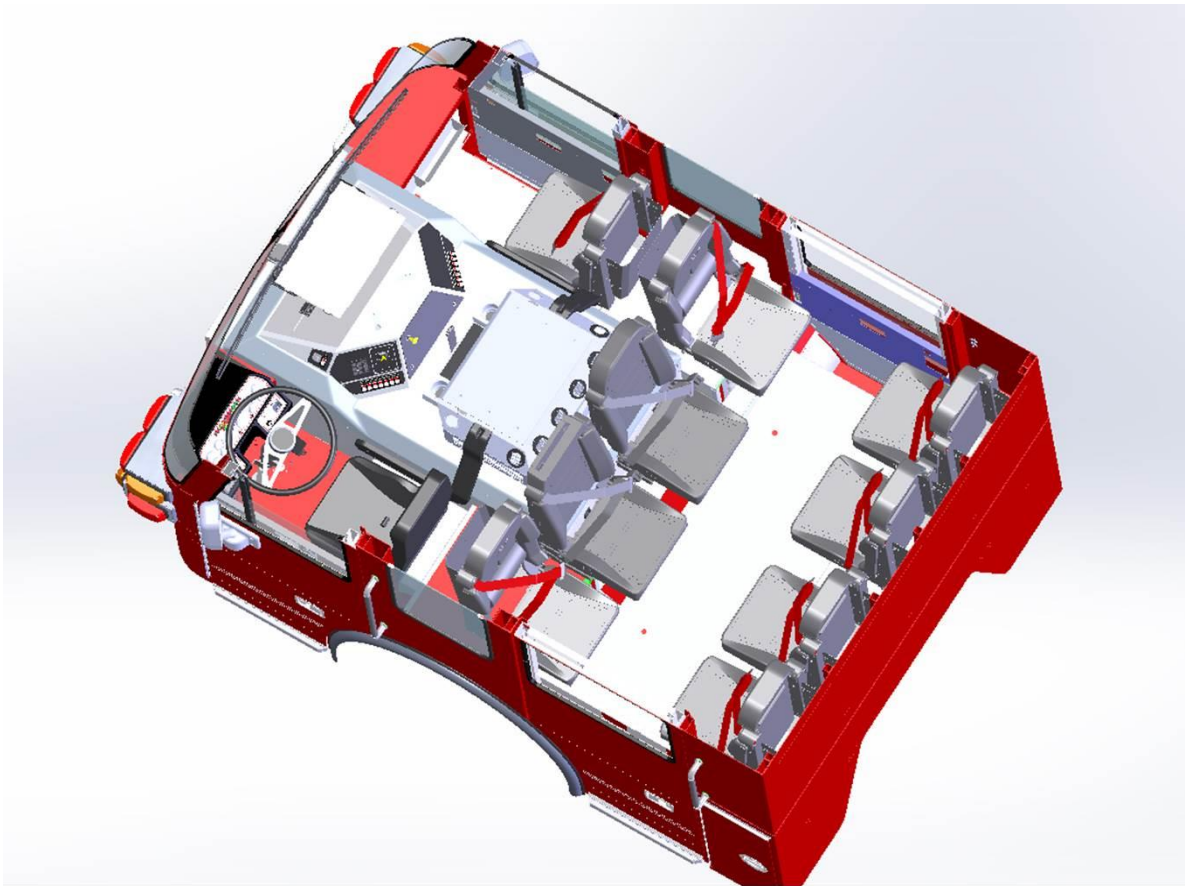
Only available with the ISL 9L Engine

Current Cab Compartments (interior/exterior) available.

Space – 17" between seats in the folded down position.

Front Axle – this modification will add 800 pounds to a 73" unit of similar configuration.

Two additional seats not available with SCBA.



NFPA 12.2.3.3 Maximum Tire Speed Rating

No steering assist cylinder required

18K rated front end (could rate to 18,180 at nominal rating)

Max tire speed 75mph

Tires – 315/80R22.5 LRL G291 130psi (18,180 rated)

Rim – 9" Steel and Al (20K rated)

Springs – SUS3185 (19K rated)

Axle – MFS-18-133A (20K rated)

43010300

G291



18K rated front end (could rate to 18,180 at nominal rating)

Max tire speed 75mph

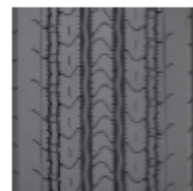
Tires – 315/80R22.5 LRL XZA2 130psi (18,180 rated)

Rim – 9" Steel and Al (20K rated)

Springs – SUS3185 (19K rated)

Axle – MFS-18-133A (20K rated)

43010350



20K rated front end

Max tire speed 68 mph

Tires - 315/80R22.5 LRL G289 WHA 130psi (20,400 rated)

Rim – 9" Steel and Al (20K rated)

Springs – SUS3184 (23K rated)

Axle – **MFS-18-133A** (20K rated C106520)

4301XXXX

G289 WHA



20K rated front end

Max tire speed 68 mph

Tires - 315/80R22.5 LRL G289 WHA 130psi (20,400 rated)

Rim – 9" Steel and AL (20K rated)

Springs – SUS3184 (23K rated)

Axle – **MFS-20-133A** (23K rated)

4301XXXX

G289 WHA



20,400 rated front end

Max tire speed 68 mph

Tires - 315/80R22.5 LRL G289 WHA 130psi (20,400 rated)

Rim – 9" 40012AOP (20,400 rated)

Springs – SUS3184 (23K rated)

Axle – MFS-20-133A (23K rated)

???????

G289 WHA

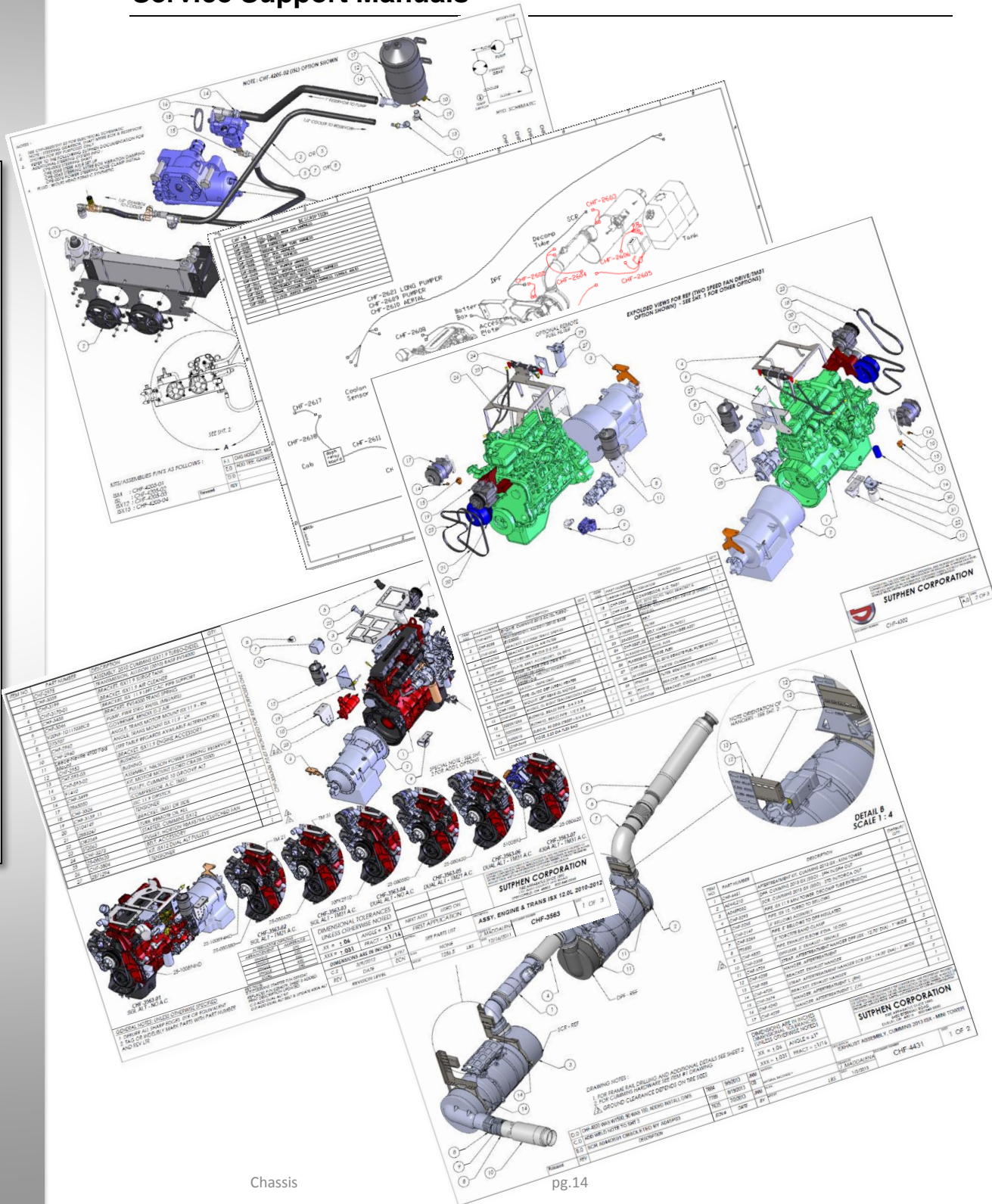


To fill wheel wells with the smaller 315 tires, outset wheels can be used.

Wheels 89363 / 40012AOP (only 3.12" inset instead of standard 6" inset) CHF-5905

Service Support Manuals

2015 Dealer Meeting





2015 / 2016 / 2017 / 2018 EPA Requirements

Calendar Year 2015 & 2016 Changes

■ 2015 Changes

- Removal of the NH₃ module & sensor from the SCR system drives **new SCR assemblies and part numbers**
- No engine side hardware changes
- No OEM side hardware or software changes required
- New engine calibrations drives **new engine specifications**

■ 2016 Changes

- Particulate Matter module & sensor hardware added to SCR assembly drives **new SCR assemblies and part numbers**
- DEF Quality Sensor added to OEM DEF tank & engine software
- 500K Baud Scan Tool Interface drive **engine wiring change & vehicle wiring change**
- New engine calibrations drive **new engine specifications**

2017 Beta Configuration and Inlet/Outlet Overview

2017 EcoFit
One Module
No Coolant Lines

2017 still buy ISX12
(Cummins Credit)

2018 ISG

Cummins Confidential





Euro5 Emissions

ISL9 400 HP

One SCR

Testing Complete – Approved



ISX15 500 HP

One SCR

Testing in process

