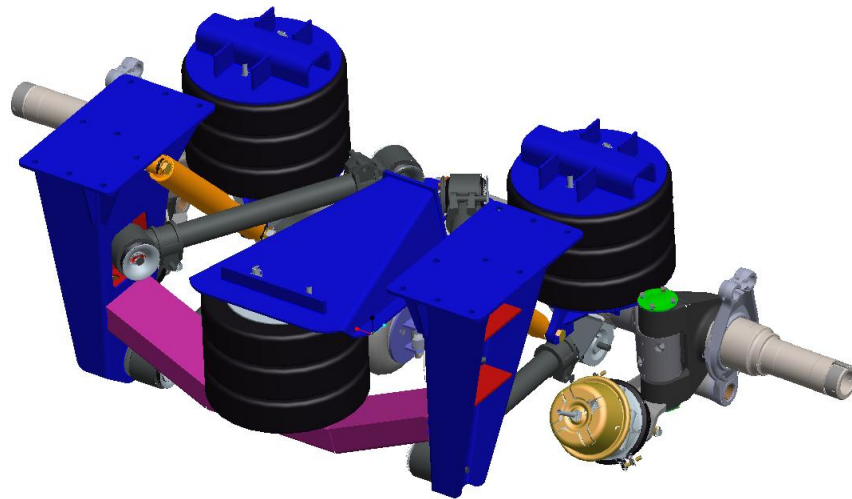


Owner's Manual

Titan ParaMax Suspension, Self Steering,
High Lift Suspension System



Instances:GENERIC

1129 Highway #3

Delhi, Ontario, Canada, N4B 2W6

Phone: 519-688-4826

Fax: 519-688-6453

www.titantrailers.com

Table of Contents

Table of Contents.....	2
General Information.....	2
Introduction.....	3
Suspension Operation.....	3
Suspension Alignment.....	4
Maintenance Schedule.....	9
Parts List & Illustrations.....	9
Warranty.....	10

General Information

Suspension Identification: The Titan ParaMax Suspension can be identified by a metal tag attached on the left-hand hanger that indicates the serial number, model number and suspension load capacity.

Parts: For best performance and reliability order only Titan replacement parts. Replacement parts and instructions are shown on page 8 and 9 of this manual.

Service & Warranty: If you need assistance regarding this suspension, please contact us and we will be pleased to help you.

Titan Trailers Inc.

1129 Highway #3

Delhi, Ontario, Canada

www.titantrailers.com

Phone: 519-688-4826

Fax: 519-688-6453

Email: info@titantrailers.com

Introduction

The Titan ParaMax suspension has been designed to give extreme suspension travel, high lift, vertical king pin position through entire suspension travel as well as allowing freedom of the axle to displace different heights vertically from side to side. These benefits allow for improved ride comfort, increased ground clearance when lifted, reduced tire wear, minimal maintenance, less stress on axle, suspension and trailer all increasing the longevity of the trailer and its components.

Suspension Operation

The controls of the Titan ParaMax Suspension are in the stainless steel box on the driver's side. There is a push/pull knob or switch to raise or lower the suspension depending on the vehicles load requirements which can manually raise and lower the suspension from ride height to the lifted position. There is also a pressure regulator and air gauge to control the load carried by the suspension. The following pressure versus load charts are shown below in Table 1 for each ride height. RH=Ride Height.

Table 1

Titan ParaMax Suspension - TP-01-1650		
Pressure	Load on Ground @ 16.50" RH	
psig	lb	kg
20	5950	2699
30	8150	3697
40	10150	4604
50	12350	5602
60	14450	6554
70	16850	7643
80	18950	8596
90	21150	9594
100	23750	10773

Titan ParaMax Suspension - TP-01-1675		
Pressure	Load on Ground @ 16.75" RH	
psig	lb	kg
20	5950	2699
30	8150	3697
40	10150	4604
50	12350	5602
60	14450	6554
70	16850	7643
80	18950	8596
90	21150	9594
100	23750	10773

Titan ParaMax Suspension - TP-01-1700		
Pressure	Load on Ground @ 17" RH	
psig	lb	kg
20	5750	2608
30	7550	3425
40	9750	4423
50	11950	5420
60	14150	6418
70	16350	7416
80	18350	8324
90	20550	9321
100	22950	10410

Titan ParaMax Suspension - TP-01-1725		
Pressure	Load on Ground @ 17.25" RH	
psig	lb	kg
20	5750	2608
30	7550	3425
40	9750	4423
50	11950	5420
60	14150	6418
70	16350	7416
80	18350	8324
90	20550	9321
100	22950	10410

Titan ParaMax Suspension - TP-01-1750		
Pressure	Load on Ground @ 17.50" RH	
psig	lb	kg
20	5550	2517
30	7350	3334
40	9450	4286
50	11650	5284
60	13850	6282
70	15950	7235
80	17850	8097
90	20150	9140
100	22450	10183

Titan ParaMax Suspension - TP-01-1775		
Pressure	Load on Ground @ 17.75" RH	
psig	lb	kg
20	5550	2517
30	7350	3334
40	9450	4286
50	11650	5284
60	13850	6282
70	15950	7235
80	17850	8097
90	20150	9140
100	22450	10183

Titan ParaMax Suspension - TP-01-1800		
Pressure	Load on Ground @ 18" RH	
psig	lb	kg
20	5450	2472
30	7250	3289
40	9350	4241
50	11350	5148
60	13350	6056
70	15350	6963
80	17550	7961
90	19350	8777
100	22050	10002

Titan ParaMax Suspension - TP-01-1825		
Pressure	Load on Ground @ 18.25" RH	
psig	lb	kg
20	5450	2472
30	7250	3289
40	9350	4241
50	11350	5148
60	13350	6056
70	15350	6963
80	17550	7961
90	19350	8777
100	22050	10002

Titan ParaMax Suspension - TP-01-1850		
Pressure	Load on Ground @ 18.50" RH	
psig	lb	kg
20	5350	2427
30	7150	3243
40	9150	4150
50	11150	5058
60	13250	6010
70	15050	6827
80	17150	7779
90	18950	8596
100	21550	9775

Titan ParaMax Suspension - TP-01-1875		
Pressure	Load on Ground @ 18.75" RH	
psig	lb	kg
20	5350	2427
30	7150	3243
40	9150	4150
50	11150	5058
60	13250	6010
70	15050	6827
80	17150	7779
90	18950	8596
100	21550	9775

Titan ParaMax Suspension - TP-01-1900		
Pressure	Load on Ground @ 19" RH	
psig	lb	kg
20	5250	2381
30	6950	3152
40	8750	3969
50	10550	4785
60	12750	5783
70	14550	6600
80	16550	7507
90	18450	8369
100	20850	9457

Titan ParaMax Suspension - TP-01-1925		
Pressure	Load on Ground @ 19.25" RH	
psig	lb	kg
20	5250	2381
30	6950	3152
40	8750	3969
50	10550	4785
60	12750	5783
70	14550	6600
80	16550	7507
90	18450	8369
100	20850	9457

Titan ParaMax Suspension - TP-01-1950		
Pressure	Load on Ground @ 19.50" RH	
psig	lb	kg
20	5150	2336
30	6750	3062
40	8450	3833
50	10350	4695
60	12350	5602
70	14050	6373
80	16050	7280
90	18050	8187
100	20150	9140

Titan ParaMax Suspension - TP-01-1975		
Pressure	Load on Ground @ 19.75" RH	
psig	lb	kg
20	5150	2336
30	6750	3062
40	8450	3833
50	10350	4695
60	12350	5602
70	14050	6373
80	16050	7280
90	18050	8187
100	20150	9140

Titan ParaMax Suspension - TP-01-2000		
Pressure	Load on Ground @ 20" RH	
psig	lb	kg
20	4950	2245
30	6550	2971
40	8250	3742
50	10050	4559
60	11950	5420
70	13550	6146
80	15550	7053
90	17350	7870
100	19550	8868

Titan ParaMax Suspension - TP-01-2025		
Pressure	Load on Ground @ 20.25" RH	
psig	lb	kg
20	4950	2245
30	6550	2971
40	8250	3742
50	10050	4559
60	11950	5420
70	13550	6146
80	15550	7053
90	17350	7870
100	19550	8868

Titan ParaMax Suspension - TP-01-2050			
Pressure	Load on Ground @ 20.50" RH		
psig	lb	kg	
20	4850	2200	
30	6150	2790	
40	8050	3651	
50	9750	4423	
60	11750	5330	
70	13350	6056	
80	15250	6917	
90	16950	7688	
100	19150	8686	

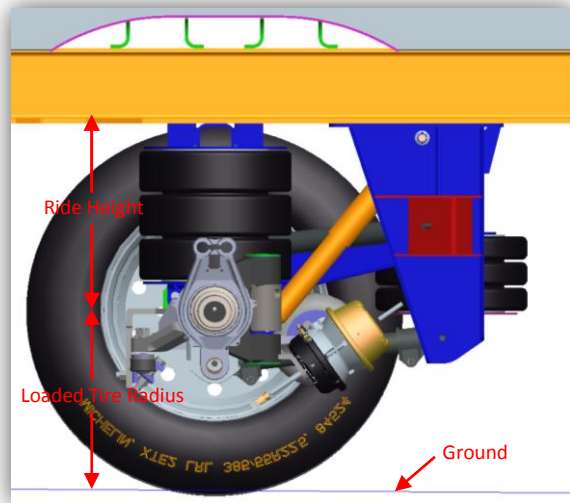


Figure 1

To achieve more accurate pressure vs. load charts for your exact trailer suspension place self-steer axle on certified scales under the lowered steer axle and adjust the pressure regulator by 10psi increments to adjust gauge pressure and record the load on the scales at these pressure increments. This should give more accurate table results for each specific axle on your trailer. Make sure the axle is at the ride height that it will be riding at when riding down the highway. See Figure 1 for illustrations.

For SPIF trailers weigh the load on the primary axles and divide the load by the number of axles. Next weigh the load on the steer axles and divide by number of axles. Then adjust proportional pressure regulator to steers until each steer axle has same load on them as each primary axle and therefore they equalize. All axles must equalize to within 500kg. See SPIF Vehicle and Weight Limits manual for more information. Below in Table 2 the ParaMax suspension parameters for each ride height is shown. These numbers can be used to verify that the suspension components are operating within their allowable ranges.

Table 2

Ride Height (in)	Ride Bag Height (in)	Lift Bag Height (in)	Up travel (Lift) (in)	Required Clearance Above Tire (in)	Down travel (Rebound) (in)	Shock Length at Ride Height	Hanger Height From Ground (in)
16.5	11	11.625	6.5	8.5	7	23.55	11
16.75	11.25	11.375	6.75	8.75	6.75	23.74	11.25
17	11.5	11.125	7	9	6.5	23.92	11.5
17.25	11.75	10.875	7.25	9.25	6.25	24.1	11.75
17.5	12	10.625	7.5	9.5	6	24.28	12
17.75	12.25	10.375	7.75	9.75	5.75	24.47	12.25
18	12.5	10.125	8	10	5.5	24.65	12.5
18.25	12.75	9.875	8.25	10.25	5.25	24.83	12.75
18.5	13	9.625	8.5	10.5	5	25	13
18.75	13.25	9.375	8.75	10.75	4.75	25.18	13.25
19	13.5	9.125	9	11	4.5	25.36	13.5

19.25	13.75	8.875	9.25	11.25	4.25	25.54	13.75
19.5	14	8.625	9.5	11.5	4	25.72	14
19.75	14.25	8.375	9.75	11.75	3.75	25.9	14.25
20	14.5	8.125	10	12	3.5	26.07	14.5
20.25	14.75	7.875	10.25	12.25	3.25	26.25	14.75
20.5	15	7.625	10.5	12.5	3	26.42	15

Suspension & Axle Alignment

To setup the alignment, caster, and toe-in/toe-out of suspension axle follow procedure IN015, IN016, IN020 of the Ingersoll Axles Installation and Maintenance Manual in conjunction with this paragraph. To adjust the caster of the axle, loosen the 5/8" pinch bolts on the lower torque rods and turn the torque rod in or out to increase or decrease caster angle whichever is desirable.

Maintenance Schedule

Below in Table 3, we recommend the following maintenance schedule to keep your Titan ParaMax suspension in optimum working condition. It should also be noted that the lift bag not exceed 60 psi. It is preset at the factory at this pressure.

Table 3

Suspension	First 1000 Miles	First 6000 Miles	First 12000 Miles	Every 36000 Miles
Bushings	I	I	I	I
Air Springs	I	I	I	I
Shocks	I	I	I	I
Structure	I	I	I	I
Fastener Torque	T	I	I	T

I = Inspect, T=Tighten

Notes:

- (1) The above intervals are minimum requirements. More frequent intervals are recommended for severe applications.
- (2) 1 mile = 1.6 km

Below in Table 4 shows the torque specification for the suspension fasteners.

Table 4

Fastener Size	Location	Torque (ft-lbs)	Torque (in-lbs)
5/8" - 11 NC	Torque Rod Joint Bolts	135	N/A
5/8" - 11 NC	Torque Rod Pinch Bolts	135	N/A
3/4" - 16 NF	Shock Bolts	295	N/A
3/8" - 16 NC	Airbag Connection	20	240
1/2" - 16 NC	Airbag Connection	30	360
3/4" - 16 NC	Airbag Connection	40	480
5/8" - 11 NC	Hanger Bolts	150	N/A

Parts List & Illustrations

Below in Figure 2 shows an exploded view of the ParaMax Suspension and on the next page a Table 5 shows a list of the components with part numbers and descriptions.

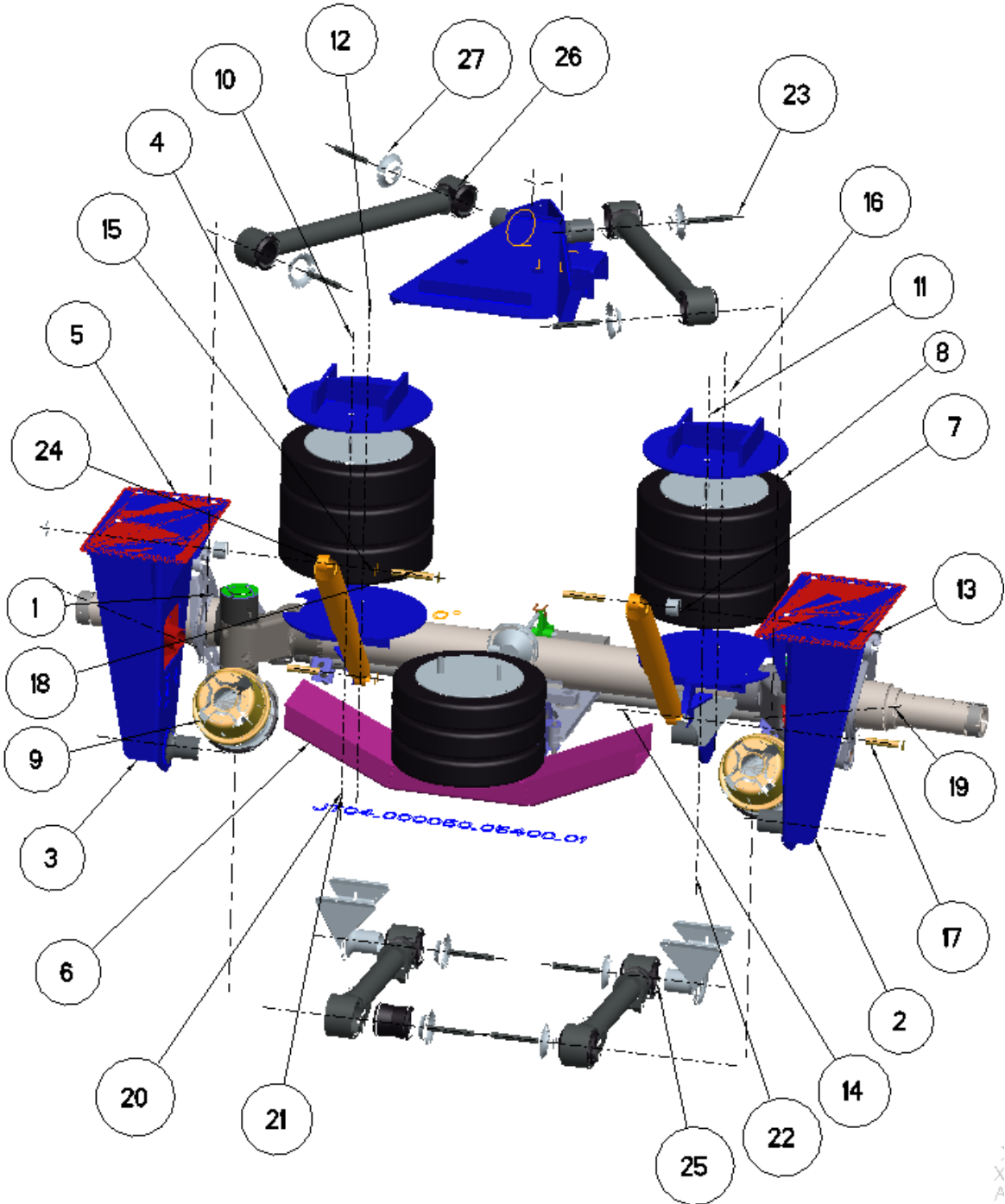


Figure 2



Table 5

Item	Description	Part Number
1	86" TRACK AXLE ASSEMBLY	04SWF_000065_01
2	HANGER ASSEMBLY, RIGHT	04SWF_000078
3	HANGER ASSEMBLY, LEFT	04SWF_000080
4	UPPER BAG PLATE ASSEMBLY	04SWF_000084_06
5	PLATE, ANTI-CORROSION	04SWF_000089
6	LIFT MOUNT ASSEMBLY	04SWF_000095_01
7	UPPER SHOCK SPACER	04SWF_000103
8	FIRESTONE TRIPLE CONVULTED AIRBAG	W01-358-7850
9	BRAKE CHAMBER, GOLD SEAL 3030, 2.5" STROKE, 4.88" ROD	AIR_139030120_SW
10	NUT, 1/2" HEX	HDW_120_000_105Z
11	LOCK WASHER, 1/2" GR 5 Z	HDW_120_000_255Z
12	NUT 3/4" HEX	HDW_340_000_105Z
13	LOCKNUT, 3/4" - 16" NC GR 8 Z, ALL METAL	HDW_340_000_108Z
14	LOCKNUT, 3/4" - 16 ALL METAL, ZINC, GR 8, NF	HDW_340_000_156Z
15	WASHER 3/4", 1.50" OD	HDW_340_000_208Z
16	LOCKWASHER, 3/4" GR 5	HDW_340_000_255Z
17	BOLT 3/4"-16 - 4 1/2"	HDW_412_000_006YZ
18	BOLT 3/4"-16 - 4"	HDW_400_000_006YZ
19	LOCKNUT, 5/8"-11 NC GR 5 FLANGE HEX CAP	HDW_379
20	WASHER 3/8" FLAT, GR 8	HDW_380_000_208Z
21	LOCK WASHER, 3/8" GR 5 Z	HDW_380_000_255Z
22	BOLT 3/8" - 16 X 1-1/4" NC GR 5 ZINC PLATED HEX CAP	HDW_380_114_005Z
23	BOLT, 5/8"-11 X 5" NC GR 8 FLANGE HEX CAP	HDW_381
24	MUNROE SHOCK ABSORBER, 65482	SUP_65482
25	TORQUE ROD, ADJUSTABLE ASSEMBLY, 24" LG	SUP_216240
26	TORQUE ROD, FIXED, 27.88" LG	SUP_223277
27	#1 SPIGOT	SUP_800201
28	TORQUE ARM RUBBER BUSHINGS	SUP_22128
29	BOLT, 5/8"-11 X 3-1/2" NC GR 8 ZINC FLANGE HEX CAP	HDW_380
30	24" ADJUSTABLE TORQUE TUBE	SUP_21924
31	ADJUSTABLE TORQUE ROD EYE	SUP_22045

Warranty

Titan Trailers warrants the suspension systems manufactured by it to be free from defects in material and workmanship under proper use, installation, application and maintenance for a period of 3 years after delivery to the original buyer.

Written permission for any claim return must be first obtained from an authorized Titan Trailer Personnel. All returns must have transportation charges prepaid by the customer and accompanied with a complete written explanation of claimed defects and the circumstances of suspension failure. On all parts not manufactured by Titan Trailers, their warranty is to the extent that the manufacturer of such parts warrant them to Titan Trailers. In no event will Titan Trailers be liable for business interruptions, loss of profits, personal injury, cost of delay or for other special, indirect, incidental or consequential losses, costs or damages.

Subject to all the above conditions, if repair or replacement of any defective part is made by Titan Trailers, Titan Trailers will return the repaired or replaced parts to the original purchaser with transportation charges prepaid. Table 6 below shows the timeline for warranties.

Table 6

Timeline	Warranty Coverage
1-12 months	100% Parts & Labour
13-24 months	100% Parts Only
25-36 months	50% Parts Only