



Replacement Parts & Service Manual and Operating Instructions



This manual covers the following models:
T-12, T-16, T-18-3, T-18, T-20, T-20LP, T-24LP, T-40LP, T-50LP, T-24, T-30,
C-10LS, C-12LS, C-14LST-40, T-50, T-50RG, T-50RGHT, T-70RG,
T-70RGHT, T-20T, T-24T, T-40T, T-50T, C-18, C-20, C-24

The Standard for the Road Ahead!

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Table of Contents

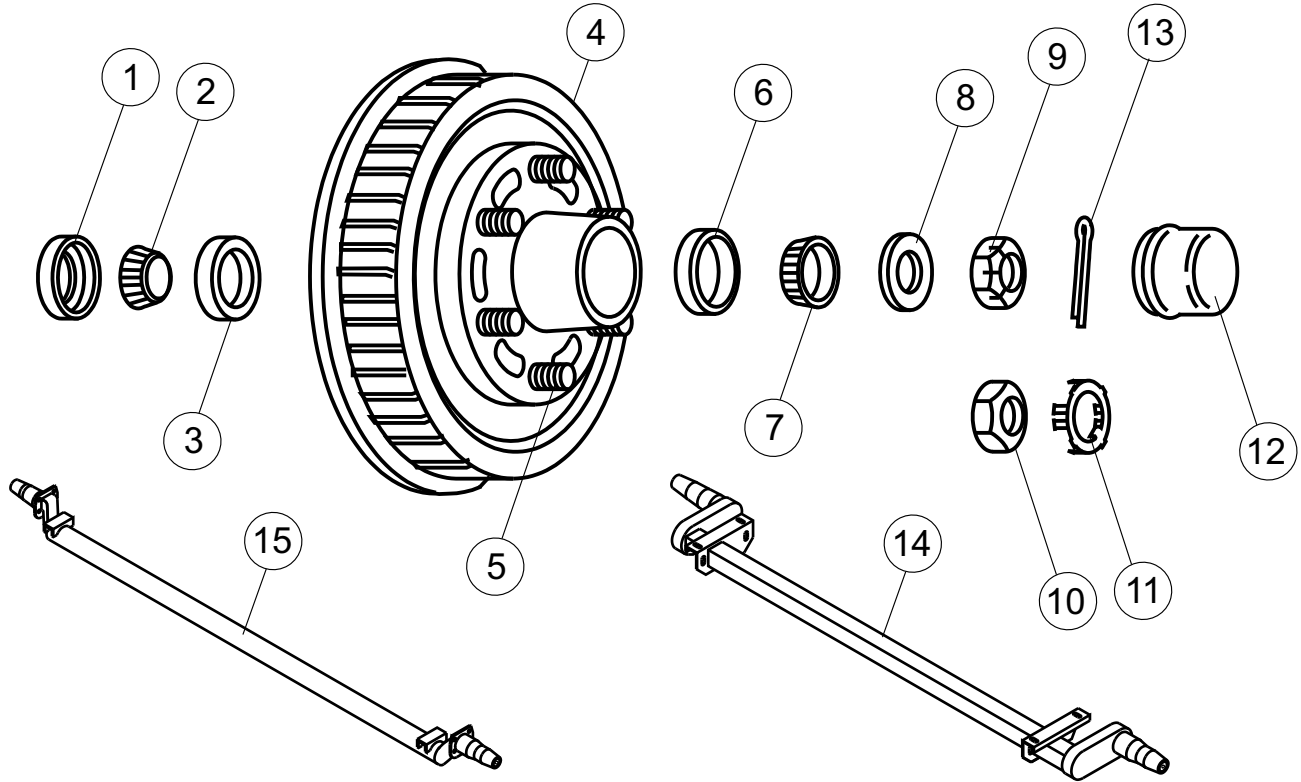
Read complete manual before using trailer.

Hubs, Drums and Axles	4 - 6K and 7K Hub, Drum and Axles (Non- E-Z Lube)
	5 - 8K Hub, Drum and Axles
	6 - 9K, 10K General Duty Hub and Drum
	7 - 10K Hub and Drum
	8 - 12K Hub and Drum
	9 - 15K Hub and Drum
	10 - 22.5K, 25K Cast Spoke Hub and Drum
	11 - 22.5K, 25K Budd Hub and Drum
	12 - 22.5K, 25K, 8 Bolt Budd, Hub-Piloted Hub and Drum
	13 - 6K Electric Brake, 12" x 2"
Brake Components	14 - 6K Hydraulic Brake, 12" x 2"
	15 - 8K Electric Brake, 12 1/4" x 3 3/8"
	16 - 8K Hydraulic Brake, 12 1/4" x 3 3/8"
	17 - 9K, 10K General Duty Electric Brake, 12 1/4" x 3 3/8"
	18 - 9K, 10K General Duty Hydraulic Brake, 12 1/4" x 3 3/8"
	19 - 10K Electric Brake, 12 1/4" x 4"
	20 - 10K Hydraulic Brake, 12 1/4" x 4"
	21 - 12K, 15K Electric Brake, 12 1/4" x 5"
	22 - 12K Hydraulic Brake, 12 1/4" x 5"
	23 - 10K, 12K, 22.5K and 25K Air Brakes
Suspensions	24 - Slipper Spring Suspension, T-12
	25 - Slipper Spring Suspension, C-18, T-18
	26 - Slipper Spring Suspension, BE-10 (electric only)
	27 - Slipper Spring Suspension, C-20 (air & hyd.), C-24
	28 - Hutchens Suspension
Air Systems	29 - Air System, 2S/1M
	30 - Air System, 2S/2M
	31 - Air System, 4S/2M
	32 - Air System, 6S/3M
	33 - Air System Fittings and ABS Components
Wheels and Tires	34 - Wheels and Tires
	35 - Tire Ratings
	36 - Wheel Torque Requirements
	37 - GVWR and TIRE SAFETY INFORMATION
	38 - "
	39 - ""
	40 - ""
	41 - ""
	42 - ""
	43 - ""
44 - ""	
45 - ""	
46 - ""	
47 - ""	
Jacks & Hitches	48 - Jacks
	49 - Hitches and Couplers
Electrical	50 - Lighting, Batteries, Battery Boxes
	51 - Wiring Harness, Deck Overs with Electric Brakes
	52 - Wiring Harness, All ABS Models
	53 - Wiring Harness, Tilt Models with ABS
	54 - Wiring Harness, Tilt Models with Electric Brakes
	55 - Wiring Circuits
Tilt Components and Ramps	56 - Deck Latching Systems (Tilt Models)
	57 - Deck Cushion Cylinder
	58 - Under-Ride Protection / Ramps (Tilt Models)
	59 - Ramps
	60 - Hydraulic Bi-fold Ramp
	61 - Hydraulic Bi-fold Ramp
	62 - Hydraulic Ramps
63 - Hydraulic Ramps	
64 - Hydraulic Folding Tail	
Miscellaneous	65 - Miscellaneous Parts
	66 - Recommended Outrigger Loadings
	67 - Payload Ratings
Decals, Warnings and Cautions	68 - Towing Tips and Check List
	69 - Decals, Warnings and Cautions
	70 - Decals, Warnings and Cautions
	71 - Decals, Warnings and Cautions
	72 - Decals, Warnings and Cautions
	73 - Decals, Warnings and Cautions
	74 - Decals, Warnings and Cautions
	75 - Reporting Safety Defects Maintenance and Operating Instructions
Maintenance & Operating Instructions	76 - Maintenance and Operating Instructions
	77 - Maintenance and Operating Instructions
	78 - Maintenance and Operating Instructions
	79 - Maintenance and Operating Instructions
	80 - Maintenance and Operating Instructions (WARNINGS!)

Printed 3/06

6K and 7K Hub, Drum and Axles (non E-Z lube)

Used on these models: C-10LS, C-12LS, C-14LS

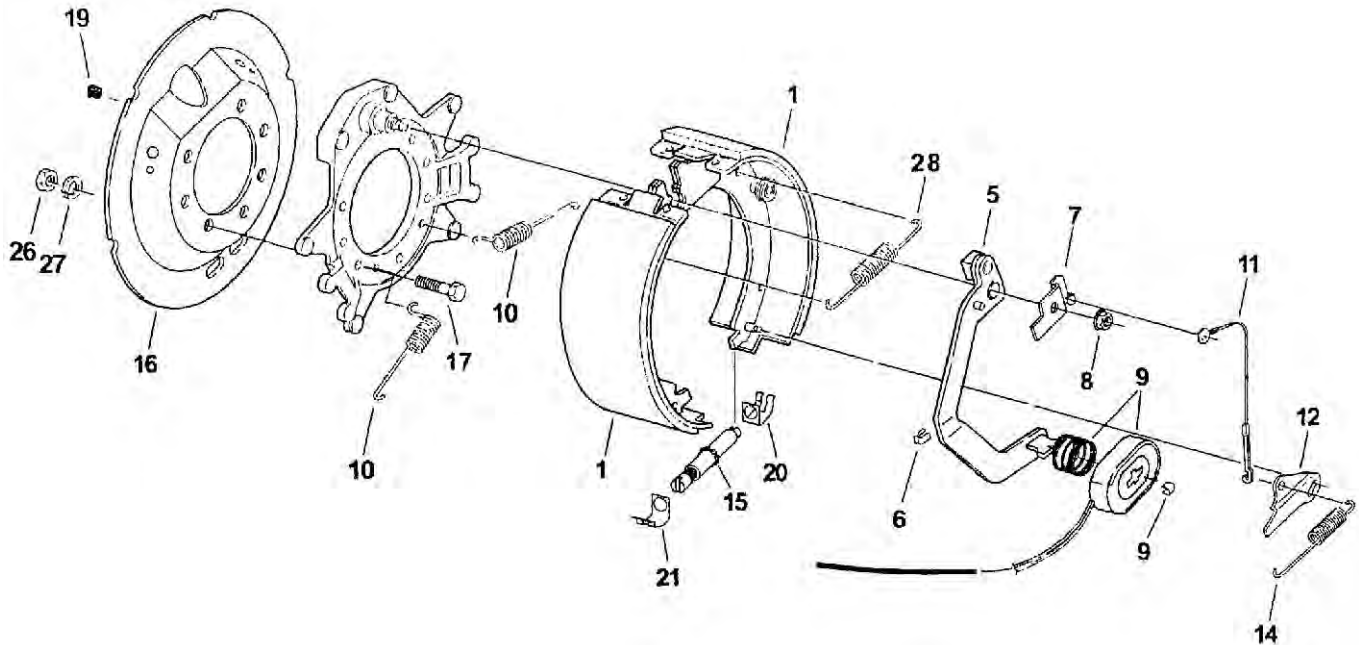


Note: 6K, 6 bolt assembly is shown, please indicate 6K, 7K, 6 bolt or 8 bolt when ordering.
Model C-14LS use 7K axles.

Item	Part #	Description
	25-6000	6K hub and drum assembly, 6 bolt
	25-5005	6K / 7K hub and drum assembly, 8 bolt
1	25-0005	grease seal, 2.25" i.d.
2	25-6010	inner bearing cone
3	25-6012	inner race
4	25-6014	hub and drum only
5	25-6161	1/2" drive-in stud
6	25-6018	outer race, 6 bolt
	25-9010	outer race, 8 bolt
7	25-6020	outer bearing cone, 6 bolt
	25-9015	outer bearing cone, 8 bolt
8	25-3522	spindle washer
9	25-3524	spindle nut
10	25-1526	jam nut
11	25-1524	nut retainer
12	25-6026	grease cap, 6 bolt
	25-5020	grease cap, 8 bolt
13	25-6016	cotter pin
14	25-0008	axle only, 6k rubber ride, less hubs/drums, C-10, C-12, C-10BL, C-12BL
	25-0010	axle only, 6k rubber ride, less hubs/drums, C-10LS, C-12LS, 45 deg. down
	25-0031	axle only, 7k rubber ride, less hubs/drums, C-14LS, 45 deg. down
15	25-0018	axle only, 6k spring, less hubs/drums/springs, C-10P, C-12P
	37-0701	1/2" cone wheel nut (not shown)
		Complete axles...
	23-0003	axle, 6k rubber ride, electric
	23-0013	axle, 6k rubber ride, hydraulic
	23-0013F	axle, 6k rubber ride, hydraulic, free backing
	23-0083	axle, 7k rubber ride, electric (C-14)
	23-0005	axle, 6k spring, 4" drop, electric
	23-0008	axle, 6k spring, 4" drop, hydraulic
	23-0008F	axle, 6k spring, 4" drop, hydraulic, free backing
	23-8002	axle, 6k rubber ride, electric, 45 deg. down (C-10LS, C-12LS only)
	23-7421	axle, 7k rubber ride, electric, 45 deg. down (C-14LS only)

12K, 15K Electric Brake, 12 1/4" x 5"

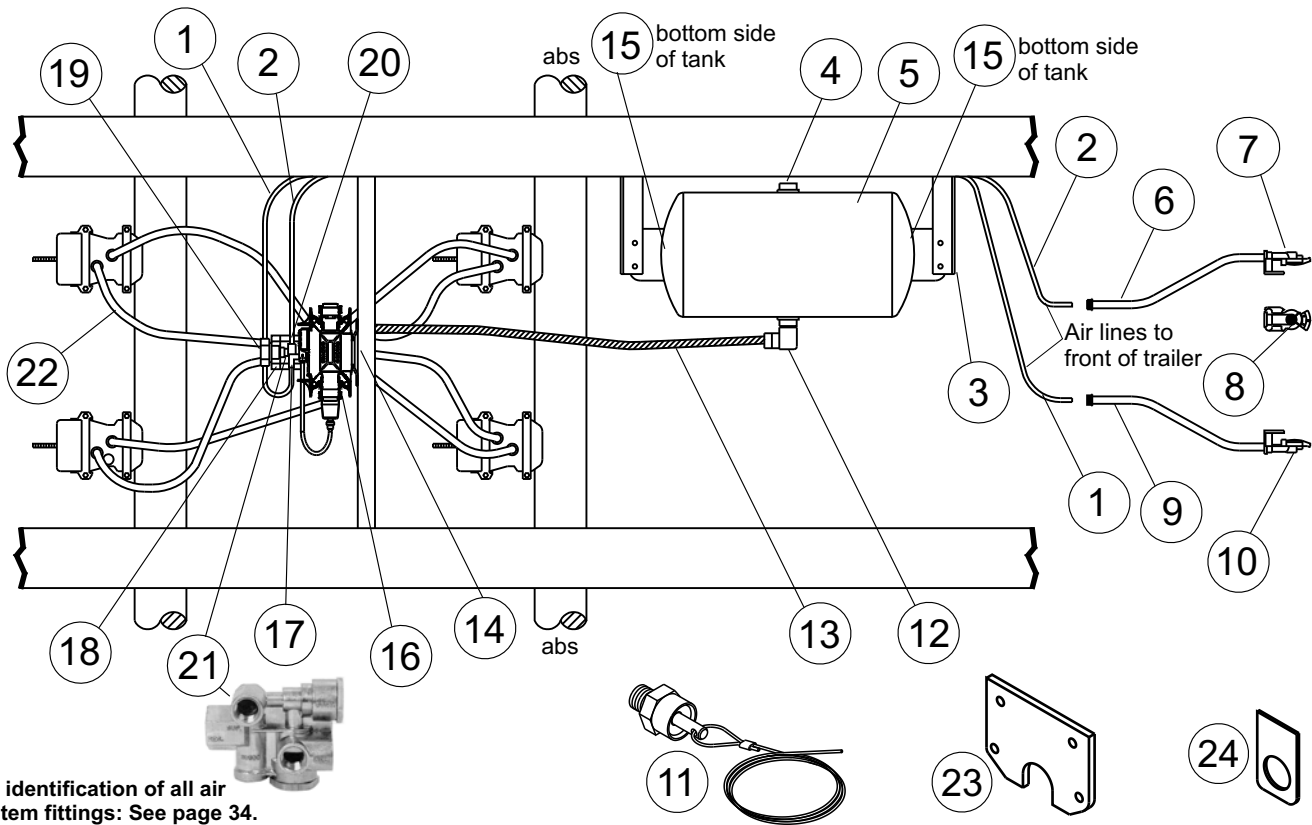
Used on these models: C-24, T-20LP, T-24, T-24LP, T-30, T-24T



Item	Part #	Description
	311229c	l.h. brake assembly (12K)
	311231c	r.h. brake assembly (12K)
	311251c	l.h. brake assembly (15K) T-30
	311253c	r.h. brake assembly (15K) T-30
1	311201c	l.h. shoe and lining kit
	311203c	r.h. shoe and lining kit
5	311344	l.h. actuator arm assembly
	311345	r.h. actuator arm assembly
7	311015	l.h. arm/shoe retainer
	311017	r.h. arm/shoe retainer
8	311342	flange nut
9	311211	magnet kit (12K)
	311215	magnet kit (15K)
10	311322	centering spring
11	311351	adjuster cable
12	311323	l.h. adjuster lever
	311324	r.h. adjuster lever
14	311325	adjuster spring
15	311326	l.h. adjuster assembly
	311327	r.h. adjuster assembly
16	311365	dust shield
17	311352	brake mounting screw
19	316027	wire grommet
20	311367	adjuster clip (thread end)
21	311368	adjuster clip (barrel end)
26	311353	brake mounting nut
27	311354	brake mounting lockwasher
28	311518	return spring

Air System, 2S/1M

Used on these models: C-20, C-24, T-20, T-20LP, T-24, T-24LP, T-20T, T-24T, T-40T, T-40, T-50RG, T-70RG, T-50RGHT, T-70RGHT

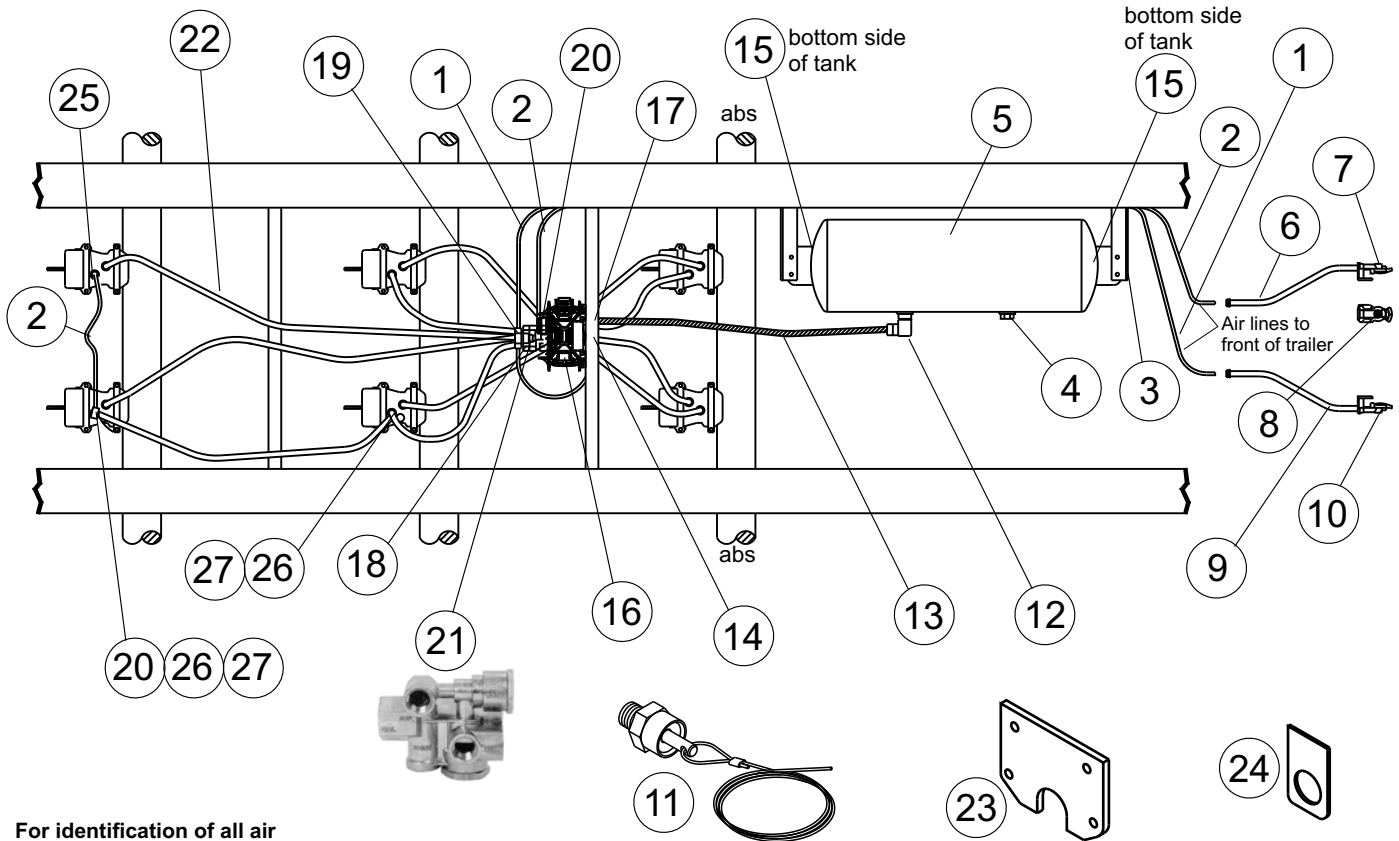


For identification of all air system fittings: See page 34.

Item	Part #	Description
1	35-0136	blue 3/8" nylon air brake tubing
2	35-0156	red 3/8" nylon air brake tubing
3	06-0922	air tank mounting bracket
4	35-0003	3/4" plug, square head, black
5	35-0085	air tank, 2800 cu. in.
6	35-0104R	3/8" air brake hose assembly with red glad hand
7	35-0052	glad hand only, emergency (red)
8	35-0109	screen, glad hand
9	35-0104B	3/8" air brake hose assembly with blue glad hand
10	35-0050	glad hand only, service (blue)
11	35-0070	drain valve with 5' pull cable
12	35-0404	90 deg. elbow comp. fitting, 1" npt pipe x 3/4" hose
13	35-0112	3/4" synflex air brake hose
14	35-0400	straight comp. fitting, 1" npt pipe x 3/4" hose
15	35-0015	3/8" plug, square head, brass (one each end of tank)
16	35-0177	ecu/valve assembly, 2s/1m
17	35-0034	90 deg. elbow, 3/8" pipe, 3/8" tube
18	35-0028	3/8" street elbow
19	35-0008	3/8" brass branch tee
20	35-0031	3/8" straight male connector, 3/8" pipe, 3/8" tube
21	35-0183	spring brake valve
22	35-0101	3/8" air brake hose, 24" (specify lengths and
	35-0107	3/8" air brake hose, 32" quantity needed, hoses
	35-0102	3/8" air brake hose, 44" will vary with different
	35-0103	3/8" air brake hose, 54" models and deck lengths)
	35-0100	3/8" air brake hose, 97"
23	06-0793	ecu valve mounting bracket
24	06-2538	air line mounting bracket
	39-4212	rubber grommet for air lines (not shown)
	35-0078	rubber pad, between air tank and mounting brackets (not shown)
	35-0108	glad hand seal (not shown)

Air System, 2S/2M

Used on these models: T-50T, T-50

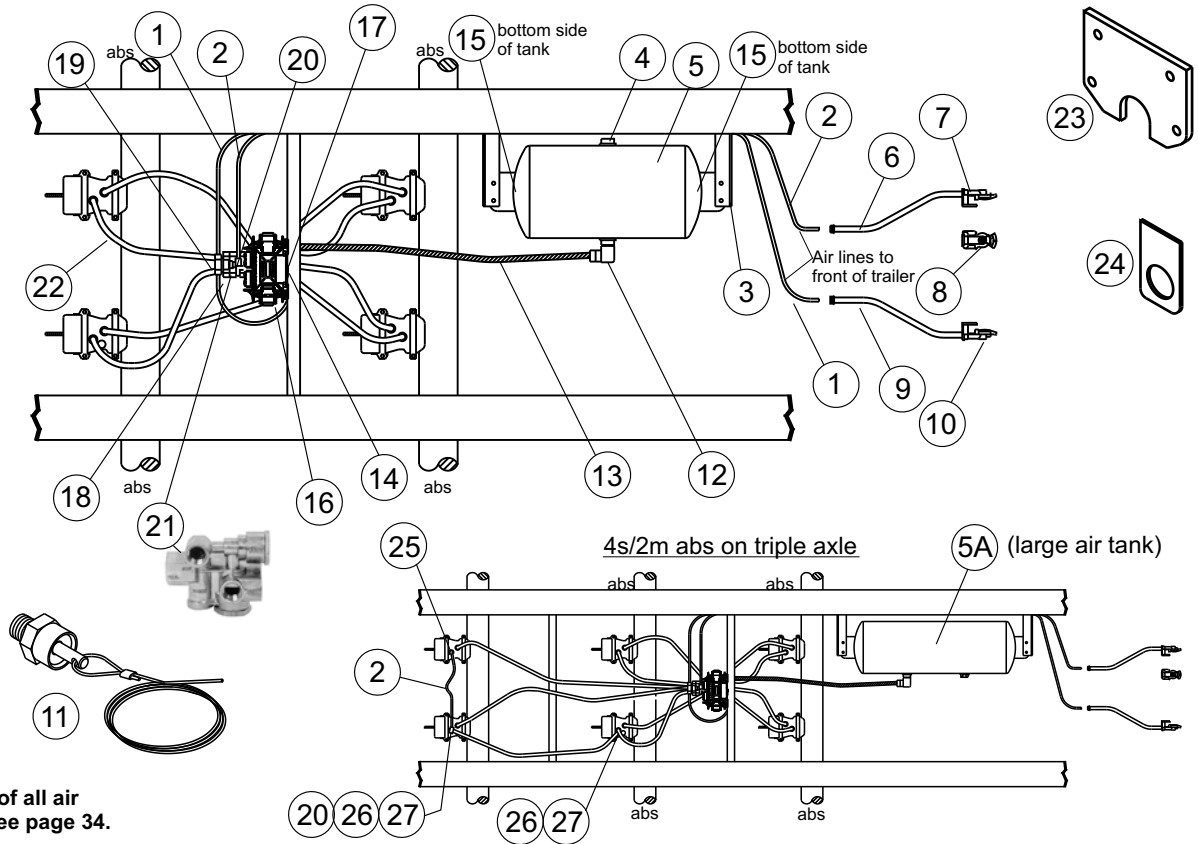


For identification of all air system fittings: See page 34.

Item	Part #	Description
1	35-0136	blue 3/8" nylon air brake tubing
2	35-0156	red 3/8" nylon air brake tubing
3	06-0922	air tank mounting bracket
4	35-0003	3/4" plug, square head, black
5	35-0086	air tank, 4307 cu. in.
6	35-0104R	3/8" air brake hose assembly with red glad hand
7	35-0052	glad hand only, emergency (red)
8	35-0109	screen, glad hand
9	35-0104B	3/8" air brake hose assembly with blue glad hand
10	35-0050	glad hand only, service (blue)
11	35-0070	drain valve with 5' pull cable
12	35-0404	90 deg. elbow comp. fitting, 1" npt pipe x 3/4" hose
13	35-0112	3/4" synflex air brake hose
14	35-0400	straight comp. fitting, 1" npt pipe x 3/4" hose
15	35-0015	3/8" plug, square head, brass (one each end of tank)
16	35-0178	ecu/valve assembly, 2s/2m
17	35-0033	90 deg. elbow, 1/4" pipe, 3/8" tube
18	35-0028	3/8" street elbow
19	35-0008	3/8" brass branch tee
20	35-0031	3/8" straight male connector, 3/8" pipe, 3/8" tube
21	35-0183	spring brake valve
22	35-0101	3/8" air brake hose, 24" (specify lengths and
	35-0107	3/8" air brake hose, 32" quantity needed, hoses
	35-0102	3/8" air brake hose, 44" will vary with different
	35-0103	3/8" air brake hose, 54" models and deck lengths)
	35-0100	3/8" air brake hose, 97"
23	06-0793	ecu valve mounting bracket
24	06-2538	air line mounting bracket
25	35-0034	90 deg. male swivel elbow, 3/8" pipe
26	35-0048	pipe tee
27	35-0126	3/8" hex nipple
	39-4212	rubber grommet for air lines (not shown)
	35-0078	rubber pad, between air tank and mounting brackets (not shown)
	35-0108	glad hand seal (not shown)

Air System, 4S/2M

Used on these models: C-20, C-24, T-20, T-20LP, T-24, T-24LP, T-20T, T-24T, T-40T, T-50T, T-40, T-50, T-50RG, T-70RG, T-50RGHT, T-70RGHT

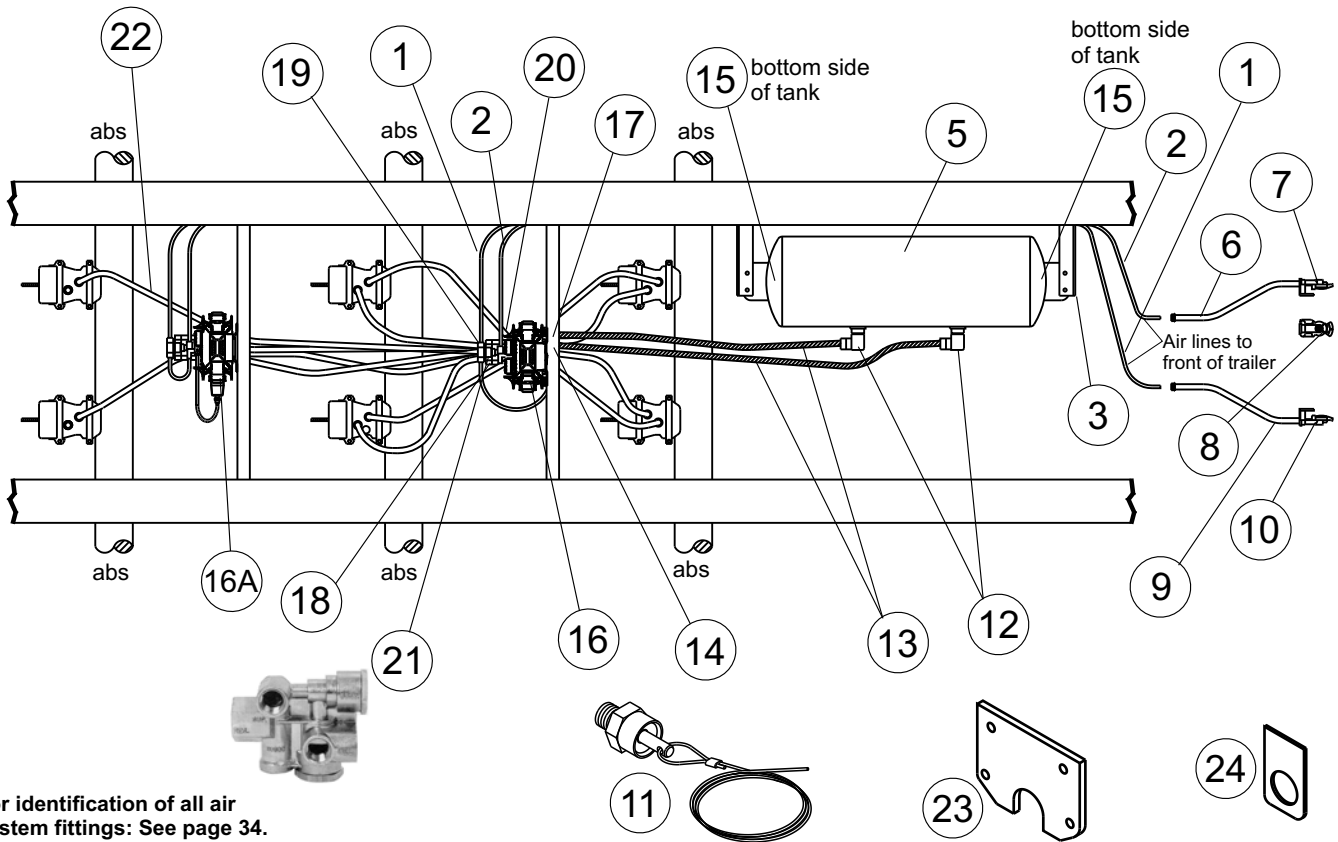


For identification of all air system fittings: See page 34.

Item	Part #	Description
1	35-0136	blue 3/8" nylon air brake tubing
2	35-0156	red 3/8" nylon air brake tubing
3	06-0922	air tank mounting bracket
4	35-0003	3/4" plug, square head, black
5	35-0085	air tank, 2800 cu. in. (tandem axle)
5A	35-0086	air tank, 4307 cu. in. (triple axle)
6	35-0104R	3/8" air brake hose assembly with red glad hand
7	35-0052	glad hand only, emergency (red)
8	35-0109	screen, glad hand
9	35-0104B	3/8" air brake hose assembly with blue glad hand
10	35-0050	glad hand only, service (blue)
11	35-0070	drain valve with 5' pull cable
12	35-0404	90 deg. elbow comp. fitting, 1" npt pipe x 3/4" hose
13	35-0112	3/4" synflex air brake hose
14	35-0400	straight comp. fitting, 1" npt pipe x 3/4" hose
15	35-0015	3/8" plug, square head, brass (one each end of tank)
16	35-0173	ecu/valve assembly, 4s/2m
17	35-0033	90 deg. elbow, 1/4" pipe, 3/8" tube
18	35-0028	3/8" street elbow
19	35-0008	3/8" brass branch tee
20	35-0031	3/8" straight male connector, 3/8" pipe, 3/8" tube
21	35-0183	spring brake valve
22	35-0101	3/8" air brake hose, 24" (specify lengths and
	35-0107	3/8" air brake hose, 32" quantity needed, hoses
	35-0102	3/8" air brake hose, 44" will vary with different
	35-0103	3/8" air brake hose, 54" models and deck lengths)
	35-0100	3/8" air brake hose, 97"
23	06-0793	ecu valve mounting bracket
24	06-2538	air line mounting bracket
25	35-0034	90 deg. male swivel elbow, 3/8" pipe
26	35-0048	pipe tee
27	35-0126	3/8" hex nipple
	39-4212	rubber grommet for air lines (not shown)
	35-0078	rubber pad, between air tank and mounting brackets (not shown)
	35-0108	glad hand seal (not shown)

Air System, 6S/3M

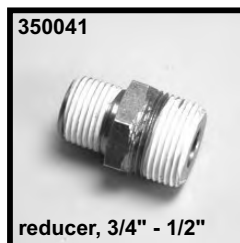
Used on these models: T-50T, T-50



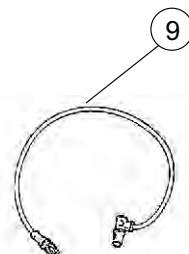
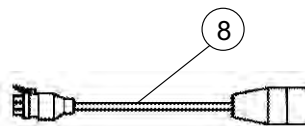
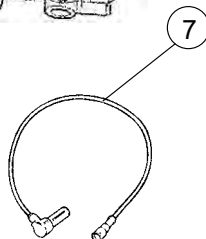
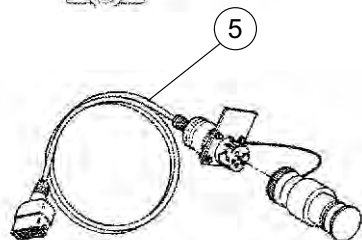
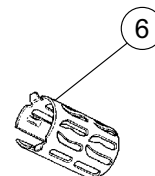
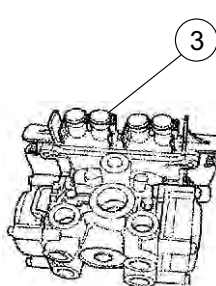
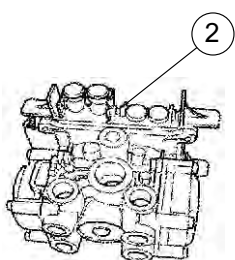
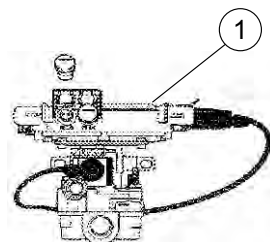
For identification of all air system fittings: See page 34.

Item	Part #	Description
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2	35-0156	red 3/8" nylon air brake tubing
3	06-0922	air tank mounting bracket
5	35-0086	air tank, 4307 cu. in.
6	35-0104R	3/8" air brake hose assembly with red glad hand
7	35-0052	glad hand only, emergency (red)
8	35-0109	screen, glad hand
9	35-0104B	3/8" air brake hose assembly with blue glad hand
10	35-0050	glad hand only, service (blue)
11	35-0070	drain valve with 5' pull cable
12	35-0404	90 deg. elbow comp. fitting, 1" npt pipe x 3/4" hose
13	35-0112	3/4" synflex air brake hose
14	35-0400	straight comp. fitting, 1" npt pipe x 3/4" hose
15	35-0015	3/8" plug, square head, brass (one each end of tank)
16	35-0173	ecu/valve assembly, 4s/2m
16A	35-0177	ecu/valve assembly, 2s/1m
17	35-0033	90 deg. elbow, 1/4" pipe, 3/8" tube
18	35-0028	3/8" street elbow
19	35-0008	3/8" brass branch tee
20	35-0031	3/8" straight male connector, 3/8" pipe, 3/8" tube
21	35-0183	spring brake valve
22	35-0101	3/8" air brake hose, 24" (specify lengths and
	35-0107	3/8" air brake hose, 32" quantity needed, hoses
	35-0102	3/8" air brake hose, 44" will vary with different
	35-0103	3/8" air brake hose, 54" models and deck lengths)
	35-0100	3/8" air brake hose, 97"
23	06-0793	ecu valve mounting bracket
24	06-2538	air line mounting bracket
	39-4212	rubber grommet for air lines (not shown)
	35-0078	rubber pad, between air tank and mounting brackets (not shown)
	35-0108	glad hand seal (not shown)

Air System Fittings

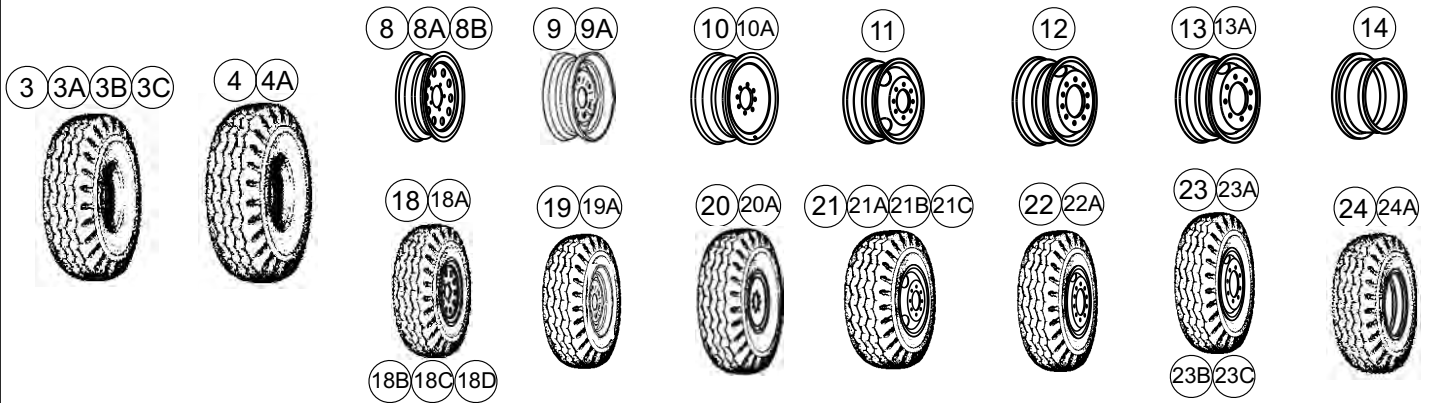


ABS Components



Item	Part #	Description
1	35-0177	ecu/valve assembly, 2s/1m
2	35-0178	ecu/valve assembly, 2s/2m (triple axle only)
3	35-0173	ecu/valve assembly, 4s/2m
5	35-0187	abs diagnostic cable (optional)
6	35-0196	sensor spring clip
7	35-0194	sensor with molded socket
8	35-0161	power cord (2s/1m)
	35-0163	power cord (4s/2m)
9	35-0198	sensor extension with plug
	35-0177	abs system with 13' lead (2s/1m)
	35-0173	abs system with 13' lead (4s/2m)

Wheels and Tires



Item	Part #	Description
3	27-0090	tire only, 235/85R x 16, load range "E"
3A	27-0043	tire only, 235/85R x 16, 12 ply, load range "G"
3B	27-0044	tire only, 245/75R x 16, load range "E"
3C	27-0041	tire only, 235/85 x 16, 12 ply, bias
4	27-0040	tire only, 215/75R x 17.5, 16 ply, load range "H"
4A	27-0042	tire only, 235/75R x 17.5, 16 ply, load range "H"
8	27-0110	wheel only, 6" x 16", white modular, 6 bolt on 5 1/2" b.c.
8A	27-0111	wheel only, 6" x 16", white modular, 8 bolt
8B	27-0130	wheel only, 6" x 16", white modular, 6 bolt on 5 1/2" b.c., 1/2" offset
9	27-0108	wheel only, 6" x 16" oem, 6 bolt
9A	27-0109	wheel only, 6" x 16" oem, 8 bolt
10	27-0602	wheel only, 6.75" x 17.5" single wheel, 8 bolt (silver) different offset than white wheel
10A	27-0606	wheel only, 6.75" x 17.5" single wheel, 8 bolt (white) different offset than silver wheel
11	27-0400	wheel only, 6" x 16" budd, 8 bolt on 6 1/2" b.c. (for duals)
12	27-0302	wheel only, 6.75" x 17.5" budd, 10 bolt (for duals)
13	27-0620	wheel only, 6.75" x 17.5" budd, outboard, hub-piloted, 8 bolt (white)
13A	27-0630	wheel only, 6.75" x 17.5" budd, outboard, hub-piloted, 8 bolt (gray)
14	27-0202	wheel only, 6.75" x 17.5", for cast spoke hub & drum
18	27-6010	tire/wheel assembly, 235/85R x 16, load range "E" on 6" x 16", white mod., 6 bolt on 5 1/2" b.c.
18A	27-6020	tire/wheel assembly, 235/85R x 16, load range "E" on 6" x 16", white mod., 8 bolt
18B	27-5022	tire/wheel assembly, 245/75R x 16, load range "E" on 6" x 16", white mod., 6 bolt on 5 1/2" b.c.
18C	27-5060	tire/wheel assembly, 245/75R x 16, load range "E" on 6" x 16", white mod., 8 bolt
18D	27-5085	tire/wheel assembly, 235/85R x 16, load range "E" on 6" x 16", white mod., 6 bolt on 5 1/2" b.c., 1/2" offset
19	27-6030	tire/wheel assembly, 235/85R x 16, load range "E" on 6" x 16" oem, 6 bolt
19A	27-6040	tire/wheel assembly, 235/85R x 16, load range "E" on 6" x 16" oem, 8 bolt
20	27-5014	tire/wheel assembly, 215/75R x 17.5, 16 ply, load range "H" on 6.75" x 17.5" single wheel, 8 bolt (silver)
20A	27-5015	tire/wheel assembly, 215/75R x 17.5, 16 ply, load range "H" on 6.75" x 17.5" single wheel, 8 bolt (white)
21	27-5042	tire/wheel assembly, 235/85R x 16, load range "E" on 6" x 16" budd, 8 bolt on 6 1/2" b.c. (for duals)
21A	27-5040	tire/wheel assembly, 245/75R x 16, load range "E" on 6" x 16" budd, 8 bolt on 6 1/2" b.c. (for duals)
21B	27-5045	tire/wheel assembly, 235/85R x 16, 12 ply, load range "G" on 6" x 16" budd, 8 bolt on 6 1/2" b.c. (for duals)
21C	27-5046	tire/wheel assembly, 235/85 x 16, 12 ply, bias tire on 6" x 16" budd, 8 bolt on 6 1/2" b.c. (for duals)
22	27-5010	tire/wheel assembly, 215/75R x 17.5, 16 ply, load range "H" on 6.75" x 17.5" budd, 10 bolt (for duals)
22A	27-5055	tire/wheel assembly, 235/75R x 17.5, 16 ply, load range "H" on 6.75" x 17.5" budd, 10 bolt (for duals)
23	27-6080	tire/wheel assembly, 215/75R x 17.5, 16 ply, load range "H" on 6.75" x 17.5" budd, 8 bolt, hub piloted (white)
23A	27-6090	tire/wheel assembly, 215/75R x 17.5, 16 ply, load range "H" on 6.75" x 17.5" budd, 8 bolt, hub piloted (gray)
23B	27-6085	tire/wheel assembly, 235/75R x 17.5, 16 ply, load range "H" on 6.75" x 17.5" budd, 8 bolt, hub piloted (white)
23C	27-6095	tire/wheel assembly, 235/75R x 17.5, 16 ply, load range "H" on 6.75" x 17.5" budd, 8 bolt, hub piloted (gray)
24	27-5012	tire/wheel assembly, 215/75R x 17.5, 16 ply, load range "H" on 6.75" x 17.5" rim (cast spoke hub & drum)
24A	27-5050	tire/wheel assembly, 235/75R x 17.5, 16 ply, load range "H" on 6.75" x 17.5" rim (cast spoke hub & drum)
	37-0413	valve stem
	37-0501	valve stem
	37-0573	valve stem
	37-0574	valve stem

Tire Ratings

ST17580R x 13	load range c, 6 ply rating, 1360 lbs. @ 50psi	single wheel application
ST205/75R x 15	load range c, 6 ply rating, 1820 lbs. @ 50psi	single wheel application
ST225/75R x 15	load range d, 8 ply rating, 2540 lbs. @ 65psi	single wheel application
215/75R x 17.5	load range h, 16 ply rating, 4805 lbs. @ 125psi	single wheel application
215/75R x 17.5	load range h, 16 ply rating, 4540 lbs. @ 125psi	dual wheel application
235/75R x 17.5	load range h, 16 ply rating, 6005 lbs. @ 125psi	single wheel application
235/75R x 17.5	load range h, 16 ply rating, 5675 lbs. @ 125psi	dual wheel application
235/85 x 16	load range g, 12 ply bias, 3415 lbs. @ 90psi	single wheel application
235/85R x 16	load range g, 12 ply rating, 3750 lbs. @ 110psi	single wheel application
235/85R x 16	load range g, 12 ply rating, 3415 lbs. @ 110psi	dual wheel application
235/85R x 16	load range e, 10 ply rating, 3042 lbs. @ 80psi	single wheel application
235/85R x 16	load range e, 10 ply rating, 2778 lbs. @ 80psi	dual wheel application
245/75R x 16	load range e, 10 ply rating, 3042 lbs. @ 80psi	single wheel application
245/75R x 16	load range e, 10 ply rating, 2778 lbs. @ 80psi	dual wheel application

Wheel Torque Requirements Ft. Lbs.

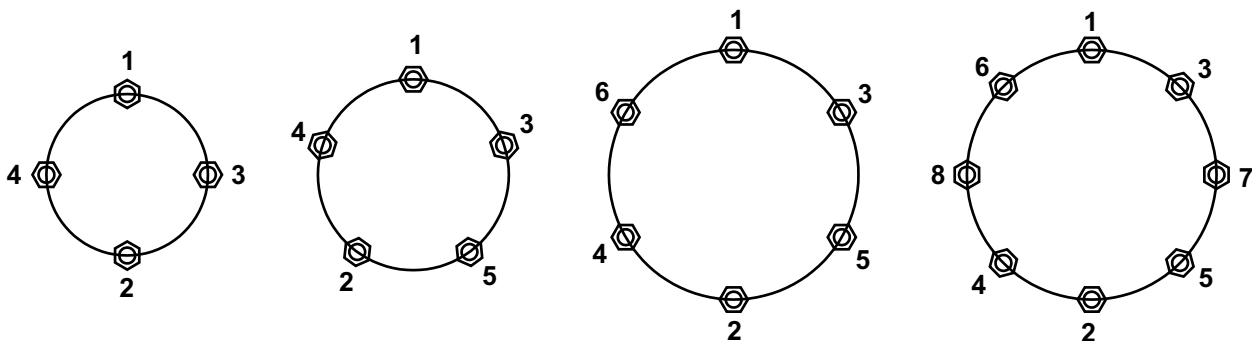
1st Stage

2nd Stage

3rd Stage

Wheel Size	1st Stage	2nd Stage	3rd Stage
12"	20-25	35-40	50-75
13"	20-25	35-40	50-75
14"	20-25	50-60	90-120
15"	20-25	50-60	90-120
16"	20-25	50-60	90-120
16.5" x 6.75"	20-25	50-60	90-120
16.5" x 9.75"	55-60	120-125	175-225
14.5" Demount.	Tighten sequentially to		85-95
17.5" Hub Pilot Clamp Ring & Cone Nuts	50-60	100-120	190-210
17.5" Hub Pilot 5/8" Flange Nuts	50-60	190-200	275-325

Torque Sequence



GVWR and TIRE SAFETY INFORMATION

General

A recent law was enacted that requires trailer manufacturers to place a tire and loading information decal placed near the serial tag on a trailer as well as detailed information on loading and tires in the owner's manual on all trailers with a GVWR (Gross Vehicle Weight Rating) of 10,000 lbs. or less. This section of our manual covers the required information.

Tire and Safety Information

This portion of the User's Manual contains tire safety information as required by 49 CFR 575.6.

Section 1.1 contains "Steps for Determining Correct Load Limit - Trailer".

Section 1.2 contains "Steps for Determining Correct Load Limit – Tow Vehicle".

Section 1.3 contains a Glossary of Tire Terminology, including "cold inflation pressure", "maximum inflation pressure", "recommended inflation pressure", and other non-technical terms.

Section 1.4 contains information from the NHTSA brochure entitled "Tire Safety – Everything Rides On It".

This brochure, as well as the preceding subsections, describes the following items;

Tire labeling, including a description and explanation of each marking on the tires, and information about the DOT Tire Identification Number (TIN).

Recommended tire inflation pressure, including a description and explanation of:

- A. Cold inflation pressure.
- B. Vehicle Placard and location on the vehicle.
- C. Adverse safety consequences of under inflation (including tire failure).
- D. Measuring and adjusting air pressure for proper inflation.
- E. Tire Care, including maintenance and safety practices.

Vehicle load limits, including a description and explanation of the following items:

- A. Locating and understanding the load limit information, total load capacity, and cargo capacity.
- B. Calculating total and cargo capacities with varying seating configurations including quantitative examples showing / illustrating how the vehicles cargo and luggage capacity decreases as combined number and size of occupants' increases. This item is also discussed in Section 3.
- C. Determining compatibility of tire and vehicle load capabilities.
- D. Adverse safety consequences of overloading on handling and stopping on tires.

1.1. Steps for Determining Correct Load Limit – Trailer

Determining the load limits of a trailer includes more than understanding the load limits of the tires alone. On all trailers there is a Federal certification/VIN label that is located on the forward half of the left (road) side of the unit. This certification/VIN label will indicate the trailer's Gross Vehicle Weight Rating (GVWR). This is the most weight the fully loaded trailer can weigh. It will also provide the Gross Axle Weight Rating (GAWR). This is the most a particular axle can weigh. If there are multiple axles, the GAWR of each axle will be provided.

If your trailer has a GVWR of 10,000 pounds or less, there is a vehicle placard located in the same location as the certification label described above. This placard provides tire and loading information. In addition, this placard will show a statement regarding maximum cargo capacity. Cargo can be added to the trailer, up to the maximum weight specified on the placard. The combined weight of the cargo is provided as a single number. In any case, remember: the total weight of a fully loaded trailer can not exceed the stated GVWR.

Tire and Safety Information - Continued

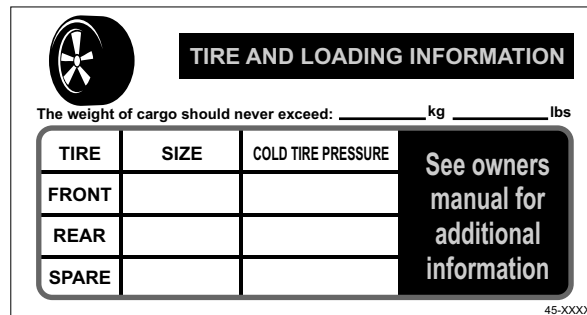
1.1. Steps for Determining Correct Load Limit – Trailer (continued)

For trailers with living quarters installed, the weight of water and propane also need to be considered. The weight of fully filled propane containers is considered part of the weight of the trailer before it is loaded with cargo, and is not considered part of the disposable cargo load. Water however, is a disposable cargo weight and is treated as such. If there is a fresh water storage tank of 100 gallons, this tank when filled would weigh about 800 pounds. If more cargo is being transported, water can be off-loaded to keep the total amount of cargo added to the vehicle within the limits of the GVWR so as not to overload the vehicle. Understanding this flexibility will allow you, the owner, to make choices that fit your travel needs.

When loading your cargo, be sure it is distributed evenly to prevent overloading front to back and side to side. Heavy items should be placed low and as close to the axle positions as reasonable. Too many items on one side may overload a tire. The best way to know the actual weight of the vehicle is to weigh it at a public scale. Talk to your dealer to discuss the weighing methods needed to capture the various weights related to the trailer. This would include the weight empty or unloaded, weights per axle, wheel, hitch or king-pin, and total weight.

Excessive loads and/or underinflation cause tire overloading and, as a result, abnormal tire flexing occurs. This situation can generate an excessive amount of heat within the tire. Excessive heat may lead to tire failure. It is the air pressure that enables a tire to support the load, so proper inflation is critical. The proper air pressure may be found on the certification/VIN label and/or on the Tire Placard. This value should never exceed the maximum cold inflation pressure stamped on the tire.

1.1.1. Trailers 10,000 Pounds GVWR or Less



The placard features a tire icon in a circle on the left. To its right is a black box with the text "TIRE AND LOADING INFORMATION" in white. Below this is a line for "The weight of cargo should never exceed: _____ kg _____ lbs". At the bottom right is a black box with the text "See owners manual for additional information".

TIRE	SIZE	COLD TIRE PRESSURE
FRONT		
REAR		
SPARE		

45-XXXX

1. Locate the statement, "The weight of cargo should never exceed XXX kg or XXX lbs.," on your vehicle's placard. See figure 1-1.

2. This figure equals the available amount of cargo and luggage load capacity.

3. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity.

The trailer's placard refers to the Tire Information Placard attached adjacent to or near the trailer's VIN (Certification) label at the left front of the trailer.

1.1.2. Trailers Over 10,000 Pounds GVWR (Note: These trailers are not required to have a tire information placard on the vehicle)

1. Determine the empty weight of your trailer by weighing the trailer using a public scale or other means. This step does not have to be repeated.

2. Locate the GVWR (Gross Vehicle Weight Rating) of the trailer on your trailer's VIN (Certification) label.

3. Subtract the empty weight of your trailer from the GVWR stated on the VIN label. That weight is the maximum available cargo capacity of the trailer and may not be safely exceeded.

Tire and Safety Information - Continued

1.2. Steps for Determining Correct Load Limit – Tow Vehicle

1. Locate the statement, "The combined weight of occupants and cargo should never exceed XXX lbs.," on your vehicle's placard.
2. Determine the combined weight of the driver and passengers who will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kilograms or XXX pounds.
4. The resulting figure equals the available amount of cargo and luggage capacity. For example, if the "XXX" amount equals 1400 lbs. and there will be five 150 lb. passengers in your vehicle, the amount of available cargo and luggage capacity is 650 lbs. (1400-750 (5 x 150) = 650 lbs.).
5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage capacity calculated in Step # 4.
6. If your vehicle will be towing a trailer, load from your trailer will be transferred to your vehicle. Consult the tow vehicle's manual to determine how this weight transfer reduces the available cargo and luggage capacity of your vehicle.

1.3. Glossary Of Tire Terminology

Accessory weight

The combined weight (in excess of those standard items which may be replaced) of automatic transmission, power steering, power brakes, power windows, power seats, radio and heater, to the extent that these items are available as factory-installed equipment (whether installed or not).

Bead

The part of the tire that is made of steel wires, wrapped or reinforced by ply cords and that is shaped to fit the rim.

Bead separation

This is the breakdown of the bond between components in the bead.

Bias ply tire

A pneumatic tire in which the ply cords that extend to the beads are laid at alternate angles substantially less than 90 degrees to the centerline of the tread.

Carcass

The tire structure, except tread and sidewall rubber which, when inflated, bears the load.

Chunking

The breaking away of pieces of the tread or sidewall.

Cold inflation pressure

The pressure in the tire before you drive.

Cord

The strands forming the plies in the tire.

Cord separation

The parting of cords from adjacent rubber compounds.

Cracking

Any parting within the tread, sidewall, or inner liner of the tire extending to cord material.

CT

A pneumatic tire with an inverted flange tire and rim system in which the rim is designed with rim flanges pointed radially inward and the tire is designed to fit on the underside of the rim in a manner that encloses the rim flanges inside the air cavity of the tire.

Tire and Safety Information - Continued

Curb weight

The weight of a motor vehicle with standard equipment including the maximum capacity of fuel, oil, and coolant, and, if so equipped, air conditioning and additional weight optional engine.

Extra load tire

A tire designed to operate at higher loads and at higher inflation pressures than the corresponding standard tire.

Groove

The space between two adjacent tread ribs.

Gross Axle Weight Rating

The maximum weight that any axle can support, as published on the Certification / VIN label on the front left side of the trailer. Actual weight determined by weighing each axle on a public scale, with the trailer attached to the towing vehicle.

Gross Vehicle Weight Rating

The maximum weight of the fully loaded trailer, as published on the Certification / VIN label. Actual weight determined by weighing trailer on a public scale, without being attached to the towing vehicle.

Hitch Weight

The downward force exerted on the hitch ball by the trailer coupler.

Innerliner

The layer(s) forming the inside surface of a tubeless tire that contains the inflating medium within the tire.

Innerliner separation

The parting of the innerliner from cord material in the carcass.

Intended outboard sidewall

The sidewall that contains a white-wall, bears white lettering or bears manufacturer, brand, and/or model name molding that is higher or deeper than the same molding on the other sidewall of the tire or the outward facing sidewall of an asymmetrical tire that has a particular side that must always face outward when mounted on a vehicle.

Light truck (LT) tire

A tire designated by its manufacturer as primarily intended for use on lightweight trucks or multipurpose passenger vehicles.

Load rating

The maximum load that a tire is rated to carry for a given inflation pressure.

Maximum load rating

The load rating for a tire at the maximum permissible inflation pressure for that tire.

Maximum permissible inflation pressure

The maximum cold inflation pressure to which a tire may be inflated.

Maximum loaded vehicle weight

The sum of curb weight, accessory weight, vehicle capacity weight, and production options weight.

Measuring rim

The rim on which a tire is fitted for physical dimension requirements.

Pin Weight

The downward force applied to the 5th wheel or gooseneck ball, by the trailer kingpin or gooseneck coupler.

Non-pneumatic rim

A mechanical device which, when a non-pneumatic tire assembly incorporates a wheel, supports the tire, and attaches, either integrally or separably, to the wheel center member and upon which the tire is attached.

Non-pneumatic spare tire assembly

A non-pneumatic tire assembly intended for temporary use in place of one of the pneumatic tires and rims that are fitted to a passenger car in compliance with the requirements of this standard.

Tire and Safety Information - Continued

Non-pneumatic tire

A mechanical device which transmits, either directly or through a wheel or wheel center member, the vertical load and tractive forces from the roadway to the vehicle, generates the tractive forces that provide the directional control of the vehicle and does not rely on the containment of any gas or fluid for providing those functions.

Non-pneumatic tire assembly

A non-pneumatic tire, alone or in combination with a wheel or wheel center member, which can be mounted on a vehicle.

Normal occupant weight

This means 68 kilograms (150 lbs.) times the number of occupants specified in the second column of Table I of 49 CFR 571.110.

Occupant distribution

The distribution of occupants in a vehicle as specified in the third column of Table I of 49 CFR 571.110.

Open splice

Any parting at any junction of tread, sidewall, or innerliner that extends to cord material.

Outer diameter

The overall diameter of an inflated new tire.

Overall width

The linear distance between the exteriors of the sidewalls of an inflated tire, including elevations due to labeling, decorations, or protective bands or ribs.

Ply

A layer of rubber-coated parallel cords.

Ply separation

A parting of rubber compound between adjacent plies.

Pneumatic tire

A mechanical device made of rubber, chemicals, fabric and steel or other materials, that, when mounted on an automotive wheel, provides the traction and contains the gas or fluid that sustains the load.

Production options weight

The combined weight of those installed regular production options weighing over 2.3 kilograms (5 lbs.) in excess of those standard items which they replace, not previously considered in curb weight or accessory weight, including heavy duty brakes, ride levelers, roof rack, heavy duty battery, and special trim.

Radial ply tire

A pneumatic tire in which the ply cords that extend to the beads are laid at substantially 90 degrees to the centerline of the tread.

Recommended inflation pressure

This is the inflation pressure provided by the vehicle manufacturer on the Tire Information label and on the Certification / VIN tag.

Reinforced tire

A tire designed to operate at higher loads and at higher inflation pressures than the corresponding standard tire.

Rim

A metal support for a tire or a tire and tube assembly upon which the tire beads are seated.

Rim diameter

This means the nominal diameter of the bead seat.

Rim size designation

This means the rim diameter and width.

Tire and Safety Information - Continued

Rim type designation

This means the industry of manufacturer's designation for a rim by style or code.

Rim width

This means the nominal distance between rim flanges.

Section width

The linear distance between the exteriors of the sidewalls of an inflated tire, excluding elevations due to labeling, decoration, or protective bands.

Sidewall

That portion of a tire between the tread and bead.

Sidewall separation

The parting of the rubber compound from the cord material in the sidewall.

Special Trailer (ST) tire

The "ST" is an indication the tire is for trailer use only.

Test rim

The rim on which a tire is fitted for testing, and may be any rim listed as appropriate for use with that tire.

Tread

That portion of a tire that comes into contact with the road.

Tread rib

A tread section running circumferentially around a tire.

Tread separation

Pulling away of the tread from the tire carcass.

Treadwear indicators (TWI)

The projections within the principal grooves designed to give a visual indication of the degrees of wear of the tread.

Vehicle capacity weight

The rated cargo and luggage load plus 68 kilograms (150 lbs.) times the vehicle's designated seating capacity.

Vehicle maximum load on the tire

The load on an individual tire that is determined by distributing to each axle its share of the maximum loaded vehicle weight and dividing by two.

Vehicle normal load on the tire

The load on an individual tire that is determined by distributing to each axle its share of the curb weight, accessory weight, and normal occupant weight (distributed in accordance with Table I of CRF 49 571.110) and dividing by 2.

Weather side

The surface area of the rim not covered by the inflated tire.

Wheel center member

In the case of a non-pneumatic tire assembly incorporating a wheel, a mechanical device which attaches, either integrally or separably, to the non-pneumatic rim and provides the connection between the non-pneumatic rim and the vehicle; or, in the case of a non-pneumatic tire assembly not incorporating a wheel, a mechanical device which attaches, either integrally or separably, to the non-pneumatic tire and provides the connection between tire and the vehicle.

Wheel-holding fixture

The fixture used to hold the wheel and tire assembly securely during testing.

Tire and Safety Information - Continued

1.4. Tire Safety - Everything Rides On It

The National Traffic Safety Administration (NHTSA) has published a brochure (DOT HS 809 361) that discusses all aspects of Tire Safety, as required by CFR 575.6. This brochure is reproduced in part below. It can be obtained and downloaded from NHTSA, free of charge, from the following web site:

http://www.nhtsa.dot.gov/cars/rules/TireSafety/ridesonit/tires_index.html

Studies of tire safety show that maintaining proper tire pressure, observing tire and vehicle load limits (not carrying more weight in your vehicle than your tires or vehicle can safely handle), avoiding road hazards, and inspecting tires for cuts, slashes, and other irregularities are the most important things you can do to avoid tire failure, such as tread separation or blowout and flat tires. These actions, along with other care and maintenance activities, can also:

- Improve vehicle handling
- Help protect you and others from avoidable breakdowns and accidents
- Improve fuel economy
- Increase the life of your tires.

This area presents a comprehensive overview of tire safety, including information on the following topics:

- Basic tire maintenance
- Uniform Tire Quality Grading System
- Fundamental characteristics of tires
- Tire safety tips.

Use this information to make tire safety a regular part of your vehicle maintenance routine. Recognize that the time you spend is minimal compared with the inconvenience and safety consequences of a flat tire or other tire failure.

1.5. Safety First—Basic Tire Maintenance

Properly maintained tires improve the steering, stopping, traction, and load-carrying capability of your vehicle. Underinflated tires and overloaded vehicles are a major cause of tire failure. Therefore, as mentioned above, to avoid flat tires and other types of tire failure, you should maintain proper tire pressure, observe tire and vehicle load limits, avoid road hazards, and regularly inspect your tires.

1.5.1. Finding Your Vehicle's Recommended Tire Pressure and Load Limits

Tire information placards and vehicle certification labels contain information on tires and load limits. These labels indicate the vehicle manufacturer's information including:

- Recommended tire size
- Recommended tire inflation pressure
- Vehicle capacity weight (VCW—the maximum occupant and cargo weight a vehicle is designed to carry)
- Front and rear gross axle weight ratings (GAWR—the maximum weight the axle systems are designed to carry).

Both placards and certification labels are permanently attached to the trailer near the left front.

1.5.2. Understanding Tire Pressure and Load Limits

Tire inflation pressure is the level of air in the tire that provides it with load-carrying capacity and affects the overall performance of the vehicle. The tire inflation pressure is a number that indicates the amount of air pressure—measured in pounds per square inch (psi)—a tire requires to be properly inflated. (You will also find this number on the vehicle information placard expressed in kilopascals (kpa), which is the metric measure used internationally.)

Tire and Safety Information - Continued

Manufacturers of passenger vehicles and light trucks determine this number based on the vehicle's design load limit, that is, the greatest amount of weight a vehicle can safely carry and the vehicle's tire size. The proper tire pressure for your vehicle is referred to as the "recommended cold inflation pressure." (As you will read below, it is difficult to obtain the recommended tire pressure if your tires are not cold.)

Because tires are designed to be used on more than one type of vehicle, tire manufacturers list the "maximum permissible inflation pressure" on the tire sidewall. This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

1.5.3. Checking Tire Pressure

It is important to check your vehicle's tire pressure at least once a month for the following reasons:

- Most tires may naturally lose air over time.
- Tires can lose air suddenly if you drive over a pothole or other object or if you strike the curb when parking.
- With radial tires, it is usually not possible to determine underinflation by visual inspection.

For convenience, purchase a tire pressure gauge to keep in your vehicle. Gauges can be purchased at tire dealerships, auto supply stores, and other retail outlets.

The recommended tire inflation pressure that vehicle manufacturers provide reflects the proper psi when a tire is cold.

The term cold does not relate to the outside temperature. Rather, a cold tire is one that has not been driven on for at least three hours. When you drive, your tires get warmer, causing the air pressure within them to increase. Therefore, to get an accurate tire pressure reading, you must measure tire pressure when the tires are cold or compensate for the extra pressure in warm tires.

1.5.4. Steps for Maintaining Proper Tire Pressure

Step 1: Locate the recommended tire pressure on the vehicle's tire information placard, certification label, or in the owner's manual.

Step 2: Record the tire pressure of all tires.

Step 3: If the tire pressure is too high in any of the tires, slowly release air by gently pressing on the tire valve stem with the edge of your tire gauge until you get to the correct pressure.

Step 4: If the tire pressure is too low, note the difference between the measured tire pressure and the correct tire pressure. These "missing" pounds of pressure are what you will need to add.

Step 5: At a service station, add the missing pounds of air pressure to each tire that is underinflated.

Step 6: Check all the tires to make sure they have the same air pressure (except in cases in which the front and rear tires are supposed to have different amounts of pressure).

If you have been driving your vehicle and think that a tire is underinflated, fill it to the recommended cold inflation pressure indicated on your vehicle's tire information placard or certification label. While your tire may still be slightly underinflated due to the extra pounds of pressure in the warm tire, it is safer to drive with air pressure that is slightly lower than the vehicle manufacturer's recommended cold inflation pressure than to drive with a significantly underinflated tire. Since this is a temporary fix, don't forget to recheck and adjust the tire's pressure when you can obtain a cold reading.

1.5.5. Tire Size

To maintain tire safety, purchase new tires that are the same size as the vehicle's original tires or another size recommended by the manufacturer. Look at the tire information placard, the owner's manual, or the sidewall of the tire you are replacing to find this information. If you have any doubt about the correct size to choose, consult with the tire dealer.

Tire and Safety Information - Continued

1.5.6. Tire Tread

The tire tread provides the gripping action and traction that prevent your vehicle from slipping or sliding, especially when the road is wet or icy. In general, tires are not safe and should be replaced when the tread is worn down to 1/16 of an inch. Tires have built-in treadwear indicators that let you know when it is time to replace your tires. These indicators are raised sections spaced intermittently in the bottom of the tread grooves. When they appear "even" with the outside of the tread, it is time to replace your tires. Another method for checking tread depth is to place a penny in the tread with Lincoln's head upside down and facing you. If you can see the top of Lincoln's head, you are ready for new tires.

1.5.7. Tire Balance and Wheel Alignment

To avoid vibration or shaking of the vehicle when a tire rotates, the tire must be properly balanced. This balance is achieved by positioning weights on the wheel to counterbalance heavy spots on the wheel-and-tire assembly. A wheel alignment adjusts the angles of the wheels so that they are positioned correctly relative to the vehicle's frame. This adjustment maximizes the life of your tires. These adjustments require special equipment and should be performed by a qualified technician.

1.5.8. Tire Repair

The proper repair of a punctured tire requires a plug for the hole and a patch for the area inside the tire that surrounds the puncture hole. Punctures through the tread can be repaired if they are not too large, but punctures to the sidewall should not be repaired. Tires must be removed from the rim to be properly inspected before being plugged and patched.

1.5.9. Tire Fundamentals

Federal law requires tire manufacturers to place standardized information on the sidewall of all tires. This information identifies and describes the fundamental characteristics of the tire and also provides a tire identification number for safety standard certification and in case of a recall.

1.5.9.1. Information on Passenger Vehicle Tires

P

The "P" indicates the tire is for passenger vehicles.

Next number

This three-digit number gives the width in millimeters of the tire from sidewall edge to sidewall edge. In general, the larger the number, the wider the tire.

Next number

This two-digit number, known as the aspect ratio, gives the tire's ratio of height to width. Numbers of 70 or lower indicate a short sidewall for improved steering response and better overall handling on dry pavement.

R

The "R" stands for radial. Radial ply construction of tires has been the industry standard for the past 20 years.

Next number

This two-digit number is the wheel or rim diameter in inches. If you change your wheel size, you will have to purchase new tires to match the new wheel diameter.

Next number

This two- or three-digit number is the tire's load index. It is a measurement of how much weight each tire can support. You may find this information in your owner's manual. If not, contact a local tire dealer. Note: You may not find this information on all tires because it is not required by law.

M+S

The "M+S" or "M/S" indicates that the tire has some mud and snow capability. Most radial tires have these markings; hence, they have some mud and snow capability.

Tire and Safety Information - Continued

Speed Rating

The speed rating denotes the speed at which a tire is designed to be driven for extended periods of time. The ratings range from 99 miles per hour (mph) to 186 mph. These ratings are listed below. Note: You may not find this information on all tires because it is not required by law.

Letter Rating	Speed Rating
Q	99 mph
R	106 mph
S	112 mph
T	118 mph
U	124 mph
H	130 mph
V	149 mph
W	168* mph
Y	186* mph

* For tires with a maximum speed capability over 149 mph, tire manufacturers sometimes use the letters ZR. For those with a maximum speed capability over 186 mph, tire manufacturers always use the letters ZR.

U.S. DOT Tire Identification Number

This begins with the letters "DOT" and indicates that the tire meets all federal standards. The next two numbers or letters are the plant code where it was manufactured, and the last four numbers represent the week and year the tire was built. For example, the numbers 3197 means the 31st week of 1997. The other numbers are marketing codes used at the manufacturer's discretion. This information is used to contact consumers if a tire defect requires a recall.

Tire Ply Composition and Materials Used

The number of plies indicates the number of layers of rubber-coated fabric in the tire. In general, the greater the number of plies, the more weight a tire can support. Tire manufacturers also must indicate the materials in the tire, which include steel, nylon, polyester, and others.

Maximum Load Rating

This number indicates the maximum load in kilograms and pounds that can be carried by the tire.

Maximum Permissible Inflation Pressure

This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

1.5.9.2. UTQGS Information

Treadwear Number

This number indicates the tire's wear rate. The higher the treadwear number is, the longer it should take for the tread to wear down. For example, a tire graded 400 should last twice as long as a tire graded 200.

Traction Letter

This letter indicates a tire's ability to stop on wet pavement. A higher graded tire should allow you to stop your car on wet roads in a shorter distance than a tire with a lower grade. Traction is graded from highest to lowest as "AA", "A", "B", and "C".

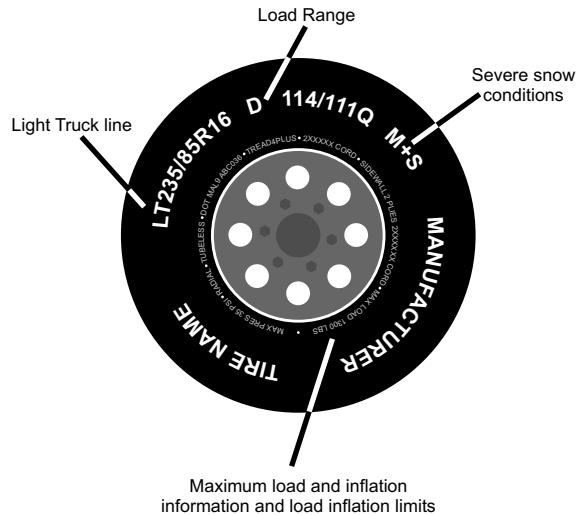
Temperature Letter

This letter indicates a tire's resistance to heat. The temperature grade is for a tire that is inflated properly and not overloaded. Excessive speed, underinflation or excessive loading, either separately or in combination, can cause heat build-up and possible tire failure. From highest to lowest, a tire's resistance to heat is graded as "A", "B", or "C".

Tire and Safety Information - Continued

1.5.9.3. Additional Information on Light Truck Tires

Please refer to the following diagram.



Tires for light trucks have other markings besides those found on the sidewalls of passenger tires.

LT

The "LT" indicates the tire is for light trucks or trailers.

ST

An "ST" is an indication the tire is for trailer use only.

Max. Load Dual kg (lbs) at kPa (psi) Cold

This information indicates the maximum load and tire pressure when the tire is used as a dual, that is, when four tires are put on each rear axle (a total of six or more tires on the vehicle).

Max. Load Single kg (lbs) at kPa (psi) Cold

This information indicates the maximum load and tire pressure when the tire is used as a single.

Load Range

This information identifies the tire's load-carrying capabilities and its inflation limits.

1.6. Tire Safety Tips

Preventing Tire Damage

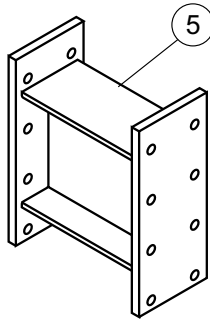
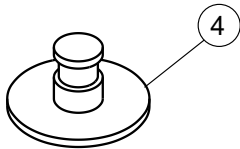
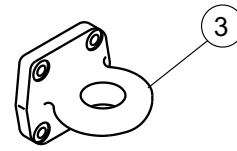
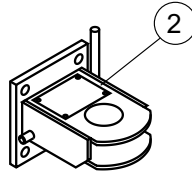
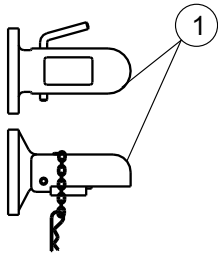
- Slow down if you have to go over a pothole or other object in the road.
- Do not run over curbs or other foreign objects in the roadway, and try not to strike the curb when parking.

Tire Safety Checklist

- Check tire pressure regularly (at least once a month), including the spare.
- Inspect tires for uneven wear patterns on the tread, cracks, foreign objects, or other signs of wear or trauma.
- Remove bits of glass and foreign objects wedged in the tread.
- Make sure your tire valves have valve caps.
- Check tire pressure before going on a long trip.
- Do not overload your vehicle. Check the Tire Information and Loading Placard or User's Manual for the maximum recommended load for the vehicle.

More information may be found at <http://www.natm.com>.

Hitches and Couplers



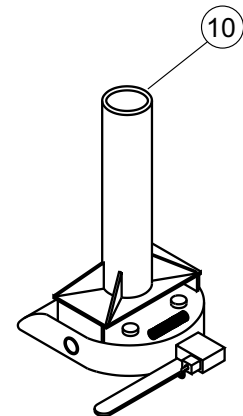
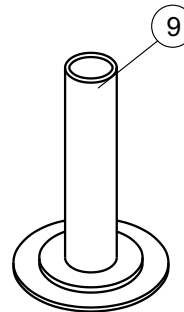
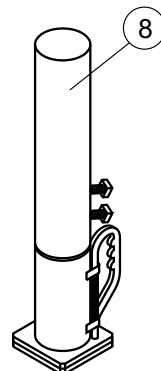
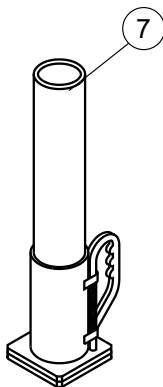
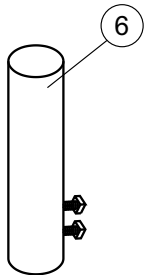
⚠ WARNING

For hitch extension only!

DO NOT use for hitch height adjustment.

Use all mounting bolts to mount to hitch plate.

458200



Item	Part #	Description
1	33-0036	2 5/16" ball coupler (12,000 lb. capacity)
	33-0012	repair kit for 2 5/16" ball coupler (33-0036 only)
2	33-0035	2 5/16" ball coupler (25,000 lb. capacity)
3	33-0050	3" i.d. pintle ring, 4 bolt
4	33-2809	2" king pin
5	12-0340	12" hitch extension (any model with 4 bolt pintle ring, 24,000 lb. capacity)
	12-0342	12" hitch extension, heavy duty (any model with 4 bolt pintle ring, T-30 and up)
6	33-0029	replacement outer tube assembly (for goosenecks)
7	33-0028	2 5/16" coupler, inner section only
8	33-0027	2 5/16" coupler, complete assembly (30,000 lb. capacity)
9	33-0030	2" king pin assembly, inner section only
10	33-0032	inverted 5th wheel assembly, inner section only

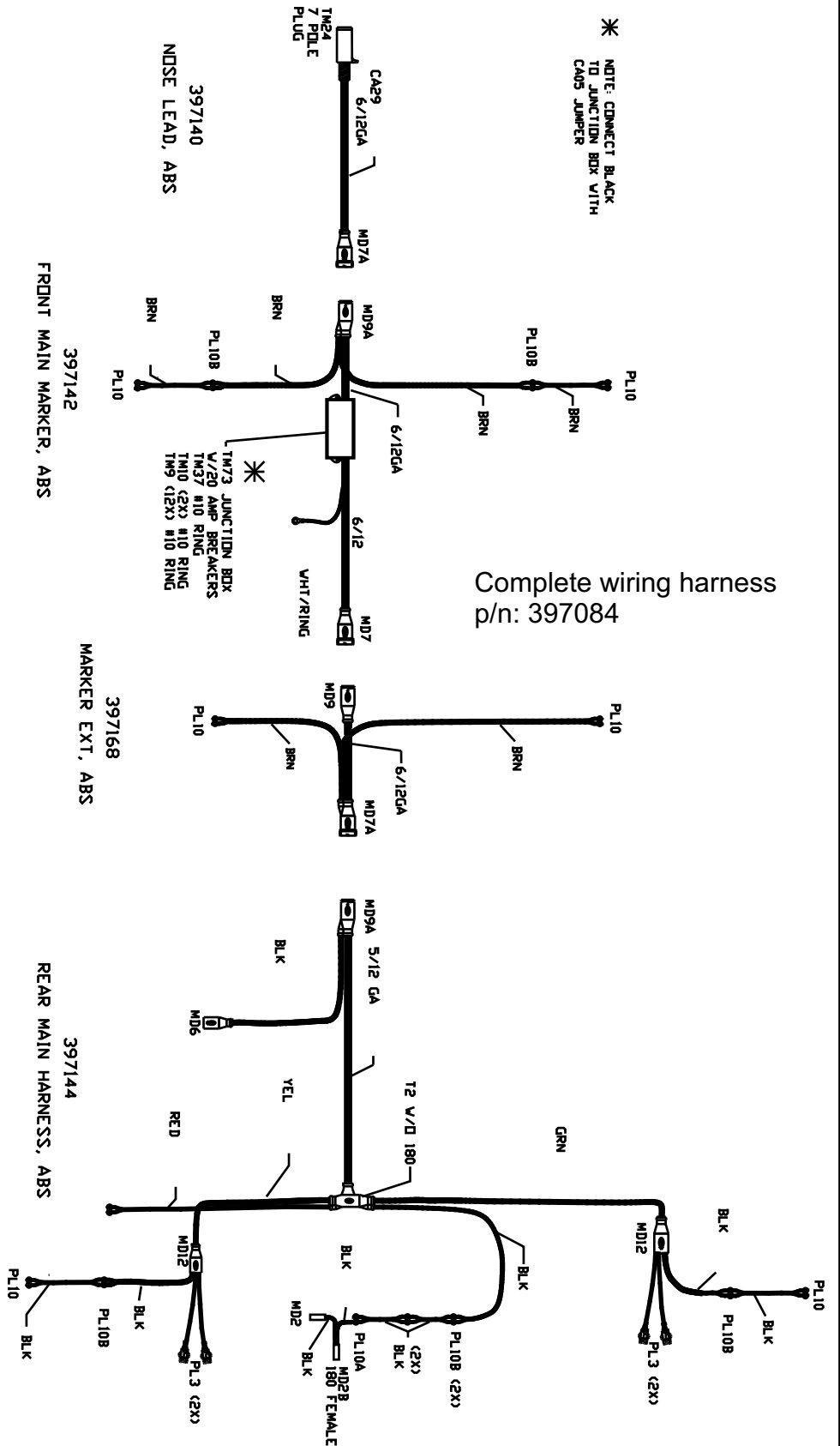
Wiring Harness, All ABS Models

Used on these models: C-20, C-24, T-20, T-20LP, T-24, T-24LP, T-20T, T-24T, T-40T, T-50T, T-40, T-50, T-50RG, T-70RG, T-50RGHT, T-70RGHT

397220 - 7 pole RV nose lead (not shown)

NOTE: CONNECT ALL WIRES COLOR TO COLOR UNLESS OTHERWISE SPECIFIED

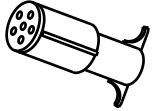
* NOTE: CONNECT BLACK TO JUNCTION BOX WITH CAOS JUMPER



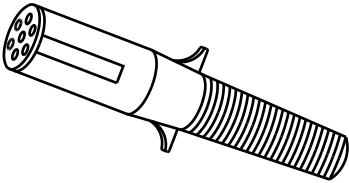
Complete wiring harness p/n: 397084

NOTE TO SCALE DRAWING

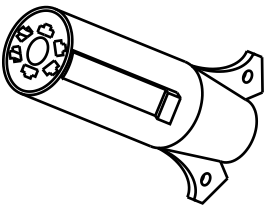
395005 - 6 pole trailer plug only



399023 - 7 pole trailer plug only



390046 - RV trailer plug only

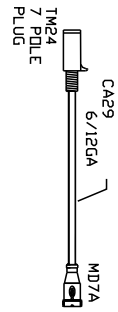


397202 - locking ring (not shown)

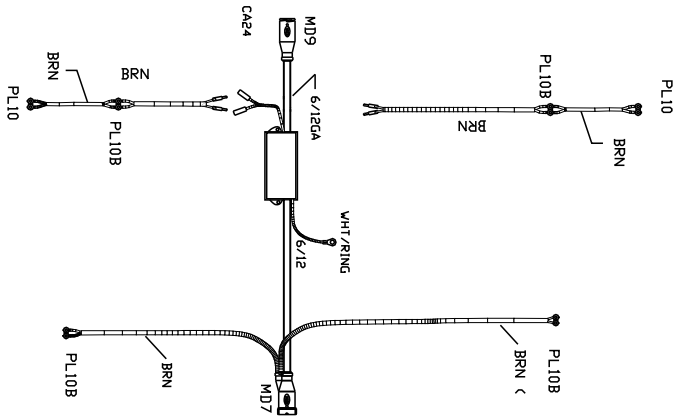
Wiring Harness, Tilt Models with ABS

Used on these models: T-20T, T-24T, T-40T, T-50T

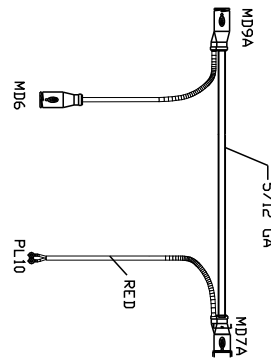
397220 - 7 pole RV nose lead (not shown)



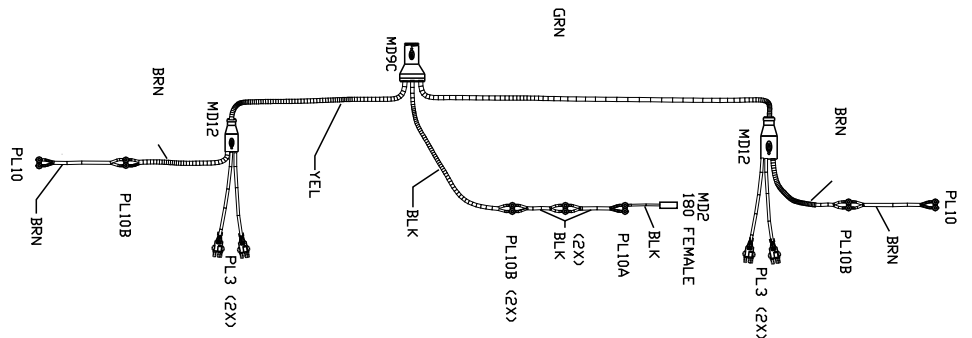
397140
NOSE LEAD, ABS



397145
FRONT MAIN HARNESS,
> T-20Tilts - ABS



397165
BRAKE LEAD,
> T-20Tilts - ABS

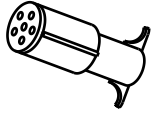


397147
REAR HARNESS,
> T-20Tilts - ABS

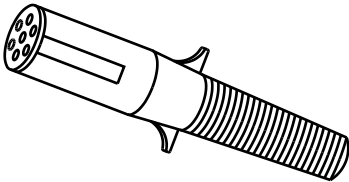
NOTE: CONNECT ALL WIRES COLOR TO COLOR
UNLESS OTHERWISE SPECIFIED

NOT TO SCALE DRAWING

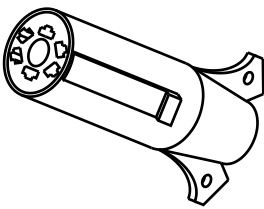
395005 - 6 pole trailer plug only



399023 - 7 pole trailer plug only



390046 - RV trailer plug only

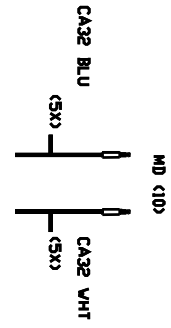


397202 - locking ring (not shown)

Wiring Harness, Tilt Models with Electric Brakes

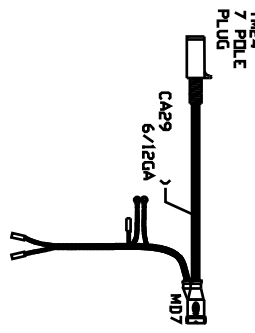
Used on these models: T-20T, T-24T

397220 - 7 pole RV nose lead (not shown)



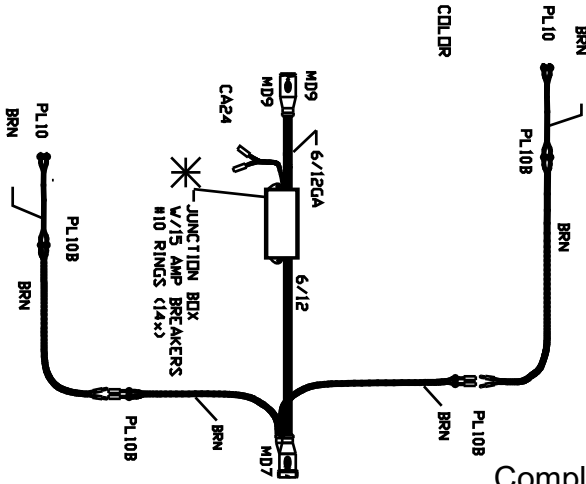
OTY 5 EACH PER KIT

NOTE: CONNECT ALL WIRES COLOR TO COLOR UNLESS OTHERWISE SPECIFIED



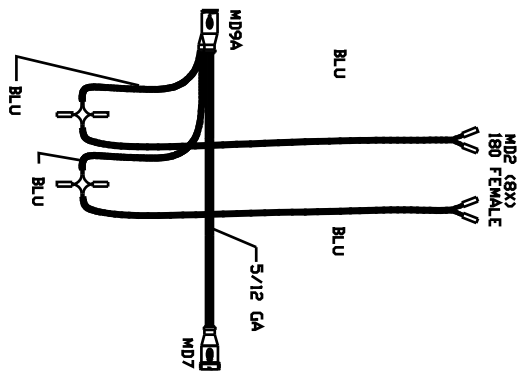
397130
NOSE LEAD, > T-20T/11ts

* * * CONNECT BLACK TO BROWN IN BOTH MD12 MOLDS



397146
FRONT MAIN HARNESS, > T-20T/11ts

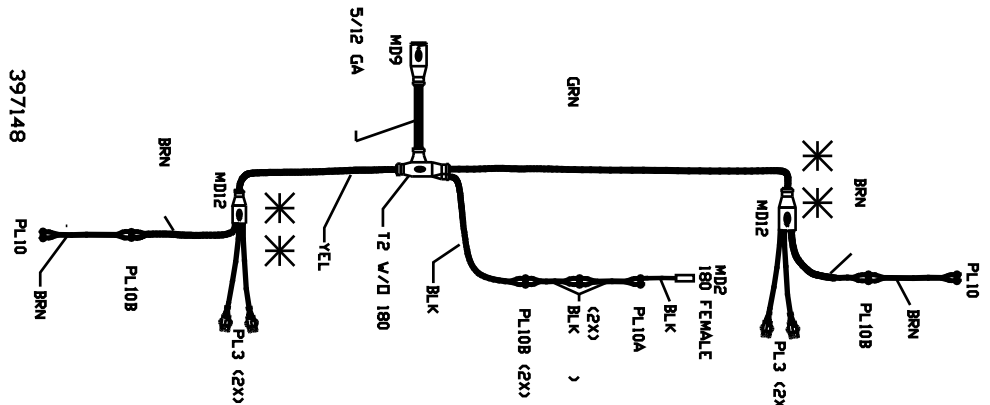
Complete wiring harness
p/n: 397086



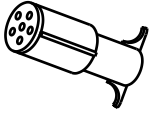
397166
BRAKE LEAD, > T-20T/11ts

NOT TO SCALE DRAWING

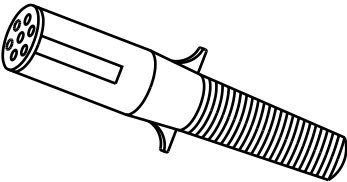
397148
REAR HARNESS, > T-20T/11ts



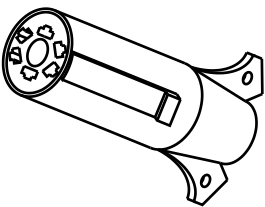
395005 - 6 pole trailer plug only



399023 - 7 pole trailer plug only



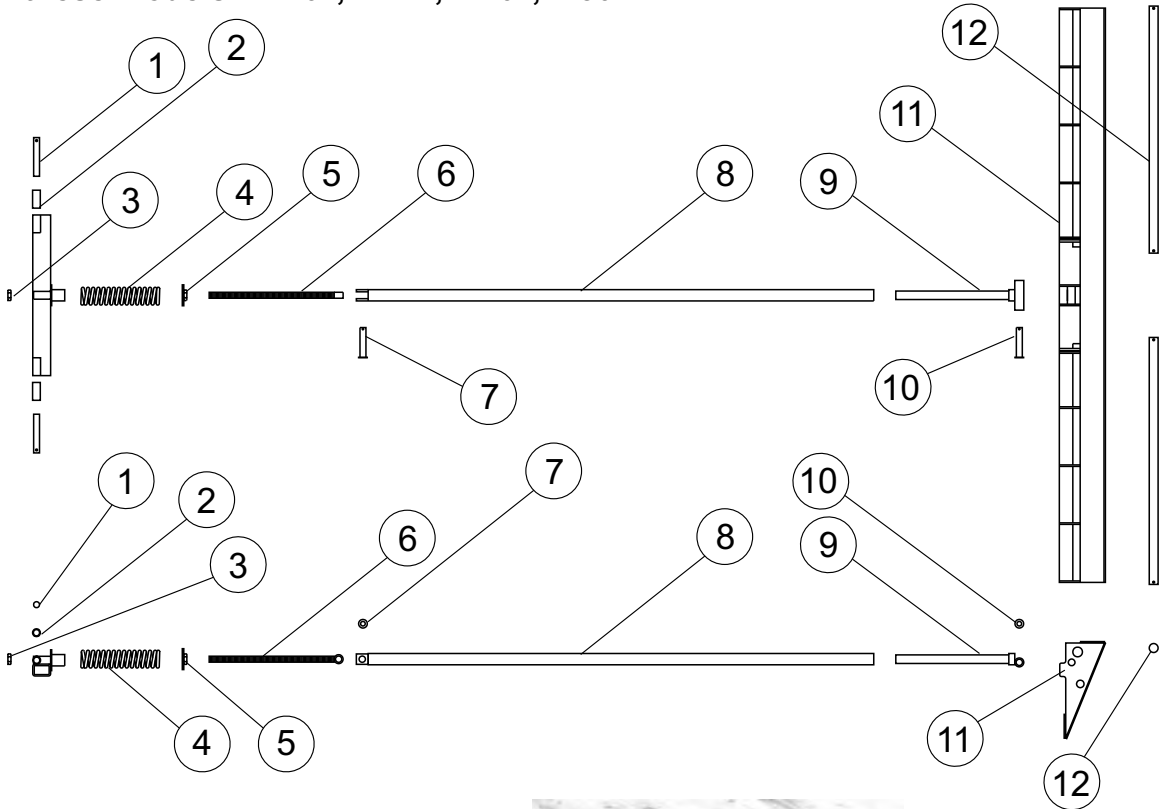
390046 - RV trailer plug only



397202 - locking ring (not shown)

Under-Ride Protection/Ramps

Used on these models: T-20T, T-24T, T-40T, T-50T

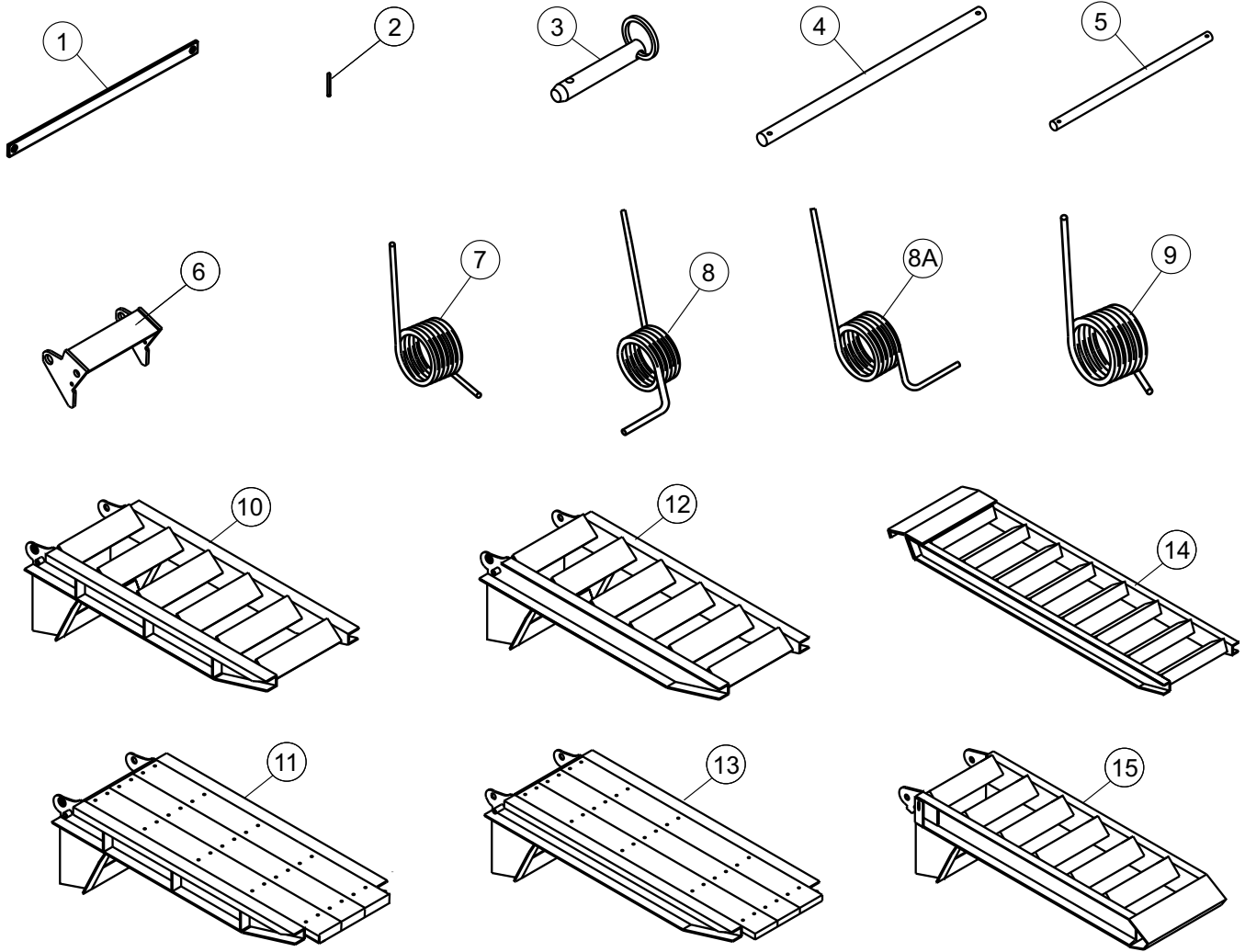


PATENTED
Under-Ride Protection
for Tilt Trailers.
U.S. Patent No.: 6,053,691
Date of Issue: 4/25/2000

P/N 451237

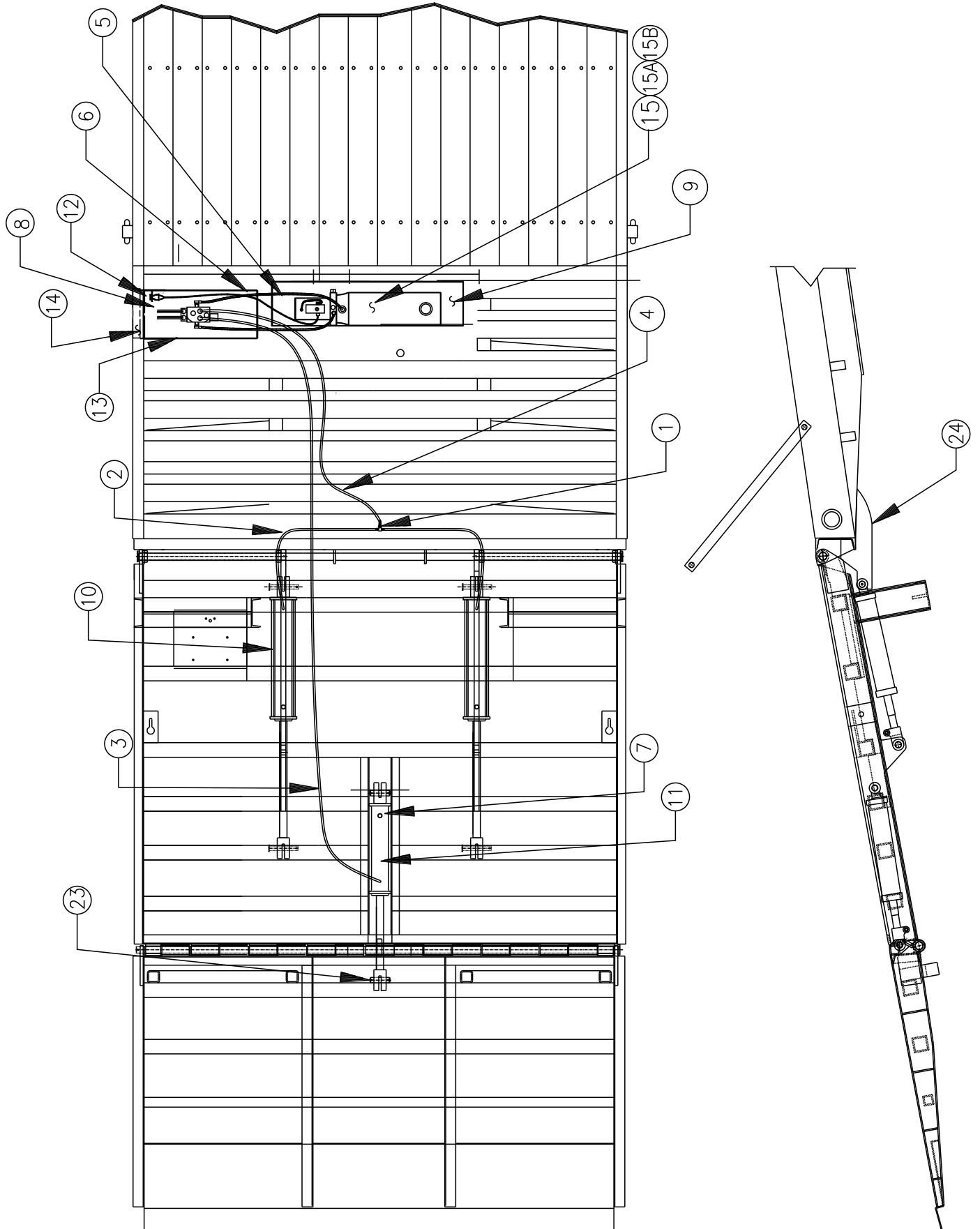
Item	Part #	Description
1	07-0102	pivot rod
2	08-0039	pivot pipe (weld to bottom of frame, each side)
3	36-0806	1" nut
4	37-0510	spring
5	12-0288	washer/nut assembly
6	12-0290	threaded rod assembly
7	12-0101	pin
8	12-0292	push rod assembly
9	12-0293	push rod end assembly
10	12-0360	pin
11	12-1114	ramp assembly (8'-6" wide model)
12	07-0050	ramp rod, 1 1/2" stress proof x 41 1/2"
13	12-0463	wood top ramp, st'd width (paver model)
	12-0369	cantilever for 12-0463 ramp
	37-0234	roll pin (not shown)

Ramps

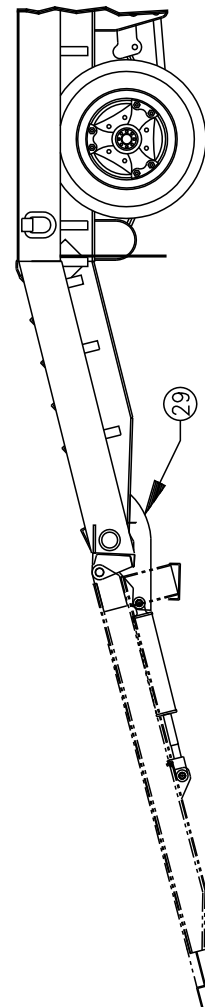
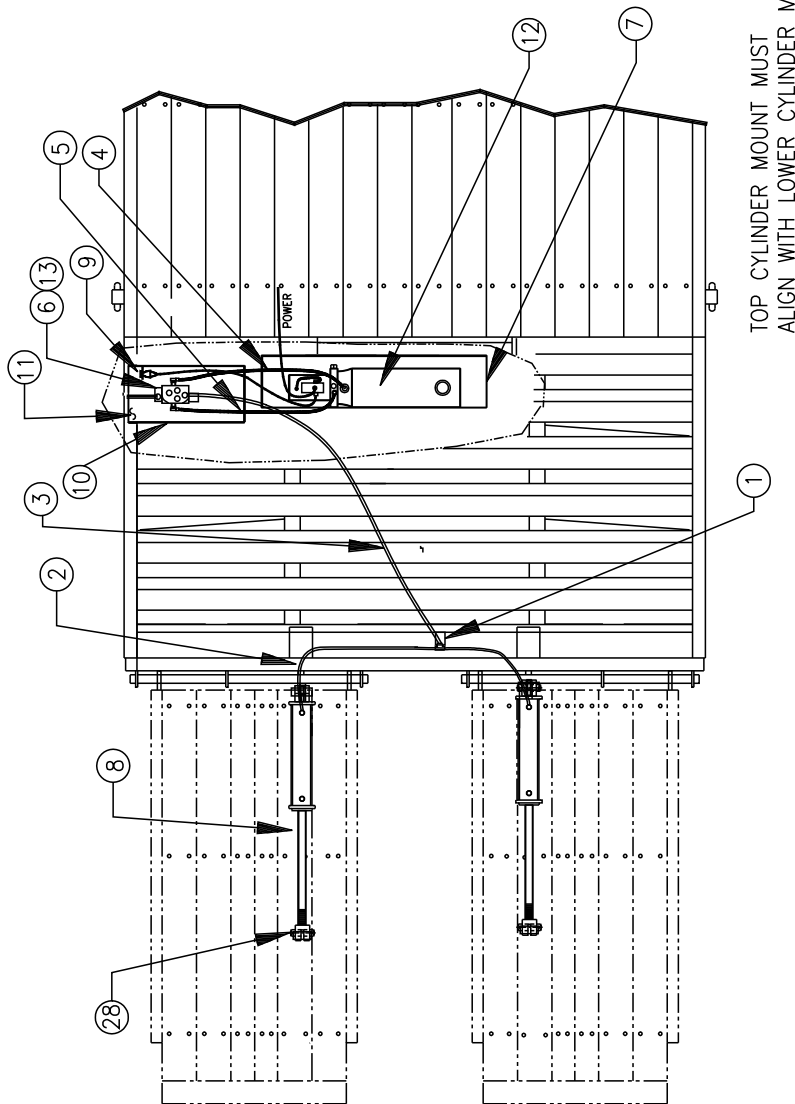
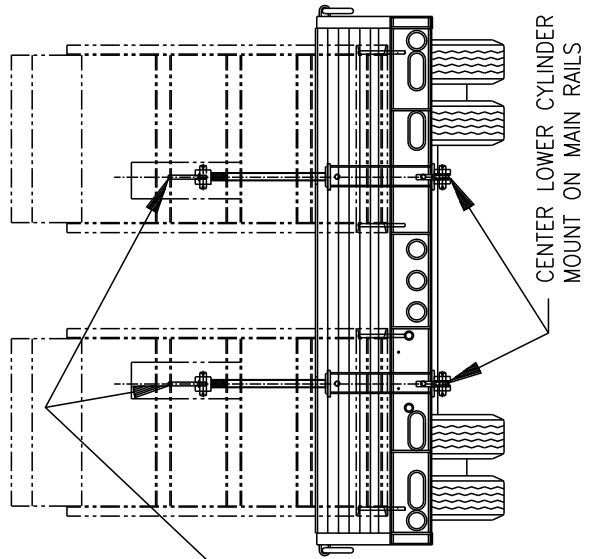


Item	Part #	Description
1	05-0608	ramp hold-up bar, 38"
2	37-0234	roll pin, 5/16" x 1 1/2"
	37-0235	roll pin, 5/16" x 3"
3	37-0230	ramp hold down pin with chain
4	07-0050	cantilever rod, stress proof, 1 1/2" x 41 1/2"
5	16-0025	ramp rod, 1" x 22 3/4", for 2-way spring assist (07-0016)
	16-0026	ramp rod, 1" x 18 1/2"
6	16-0260	cantilever
7	37-0590	ramp helper spring, lift off ground, 3/8" matl
8	37-0578	ramp helper spring, lift off beavertail, r.h.
8A	37-0579	ramp helper spring, lift off beavertail, l.h.
9	37-0592	ramp helper spring, lift off ground, 5/8" matl (replaces 370590)
10	16-4107	5' cleat style ramp, deck overs, heavy duty, T-30 and up (57.50" over-all length)
	16-4111	6' cleat style ramp, deck overs, heavy duty, T-30 and up (66.70" over-all length)
11	16-2300	5' wood top ramp, deck overs, heavy duty, T-30 and up (59.5" over-all length)
	16-2301	6' wood top ramp, deck overs, heavy duty, T-30 and up (68.7" over-all length)
12	16-4105	5' cleat style ramp, deck overs, T-24 and down (57.5" over-all length)
	16-4109	6' cleat style ramp, deck overs, T-24 and down (66.7" over-all length)
13	16-2302	5' wood top ramp, deck overs, T-24 and down (59.5" over-all length)
	16-2303	6' wood top ramp, deck overs, T-24 and down (68.7" over-all length)
14	16-4022	aluminum ramp to load top deck on RG models, 6 ft.
15	16-4020	5' cleat style ramp, T-70RG only, 6" channel iron (65" over-all length)

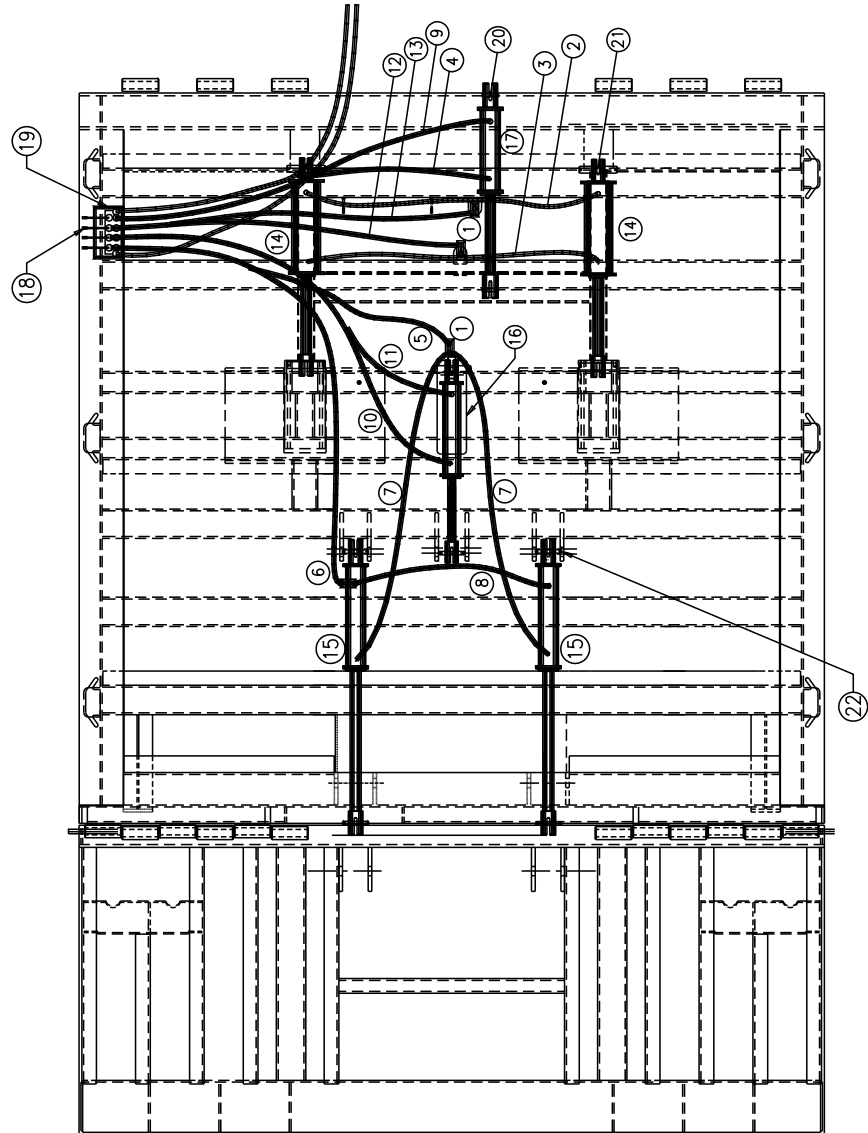
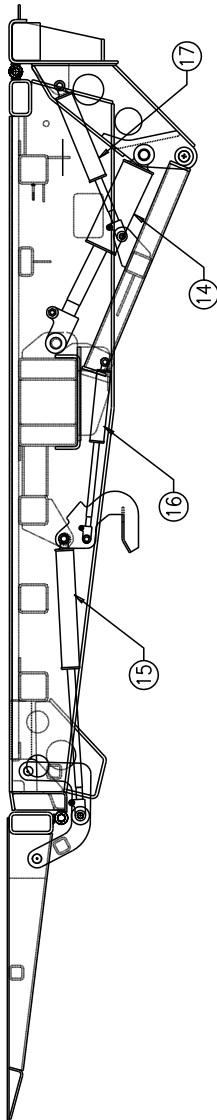
Hydraulic Bi-Fold Ramp



Hydraulic Ramps

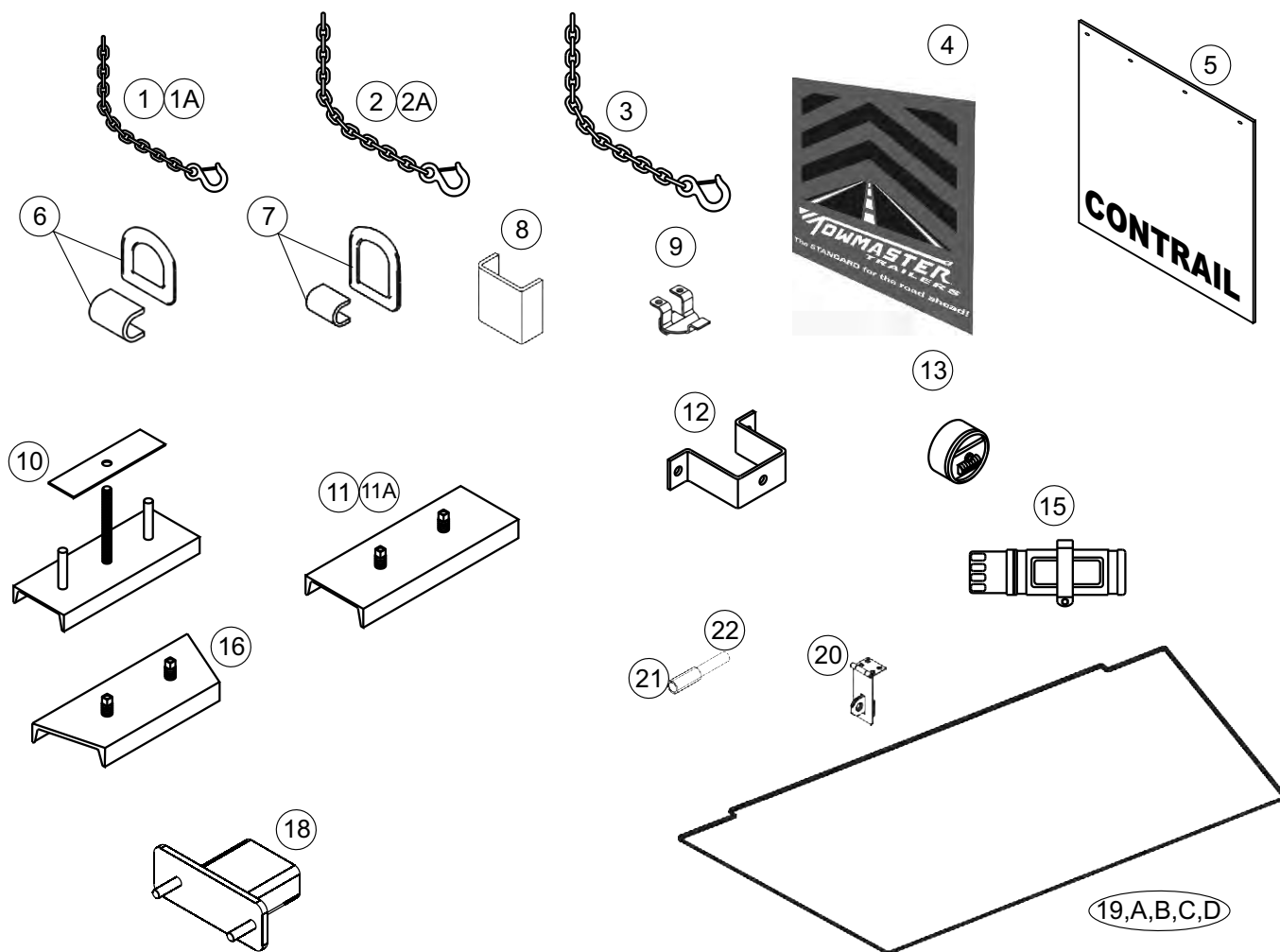


Hydraulic Folding Tail



ITEM	QTY	PART NO.	DESCRIPTION
1	3	356000	TEE, BULKHEAD
2	2	375102	HOSE AS. LIFT CYL BUTT&ROD END
3	2	375104	HOSE AS. LIFT CYL BUTT&ROD END
4	1	375106	HOSE AS. H-FRAME ROD END
5	1	375108	FOLD TAIL (OUT) BUTT END
6	1	375110	FOLD TAIL (IN) VALVE TO TEE ROD END
7	2	375112	HOSE A. FOLD TAIL (IN) ROD END
8	1	375114	HOSE A. FOLD TAIL(OUT) CROSS/OVER
9	1	375116	HOSE AS. H-FRAME BUTT
10	1	375118	HOSE A LOCK CYL UNLOCK(ROD END)
11	1	375120	HOSE A LOCK CYL UNLOCK(BUTT END)
12	1	375122	LIFT CYL ROD
13	1	375124	LIFT CYL BUTT
14	2	370307	CLY , 4-1/2 X 12
15	2	370309	CLY , 2-1/2 X 16
16	1	370310	CLY , 2 X 8
17	1	370308	CLY , 2-1/2 X 12
18	1	376215	VALVE, HYD, 4 SEC
19	1	061600	MOUNT PLATE FOR VALVE
20	2	376130	HYD HOSE KIT, FLIP TAIL
21	4	070134	PIN,H-FRAME CYL
21	4	070138	PIN,H-FRAME PIVOT
22	6	070133	PIN,PIVOT CYLINDER

Miscellaneous Parts



Item	Part #	Description
1	37-0003	3/8" x 40" safety chain assembly, grade 43 (12,000 lb. capacity models and smaller)
1A	37-0014	3/8" x 40" safety chain assembly, grade 70 (14,000 lb. capacity models through 20,000 lb. capacity)
2	37-0002	1/2" x 40" safety chain assembly, grade 70 (24,000 lb. capacity models through 30,000 lb. capacity)
2A	37-0013	1/2" x 40" safety chain assembly, grade 80 (40,000 lb. capacity models)
3	37-0006	5/8" x 40" safety chain assembly, grade 80 (50,000 lb. capacity models)
4	37-0802	mud flaps, Towmaster, large, one pair
5	37-0800	mud flaps, Contrail, large, one pair (p/n 37-0804 - generic, no logo, large, one pair)
6	37-0008	3/4" D-ring and clip
7	37-0009	1" D-ring and clip (37-0011 - D-ring only)
8	05-0221	stake pocket, 4", 1/4" mat'l (see 05-0222 for 3/16")
9	35-3202	glad hand holder
10	12-0310	spare wheel/tire holder, cast wheels
11	12-0312	spare wheel/tire holder, 10 bolt budd wheels
11A	12-0472	spare wheel/tire holder, 8 bolt, hub piloted
12	06-0737	hubodometer mounting bracket (6 bolt hubs only)
13	37-5011	hubodometer
15	37-6072	registration holder, large
16	12-6078	spare tire mount, T-20
18	12-5132	spare tire mount, T-16
19	06-0140	tool box lid, 14.25" x 34" T-30, T-40, T-50, T-40LP, T-50LP
19A	09-1795	tool box lid, 14.25" x 24.5" T-20T, T-24T
19B	06-0078	tool box lid, 14.25" x 26.5" T-40T, T-50T
19C	06-0174	tool box lid, 14.25" x 36.31" T-18, T-20, T-20LP, T-24LP, T-24, C-18, C-20, C-24
19D	06-0528	tool box lid, 14.25" x 54" T-12, T-16, T-18-3
20	37-0100	lock hasp, toolbox
21	08-0028	tool box hinge
22	07-0006	tool box hinge

Recommended Outrigger Loadings

PROPER LOADING TECHNIQUE

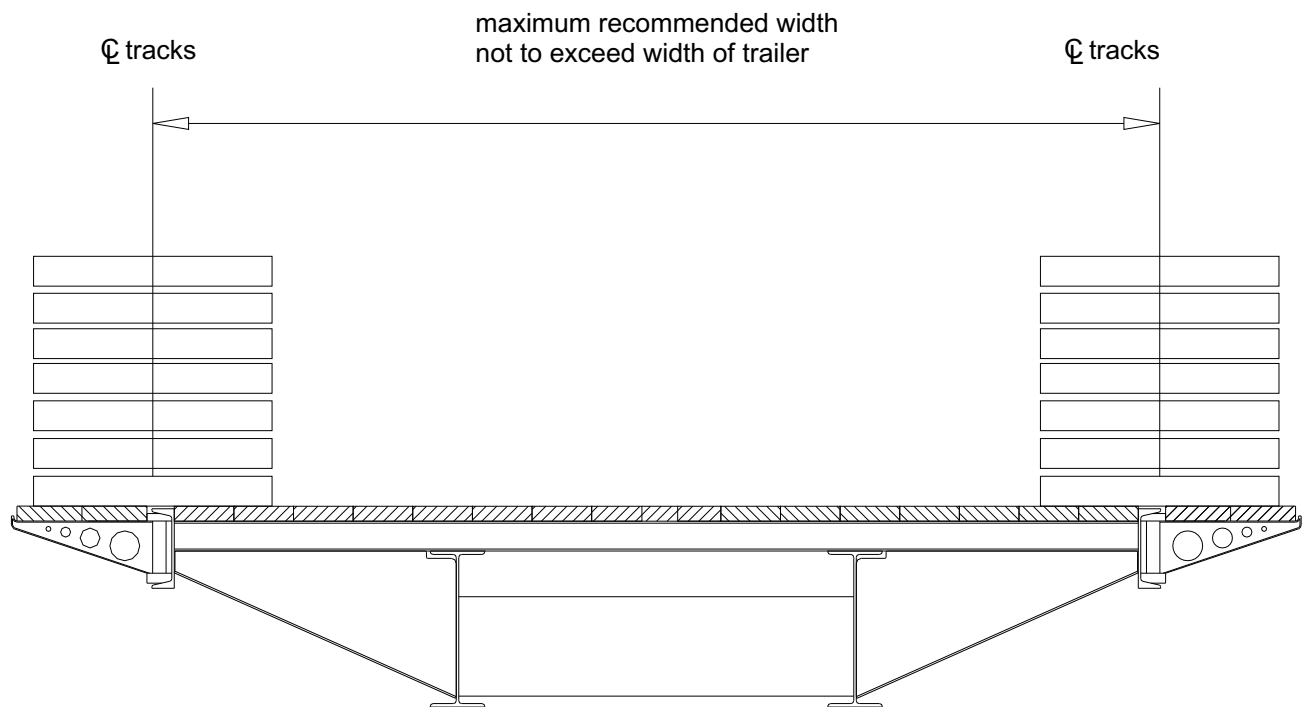
Because outriggers (sometimes called swinging side brackets or extension brackets) are often used to extend the useful width of the deck by approximately 12" on each side (or 24" total), the proper loading technique is very important.

RECOMMENDED PRACTICE

It is recommended that the centerline of the vehicle tracks, tires or grousers be "in-line" or "inboard" of the outside edge of the deck.

!! CAUTION !!

Outrigger brackets are designed for use only with 2" thick boards, so the use of thicker boards and/or loading practices that disregard these recommendations may result in outrigger failures (breakage) and subsequent equipment damage and personal injury.



Payload Ratings

ALL PAYLOAD RATINGS ARE AT 55+ M.P.H. Trailers are NOT shipped with BRAKE CAB CONTROL equipment. Contact our parts department for information on specialized controllers.

All payload ratings are approximate, and will vary slightly with the actual finished trailer weight. Please see detail specifications for exact Gross Vehicle Weight Rating (GVWR). Trailer payload capacity is defined as the GVWR less the actual trailer weight. Please note that this payload capacity is a maximum to not be exceeded, and may only be achieved when the trailer is carefully loaded so that the hitch bears its full rated load.

Payload capacity will be reduced if the trailer is loaded such that the hitch bears less than its full rated loading. Care should be taken that moving the load back to reduce hitch weight does not overload the axles and tires. The certification tag on the trailer tongue lists the Gross Axle Weight Rating (GAWR), which is the maximum total weight allowed on the axles/tires. Total axle/tire weight allowed is the GAWR times the number of axles. The tag also lists the GVWR. The required hitch weight at full load is the difference of the GVWR and the sum of the GAWR's.

Payload capacity will also be reduced by the addition of any options or changes that increase the trailer weight.

When selecting a trailer, always allow a capacity safety margin to account for non-uniform loading, growth in load and accessories weight, and the multitude of other unforeseen circumstances that occur in equipment transportation.

Towing Tips and Check List

Know and follow all state, local, D.O.T., towing and tie down laws that pertain to the load/trailer combination that is to be towed. If you have any questions, contact your local law enforcement or D.O.T. before towing.

OK NO

1. Check over-all condition of trailer: tie downs, ramps, hitch for proper operation.

2. Make sure the trailer coupler and towing coupler are the same size and proper capacity.

3. Back tow vehicle up to trailer, and hook up. Using a "spotter" is the easiest method.

4. Trailer must be connected to tow vehicle before loading or unloading.

5. Lock tow vehicle brakes before loading and unloading trailer, and use chock blocks.

6. After connected to tow vehicle, make sure trailer is level, or slightly higher in front, adjust as needed.

7. Attach safety chains (cross them), electrical plug and break-a-way switch (electric brakes), and make sure they are not dragging.

8. Check for proper tire pressure on trailer and tow vehicle.

9. Check all lighting on trailer and tow vehicle for proper operation. Adjust brake controller (electric brakes) as necessary for proper braking. Make sure running lights are on.

10. Make sure deck is clear of all debris before loading and before heading out onto the road.

11. Secure cargo or equipment to trailer, secure load on all 4 corners if possible, do not over-tighten binders.

12. Secure all loading ramps, deck latches (tilt models) and make sure jack stand is in up position, and stow chock blocks.

13. After traveling a short distance, stop and check to see if your load is secure, and that all tie downs are tight.

14. Allow for greater braking distance when pulling a trailer, and generally travel at slower speeds.

Decals, Warnings and Cautions

For complete decal kits: please specify trailer model, deck length and paint color.

Part number	Model
45-0175	C-10LS
45-0177	C-12LS
45-0247	C-14LS
450222	T-18
450224	T-20
450218	T-20LP
450220	T-24LP
450233	T-40LP
450235	T-50LP
450226	T-24
450228	T-30
450232	T-40
450234	T-50
450236	T-50RG
450237	T-50RGHT
450238	T-70RG
450239	T-70RGHT
450206	T-20T
450208	T-24T
450210	T-40T
450211	T-50T
450155	C-18
450160	C-20
450165	C-24

P/n: 450009A

WARNING

For proper performance, all new axles should have the following checked at the specific intervals:

Wheel Nut Torque:

Upon delivery, at 10, 25 and 50 miles and weekly thereafter. **KEEP THEM TIGHT!**

Brake Adjustment:

At 200 miles and 3,000 miles and every 3,000 miles thereafter.

Tire Pressure:

Upon delivery and per tire manufacturer's requirements.

450009A

p/n: 453220B

WARNING

This trailer with **ELECTRIC BRAKES** requires an electric brake controller in tow vehicle.

Load must be secured according to D.O.T. standards.
(Follow DOT Federal Motor Carrier Safety Regulations §392.9, §393.100 and §393.102.)

Trailer tongue is rated to transfer 20-25% of gross weight to achieve maximum payload capacity and proper towing. Check hitch bolts frequently. Use only grade 8 bolts and nuts on hitch.

KEEP THEM TIGHT!



Trailer must be towed level, or slightly higher (1" to 2") in front.

453220B

Decals, Warnings and Cautions

⚠ WARNING

Screen in glad hand must be clean before connecting to tow vehicle.



Keep clean!

453301

p/n: 453301 Warning: Screen in glad hand must be clean before connecting to tow vehicle. Keep clean!

⚠ WARNING

TILT DECK

When releasing deck locking lever, stay clear of deck area when loading & unloading. When deck is in down position, make sure safety pin for deck locking lever is in lock position.

Failure to unhook platform latch prior to unloading equipment may cause trailer damage.

450269

p/n: 450269 Warning: TILT DECK! When releasing deck locking lever(s), stay clear of deck area when loading & unloading. When deck is in down position, make sure safety pin for deck locking lever is in lock position! Failure to unhook platform latch prior to unloading equipment will cause trailer damage!

⚠ WARNING

"UNCAGE" ALL PARK BRAKES!

Failure to "uncage" all park brake chambers will result in improper operation of park brake(s), and trailer may roll.



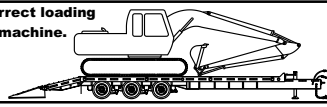
REMOVE TO "UNCAGE"

451250


p/n: 451250 Warning: "UNCAGE" ALL PARK BRAKES! Failure to "uncage" all park brake chambers will result in improper operation of park brake(s), and trailer may roll.

⚠ WARNING

Correct loading of machine.



Loading of machine this way may exceed tongue weight.

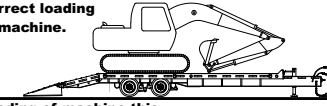


452401


p/n: 452401 Warning: Correct loading of machine. Loading of machine this way may exceed tongue weight. (Triple axle models.)

⚠ WARNING

Correct loading of machine.



Loading of machine this way may exceed tongue weight.

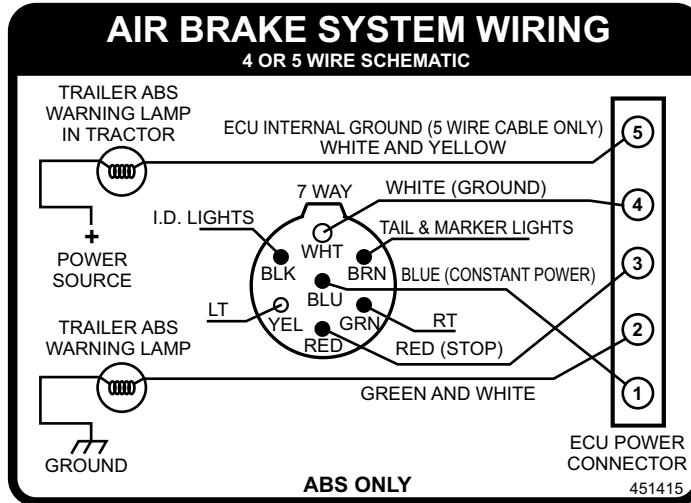


452405

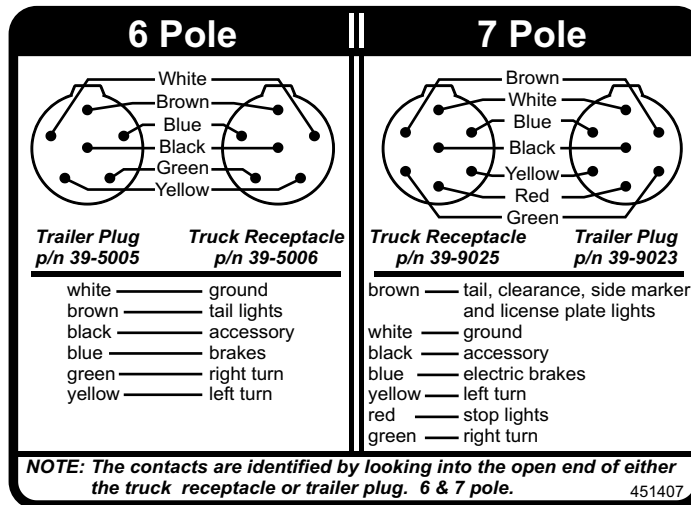
p/n: 452405 Warning: Correct loading of machine. Loading of machine this way may exceed tongue weight. (Tandem axle models.)

Decals, Warnings and Cautions

p/n: 451415

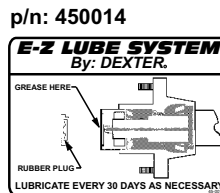


p/n: 451407



p/n: 452820

<h2 style="margin: 0;">⚠ DANGER</h2> <p style="margin: 0;">SERIOUS INJURY AND/OR PROPERTY DAMAGE CAN RESULT IF THIS VEHICLE IS TOWED BEFORE FAMILIARIZING YOURSELF WITH THE MANUFACTURER'S OPERATING INSTRUCTIONS AND CAUTIONS LISTED TO THE RIGHT</p>	<h2 style="margin: 0;">⚠ CAUTION</h2> <p style="margin: 0;">BEFORE TOWING THIS TRAILER CHECK THAT:</p> <ul style="list-style-type: none"> • COUPLER HITCH AND TRAILER BALL ARE THE SAME SIZE • COUPLER IS LATCHED • SAFETY CHAINS ARE CRISSCROSSED UNDER TONGUE AND ATTACHED TO TOW VEHICLE • ALL TRAILER LIGHTING IS WORKING CORRECTLY • LOAD IS SECURED TO TRAILER FRONT AND REAR • TONGUE JACK (IF SO EQUIPPED) IS RETRACTED • TILT PIN IS LATCHED • WHEEL LUG BOLTS ARE PROPERLY TIGHTENED • TIRES ARE INFLATED TO PRESSURE INDICATED ON TIRE • TRAILER BRAKES ARE PROPERLY ADJUSTED AND BREAK-AWAY DEVICE IS ATTACHED TO TOW VEHICLE • LOAD IS WITHIN TRAILER CAPACITY AND DISTRIBUTED PROPERLY TO MAINTAIN PROPER TONGUE WEIGHT 	<h2 style="margin: 0;">⚠ WARNING</h2> <p style="margin: 0;">YOU ARE REQUIRED TO COMPLY WITH LOCAL AND STATE REQUIREMENTS REGARDING BRAKES, LICENSING AND AN ADDITIONAL EQUIPMENT THAT MAY BE NECESSARY. CONTACT YOUR STATE MOTOR VEHICLE DEPARTMENT FOR MORE INFORMATION. ALSO REFER TO DOT FEDERAL MOTOR CARRIER SAFETY REGULATIONS §392.9, §393.100 AND §393.102. 452820</p>
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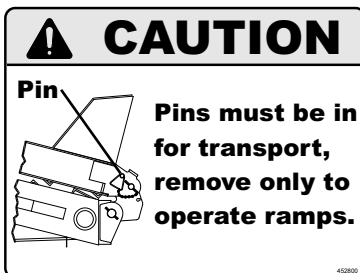
Decals, Warnings and Cautions



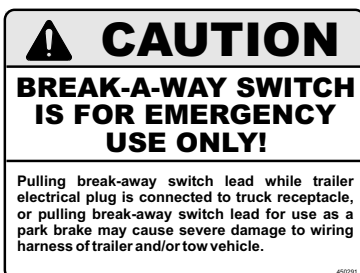
p/n: 458206 Warning: For hitch extension only! DO NOT use for hitch height adjustment. Use all mounting bolts to mount to hitch plate. (For use with hitch extension part numbers 120340 & 120342)



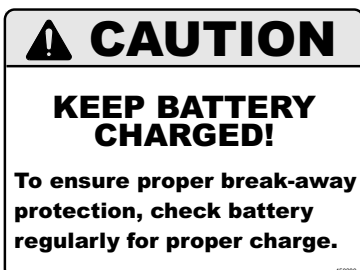
p/n: 450305 Caution: Pallet forks must be secured to trailer while trailer is in motion.



p/n: 452800 Caution: Pins must be in for transport, remove only to operate ramps.



p/n: 450291 Caution: BREAK-A-WAY SWITCH IS FOR EMERGENCY USE ONLY! Pulling break-a-way switch lead while trailer electrical plug is connected to the truck receptacle, or pulling break-a-way switch lead for use as a park brake will cause severe damage to wiring harness of trailer and/or tow vehicle.



p/n: 450280 Caution: KEEP BATTERY CHARGED! To ensure proper break-a-way protection, check battery regularly for proper charge.

Decals, Warnings and Cautions

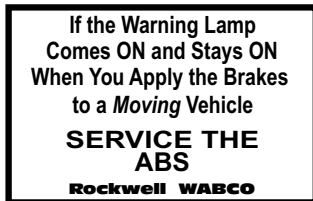
p/n: 450052 - 1" red/white reflectorized tape



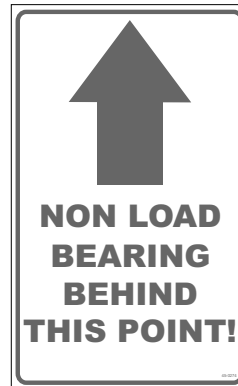
p/n: 450050 - 2" red/white reflectorized tape



p/n: 450285



p/n: 450274



p/n: 451225 - small red, black & white Towmaster decal, 1 1/2" x 8"



p/n: 450016 - large red, black & white Towmaster decal, 6" x 29"



Decals, Warnings and Cautions

p/n: 451232, large red, white & black Contrail decal, 5" x 24"



p/n: 451230, small red, white & black Contrail decal, 1 1/2" x 8"



p/n: 450705

800-462-4517
towmastertrailers.com

p/n: 451240

ATTENTION

A "green brake" is an unground, unburnished brake. Normal manufacturing tolerances dictate that there is a break-in period required after which the lining will seat into a perfect concentric situation. During this break-in period, the user must be aware that additional brake adjustments will be mandatory to achieve optimum braking performance.

451240

p/n: 450720

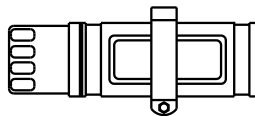
This trailer is 102" wide. This width trailer is legal on all federally funded highways. Some states require that trailers be no wider than 96" on state roads. Check with your state highway department for specific regulations and permits.

450720

p/n: 452925

ATTENTION:

Registration Holder



Parts and Service Manual enclosed. To receive an additional 6 months warranty of MAIN FRAME only, return your warranty registration within 14 days. See dealer.

452925

Reporting Safety Defects

Reporting Safety Defects: If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Towmaster, Inc.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Towmaster, Inc.

To contact NHTSA, you may either call the Auto Safety Hotline toll-free at 1-800-424-9393 (or 366-0123 in Washington, DC area) or write to: NHTSA, U.S. Department of Transportation, 400 7th Street SW NSA-11, Washington, DC 20590. You may also obtain other information about motor vehicle safety from the Hotline.

Maintenance and Operating Instructions

TIRES: Check daily, and maintain proper inflation. Refer to Tire Chart.

WHEEL NUTS: Check weekly, and maintain proper torque.

WHEEL BEARINGS: Check bearings every 3000 miles. Grease if necessary. Check for overheating and excessive wear when operating in severe conditions, i.e. deep mud, sand or water and also when a hub is pulled for any reason.

WHEEL BEARINGS/LUBRICATION: Check oil level of wheel bearings daily. Where severe operating conditions such as deep mud, sand, or water, etc. are encountered, bearings should be checked for overheating or excessive wear and also when a hub is pulled for any reason. Fill hub with SAE 90 oil to indicated level on hub cap.

BATTERY: Keep battery charged! To ensure proper break-a-way protection, check battery regularly for proper charge.

ELECTRICAL PLUG: Check trailer plug and truck receptacle for damage and/or corrosion, and that they fit tight.

LIGHTS/WIRING: Inspect all lights for proper operation daily and replace as necessary. Connect power source, preferably tow vehicle to trailer, and check all lights for proper operation and possible loose connections, or improper wiring between tow vehicle and trailer.

Maintenance and Operating Instructions

PARKING JACK: Check jack for any physical damage or improper operation due to corrosion. Replace if severely damaged or rusted. Check bolts for tightness daily and be sure the lock washers and/or lock nuts are used.

TIE DOWN RINGS: Check daily for physical damage to "D" ring, clips, or welds and replace or repair immediately.

SUSPENSION BOLTS: After an initial break-in period of 150 miles and periodically thereafter every 1000 miles, all bolts and nuts should be rechecked for proper torque. Check eye bushings in springs for wear and replace any part if wear shows.

DECK CUSHION CYLINDER: Use "ATF" oil or equivalent. (Tilt models only.)

COUPLER/TOW RING: Inspect visually: if coupler shows excessive wear, it should be replaced.

TOW RING: Inspect for tightness daily before use. Ring plate must be tight against hitch plate to prevent plate deformation. If ring shows excessive wear, it should be replaced immediately. Double nut bottom bolts. (4 bolt pintle ring.)

TOW RING INSTALLATION

1. Determine proper tow ring height according to tow vehicle.
2. Install tow ring with secondary support bolt in lower position whenever possible.
3. Tighten nuts on both bolts until lock washers are fully compressed.
4. Do not use tow ring with a hitch which is excessively loose or that binds when trailer turns.
5. Double nut lower bolts.

BRAKE CONTROLLER: Check controller daily for proper operation both automatic with tow vehicle foot pedal and manually. Replace if defective or damaged. Adjust for proper braking effect for load being towed. Trailer braking should be adjusted so that trailer brakes react and apply at the same time as tow vehicle brakes come on, never after tow vehicle brakes.

Maintenance and Operating Instructions

MAGNETS: Check at any indication of braking problems, at brake replacement, at bearing inspection, or any time a hub is pulled. Magnets should be replaced if bare wire is showing at wear surface, surface of magnet is gouged, scored, or magnet is worn unevenly.

BRAKE CLEANING/INSPECTION: Your trailer brakes must be inspected and serviced at yearly intervals or more often as use and performance requires. Magnets and shoes must be changed when they become worn or scored thereby preventing adequate vehicle braking. Clean the backing plate, magnet arm, magnet, and brake shoes. Make certain that all the parts removed are replaced in the same brake and drum assembly. Inspect the magnet arm for any loose or worn parts. Check shoe return springs, hold down springs, and adjuster springs for stretch or deformation and replace if required. **ASBESTOS DUST HAZARD!** Since some brake shoe friction materials contain asbestos, certain precautions need to be taken when servicing brakes: (1) Avoid creating or breathing dust. (2) Avoid machining, filing or grinding the brake linings. (3) Do not use compressed air or dry brushing for cleaning. (Dust can be removed with a damp brush.)

BRAKE ADJUSTMENT: Brakes should be adjusted (1) after the first 200 miles of operation when the brake shoes and drums have "seated," (2) at 3000 mile intervals, (3) or as use and performance requires. The brakes should be adjusted in the following manner:

1. Jack up trailer and secure on adequate capacity jack stands. Do not lift or place supports on any part of the suspension system. Check that the wheel and drum rotate freely.
2. Remove the adjusting hole cover from the adjusting slot on the bottom of the brake backing plate.
3. With a screwdriver or standard adjusting tool, rotate the starwheel of the adjuster assembly to expand the brake shoes. Adjust the brake shoes out until the pressure of the linings against the drum makes the wheel very difficult to turn. (With drop spindle axles, a modified adjusting tool with about an 80 degree angle should be used.)
4. Rotate the starwheel in the opposite direction until the wheel turns freely with a slight lining drag.
5. Replace the adjusting hole cover and lower the wheel to the ground. Repeat the above procedure on all brakes.

* A "green brake" is an unground, unburnished brake. Normal manufacturing tolerances dictate that there is a break-in period required after which the lining will seat into a perfect concentric situation. During this break-in period, the user must be aware that additional brake adjustments will be mandatory to achieve optimum braking performance.

Maintenance and Operating Instructions

AIR AXLES AND AIR BRAKES

1. **15,000 miles or a minimum of twice a year:** Inspect wheel bearings. Check all seals for signs of wear.
2. **25,000 - 30,000 miles:** Check lining wear and estimate reline time. Check brake adjustment and inspect rollers, roller shafts, anchor pins, and bushings, replace if necessary. Inspect cam shafts, cam shaft bushings, cam shaft brackets and cam shaft bracket bushings for wear. Lubricate brake actuating components.
3. **100,000 miles or at brake relining:** Overhaul and lubricate all brake actuating components. Check brake chambers. Replace oil in wheel bearings.

RECOMMENDED BRAKE ADJUSTMENT PROCEDURE

1. Grease cam bracket and spider fittings.

! WARNING ! Care must be exercised to prevent grease from coming in contact with brake linings which could result in reduced braking performance

2. Adjust the slack adjuster until the brake lining comes into contact with the brake drum.
 - * A. For green brakes, there should be a slight amount of wheel drag at initial adjustment to compensate for any linings irregularities (high spot, etc.)
 - B. For burnished or broken-in brakes, back off the slack adjuster to achieve .010" clearance between drum and shoes.
3. Apply brakes using normal truck operating pressure. (Average line pressure should be 90 psi.)

! DANGER ! Use of air pressure in excess of 130 psi could result in failure of the air chamber or spring brake chamber and result in injury.

- A. Check the amount of push rod travel. Maximum should not exceed 2" for type 30 chambers.
 - * Optimum push rod travel on a green brake should be under 2".
 - * Optimum push rod travel on a burnished or broken-in brake should be under 1 3/4".
- B. Check the angle between the slack adjuster and push rod. With the brakes applied, the angle should be 90 deg. +/- 5 deg.
- C. With air pressure applied to brakes, check for lining to drum contact. The contact should approach 100%. Use a .010" feeler gauge if in doubt. It should not fit between the lining and drum during brake application.
- D. Check to ensure the lining is inside the drum during application. More than .06" hanging out of the drum is not recommended.

Maintenance and Operating Instructions

4. Release air pressure from the brakes and confirm that all brakes release to the normal relaxed position.

! CAUTION ! The pawl must be removed or disengaged before you turn the manual adjusting nut or you will damage the pawl teeth. Damaged teeth prevent automatic adjustment and require that you regularly adjust the brake manually. (See page 5)

! CAUTION ! Failure to properly adjust brakes could cause reduced braking performance.

BRAKE ASSEMBLY/DISASSEMBLY PRECAUTIONS

Although Dexter Axle supplies non-asbestos brake linings as standard equipment, asbestos linings may still be found on axles in service.

! DANGER ! Asbestos brake linings contain asbestos fibers.

Breathing asbestos dust may be hazardous to your health and may cause serious respiratory or other bodily harm. AVOID CREATING DUST!

Do not remove, work on brake drums or replace brake linings without proper protective equipment.

Do not remove, work on brake drums or replace brake linings without proper protective equipment.

Do not attempt to sand, grind, chisel, file, hammer or alter brake linings in any manner without proper protective equipment. Follow O.S.H.A. standards for proper protective devices to be used when working with asbestos materials.

! DANGER ! Excessive pounding on anchor pins, or cam roller pins to remove or install them can damage the pins and cause misalignment of the brake spiders and brake shoes. The use of a soft hammer or brass drift is recommended to remove or install the anchor pins if necessary.

! DANGER ! To insure your safety, it is critical that any brake drum reaching maximum wear diameter, as cast on drum, by turning, grinding, and/or wearing be considered unsafe and immediately replaced. Any brake drum exceeding this dimension is considered a safety hazard. If in doubt, contact the brake drum manufacturer.

! WARNING ! When you work on a spring chamber, carefully follow the service instructions of the chamber manufacturer. Sudden release of a compressed spring can cause serious personal injury.

! WARNINGS !

- ! Be sure trailer is connected to tow vehicle when loading and unloading machinery.
- ! Lock tow vehicle brakes **BEFORE** loading and unloading.
- ! Use wheel chocks when loading or unloading trailer.
- ! Check tire inflation daily. See tire chart.
- ! Check wheel nuts weekly - maintain proper torque.
- ! Trailer should be level when fully loaded. If trailer is low in front when loaded, adjust coupler to make level (or slightly higher in front).
- ! Use caution when trailer is being loaded or unloaded. **DO NOT** place hands or feet under ramps when raising or lowering.

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Portions of this manual were used with the expressed authority of Dexter Axle, but Dexter Axle is not responsible for the accuracy of the information contained herein.

Towmaster means; quality, value, dependability.

Towmaster, Inc., 61381 U.S. Highway 12, Litchfield, MN 55355
800-462-4517 Parts Dept. Fax: 320-693-5703
www.towmastertrailers.com



**Employee Owned
Employee Pride
U.S.A. Made!**

Towmaster, Inc. offers a complete line of trailers from small pans and tilts to drop deck trailers to deck over models and large tilts and detachable gooseneck trailers. See your Towmaster Trailers dealer or visit our website to learn more.

Manufacturer reserves the right to modify, without notice, specific designs and specifications as deemed advisable on the trailers described herein without obligation in regards to trailers previously sold. The manufacturer also reserves the right to discontinue any model or models without obligation in regards to trailers previously sold. Written warranty covers each trailer. No other warranty expressed or implied is made. Warranty on tires and brakes through original manufacturer. All dimensions approximate.