# SUSPENSION FIELD MANUAL









# SUSPENSION FIELD MANUAL

Euclid has been a long-standing trusted source for high-quality, all-makes truck parts for more than 80 years. With a comprehensive aftermarket suspension parts portfolio, you can trust Euclid to provide your business with the products and support needed to maintain uptime and keep your vehicles running on the road. This field manual offers a detailed view of the most popular rear truck and trailer suspensions on the road today, and will guide you through the various suspensions to help you identify common wear items that frequently need replacement.

For the complete suspension and components offering, visit **MeritorPartsXpress.com** or refer to the **700F** series Suspension catalog.

# TABLE OF CONTENTS

5	HOW TO IDENTIFY YOUR REAR TRUCK
	AND TRAILER SUSPENSION

- 6 Rear Truck Air Suspensions
- 8 Rear Truck Leaf Spring Suspensions
- 9 Rear Truck Bolster / Rubber Spring Suspensions
- 10 Trailer Air Suspensions
- 11 Trailer Leaf Spring Suspensions

#### 13 LINE HAUL TRACTOR ....

- 14 Freightliner: FAS II AirLiner®
- 16 Kenworth: AirGlide 100®
- 18 Kenworth: AirGlide 200<sup>®</sup> / 400<sup>®</sup>
- 20 Mack® / Volvo: Corporate Air
- 22 Navistar / International®: Corporate Air
- 24 Peterbilt: Air Leaf
- 26 Peterbilt: Air Trac
- 28 Peterbilt: AirGlide 210
- 30 Peterbilt: FLEX Air

#### 33 LINE HAUL TRAILER ...

- 34 Hendrickson: INTRAAX®
- 36 Hutch: H7700 / 9700
- 38 Meritor®: RHP / MPA RideSentry
- 40 SAF-Holland Neway: CBX23 / 25
- **42** SAF-Holland Neway: Duralite (Binkley)

#### 45 DUMP TRUCKS 556

- 46 Chalmers: 800 Series
- 48 Freightliner: TufTrac®
- 50 Hendrickson: HAULMAAX®
- 52 Hendrickson: HAULMAAX® EX
- 54 Hendrickson: HN®
- 56 Hendrickson: RT®
- 58 Mack: SS44 Series, Camelback

#### 61 REFUSE TRUCKS

- 62 Freightliner: TufTrac®
- 64 Hendrickson: HAULMAAX®
- 66 Hendrickson: HAULMAAX® EX
- 68 Hendrickson: HN®
- 70 Mack: SS44 Series, Camelback

#### 73 CONCRETE TRUCKS

- 74 Chalmers: 800 Series
- 76 Hendrickson: PRIMAAX®
- 78 Hendrickson: RS®
- 80 SAF-Holland Neway: AD-123
- 82 SAF-Holland Neway: ADZ

#### 85 VOCATIONAL TRAILERS \*\*\*\* ---

- 86 Hutch: H900
- 88 Meritor®: MTA
- 90 Reyco: 21B Cast

#### 93 COMPONENT GUIDES

- 94 Torque Rod Selection Guide
- 96 Hendrickson Ultra Rod® (Truck
- Suspension Only)
- 98 Uni-Rod® Kits: Individual Components
- 100 Hendrickson INTRAAX® Series Air Spring
  - Selection Guide
- 102 Hendrickson INTRAAX® Shock Absorber Selection Guide
- 104 U-Bolt Selection Guide
- 105 Threaded Rod Selection Guide
- 106 Height Control Valve Selection Guide
- 108 Height Control Valve Cross Reference
- 110 Universal Height Control Valve Selection Guide

#### 111 INDEX

#### 112 NUMERICAL LISTING

# SUSPENSION OVERVIEW

#### **SUSPENSION FUNCTION**

- Carry the load
- Provide stability against side sway
- Transfer driving and braking forces between frame and axles
- Produce suitable riding and cushioning properties
- Maintain axle alignment
- Distribute the load across multiple axles

# SUSPENSION TYPES REAR TRUCK SUSPENSIONS

- Air Ride
- Leaf Spring
- Bolster / Rubber Spring

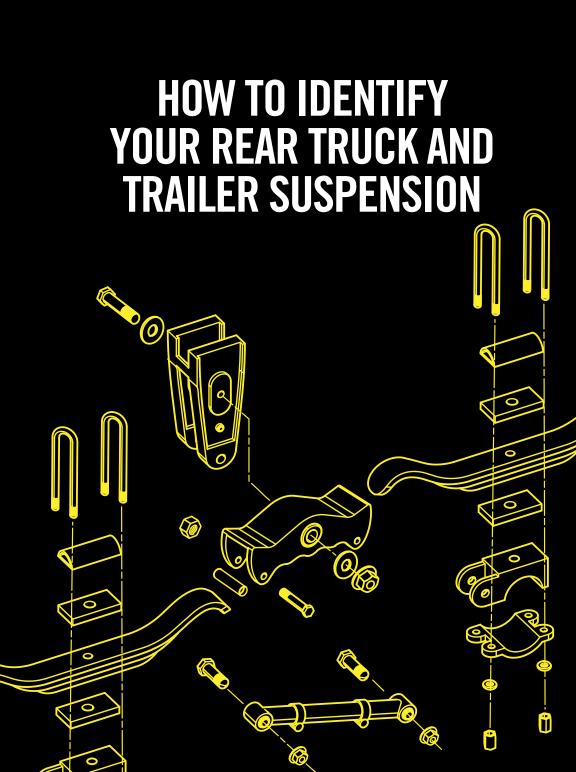
#### TRAILER SUSPENSIONS

- Air Ride
- Leaf Spring

#### THE IMPORTANCE OF SUSPENSION MAINTENANCE

- The suspension relies on all components working in harmony to perform its function.
- When one component gets worn, the stress transfer to other components causes accelerated wear on these parts.
- Early detection of any worn part will prevent major repairs and provide long-term savings.





### **REAR TRUCK AIR SUSPENSIONS**

The Rear Truck Air Suspensions covered in this manual are noted below. Additional information, exploded views and parts lists can be found in the Line Haul or Concrete Mixer sections. For a complete offering see 700F Euclid Suspension parts book.



FREIGHTLINER: FAS II AIRLINER®

Identifiable by the long thin solid hanger. The genuine hanger has "AirLiner" cast into the part. (pp. 14-15)



#### **HENDRICKSON: PRIMAAX®**

The PRIMAAX features a square transverse beam connecting the two pivot beams connected the hangers. The hangers feature the Hendrickson logo and an alignment collar that features the Hendrickson logo. (pp. 76-77)



#### KENWORTH: AIRGLIDE 100®

Identifiable by larger center hanger with two torsion bars connected at the bottom. This style of hanger is very unique to this suspension. (pp. 16-17)



#### **KENWORTH: AIRGLIDE 200® / 400®**

Newer version of the Kenworth 100. Identifiable by larger center hanger with two torsion bars connected at the bottom. The 200-400 series has a "V" cut out of the top of the hanger. (pp. 18-19)



#### MACK® / VOLVO: CORPORATE AIR

Identifiable by the unique hanger with a lower appendage that sits forward of the main body of the hanger. The genuine hanger typically has "Mack" or "Volvo" cast into the part. (pp. 20-21)



#### NAVISTAR / INTERNATIONAL®: CORPORATE AIR

Identifiable by the long thin hanger with a hole cut out of the center. (pp. 22-23)

#### **REAR TRUCK AIR SUSPENSIONS**

The Rear Truck Air Suspensions covered in this manual are noted below.

Additional information, exploded views and parts lists can be found in the Line Haul or Concrete Mixer sections.

For a complete offering see 700F Euclid Suspension parts book.



#### PETERBILT: AIR LEAF

Identifiable by the unique mounting method for the spring. There are two bolts that connect the spring to the hanger. The bolts are located below the spring on the Air Leaf and there is no torque arm connecting the hanger to the axle. (pp. 24–25)



#### PETERBILT: AIRGLIDE 210

Identifiable by the shorter hanger with the spring eye bushing mounted to the rear of the hanger. The genuine hanger typically has "PACCAR" cast into the part. (pp. 28–29)



#### PETERBILT: AIR TRAC

The leaf spring is not attached to the hanger as it slides within the hanger on a wear pad. The torque arm mounts to the hanger immediately below the spring connecting to the axle. (pp. 26–27)



#### PETERBILT: FLEX AIR

Identifiable by the unique curved flex spring visible between the wheels. (pp. 30-31)



#### SAF-HOLLAND NEWAY: AD-123

Identifiable by the long curved equalizer beam assembly. This beam is connected to the opposing equalizer beam by a transverse beam assembly that supports the air springs. (pp. 80–81)



#### SAF-HOLLAND NEWAY: ADZ

The ADZ suspension has a straighter beam then the AD-123 and has a rigid connection to the transverse beam. The suspension also uses a "V" style torque rod. (pp. 82–83)

### **REAR TRUCK LEAF SPRING SUSPENSIONS**

The Rear Truck Leaf Spring Suspensions covered in this manual are noted below.

Additional information, exploded views and parts lists can be found in the Dump Truck or Refuse Truck sections.

For a complete offering see 700F Euclid Suspension parts book.



**HENDRICKSON:** RT<sup>®</sup> Identifiable by the walking beam connected to the bottom of the leaf spring stack. (pp. 56–57)



MACK: SS44 SERIES, CAMELBACK
Identifiable by the large hump in the leaf spring stack,
lending to the suspensions name. (pp. 58–59, 70–71)



FREIGHTLINER: TUFTRAC®
This suspension uses both leaf springs and a large bolster spring mounted above the leaf springs. (pp. 48–49, 62–63)

#### **REAR TRUCK BOLSTER / RUBBER SPRING SUSPENSIONS**

The Rear Truck Bolster / Rubber Spring Suspensions covered in this manual are noted below.

Additional information, exploded views and parts lists can be found in the Dump Truck or Refuse Truck sections.

For a complete offering see 700F Euclid Suspension parts book.



**CHALMERS: 800 SERIES** 

Identifiable by the single bolster spring located directly on top of the walking beam, this suspension also features two torque arms below the walking beam. (pp. 46–47, 74–75)



**HENDRICKSON: HAULMAAX®** 

Identifiable by four ribbed bolster springs, the HAULMAAX model has four bolster springs per side. (pp. 50–51, 64–65)



HENDRICKSON: HN®

Identifiable by two large ribbed bolster springs, the HN model only features two bolster springs per side. (pp. 54–55, 68–69)



#### HENDRICKSON: HAULMAAX EX®

Identifiable by two rows of frame mounting bolts, a circular rubber load spring and four ribbed bolster springs per side. (pp. 52–53, 66–67)



**HENDRICKSON: RS®** 

Identifiable by the bolster springs sitting directly below the frame, this suspension can have 2–3 bolster springs per side. (pp. 78–79)

### **TRAILER AIR SUSPENSIONS**

The Trailer Air Suspensions covered in this manual are noted below.

Additional information, exploded views and parts lists can be found in the Line Haul and Vocational Trailer sections.

For a complete offering see 700F Euclid Suspension parts book.



#### **HENDRICKSON: INTRAAX®**

Identifiable by the Hendrickson logo found on the outer alignment washer. The width of the bottom of the hanger for the wide bushing versions is 7.25", for the narrow bushing versions it is 4.12". The ULTRAA-K version (Right photo) is easily identifiable by the unique shape of the hanger, this suspension uses the narrow bushing. (pp. 34–35)



MERITOR®: MTA
Identifiable by the unique groove or channel in the outer alignment washer. (pp. 88–89)



MERITOR®: RHP / MPA RIDESENTRY
Identifiable by the large center hanger with "V" notches
which supports two axles. There are also two torque arms at
the bottom of the center hanger. (pp. 38–39)



SAF-HOLLAND NEWAY: CBX23 / 25 Identifiable by the rounded bottom of the hanger and the adjustment mechanism mounted to the front of the hanger. (pp. 40–41)

### TRAILER LEAF SPRING SUSPENSIONS

The Trailer Leaf Spring Suspensions covered in this manual are noted below.

Additional information, exploded views and parts lists can be found in the Line Haul and Vocational Trailer sections.

For a complete offering see 700F Euclid Suspension parts book.



HUTCH: H7700 / 9700

Identifiable by the shape of the equalizer and a 1-1/8" diameter equalizer bolt. The Reyco 88 uses a similar style equalizer but has a 1" diameter bolt and a flatter bottom on the center hanger. (pp. 36–37)



**REYCO: 21B CAST** 

Identifiable by the large washer located on the cast center hanger. (pp. 90–91)



#### **HUTCH: H900**

Identifiable by trunnion housing located below the leaf spring and the lack of torque rods. Can be easily mistaken for Neway and Watson & Chalin trunnion suspension that are very similar. (pp. 86–87)



SAF-HOLLAND: DURALITE (BINKLEY)

Identifiable by the straight bottom on the center hanger and the two holes located on either end of the equalizer. (pp. 42–43)



# 00

# LINE HAUL TRACTOR



FREIGHTLINER: FAS II AIRLINER®



KENWORTH: AIRGLIDE 100®



KENWORTH: AIRGLIDE 200® / 400®



MACK® / VOLVO: CORPORATE AIR



NAVISTAR / INTERNATIONAL®: CORPORATE AIR



PETERBILT: AIR LEAF



PETERBILT: AIR TRAC



PETERBILT: AIRGLIDE 210



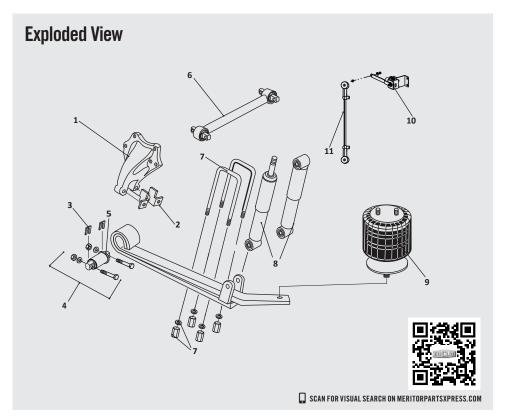
PETERBILT: FLEX AIR



# Truck, Drive Axle, Air Ride, Single or Tandem Axle, Requires Transverse Torque Arm



FAS II AirLiner is the most common Freightliner suspension on the road today, especially on highway tractors. This air ride suspension can be found on everything from long haul over the road trucks to smaller straight trucks. The suspension features a spring eye bushing connected to a "hockey stick" style spring.



#### **WEAR ITEMS**

Spring eye bushing wear and walk out. Air springs, shocks and Height Control Valve (HCV).

## FREIGHTLINER: FAS II AIRLINER®



#### **X** TECH TIP

Newer designed spring eye bushings include a shoulder to reduce bushing walkout.

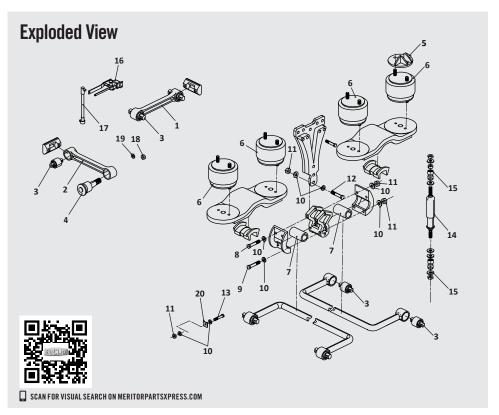
KEY No.	EUCLID Part No.	OEM Ref.	DESCRIPTION	QTY. PER Axle
1	E-16649	16-13901-000	Hanger, Ductile Iron, Standard Flange — 1-1/4" Thick	2
	E-8803	681-325-22-09	Hanger Wear Pad, Right Hand	2
2	E-8802	681-325-21-09	Hanger Wear Pad, Left Hand	2
4	E-16651	16-16456-001	Hanger Wear Pad, Right Hand, Use With Anti-Walk Bushing E-15541	2
	E-16652	16-16456-000	Hanger Wear Pad, Left Hand, Use With Anti-Walk Bushing E-15541	2
	E-8805	681-328-13-84	Alignment Shim, 1/8"	As Required
3	E-8806	681-328-21-84	Alignment Shim, 1/16"	As Required
3	E-8809	681-328-16-84	Alignment Shim, 1/16" Thick x 4-3/8" Long	As Required
	E-8810	681-328-19-84	Alignment Shim, 1/8" Thick x 4-3/8" Long	As Required
4	E-17005	-	Front Pivot Bushing Kit, Includes Bushing, Bolts, Washers, and Nuts	2
	E-15541	16-16412-001	Spring Eye Bushing, Rubber, Anti-Walk	2
5	GAFF11083	-	Spring Eye Bushing, Poly, Anti-Walk	2
)	E-15600	-	Spring Eye Bushing, Rubber, Anti-Walk, .050" Oversize OD	As Required
	GAFF11084	-	Spring Eye Bushing, Poly, Anti-Walk, .050" Oversize OD	As Required
	E-15536	681-326-67-16	Torque Arm, 23-15/16" Center-to-Center, E-15536 Includes E-5275 Bushings	1
6	GAFF11078	-	Torque Arm, 23-15/16" Center-to-Center, Includes GAFF11004 Poly Bushings	1
0	E-15542	16-16749-002	Torque Arm, 24-3/8" Center-to-Center, E-15542 Includes E-5275 Bushings	1
	GAFF11081	-	Torque Arm, 24-5/16" Center-to-Center, Includes GAFF11004 Poly Bushings	1
7	E-UB8267-153	681-325-03-25	U-Bolt Assembly, Special Bend, 7/8"-14 Thd. x 5-3/16" Wide x 15-3/8" Long	4
	M85319	681-326-04-00	Shock Absorber	2
8	M89428	681-326-04-00	Shock Absorber, Premium Adjustable	2
	M85724	16-13957-000	Shock Absorber	2
	FS9781	681-320-00-17, 16-14004-000, 16-16773-000	Firestone Air Spring	2
9	EAS9781	681-320-00-17, 16-14004-000, 16-16773-000	Euclid Air Spring	2
	FS9780	16-14377-000	Firestone Air Spring	2
	EAS9780	16-14377-000	Euclid Air Spring	2
10	E-9624	H00500C	Universal Height Control Valve, Hadley Model 500, Apply Air To Dump	1
10	E-14731	H01501UD	Universal Height Control Valve, Hadley Next Gen, Apply Air To Dump	1
11	E-9625	HPB450-3	Universal Leveling Valve Link Kit	1



#### Truck, Drive Axle, Air Ride, Tandem Axles



AirGlide 100<sup>®</sup> is an air suspension that is of the parallelogram style, commonly known as the 8 bag suspension. The suspension features eight air bags that pivot on two stabilizer rods connected to a central support bracket.



#### **WEAR ITEMS**

Stabilizer / torsion bar bushing, air springs, shocks, Height Control Valve (HCV).

## KENWORTH: AIRGLIDE 100® ....



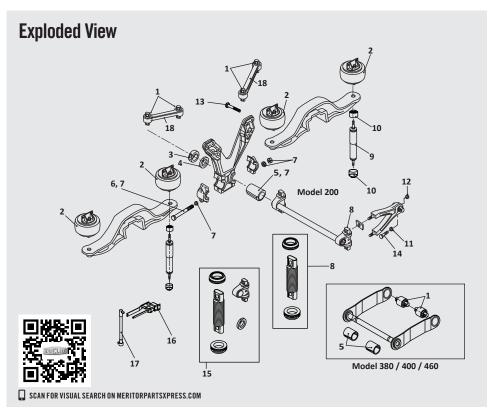
KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER Tandem
	E-15711	K195-375; 944270	Torque Arm, 24" Center-to-Center, E-2226 Straddle Mount Rubber Bushings	2
	GAFF11751	-	Torque Arm, 24" Center-to-Center, Straddle Mount Poly Bushings	2
1	GAFF11751EZ	-	Torque Arm, 24" Center-to-Center, Rotating Pin, Straddle Mount Poly Bushings	2
	E-15611	925150	Torque Arm, 25" Center-to-Center, E-2226 Straddle Mount Rubber Bushings	2
	E-15708	K195-376; 925031	Torque Arm, 24" Center-to-Center,	2
2	CAFF11000	,	Includes Straddle Mount Bushing and Tapered Stud Bushing	2
	GAFF11080	-	Transverse Torque Arm, 24" Center-to-Center, Straddle / Taper, Includes Poly Bushings	
$\vdash$	GAFF11080EZ	- 020040 020210	Transverse Torque Arm, 24" Center-to-Center, Rotating Pin, Straddle / Taper, Includes Poly Bushings	2
	E-10303	836940; 839310	Torque Arm & Stabilizer Rod Bushing, Rubber, Straddle Mount	8
	E-10303-P	-	Torque Arm & Stabilizer Rod Bushing, Rubber, Straddle Mount, Price Point	8
	GAFF11729	-	Torque Arm & Stabilizer Rod Bushing, Poly, Straddle Mount	8
3	E-2226	227720	Torque Arm & Stabilizer Rod Bushing, Rubber, Straddle Mount	8
	GAFF13520	-	Torque Arm & Stabilizer Rod Bushing, Poly, Straddle Mount	8
	GAFF83520	-	Torque Arm & Stabilizer Rod Bushing, Rotating Pin, Poly, Straddle Mount	8
	E-4664	227722	Torque Arm Bushing, Straddle Mount, Aluminum Pin	8
4	E-2228	229610	Torque Arm Bushing, Rubber, Tapered Stud	2
	GAFF13518	-	Torque Arm Bushing, Poly, Tapered Stud	2
5	E-5075	K048-449	Air Spring Bracket	8
	FS9422	K303-6; K303-14; K303-15	Firestone Air Spring to 1994	8
6	EAS9422	K303-6; K303-14; K303-15	Euclid Air Spring to 1994	8
	FS9616	K303-16	Firestone Air Spring with Bracket, 1995 and up	8
	EAS9616	K303-16	Euclid Air Spring with Bracket, 1995 and up	8
	E-4669	K066-58; K066-50	Stabilizer Bushing, Rubber	4
7	GAFF11502	K066-449	Stabilizer Bushing, Poly	4
Ш	GAFF11719	-	Stabilizer Bushing, Oversize, Poly	4
8	E-16690	K041-724-260P	Stabilizer Bar Mounting Bolt, Top of Bracket, M20-2.5 x 260mm Long	4
9	E-16226	K041-717-160P	Stabilizer Bar Mounting Bolt, Bottom of Bracket, M16-2.0 x 160mm Long	4
10	E-2547	-	Washer for 16mm Bolt	As Required
	E-2545	-	Washer for 20mm Bolt	As Required
11	E-8841	-	Lock Nut, M16-2.0	As Required
	E-16229	-	Lock Nut, M20-2.5mm	As Required
12	E-16415	-	Stabilizer Block Mounting Bolt, M16-2.0 x 170mm Long, Fabricated Hanger Bracket	6
13	E-16230	K041-712-130P	Stabilizer End Mounting Bolt, M16-2.0 x 120mm	8
	E-16225	K041-712-150P	Stabilizer End Mounting Bolt, M16-2.0 x 150mm	8
14	M85310	K374-87	Shock Absorber	4
	M89423	K374-7, K374-9, K374-29	Shock Absorber, Premium Adjustable	4
15	GAFF11550	CA368-6	Shock Bushing, Poly, For Stud Mounted Shocks	16
16	E-9624	H00500C	Universal Height Control Valve, Hadley Model 500, Apply Air To Dump	1
Ľ	E-14731	H01501UD	Universal Height Control Valve, Hadley Next Gen, Apply Air To Dump	1
17	E-9625	-	Universal Linkage Kit	1
18	E-2017	49NE2012	Torque Arm Mounting Nut For Tapered Pin Bushing	2
19	E-2018	-	Torque Arm Washer, 1-5/16" ID	2
20	E-5076	K21-922-3	Alignment Shim, 1/8" Thick	As Required



#### Truck, Drive Axle, Air Ride, Tandem Axles



AirGlide 200–400 is an air suspension that is of the parallelogram style, commonly known as the 8 bag suspension and is the latest generation of the AirGlide system. The suspension features eight air bags that pivot on two stabilizer rods connected to a central support bracket. The AirGlide 200–400 is commonly found on Newer Kenworth Tractors used in line haul applications.



#### **WEAR ITEMS**

Stabilizer / torsion bar bushing, air springs, shocks, Height Control Valve (HCV).

## **KENWORTH: AIRGLIDE 200® / 400®**



#### **X** TECH TIP

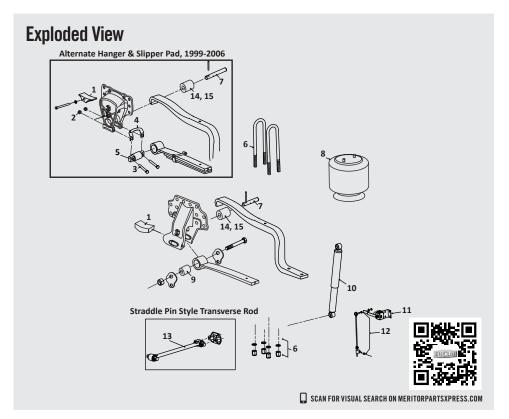
Loose fasteners that are allowed to operate for any period of time will result in irreversible damage. Retightening a worn fastener will not correct a situation created by loose operation. It is imperative that fastener and other affected parts including bushings be replaced.

KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER Tandem
	E-10303	836940	Torque Arm & Stabilizer Rod Bushing, Rubber, Straddle Mount	8
1	E-10303-P	836940	Torque Arm & Stabilizer Rod Bushing, Rubber, Straddle Mount, Price Point	8
	GAFF11729	-	Torque Arm & Stabilizer Rod Bushing, Poly, Straddle Mount	8
	FS9617	K303-18	Firestone Air Spring	8
	FS9622	K303-22	Firestone Air Spring	8
	EAS9622	K303-22	Euclid Air Spring	8
2	FS9625	K303-25	Firestone Air Spring	8
	EAS9625	K303-25	Euclid Air Spring	8
	FS9547	C81-1004	Firestone Air Spring	8
	FS9541	C81-1005	Firestone Air Spring	8
3	E-16115	K220-598	Collar Assembly, 54mm Bar Dia., 40K Models	4
	E-15618	K066-502-1; K066-454	Thrust Bearing, 54mm Bar Dia., Rubber	4
4	E-16112	K066-502-2; K066-461	Thrust Bearing, 58mm Bar Dia., Rubber	4
	GAFF11734	-	Thrust Bearing, 58mm Bar Dia., 46K Models, Poly	As Required
	E-16091	C13-1004	Torsion Bar Bushing, 54mm Bar Dia., 40K Models, Rubber, Improved OE Version	4
_	GAFF11720	-	Torsion Bar Bushing, 54mm Bar Dia., 40K Models, Poly	4
5	E-16092	C13-1005	Torsion Bar Bushing, 58mm Bar Dia., 46K Models, Rubber, Improved OE Version	4
	GAFF11743	-	Torsion Bar Bushing, 58mm Bar Dia., 46K Models, Poly	4
6	E-16231	K041-712-290P	Bolt, M16-2.0 x 290mm Long	4
	E-16119	C13-1006	Torsion Bar Service Kit, 54mm Bar, 40K Models, Includes (4) E-16091 Bushings, (4) E-16231 Bolts and Nuts	1
7	E-16093	C13-1007	Torsion Bar Service Kit, 58mm Bar, 46K Models, Includes (4) E-16092 Bushings, (4) E-16231 Bolts and Nuts	1
	E-16117	K345-5156; K345-5032	Threaded Pin Service Kit, Includes (2) Threaded Pins and Seals	2
8	GAFF11733	-	Threaded Pin Service Kit, Includes (1) Threaded Pin, 2 Seals, and (1) GAFF11734 Thrust Bearing (Poly) Key 4	4
	M85900	70701; 665944; 665903	Shock Absorber	4
	M85902	665950; 665945; 665906	Shock Absorber	4
9	M85936	C71-1014; 671962	Shock Absorber	4
	M89456	C71-1014; 671962	Shock Absorber, Premium Adjustable	4
	M85937	C71-1015; 671963	Shock Absorber	4
10	GAFF11550	-	Shock Bushing, Poly, For Stud Mounted Shocks	8
11	E-2547	-	Washer, 5/8" ID, Use with M16 Bolts	16
12	E-8841	-	Lock Nut, M16 - 2.0	16
13	E-16226	K041-712-160P	Bolt, M16 - 2.0 x 160mm Long, Top Row of Hanger	8
14	E-16230	K041-712-120P	Bolt, M16 - 2.0 x 120mm Long	8
15	GAFF11766	C65-1000; C65-1013	Sway Bar Assembly, 58mm Bar, Includes Bushings, For Air Glide 200, 52" Axle Spacing	2
16	E-9624	H00500C	Universal Height Control Valve, Hadley Model 500, Apply Air To Dump	1
	E-14731	H01501UD	Universal Height Control Valve, Hadley Next Gen, Apply Air To Dump	1
17	E-9625	-	Universal Linkage Kit	1
18	GAFF11773	K195-474	Torque Arm, 19-3/4" Center-to-Center, Includes Poly Bushings	4





Mack / Volvo Corporate is the most common suspension used on their newer vehicles. This air ride suspension can be found on everything from long haul over the road trucks to smaller straight trucks. The suspension features a "Z" style spring connected to a torque leaf which attaches to the hanger. The Z spring rests in the hanger against a special wear pad. The suspension also requires a transverse torque rod. There have been three different hangers and torque leaf designs used with this suspension and the two most recent versions are shown below.



#### **WEAR ITEMS**

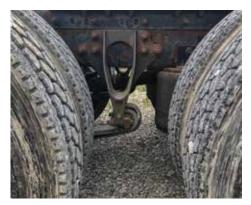
Wear pad, torque arm / leaf bushing, air springs, shocks and Height Control Valve (HCV).

## MACK® / VOLVO: CORPORATE AIR ....

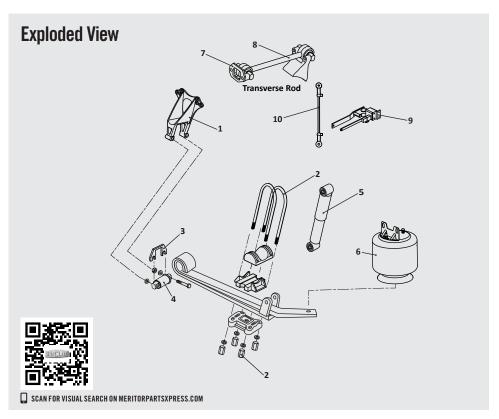


KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER Axle
1	GAFF31145	8079889; 20568741	Wear Pad Kit, 1999 - 2006	2
	GAFF31144	20703083	Wear Pad Kit, 2007 and Later	2
2	E-8911	V8397202	Flange Nut, 5/8"-11, Through 2006	4
3	E-8909	V8397091	Bolt, 5/8"-11 x 6" Long, Through 2006	4
٥	E-15199	V8397092	Bolt, 5/8"-11 x 6 5/8" Long, Through 2006	4
4	E-5281	V8020329	Alignment Shim	2
	E-2225	35033-3201	Spring Eye Bushing, Straddle Mount, 2-1/2" OD, 4-3/8" Center-to-Center, 5/8" Bolt Holes	2
5	GAFF13522	-	Spring Eye Bushing, Straddle Mount, 2-1/2" OD, 4-3/8" Center-to-Center, 5/8" Bolt Holes, Poly	2
	E-15671	8079894	Spring Eye Bushing, High Confinement, Straddle Mount, 2-1/2" OD, 4-3/8" Center-to-Center, 5/8" Bolt Holes	2
6	E-UB8151-16	V8027431	U-Bolt Assembly, Rd. Bend, 3/4"-16 Thd. x 3" Wide x 16" Long	4
7	E-16806	35026-0001; 8027436	Rebound Pin, 3/4" OD X 5-1/4" Long	2
	FS9219	35003-3204; 35003-3209	Firestone Air Spring	2
8	FS8829	20505399	Firestone Air Spring	2
	EAS8829	20505399	Euclid Air Spring	2
	FS9296	8061151	Firestone Air Spring	2
9	E-16777	20558810	Spring Eye Bushing, Through Hole, After 2006, 7/8" ID x 2-9/16" OD x 3-9/16" Long, Rubber	2
3	GAFF31129	-	Spring Eye Bushing, Through Hole, After 2006, 7/8" ID X 2-9/16" OD X 3-9/16" Long, Poly	2
	M85024	8071524	Shock Absorber	2
10	M85046	8026658	Shock Absorber	2
	M85047	8169859	Shock Absorber	2
11	E-9624	H00500C	Universal Height Control Valve, Hadley Model 500, Apply Air To Dump	1
11	E-14731	H01501UD	Universal Height Control Valve, Hadley Next Gen, Apply Air To Dump	1
12	E-7852	-	Leveling Valve Link Kit	1
	E-8821	35801-0068	Torque Arm, 22-1/8" Long, Straddle Mount Bushings, E-8821 Includes E-9395 Bushings	1
12	E-3176	-	Torque Arm Kit, Full Ball Design	1
13	GAFF18860	30SQ4525	Torque Arm, 22-1/8" Long, Straddle Mount Bushings, Poly Bushings	1
	GAFF18860EZ	-	Torque Arm, 22-1/8" Center-to-Center, Rotating Pin, Poly Bushings	1
14	GAFF13843	8079890	Rebound Roller, Poly	2
15	GAFF11747	-	Roller Kit, Includes Bolt, Nut, Washer, Sleeve, Key 14.	2





Navistar / International Corporate Air Suspension is the most common Navistar / International suspension used on their vehicles and includes a large opening in the center of the hanger for weight reduction purposes. This air ride suspension can be found on everything from line haul over the road trucks to smaller straight trucks. The suspension features a spring eye bushing connected to a "hockey stick" style spring. The suspension also requires a transverse torque rod.



## NAVISTAR / INTERNATIONAL®: CORPORATE AIR

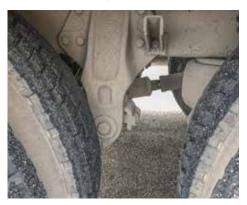


#### **WEAR ITEMS**

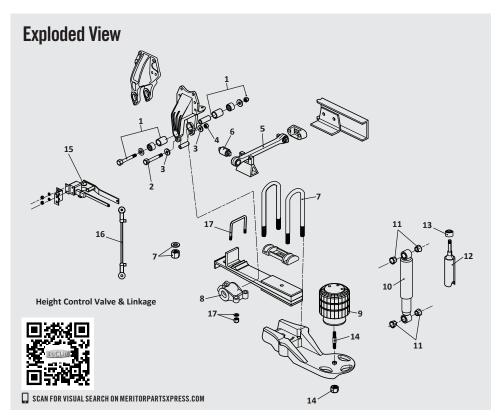
Spring eye bushing wear and walk out. Air springs, shocks and Height Control Valve (HCV) (uses the same spring eye bushing as Freightliner FAS II AirLiner).

KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER AXLE
1	E-16812	3545280C1; 3544131C2	Hanger, Most Models	2
2	E-UB8169-156	-	U-Bolt Assembly, Rd. Bend, 7/8"-14 Thd. x 5-1/2" Wide x 15-3/4" Long	4
	E-UB8169-166	3538842C1	U-Bolt Assembly, Rd. Bend, 7/8"-14 Thd. x 5-1/2" Wide x 16-3/4" Long	4
3	E-16687	65640-002	Shim, 1/16" Thick	As Required
	E-15541	3538115C5	Spring Eye Bushing, Anti-Walk, Rubber	2
4	GAFF11083	-	Spring Eye Bushing, Anti-Walk, Poly	2
4	E-15600	-	Spring Eye Bushing, Anti-Walk, Rubber, .050" Oversize OD	As Required
	GAFF11084	-	Spring Eye Bushing, Anti-Walk, Poly, .050" Oversize OD	As Required
5	M85931	3573265C1	Shock Absorber	2
	M89458	-	Shock Absorber, Premium Adjustable	2
6	FS1191	3541731C1	Firestone Air Spring, Includes Bracket	2
0	EAS1191	3541731C1	Euclid Air Spring, Includes Bracket	2
7	E-2634	22186-000	Transverse Torque Arm Mounting Bracket	1
8	E-16075	3580088C1; 3548381C1	Transverse Torque Arm, 25-3/8" Center-to-Center, Rubber, Not Rebushable	1
	GAFF34563	-	Transverse Torque Arm, 25-3/8" Center-to-Center, Poly	1
9	E-14731	H01501UD	Universal Height Control Valve, Hadley Next Gen, Apply Air To Dump	1
10	E-9625	HPB450-3	Linkage Kit, Universal	1





The Air Leaf is an air ride suspension with a distinctive paddle and leaf spring combination supporting the air spring. The suspension features a spring eye bushing housed in a spring eye pivot that is bolted directly to the leaf spring which also replaces the standard torque rod. The suspension also requires a transverse torque rod.



#### **WEAR ITEMS**

Spring eye bushing and connecting parts, air springs, shocks and Height Control Valve (HCV).

## PETERBILT: AIR LEAF ....

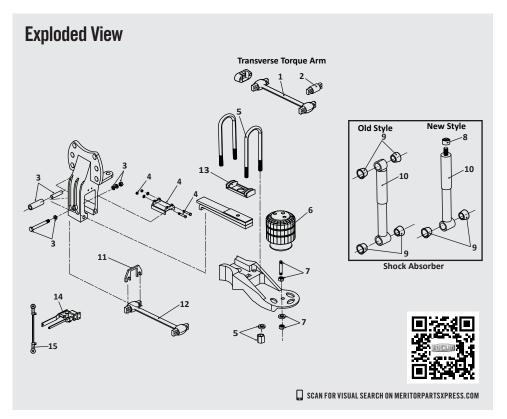


KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER Axle
1	E-4773	03AL1	Spring Eye Bushing Kit, Includes Bushing, Spacers & Hardware	2
2	E-1820	-	Bolt, 1/2" X 6-1/2" Long	2
3	E-9603	-	Washer, 1/2" ID	2
4	E-3560	-	Lock Nut, 1/2"-20	2
	E-4771	03-04059	Transverse Torque Arm, 22-7/8" Center-to-Center, Newer Torque Arms Are Not Rebushable, Older Torque Arms Use E-2225 Rubber Bushings	1
5	E-4771-P	03-04059	Transverse Torque Arm, 22-7/8" Center-to-Center, Rubber Bushings, Price Point	1
	GAFF34554	-	Transverse Torque Arm, 22-7/8" Center-to-Center, Poly Bushings, Includes GAFF13520 Bushings	1
	GAFF34554EZ	-	Transverse Torque Arm, 22-7/8" Center-to-Center, Poly, Rotating Pin	1
6	E-2225	227710; 44694	Torque Arm Bushing, Rubber, Straddle Mount	2
0	GAFF13522	-	Torque Arm Bushing, Poly, Straddle Mount	2
7	E-UB8375-14	03-03133-150	U-Bolt Assembly, Semi Rd. Bend, 1"-14 Thd. x 4-1/8" Wide x 14" Long	4
	E-UB8375-154	03-03134-151	U-Bolt Assembly, Semi Rd. Bend, 1"-14 Thd. x 4-1/8" Wide x 15-1/2" Long	4
8	E-11749	03-01654	Spring Eye Pivot	2
0	E-11749-P	03-01654	Spring Eye Pivot, Price Point	2
9	FS9069	03-01649	Firestone Air Spring	2
9	EAS9069	03-01649	Euclid Air Spring	2
10	M85308	03-04176	Shock Absorber	2
10	M89424	03-04176	Shock Absorber, Premium Adjustable	2
11	E-401754	73D2002	Shock Bushing, Rubber, For Eye Mounted Shocks	As Required
11	GAFF18566	-	Shock Bushing, Poly, For Eye Mounted Shocks	As Required
12	M85311	03-04629	Shock Absorber	2
12	M89422	03-04629	Shock Absorber, Premium Adjustable	2
13	GAFF11550	-	Shock Bushing, Poly, For Stud Mounted Shocks	As Required
14	E-7868	27-00173	Air Spring Stud Assembly, 1/2"-20 X 5" Long	2
	E-9624	H00500C	Universal Height Control Valve, Hadley Model 500, 3/8" Ports, Apply Air To Dump	1
15	E-14731	H01501UD	Universal Height Control Valve, Hadley Next Gen, 3/8" Ports, Apply Air To Dump	1
	E-14732	H01501PUD	Universal Height Control Valve, Hadley Next Gen, 1/4" Ports, Apply Air To Dump	1
16	E-9625	-	Universal Linkage Kit	1
17	E-UB8255-05	03-04523	U-Bolt Assembly, Sq. Bend, 3/4"-16 Thd. x 4" Wide x 5" Long	2





The Air Trac is an air ride suspension and similar to the Air Leaf with a distinctive paddle and leaf spring combination supporting the air spring but it is not rigidly attached to the hanger. The suspension features a lower torque rod that connects to the hanger and runs below the leaf spring to the axle. The older versions have eye mounted shocks while the newer versions have stud mounted shocks. The suspension also features a transverse torque rod.



#### **WEAR ITEMS**

Spring wear pad, torque rod bushing, air springs, shocks and Height Control Valve (HCV).

## PETERBILT: AIR TRAC



#### **X** TECH TIP

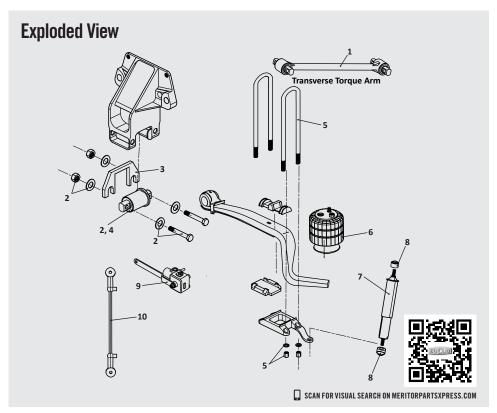
Loose fasteners that are allowed to operate for any period of time can cause irreversible damage. Retightening worn fasteners will not correct a situation created by loose operation. It's imperative that fastener and other affected parts including bushings be replaced.

KEY No.	EUCLID Part No.	OEM Ref.	DESCRIPTION	QTY. PER Axle
	E-4771	03-04059	Transverse Torque Arm, 22-7/8" Center-to-Center, Newer Torque Arms Are Not Rebushable, Older Torque Arms Use E-2225 Rubber Bushings	1
1	E-4771-P	03-04059	Transverse Torque Arm, 22-7/8" Center-to-Center, Rubber Bushings, Price Point	1
	GAFF34554	-	Transverse Torque Arm, 22-7/8" Center-to-Center, Poly Bushings, Includes GAFF13520 Bushings	1
	GAFF34554EZ	-	Transverse Torque Arm, 22-7/8" Center-to-Center, Poly Bushings, Rotating Pin	1
	E-2225	227710; 44694	Torque Arm Bushing, Rubber, Straddle Mount	2
2	GAFF13522	-	Torque Arm Bushing, Poly, Straddle Mount	2
3	E-7854	-	Spring Roller Bushing Kit Includes Bushing, Spacer, and Hardware	2
	E-7862	23-12566	Wear Pad Kit, 1/2" Bolts, Use With E-16711 Hanger	2
4	E-15658	03-07296	Wear Pad Kit, 5/8" Bolts	2
	E-UB8375-14	03-03133-150	U-Bolt Assembly, Semi Rd. Bend, 1"-14 Thd. x 4-1/8" Wide x 14"Long	4
5	E-UB8375-154	03-03134-151	U-Bolt Assembly, Semi Rd. Bend, 1"-14 Thd. x 4-1/8" Wide x 15-1/2" Long	4
	FS9069	03-01649; 03- 02038; 03-02456	Firestone Air Spring	2
6	EAS9069	03-01649; 03- 02038; 03-02456	Euclid Air Spring	2
7	E-7868	27-00173	Air Spring Stud Assembly, 1/2"-20 x 5" Long	2
8	GAFF11550	-	Shock Bushing, Poly, For Stud Mounted Shocks	As Required
9	E-401754	-	Shock Bushing, Rubber For Eye Mounted Shocks	As Required
	GAFF18566	-	Shock Bushing, Poly For Eye Mounted Shocks	As Required
	M85308	03-04176	Shock Absorber	2
10	M89422	03-04176	Shock Absorber, Premium Adjustable	2
10	M85311	03-04629	Shock Absorber	2
	M89424	03-04629	Shock Absorber, Premium Adjustable	2
11	E-5281	-	Torque Arm Shim, 1/16" Thick	As Required
	E-5082	03-04119	Torque Arm with 5/8" Hole in Both Bushings, 17-11/32 Center-to-Center, Includes E-2226 Bushings	2
	E-5083	03-04327	Torque Arm with 5/8" Hole Hanger End, 3/4" Hole Axle End, 17-11/32 Center-to-Center, Includes (1) E-2226 and (1) E-3868 Bushing	2
12	E-5083-P	-	Torque Arm with 5/8" Hole Hanger End, 3/4" Hole Axle End, 17-11/32 Center-to-Center, Includes Bushings, Price Point	2
	GAFF12395	-	Torque Arm with 5/8" Hole Hanger End, 3/4" Hole Axle End, 17-11/32" Center-to-Center, GAFF12395 Includes (1) GAFF13520, (1) GAFF13528 Poly Bushings	2
	GAFF12395EZ	-	Torque Arm with 5/8" Hole Hanger End, 3/4" Hole Axle End, 17-11/32" Center-to-Center, Rotating Pin, GAFF12395 Includes (1) GAFF83520, (1) GAFF13528 Poly Bushings	2
13	E-4781	03-01656	Top Plate	2
13	E-4781-P	-	Top Plate, Price Point	2
	E-9624	H00500C	Universal Height Control Valve, Hadley Model 500, 3/8" Ports, Apply Air To Dump	1
14	E-14731	H01501UD	Universal Height Control Valve, Hadley Next Gen, 3/8" Ports, Apply Air To Dump	1
1.	E-14732	H01501PUD	Universal Height Control Valve, Hadley Next Gen, 1/4" Ports, Apply Air To Dump	1
15	E-9625	-	Universal Linkage Kit	1





The AirGlide 210 is an air ride suspension can be found on everything from long haul over the road trucks to smaller straight trucks. The suspension features a spring eye bushing connected to a twisted "Z" style spring. The suspension also requires a transverse torque rod.



## PETERBILT: AIRGLIDE 210 •••-



#### **WEAR ITEMS**

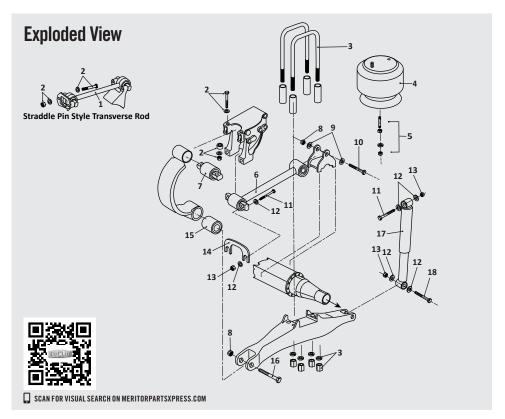
Spring eye bushing wear and walk out. Air springs, shocks and Height Control Valve (HCV). The Airglide 210 uses the same spring eye bushing as Freightliner FAS II AirLiner.

KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER Axle
1	E-16118	TR030020010	Transverse Torque Arm, 25-9/16" Center-to-Center, Not Rebushable	1
1	GAFF11792	-	Transverse Torque Arm, 25-9/16" Center-to-Center, Includes GAFF13521 Poly Bushings	1
2	E-17006	-	Front Pivot Bushing Kit, Includes Bushing, Bolts, Washers, and Nuts	2
3	E-16687	-	Torque Arm Shim, 1/16" Thick	As Required
	E-15541	-	Spring Eye Bushing, Anti-Walk, Rubber	2
,	GAFF11083	-	Spring Eye Bushing, Anti-Walk, Poly	2
4	E-15600	-	Spring Eye Bushing, Anti-Walk, .050" Oversize, Rubber	As Required
	GAFF11084	-	Spring Eye Bushing, Anti-Walk, .050" Oversize OD, Poly	As Required
5	E-UB8161-15	-	U-Bolt Assembly, Rd. Bend, 7/8"-14 Thd. x 3" Wide x 15" Long	-
6	FS8864	C81-1011	Firestone Air Spring	2
0	EAS8864	C81-1011	Euclid Air Spring	2
7	M85069	03-08781	Shock Absorber	2
8	GAFF11550	-	Shock Bushing, Poly, For Stud Mounted Shocks	4
9	E-14731	H01501UD	Height Control Valve, Hadley Next Gen, Apply Air To Dump	1
10	E-9625	HPD450-3	Universal Linkage Kit	1





The FLEX Air is an air ride suspension that can easily be identified by the curved leaf spring running in front of the hanger and curving down to the axle. It features a torque rod running from the bottom of the hanger back to the axle. The suspension also requires a transverse torque rod.



#### **WEAR ITEMS**

Spring eye bushings, torque rod bushing, air springs, shocks and Height Control Valve (HCV).

## PETERBILT: FLEX AIR



#### **X** TECH TIP

Loose fasteners that are allowed to operate for any period of time will result in irreversible damage. Retightening a worn fastener will not correct a situation created by loose operation. It is imperative that fastener and other affected parts including bushings be replaced.

KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER AXLE
1	E-15709	C65-6002; C65-6009	Transverse Torque Arm, 25-9/16" Center-to-Center, New Torque Arms Are Not Rebushable. Older Torque Arms Use E-5275 Bushings	1
	GAFF11792	-	Transverse Torque Arm, 25-1/2" Center-to-Center, Includes GAFF13521 Poly Bushings	1
2	E-16088	-	Bolt Assembly, M16 - 2.0 x 150mm Long, Includes Bolt, Nut, Washers	As Required
2	E-16105	-	Bolt Assembly, M16 - 2.0 x 160mm Long, Includes Bolt, Nut, Washers	As Required
3	E-UB8268-134	C34-6000	U-Bolt Assembly, Sq. Bend, 7/8"-14 Thd. x 5-1/8" Wide x 13-1/2" Long	4
	FS8813	C81-6000	Firestone Air Spring	2
4	EAS8813	C81-6000	Euclid Air Spring	2
5	E-7868	27-00173	Air Spring Stud Assembly, 1/2"-20 x 5" Long, Includes Washer and 2 Nuts	2
	E-16098	C65-6000-001	Torque Arm, Front, 23-3/4" Center-to-Center, Not Rebushable, Rubber	2
6	GAFF12397	-	Torque Arm, Front, 23-3/4" Center-to-Center, Rebushable, Poly	2
0	E-16099	C65-6000-002	Torque Arm, Rear, 24-5/8" Center-to-Center, Not Rebushable, Rubber	2
	GAFF11795	-	Torque Arm, Rear, 24-5/8" Center-to-Center, Rebushable, Poly	2
7	E-16094	C13-6001	Spring Eye Bar Pin Bushing, Rubber	2
'	GAFF11765	-	Spring Eye Bar Pin Bushing, Poly	2
8	E-1835	-	Lock Nut, 7/8"-14	4
9	E-2546	-	Washer, 7/8" ID	4
10	E-15182	-	Torque Arm Bolt, 7/8"-14 x 5-1/2" Long	2
11	E-16224	-	Bolt, 5/8"-18 x 5-1/2" Long, Replacement for OE 16mm Bolt	6
12	E-2547	-	Washer, 5/8" ID	12
13	E-1943	-	Lock Nut, 5/8"-18	8
14	E-5281	-	Torque Arm Shim, 1/16" Thick	As Required
15	E-16097	C65-1002; C13-6002	Spring Eye Hollow Bushing	2
16	E-3693	-	Bolt, 7/8"-14 x 6-1/2" Long	2
17	M85067	C71-6000	Shock Absorber	2
18	E-3792	-	Bolt, 5/8"-18 x 4-1/2" Long	2







HENDRICKSON: Intraax®



HUTCH: H7700 / 9700



MERITOR®: Rhp / Mpa ridesentry



SAF-HOLLAND NEWAY: CBX23 / 25



SAF-HOLLAND NEWAY: DURALITE (BINKLEY)

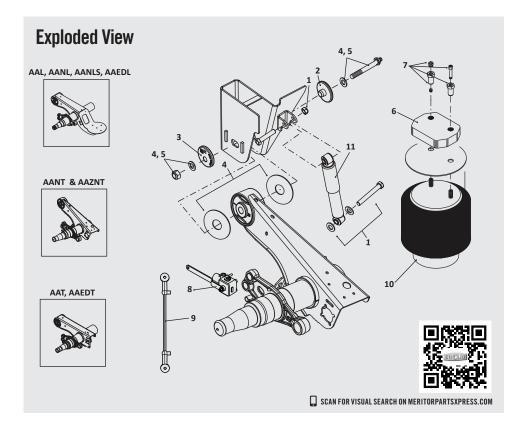


#### Trailer, Air Ride, Single Axle





The INTRAAX / VANTRAAX / ULTRAA-K series of air spring suspensions comes in many different versions but all of them have a beam that is welded to the axle, thereby eliminating the need for U-Bolts. The main identifying feature is the type of trailing arm used in the suspension and the width of the main (Trifunctional) bushing. There is a wide version (7.25" hanger width) and a narrow version (4.12" hanger width). Below are drawings of the three main versions of the trailing arm and the suspension types they can be found on.



#### **WEAR ITEMS**

Tri-functional bushing and adapters. Air springs, shocks and Height Control Valve (HCV).

## **HENDRICKSON: INTRAAX®**



## X TECH TIP

As a part of your routine maintenance, visually examine all trailer pivot connections by looking up at the bushing tube from under the trailer, specifically inspecting the voids and metal cores.

KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER Axle
Ţ,	E-16352	S-24757/2	Shock Bolt Kit, 5" Dia Axles for AAL, AAEDL AAZL Fronts; All HKA Models	2
1 E-14780		S-2157/2	Shock Bolt Kit, AAL, AANL, AAEDL Rear	2
2	E-10755	S-20924	Alignment Collar — Concentric (Inner) QUIK-ALIGN™	2
3	E-10754	S-20925	Alignment Collar — Eccentric (Outer) QUIK-ALIGN™	2
	E-10729A	S-24691	Tri-Function Bushing Kit - QUIK-ALIGN™, Includes Bushing & Hardware, All Models with Wide Bushings, Rubber	2
4	GAFF13744	-	Tri-Function Bushing Kit - QUIK-ALIGN™, Includes Bushing & Hardware, All Models with Wide Bushings, Poly	2
4	E-14377	S-26321	Tri-Function Bushing Kit - QUIK-ALIGN™, Includes Bushing & Hardware, Does 1 Axle, All Models with Narrow Bushing, Rubber	1
	GAFF13743	-	Tri-Function Bushing Kit - QUIK-ALIGN™, Includes Bushing & Hardware, Does 1 Axle, All Models with Narrow Bushing, Poly	1
5	E-10730A	S-24679 Pivot Bolt Kit - QUIK-ALIGN™, 10-1/2" Long Bolt, All Models with Wide Bushings		2
5	E-14635	S-24705	Pivot Bolt Kit - QUIK-ALIGN™, 7" Long Bolt, All Models with Narrow Bushing	2
	E-14777	B-22510-4	Air Spring Spacer 3/4" Thick, Plastic	2
	E-14339	B-22510-1	Air Spring Spacer 1-1/8" Thick, Plastic	2
6	E-14340	B-22510-2	Air Spring Spacer 1-7/8" Thick, Plastic	2
	E-14341	B-22510-3	Air Spring Spacer 3-1/8" Thick, Plastic	2
	E-14342	S-22619/2	Air Spring Fitting Kit; w/out Plastic Spacer;	
	E-14343	S-22630/2	Air Spring Fitting Kit; Use With 1-1/8". Thick Plastic Spacer	2
7	E-14345	S-22632/2	Air Spring Fitting Kit; Use With 3-1/8". Thick Plastic Spacer	2
	E-14344	S-22631/2	Air Spring Mounting Kit; Use With 3-1/8". Thick Plastic Spacer & All HKA Models	2
	E-16368	S-22635/2	Air Spring Fitting Kit; Use With 3/4". Thick Plastic Spacer; All Models Except AAEDT	2
8	E-11855	VS-227	Height Control Valve	1
9	E-14789	S-14187	Linkage Kit	1
Not	E-9575	S-21307	Rebush Tool (Wide Bushing), Except AANL & AANLS	As Required
Shown	E-14634	S-24736	Rebush Tool (Narrow Bushing), AANL & AANLS Models	As Required
10	See INTRAAX Air Springs Section, Page 100	Various	Air Spring Assembly	2
11	See INTRAAX Shock Absorbers Section, Page 102	Various	Shock Absorber	2

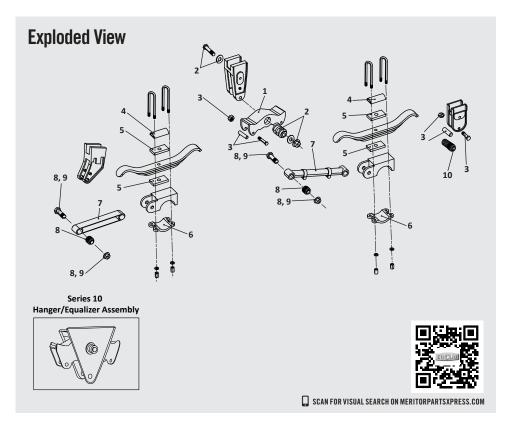


## Trailer, Leaf Spring, Single, Tandem or More Axles





H7700 / 9700 is the most common leaf spring suspension used on trailers. This suspension comes in multiple axle spacing configurations, 42" to 121", with the 42-1/2" and 49" being the most popular configurations. The H7700 models had two bolts attaching the equalizer through the hanger and was replaced in the mid 1990s by the H9700 which uses only one larger bolt to attach the equalizer. The suspension comes in two major variants the cast and fabricated version with the cast version providing better durability for heavy / severe duty applications.



#### **WEAR ITEMS**

Equalizer and bushing, torque arms.



#### **X** TECH TIP

- 1. Loose fasteners that are allowed to operate for any period of time will result in irreversible damage. Retightening a worn fastener will not correct a situation created by loose operation. It is imperative that fastener and other affected parts including bushings be replaced.
- Always carefully inspect the spring and axle clamp components for any signs of wear or cracks, and replace if visible wear or cracks are present.

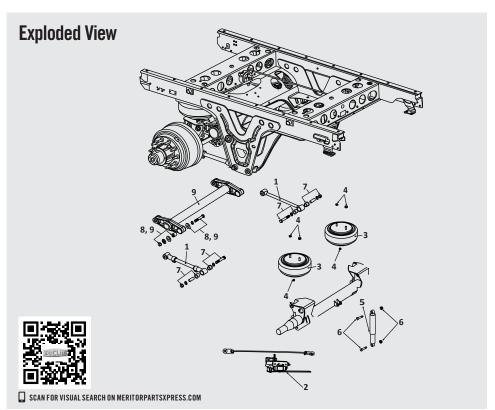
KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER Tandem	
	E-7532	16158-01	Equalizer, Fabricated, Rubber Bushing, One Bolt, 42-1/2 & 49" Axle Spacing	2	
	E-7532-P	16158-01	Equalizer, Fabricated, Rubber Bushing, Price Point, One Bolt, 42-1/2 & 49" Axle Spacing	2	
	GAFF997532	-	Equalizer, Fabricated, Poly Bushing, One Bolt, 42-1/2 & 49" Axle Spacing	2	
	E-17660	-	Equalizer, Fabricated, Rubber Bushing, Heavy Duty, One Bolt, Includes Wear Plates	2	
	E-9471	17784-01	Equalizer, Cast, Rubber Bushing, One Bolt, 42-1/2 & 49" Axle Spacing	2	
	E-9471-P	17784-01	Equalizer, Cast, Rubber Bushing, One Bolt, 42-1/2 & 49" Axle Spacing, Price Point	2	
	GAFF999471	-	Equalizer, Cast, Poly Bushing, One Bolt, 42-1/2 & 49" Axle Spacing	2	
1	E-2781	-	Equalizer, Fabricated, Rubber Bushing, Heavy Duty, Two Bolts, Includes Wear Plates, 42-1/2 & 49" Axle Spacing	2	
	GAFF992781	-	Equalizer, Fabricated, Poly Bushing, Heavy Duty, Two Bolts, Includes Wear Plates, 42-1/2 & 49" Axle Spacing	2	
	E-2781A	750-03	Equalizer, Fabricated, Rubber Bushing, OE Equivalent, Two Bolt, 42-1/2 & 49" Axle Spacing	2	
	E-2781A-P	750-03	Equalizer, Fabricated, Rubber Bushing, Price Point, Two Bolt, 42-1/2 & 49" Axle Spacing	2	
	GAFF992781A	-	Equalizer, Fabricated, Poly Bushing, Two Bolt, 42-1/2 & 49" Axle Spacing	2	
	E-2889	19137-01	Equalizer, Cast, Rubber Bushing, Two Bolt, 42-1/2 & 49" Axle Spacing	2	
	E-2889-P	19137-01	Equalizer, Cast, Rubber Bushing, Two Bolt, 42-1/2 & 49" Axle Spacing, Price Point	2	
	GAFF992889	-	Equalizer, Cast, Poly Bushing, Two Bolt, 42-1/2 & 49" Axle Spacing	2	
	E-9472	-	Equalizer Bushing, Rubber & Bolt Kit, One Bolt Model	2	
	GAFF999472	-	Equalizer Bushing, Poly & Bolt Kit, One Bolt Model	2	
2	E-2003	-	Equalizer Bushing, Rubber & Bolt Kit, Two Bolt Model	2	
	E-9474	-	Equalizer Bushing, Poly & Bolt Kit, Two Bolt Model	2	
3	E-4835	10287-00	Rebound Bolt Kit; 5/8"-18 x 4-1/2" Long, Includes Bolt, Spacer, & Nut		
4	E-2907A	16868-01	U-Bolt Top Plate	4	
4	E-2907A-P	16868-01	U-Bolt Top Plate, Price Point	4	
5	E-2842	-	Delrin Spring Liner Pad	8	
6	E-2909	710-00	Bottom Plate, 5" Rd. Axle, 7/8" Dia. U-Bolts	4	
b	E-2909-P	710-00	Bottom Plate, 5" Rd. Axle, 7/8" Dia. U-Bolts, Price Point	2	
	E-3277	16398-04	Adjustable Torque Arm, Rubber, 18-1/2"–21" Center-to-Center, 49" & 50" Axle Spacing	2	
	E-3277-P	16398-04	Adjustable Torque Arm, Rubber, 18-1/2"—21" Center-to-Center, 49" & 50" Axle Spacing, Price Point	2	
	GAFF993277	16398-04	Adjustable Torque Arm, Poly, 18-1/2"—21" Center-to-Center, 49" & 50" Axle Spacing	2	
7	E-2899	715-00	Rigid Torque Arm, Rubber, 19-1/4" Center-to-Center, 49" & 50" Axle Spacing	2	
'	E-2899-P	715-00	Rigid Torque Arm, Rubber, 19-1/4" Center-to-Center, 49" & 50" Axle Spacing, Price Point	2	
	GAFF992899	715-00	Rigid Torque Arm, Poly, 19-1/4" Center-to-Center, 49" & 50" Axle Spacing	2	
	E-11448	16398-06	Adjustable Torque Arm, 21-1/4"–23-3/4" Center-to-Center Rear, No Hop 5" Rd. Axle, 49" & 50" Axle Spacing	8	
	E-16390	16398-01	Adjustable Torque Rod; 13"—15-1/2" Center-to-Center, Front 42-1/2" & 44" Axle Spacing	8	
8	E-3079	-	Torque Arm Bushing, Rubber & Bolt Kit Assy Includes Bushing & Hardware	8	
L°	GAFF993079	-	Torque Arm Bushing, Poly & Bolt Kit Assy Includes Bushing & Hardware	As Required	
9	E-9839	-	Torque Arm Bolt and Flange Nut		
10	E-15459	18541-01	Spring Rebound Bushing, Rear Hanger Mounted, Optional	As Required	
-	E-7682	7717-01	Hanger Repair Bushing Washer For Fabricated Hangers (weld in place)	-	
-	E-9487	755-03	Replacement Hanger Wear Pad	-	



#### Trailer, Air Ride, Tandem Axle



RHP / MPA RideSentry is an air suspension that is of the parallelogram style. The suspension features four air bags connected to a central frame by two upper control arms and four lower torque arms.





## **X** TECH TIP

Loose fasteners that are allowed to operate for any period of time will result in irreversible damage. Retightening a worn fastener will not correct a situation created by loose operation. It is imperative that fastener and other affected parts including bushings be replaced.

KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER Tandem
1	E-11769	A1-3133-Y-8345	Adjustable Torque Arm, Includes Bushing	2
1	E-11768	A-3133-G-8249	Rigid Torque Arm, Includes Bushing	2
	E-13907	KIT 11308	Height Control Valve, Remove Air to Dump, Includes Linkage, RHP Only	1
	E-14332	KIT 11309	Height Control Valve, No Dump, Includes Linkage, RHP Only	1
2	E-14333	KIT 11332	Height Control Valve, Remove Air to Dump, Includes Linkage, MPA Only	1
4	E-17057	A-7806-Q-1109	Height Control Valve, Remove Air to Dump, Barksdale Style, All MPA Models After November 2019	1
	E-14334 KIT 11333 Height Control Valve, No Dump, Includes Linkage, MPA Only		1	
	E-17056	A-7806-P-1108	Height Control Valve, No Dump, Barksdale Style, All MPA Models After November 2019	1
	FS8729	A-2258-F-1410	Air Spring, RHP11 & MPA 16.5" Ride Height	4
3	EAS8729	A-2258-F-1410	Air Spring, RHP11 & MPA 16.5" Ride Height	4
3	E-17695	A-2258-W-1531	Air Spring, MPA 17.5" Ride Height, Requires 1244-C-2733 Spacer	4
	E-17696	A-2258-X-1532	Air Spring, MPA 18.5" Ride Height, Requires Two 1244-C-2733 Spacers	4
4	E-17022	KIT 11105	Hardware Kit, Air Spring, Includes Upper & Lower Nuts	4
5	M85919	M85919	Shock Absorber	2
6	E-17026	KIT 11103	Bolt Kit, Shock Absorber, Includes Bolt & Nut	2
7	E-11770	KIT 11102	Torque Arm Bushing & Bolt Kit, Rubber, Includes Bushing, Bolt, Washer, Inner Sleeve & Nut	8
'	GAFF50033	-	Torque Arm Bushing & Bolt Kit, Poly, Includes Bushing, Bolt, Washer, Inner Sleeve & Nut	8
8	E-17033	KIT 11300	Control Arm Bushing & Bolt Kit, Includes Bushing & Hardware	2
9	E-17035	KIT 11305	Control Arm Assembly, Includes Control Arm, Bushing & Hardware	2

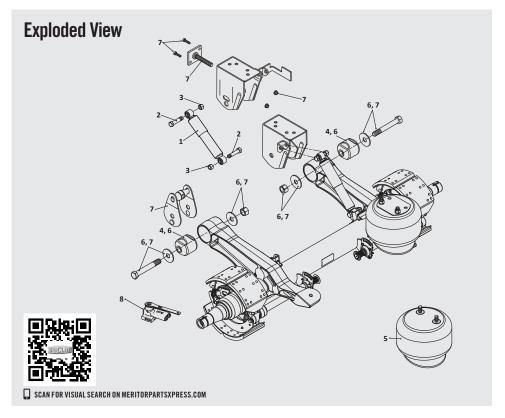




#### Trailer, Air Ride, Single Axle



The CBX23 / 25 suspension is a trailing arm air suspension. It comes in several versions to include 23,000 lbs and 25,000 lbs top mount and underslung models. The suspension features a unique alignment system that uses a screw to perform the adjustment.



### **WEAR ITEMS**

Pivot bushing, air springs, shocks, Height Control Valve (HCV).

## SAF-HOLLAND NEWAY: CBX23 / 25



KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER Axle
	M83128	90045298	Shock Absorber, CBX23 / 40, 15-1/2"-16" Ride Height	2
	M83128	90044162	Shock Absorber, CBX40, 16-1/2"-17" Ride Height	2
1	M85045	90044868	Shock Absorber, CBX23, 14" Ride Height	2
	M83130	90045040	Shock Absorber, CBX40, 18" Ride Height	2
2	E-4345	93006035	Bolt, 3/4"-10 x 3-1/2" Long	4
3	E-4347	93400492	Nut, 3/4" -10	4
4	E-16566	90008247	Bushing, Front Pivot, Rubber	2
4	GAFF50046	-	Bushing, Front Pivot, Poly	4
	FS9807	50857000	Firestone Air Spring, CBX40	2
5	EAS9807	50857000	Euclid Air Spring, CBX40	4
)	FS9974	90557369	Firestone Air Spring, CBX23, 16" & 17" Ride Height	2
	EAS9974	90557369	Euclid Air Spring, CBX23, 16" & 17" Ride Height	2
_	E-16552	48100394/SRK-530	Connection Kit, Pivot, Rubber	1
6	GAFF50047	-	Connection Kit, Pivot, Poly	1
7	E-16553	48100406/SRK-542	Swing Align Kit	1
	E-16586	50860013	Height Control Valve, No Dump	
	E-16571	50860016	Height Control Valve, Remove Air to Dump	1
8	E-14729	H01500UN	Height Control Valve, Universal, No Dump, Hadley Next Gen Series	1
	E-14730	H01502UNC	Height Control Valve, Universal, Remove Air to Dump	1



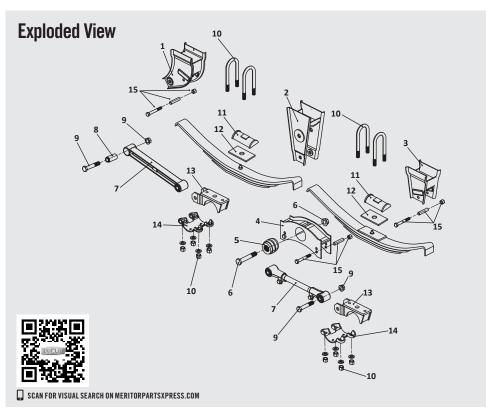
## SAF-HOLLAND NEWAY: DURALITE (BINKLEY)



#### Trailer, Leaf Spring, Tandem



Duralite is a leaf spring suspension used primarily on tandem axle trailers. The suspension only comes in fabricated version and is popular with line haul and dry van applications. Note the straight lines of the hanger vs. Hutch H7700 / 9700 which is more curved.



### **WEAR ITEMS**

Equalizers and bushings, torque arms and bushings.

KEY No.	EUCLID OEM Part no. Ref.		DESCRIPTION	QTY. PER Tandem
1	E-9302	SP0100	Front Hanger, Straddle Mount	2
2	E-9303	SP0110	Equalizer Hanger, Straddle Mount	2
3	E-9304	SP0120	Rear Hanger, Straddle Mount	2
4	E-9305	SP0131	Equalizer with E-4827 Bushing	2
4	E-9305-P	-	Equalizer with Bushing, Price Point	2
5	E-4827	XB-SP0054-05	Equalizer Bushing, Rubber	2
)	GAFF15054	-	Equalizer Bushing, Poly	2
6	E-9309	-	Equalizer Bolt & Nut Assembly	2
	E-4824	SP0123	Adjustable Torque Arm with E-1980 Bushings	2
7	E-4824-P	-	Adjustable Torque Arm with Bushings, Price Point	2
	E-9307	SP0143	Rigid Torque Arm with E-1980 Bushings	2
	E-1980	XB-SP0054-02	Bushing, Torque Arm, Rubber	8
8	E-1980-P	XB-SP0054-02	Bushing, Torque Arm, Rubber, Price Point	8
	GAFF15013	-	Bushing, Torque Arm, Poly	8
9	E-9308	-	Torque Arm Bolt & Nut Assembly	8
	E-UB8151-10	SP0075-01	U-Bolt, Assembly, Round Bend, 3/4"-16 x 3" Wide x 10" Long	8
10	E-UB8151-12	SP0075-02, -03, -04, -05	U-Bolt, Assembly, Round Bend, 3/4"-16 x 3" Wide x 12" Long	8
	E-UB8151-14	SP0075-06, -07, -08	U-Bolt, Assembly, Round Bend, 3/4"-16 x 3" Wide x 14" Long	8
11	E-2907A	SP0136	U-Bolt, Top Plate	4
11	E-2907A-P	-	U-Bolt, Top Plate, Price Point	4
12	E-2842	SP0049	Delrin Spring Liner	4
13	<b>E-16630</b> SP0149-05 Spring Seat, 2-3/4" high		Spring Seat, 2-3/4" high	4
14	E-2909	SP0099	Bottom Plate	4
14	E-2909-P	-	Bottom Plate, Price Point	4
15	E-4835	-	Rebound Bolt, Assembly	8





# DUMP TRUCKS



CHALMERS: 800 SERIES



FREIGHTLINER: TUFTRAC®



HENDRICKSON: Haulmaax®



HENDRICKSON: HAULMAAX EX®



HENDRICKSON: HN®



HENDRICKSON:



MACK: SS44 SERIES, CAMELBACK

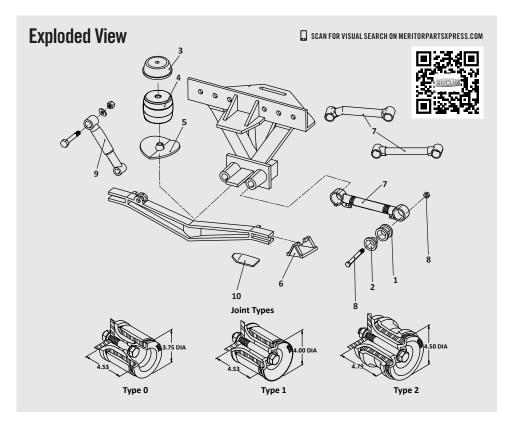


#### Truck, Drive Axle, Tandem, Bolster Spring / Rubber Pad





Chalmers 800 Series is a bolster spring suspension with walking beams, two load springs and eight torque arms. The suspension is known for being a reliable on road and off road system with high articulation. It is common to find the Chalmers 800 on dump trucks, cement trucks and other vocational vehicles.



### **WEAR ITEMS**

Torque rod / arm bushings and caps, load cushions.

## **CHALMERS: 800 SERIES**



## X TECH TIP

Change one rod at a time! Otherwise, axles will slide and make re-installation of rods very difficult.

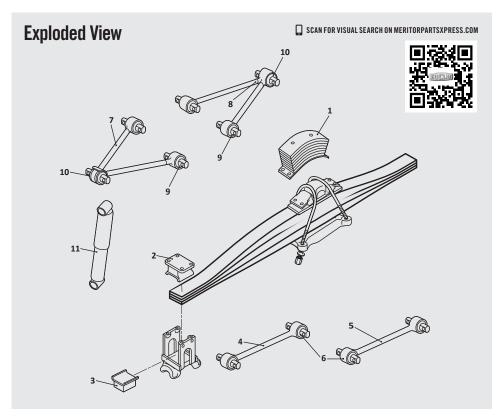
KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER Tandem	
	E-4677A	22128	Torque Arm Bushing, Rubber, Type 0 & 1 Joints	16	
	E-4677A-P	22128	Torque Arm Bushing, Rubber, Type 0 & 1 Joints, Price Point	16	
	GAFF18919	-	Torque Arm Bushing, Poly, Type 0 & 1 Joints	16	
	E-7766	800010	Torque Arm Bushing, Rubber, Type 2 Joints	16	
	E-7766-P	800010	Torque Arm Bushing, Rubber, Type 2 Joints, Price Point	16	
, [	GAFF11739	-	Torque Arm Bushing, Poly, Type 2 Joints	16	
1	E-4678A	22129	Torque Arm Bushing, Rubber, Oversized, Type 0 & 1 Joints	As Required	
	E-8702	22129	Torque Arm Bushing, Rubber, Oversized Version, OE Equivalent	As Required	
	GAFF18920	-	Torque Arm Bushing, Poly, Oversized Version, Type 0 & 1 Joints	As Required	
	E-7767	800009	Torque Arm Bushing, Rubber, Oversized, Type 2 Joints	As Required	
	E-7767-P		Torque Arm Bushing, Rubber, Oversized, Type 2 Joints, Price Point	As Required	
	GAFF18921	-	Torque Arm Bushing, Poly, Oversized, Type 2 Joints	As Required	
	E-9571	800201	Spigot Cap, Type 1 Joint	16	
2	E-9571-P		Spigot Cap, Type 1 Joint, Price Point	16	
	E-7768	800055	Spigot Cap, Type 2 Joint	16	
	E-7768-P		Spigot Cap, Type 2 Joint, Price Point	16	
	E-4688A	373028, 373020	Restrictor Can #28, Replaces Restrictor Can #20, 4-7/16" High x 12-5/8" Diameter	2	
3	E-7758	373029	Restrictor Can #29, 5-1/8" High x 11-1/2" Diameter, High Center of Gravity	2	
	E-4685	15002	Load Spring #20, 9-1/2" Diameter, Rubber	2	
4	E-4685-P	15002	Load Spring #20, 9-1/2" Diameter, Rubber, Price Point	2	
	GAFF11740	-	Load Spring #20, 9-1/2" Diameter, Poly	2	
	E-7769	800117, 800689	Spring Plate, 46–58K Low Mount For 54" Axle Spread	2	
5	E-7770	800125, 800691	Spring Plate, 40–58K High Mount For 60" Axle Spread,	2	
	E-14982	800685, 800119	Spring Plate, 40-58K High Mount For 60" Axle Spread, 46-58K Low Mount for 72" Axle Spread	2	
6	E-7756	222083	Saddle, Most Axles	4	
	E-14985	223157	Rigid Torque Arm, Upper, 15-7/8" Center-to-Center, Type 0 & 1 Joints	4	
	E-14986	800049	Rigid Torque Arm, Upper, Curved Design 46–50K, Type 2 Joints	4	
	E-14773	807250	Adjustable Torque Arm, 46K 21-3/4" Center-to-Center, Type 2 Joints	1	
7	E-14774	807216	Adjustable Torque Arm, 46K 25" Center-to-Center, Type 2 Joints	1	
'	E-14987	807214	Adjustable Torque Arm, 21-1/2" Center-to-Center, Type 2 Joints	1	
	E-14976	807240	Adjustable Torque Arm, 24" Center-to-Center, Type 2 Joints	1	
	E-14989	807220	Adjustable Torque Arm, 22" Center-to-Center, Type 2 Joints	1	
	E-14991	805220	Rigid Torque Arm, 22" Center-to-Center, Type 2 Joints	1	
8	E-7774	K880640	Hardware Kit, Type 1 Joint, 5" Bolts	4	
L	E-7773	K880231	Hardware Kit, Type 2 Joint, 5-1/2" Bolts	4	
	M85301	800670	Shock Absorber, High Mount	4	
9	M85305	800781	Shock Absorber, Low Mount	4	
Ш	M85060	665174	Shock Absorber, Standard Mount	4	
10	E-7765	700313	Wear Plate	As Required	



# Truck, Drive Axle, Leaf Spring & Bolster Spring / Rubber Pad, Tandem, V-Rods



TufTrac is both leaf spring and bolster spring suspension with two bolster springs, four torque rods, two V-Rods and eight insulator pads. This suspension is offered in a 40K and 46K versions for vocational applications.



## **WEAR ITEMS**

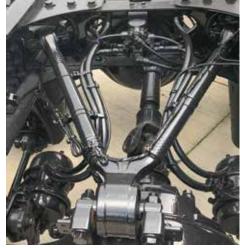
Torque arms and insulator caps / pads.

## FREIGHTLINER: TUFTRAC®



KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION		
1	E-16060	16-15010-000	Bolster Spring, Rubber	2	
	GAFF11159	-	Bolster Spring, Poly	2	
	E-16053	11-22805-000	Upper Insulator Cap, Rubber, 40K	4	
2	E-16051	11-19581-000	Upper Insulator Cap, Rubber, 46K	4	
	GAFF11164	-	Upper Insulator Cap, Poly, 46K	4	
3	E-15588	11-20807-000	Lower Insulator Pad, Rubber	4	
l °	GAFF11165	-	Lower Insulator Pad, Poly	4	
4	E-16058	16-15002-000	Torque Rod, Front w/ 54" Axle Spacing	2	
4	E-16055	16-14998-000	Torque Rod, Front w/ 56" Axle Spacing	2	
_	E-16059	16-15002-001	Torque Rod, Rear w/ 54" Axle Spacing	2	
5	E-16054	16-14998-001	Torque Rod, Rear w/ 56" Axle Spacing	2	
	E-16064	-	Torque Rod Bushing Kit, Includes (1) Rubber Bushing and (1) Snap Ring. For Torque Arms E-16058 & E-16059 w/ 54" Axle Spacing	4	
6	E-16063	-	Torque Rod Bushing Kit, Includes (1) Rubber Bushing and (1) Snap Ring. For Torque Arms E-16054 & E-16055 w/ 56" Axle Spacing	8	
-	E-16056	16-15001-000	V-Rod, Front 40K, 54" Axle Spacing	1	
7	E-16061	16-15069-000	V-Rod, Front 46—52K, 56" Axle Spacing	1	
8	E-16057	16-15001-001	V-Rod, Rear 40K, 54" Axle Spacing	1	
	E-16062	16-15069-001	V-Rod, Rear 46–52K, 56" Axle Spacing	1	
9	E-16066	-	V-Rod Bushing Kit, Outer Bushings, Includes (2) Bushings and (2) Snap Rings for all V-Rods, Rubber	4	
9	GAFF11163	-	V-Rod Bushing Kit, Outer Bushings, Includes (2) Bushings and (2) Snap Rings for all V-Rods, Poly	4	
10	E-16069	-	V-Rod Center Bushing Kit, Includes (1) Bushing and (1) Snap Ring for V-Rods E-16056 & E-16057	2	
10	E-16070	-	V-Rod Center Bushing Kit, Includes (1) Bushing and (1) Snap Ring for V-Rods E-16061 & E-16062	2	
11	M85956	85956 16-15770-000 Shock Absorber			



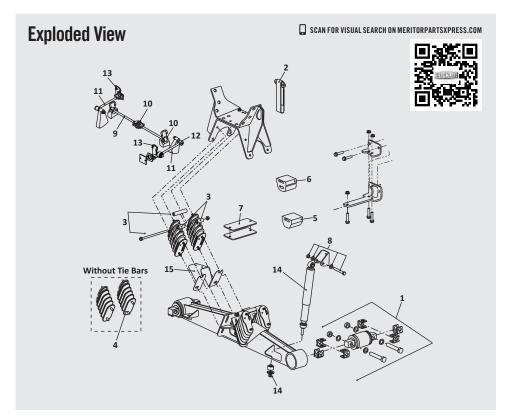




# Truck, Drive Axle, Bolster Spring / Rubber Pad, Tandem, Transverse Torque Arm



The HAULMAAX is the newer Hendrickson bolster spring suspension that features eight bolster springs, four per side, connected to a walking beam. Like the HN it removes the need for a center bushing for the beam to pivot on. In addition to the bolster springs the HAULMAAX is fitted with a progressive load spring designed to improve ride quality. This is a very popular vocational suspension especially on refuse and dump applications and also features the standard Hendrickson four end beam bushings.



### **WEAR ITEMS**

Bolster spring, aux load spring, end beam bushings.

## **HENDRICKSON: HAULMAAX®**



## **X** TECH TIP

The HAULMAXX suspension must be equipped with at least one load spring shim on each side, failure to do so can cause premature component wear, equalizing beam misalignment.

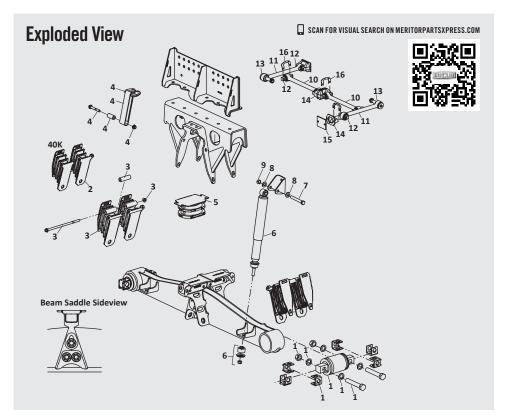
KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER Tandem
	E-9325	34013-087	Bar Pin Bushing Kit, Non-Shim Type, Rubber	4
	GAFF13607	-	Bar Pin Bushing Kit, Non-Shim Type, Poly	4
	GAFF13833	-	Bar Pin Bushing Kit, Hi Confinement Rotating Bushing, Non-Shim Type, Poly	4
1	E-9326	34013-088	Bar Pin Bushing Kit, Shim Type, Rubber	4
	GAFF13596	-	Bar Pin Bushing Kit, Shim Type, Poly	4
	E-14725	34013-188	Bar Pin Bushing Kit, Rotating Bushing, Shim Type, Rubber	4
	GAFF83596	-	Bar Pin Bushing Kit, Rotating Bushing, Shim Type, Poly	4
2	E-13986	57878-003	Rebound Strap	2
-	E-15168	64179-028	Rebound Strap Service Kit, Includes Hardware and Clip	As Required
	E-14807	64179-048	Tie-Bar Bolster Spring Service Kit, Includes Wear Plate, Rubber	4
	GAFF13626	-	Tie-Bar Bolster Spring Service Kit, w/o Wear Plate, Poly	4
3	E-17605	60961-712	Tie-Bar Bolster Spring Service Kit, Rubber, One Side, Includes (4) Bolster Springs and (1) Auxiliary Load Spring, and Wear Plates	2
	GAFF13831	-	Tie-Bar Bolster Spring Service Kit, Poly, Two Sides, Includes (8) Bolster Springs and (2) Auxiliary Load Spring, and Wear Plates	1
	E-17755	-	Tie-Bar Bolster Spring Service Kit, Rubber, Two Sides, Includes (8) Bolster Springs and (2) Auxiliary Load Spring, Wear Plates and (4) Auxiliary Spring Shims	1
4	E-16356	64179-049	Bolster Spring w/o Tie-Bar Service Kit, Includes Wear Plate	4
_	E-14047	60314-000	Auxiliary Load Spring For Vehicles Built Before 07/15/14	4
5	E-14534	64179-004	Auxiliary Spring Service Kit For Vehicles Built Before 07/15/14, Includes Hardware	2
	E-14896	67778-000	Progressive Load Spring For Vehicles Built After 07/15/14	4
6	E-16357	60961-747	Progressive Load Spring Service Kit For Vehicles Built After 07/15/14, Includes Hardware	1
7	E-15155	60791-000	Auxiliary Spring Shim - 0.25"	6
8	E-5277	49176-001	Bolt Assembly 5/8"-18 x 4-1/2" Long, Includes Bolt, Nut, Washers	4
9	See Ultra Rod Section, Page 96	Various	Hendrickson Ultra Rod Longitudinal Torque Rod Straddle / Straddle Assembly	2
10	E-5275	47691-000	Ultra Rod Straddle Bushing	4
	See Ultra Rod Section, Page 96	62350-000	Hendrickson Ultra Rod Transverse Torque Rod Straddle / Taper Assembly	2
11	GAFF11080	-	Transverse Torque Arm, 24" Center-to-Center, Straddle / Taper, Includes Poly Bushings	2
	GAFF11080EZ	-	Transverse Torque Arm, 24" Center-to-Center, Rotating Pin, Straddle / Taper, Includes Poly Bushings	2
12	E-10309 64697-000H Ultra Rod Taper Bushing		2	
13	E-5281	49689-000	Torque Rod Shim	
14	M83143	60680-004	Shock Absorber Assembly, 16-1/2" Saddle Ht.	4
14	M83142	60680-005	Shock Absorber Assembly, 17-1/2" & 18-1/2" Saddle Ht.	4
15	E-14535	64890-000	Wear Plate, Also Included in Bolster Spring Service Kit, Key No. 3 and 4	2



# Truck, Drive Axle, Bolster Spring / Rubber Pad, Tandem, Transverse Torque Arm



The HAULMAAX EX is the latest Heavy-Duty Hendrickson bolster spring suspension that features eight bolster springs, four per side, connected to a walking beam. Like the original HAULMAAX and HN suspensions it removes the need for a center beam bushing. In addition to the bolster springs the HAULMAAX EX is fitted with a round and larger progressive load spring designed to improve ride quality. This is a very popular vocational suspension especially on refuse and dump applications and also features the standard Hendrickson four end beam bushings.





Bolster spring, progressive load spring, end beam bushings, shocks (if equipped)

## **HENDRICKSON: HAULMAAX EX®**



## **X** TECH TIP

The HAULMAXX EX suspension must be equipped with at least one load spring shim on each side, failure to do so can cause premature component wear, equalizing beam misalignment.

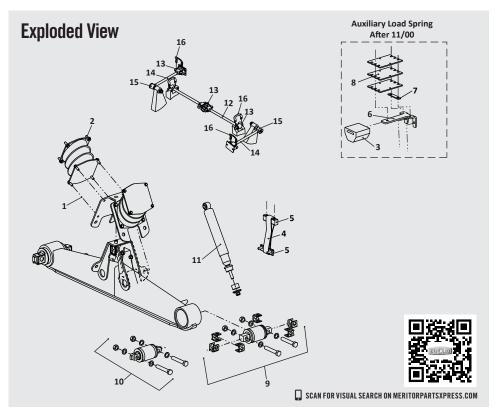
KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION			
	E-9325	34013-087	Bar Pin Bushing Kit, Non-Shim Type, Rubber	4		
	GAFF13607	-	Bar Pin Bushing Kit, Non-Shim Type, Poly	4		
	GAFF13833	-	Bar Pin Bushing Kit, Hi Confinement Rotating Bushing, Non-Shim Type, Poly	4		
1	E-9326	34013-088	Bar Pin Bushing Kit, Shim Type, Rubber	4		
	GAFF13596	-	Bar Pin Bushing Kit, Shim Type, Poly	4		
	E-14725	34013-188	Bar Pin Bushing Kit, Rotating Bushing, Shim Type, Rubber	4		
	GAFF83596	-	Bar Pin Bushing Kit, Rotating Bushing, Shim Type, Poly	4		
2	E-17654	34013-356	Bolster Spring w/o Tie-Bar Service Kit, Includes Mounting Hardware	4		
3	E-17655	34013-357	Tie-Bar Bolster Spring Service Kit, Includes Mounting Hardware	4		
	E-17656	34013-354	Rebound Strap Service Kit, 40K, 46K Vehicles Originally equipped with One Strap, One Side	2		
4	E-17657	34013-355	Rebound Strap Service Kit, 52K Vehicles Originally equipped with Dual Straps, One Side	2		
	E-17658	34013-363	Rebound Strap Service Kit, Aftermarket Dual Strap Enhancement, One Side	2		
_	E-17748	34013-358	Single Progressive Load Spring Service Kit, Vehicles Originally Equipped with One Strap, Includes Hardware	1		
5	E-17749	34013-364	Single Progressive Load Spring Service Kit, Vehicles Originally Equipped with Dual Straps, Includes Hardware	1		
	M83143	60680-004	Shock Absorber, (if equipped), 14-7/8" — 15-1/2", 16", 16-1/2" Saddle Height	4		
6	M83142	60680-005	Shock Absorber, (if equipped), 17-1/4", 17-1/2" Saddle Height	4		
0	S.O.S.	60680-009	Shock Absorber, (if equipped), 18-3/4" – 18-1/2" Saddle Height	4		
	S.O.S.	60680-010	Shock Absorber, (if equipped), 20-1/4", 20-1/2", 21-1/2", 22-1/2" Saddle Height	4		
7	E-16227	-	Hex Bolt, 5/8"-11 UNC x 5" Hex Bolt (if equipped)	4		
8	E-2547	-	Washer, 5/8" Dia. (if equipped)	8		
9	E-2988	-	Locknut, 5/8"-11 UNC, (if equipped)	4		
10	See Ultra Rod Section, Page 96	Various	Ultra Rod Longitudinal Torque Rod Straddle / Straddle Assembly	2		
11	See Ultra Rod Section, Page 96	6/350_000   Hitra Rod Transverse Torque Rod Straddle / Taner Assembly		2		
12	E-5275	47691-000	Ultra Rod Straddle Bushing			
13	E-10309	64697-000	Ultra Rod Taper Bushing			
14	E-2634	22186-000	Transverse Rod Frame Bracket			
15	E-15153	45045-003	Back-Up Plate (for Torque Rod)			
16	E-5281	49689-000L	49689-000L Torque Rod Shim			



# Truck, Drive Axle, Bolster Spring / Rubber Pad, Tandem, Transverse Torque Arm



The HN is a bolster spring suspension with four bolster springs, two per side, connected to a walking beam. The design removes the need for a center bushing that a walking beam normally pivots on. This suspension is common on vocational vehicles that travel on and off the road. This uses the standard Hendrickson four end beam bushings.



#### **WEAR ITEMS**

Bolster spring, aux load spring, end beam bushings.

## **HENDRICKSON: HN®**



## X TECH TIP

If Bar Pin movement or looseness is noticed in the beam end, hub replace the bushings and connecting hardware immediately. Failure to do so can result in costly repairs down the road and an unsafe vehicle.

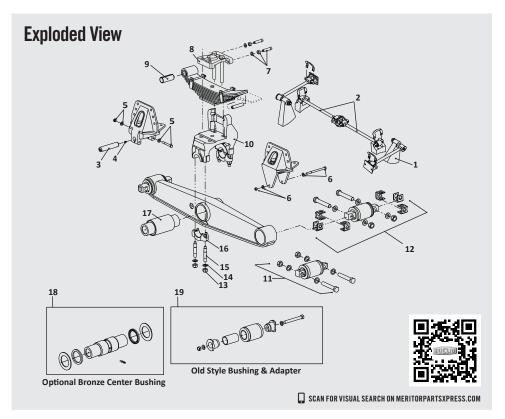
KEY No.	EUCLID Part no.	OEM REF.	DESCRIPTION		
1	E-16398	-	Bolster Spring Fastener Kit For One Bolster Spring, Includes Bolt, Nut and Washer	4	
2	E-11496	60879-000	Bolster Spring Service Kit, 1 Pair for 1 Side (Must be replaced in pairs), Rubber	2	
4	GAFF13721	-	Bolster Spring Service Kit, 1 Pair for 1 Side (Must be replaced in pairs), Poly	2	
3	E-14047	60314-000	Auxiliary Load Spring, 3-3/8" High, Rubber	-	
3	GAFF13611	-	Auxiliary Load Spring, 3-3/8" High, Poly	-	
4	<b>E-13986</b> 57878-003 Rebound Strap		Rebound Strap	2	
5	E-16400	60639-000	Anchor Plate Assembly Includes Anchor Plate 1/2" Washer 1/2" Lock Nut	4	
6	E-15171	58948-001	Auxiliary Load Spring Mounting Plate — 1/4" Thick	2	
7	E-15172	58949-000	Auxiliary Spring Mounting Plate Shim	2	
8	E-15173	58960-003	Auxiliary Spring Mounting Shim	-	
	E-9326	34013-088	Bar Pin Bushing Service Kit, Shim Type (Includes Mounting Hrdw & Shims), Rubber	4	
9	GAFF13596	-	Bar Pin Bushing Service Kit, Shim Type (Includes Mounting Hrdw & Shims), Poly	4	
9	E-14725	34013-188	Bar Pin Bushing Service Kit, Rotating & Shim Type (Includes Mounting Hrdw & Shims), Rubber	4	
	GAFF83596	-	Bar Pin Bushing Service Kit, Rotating & Shim Type (Includes Mounting Hrdw & Shims), Poly	4	
	E-9325	34013-087	Bar Pin Bushing Service Kit, Non-Shim Type (Includes Mounting Hrdw), Rubber	4	
10	GAFF13607	-	Bar Pin Bushing Service Kit, Non-Shim Type (Includes Mounting Hrdw), Poly	4	
	GAFF13833	-	Bar Pin Bushing Kit, Hi Confinement Rotating Bushing, Non-Shim Type, Poly	4	
11	M83112	60680-003	Shock Absorber	4	
12	E-13989	60218-000	Torque Rod Kit, ULTRA ROD, Two Straddle Mount Bushing, 27" Max Length	2	
13	E-5275	47691-000	ULTRA ROD Straddle Bushing	2	
	E-13988	60215-000	Transverse Torque Rod Kit, ULTRA ROD, Straddle and Tapered Bushings	2	
14	GAFF11080	-	Transverse Torque Arm, 24" Center-to-Center, Straddle / Taper, Includes Poly Bushings	2	
	GAFF11080EZ	-	Transverse Torque Arm, 24" Center-to-Center, Rotating Pin, Straddle / Taper, Includes Poly Bushings	2	
15	E-10309	64697-000	ULTRA ROD Tapered Bushing	-	
16	E-5281	49689-000	Torque Rod Shim	As Required	



# Truck, Drive Axle, Leaf Spring, Tandem, Transverse Torque Arm for High Capacities



The RT is a steel spring suspension that features a walking beam with a center bushing used as a pivot point. This suspension has been in service for over 90 years and is known for its reliability. This system is used on vocational applications, requires transverse torque rods for high capacity applications. This system also features the standard Hendrickson four end beam bushings. Older walking beams are cast and newer versions are fabricated.



### **WEAR ITEMS**

Center and end beam bushings.

## **HENDRICKSON: RT®**



## **X** TECH TIP

Look for loose or damaged fasteners on the entire suspension. Ensure that all fasteners are torqued to correct specifications. If loose fastener discovered inspect all mating parts closely. The replacement of springs should be done in pairs to keep equal spring deflection on both sides.

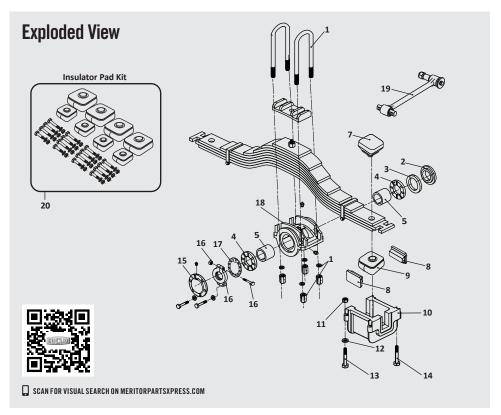
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KEY No.	EUCLID Part no.	OEM REF.	DESCRIPTION	RT/RTE 340	RT/RTE 400	RT/RTE 460	RT/RTE 480	RT/RTE 520	
1	E-13988	60215-000	Two-Piece Transverse Torque Rod Kit, Includes Straddle Bushings	2	2	2	2	2	
2	See Torque Rod Section, Page 94	Various	Longitudinal Torque Rod Assembly	2	2	2	2	2	
3	E-1818	32277-000	Spring Pin, Single Lock Pin / Groove	2	2	-	-	-	
3	E-3761	43146-000	Spring Pin, Double Lock Pin / Groove	2	2	2	2	2	
4	E-1307	33117-000	Lube Fitting	2	2	2	2	2	
5	E-9427	29828-035	Lock Bolt Kit	2	2	2	2	2	
6	E-9428	29828-023	Rebound Bolt & Spacer Assembly	2	2	2	2	2	
7	E-9429	35370-002	Set Screw Kit	4	4	4	4	4	
8	E-1869	35064-000	Top Pad	2	2	2	2	2	
9	E-1877	30057-008	Spring Eye Bushing 1-3/8" I.D.	2	2	2	2	2	
	E-1853	31017-022	Saddle Assembly, 6" Height	2	2	-	-	-	
10	E-1854	31017-096	Saddle Assembly, 6" Height	-	-	2	-	-	
	E-7531	31017-053	Saddle Assembly, 6" Height	-	-	-	2	2	
	E-9325	34013-087	Bar Pin Bushing Kit, Non-Shim Type, Rubber	4	4	4	4	4	
11	GAFF13607	-	Bar Pin Bushing Kit, Non-Shim Type, Poly	4	4	4	4	4	
11	GAFF13833	-	Bar Pin Bushing Kit, Hi Confinement Rotating Bushing, Non-Shim Type, Poly	4	4	4	4	4	
	E-9326	34013-088	Bar Pin Bushing Kit, Shim Type, Rubber	4	4	4	4	4	
10	GAFF13596	-	Bar Pin Bushing Kit, Shim Type, Poly	4	4	4	4	4	
12	E-14725	34013-188	Bar Pin Bushing Kit, Free Rotating Bushing, Shim Type, Rubber	4	4	4	4	4	
	GAFF83596	-	Bar Pin Bushing Kit, Free Rotating Bushing, Shim Type, Poly	4	4	4	4	4	
13	E-1835	04842-000	Nut, Saddle Cap Stud	8	8	8	8	8	
14	E-1834	22962-002	7/8" Hardened Washer	8	8	8	8	8	
15	E-1830	06696-000	7/8"-14 Saddle Cap Stud, 4-13/16" Long	-	8	8	8	8	
15	E-1829	07002-000	7/8"-14 Saddle Cap Stud, 4-3/8" Long	8	-	-	-	-	
16	E-1833A	58795-000	Saddle Cap	-	4	4	4	4	
10	E-16464	06662-000	Saddle Cap	4	-	-	-	-	
	E-1338	06664-000	Rubber Center Bushing with Welded End Plug	2	-	-	-	-	
	GAFF13500	-	Poly Center Bushing with Welded End Plug	2	-	-	-	-	
	E-1594	22279-000	Rubber Center Bushing with Loose End Plug	2	-	-	-	-	
	E-6979	49400-000	Rubber Center Bushing with Welded End Plug	2	2	-	-	-	
17	GAFF13505	-	Poly Center Bushing with Welded End Plug	2	2	-	-	-	
	E-6980	49600-000	Rubber Center Bushing with Loose End Plug	2	2	-	-	-	
	GAFF13543	-	Poly Center Bushing with Loose End Plug	2	2	-	-	-	
	E-9359	29483-005	Rubber Center Bushing with Welded End Plug	-	-	2	2	2	
	E-16416	34013-097	Rubber Center Bushing with Loose End Plug	-	-	2	2	2	
18	E-1546	30437-000	Kit, Bronze Center Bushings, Includes Thrust Washer, Seal, Sleeve, and Bronze Bushing	1	1	1	1	1	
	E-5309	34013-049	End Beam Bushing Kit, Old Style, Includes Bushing and Adapter	4	4	-	-	-	
10	E-9576	34013-073	End Beam Bushing Kit, Old Style, Includes Bushing and Adapter	-	-	4	-	-	
19	E-9577	34013-050	End Beam Bushing Kit, Old Style, 5-3/4" Long Bushing, Includes Bushing and Adapter	-	-	-	4	4	



#### Truck, Drive Axle, Single Point Leaf Spring, Tandem Axles



Mack Camelback is a single point spring suspension that pivots on a trunnion bushing. The suspension has a unique hump in the spring stack that lends to its name. It is easily identifiable and comes in a variety of capacities. The most common version is the SS44 series that uses 4" wide springs and bronze trunnion bushings with a 3-1/2" ID. This suspension has been around for decades and has a proven track record for reliability. It is commonly found on vocational trucks and especially on dump trucks.



## **WEAR ITEMS**

Rubber insulator pads and trunnion bushings.

## MACK: SS44 SERIES, CAMELBACK



KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER Tandem	
	E-UB8394-144	-	U-Bolt Assembly, Semi Rd. Bend, 1-1/4"-12 x 4" Wide x 14-1/2" Long	4	
1	E-UB8394-162S	-	U-Bolt Assembly, Semi Rd. Bend, 1-1/4"-12 x 4" Wide x 16-1/4" Long	4	
	E-UB8394-18	-	U-Bolt Assembly, Semi Rd. Bend, 1-1/4"-12 x 4" Wide x 18" Long	4	
2	E-3187	88AX244; 88AX446	Trunnion Seal, 5-1/2" OD x 4-3/8" ID x 9/16" Thick	2	
3	E-3699	43QK117	Steel Washer, 5-3/8" OD x 4-3/8" ID x 3/8" Thick	2	
4	E-3698	35AX688; 43QK116	Bronze Thrust Washer, 5-5/16" OD x 3-1/2" ID x 1/4" Thick	4	
5	E-2925	10QK157; 80AX300	Bronze Trunnion Bushing, 3-3/4" OD x 3-1/2" ID x 3-7/16" Long	4	
6	E-3916	-	Trunnion Rebuild Kit, Includes Key No. 2, 3, 4, 5, 17, 18. Axle Set	1	
7	E-2919	10QK370	Upper Insulator Pad, Rubber, 6" Long x 4-1/2" Wide x 3" Thick, 1-3/4" Dia. Pin	4	
'	GAFF12010	-	Upper Insulator Pad, Poly, 6" Long x 4-1/2" Wide x 3" Thick, 1-3/4" Dia. Pin	4	
8	E-3689	13QK246	Insulator Spacer Block	8	
°	E-3689-P	13QK246	Insulator Spacer Block, Price Point	8	
9	E-2920	10QK36B	Lower Insulator Pad, Rubber, 6" Long x 6" Wide x 3-3/4" Thick, 1-3/4" Dia. Pin	4	
9	GAFF12014	-	Lower Insulator Pad, Poly, 6" Long x 6" Wide x 3-3/4" Thick, 1-3/4" Dia. Pin	4	
10	E-3688	52QK418BP4	Insulator Box, 6-3/4" Deep	2	
10	E-16782	52QK418BP5	Insulator Box, 6-3/8" Deep	2	
11	E-1835	21AX480	Lock Nut, 7/8"-14		
12	E-2546	37AX1310	Washer, 7/8" ID	8	
	E-3690	1AX425	Insulator Box Bolt, 7/8"-14 x 5" Long	8	
	E-3691	1AX475	Insulator Box Bolt, 7/8"-14 x 5-1/4" Long	8	
13	E-3692	1AX427; 3AX987	Insulator Box Bolt, 7/8"-14 x 6" Long	8	
	E-3693	3AX1344	Insulator Box Bolt, 7/8"-14 x 6-1/2" Long	8	
	E-5428	3AX1348	Insulator Box Bolt, 7/8 "-14 x 8 " Long	8	
14	E-3696	4AX320; 6AX837	Insulator Box Stud, 7/8"-9 x 4-1/2" Long	8	
14	E-5427	6AX1160	Insulator Box Stud, 7/8"-9 x 6" Long	8	
15	E-3697	97QL399P2	Trunnion Grease Cap, 5/16" Dia. Bolt Holes, 7" Bolt Circle	2	
15	E-3697-P	97QL399P2	Trunnion Grease Cap, 5/16" Dia. Bolt Holes, 7" Bolt Circle, Price Point	2	
16	E-16787	-	Trunnion Nut & Hardware, Includes Trunnion Nut	2	
17	E-3915	23QJ112B	Star Lock Washer, 4-7/8" OD x 1/4" Thick		
18	E-3687	39QK27E; 39QK27F; 39QK326	Trunnion and Bushing Assembly	2	
	E-3687-P	-	Trunnion and Bushing Assembly, Price Point	2	
19	E-3988	-	Transverse Torque Arm Kit, Full Ball Design	1	
20	E-14932	-	Insulator Pad Kit, Rubber, Includes E-2919 Upper and E-2920 Lower Insulator Pads and Hardware	1	
20	GAFF12036	-	Insulator Pad Kit, Poly, Includes GAFF12010 Upper and GAFF12014 Lower Insulator Pads and Hardware	1	



# REFUSE TRUCKS



FREIGHTLINER: TUFTRAC®



HENDRICKSON: Haulmaax®



HENDRICKSON: HAULMAAX EX®



HENDRICKSON: HN®



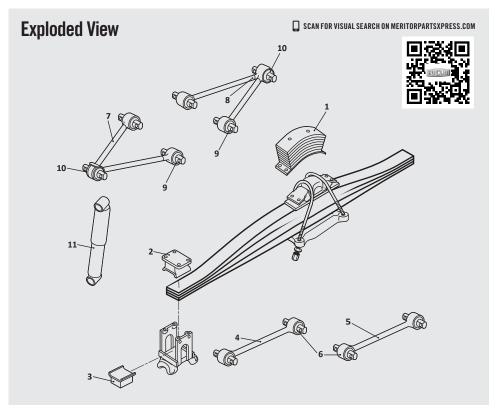
MACK: SS44 SERIES, CAMELBACK



# Truck, Drive Axle, Leaf Spring & Bolster Spring / Rubber Pad, Tandem, V-Rods



TufTrac is both leaf spring and bolster spring suspension with two bolster springs, four torque rods, two V-Rods and eight insulator pads. This suspension is offered in a 40K and 46K versions for vocational applications.



## **WEAR ITEMS**

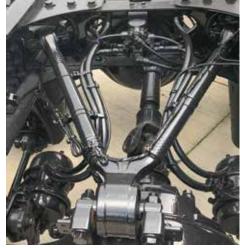
Torque arms and insulator caps / pads.

## FREIGHTLINER: TUFTRAC®



KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER Tandem
1	E-16060	16-15010-000	Bolster Spring, Rubber	2
1	GAFF11159	-	Bolster Spring, Poly	2
	E-16053	11-22805-000	Upper Insulator Cap, Rubber, 40K	4
2	E-16051	11-19581-000	Upper Insulator Cap, Rubber, 46K	4
	GAFF11164	-	Upper Insulator Cap, Poly, 46K	4
3	E-15588	11-20807-000	Lower Insulator Pad, Rubber	4
3	GAFF11165	-	Lower Insulator Pad, Poly	4
4	E-16058	16-15002-000	Torque Rod, Front w/ 54" Axle Spacing	2
4	E-16055	16-14998-000	Torque Rod, Front w/ 56" Axle Spacing	2
_	E-16059	16-15002-001	Torque Rod, Rear w/ 54" Axle Spacing	2
5	E-16054	16-14998-001	Torque Rod, Rear w/ 56" Axle Spacing	2
	E-16064	-	Torque Rod Bushing Kit, Includes (1) Rubber Bushing and (1) Snap Ring. For Torque Arms E-16058 & E-16059 w/ 54" Axle Spacing	4
6	E-16063	-	Torque Rod Bushing Kit, Includes (1) Rubber Bushing and (1) Snap Ring. For Torque Arms E-16054 & E-16055 w/ 56" Axle Spacing	8
	GAFF11163	-	Torque Arm Bushing, Poly Version of E-16063	8
7	E-16056	16-15001-000	V-Rod, Front 40K, 54" Axle Spacing	1
'	E-16061	16-15069-000	V-Rod, Front 46–52K, 56" Axle Spacing	1
8	E-16057	16-15001-001	V-Rod, Rear 40K, 54" Axle Spacing	1
8	E-16062	16-15069-001	V-Rod, Rear 46—52K, 56" Axle Spacing	1
9	E-16066	-	V-Rod Bushing Kit, Outer Bushings, Includes (2) Bushings and (2) Snap Rings for all V-Rods	4
10	E-16069	-	V-Rod Center Bushing Kit, Includes (1) Bushing and (1) Snap Ring for V-Rods E-16056 & E-16057	2
10	E-16070	-	V-Rod Center Bushing Kit, Includes (1) Bushing and (1) Snap Ring for V-Rods E-16061 & E-16062	2
11	M85956	16-15770-000	Shock Absorber	2



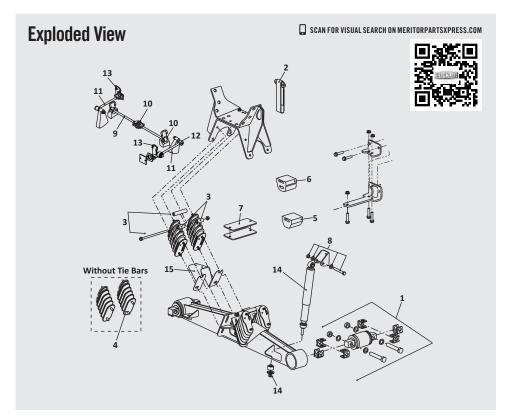




# Truck, Drive Axle, Bolster Spring / Rubber Pad, Tandem, Transverse Torque Arm



The HAULMAAX is the newer Hendrickson bolster spring suspension that features eight bolster springs, four per side, connected to a walking beam. Like the HN it removes the need for a center bushing for the beam to pivot on. In addition to the bolster springs the HAULMAAX is fitted with a progressive load spring designed to improve ride quality. This is a very popular vocational suspension especially on refuse and dump applications and also features the standard Hendrickson four end beam bushings.



### **WEAR ITEMS**

Bolster spring, aux load spring, end beam bushings.

## **HENDRICKSON: HAULMAAX®**



## **X** TECH TIP

The HAULMAXX suspension must be equipped with at least one load spring shim on each side, failure to do so can cause premature component wear, equalizing beam misalignment.

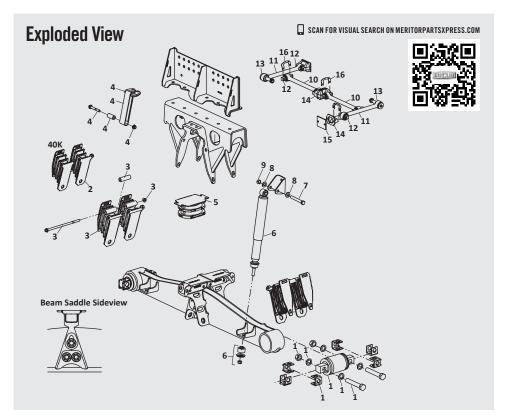
KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER Tandem
	E-9325	34013-087	Bar Pin Bushing Kit, Non-Shim Type, Rubber	4
	GAFF13607	-	Bar Pin Bushing Kit, Non-Shim Type, Poly	4
	GAFF13833	-	Bar Pin Bushing Kit, Hi Confinement Rotating Bushing, Non-Shim Type, Poly	4
1	E-9326	34013-088	Bar Pin Bushing Kit, Shim Type, Rubber	4
	GAFF13596	-	Bar Pin Bushing Kit, Shim Type, Poly	4
	E-14725	34013-188	Bar Pin Bushing Kit, Rotating Bushing, Shim Type, Rubber	4
	GAFF83596	-	Bar Pin Bushing Kit, Rotating Bushing, Shim Type, Poly	4
2	E-13986	57878-003	Rebound Strap	2
-	E-15168	64179-028	Rebound Strap Service Kit, Includes Hardware and Clip	As Required
	E-14807	64179-048	Tie-Bar Bolster Spring Service Kit, Includes Wear Plate, Rubber	4
	GAFF13626	-	Tie-Bar Bolster Spring Service Kit, w/o Wear Plate, Poly	4
3	E-17605	60961-712	Tie-Bar Bolster Spring Service Kit, Rubber, One Side, Includes (4) Bolster Springs and (1)  Auxiliary Load Spring, and Wear Plates	2
	GAFF13831	-	Tie-Bar Bolster Spring Service Kit, Poly, Two Sides, Includes (8) Bolster Springs and (2) Auxiliary Load Spring, and Wear Plates	1
	E-17755	-	Tie-Bar Bolster Spring Service Kit, Rubber, Two Sides, Includes (8) Bolster Springs and (2) Auxiliary Load Spring, Wear Plates and (4) Auxiliary Spring Shims	1
4	E-16356	64179-049	Bolster Spring w/o Tie-Bar Service Kit, Includes Wear Plate	4
_	E-14047	60314-000	Auxiliary Load Spring For Vehicles Built Before 07/15/14	4
5	E-14534	64179-004	Auxiliary Spring Service Kit For Vehicles Built Before 07/15/14, Includes Hardware	2
	E-14896	67778-000	Progressive Load Spring For Vehicles Built After 07/15/14	4
6	E-16357	60961-747	Progressive Load Spring Service Kit For Vehicles Built After 07/15/14, Includes Hardware	1
7	E-15155	60791-000	Auxiliary Spring Shim - 0.25"	6
8	E-5277	49176-001	Bolt Assembly 5/8"-18 x 4-1/2" Long, Includes Bolt, Nut, Washers	4
9	See Ultra Rod Section, Page 96	Various	Hendrickson Ultra Rod Longitudinal Torque Rod Straddle / Straddle Assembly	2
10	E-5275	47691-000	Ultra Rod Straddle Bushing	4
	See Ultra Rod Section, Page 96	62350-000	Hendrickson Ultra Rod Transverse Torque Rod Straddle / Taper Assembly	2
11	GAFF11080	-	Transverse Torque Arm, 24" Center-to-Center, Straddle / Taper, Includes Poly Bushings	2
	GAFF11080EZ	-	Transverse Torque Arm, 24" Center-to-Center, Rotating Pin, Straddle / Taper, Includes Poly Bushings	2
12	E-10309	64697-000H	Ultra Rod Taper Bushing	2
13	E-5281	49689-000	Torque Rod Shim	As Required
14	M83143	60680-004	Shock Absorber Assembly, 16-1/2" Saddle Ht.	4
14	M83142	60680-005	Shock Absorber Assembly, 17-1/2" & 18-1/2" Saddle Ht.	4
15	E-14535	64890-000	Wear Plate, Also Included in Bolster Spring Service Kit, Key No. 3 and 4	2



# Truck, Drive Axle, Bolster Spring / Rubber Pad, Tandem, Transverse Torque Arm



The HAULMAAX EX is the latest Heavy-Duty Hendrickson bolster spring suspension that features eight bolster springs, four per side, connected to a walking beam. Like the original HAULMAAX and HN suspensions it removes the need for a center beam bushing. In addition to the bolster springs the HAULMAAX EX is fitted with a round and larger progressive load spring designed to improve ride quality. This is a very popular vocational suspension especially on refuse and dump applications and also features the standard Hendrickson four end beam bushings.





Bolster spring, progressive load spring, end beam bushings, shocks (if equipped)

## **HENDRICKSON: HAULMAAX EX®**



## **X** TECH TIP

The HAULMAXX EX suspension must be equipped with at least one load spring shim on each side, failure to do so can cause premature component wear, equalizing beam misalignment.

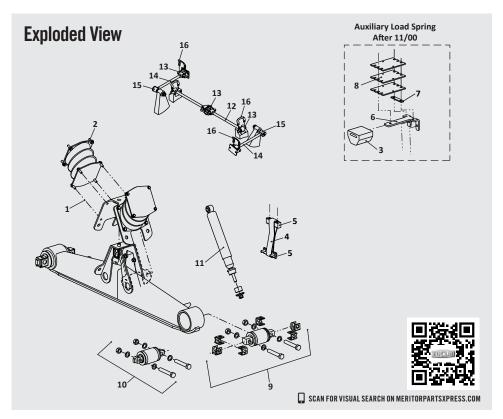
KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER Tandem
	E-9325	34013-087	Bar Pin Bushing Kit, Non-Shim Type, Rubber	4
	GAFF13607	-	Bar Pin Bushing Kit, Non-Shim Type, Poly	4
	GAFF13833	-	Bar Pin Bushing Kit, Hi Confinement Rotating Bushing, Non-Shim Type, Poly	4
1	E-9326	34013-088	Bar Pin Bushing Kit, Shim Type, Rubber	4
	GAFF13596	-	Bar Pin Bushing Kit, Shim Type, Poly	4
	E-14725	34013-188	Bar Pin Bushing Kit, Rotating Bushing, Shim Type, Rubber	4
	GAFF83596	-	Bar Pin Bushing Kit, Rotating Bushing, Shim Type, Poly	4
2	E-17654	34013-356	Bolster Spring w/o Tie-Bar Service Kit, Includes Mounting Hardware	4
3	E-17655	34013-357	Tie-Bar Bolster Spring Service Kit, Includes Mounting Hardware	4
	E-17656	34013-354	Rebound Strap Service Kit, 40K, 46K Vehicles Originally equipped with One Strap, One Side	2
4	E-17657	34013-355	Rebound Strap Service Kit, 52K Vehicles Originally equipped with Dual Straps, One Side	2
	E-17658	34013-363	Rebound Strap Service Kit, Aftermarket Dual Strap Enhancement, One Side	2
_	E-17748	34013-358	Single Progressive Load Spring Service Kit, Vehicles Originally Equipped with One Strap, Includes Hardware	1
5	E-17749	34013-364	Single Progressive Load Spring Service Kit, Vehicles Originally Equipped with Dual Straps, Includes Hardware	1
	M83143	60680-004	Shock Absorber, (if equipped), 14-7/8" — 15-1/2", 16", 16-1/2" Saddle Height	4
6	M83142	60680-005	Shock Absorber, (if equipped), 17-1/4", 17-1/2" Saddle Height	4
0	S.O.S.	60680-009	Shock Absorber, (if equipped), 18-3/4" – 18-1/2" Saddle Height	4
	S.O.S.	60680-010	Shock Absorber, (if equipped), 20-1/4", 20-1/2", 21-1/2", 22-1/2" Saddle Height	4
7	E-16227	-	Hex Bolt, 5/8"-11 UNC x 5" Hex Bolt (if equipped)	4
8	E-2547	-	Washer, 5/8" Dia. (if equipped)	8
9	E-2988	-	Locknut, 5/8"-11 UNC, (if equipped)	4
10	See Ultra Rod Section, Page 96	Various	Ultra Rod Longitudinal Torque Rod Straddle / Straddle Assembly	2
11	See Ultra Rod Section, Page 96	62350-000	Ultra Rod Transverse Torque Rod Straddle / Taper Assembly	2
12	E-5275	47691-000	Ultra Rod Straddle Bushing	6
13	E-10309	64697-000	Ultra Rod Taper Bushing	2
14	E-2634	22186-000	Transverse Rod Frame Bracket	4
15	E-15153	45045-003	Back-Up Plate (for Torque Rod)	4
16	E-5281	49689-000L	Torque Rod Shim	As Req.



# Truck, Drive Axle, Bolster Spring / Rubber Pad, Tandem, Transverse Torque Arm



The HN is a bolster spring suspension with four bolster springs, two per side, connected to a walking beam. The design removes the need for a center bushing that a walking beam normally pivots on. This suspension is common on vocational vehicles that travel on and off the road. This uses the standard Hendrickson four end beam bushings.



#### **WEAR ITEMS**

Bolster spring, aux load spring, end beam bushings.

## HENDRICKSON: HN®



## X TECH TIP

If Bar Pin movement or looseness is noticed in the beam end, hub replace the bushings and connecting hardware immediately. Failure to do so can result in costly repairs down the road and an unsafe vehicle.

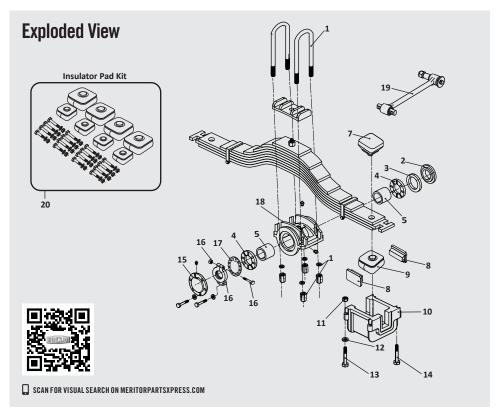
KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER Tandem
1	E-16398	-	Bolster Spring Fastener Kit For One Bolster Spring, Includes Bolt, Nut and Washer	4
2	E-11496	60879-000	Bolster Spring Service Kit, 1 Pair for 1 Side (Must be replaced in pairs), Rubber	2
	GAFF13721	-	Bolster Spring Service Kit, 1 Pair for 1 Side (Must be replaced in pairs), Poly	2
	E-14047	60314-000	Auxiliary Load Spring, 3-3/8" High, Rubber	-
3	GAFF13611	-	Auxiliary Load Spring, 3-3/8" High, Poly	-
4	E-13986	57878-003	Rebound Strap	2
5	E-16400	60639-000	Anchor Plate Assembly Includes Anchor Plate 1/2" Washer 1/2" Lock Nut	4
6	E-15171	58948-001	Auxiliary Load Spring Mounting Plate — 1/4" Thick	2
7	E-15172	58949-000	Auxiliary Spring Mounting Plate Shim	2
8	E-15173	58960-003	Auxiliary Spring Mounting Shim	-
	E-9326	34013-088	Bar Pin Bushing Service Kit, Shim Type (Includes Mounting Hrdw & Shims), Rubber	4
9	GAFF13596	-	Bar Pin Bushing Service Kit, Shim Type (Includes Mounting Hrdw & Shims), Poly	4
9	E-14725	34013-188	Bar Pin Bushing Service Kit, Rotating & Shim Type (Includes Mounting Hrdw & Shims), Rubber	4
	GAFF83596	-	Bar Pin Bushing Service Kit, Rotating & Shim Type (Includes Mounting Hrdw & Shims), Poly	4
	E-9325	34013-087	Bar Pin Bushing Service Kit, Non-Shim Type (Includes Mounting Hrdw), Rubber	4
10	GAFF13607	-	Bar Pin Bushing Service Kit, Non-Shim Type (Includes Mounting Hrdw), Poly	4
	GAFF13833	-	Bar Pin Bushing Kit, Hi Confinement Rotating Bushing, Non-Shim Type, Poly	4
11	M83112	60680-003	Shock Absorber	4
12	E-13989	60218-000	Torque Rod Kit, ULTRA ROD, Two Straddle Mount Bushing, 27" Max Length	2
13	E-5275	47691-000	ULTRA ROD Straddle Bushing	2
	E-13988	60215-000	Transverse Torque Rod Kit, ULTRA ROD, Straddle and Tapered Bushings	2
14	GAFF11080	-	Transverse Torque Arm, 24" Center-to-Center, Straddle / Taper, Includes Poly Bushings	2
14	GAFF11080EZ	-	Transverse Torque Arm, 24" Center-to-Center, Rotating Pin, Straddle / Taper, Includes Poly Bushings	2
15	E-10309	64697-000	ULTRA ROD Tapered Bushing	-
16	E-5281	49689-000	Torque Rod Shim	As Required



#### Truck, Drive Axle, Single Point Leaf Spring, Tandem Axles



Mack Camelback is a single point spring suspension that pivots on a trunnion bushing. The suspension has a unique hump in the spring stack that lends to its name. It is easily identifiable and comes in a variety of capacities. The most common version is the SS44 series that uses 4" wide springs and bronze trunnion bushings with a 3-1/2" ID. This suspension has been around for decades and has a proven track record for reliability. It is commonly found on vocational trucks and especially on dump trucks.



## **WEAR ITEMS**

Rubber insulator pads and trunnion bushings.

# MACK: SS44 SERIES, CAMELBACK



KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER Tandem
	E-UB8394-144	-	U-Bolt Assembly, Semi Rd. Bend, 1-1/4"-12 x 4" Wide x 14-1/2" Long	4
1	E-UB8394-162S	-	U-Bolt Assembly, Semi Rd. Bend, 1-1/4"-12 x 4" Wide x 16-1/4" Long	4
	E-UB8394-18	-	U-Bolt Assembly, Semi Rd. Bend, 1-1/4"-12 x 4" Wide x 18" Long	4
2	E-3187	88AX244; 88AX446	Trunnion Seal, 5-1/2" OD x 4-3/8" ID x 9/16" Thick	2
3	E-3699	43QK117	Steel Washer, 5-3/8" OD x 4-3/8" ID x 3/8" Thick	2
4	E-3698	35AX688; 43QK116	Bronze Thrust Washer, 5-5/16" OD x 3-1/2" ID x 1/4" Thick	
5	E-2925	10QK157; 80AX300	Bronze Trunnion Bushing, 3-3/4" OD x 3-1/2" ID x 3-7/16" Long	4
6	E-3916	-	Trunnion Rebuild Kit, Includes Key No. 2, 3, 4, 5, 17, 18. Axle Set	1
7	E-2919	10QK370	Upper Insulator Pad, Rubber, 6" Long x 4-1/2" Wide x 3" Thick, 1-3/4" Dia. Pin	4
'	GAFF12010	-	Upper Insulator Pad, Poly, 6" Long x 4-1/2" Wide x 3" Thick, 1-3/4" Dia. Pin	4
8	E-3689	13QK246	Insulator Spacer Block	8
0	E-3689-P	13QK246	Insulator Spacer Block, Price Point	8
E-2920 10QK36B Lower Insulato		10QK36B	Lower Insulator Pad, Rubber, 6" Long x 6" Wide x 3-3/4" Thick, 1-3/4" Dia. Pin	4
9	9 GAFF12014 - Lower Insulator Pad, Poly, 6" Long x 6" Wide x 3-3/4" Thick, 1-3/4" Dia. Pin		4	
10	E-3688	52QK418BP4	Insulator Box, 6-3/4" Deep	2
10	E-16782	52QK418BP5	Insulator Box, 6-3/8" Deep	
11	E-1835	21AX480	Lock Nut, 7/8"-14 8	
12	E-2546	37AX1310	Washer, 7/8" ID	
	E-3690	1AX425	Insulator Box Bolt, 7/8"-14 x 5" Long	8
	E-3691	1AX475	Insulator Box Bolt, 7/8"-14 x 5-1/4" Long	8
13	E-3692	1AX427; 3AX987	Insulator Box Bolt, 7/8"-14 x 6" Long	8
	E-3693	3AX1344	Insulator Box Bolt, 7/8"-14 x 6-1/2" Long	8
	E-5428	3AX1348	Insulator Box Bolt, 7/8 "-14 x 8 " Long	8
14	E-3696	4AX320; 6AX837	Insulator Box Stud, 7/8"-9 x 4-1/2" Long	8
14	E-5427	6AX1160	Insulator Box Stud, 7/8"-9 x 6" Long	8
15	E-3697	97QL399P2	Trunnion Grease Cap, 5/16" Dia. Bolt Holes, 7" Bolt Circle	2
15	E-3697-P	97QL399P2	Trunnion Grease Cap, 5/16" Dia. Bolt Holes, 7" Bolt Circle, Price Point	2
16	E-16787	-	Trunnion Nut & Hardware, Includes Trunnion Nut	2
17	E-3915	23QJ112B	Star Lock Washer, 4-7/8" OD x 1/4" Thick	2
E-3687 39QK27E; 39QK27F; 39QK326 Trunnion and Bushing Assembly		Trunnion and Bushing Assembly	2	
	E-3687-P	-	Trunnion and Bushing Assembly, Price Point 2	
19	E-3988	-	Transverse Torque Arm Kit, Full Ball Design 1	
20	E-14932	-	Insulator Pad Kit, Rubber, Includes E-2919 Upper and E-2920 Lower Insulator Pads and Hardware	1
20	GAFF12036	-	Insulator Pad Kit, Poly, Includes GAFF12010 Upper and GAFF12014 Lower Insulator Pads and Hardware	1



# CONCRETE TRUCKS



CHALMERS: 800 SERIES



HENDRICKSON: PRIMAAX®



HENDRICKSON: RS®



SAF-HOLLAND NEWAY: AD-123



SAF-HOLLAND NEWAY: ADZ

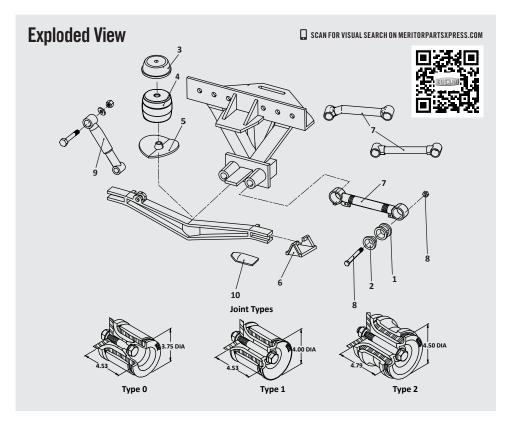


#### Truck, Drive Axle, Tandem, Bolster Spring / Rubber Pad





Chalmers 800 Series is a bolster spring suspension with walking beams, two load springs and eight torque arms. The suspension is known for being a reliable on road and off road system with high articulation. It is common to find the Chalmers 800 on dump trucks, cement trucks and other vocational vehicles.



#### **WEAR ITEMS**

Torque rod / arm bushings and caps, load cushions.

# **CHALMERS: 800 SERIES**



#### **X** TECH TIP

Change one rod at a time! Otherwise, axles will slide and make re-installation of rods very difficult.

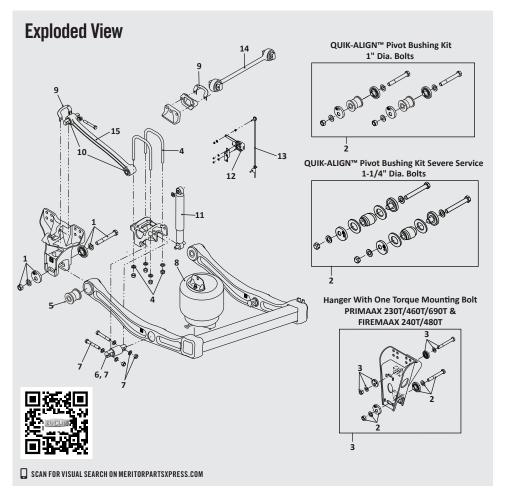
KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER Tandem
	E-4677A	22128	Torque Arm Bushing, Rubber, Type 0 & 1 Joints	16
	E-4677A-P	22128	Torque Arm Bushing, Rubber, Type 0 & 1 Joints, Price Point	16
	GAFF18919	-	Torque Arm Bushing, Poly, Type 0 & 1 Joints	16
	E-7766	800010	Torque Arm Bushing, Rubber, Type 2 Joints	16
	E-7766-P	800010	Torque Arm Bushing, Rubber, Type 2 Joints, Price Point	16
	GAFF11739	-	Torque Arm Bushing, Poly, Type 2 Joints	16
1 [	E-4678A	22129	Torque Arm Bushing, Rubber, Oversized, Type 0 & 1 Joints	As Required
	E-8702	22129	Torque Arm Bushing, Rubber, Oversized Version, OE Equivalent	As Required
	GAFF18920	-	Torque Arm Bushing, Poly, Oversized Version, Type 0 & 1 Joints	As Required
	E-7767	800009	Torque Arm Bushing, Rubber, Oversized, Type 2 Joints	As Required
	E-7767-P		Torque Arm Bushing, Rubber, Oversized, Type 2 Joints, Price Point	As Required
	GAFF18921	-	Torque Arm Bushing, Poly, Oversized, Type 2 Joints	As Required
	E-9571	800201	Spigot Cap, Type 1 Joint	16
2	E-9571-P		Spigot Cap, Type 1 Joint, Price Point	16
4	E-7768	800055	Spigot Cap, Type 2 Joint	16
	E-7768-P		Spigot Cap, Type 2 Joint, Price Point	16
	E-4688A	373028, 373020	Restrictor Can #28, Replaces Restrictor Can #20, 4-7/16" High x 12-5/8" Diameter	2
3	E-7758	373029	Restrictor Can #29, 5-1/8" High x 11-1/2" Diameter, High Center of Gravity	2
	E-4685	15002	Load Spring #20, 9-1/2" Diameter, Rubber	2
4	E-4685-P	15002	Load Spring #20, 9-1/2" Diameter, Rubber, Price Point	
	GAFF11740	-	Load Spring #20, 9-1/2" Diameter, Poly	2
	E-7769	800117, 800689	Spring Plate, 46–58K Low Mount For 54" Axle Spread	2
5	E-7770	800125, 800691	Spring Plate, 40–58K High Mount For 60" Axle Spread,	2
	E-14982	800685, 800119	Spring Plate, 40–58K High Mount For 60" Axle Spread, 46–58K Low Mount for 72" Axle Spread	2
6	E-7756	222083	Saddle, Most Axles	4
	E-14985	223157	Rigid Torque Arm, Upper, 15-7/8" Center-to-Center, Type 0 & 1 Joints	4
	E-14986	800049	Rigid Torque Arm, Upper, Curved Design 46–50K, Type 2 Joints	4
	E-14773	807250	Adjustable Torque Arm, 46K 21-3/4" Center-to-Center, Type 2 Joints	1
7	E-14774	807216	Adjustable Torque Arm, 46K 25" Center-to-Center, Type 2 Joints	1
' [	E-14987	807214	Adjustable Torque Arm, 21-1/2" Center-to-Center, Type 2 Joints	1
	E-14976	807240	Adjustable Torque Arm, 24" Center-to-Center, Type 2 Joints	1
	E-14989	807220	Adjustable Torque Arm, 22" Center-to-Center, Type 2 Joints	1
	E-14991	805220	Rigid Torque Arm, 22" Center-to-Center, Type 2 Joints	1
8	E-7774	K880640	Hardware Kit, Type 1 Joint, 5" Bolts	4
L	E-7773	K880231	Hardware Kit, Type 2 Joint, 5-1/2" Bolts	4
	M85301	800670	Shock Absorber, High Mount	4
9	M85305	800781	Shock Absorber, Low Mount	
	M85060	665174	Shock Absorber, Standard Mount	4
10	E-7765	700313	Wear Plate	As Required



# Truck, Drive Axle, Air Ride, Single or Multiple Axles, Transverse Torque Arm



The PRIMAAX is an air spring suspension designed for severe duty applications. This suspension features two front pivot bushings and two torque rods. The PRIMAAX suspension is commonly found on cement trucks, flatbed trucks and other specialty vocational applications. Each axle is independently supported allowing these suspensions to be stacked up for tandem or tridem applications.



# HENDRICKSON: PRIMAAX®



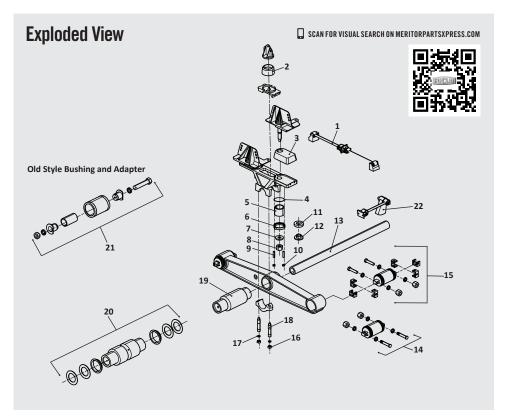
				OTV DO	DAVIE	
				QTY. PER AXLE		
KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	PRIMAAX® EX 23K/26K S/46K/52K S/69K/78K S, FIREMAAX EX	PRIMAAX® EX 26K/52K/78K, FIREMAAX EX 27K/31K/54K/62K	
				24K/27K S 48K/54K	2717,0117,0417,021	
1	E-14673A	60632-019 60632-006	Quik-Align Collar Service Kit, 1" Bolts, One Wheel End	2	2	
2	E-14025	60632-020	QUIK-ALIGN™ Pivot Bushing Service Kit, 1" Dia. Bolts, Includes Key No. 9, Axle Set. For Wheel End Kit: E-16350	1	1	
	E-17574 60632-043 QUIK-ALIGN™ Pivot Bushing Service Kit, Severe Service, 1" Dia. Bolts, with Severe Service Bushings and Wear Washers, Axle Set.  As Required		As Required			
3	E-16262	58821-011	Torque Rod Fastener & Alignment Kit, One Wheel End	-	2	
	E-UB8257-087	-	U-Bolt Assembly, Sq. Bend, 3/4"-16 Thd. x 6-3/8" Wide x 8-7/8" Long	4		
4	E-UB8257-11	-	U-Bolt Assembly, Sq. Bend, 3/4"-16 Thd. x 6-3/8" Wide x 11" Long	4	4	
	E-UB8257-12	-	U-Bolt Assembly, Sq. Bend, 3/4"-16 Thd. x 6-3/8" Wide x 12" Long	-	4	
_	E-13992	58648-000	Pivot Bushing, Rubber	2	2	
5	GAFF18821	-	Pivot Bushing, Poly	2	2	
	E-14026	60383-000	D-Pin Bushing Use with 3/4" Bolts, Rubber	2	-	
6	GAFF13627	-	D-Pin Bushing Use with 3/4" Bolts, Poly	2	-	
	E-17569	65381-000	D-Pin Bushing Use with 7/8" Bolts	-	2	
	E-17596	34013-117	D-Pin Bushing and Fastener Kit, Includes E-14026 Bushing and 3/4"-16 x 4-3/4" Long Bolts, Wheel End Set	2	2	
	E-17597	34013-478	D-Pin Bushing and Fastener Kit, Includes E-17569 Bushing and 7/8"-14 x 4-1/2" Long Bolts, Wheel End Set	2	2	
7	E-17598	34013-477	D-Pin Bushing and Fastener Kit, Includes E-17569 Bushing and 7/8"-14 x 4-3/4" Long Bolts, Wheel End Set	2	2	
	E-17599	34013-114	D-Pin Bushing and Fastener Kit, Includes E-17569 Bushing and 7/8"-14 x 5" Long Bolts, Wheel End Set	2	2	
	E-17600	34013-479	D-Pin Bushing and Fastener Kit, Includes E-17569 Bushing and 7/8"-14 x 5-1/2" Long Bolts, Wheel End Set	2	2	
8	See 700F Catalog	Various	Air Spring Assembly See Selection Guide	2	2	
9	E-5281	49689-000	Shim; 1/16" Thick, 4-3/8" Center to Center	As Required	-	
10	See Hendrickson Torque Rod Section in 700F	Various	Torque Rod Bushing. Most Hendrickson OE Torque Rods Are Not Rebushable. If Torque Rod Bushings Can Be Replaced, See Torque Rod Bushing Section for Replacement Bushings.	2	2	
	M85072	60657-003; 60657- 004; 60657-005; 60657-007	Shock Absorber, PRIMAAX EX, Most Drum Brake Applications, Except 12" Ride Height	2	-	
,,	M85967	60665-011	Shock Absorber, PRIMAAX EX, w/Drum Brake, 12" Ride Height	2	-	
11	M85962	68065-014	Shock Absorber, PRIMAAX EX, w/Air Disc Brakes, Except 12" Ride Height	2	-	
	M85965	60665-013	Shock Absorber, PRIMAAX EX, w/ Drum Brakes, Except 12" Ride Height	- 2 2		
12	E-11870	57977-000	Height Control Valve with Dump	1 1		
13	E-9625	-	Linkage Assembly; Universal Adjustable 3-5/8"—19-5/8" Range	1 1		
14	See Ultra Rod Section in 700F	Various	Transverse Torque Rod,	1	1	
See Hendrickson Torque Rod Section in 700F Torque Rod Assembly 2		2	2			



# Truck, Drive Axle, Bolster Spring / Rubber Pad, Tandem, Transverse Torque Arm for High Capacities



The RS is a bolster spring suspension that features a maximum of six springs (four standard springs and two optional overload springs), two or three per side, and a walking beam with a central bushing that acts as a pivot point. This suspension is common for severe duty applications. This system also features the standard Hendrickson four end beam bushings.



#### **WEAR ITEMS**

Bolster spring, center and end beam bushings.

# **HENDRICKSON: RS®**



#### **X** TECH TIP

Load cushions that are cut or damaged should be replaced. The free height of new cushions is 3.94". Used cushions that measure less than 3.68" when measured on a flat surface have taken a permanent set and should be replaced.

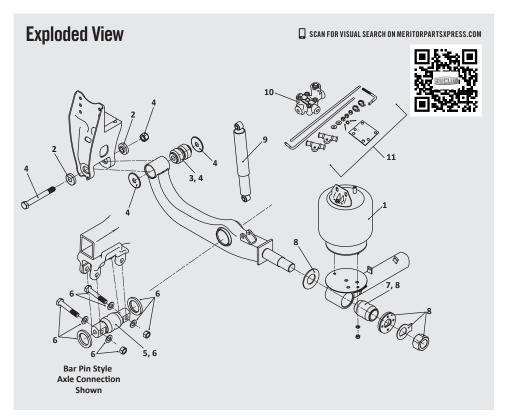
KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	
1	See Torque Rod Section, Page 94	Various	Torque Rod Assembly	2
2	E-2232	24209-000	Heavy-Duty Load Cushion RS-340 / 400 / 460 / 480 / 520, Rubber	2
	GAFF13649 - Heavy-Duty Load Cushion RS-340 / 400 / 460 / 480 / 520, Poly		Heavy-Duty Load Cushion RS-340 / 400 / 460 / 480 / 520, Poly	2
	E-1598A	48973-000	Load Cushion, 60 Durometer, Discontinued used E-1960, Rubber	4
3	,		4	
	E-1960	26953-000	Load Cushion, 70 Durometer	4
4	E-9418	50780-000	Saddle Bushing Ring	4
5	E-1940	19279-000	Bushing	4
6	E-1941	05917-000	Сар	4
7	E-1945	08536-000	Washer	4
8	E-1946	25151-000	Nut, 1-1/2"-12	4
9	E-1942	19111-001	5/8"-18, 5/8"-11 Bushing Cap Stud	8
10	E-1943	19114-000	Nut, 5/8"-18	8
11	E-2233	30208-000	Rebound Bumper	
12	E-7620	30251-000	Stop Nut	As Required
10	E-1842	44643-009	Cross Tube, 44-7/8"	1
13	E-9426	07622-003	Cross Tube, 46"	1
1.4	E-9325	34013-087	Bar Pin Bushing Kit, Non-Shim Type, Rubber	4
14	GAFF13607	-	Bar Pin Bushing Kit, Non-Shim Type, Poly	4
15	E-9326	34013-088	Bar Pin Bushing Kit, Shim Type	4
15	GAFF13596	-	Bar Pin Bushing Kit, Shim Type, Poly	4
16	E-1835	04842-000	7/8"-14 Saddle Cap Locknut	8
17	E-1834	22962-002	7/8" Hardened Washer	8
18	E-1947	09030-000	7/8"-14, 7/8"-9 Saddle Cap Stud	8
	E-1338	6664-000	Rubber Center Bushing Welded End Plug, RS340	2
	GAFF13500	-	Poly Center Bushing Welded End Plug, RS340	2
	E-1594	22279-000	Rubber Center Bushing Loose End Plug, RS340	2
19	E-6979	49400-000	Rubber Center Bushing Welded End Plug, RS400 / 460	2
13	GAFF13505	-	Poly Center Bushing Welded End Plug, RS400 / 460	2
	E-6980	49600-000	Rubber Center Bushing Loose End Plug, RS400 / 460	2
	GAFF13543	-	Poly Center Bushing Loose End Plug, RS400 / 460	2
	E-9359	29483-005	Rubber Center Bushing Welded End Plug, RS460 / 480 / 520 Extreme Duty, Transverse Rods Required	2
20	E-1546	30437-000	Bronze Center Bushing Kit, RS400 / 460 / 480 / 520	
	E-5308	34013-048	End Beam Bushing Kit, RS340, Includes Bushing, Adapter & Hardware	4
21	E-5309	34013-049	End Beam Bushing Kit, RS400, Includes Bushing, Adapter & Hardware	
21	E-9576	34013-073	End Beam Bushing Kit, RS460, Includes Bushing, Adapter & Hardware	4
	E-9577	34013-050	End Beam Bushing Kit, RS480 / 520, Includes Bushing, Adapter & Hardware	4
22	E-13988	60215-000	Two-Piece Transverse Torque Rod Kit, Includes Bushings	2



# Truck, Drive Axle, Air Ride, Single or Multiple Axles, Transverse Torque Arm



The AD Series suspensions are air ride suspensions that come in three different versions. The AD-123 (23,000 lbs), AD-126 (26,000 lbs), and AD-130 (30,000 lbs). This suspension is commonly used on vocational trucks such as liquid hauler trucks, cement trucks and other specialty applications. Each axle is independently supported allowing these suspensions to be stacked up for tandem or tridem applications.



# SAF-HOLLAND NEWAY: AD-123



KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	
	FS9471	90557146	Firestone Air Spring, Includes Mounting Bracket, 10" Ride Height	2
1	EAS9471	90557146	Euclid Air Spring, Includes Mounting Bracket, 10" Ride Height	2
	FS9472	90557147	Firestone Air Spring, Includes Mounting Bracket, 6-3/4" & 8-3/4" Ride Height	2
2	E-4267	90008120	Alignment Block, AD123 & AD126 Only	2
	E-9292	90008252	Beam Bushing, Pivot, Rubber, AD123 & AD126 Only	2
3	GAFF14514	-	Beam Bushing, Pivot, Poly, AD123 & AD126 Only	2
	E-16567	90008256	Bushing, Front Pivot, Rubber, AD130 Only	2
	E-9300A	48100260/SRK-200	Pivot Connection Kit, Includes Bushing & Hardware, AD123 Only	1
4	E-16562	48100427/SRK-563	Pivot Connection Kit, Includes Bushing & Hardware, AD126 Only	1
	E-16589	48100429/SRK-565	Pivot Connection Kit, Includes Bushing & Hardware, Heavy Duty, AD130 Only	1
_	E-10678 90008175 Bushing, Axle Connection, Bar Pin Style, Rubber, AD123 Only		2	
5 <b>E-16636</b> 90508012		90508012	Bushing, Axle Connection, Bar Pin Style, Rubber, AD126 Only	2
6	E-15340	48100315/SRK-452	Connection Kit, Axle, Bar Pin Style, Includes Hardware & Bushing, AD123 Only	
0	E-16638	48100313/SRK-450	Connection Kit, Axle Bar Pin, Includes Hardware & Bushing, AD126 Only	1
	E-4252	90008219	Bushing, Transverse Beam, Rubber, AD123 & AD126 Only	2
7	GAFF31592	-	Bushing, Transverse Beam, Poly, AD123 & AD126 Only	2
	E-9293	90008135	Bushing, Transverse Beam, Rubber, AD130 Only	2
	E-16624	48100276/SRK-214	Transverse Beam Connection Kit, Includes Bushing, Nut & Spacer Assembly, AD123 Only	1
8	E-16577	48100335/SRK-472	Transverse Beam Connection Kit, Includes Bushing, Nut & Spacer Assembly, AD126 Only	1
	E-16608	48100364/SRK-500	Transverse Beam Connection Kit, Includes Bushing, Nut & Spacer Assembly, AD130 Only	
9	M85906	90045099	Shock Absorber	2
9	M85909	90045132	Shock Absorber (Optional, 24-1/4" Extended Length)	2
10	E-13922	90554241	Height Control Valve	
11	E-16623	48100267/SRK-205	Linkage, Height Control Valve	1





# Truck, Drive Axle, Air Ride, Single or Multiple Axles, Transverse Torque Arm



The ADZ is an air spring suspension designed for severe duty applications. This suspension supports one axle and features two front pivot bushings and a V-Style Torque Rod. The ADZ suspension is commonly found on cement trucks and other specialty vocational applications. Each axle is independently supported allowing these suspensions to be stacked up for tandem or tridem applications.

# Pivot Bushing Connection Kit 1,9 2,9 3 7 7 7 8 Serial Number Tag Scan For Visibal Search on Meritor Part Syrress. Com

#### **WEAR ITEMS**

Air springs, shocks, bushings and height control valve

# SAF-HOLLAND NEWAY: ADZ



KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	
	E-10303	90008265	Bar-Pin Bushing, Rubber, Included in Kit E-17685	2
1	E-10303-P	90008265	Bar-Pin Bushing, Rubber, Price Point	2
	GAFF11729	-	Bar-Pin Bushing, Poly	2
	E-17678	90008264	V-Rod Thru Bolt Bushing, Rubber, Included in Kit E-17686	1
2	2 GAFF14537 - V-Rod Thru Bolt Bushing, Poly		V-Rod Thru Bolt Bushing, Poly	1
3	M85109	90045605	Shock Absorber	
	<b>E-17679</b> 90557368 Air Spring, 10" Ride Height, 123, 246, 369 Models		2	
4	E-17680	90557395	Air Spring, 12" Ride Height, 123, 246, 369 Models	2
	E-17681	90557392	Air Spring, 126, 252, 378 Models	2
5	E-17682	90008267	Bar-Pin Bushing, Rubber, Included in Kit E-17686	2
) 3	GAFF14536	-	Bar-Pin Bushing, Poly	2
6	E-17683	90008279	Beam End Bushing, Included in Kit E-17684 2	
7	E-17684	SRK-643	Pivot Bushing Connection Kit, Includes Key No. 6 & Mounting Hardware	
8	E-17685	SRK-644	Axle Bar-Pin Bushing Connection Kit, Includes Key No. 5 & Mounting Hardware	
9	E-17686	SRK-645	V-Rod Bushing Connection Kit, Includes Key No. 1, 2 & Mounting Hardware 1	



# VOCATIONAL TRAILERS



HUTCH: H900



MERITOR®: MTA



REYCO: 21B CAST

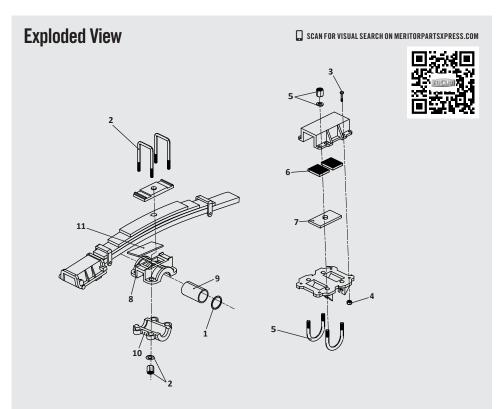


#### Trailer, Single Point Leaf Spring





H900 is a spring suspension that is a single point trunnion style. The system features leaf springs that pivot on a trunnion and extend out to the spring end caps. The spring end caps have rubber pads around the springs to reduce wear and increase ride performance. This system is commonly used on dump trailers. There are many trunnion and axle mounting options for these suspensions which require careful review.



See catalog 700F for other overslung and underslung axle and trunnion options.

#### **WEAR ITEMS**

Trunnion bushing, spring end pads.



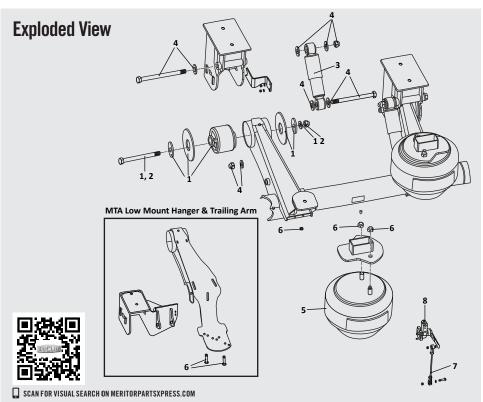
KEY No.	EUCLID Part No.	OEM Ref.	DESCRIPTION	
1	E-5219	895-00	Trunnion Washer; 4" ID x 5-3/4" OD x 3/16" Thick	2
2	E-UB8286-134	9639-01, 9639-02	U-Bolt Assembly, Sq. Bend, 1-1/8"-12 Thd. X 5-1/8" Wide x 13-1/2" Long	4
	E-UB8286-154	9639-03, 9639- 04, 9639-05	U-Bolt Assembly, Sq. Bend, 1-1/8"-12 Thd. x 5-1/8" Wide x 15-1/2" Long	4
3	E-4348	-	Hex Bolt 5/8"-11 x 2" Long	
4	E-2988	-	Hex Locknut 5/8"-11	
	E-UB8155-073	10060-01	U-Bolt Assembly, Rd. Bend, 3/4"-16 Thd. x 5" Wide x 7-3/8" Long	8
	E-UB8156-08	10061-01	U-Bolt Assembly, Rd. Bend, 3/4"-16 Thd. x 5-3/4" Wide x 8" Long	8
	E-UB8157-08	10062-01	U-Bolt Assembly, Rd. Bend, 3/4"-16 Thd. x 6" Wide x 8" Long	8
	E-UB8175-104	10064-01, 10064-02	U-Bolt Assembly, Rd. Bend, 1"-14 Thd. x 5" Wide x 10-1/2" Long	8
5	E-UB8177-114	10065-01	U-Bolt Assembly, Rd. Bend, 1"-14 Thd. x 5-3/4" Wide x 11-1/2" Long	8
	E-UB8176-114	10066-01	U-Bolt Assembly, Rd. Bend, 1"-14 Thd. x 6" Wide x 11-1/2" Long	
	E-UB8256-077	10063-02	U-Bolt Assembly, Sq. Bend, 3/4"-16 Thd. x 5" Wide x 7-7/8" Long	
	E-UB8271-104	10067-02	U-Bolt Assembly, Sq. Bend, 1"-14 Thd. x 5" Wide x 10-1/2" Long	
	E-UB8271-111	10067-03	U-Bolt Assembly, Sq. Bend, 1"-14 Thd. x 5" Wide x 11-1/8" Long	8
6	E-5227	814-00	Spring End Pad, Rubber	8
0	GAFF14087	-	Spring End Pad, Poly	8
	E-5228	10608-00	Alignment Adjustment Plate 3/8" Thick	4
7	E-5228-P	10608-00	Alignment Adjustment Plate 3/8" Thick, Price Point	4
	E-15463	19059-01	Alignment Adjustment Plate 5/8" Thick	4
8	E-5210	891-00	Upper Trunnion Hub	2
	E-5216	890-00	Trunnion Bushing, Rubber	2
9	GAFF14027	-	Trunnion Bushing, Poly	2
	E-16397	23276-01	Free Oscillating Trunnion Bushing	
	E-5211	898-00	Lower Trunnion Hub, Overslung	2
10	E-5211-P	898-00	Lower Trunnion Hub, Overslung, Price Point	
	E-5212	892-00	Lower Trunnion Hub, Underslung Trunnion	2
11	E-25197	12919-01	Spring Liner Pad, 4-3/4" Wide x 10" Long	



#### Trailer, Air Ride, Single Axle



The MTA suspension is a trailing arm air suspension. It comes in five versions, three top-mount models ranging from 23,000- to 30,000-pound capacities and two recently introduced low-mount models in 25,000- and 30,000-pound per axle capacities. The MTA suspension features a distinctive groove or channel in the outer alignment collar.



## 



#### **X** TECH TIP

Loose fasteners that are allowed to operate for any period of time will result in irreversible damage. Retightening a worn fastener will not correct a situation created by loose operation. It is imperative that fastener and other affected parts including bushings be replaced.

KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	
1	E-17040	KIT 11350	Pivot Bolt and Bushing Kit, MTA23T Only, Includes Bushing, Alignment Collars, & Hardware	2
1	E-17041 KIT 1135		Pivot Bolt and Bushing Kit, All MTA25 $\&$ 30 Models, Includes Bushing, Alignment Collars, $\&$ Hardware	2
2	E-17042	KIT 11352	Pivot Bolt Kit, MTA23T Only, Includes Bolt, Washers & Nut	2
	E-17043	KIT 11353	Pivot Bolt Kit, All MTA25 & 30 Models, Includes Bolt, Washers & Nut	2
3	E-17698	A-7805-F-1020	Shock Absorber, All Top Mount Models	
3	E-17717 A-7805-S-1163 Shock Absorber, All Low Mount Models		2	
4	E-17046	KIT 11356	Shock Absorber Hardware Kit, All Top Mount Models, Includes Bolts, Washers & Nuts	
4	E-17067	KIT 11432	Shock Absorber Hardware Kit, All Low Mount Models, Includes Bolts, Washers & Nuts	2
	E-17688	A-2258-H-1568	Air Spring, MTA23T Only	2
	FS8091	A-2258-P-1576	Air Spring, MTA25T Only	2
	EAS8091	A-2258-P-1576	Euclid Air Spring, MTA25T Only	
5	E-17692	A-2258-Q-1577	Air Spring, MTA30T Only	
	E-17693	A-2258-H-1776	Air Spring, MTA25L & 30L, 6.5"-8" Ride Height	2
	E-17689	A-2258-J-1726	Air Spring, MTA25L & 30L, 9"-11" Ride Height	2
	E-17694	A-2258-J-1778	Air Spring, MTA25L & 30L, 12"—19" Ride Height	2
6	E-14350	KIT 11203	Air Spring Hardware Kit, Top Mount Only, Includes Upper and Lower Nuts	2
0	E-17030	KIT 11455	Air Spring Hardware Kit, Low Mount Only, Includes Upper Nuts and Lower Bolts	2
7	E-17048	203159-5	Linkage Assembly, All Top Mount Models, Use with Hadley Style HCV	1
	E-17066	203159-9	Linkage Assembly, All Low Mount Models, Use with Hadley Style HCV	1
	E-17049	A-7806-M-1053	Height Control Valve, Remove Air to Dump, All Top Mount Models Prior to November 2019	
8	E-14677	A-7806-L-1052	Height Control Valve, No Dump, All Top Mount Models Prior to November 2019	
0	E-17050	A-7806-Y-1065	Height Control Valve, Remove Air to Dump, All Low Mount Models Prior to November 2019	1
	E-17051	A-7806-X-1064	Height Control Valve, No Dump, All Low Mount Models Prior to November 2019	1

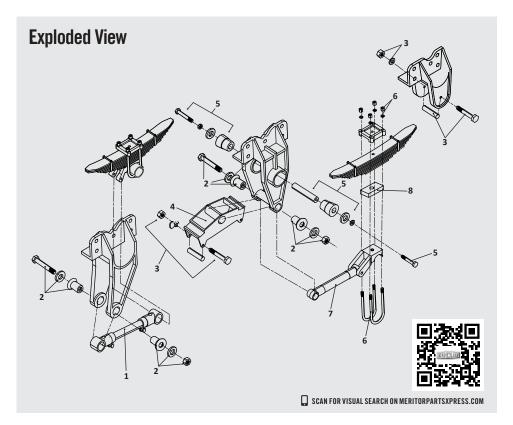


#### Trailer, Leaf Spring, Tandem or More Axles





Reyco 21B is a leaf spring suspension that comes in multiple axle spacing configurations, 44" to 60". The suspension comes in two major variants the cast and fabricated version. The hangers and equalizers for each version are not interchangeable. The Reyco 21B is popular with vocational trailers.



#### **WEAR ITEMS**

Equalizers and bushing, torque arms and bushings.

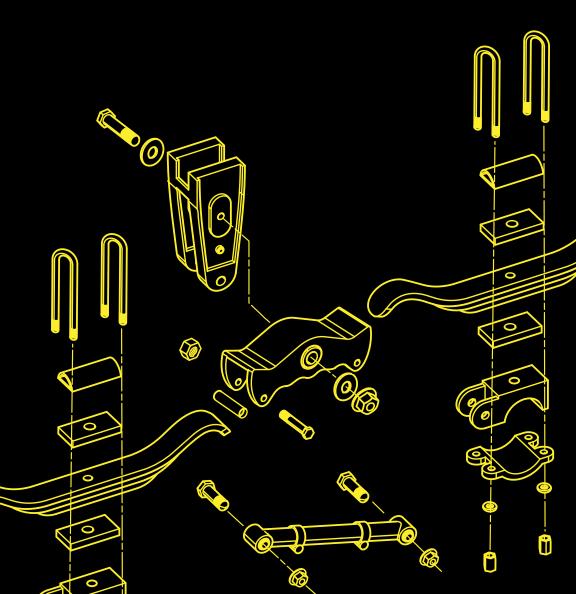
# REYCO: 21B CAST – 42"-49" AXLE SPACING



KEY No.	EUCLID Part no.	OEM Ref.	DESCRIPTION	QTY. PER Tandem
	E-3283A	15172-01	Adjustable Torque Arm without Bushings, Rear 42" – 44" Axle Spacing, Front 49"–109" Axle Spacing	1
1	E-3284A	15173-01	Adjustable Torque Arm without Bushings, Rear 49"—109" Axle Spacing	1
	E-3284A-P	15173-01	Adjustable Torque Arm without Bushings, Rear 49"—109" Axle Spacing, Price Point	1
2	E-1312A	TK18997	Torque Arm Bushing Kit Includes Rubber Bushing and Hardware	8
	GAFF999545	-	Torque Arm Bushing Kit Includes Poly Bushing and Hardware	8
3	E-1975	TK19011	Spring Roller Assembly Includes Roller and Hardware	6
	E-2846A	21725-01	ADI Equalizer without Bushing, 49" Axle Spacing	2
4	E-10768A	25222-01	ADI Equalizer without Bushing, 42"—44" Axle Spacing	2
	E-16477	T-5427	Equalizer, Steel, 49" Axle Spacing, without Bushing	2
_	E-3976 TK18998 Equalizer Bushing Assembly Includes Rubber Bushing and Hardware		2	
)	GAFF15075		Equalizer Bushing Assembly Includes Poly Bushing and Hardware	2
	E-UB5165-14	Various	U-Bolt Assembly, Rd. Bend, 7/8"-14 Thd. x 5" Wide x 14" Long	8
	E-UB5165-18	Various	U-Bolt Assembly, Rd. Bend, 7/8"-14 Thd. x 5" Wide x 18" Long	
6	E-UB5161-14	Various	U-Bolt Assembly, Rd. Bend, 7/8"-14 Thd. x 3" Wide x 14" Long	
	E-UB5161-18	Various	U-Bolt Assembly, Rd. Bend, 7/8"-14 Thd. x 3" Wide x 18" Long	8
	E-2855	15178-01, T-7635	Torque Arm, Rigid, without Bushings, Rear 44" Axle Spacing, Front 49"—109" Axle Spacing	1
7	E-2856	15179-01, T-2293	Torque Arm, Rigid, without Bushings, Rear 49" Axle Spacing	1
	E-2855	T-7635	Torque Arm, Rigid, Rear 44", Front 50"—109" Axle Spacing, 16-1/4" Center-to-Center	1
	E-9562	T-7555	Spacer, 1/2"	As Required
	E-9563	T-7716	Spacer, 1"	As Required
8	E-9564	T-7654	Spacer, 1-1/2"	As Required
	E-2878	T-7655	Spacer, 2"	
	E-9559 11851-01 Equalizer Stiffener Plate, Steel Equalizer Only		Equalizer Stiffener Plate, Steel Equalizer Only	As Required
-	E-9560	11852-01	Equalizer Wear Pad, Steel Equalizer Only	As Required
	E-9561	15630-01	Hanger Weld-On Wear Plate, Front & Rear	As Required



# APPENDIX COMPONENT GUIDES



## **TORQUE ROD / ARM SELECTION GUIDE**

#### ADJUSTABLE, RIGID, AND V-ROD COMPLETE ASSEMBLIES

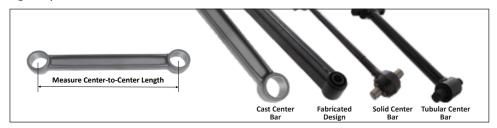
Torque Rods / Arms are available in variety of sizes and bushing styles depending on the application. The options below can be found in the parts lists or illustrated section for each suspension. While there are many torque arms contained in the 700F Euclid Suspension catalog, almost any of these one piece torque rods that are not included in this catalog can be ordered through Euclid's S.O.S. program.



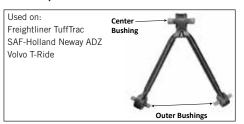
#### **Adjustable Torque Rods (Trailer Suspensions)**



#### **Rigid Torque Rods**



#### V-Rod Torque Rods



#### **Rotational Pin Poly Torque Rod Bushings**

Rotating pin simplifies bushing installation and mounting of torque rods.

#### **BUSHING TYPES**

ONE-PIECE	STRADDLE Mount	STRADDLE MOUNT Rotational pin Poly
Note the ID provides clearance for the mounting bolt.	Length is the center-to-center dimension between the holes.	Optional rotating pin replacement for standard straddle mount bushings.

## **TORQUE ROD / ARM SELECTION GUIDE**

#### TORQUE ROD KITS (TRUCK SUSPENSIONS)

Several different styles of Torque Rod / Arms Kits are available from Euclid. These require measurement, cutting-to-length and welding in the field to produce the required torque rod. This design reduces inventory and provides the maximum flexibility when servicing a fleet customer.



Access the Torque Rod
Visual Product Tool
by scanning the
QR code.

#### Hendrickson Ultra Rod®

These two piece kits are available from Euclid with a wide variety of bushings to cover virtually every application. (p. 96)



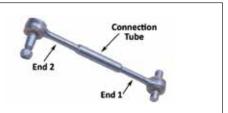
#### Hendrickson Ultra Rod Plus®

Euclid stocks the empty hub end and empty spacer ends that require Ultra Rod Plus Bushings. Select and install the proper bushings in the field. (See 700F)



#### Uni-Rod® Kits from ZF Lemforder

These three piece kits offer a full ball socket design which provides for maximum movement or articulation in the suspension. These are typically used for heavy duty trucks and tractors that operate in environments that require high articulation. (p. 98)



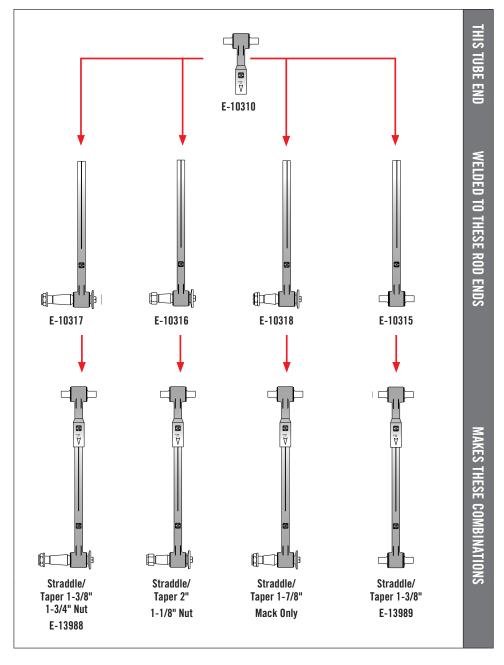
#### BUSHING TYPES CONTINUED

STRAIGHT TWO-PIECE	TAPERED Two-Piece	TAPERED Stud
Two bushings are typically required to service one component end.	Two bushings are required to service one component or component end.	Note the thread size and length of the tapered section.

# **HENDRICKSON ULTRA ROD® (TRUCK SUSPENSION)**

#### **ULTRA ROD OPTION CONFIGURATIONS**

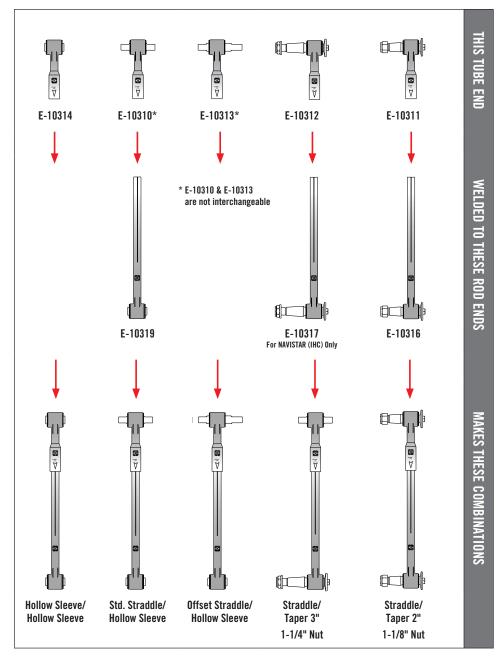
Ultra Rods require the proper selection of both the proper selection of a Tube End and Rod End. Rod end is cut to length and welded to the tube end in the field. Refer to Hendrickson publication 59310-002 for complete welding and assembly instructions.



# **HENDRICKSON ULTRA ROD® (TRUCK SUSPENSION)**

#### **ULTRA ROD OPTION CONFIGURATIONS**

Ultra Rods require the proper selection of both the proper selection of a Tube End and Rod End. Rod end is cut to length and welded to the tube end in the field. Refer to Hendrickson publication 59310-002 for complete welding and assembly instructions.

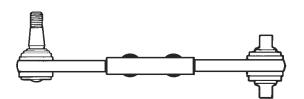


# **UNI-ROD® KITS: INDIVIDUAL COMPONENTS (TRUCK SUSPENSION)**

Uni-Rod Kits Require Two Ends and a Connector Tube. Rod end is cut to length and welded in the field.

See page CMP-91 in the 700F for complete welding and assembly instructions

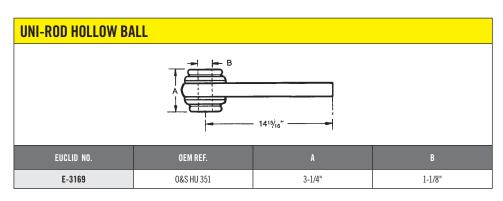
Kits are available for most popular applications and include nuts and washers (if applicable). See 700F for kit options.



# UNI-ROD BALL STUD Thread Euclid Nut 11/8"-12 = E-2079 11/4"-12 = E-2017

#### Nut Not Furnished

EUCLID NO.	OEM REF.	A THREAD	В	C
E-3165	0&S BU 235	1-1/8"-12	3-3/8"	6-9/64"
E-3166	0&S MU 239	1-1/4"-12	3-3/8"	6-11/64"
E-3167	0&S BU 347	1-1/4"-12	3-3/4"	7-43/64"
E-3168	0&S MU 318	1-1/4"-12	3-3/4"	6-39/64"



# **UNI-ROD® KITS: INDIVIDUAL COMPONENTS (TRUCK SUSPENSION)**

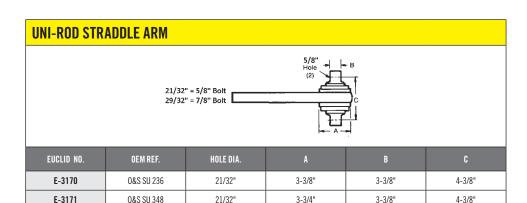
Uni-Rod Kits Require Two Ends and a Connector Tube. Rod end is cut to length and welded in the field. See page CMP-91 in the 700F for complete welding and assembly instructions

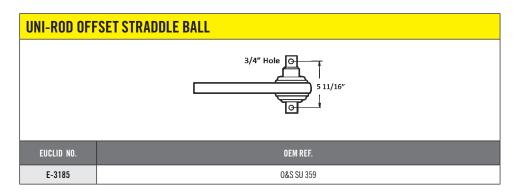
29/32"

Kits are available for most popular applications and include nuts and washers (if applicable). See 700F for kit options.

E-3987

0&S BU 372

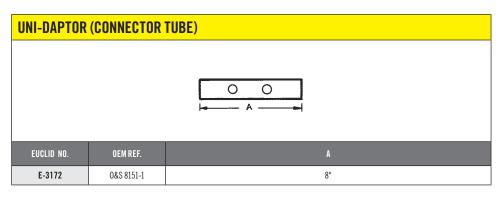




3-3/4"

3-3/4"

4-3/8"



# HENDRICKSON INTRAAX® SERIES AIR SPRING SELECTION GUIDE

MODEL	EUCLID NO.	NOTES AND COMMENTS				
MODEL		OEM REF.				
AAEDL _	\$.0.\$.	S-24445	9" Ride Height			
	\$.0.\$.	S-24446				
AAEDT 30K	\$.0.\$.	S-25319	All			
	FS9626 / EAS9626	S-23720	23K — 6-1/2 – 7-1/2" Ride Height			
	FS9621	S-23613	23K — 8 – 9" Ride Height			
	FS9619	S-23614	23K — 12 – 19" Ride Height			
AAL 23K/25K/30K	FS9644 / EAS9644	S-23721	25K — 6-1/2 – 7-1/2" Ride Height			
	FS9646	S-23611	25K — 8 – 9" Ride Height			
	FS9645 / EAS9645	S-23612	25K — 12 – 19" Ride Height			
	\$.0.\$.	S-25871	30K — 8 – 9" Ride Height			
	S.O.S.	S-25872	30K — 12 – 19" Ride Height			
	FS9626 / EAS9626	S-23720	6-1/2 – 7-1/2" Ride Height Standard Pressure			
	FS9621	S-23613	8 – 9" Ride Height Standard Pressure			
AANL 23K	FS9619	S-23614	12 – 17" Ride Height Standard Pressure			
AANL 23N	FS9644 / EAS9644	S-23721	6-1/2 – 7-1/2" Ride Height Low Pressure			
	FS9646	S-23611	8 – Ride Height Low Pressure			
	FS9645 / EAS9645	S-23612	12 – 17" Ride Height Low Pressure			
AANLS 20K	FS9644 / EAS9644	S-23721	All			
	FS8614	S-26773	12 – 13" Ride Height			
	FS8709 / EAS8709	S-21800	13-1/2 – 19" Ride Height Standard Pressure			
	FS8091 / EAS8091	S-20901	13-1/2 – 19" Ride Height Low Pressure			
AANT 23K	E-17576	S-35510; S-39400	ZMD, 14 – 17" Ride Heights, Std Travel Only, Use Downstop E-17 for 14" Ride Ht & 16" Ride Height with Bolt on Frame Brackets Use E-17595 for 15 – 17" Ride Heights Including 16" Ride Heig with Weld on Frame Brackets			
	FS8709 / EAS8709	S-21800	23K Models			
	E-17576	S-35510; S-39400	23K Models, ZMD, 14-19" Ride Heights, Std Travel Only, Use Dov stop E-17594 for 14 & 16" Ride Ht (Raised Center Axle w/ Limit Rebound) & E-17595 for 15 – 17" Ride Heights			
AAT	FS8091 / EAS8091	S-20901	25K Models			
	E-17579	S-39401	25k Models, ZMD Composite Piston, 14 – 19" Ride Heights, Std Tr Only, Use Downstop E-17594 for 14 & 16" Ride Ht (Raised Center w/ Limited Rebound) & E-17595 for 15 – 17" Ride Heights			
	FS8774 / EAS8774	S-25873	30K Models			
	FS9626 / EAS9626	S-23720	6-1/2 – 7-1/2" Ride Height Standard Pressure			
	FS9621	S-23613	8 – 9" Ride Height Standard Pressure			
AAZL 23/46K -	FS9619	S-23614	12" Ride Height Standard Pressure			
	FS9644 / EAS9644	S-23721	6-1/2 – 7-1/2" Ride Height Low Pressure			
	FS9646	S-23611	8 – 9" Ride Height Low Pressure			
	FS9645 / EAS9645	S-23612	12" Ride Height Low Pressure			
	FS8709 / EAS8709	S-21800	13-1/2 – 17" Ride Height Standard Pressure			
AAZNIT OOK	FS8091 / EAS8091	S-20901	13-1/2 – 17" Ride Height Low Pressure			
AAZNT 23K	E-17578	S-39400	ZMD, 13-1/2 — 17" Ride Height, Use Downstop E-17594 for 14" Ride Ht & E-17595 for 15 — 17" Ride Heights			

# **HENDRICKSON INTRAAX® SERIES AIR SPRING SELECTION GUIDE**

INTRAAX SERIES SUSPENSION AIR SPRING SELECTION GUIDE					
MODEL	EUCLID NO. OEM REF. NOTES AND COMMENTS				
HKANT 40K	FS8713 / EAS8713	S-22948	Before Jan 2008		
	FS9978 / EAS9978	S-28929	Composite Piston, After Jan 2008		
	E-17575	S-33161	ZMD Built Before Jan 2008, Use Downstop E-17594		
	E-17492	S-34733	ZMD Built After Jan 2008, Use Downstop E-17594		
FS8709 / EAS8709		S-21800	15" Ride Height		
HKANT69K23	FS8708 / EAS8708	C-21966	16 & 18" Ride Height		
HKANT/HKAT 46K / HKA200	FS8709 / EAS8709	S-21800	Less Than 16" Ride Height		
	FS8713 / EAS8713	S-22948	16" & Larger Ride Height		
IIVAT FOVUIVA O FO	FS8091 / EAS8091	S-20901	14 – 15" Ride Height		
HKAT 50K/HKA250	FS8093	S-23748	16 — 19" Ride Height		
HKAT 69K25	FS8093 S-23748 All		All		
LILTDAA IZ LITIZAIT AOIZ	E-17492	S-34733	ZMD Built Before March 2019, Use Downstop Kit E-17593		
ULTRAA-K UTKNT 40K	E-17577	S-38000	ZMD Built After March 2019		
VANTRAAX HKAL 46K	<b>FS9621</b> S-23613 9, 10, and 11" Ride Height		9, 10, and 11" Ride Height		
VANTRAAX HKARL	FS9619	S-23614	12" Ride Height		
46K Slider	FS9621	S-23613	All		

Note: Part Numbers Beginning with FS are Genuine Firestone Air Springs. Part Numbers Beginning with EAS are Euclid Air Springs.

# HENDRICKSON INTRAAX® SHOCK ABSORBER SELECTION GUIDE

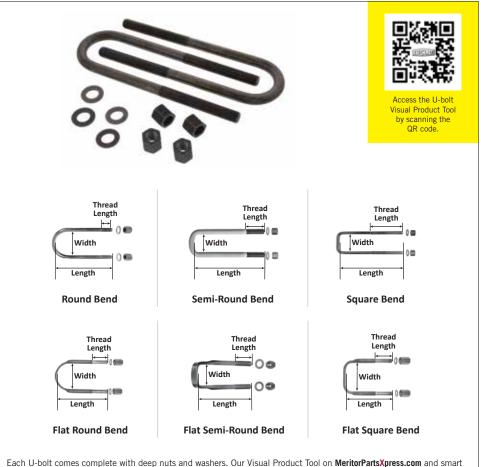
MODEL	EUCLID NO.	OEM REF.	DESCRIPTION	NOTES AND COMMENTS			
M85939 S-24579 Standard Duty			Front; 9" Ride Height				
AAEDL	M85738	S-24023	Standard Duty Shock	Front; 12" Ride Height			
	S.O.S.	S-23316	<del>                                     </del>	Front; 12 - Nide Height			
			Standard Duty Shock				
-	M85916	S-25436	Standard Duty Shock	Rear; 9 – 12" Ride Height			
	M85337	S-25437	Standard Duty Shock	Rear; 14 – 17" Ride Height			
-	S.O.S.	S-23316	Standard Duty Shock	Front; 14" Ride Height; Extended Service & High Damping			
AAEDT 30K	M85338	S-25515	Standard Duty Shock	Front; 15 & 17" Ride Height; Extd Service & High Damping			
-	M85916	S-25436	Standard Duty Shock	Rear; 14 & 15" Ride Height; Extended Service			
	\$.0.\$.	S-25512	Standard Duty Shock	Rear; 16 & 17" Ride Height; Extended Service			
-	M85045	S-23651	Standard Duty Shock	Front Standard; 6-1/2 — 9" Ride Height			
	M85000	S-23566	Standard Duty Shock	Front Standard; 12" Ride Height			
ļ	M85029	S-2212	Standard Duty Shock	Front Standard; 14 – 19" Ride Height			
ļ	S.O.S.	S-20345	Standard Duty Shock	Rear; 6-1/2 – 7-1/2"; Ride Height			
	M85939	S-24579	Standard Duty Shock	Rear; 6-1/2 – 9" Ride Height; Extended Service			
AAL 23K/25K/30K	M85916		Standard Duty Shock				
	M89430	S-25436	Premium Adjustable Shock Absorber	Rear; 9 – 12" Ride Height			
	M85738	S-24023	Standard Duty Shock	Rear; 12" Ride Height; Extended Service			
	S.O.S.	S-23316	Standard Duty Shock	Rear; 14 – 19" Ride Height; Extended Service			
	M85337	S-25437	Standard Duty Shock	Rear; 14 – 17-1/2" Ride Height			
L	M85045	S-23651	Standard Duty Shock	6-1/2 — 9" Ride Height; Standard			
AANL 23K	M85939	S-24579	Standard Duty Shock	6-1/2 — 9" Ride Height; Extended Service			
	M85338	S-25515	Standard Duty Shock	12 – 17" Ride Height; Extended Service			
	M85045	S-23651	Standard Duty Shock	Front Standard; 6-1/4 — 9" Ride Height			
[	M85000	S-23566	Standard Duty Shock	Front Standard; 12" Ride Height			
AANLS 20K	M85338	S-25515	Standard Duty Shock	Rear; 6-1/4 — 7" Ride Height			
AAINLS ZUK	S.O.S.	S-23316	Standard Duty Shock	Rear; 9" Ride Height			
	M85939	S-24579	Standard Duty Shock	6-1/4 — 9" Ride Height; Extended Service & High Damping			
	M85738	S-24023	Standard Duty Shock	12" Ride Height; Extended Service & High Damping			
	M85938	S-23743	Standard Duty Shock	Front; 12" Ride Height; Extended Service and High Dampin			
	M85939	S-24579	Standard Duty Shock	Front; 13" Ride Height; Extended Service			
AANT 23K	M85045	S-23651	Standard Duty Shock	Front; 13" Ride Height; Standard			
	M85911	S-23361	Standard Duty Shock	13-1/2 – 17" Ride Height; Standard / 13-1/2 – 19" Ride Height Limited Rebound			
	M85000	S-23566	Standard Duty Shock	13-1/2 — 19" Ride Height; Standard			
	M85738	S-24023	Standard Duty Shock	13-1/2" — 19" Ride Height; Extended Service with High Damping			
	M85738	S-24023	Standard Duty Shock	All 30K & some 23 & 25K with High Damping			
AAT	M85000	S-23566	Standard Duty Shock	Standard Duty all 23 & 25K			
			1	1			

# HENDRICKSON INTRAAX® SHOCK ABSORBER SELECTION GUIDE

INTRAAX SERIES SUSPENSION SHOCK ABSORBER SELECTION GUIDE					
MODEL	EUCLID NO.	OEM REF.	DESCRIPTION	NOTES AND COMMENTS	
	M85045	S-23651	Standard Duty Shock	6-1/2 — 9" Ride Height; Standard	
AAZL 23/46K	M85000	S-23566	Standard Duty Shock	12" Ride Height; Standard	
	M85939	S-24579	Standard Duty Shock	6-1/2 — 9" Ride Height; Extended Service	
	M85738	S-24023	Standard Duty Shock	12" Ride Height; Extended Service	
AAZNT 23K	M85000 S-23566 Standard Duty Shock		12 – 17" Ride Height; Standard Travel		
AAZINI ZON			Standard Duty Shock	12-17" Ride Height	
HKANT 40K	M83128	S-24088	Standard Duty Shock	All	
HKANT46K	M85000	S-23566	Standard Duty Shock	All	
HKANT69K	M85000	S-23566	Standard Duty Shock	All	
HKAT 46K / HKA200	M85000	S-23566	Standard Duty Shock	All	
HKAT 50K / HKA250	M85738	S-24023	Standard Duty Shock	All	
HKAT 69K25	M85738	S-24023	Standard Duty Shock	All	
ULTRAA-K UTKNT 40K	See INTRAAX Series Suspension Air Spring Selection Guide	Various	Shock Absorber	ZMD Air Spring / Shock Absorber	
VANTRAAX HKAL 46K	M85000	S-23566	Standard Duty Shock	All	
VANTRAAX HKARL 46K Slider	M85000	S-23566	Standard Duty Shock	with Drum Brakes	

## **U-BOLT SELECTION GUIDE**

#### **MEASURING AND TYPES OF U-BOLTS**



Each U-bolt comes complete with deep nuts and washers. Our Visual Product Tool on MeritorPartsXpress.com and smart part numbering system make it easy to identify the proper U-bolt to fit your needs.

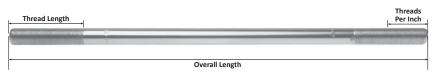
#### **X** TECH TIP

**Do not reuse U-Bolts.** Used U-Bolts may be damaged, stretched, or have rust which could lead to premature failure.

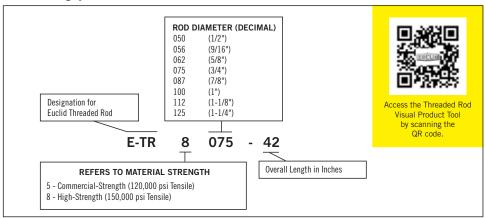
### THREADED ROD SELECTION GUIDE

#### **MEASURING THREADED RODS**

Each threaded rod is marked at the center line to ensure precise bending. When in between sizes, round up to the next threaded rod length. Use the Visual Product Tool and smart part numbering system to identify the proper threaded rod.



#### **Part Numbering System**



#### Hardware

HARDENED WASHERS /	THREAD SIZE							
HI-NUTS	1/2" - 20	9/16" - 18	5/8" - 18	3/4" - 16	7/8" - 14	1" -14	1-1/8" - 12	1-1/4" - 12
0	E-9603	E-9604	E-2547	E-2545	E-2546	E-2975	E-2548	E-2934
	E-9605	E-9606	E-3000	E-3001	E-3002A	E-3003	E-3004	E-3005

#### **X** TORQUE, TORQUE, TORQUE!

The proper tightening of U-bolts is critical to the life of Suspension components. Loose U-bolts are the leading cause of misalignment, spring breakage and other component failures.

OEMs recommend that U-Bolts be torqued at time of installation, after first 1,000 miles and periodically thereafter.

Refer to the vehicle or suspension supplier's service manual for required torque values and retorquing specifications.

#### **HEIGHT CONTROL VALVE SELECTION GUIDE**

#### **HEIGHT CONTROL VALVE (HCV) DEFINITIONS**

#### Arm Length

For a valve to function in the optimum manner the arm length must match that of the OE application. Several valves have multiple holes in the arm for attaching the linkage which provides more flexibility and opportunities to match the OE design.

- While a valve will operate with an arm length that is different than the OEM specification, it will not perform in the
  optimal manner.
- Some valves have arms that can be removed and replaced. Barksdale valves have arms that should not be remove or replaced since this will alter the performance of the valve.

#### **Dump Feature**

Dump valves can operate in one of two manners:

- Dump valve opens when pressure is applied to the dump port. In this case the air line to the dump port is typically
  connected to a button located on the dash board. When activated by the driver, this provides the air pressure
  necessary to actuate the dump feature in the HCV and dump air to the air springs.
- Dump valve opens when pressure is removed from the dump port. The dump port is on these valves is connected to
  the air brake system so when the brake pressure is dumped and the spring brakes are set, the dump feature in the
  HCV is actuated and it dumps air to the air springs.

#### **Fitting Types**

A number of fitting types are available to provide the connection to the air tubing. 1/4" NPT compression fittings and the newer Push to Connect (PTC) options are the most common. Not every HCV will be available with every fitting type so adapters can be used when necessary to provide the desired connection.

#### Linkage

All HCVs have some type of linkage that attaches the valve arm to the axle. Depending upon the application, the linkage can be a simple straight steel or aluminum shaft with ends which attach to the valve and axle or may be a more complicated design which may be required to avoid interference with nearby components. If the linkage is not damaged and a "like for like" HCV is available, then the linkage can often be reused.

#### SELECTING THE PROPER HEIGHT CONTROL VALVE

The proper Height Control Valve can be determined several different ways.

- 1. Using the OEM number from the existing HCV (if available). Pages 108 & 109 show all HCVs in the Euclid suspension program by OEM number. Many other OEM part numbers are available through Euclid's SOS program.
- 2. If the OEM part number or HCV is not available, other valves may be available including universal valves. In this case you must first determine whether a dump style valve or no dump valve is required. Once this is determined, the arm length should be matched and mounting and fitting options should be evaluated.

Universal Valves are shown below. See page 110 for more details on Euclid's Universal Height Control Valves

#### UNIVERSAL HEIGHT CONTROL VALVES

Euclid Offers Several Universal Height Control Valves Which Can Be Used In Most Applications

APPLICATION	EUCLID PART NO.	LINK / HADLEY MODEL		
No Dump	E-14729	Next Gen		
Applied Air To Dump	E-14731	Next Gen		
Remove Air To Dump	E-14730	Next Gen		

### **HEIGHT CONTROL VALVE SELECTION GUIDE**

### HEIGHT CONTROL VALVE MANUFACTURER AND MODEL IDENTIFICATION WITH INTEGRATED DUMP FEATURE — WITH INTEGRATED DUMP FEATURE -NO DUMP **DUMP WHEN AIR PRESSURE IS APPLIED** DUMP WHEN AIR PRESSURE IS REMOVED Barksdale Series And Description — Immediate Response 55521 Series Non Dump Valve - Plastic Body 52341 Series, Integral Dump Feature 54341 Series - Negative Air Pressure to 52321 Series Non Dump Valve - Aluminum Body Actuate Dump valve Hadley Series and Description — Immediate Response 450 Series Non Dump Valve 500 Series Dump Valve 500 Series Reverse Actuation Dump Valve Next Gen Non Dump Valve Next Gen Pressure Dump Valve Next Gen Zero Pressure Dump Valve Haldex Series and Description -- Immediate Response IR Series with Dump Valve IR Series Non Dump Valve PR Series Non Dump Valve PR Series w/ Normally Open Dump Valve PR Series w/ Normally Closed Dump Valve Haldex Series and Description -**Delayed Response** CR Series w/ Normally Closed Dump Valve CR Series Non Dump Valve CR Series w/ Normally Open Dump

# HEIGHT CONTROL VALVE CROSS REFERENCE

BARKSD	BARKSDALE — NO DUMP STYLE FOR HENDRICKSON APPLICATIONS							
OEM Ref.	MFG./ Model	ARM Length	APPLICATION	FITTINGS/ Portsize	BRACKET Included	LINKAGE Included	VALVE ONLY Euclid No.	EUCLID No.
60826-000	52321 Series	5", 6-7/8" & 7-1/2"	HA360, 400, 460 Air Ride	1/4" NPT	Yes	No	N/A	E-11494
VS-227	52321 Series	5", 7-3/8" & 8-1/2"	INTRAAX and VANTRAAX	1/4" NPT	Yes	No	N/A	E-11855
60961-155	55521-Q141- 320110	5-3/4"	Airtek for International Dual HCV Conversion, Prior to 08/09	PTC	No	Yes	N/A	E-15130
59935-003	55521-Q116	5-3/4"	Airtek for Mack Vehicles, Prior to 03/05	PTC	No	No	-	E-15151
64089-000	55521-Q116- 32071	5-3/4"	Airtek for Mack Vehicles, Prior to 03/05 w/12 & 12.5k Axles	PTC	Yes	Yes	E-15151	E-14013
64094-000	55521 Series	5-3/4"	Airtek For Mack Vehicles, Prior to 03/05 w/13.2 & 14.6k Axles	PTC	Yes	Yes	E-15151	E-14014
59427-006	55521-Q116- 32071	5-3/4"	Airtek for Mack Vehicles	PTC	No	Yes	-	E-15150
59427-013	55521-Q141- 320110	5-3/4"	Airtek for International Vehicles, Left Hand	PTC	No	Yes	-	E-15095
59935-011	55521-Q160	6"	Airtek for International IC Buses, Right Hand	PTC	No	No	-	E-13996
59935-004	55521-Q119	7"	Airtek for Blue Bird Bus	PTC	No	No	-	E-17588
59935-024	55521-Q183	7"	Airtek w/Steertek NXT Axle For Freightliner and Western Star, Right Hand Airtek for Freightliner, Right Hand	PTC	No	No	-	E-17587
59935-002	55521-Q115	7"	Airtek w/Steertek Axle for Freightliner and Western Star, Right Hand	PTC	No	No	-	E-13995
59935-013	55521-Q150	7"	Airtek w/Steertek NXT Axle for Freightliner and Western Star, Left Hand	PTC	No	No	-	E-17088
59935-024	55521-Q183	7"	Airtek w/Steertek NXT Axle for Freightliner and Western Star, Right Hand	PTC	No	No	-	E-17089

LINK / HA	LINK / HADLEY — NO DUMP STYLE							
OEM Ref.	MFG./ Model	ARM Length	APPLICATION	FITTINGS/ PORT SIZE	BRACKET INCLUDED	LINKAGE INCLUDED	VALVE ONLY Euclid No.	EUCLID No.
H00450CE	450 Series	7"	Various	1/4" Compression	Yes	No	N/A	E-9623
23329-01	450 Series	7"	Reyco	1/4" Compression	Yes	Yes	N/A	E-15271
-	600 Series Left Hand	5-7/8"	Airtek for Freightliner	PTC	No	No	N/A	E-17583
-	600 Series Right Hand	5-7/8"	Airtek for Freightliner	PTC	No	No	N/A	E-17584
A-7806-L-1052	Next Gen	5-1/2"	Meritor MTA Top Mount	3/8" PTC	No	No	-	E-14677
KIT11309	Next Gen	9"	Meritor RHP	3/8" PTC	No	Yes	N/A	E-14332
KIT11333	Next Gen	9"	Meritor RideSentry MPA	3/8" PTC	No	Yes	N/A	E-14334
-	Next Gen	7", 8", & 9"	Universal	3/8" PTC	No	No	-	E-14729

HALDEX	HALDEX — NO DUMP STYLE							
OEM Ref.	MFG./ Model	ARM Length	APPLICATION	FITTINGS/ PORT SIZE	BRACKET INCLUDED	LINKAGE INCLUDED	VALVE ONLY Euclid No.	EUCLID No.
90555105, 90554241	IR Series	Adjustable	Neway	1/4" NPT	Yes	Yes	N/A	E-13922
90054007	CR Series	7"	Neway	1/8" NPT	Yes	No	N/A	E-4323
90554945	PR Plus Series	7"	Neway	1/4" NPT	No	No	-	E-13917

# HEIGHT CONTROL VALVE CROSS REFERENCE

BARKSDA	BARKSDALE — APPLY AIR TO DUMP STYLE FOR HENDRICKSON APPLICATIONS							
OEM Ref.	MFG./ Model	ARM Length	APPLICATION	FITTINGS/ PORT SIZE	BRACKET Included	LINKAGE Included	VALVE ONLY Euclid No.	EUCLID No.
66277-001	52341-Q211- 320136	5-3/4"	Airtek for Spartan Motorhome Chassis with Drum Brakes, Left Hand	PTC	No	Yes	N/A	E-16417
66277-005	52341-Q211- 320313	5-3/4"	Airtek for Spartan, Left Hand	PTC	No	Yes	-	E-17591
66277-006	52341-Q212- 320313	5-3/4"	Airtek for Spartan, Right Hand	PTC	No	Yes	-	E-17592
66277-002	52341-Q212- 320136	5-3/4"	Airtek for Spartan Motorhome Chassis with Drum Brakes, Right Hand	PTC	No	Yes	N/A	E-16418
60501-000	52341-Q123	7"	PARASTEER / BlueBird	1/4" NPT	No	No	-	E-16407
57977-000	060501-000; 52341-Q123;	7"	Hendrickson AR2	1/4" NPT	Yes	No	E-16407	E-11870

LINK / HA	LINK / HADLEY — APPLY AIR TO DUMP STYLE							
OEM Ref.	MFG./ Model	ARM Length	APPLICATION	FITTINGS / PORT SIZE	BRACKET Included	LINKAGE Included	VALVE ONLY Euclid No.	EUCLID No.
A7806Y1013	500 Series/ H00500DB	6-1/4"	Meritor RFS	1/4" NPT	No	No	-	E-14352
KIT11207	500 Series	6-1/4"	Meritor RFS	1/4" NPT	No	Yes	E-14352	E-14365
-	500 Series/ H00500C	3", 5", 9"	Meritor M311501	1/4" NPT	Yes	No	N/A	E-9624
-	500 Series/ H00500CB	9"	-	1/4" Compression	Yes	No	N/A	E-11465
-	Next Gen	7", 8", 9"	Universal	1/4" PTC	No	No	-	E-14732
-	Next Gen	7", 8", 9"	Universal	3/8" PTC	No	No	-	E-14731
A-7806-M-1053	Next Gen	5-1/2"	Meritor MTA Top Mount	3/8" PTC	No	No	N/A	E-17049

HALDEX	HALDEX — APPLY AIR TO DUMP STYLE						
OEM Ref.	MFG./ Model	ARM Length	FITTINGS / PORT SIZE	BRACKET INCLUDED	LINKAGE INCLUDED	VALVE ONLY Euclid No.	EUCLID No.
90555106	IR Series	ADJ.	1/4" NPT	No	No	-	E-13916
90554950	PR Plus Series	7"	1/4" NPT & Pilot -1/4" PTC	No	No	-	E-13918
90555274	PR Plus Series	7"	1/4" NPT & Pilot -1/4" PTC	No	No	-	E-13921

LINK / HA	LINK / HADLEY — REMOVE AIR TO DUMP STYLE							
OEM Ref.	MFG./ Model	ARM Length	APPLICATION	FITTINGS / PORT SIZE	BRACKET INCLUDED	LINKAGE INCLUDED	VALVE ONLY EUCLID NO.	EUCLID No.
A7806Z1014	500 Series	6-1/4"	Meritor RFS	1/4" NPT	No	No	-	E-14351
KIT11206	500 Series	6-1/4"	Meritor RFS	1/4" NPT	No	Yes	E-14351	E-14368
-	500 Series/ H00500CA	7", 8", 9"	Various	1/4" NPT	Yes	No	N/A	E-11293
KIT11308	Next Gen/ H01502KB	9"	Meritor RHP11 and RHP55	3/8" PTC	No	Yes	N/A	E-13907
KIT11332	Next Gen/ H01502KC	9"	Meritor RideSentry MPA	3/8" PTC	No	Yes	N/A	E-14333
Various	Next Gen/ H01502UNC	7", 8", 9"	Universal	3/8" PTC	No	No	=	E-14730

### **UNIVERSAL HEIGHT CONTROL VALVE SELECTION GUIDE**

#### UNIVERSAL HEIGHT CONTROL VALVES

Euclid Offers Several Universal Height Control Valves Which Can Be Used In Most Applications

APPLICATION	EUCLID PART NO.	LINK/HADLEY MODEL
No Dump	E-14729	Next Gen
Applied Air To Dump	E-14731	Next Gen
Remove Air To Dump	E-14730	Next Gen

#### **Universal Height Control Valves Specs**

	EUCLID No.	APPLICATION	MFG. Model	ARM LENGTH	FITTINGS
	E-14729	No Dump	Next Gen	7", 8", & 9"	3/8" PTC
5	E-14731	Apply Air to Dump	Next Gen	7", 8", 9"	3/8" PTC
and the second s	E-14730	Remove Air to Dump	Next Gen/ H01502UNC	7", 8", 9"	3/8" PTC

# INDEX

CHALMERS: 800 SERIES (46–47, 74–75)

FREIGHTLINER: FAS II AIRLINER® (14–15)

FREIGHTLINER: TUFTRAC® (48–49, 62–63)

HENDRICKSON: HAULMAAX® (50-51, 64-65)

HENDRICKSON: HAULMAAX EX® (52-53, 66-67)

HENDRICKSON: HN® (54–55, 68–69) HENDRICKSON: INTRAAX® (34–35) HENDRICKSON: PRIMAAX® (76–77)

HENDRICKSON: RS® (78–79) HENDRICKSON: RT® (56–57)

**HUTCH: H900** (86-87)

**HUTCH: H7700 / 9700** (36–37)

KENWORTH: AIRGLIDE 100® (16–17)

KENWORTH: AIRGLIDE 200° / 400° (18–19)
MACK° / VOLVO: CORPORATE AIR (20–21)

MACK: SS44 SERIES, CAMELBACK (58–59, 70–71)

**MERITOR®: MTA** (88–89)

**MERITOR®: RHP / MPA RIDESENTRY** (38–39)

NAVISTAR / INTERNATIONAL®: CORPORATE AIR (22-23)

PETERBILT: AIRGLIDE 210 (28–29)

PETERBILT: AIR LEAF (24–25)

PETERBILT: AIR TRAC (26–27)

PETERBILT: FLEX AIR (30–31)

**REYCO: 21B CAST** (90-91)

SAF-HOLLAND NEWAY: AD-123 (80–81)

SAF-HOLLAND NEWAY: ADZ (82–83)

**SAF-HOLLAND NEWAY: CBX23 / 25** (40–41)

SAF-HOLLAND NEWAY: DURALITE (BINKLEY) (42–43)



EUCLID Part no.	PAGE No.
E-1307	57
E-1312A	91
E-1338	57, 79
E-1546	57, 79
E-1594	57, 79
E-1598A	79
E-1818	57
E-1820	25
E-1829	57
E-1830	57
E-1833A	57
E-1834	57, 79
E-1835	31, 57, 59, 71, 79
E-1842	79
E-1853	57
E-1854	57
E-1869	57
E-1877	57
E-1940	79
E-1941	79
E-1942	79
E-1943	31, 79
E-1945	79
E-1946	79
E-1947	79
E-1960	79
E-1975	91
E-1980	43
E-1980-P	43
E-2003	37
E-2017	17
E-2018	17
E-2225	21, 25, 27
E-2226	17
E-2228	17
E-2232	79
E-2233	79
E-2545	17, 105
E-2546	31, 59, 71, 105 17, 19, 31, 53,
E-2547	67, 105
E-2548	105
E-2634	23, 53, 67
E-2781	37
E-2781A	37
E-2781A-P	37

EUCLID Part no.	PAGE No.
E-2842	37, 43
E-2846A	91
E-2855	91
E-2856	91
E-2878	91
E-2889	37
E-2889-P	37
E-2899	37
E-2899-P	37
E-2907A	37, 43
E-2907A-P	37, 43
E-2909	37, 43
E-2909-P	37, 43
E-2919	59, 71
E-2920	59, 71
E-2925	59, 71
E-2934	105
E-2975	105
E-2988	53, 67, 87
E-3000	105
E-3001	105
E-3002A	105
E-3003	105
E-3004	105
E-3005	105
E-3079	37
E-3165	98
E-3166	98
E-3167	98
E-3168	98
E-3169	98
E-3170	99
E-3171	99
E-3172	99
E-3176	21
E-3185	99
E-3187	59, 71
E-3277	37
E-3277-P	37
E-3283A	91
E-3284A	91
E-3284A-P	91
E-3560	25
E-3687	59, 71
E-3687-P	59, 71
E-3688	59, 71

EUCLID Part no.	PAGE No.
E-3689	59, 71
E-3689-P	59, 71
E-3690	59, 71
E-3691	59, 71
E-3692	59, 71
E-3693	31, 59, 71
E-3696	59, 71
E-3697	59, 71
E-3697-P	59, 71
E-3698	59, 71
E-3699	59, 71
E-3761	57
E-3792	31
E-3915	59, 71
E-3916	59, 71
E-3976	91
E-3987	99
E-3988	59, 71
E-4252	81
E-4267	81
E-4323	108
E-4345	41
E-4347	41
E-4348	87
E-4664	17
E-4669	17
E-4677A	47, 75
E-4677A-P	47, 75
E-4678A	47, 75
E-4685	47, 75
E-4685-P	47, 75
E-4688A	47, 75
E-4771	27
E-4771	25
E-4771-P	25, 27
E-4773	25
E-4781	27
E-4781-P	27
E-4824	43
E-4824-P	43
E-4827	43
E-4835	37, 43
E-5075	17
E-5076	17
E-5082	27

E-5083

27

FUCLID	DACE
EUCLID Part no.	PAGE No.
E-5083-P	27
E-5210	87
E-5211	87
E-5211-P	87
E-5212	87
E-5216	87
E-5219	87
E-5227	87
E-5228	87
E-5228-P	87
E-5275	51, 53, 55, 65, 67, 69
E-5277	51, 65
E-5281	21, 27, 31, 51, 53, 55, 65, 67, 69, 77
E-5308	79
E-5309	57, 79
E-5427	59, 71
E-5428	59, 71
E-6979	57, 79
E-6980	57, 79
E-7531	57
E-7532	37
E-7532-P	37
E-7620	79
E-7682	37
E-7756	47, 75
E-7758	47, 75
E-7765	47, 75
E-7766	47, 75
E-7766-P	47, 75
E-7767	47, 75
E-7767-P	47, 75
E-7768	47, 75
E-7768-P	47, 75
E-7769	47, 75
E-7770	47, 75
E-7773	47, 75
E-7774	47, 75
E-7852	21
E-7854	27
E-7862	27
E-7868	25, 27, 31
E-8702	47, 75
E-8802	15
E-8803	15
E-8805	15

EUCLID Part no.	PAGE No.
E-8806	15
E-8809	15
E-8810	15
E-8821	21
E-8841	17, 19
E-8909	21
E-8911	21
E-9292	81
E-9293	81
E-9300A	81
E-9302	43
E-9303	43
E-9304	43
E-9305	43
E-9305-P	43
E-9307	43
E-9308	43
E-9309	43
E-9325	51, 53, 55, 57, 65, 67, 69, 79
E-9326	51, 53, 55, 57, 65, 67, 69, 79
E-9359	57, 79
E-9418	79
E-9426	79
E-9427	57
E-9428	57
E-9429	57
E-9471	37
E-9471-P	37
E-9472	37
E-9474	37
E-9487	37
E-9559	91
E-9560	91
E-9561 E-9562	91
	91
E-9563	91
E-9564 E-9571	47, 75
E-9571-P	47, 75
E-9575	35
E-9576	57, 79
E-9577	57, 79
E-9603	25, 105
E-9604	105
E-9605	105
E-9606	105
	1

EUCLID Part no.	PAGE No.
E-9623	108
E-9624	15, 17, 19, 21, 25, 27, 109
E-9625	15, 17, 19, 23, 25, 27, 29, 77
E-9839	37
E-10303	17, 19, 83
E-10303-P	17, 19, 83
E-10309	51, 53, 55, 65,
E-10678	67, 69 81
E-10729A	35
E-10730A	35
E-10754	35
E-10755	35
E-10768A	91
E-10700A E-11293	109
E-11448	37
E-11465	109
E-11494	108
E-11496	55, 69
E-11749	25
E-11749-P	25
E-11768	39
E-11769	39
E-11770	39
E-11855	35, 108
E-11870	77, 109
E-13907	39, 109
E-13916	109
E-13917	108
E-13918	109
E-13921	109
E-13922	81, 108
E-13986	51, 55, 65, 69
E-13988	55, 57, 69, 79
E-13989	55, 69
E-13992	77
E-13995	108
E-13996	108
E-14013	108
E-14014	108
E-14025	77
E-14026	77
E-14047	51, 55, 65, 69
E-14332	39, 108
E-14333	39, 109
E-14334	39, 108
E-14339	35

FUOLID	2105
EUCLID Part no.	PAGE No.
E-14340	35
E-14341	35
E-14342	35
E-14343	35
E-14344	35
E-14345	35
E-14350	89
E-14351	109
E-14352	109
E-14365	109
E-14368	109
E-14377	35
E-14534	51, 65
E-14535	51, 65
E-14634	35
E-14635	35
E-14673A	77
E-14677	89, 108
E-14725	51, 53, 55, 57, 65, 67, 69
E-14729	41, 106, 108, 110
E-14730	41, 106, 109, 110
E-14731	15, 17, 19, 21, 23, 25, 27, 29, 106, 109, 110
E-14732	25, 27, 109
E-14773	47, 75
E-14774	47, 75
E-14777	35
E-14780	35
E-14789	35
E-14807	51, 65
E-14896	51, 65
E-14932	59, 71
E-14976	47, 75
E-14982	47, 75
E-14985	47, 75
E-14986	47, 75
E-14987	47, 75
E-14989	47, 75
E-14991	47, 75
E-15095	108
E-15130	108
E-15150	108
E-15151	108
E-15153	53, 67
E-15155	51, 65
	1 . ,

EUCLID Part no.	PAGE No.
E-15168	51, 65
E-15171	55, 69
E-15172	55, 69
E-15173	55, 69
E-15182	31
E-15199	21
E-15271	108
E-15340	81
E-15459	37
E-15463	87
E-15536	15
E-15541	15, 23, 29
E-15542	15
E-15588	49, 63
E-15600	15, 23, 29
E-15611	17
E-15618	19
E-15658	27
E-15671	21
E-15708	17
E-15709	31
E-15711	17
E-16051	49, 63
E-16053	49, 63
E-16054	49, 63
E-16055	49, 63
E-16056	49, 63
E-16057	49, 63
E-16058	49, 63
E-16059	49, 63
E-16060	49, 63
E-16061	49, 63
E-16062	49, 63
E-16063	49, 63
E-16064	49, 63
E-16066 E-16069	49, 63
E-16070	49, 63
E-16075	49, 63
E-16088	31
E-16091	19
E-16091	19
E-16093	19
E-16094	31
E-16097	31
E-16098	31
F-10030	21

	·
EUCLID Part no.	PAGE No.
E-16099	31
E-16105	31
E-16112	19
E-16115	19
E-16117	19
E-16118	29
E-16119	19
E-16224	31
E-16225	17
E-16226	17, 19
E-16227	53, 67
E-16229	17
E-16230	17, 19
E-16231	19
E-16262	77
E-16352	35
E-16356	51, 65
E-16357	51, 65
E-16368	35
E-16390	37
E-16397	87
E-16398	55, 69
E-16400	55, 69
E-16407	109
E-16415	17
E-16416	57
E-16417	109
E-16418	109
E-16464	57
E-16477	91
E-16552	41
E-16553	41
E-16562	81
E-16566	41
E-16567	81
E-16571	41
E-16577	81
E-16586	41
E-16589	81
E-16608	81
E-16623	81
E-16624	81
E-16630	43
E-16636	81
E-16638	81
E-16649	15

EUCLID Part no.	PAGE No.
E-16651	15
E-16652	15
E-16687	23, 29
E-16690	17
E-16777	21
E-16782	59, 71
E-16787	59, 71
E-16806	21
E-16812	23
E-17005	15
E-17006	29
E-17022	39
E-17026	39
E-17030	89
E-17033	39
E-17035	39
E-17040	89
E-17041	89
E-17042	89
E-17043	89
E-17046	89
E-17048	89
E-17049	89, 109
E-17050	89
E-17051	89
E-17056	39
E-17057	39
E-17066	89
E-17067	89
E-17088	108
E-17089	108
E-17492	101
E-17569	77
E-17574	77
E-17575	101
E-17576	100
E-17577	101
E-17578	100
E-17579	100
E-17583	108
E-17584	108
E-17587	108
E-17588	108
E-17591	109
E-17592	109
E-17596	77

EUCLID Part no.	PAGE No.
E-17597	77
E-17598	77
E-17599	77
E-17600	77
E-17605	51, 65
E-17654	53, 67
E-17655	53, 67
E-17656	53, 67
E-17657	53, 67
E-17658	53, 67
E-17660	37
E-17678	83
E-17679	83
E-17680	83
E-17681	83
E-17682	83
E-17683	83
E-17684	83
E-17685	83
E-17686	83
E-17688	89
E-17689	89
E-17692	89
E-17693	89
E-17694	89
E-17695	39
E-17696	39
E-17698	89
E-17717	89
E-17748	53, 67
E-17749	53, 67
E-17755	51, 65
E-25197	87
E-401754	25, 27
EAS1191	23
EAS8091	89, 100, 101
EAS8708	101
EAS8709	100, 101
EAS8713	101
EAS8729	39
EAS8774	100
EAS8813	31
EAS8829	21
EAS8864	29
EAS9069	25, 27
EAS9422	17

EUCLID	PAGE
PART NO.	NO.
EAS9471	81
EAS9616	17
EAS9622	19
EAS9625	19
EAS9626	100
EAS9644	100
EAS9645	100
EAS9780	15
EAS9781	15
EAS9807	41
EAS9974	41
EAS9978	101
E-UB5161-14	91
E-UB5161-18	91
E-UB5165-14	91
E-UB5165-18	91
E-UB8151-10	43
E-UB8151-12	43
E-UB8151-14	43
E-UB8151-16	21
E-UB8155-073	87
E-UB8156-08	87
E-UB8157-08	87
E-UB8161-15	29
E-UB8169-156	23
E-UB8169-166	23
E-UB8175-104	87
E-UB8176-114	87
E-UB8177-114	87
E-UB8255-05	25
E-UB8256-077	87
E-UB8257-11	77
E-UB8257-12	77
E-UB8257-087	77
E-UB8267-153	15
E-UB8268-134	31
E-UB8271-104	87
E-UB8271-111	87
E-UB8286-134	87
E-UB8286-154	87
E-UB8375-14	25, 27
E-UB8375-154	25, 27
E-UB8394-18	59, 71
E-UB8394-144	59, 71
E-UB8394-162S	59, 71
FS1191	23

EUCLID Part no.	PAGE No.
FS8091	89, 100, 101
FS8093	101
FS8614	100
FS8708	101
FS8709	100, 101
FS8713	101
FS8729	39
FS8774	100
FS8813	31
FS8829	21
FS8864	29
FS9069	25, 27
FS9219	21
FS9296	21
FS9422	17
FS9471	81
FS9472	81
FS9541	19
FS9547	19
FS9616	17
FS9617	19
FS9619	100, 101
FS9621	100, 101
FS9622	19
FS9625	19
FS9626	100
FS9644	100
FS9645	100
FS9646	100
FS9780	15
FS9781	15
FS9807	41
FS9974	41
FS9978	101
GAFF11078	15
GAFF11080	17, 51, 55, 65, 69
GAFF11080EZ	17, 51, 55, 65, 69
GAFF11081	15
GAFF11083	15, 23, 29
GAFF11084	15, 23, 29
GAFF11159	49, 63
GAFF11163	49, 63
GAFF11164	49, 63
GAFF11165	49, 63
GAFF11502	17
GAFF11550	17, 19, 25, 27, 29

EUCLID Part no.	PAGE No.
GAFF11719	17
GAFF11720	19
GAFF11729	17, 19, 83
GAFF11733	19
GAFF11734	19
GAFF11739	47, 75
GAFF11740	47, 75
GAFF11743	19
GAFF11747	21
GAFF11751	17
GAFF11751EZ	17
GAFF11765	31
GAFF11766	19
GAFF11773	19
GAFF11792	29, 31
GAFF11795	31
GAFF12010	59, 71
GAFF12014	59, 71
GAFF12036	59, 71
GAFF12395	27
GAFF12395EZ	27
GAFF12397	31
GAFF13500	57, 79
GAFF13505	57, 79
GAFF13518	17
GAFF13520	17
GAFF13522	21, 25, 27
GAFF13543	57, 79
GAFF13596	51, 53, 55, 57, 65, 67, 69, 79
GAFF13607	51, 53, 55, 57, 65, 67, 69, 79
GAFF13611	55, 69
GAFF13626	51, 65
GAFF13627	77
GAFF13649	79
GAFF13650	79
GAFF13721	55, 69
GAFF13743	35
GAFF13744	35
GAFF13831	51, 65
GAFF13833	51, 53, 55, 57, 65, 67, 69
GAFF13843	21
GAFF14027	87
GAFF14087	87
GAFF14514	81
GAFF14536	83

EUCLID Part no.	PAGE No.
GAFF14537	83
GAFF15013	43
GAFF15054	43
GAFF15075	91
GAFF18566	25, 27
GAFF18860	21
GAFF18860EZ	21
GAFF18919	47, 75
GAFF18920	47, 75
GAFF18921	47, 75
GAFF31129	21
GAFF31144	21
GAFF31145	21
GAFF31592	81
GAFF34554	25, 27
GAFF34554EZ	25, 27
GAFF34563	23
GAFF50033	39
GAFF50046	41
GAFF50047	41
GAFF83520	17
GAFF83596	51, 53, 55, 57, 65, 67, 69
GAFF992781	37
GAFF992781A	37
GAFF992889	37
GAFF992899	37
GAFF993079	37
GAFF993277	37
GAFF997532	37
GAFF999471	37
GAFF999472	37
GAFF999545	91
M83112	55, 69
M83128	41, 103
M83130	41
M83142	51, 53, 65, 67
M83143	51, 53, 65, 67
M85000	102, 103
M85024	21
M85029	102
M85045	41, 102, 103
M85046	21
M85047	21
M85060	47, 75
M85067	31
M85069	29

EUCLID	PAGE
PART NO. M85072	NO.
M85109	83
M85301	47, 75
M85305	47, 75
M85308	25, 27
M85310	17
M85311	25, 27
M85319	15
M85337	102
M85338	102
M85724	15
M85738	102, 103
M85900	19
M85902	19
M85906	81
M85909	81
M85911	102
M85916	102
M85919	39
M85931	23
M85936	19
M85937	19
M85938	102
M85939	102, 103
M85956	49, 63
M85962	77
M85965	77
M85967	77
M89422	25, 27
M89423	17
M89424	25, 27
M89428	15
M89430	102
M89456	19
M89458	23











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