

—(36.55) Overall –

DCN#	REV		REVISION DESCRIPTION					DATE	BY	CHK	APP
DRAFTSMAN: DWalker 3/17/2015			TITLE:								
CHECKED: CHK			Layout							TM	
RELEASED: APP		Cush Rou									
WEIGHT: N/A			25000lbs Gi		Ispension Weight R	Rating					
MATERIAL:	MATERIAL:			14"/16" RH Weld-On Wingless Hanger Mount						pension	15
All of the Inform			TOLER								
herein is the intellectual property of Cush Corp and is submitted only on a confidential basis. The			.XX = +/062 FRACTIONS = +/- 1/16 .XXX = +/031 ANGLES = +/- 1°					PHONE	a, MO. US :: 417-724 cushcorp.c	-1239	
recipient agrees that no disclosure of this information		PROJECT NO:	SHEET:	SCALE: A-SIZE: NTS	REV:	PAI	RT/DRAWING	NO:			
will be made to without written Cush Corp.	a third	party	14200	OF 3	B-SIZE: 1/X D-SIZE: 1/4	-		CR25C	C-(15/	/16/17	7)

CUSH TORQUE SPECIFICA	ATION:	<u> </u>	(Ft*	Lbs)	(N³	*m)	ROUGHNECK HANGER WITH 1.13" LARGE PIVOT BOLT				CR25C15
			<del>  `</del>		<u> </u>	Ť	<ol> <li>Bushings with 1.125" inner sleeve ID will not need plastic insert reducer for the 1-1/8" pivot bolt.</li> <li>Use Cush Height Control Kit bracket from ACK-0206 or weld bracket to side of hanger.</li> </ol>		Description: CR25C15  Weld-on RoughNeck Hanger, 1/2" Slot Align	<del>                                     </del>	Cush P/N W1251
		_					DUAL ECCENTRIC ALIGNMENT NOTES:	2	Pivot Bushing Kit (Per Hanger)	_	K0640
Air Spring Mount	3/8	5/B	15	20	20	27	OVERVIEW: The DUAL ECCENTRIC pivot joint features outside eccentric cam gear washers that cover the alignment slot, Final axle alignment is required for proper bushing and tire wear.	2a	Bushing, 6.75" Long 1.25"ID		C05
Air Spring Mount	1/2	5/B	25	35	<b>34</b>	47	CAUTION: DO NOT APPLY undercoating to the area until after alignment and torque of the pivot bolt.	2b	Wear Washer, 0.25" thk  HHCS 1 1/8"-7 UNC x 10" Long, Grade 8	<del>                                     </del>	C00 H01
Air Spring Mount	3/4	5/B	40	50	54	68	CAUTION: With dual eccentric alignment both gears at the pivot must be moved/adjusted together at the same time and in the same direction. If not adjusted together on the same banger this may lead to an improper pivot joint elemp and saves failure.	2d	Nut, Unitorque, Hex, 1 1/8"-7 UNC, Factory Wax, Grade C		H11
Brake Chamber Mounting	5/8	_	100	110	126		direction. If not adjusted together on the same hanger this may lead to an improper pivot joint clamp and cause failure.  · With both pivot bolts snug and suspension at ride height.		Alignment Gear Welded for captured Hex	<del>                                     </del>	<b>W</b> 1266
							For adjustment, use (2) 1/2" square-drive breakover bars or ratchet to move the axle forward/rearward on one hanger at a time.		Alignment Gear 4" OD Universal Beam Assembly for Bolt-on tower 5"round	<del>                                     </del>	F1234-38 W0782
Beam Tower for Air Spring Mount	3/8	5/B	30	<b>4</b> 5	41	61	Must move inside and outside gears together for adjustment. The square Adjustment Holes must line up side to side on each hanger.  The Slot gives you 1/4" pivot movement fore and aft per hanger side.		Unv Bolt-on Air Spring Tower/Beam Spacer (Charted/RH)	<del>                                     </del>	W0776-1
Shock Eye Mount	3/4	5/B	210	235	<i>285</i>	319	Start with the eccentric gears in the neutral position with the 1/2" adjustment square at 12 o'clock and lined up with the inset 1/2"		Kit, Air Spring Tower Mounting	<del>                                     </del>	K0419
U-Bolt Nut	7/8	8/C	475	525	644	712	plug hole, you can use a 1/2" round bar to check.  To align the axle, move both sides of the suspension gears to get the axle aligned. If needed, go to the other side of the suspension	7a	L'Nut, Toplock 0.375-16UNC		H14
	_	_	1				and move in the gears in the opposite direction to fully align the axle to within 1/16".	76	HHCS Bolt 0.375-16UNC x 1.0"Long  Box of Parts:	8	H07
Pivot Nut (as supplied)	7/8		1	600		813	· After alignment, clamp the joint per Cush torque specifications. · After alignment, the suspension installer can weld the gears to the hanger side with 1/2" welds at 12 & 6 o'clock to prevent	8	0.19" Tall spacer Weld-on Plate, Universal	2	F0407
Pivot Nut (Wet_Oily_Anti-seize)	1 1/8	8/C	800	1000	1085	1356	tampering & for off-road applications.	9	Hardware kit, Mounting for Shocks	<del>                                     </del>	K0025
								9a Oh	HHCS, 0.75-10unc x 10"lg, Grd 5  Nut, locking, 0.75-10unc, grd C		H <b>0</b> 2
	1					4	(2d)	90 9c	Washer 3/4" ID, USS		H22
								10	AS Hardware Kit Bagged Together		K0030
								10a	Toplock nut 0.5-13UNC		H13
					0			10b	L'Nut, Nylock 0.75-16UNF  Shock, 16"max/10.7"min (Gabriel#85064)	<del></del>	H12 <b>C0226</b>
			M			3			Air Spring, (GY 1R14-171 / Conti 11_10.5A-16 P523/FS W01-358-8091)	_	C0228
2c		3		9b							

				CR25C15	CR25C16	CR25C17
	ITEM	Description: CR25C15	QTY	Cush P/N:	Cush P/N:	Cush P/N:
	1	Weld-on RoughNeck Hanger, 1/2" Slot Align	2	<b>W</b> 1251	W1251-10	<b>W</b> 1251-11
	2	Pivot Bushing Kit (Per Hanger)	2	K0640		
axle	2a	Bushing, 6.75" Long 1.25"ID	1	C0535		
	2b	Wear Washer, 0.25" thk	1	C0061		
ne	2с	HHCS 1 1/8"-7 UNC x 10" Long, Grade 8	1	H <b>0150</b>		
IIC	2d	Nut, Unitorque, Hex, 1 1/8"-7 UNC, Factory Wax, Grade C	1	H11 <b>09</b>		
	3	Alignment Gear Welded for captured Hex	2	<b>W</b> 1266		
	4	Alignment Gear 4" OD	2	F1234-38		
ger.	5	Universal Beam Assembly for Bolt-on tower 5*round	2	W0782		
	6	Unv Bolt-on Air Spring Tower/Beam Spacer (Charted/RH)	2	<b>W0776-1.5</b>	<b>W</b> 0776-2.5	<b>W</b> 0776-3.5
	7	Kit, Air Spring Tower Mounting	1	K0419		
_	7a	L'Nut, Toplock 0.375-16UNC	8	H1404		
ion	7b	HHCS Bolt 0.375-16UNC x 1.0"Long	8	H0701		
		Box of Parts:				
	8	0.19" Tall spacer Weld-on Plate, Universal	2	F0407		
	9	Hardware kit, Mounting for Shocks	1	K0025		
	9a	HHCS, 0.75-10unc x 10"lg, Grd 5	4	H <b>0</b> 225		
	9b	Nut, locking, 0.75–10unc, grd C	4	H12 <b>0</b> 1		
	9с	Washer 3/4" ID, USS	4	H22 <b>0</b> 3		
	10	AS Hardware Kit Bagged Together	1	K0030		
	10a	Toplock nut 0.5-13UNC	2	H13 <b>0</b> 2		

Roughneck Features

**HD Pivot Bolt & Nut** 

HD Boxed Hanger
Dual Eccentric Axle Adjustment of ±0.25" at Hangers
Outside Gear Captured Bolt Head Tab

Dual Bushing Wear Washers Integrated Shock Mounting

Integrated HCV Mounting, for ACK-0206 Kit

DATE BY CHK APP Parts Explosion Cush Roughneck Top Mount Half Wrap 25000lbs Gross Suspension Weight Rating 14"/16" RH ELEASED: APP Weld-On Wingless Hanger Mount All of the Information shown herein is the intellectual property of Cush Corp and is submitted only on a confidential basis. The Nixa, MO. USA PHONE: 417-724-1239 www.cushcorp.com ANGLES = +/- 1° recipient agrees that no disclosure of this information will be made to a third party without written consent of A-SIZE: NTS B-SIZE: 1/X D-SIZE: 1/4 CR25C-(15/16/17) 14200

REVISION DESCRIPTION

DCN#

## CUSH GENERAL INSTALLATION NOTES, SEE CUSH SERVICE/INSTALLATION MANUAL

- **INSTALLATION NOTES:**
- 1) Measure trailing arm centers and track to verify your requirements.
- 2) DO NOT APPLY undercoating to the suspension until after
- pivot connection fastener and can damage the hardware.
- 3) Mount hangers onto trailer frame per suspension drawing sheets.
- spacer collars into bush inner sleeve.
- suspension hangers. NOTE: If the assembly fits tightly, it may be necessary to spread the

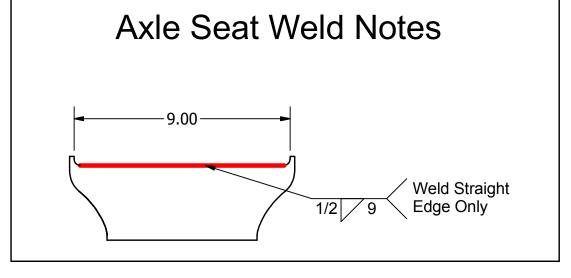
6) Place"-Align" gear washer, with indicator in neutral position, and insert pivot bolt/washer

- 7) Mount pivot washer/nut and torque joint for a snug fit.
- 8) Adjust "-Align" for proper axle track alignment. 9) Torque bushing pivot bolts per Cush torque instructions.
- NOTE: Failure to follow the procedures in the Cush Service and
- 10) Install air springs and shocks per suspension installation manual and drawing sheets.

Ger	neral Application Dimension Variables	- Installa	ation Cl	earance	e Notes	Superse	ede all Common Variables Shown
-B-	Ref. Suspension Beam(Hanger) Centers	34	35	40	41	40	39
"s"	Ref. Air Spring Centers (2 " inset/side)	30	31	36	37	36	35
<b>-</b> T-	Ref. Axle Track	71.5	71.5	76.5	77.5	77.5	77.5"
"C"	Approx. Chamber Centers for 16.5" x 7" Brake	9.75	9.75	14.75	<b>15.75</b>	<b>15.75</b>	15.75
-1-	Ref. Inside of Tires Min (Hanger Style)	46.5	46.5	51.5	52.5	52.5	52.5
	Installation Clearance Notes						
1	0.75" minimum clearance must be maintained	around ai	r spring w	rhen it is :	at maximu	ım diame	ter.
2	It is the responsibility of the installer to ensure to tire and bottom of trailer structure when axie is structure for lateral movement, and there should suspension beam and brake s-cam shaft	at full jou	ince, 2 ° n	ninimum	clearance	required	between inside of tire and trailer frame

1) Suspension components and their mating parts must be at a minimum temperature of 60°F(15.5°C) and free from moisture, dirt, scale, paint, grease, and other contaminates. 2) For the best axle to beam weld joint use the following wire. Axle Weld Wire: AWS ER70S-6 3) Create the root pass to connect the axle to the trailing arm beam on the straight edge weld. Hit the axle

WARNING: Review Cush Recommended Steel Welding Procedures

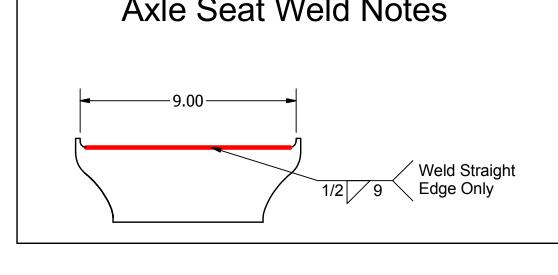


- completing the alignment. Undercoating will effect clamp load of the
- 4) Place plastic washers on both sides of bush inner metal and insert
- 5) Measure for fitup then mount Cushride trailing arm/axle assembly into
- mounting. DO NOT GRIND material from suspension components.
- Installation manual and/or properly torque the pivot fasteners at this time can result in a failed pivot connection and a loss of warranty coverage!

Gei	neral Application Dimension Variables	- Installa	ation Cl	earance	e Notes	Superse	ede all Common Variables Showi
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AXLE WELDING NOTES, See Cush Procedure A0001-3:

seat tabs down to the axle to give you parent metal for pass 2 and 3. Finnished axle weld should be a multi-pass 1/2" weld.



- ORIGINAL-INSTALLATION INSPECTION NOTES, verify that:
- 1) The installation clearance requirements have been met.
- 2) The axles have been aligned properly. 3) The suspension frame bracketry and air spring plate welds
- have been properly completed per specifications. 4) All suspension bolt torques are to Cush specifications.

5) The suspension ride height is set properly.

6) The suspension can articulate freely through its entire travel and adequate component clearances have been provided.

INSPECTION: 30-DAY, 90-DAY, & at every brake lining change.

- 1) Check installation clearance requirements.
- 2) Check for any signs of wear or component interferences. 3) Check suspension attachment welds for signs of
- problems. 4) Check that all bolts are in place and securely torqued.
- 5) Check pivot bushings & clamping connections for problems.
- 6) Check that the trailer is level.
- 7) Check tire wear that might indicate an alignment problem.

					Тор	Hanger	Horz	Beam
Part No.	(In)	Bumper		UP	Spacer	Pivot	Pivot to	Tower
Suspension	RIDE	Deflection	Down	BUMPER	Height	Height	Axle	Height
Model & RH	HT	JOUNCE	REB'D	CONTACT	"D" (In)	"P" (In)	■F■ (In)	"TH" (In)
CR25C15	14.0	3.0"	5.5	2.75	0.18	9	19.7	1.5
	14.5	3.5"	5	3.25	0.18	9	19.5"	1.5
Shown-	*15.0"	4.0"	4.5	3.75	0.18	9	19.4"	1.5
	15.5	4.5"	4	4.25	0.18	9	19.2"	1.5
	16.0°	5.0"	3.5	4.75	0.18	9	19.0"	1.5
	16.5	5.5"	3	5.25	0.18	9	18.8	1.5
CR25C16	15.0°	3.0°	5.5	2.75	0.18	10	19.7°	2.5
	15.5 <b>"</b>	3.5 <b>"</b>	5	3.25	0.18	10	19.5"	2.5
	16.0°	4.0"	4.5	3.75	0.18	10	19.4"	2.5
	16.5°	4.5"	4	4.25	0.18	10	19.2"	2.5
	17.0°	5.0"	3.5	4.75	0.18	10	19.0°	2.5
	17.5°	5.5"	3	5.25	0.18	10	18.8	2.5
CR25C17	16.0°	3.0"	5.5	2.75	0.18	11	19.7"	3.5
	16.5	3.5"	5	3.25	0.18	11	19.5"	3.5
	17.0°	4.0"	4.5	3.75	0.18	11	19.4	3.5
	17.5	4.5"	4	4.25	0.18	11	19.2	3.5
	18.0°	5.0"	3.5	4.75	0.18	11	19.0	3.5
	18.5"	5.5 <b>"</b>	3	5.25	0.18	11	18.8 <b>"</b>	3.5

## DATE BY CHK APP **REVISION DESCRIPTION** AFTSMAN: DWalker 3/17/2015 **Installation Notes** Cush Roughneck Top Mount Half Wrap 25000lbs Gross Suspension Weight Rating 14"/16" RH Weld-On Wingless Hanger Mount All of the Information shown herein is the intellectual Nixa, MO. USA PHONE: 417-724-1239 property of Cush Corp and is submitted only on a ecipient agrees that no A-SIZE: NTS disclosure of this information CR25C-(15/16/17) 14200 B-SIZE: 1/X D-SIZE: 1/4 will be made to a third party

· To align the axle, move both sides of the suspension gears to get the axle aligned. If needed, go to the other side of the suspension and move in the gears in the opposite direction to fully align the axle to within 1/16". After alignment, clamp the joint per Cush torque specifications. After alignment, the suspension installer can weld the gears to the hanger side with 1/2" welds at 12 & 6 o'clock to prevent tampering & for off-road applications.

**INSTALLATION DISCLAIMER NOTES:** 

**CUSTOMER TORQUE INSTRUCTIONS:** 

ratings are for suspension components and axle beam only.

correspond with those specified on the suspension drawing.

sheets thoroughly before proceeding with a suspension installation.

THIS JOINT TO SPECIFICATION AFTER AXLE ALIGNMENT.

inspection cycles. Failure to do so can result in loss of warranty.

Corporation. DO NOT APPLY ANY ADDITIONAL LUBRICANTS.

5) CAUTION: Over-torquing fasteners could result in material failure.

proper joint clamping contact Cush for replacement fasteners.

**CUSH TORQUE SPECIFICATIONS** 

**Air Spring Mount** 

**Air Spring Mount** 

**Air Spring Mount** 

**Brake Chamber Mounting** 

Beam Tower for Air Spring Mount

**Shock Eye Mount** 

U-Bolt Nut

Pivot Nut (as supplied)

Pivot Nut (Wet Oily Anti-seize)

**DUAL ECCENTRIC ALIGNMENT NOTES:** 

bolt

ROUGHNECK HANGER WITH 1.13" LARGE PIVOT BOLT

this may lead to an improper pivot joint clamp and cause failure.

· The Slot gives you 1/4" pivot movement fore and aft per hanger side.

With both pivot bolts snug and suspension at ride height.

1) It is important that the proper Cush suspension is chosen for the trailer application. The

following criteria must be considered when selecting a suspension: required suspension capacity,

2) It is the responsibility of the installer to determine the correct location of the suspension in order

to provide the proper trailer load distribution. The gross axle weight rating (GAWR) of each axle

must not exceed the rated capacity of any of the components involved. The suspension capacity

3) Required cross member locations maybe shown. Actual size and shape may vary per trailer

design. It is the responsibility of the suspension installer to ensure structural adequacy of the

trailer frame and related cross members. Verify that the actual trailer cross member locations

4) It is the responsibility of the suspension installer to read the instructions on all the drawing

2) It is the customer's responsibility to check and tighten fasteners to specified torque at

3) Torque values given are specified for the fasteners in the condition supplied by Cush

Suspension Fastener Description | Size | Grade | Min. | Max. | Min | Max.

3/8

1/2

3/4

5/8

3/8

3/4

2. Use Cush Height Control Kit bracket from ACK-0206 or weld bracket to side of hanger.

cover the alignment slot, Final axle alignment is required for proper bushing and tire wear.

CAUTION: With dual eccentric alignment both gears at the pivot must be moved/adjusted

For adjustment, use (2) 1/2" square-drive breakover bars or ratchet to move the axle

adjustment. The square Adjustment Holes must line up side to side on each hanger.

and lined up with the inset 1/2" plug hole, you can use a 1/2" round bar to check.

forward/rearward on one hanger at a time. Must move inside and outside gears together for

installation, after the suspension has been in operation for 3000 miles, and at suspension

4) CAUTION: Fasteners should never be reused if removed or loss of clamp load occurs. For

5/B

5/B

5/B

5/B

5/B

5/B

8/C

8/C

. Bushings with 1.125" inner sleeve ID will not need plastic insert reducer for the 1-1/8" pivot bolt

OVERVIEW: The DUAL ECCENTRIC pivot joint features outside eccentric cam gear washers that

CAUTION: DO NOT APPLY undercoating to the area until after alignment and torque of the pivot

together at the same time and in the same direction. If not adjusted together on the same hanger

Start with the eccentric gears in the neutral position with the 1/2" adjustment square at 12 o'clock

(Ft\*Lbs)

100 | 110

25

20

35

50

**210 235** *285* 

8/C **475 525** *644 712* 

550 600 746

800 1000 1085

(N\*m)

34

136

1) \*DUAL RATE PIVOT BUSHING JOINT SNUG FROM FACTORY. CUSTOMER TO TORQUE

loaded frame-to-ground measurement, ride height, axle travel, axle spacing, and axle GAWR.