

J-Series

Revolving Clamps

Manual Number 6904508



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CONTENTS

Recommended Hydraulic Supply	1
Truck Requirements	2
Installation	3
Custom Arm Installation	11
Periodic Maintenance	12

This manual provides instructions for installing Cascade J-Series Revolving Clamp attachments.

Follow the suggested installation procedures for best results. If you have any questions or need more information, contact your nearest Cascade Service Department. Refer to back cover.

Read the **WARNING** statements placed throughout this manual to emphasize safety during attachment installation.

IMPORTANT: Field alterations may impair performance or capability and could result in loss of warranty. Consult Cascade for any required modifications.

RECOMMENDED HYDRAULIC SUPPLY

J-Series Revolving Clamps can be operated with any of the hydraulic supply arrangements shown below. Refer to Cascade *Hose & Cable Reel Selection Guide*, Part No. 212199, to select the correct hose reel for the mast and truck. The hose and fitting requirements are:

- **14J** All hoses and fittings for both CLAMP, SIDESHIFT and ROTATE functions require No. 6 hose with .28 in. (7 mm) minimum ID.
- 18J, 22J 26J CLAMP and SIDESHIFT function Hoses and fittings should be No. 6 with .28 in. (7 mm) minimum ID.
- 18J, 22J 26J ROTATE function Hoses and fittings should be No. 8 with .40 in. (10 mm) minimum ID.

CAUTION: Rotate function supply circuit back pressure exceeding 500 psi (35 bar) can result in excessive oil heating, reduced attachment performance and shortened hydraulic system life. Check for restrictions such as numerous fittings and fitting/hose sizes less than No. 6 (14J) or No. 8. (18J, 22J, and 26J).



A and B

RH and LH THINLINE[™] 2-port hose reel groups.

OR

Α

Solenoid Adaption using a RH 6-N-1 Cable-Hose Reel Group

OR (optional)

A and C

RH THINLINE[™] 2-Port Hose Reel Group for ROTATE function, and mast single function Internal Hose Reeving Group for the CLAMP function.

Truck Relief Setting (see attachment nameplate)					WARNING: Rated capacity of the truck/attachment combination		
	Low Pres 2245 psi (15 2740 psi (18	sure High 5 bar) 2755 9 bar) 3625	n Pressure psi (190 bar) psi (250 bar)	Recommended Maximum		is a responsibility of the original truck manufacturer and may be less than that shown on the	
NOTE: The attachment revolving connection has separate pressure relief control, see Instruction Step 12 for adjustment.						attachment nameplate. Consult the truck nameplate.	
Tru	uck Flow \	Volume ^①					
		Min. ^②	Recommende	d Max. ³		TIM	
CL/ SID	AMP, DESHIFT	5 GPM (19 L/min)	12 GPM (45 L/min.)	16 GPM (61 L/min.)			
14J	ROTATE	5 GPM (19 L/min)	8 GPM (32 L/min.)	12 GPM (45 L/Min.)			
18J RO	, 22J, 26J TATE	5 GPM (19 L/min)	10 GPM (38L/min.)	15 GPM (57 L/Min.)			
① (Cascade Revolv 10W petroleum or MIL-0-2104B not recommend seals must be u	ving Clamp attac base hydraulic f . Use of synthet led. If fire resista used. Contact Ca	chments are compa fluid meeting Mil. S ic or aqueous base ant hydraulic fluid is ascade.	atible with SAE pec. MIL-0-5606 e hydraulic fluid is s required, special			
2 F F	-low less than r performance.	ecommended w	ill result in reduced	l system			
3 F	Flow greater that system perform	an maximum can ance and short h	n result in excessive hydraulic system lif	e heating, reduced e.			
	Reference: SS-279	92 SH 2 (R0), SS-2784	4 SH 2 (R2), SS-2790 SH	2 (R1), SS-2806 SH 2 (R2)		GA0460.eps	
	Carriag	ge Mount D) imension (A	A) ITA (ISO)			
A	∏	Minimu	m N	laximum	ſ	Carriage – Clean carriage bars	
	Class II Class III	14.94 in. (380 18.68 in. (474).0 mm) 15.00 i I.5 mm) 18.74 i	in. (381.0 mm) in. (476.0 mm)		and inspect carriage bars. Make sure the bars are parallel and that ends are flush. Papair any demaged potabas	
						nush. Repair any damaged noiChes.	

Auxiliary Valve Functions

Check for compliance with ANSI/ITSDF (ISO) standards:

WARNING: Truck control handle and attachment function activation shown here conforms to ANSI/ITSDF B56.1 (ISO 3691) recommended practices. Failure to follow these practices may lead to serious bodily injury or property damage. End user, dealer and OEMs should review any deviation from the practices for safe operation.



6904508

Follow the steps shown to install the attachment on the truck. Read and understand all **WARNING** and **CAUTION** statements. If you don't understand a procedure, ask your supervisor, or call the nearest Cascade Service Department for assistance.



Unlock Quick-Change lower mounting hooks (if equipped)

- A Move hooks into unlocked position.
- **B** Reinstall pin in lower hole.







14J

Prepare hoses

A Determine hose lengths required for hydraulic supply configuration of truck.

B Cut hoses to length, install end fittings.

CAUTION: Rotate function supply circuit back pressure exceeding 500 psi (35 bar) can result in excessive oil heating, reduced attachment performance and shortened hydraulic system life. Check for restrictions such as numerous fittings and fitting/hose sizes less than No. 6 (14J) or No. 8. (18J, 22J, and 26J).

CAUTION: Use hoses that are 180 bar (2600 psi) working pressure rated for all attachment functions.

18J, 22J, 26J



RH & LH 2-PORT THINLINE[™] HOSE REELS



RH 2-PORT THINLINE[™] HOSE REEL AND SINGLE INTERNAL HOSE REEL (18J Attachment Shown)



LH 2-PORT THINLINE[™] HOSE REEL AND SOLENOID ADAPTION WITH 6-N-1 CABLE (18J Attachment Shown)



Flush hydraulic supply hoses

- A Install hoses as shown.
- **B** Operate auxiliary valves for 30 seconds.
- **C** Remove union fittings.
- **D** Connect hoses to clamp fittings as shown in Step 3.









Connect hoses prepared in Step 3 to hose terminals



18J, 22J, 26J





Install solenoid control knob or push button switch (solenoid equipped)

IMPORTANT: Avoid interference with other control levers and control surfaces.

NOTE: Secure the cable so it will not be pinched when the handle is actuated.



Install the push button switch to the control lever. Refer to Installation Instructions 6822725, included with switch, for complete installation procedure.



Remove existing knob from auxiliary valve handle. Install the new knob using the adapter provided.





Cycle attachment functions

WARNING: Make sure all personnel are clear of the clamp during testing.

- With no load, cycle CLAMP, SIDESHIFT (if equipped) and ROTATE functions several times.
- Check functions for operation in accordance with ANSI/ITSDF (ISO) standards.
- Clamp and rotate a maximum load, check for equal arm movement and normal rotation.
- Check for leaks at fittings, revolving connection and cylinders.



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REVOLVING ATTACHMENTS

REVOLVING ATTACHMENTS WITH SOLENOID ADAPTION







E Repeat Steps C and D to confirm setting.



WARNING: Before removing hydraulic lines or components, relieve pressure in the hydraulic system. With the truck off and move the truck auxiliary control valve(s) several times in both directions.

Attachments without arms are supplied with two arm bases. Special forks can be welded directly to them or they can be used as a base to fabricate custom built arms.



WARNING: Cascade requires that a qualified or certified welder experienced in this type of fabrication be used for best quality.

CAUTION: Weld fabricated arms to the **arm bases** only. Do not weld or bolt special built arms or forks directly to the **arm bars**.

The arm base material is AISI C-1020 HR with the following specifications:

- TENSILE STRENGTH 61,000 PSI (420 mPa min.)
- YIELD STRENGTH 43,000 PSI (300 mPa min.)
- CARBON CONTENT 23% max.

CAUTION: The surface flatness of the arm base must remain within 0.01 in. (0.25 mm) in capscrew area and arm must slide manually.



1 Fasten the arm bases to the arm bars. Use drive extension tool, Cascade part no. 6040284 (14 mm) or 6040285 (17 mm), to clear arm bars and tighten capscrews to torque of:

14J – 202 ft.-lbs. (274 Nm) **18J- 26J –** 394 ft.-lbs. (534 Nm)

IMPORTANT: Be careful not to damage the arm bar. Premature bearing failure will occur.

Drive extension dimensions are provided to make the tool from the allen wrench. Do not use mild steel hex stock.

- **2** Lubricate the cylinder rod threads, nut threads and spherical portion of the nut with wheel bearing grease.
- **3** Install the hex washer on the rod end with the beveled side facing the arm base lug.
- 4 Engage the rod end into the lug. Align the washer flats with the pins (if equipped) on the back side of the arm base lug.
- **5** Tighten the rod end nut to a torque of:

14J- 22J – 85 ft.-lbs. (115 Nm) **26J** – 173 ft.-lbs. (235 Nm)

Prevent rod turning by using wrench on hex washer.

NOTE: The rod nut is being tightened against the hex washer. The nut will not be tight against the arm base lug. This looseness allows for cylinder alignment during clamping.

6 Install the locking cap and cotter pin.









WARNING: After completing any service procedure, always test the attachment through five complete cycles. First test the attachment empty, then test with a load to make sure the attachment operates correctly before returning it to the job.

Daily Inspection

Prior to each shift of truck operation, complete the following maintenance procedures:

- Check for loose or missing bolts, worn or damaged supply hoses and hydraulic leaks.
- Inspect cylinder rod anchors for wear. The anchors operate loose and require no lubrication.
- Check for equal arm movement.
- Check decals and nameplate for legibility.



1000-Hour Maintenance

Every time the lift truck is serviced or every 1000 hours of truck operation, complete the following maintenance procedures:

- Check sample of baseplate capscrews for proper torque value. See Technical Bulletin TB183 or Service Manual 6928202 for checking and replacement procedures.
- Check sample of bearing capscrews for proper torque value. See Technical Bulletin TB183 or Service Manual 6928202 for checking and replacement procedure.
- Tighten upper hook capscrews to a torque of:

14J – 165 ft.-lbs. (225 Nm) **18J-26J** – 121 ft.-lbs. (165 Nm)

• Tighten frame capscrews to a torque of:

14J-22J – 195 ft.-lbs. (270 Nm) **26J, Hex Head** – 320 ft.-lbs. (435 Nm) **26J, Socket Head** – 394 ft.-lbs. (534 Nm)

- Tighten arm bar capscrews to 394 ft.-lbs. (534 Nm).
- If equipped, tighten cylinder rod anchor nuts to a torque of:

14J-22J – 85 ft.-lbs. (115 Nm) **26J** – 173 ft.-lbs. (235 Nm)



WARNING: A sampling of baseplate and bearing capscrews must be checked for proper torque at 500 hours (see TB183). A complete inspection is required every 2000 hours. Failure to keep the capscrews tightened can result in attachment damage and serious injury.

1000-Hour Maintenance (Continued)

Check clearance between lower mounting hooks and truck carriage bar:

Quick-Change Hooks – 0.18 in. (5 mm) max. Bolt-On Hooks – Tight against lower carriage bar.

If adjustment is necessary, refer to Installation Step 7. Tighten lower hook capscrews to a torque of 122 ft.-lbs. (165 Nm).



Back (Driver's) Vew

- Lubricate rotation bearing assembly with Omnitask multi-pupose NLGI Grade 2 grease or equivalent. Rotate one full turn during procedure.
- Check that rotator drive gearcase lubricant level is up to fill plug hole. If necessary, fill with Cascade Rotator Drive Lubricant, Part No. 656300 or SAE 90 wt. gear lube (AGMA 'mild' 6 EP Gear Oil). Replace plug.
- Check that the load holding hydraulic system is functioning properly. Clamp Force Indicator 831887 is available for this test.
- Inspect top and bottom bearings of each arm for wear or damage. Replace bearings if any area is worn less than 0.06 in. (1.5 mm).

2000-Hour Maintenance

After each 2000 hours of truck operation, in addition to the 1000-hour maintenance, perform the following procedures:

 Check all rotation bearing capscrews for proper torque value. See Technical Bulletin TB183 or Service Manual 6928202 for checking and replacement procedures.

4000-Hour Maintenance

After each 4000 hours of truck operation, in addition to the 1000-hour and 2000-hour maintenance, perform the following procedures:

• Due to normal mechanical wear and component service life, cylinder seals should be replaced to maintain performance and safe operation.



Back (Driver's) View

Do you have questions you need

answered right now? Call your nearest Cascade Service Department. Visit us online at www.cascorp.com

AMERICAS

Cascade Corporation U.S. Headquarters 2201 NE 201st Fairview, OR 97024-9718 Tel: 800-CASCADE (227-2233) Fax: 888-329-8207

EUROPE-AFRICA

Cascade Italia S.R.L. European Headquarters

Via Dell'Artigianato 1 37030 Vago di Lavagno (VR) Italy Tel: 39-045-8989111 Fax: 39-045-8989160

ASIA-PACIFIC

Cascade Japan Ltd. 2-23, 2-Chome, Kukuchi Nishimachi Amagasaki, Hyogo Japan, 661-0978 Tel: 81-6-6420-9771 Fax: 81-6-6420-9777

Cascade Australia Pty. Ltd.

1445 Ipswich Road Rocklea, QLD 4107 Australia Tel: 1-800-227-223 Fax: +61 7 3373-7333

Cascade Canada Inc.

5570 Timberlea Blvd. Mississauga, Ontario Canada L4W-4M6 Tel: 905-629-7777 Fax: 905-629-7785

Cascade (Africa) Pty. Ltd.

PO Box 625, Isando 1600 60A Steel Road Sparton, Kempton Park South Africa Tel: 27-11-975-9240 Fax: 27-11-394-1147

Cascade Korea

121B 9L Namdong Ind. Complex, 691-8 Gojan-Dong Namdong-Ku Inchon, Korea Tel: +82-32-821-2051 Fax: +82-32-821-2055

Cascade New Zealand

15 Ra Ora Drive East Tamaki, Auckland New Zealand Tel: +64-9-273-9136 Fax: +64-9-273-9137

Cascade do Brasil

CEP 09891-430

Praca Salvador Rosa.

131/141-Jordanópolis,

Tel: 55-13-2105-8800

Fax: 55-13-2105-8899

São Bernardo do Campo - SP

Cascade-Xiamen No. 668 Yangguang Rd. Xinyang Industrial Zone Haicang, Xiamen City Fujian Province P.R. China 361026 Tel: 86-592-651-2500 Fax: 86-592-651-2571

Sunstream Industries Pte. Ltd.

18 Tuas South Street 5 Singapore 637796 Tel: +65-6795-7555 Fax: +65-6863-1368

Cascade India Material

Handling P Ltd Sy no 271/8, Ingawale Patil Estate, Godown No.9,10 & 11, Bhugaon, Off Paud Road, Tal Mulshi, Dist Pune 411 042

