

TECHNICAL MANUAL

OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT
AND GENERAL SUPPORT MAINTENANCE MANUAL
INCLUDING REPAIR PARTS LIST
FOR
PUMP, STRIPPER
(MODEL 226-209)
(GRACO, INC.)
(NSNA)

HEADQUARTERS, DEPARTMENT OF THE ARMY

APRIL 1980

WARNING

Never point the gun at yourself or anyone else. Take care not to get spray containing cleaning chemicals into eyes, ears, or nose. If any does get on the skin or in your eyes, flush immediately and thoroughly with water. Seek immediate medical attention for eyes.

TECHNICAL MANUAL

No. 9-4940-410-14&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 28 April 1980

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REPORTING OF ERRORS

You can help improve this manual. If you find any mistake or know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-MAS, Rock Island, IL 61299. A reply will be furnished direct to you.

NOTE

This manual is published for the purpose of identifying an authorized commercial manual for the use of the personnel to whom the pump stripper is issued.

Manufactured by: Graco Inc.

P.O. Box 1441

Minneapolis, MN 55440

Procured under Contract No: DAAA09-75-M-8227

This technical manual is an authentication of the manufacturers commercial literature and does not conform with the format and content specified in AR 310-3, Military Publications. This technical manual does, however, contain available information that is essential to the operation and maintenance of the equipment.

**INSTRUCTIONS FOR REQUISITIONING PARTS
NOT IDENTIFIED BY NSN**

When requisitioning parts not identified by National Stock Number, it is mandatory that the following information be furnished the supply officer.

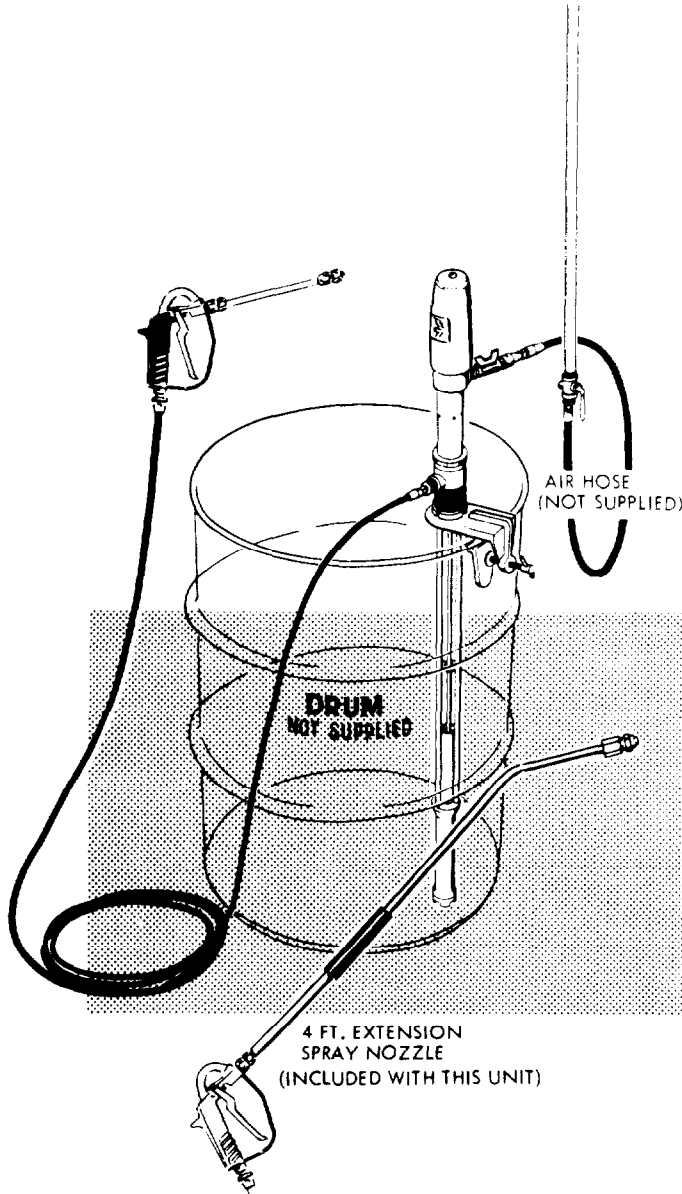
- 1 - Manufacturer's Federal Supply Code Number -
- 2 - Manufacturer's Part Number exactly as listed herein.
- 3 - Nomenclature exactly as listed herein, including dimensions, if necessary.
- 4 - Manufacturer's Model Number -
- 5 - Manufacturer's Serial Number (End Item)
- 6 -Any other information such as Type, Frame Number, and Electrical Characteristics, if applicable.
- 7 - If DD Form 1348 is used, fill in all blocks except 4,5,6, and Remarks field in accordance with AR 725-50.

Complete Form as Follows:

- (a) In blocks 4, 5, 6, list manufacturer's Federal Supply Code Number followed by a colon and manufacturer's Part Number for the repair part.
- (b) Complete Remarks field as follows:
 - Noun: (nomenclature of repair part)
 - For: NSN:
 - Manufacturer:
 - Model:
 - Serial:
 - Any other pertinent information such as frame number, type, dimensions, etc.

360 PSI -- 25 bar -- MAXIMUM WORKING PRESSURE

PRESSURE WASHER
-stainless steel-
Model 226-209



Height : 51 inches
Weight : 35 lbs.

CAUTION

Maximum operating temperature for immersion
fluid pump is 480° F.; for air motor 200° F.



application

For low pressure spray application of paint strippers, metal brighteners, etching compounds and other hard to handle specialty products, where overspray at high pressures is hazardous or objectionable.

features

Teflon packed, stainless steel fluid immersion pump is separated from its air motor to prevent the chemical

solution getting into air motor and fouling its operation. Unit includes a mounting clamp for open drums; bung adapter for 2 in. N.P.T. bung type closed drums; 40 ft. of ¼ in. I.D. nylon lined and static ground wire fluid hose; non-corrosive spray valve with 12 in. spray nozzle and .031 tip with 25° spray angle; 4 ft. spray nozzle extension with .062 tip having a 40° spray angle; air control valve ; quick air coupler,

AIR REQUIREMENTS

Air input pressure required to operate the pump is 30 to 180 psi (2 to 12.5 bar). Air consumption—rule of thumb: This 2 to 1 pump requires approximately .4 cubic feet of air per gallon of fluid pumped for each 15 psi of air supply pressure. For example: with 75 psi air supply to a pump operating at 1½ gallons per minute the air consumption will be $75 \div 15$ or $5 \times .4 \times 1\frac{1}{2} = 3$ cfm.

Pump develops fluid pressure approximately 2 times the inbound air pressure. The 2500 lb. working pressure fluid hose supplied with this unit is strong enough to withstand the fluid pressures developed by the pump.

Pump should not be run continuously at more than 66 cycles or 1½ gallons per minute.

INSTALLATION

1 PREPARING UNIT FOR USE

(1) Mount pump in fluid supply container with drum clamp provided as shown in Fig. 1, if an open drum. Screw pump into clamp (or bung bushing of closed drum) until it touches bottom, then back out ½ in. and tighten ring nut. Refer to Fig. 1. Vent plug in a closed drum should be loosened to prevent a vacuum from forming in drum.

(2) Screw bushing into pump fluid outlet and fluid hose into bushing with wrench applied to small hex of hose stud. Refer to Fig. 1. Use pipe sealant, at threaded connections.

(3) Screw air coupler pin fitting onto pump air control valve. Attach on air supply hose (at least ¼ in. I.D.) to ¼ in. n.p.t. (f) inlet of quick air coupler. Refer to Fig. 1.

(4) Provide a suitable water supply hose and spray valve for rinsing.

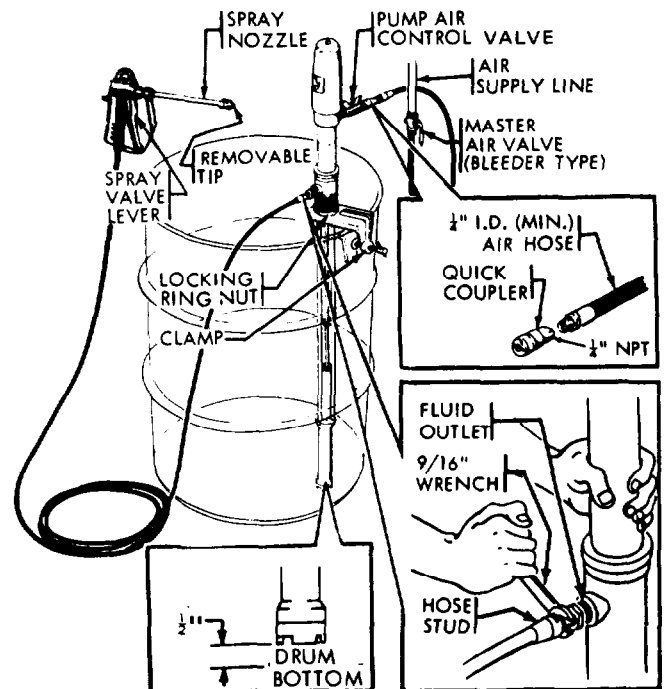


Fig 1

OPERATION

WARNING

NEVER point the gun at yourself or anyone else. Take care not to get spray containing cleaning chemicals into eyes, ear, or nose. If any does get on your skin or in your eyes, flush immediately and thoroughly with water. Seek immediate medical attention for eyes.

2 MIXING THE SOLUTION

Prepare the solution according to manufacturer's instructions.

3 STARTING & STOPPING PUMP

(1) Close pump air valve (turn handle perpendicular to body) before connecting quick coupler and turning on air. Then open valve as required to start pump,

(2) Squeeze lever of spray valve and hold open until solution is spraying from nozzle. Pump is now primed.

(3) Adjust air valve until pump is operating smoothly and suitable spray is achieved. Do not operate pump any faster than necessary.

(4) Release spray valve lever to stop pump. Pump operation is controlled by spray valve, squeeze valve open to start again.

CAUTION

During shutdown, always disconnect air quick coupler and open spray valve to relieve all pressures in unit.

(2) If dirt is not removed completely, spray dirty areas again.

(3) Rinse solution from surface with clear, cold water or pressure clean using the _____ before water rinsing.

NOTES

- 1) The small tip (stamped 25015) and large tip (stamped 4006) in nozzles can be interchanged as necessary to obtain the best results... readjust pump speed after changing.
- 2) Protect all parts which could be damaged by solution or water.
- 3) Hot surfaces normally can be cleaned better after wetting with water.
- 4) Particularly heavy concentrations of soil may have to be removed with a sponge or brush.

4 CLEANING PROCEDURE

(1) Hold spray valve with nozzle 1 to 2 feet from surface and wet surface thoroughly with solution. Then move nozzle to within 6 inches of surface and use spray to flush surface clean.

SERVICE

NOTE

Always disconnect air supply line and open spray valve to relieve fluid pressure before servicing unit.

5 TROUBLESHOOTING

Service instructions are given in following paragraphs and in separate instructions (306-593 & 307-010) for the less common troubles only. Check all other possible remedies and flush out solution (see par. 7) if it will burn skin on contact, before disassembling spray valve or pump.

TROUBLES:

- Will not spray _____
- Pump does not operate (hose removed) _____
- Valve won't stop pump operation _____
- Valve won't stop fluid spray _____
- Spray valve leakage at needle _____
- Fluid pressure low on both strokes _____
- on down stroke _____
- on up stroke _____
- Erratic pump operation _____
- Fluid hose leakage _____

PROBABLE CAUSE:

- Restricted air supply line _____
- Closed or clogged air valve or no pressure _____
- Obstructed spray tip, valve or hose _____
- Exhausted supply of solution _____
- Incorrect spray valve adjustment _____
- Worn needle packings or loose packing nut _____
- Clogged spray valve or worn stem or seat _____
- Clogged or worn fluid piston or packings _____
- Clogged or worn pump fluid intake valve _____
- Clogged or worn air piston or packings _____
- Upper air motor spring broken _____
- Hose abuse; sharp kinking, crushing, etc. _____

POSSIBLE REMEDIES

- Clear _____
- Open, clear _____
- Clear _____
- Refill container _____
- Adjust (see 307-010) _____
- Tighten (see 307-010) _____
- Clear (see 307-010) _____
- See 306-593 _____
- See 306-593 _____
- See 306-593 _____
- See 306-593 _____
- Recouple (par. 8) _____

6 LUBRICATION & CARE

- (1) For automatic lubrication, install accessory air line Oiler shown on page 5, or lubricate air motor weekly by injecting about 15 drops of light oil into quick coupler pin fitting before starting pump. See Fig 2.
- (2) Stop pump immediately when it is running too fast and check solution level in supply container.
- (3) Oil spray valve periodically.

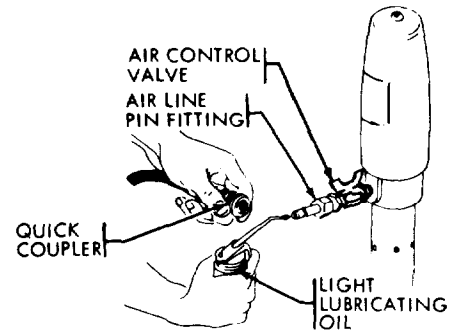


Fig 2

7 FLUSHING TO REMOVE HAZARDOUS SOLUTION

- (1) Remove pump from container of solution and remount so pump is outside of container. See Fig. 3.
- (2) Aim spray valve into solution container, squeeze lever and pump out all possible solution.
- (3) Stop pump by closing air valve and set pump in pail of 2-3 gallons of clear water as shown in Fig. 3.
- (4) Aim spray valve into pail of water, open air valve, squeeze valve lever and circulate water for 3 or 4 minutes.
- (5) Release valve lever, remove pump from pail, reclamp pump to outside of container, aim valve into pail, squeeze valve lever and pump out all possible water.

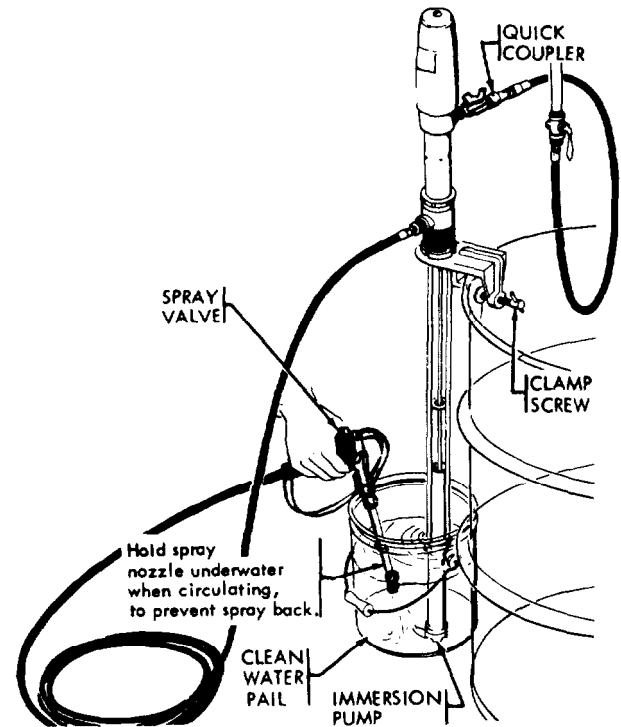


Fig 3

8 FLUID HOSE SERVICE

To salvage hose, remove the reusable coupling from damaged section by reversing the installation procedure. Then, install the coupling on the good section of hose.

- (1) Cut hose squarely so it will bottom all around on shoulder in sleeve.
- (2) Clamp hose so its end is not more than 1½ times sleeve length from vise. Screw sleeve onto hose counterclockwise until hose bottoms. Back off ½ turn. See Fig. 4.

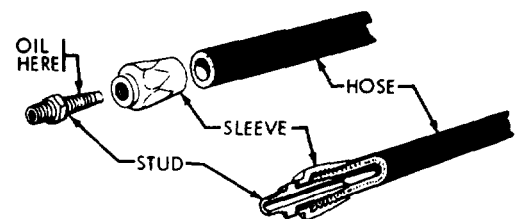
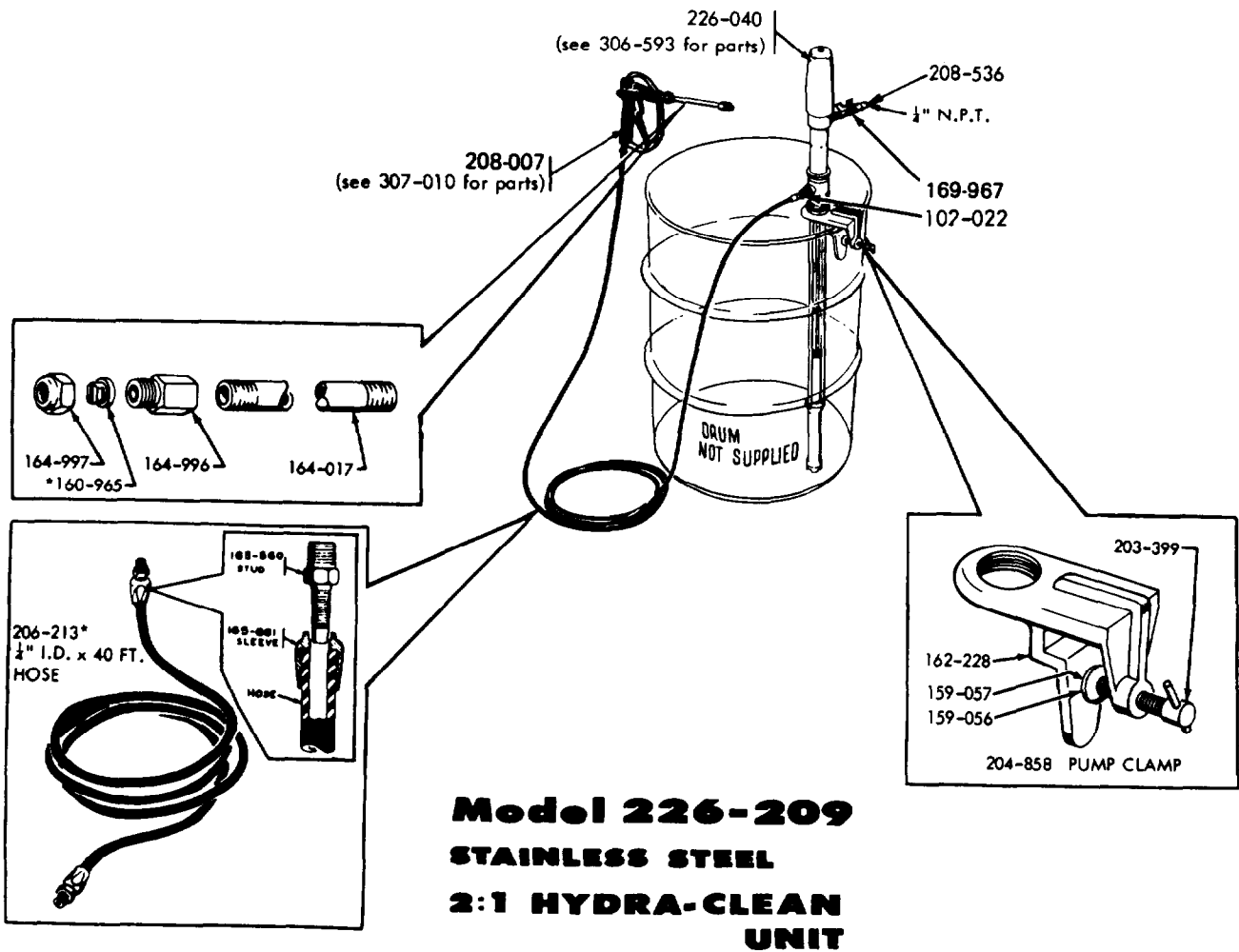
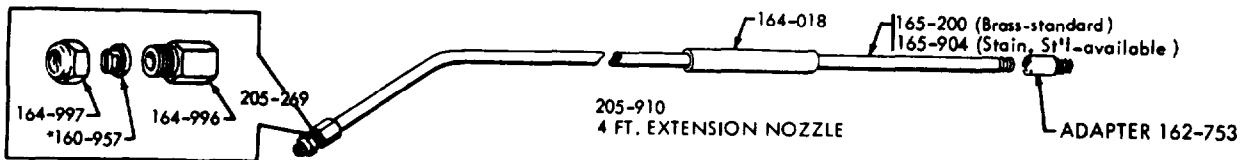


Fig 4

- (3) Clamp sleeve in vise, oil stud lightly and wrench tighten stud snugly against sleeve.



*** SUGGESTED REPLACEMENT PARTS**



PARTS LIST

PART NO.	DESCRIPTION	QTY.	PART NO.	DESCRIPTION	QTY.
102-022	BUSHING, fluid outlet: 1/2 x 1/4 npt	1	165-660	STUD, reusable coupling: fluid hose	2
159-056	PAD, clamp screw: pump clamp	1	165-661	SLEEVE, reusable coupling: fluid hose	2
159-057	RETAINER, pad: pump clamp	1	169-967	FITTING, air line	1
• 160-957	TIP, spray; 1/16" equiv. orifice size; 40° fan angle: spray nozzle extension	1	203-399	CLAMP SCREW Assy.: pump clamp	1
• 160-965	TIP, spray; 1/32" equiv. orifice size; 25° fan angle: spray nozzle	1	204-858	PUMP CLAMP Assy.	1
162-228	BODY, pump clamp	1	205-269	SPRAY NOZZLE Assy.: 4 ft. extension	1
162-753	ADAPTER; 1/4 npt (mx): nozzle extension	1	205-910	NOZZLE EXTENSION Assy.: 4' lg	1
164-017	TUBE, spray; 1/4" n.p.t. (m) thd; 10" lg.	1	206-213	FLUID HOSE Assy; 1/4 ID; 40' lg; cpld 1/4 npt (m); nylon	1
164-018	GRIP, plastic; 7" lg.: nozzle extension	1	208-007	SPRAY GUN (see 307-010 for parts)	1
164-996	BODY, spray nozzle	2	208-536	COUPLER, air line	1
164-997	CAP, spray nozzle	2	226-040	2:1 S.S. PUMP (see 306-593 for parts)	1

*SUGGESTED REPLACEMENT PARTS

SERVICE INFORMATION

Listed below by the number of the assembly changed are OLD, NEW and ADDED parts.

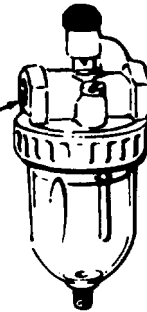
ASSEMBLY CHANGED	PART DESIGNATION	PART NO.	NAME
205-910 EXTENSION Assy	ADDED	162-753	Adapter
226-209 FINAL Assy	OLD	157-435	Fitting
	NEW	169-967	Fitting
	OLD	202-437	Coupler
	NEW	208-536	Coupler
	OLD	206-204	Spray Gun
	NEW	208-007	Spray Gun

INTERCHANGEABILITY NOTE: NEW parts replace OLD parts listed directly above them.

ACCESSORY

206-243 AIR LINE OILER

3/8 NPT INLET AND OUTLET



By Order of the Secretary of the Army:

Official:

J.C. PENNINGTON
Major General, United States Army
The Adjutant General

E.C.MEYER
General, United States Army
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Pump, Stripper, Model 226-209

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PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.
1	1(3)		
3	7(1)		

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

In line 3, change 1/2 in. n.p.t. to 1/4 in. n.p.t.

Change Fig. 4 to Fig. 3.

SAMPLE

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

JOHN DOE SP/3 XX-XXXX

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John Doe

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