DV207
Vibratory Roller

SERVICE MANUAL

Part number 84555711A
English
April 2012

CASE

This service manual is divided into several chapters. It includes technical and assembly data, adjustment guidelines and instructions in the use of special tools, jigs and aids.

The primary purpose of this Service Manual is to provide basic information on removal, installation and servicing/ repair of the machine's main groups.

Machine group identification in this manual corresponds to the Spare Parts Catalog.

Before beginning work, we recommend that you mark any removed parts that will be reinstalled and that you cover all holes in individual hydraulic system parts to prevent hydraulic circuit contamination.

When installing individual parts in the machine, tighten individual bolts or nuts as indicated in the torque tables (appendix) unless otherwise indicated in the text.

ALWAYS observe the safety instructions and precautions indicated in Chapter 2.

The manufacturer is continually improving the products based on operational experience and the latest knowledge. Consequently, the manufacturer reserves the right to make changes to the illustrations, descriptions, procedures or design patterns given in this manual as developments are made.

13. Crush hazard!

3431bz

Engage the hood lock before servicing the machine. Failure to comply could result in death or serious injury. (Symbol located on the left hand side)

Part No.: ND147576

Quantity: 1

14. Crush hazard!

3570bz

Secure the steering joint (lock link) when loading and transporting the machine on a vehicle. Failure to comply could result in death or serious injury. (Symbol located to the left on the rear frame near the joint)

Part No.: 84595622

Quantity: 1

15. Hood locking


3326bz

Lock the hood. (Symbol located on the left side of the machine)

Part no.: ND140504

Quantity: 1

16. Crush hazard!

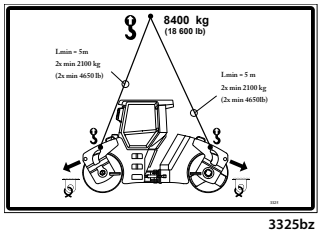
3433bz

Make sure that no one is within the danger area surrounding the edge cutter. Failure to comply could result in death or serious injury. (Symbol located on right-hand side of the machine (option))

Part No.: ND147578

Quantity: 1

17. Lifting diagram



3325bz

Use rigging of sufficient loading capacity to lift the Machine. Secure the Machine's joint before lifting. (Symbol located on the left side of the machine)

Part no.: ND140503

Quantity: 1

18. Lifting lugs


2153bz

Lift the machine using these lugs. (Symbol located on both sides of the machine)

Part no.: ND081460

Quantity: 4

19. Sling points


3048bz

The machine is to be rigged in these points. (Symbols located on both sides of the machine)

Part no.: ND119495

Quantity: 4

3.1. Safety regulations

The following safety regulations must be observed by anyone who repairs the machine!

- Only a skilled, competent, trained and experienced service technician and/or dealer or Service Center of Case Company may repair this machine.
- ALWAYS use our Service Manual during repair work. Special instructions concerning installation work are given in individual chapters.
- Before putting the machine into operation, read Operator's Manual thoroughly to familiarize yourself with the machine controls and make sure you understand all the equipment of your machine before putting the machine into operation.
- Do NOT use the machine unless you fully understand all the controls and control elements and until your know exactly how the machine operates.
- Familiarize yourself with the site where you will be working.
- NEVER convert or adapt the machine because doing so could impair machine safety.
- Use only genuine parts and accessories designed specifically for this machine.
- Mounting or using parts that have not been supplied or authorized by the machine manufacturer could negatively impact operating characteristics and safe operation of the machine.

Safety precautions during machine repair or inspection

- Wear protective clothing and shoes.
- Use protective gloves when handling oil, fuel and coolant.
- Protect your eyes with safety glasses or a shield when handling the battery.
- Park the machine on a flat and paved surface before beginning any machine repair work. Secure the machine so it does not to move unexpectedly.
- Before starting any work, remove the key, disconnect the battery and allow the hot parts to cool down.
- Attach a "DO NOT OPERATE" sign to the steering wheel and keep it there until repair work is complete.
- Wash the entire machine properly. If using steam, do not expose electric components or insulation material to the direct steam flow or cover them first.
- Use caution if using detergents. Do NOT use gasoline or other flammable materials for cleaning purposes!
- Observe absolute cleanliness of all parts during removal, installation and service repair work. Protect removed parts against any dirt.
- Clean the surface of removed parts and provide for an adequate dust-free environment along with the storage area required.
- Clean and dry the parts; then apply corrosion protection oil instantly – NEVER install corroded parts!
- Tools, hoists, protective devices, supports or other auxiliaries must be in an operable (available) state and in good order.
- Use hoists and rigging (cables, chains) that are intact and have sufficient load capacity.
- Provide for adequate air supply when starting in an enclosed area.
- Before running the machine, make sure no persons are present on the machine or within its hazard zone. Use an acoustic signal to warn that the machine is started. Always do this when starting the machine and after each break before setting the machine in motion. When the acoustic signal sounds, any persons present on the machine or within its hazard zone must leave the machine and the zone. In addition to acoustic and light signals, hand signals must be used as described in chapter "2.4. Hand signals".
- NEVER adjust the Machine while it is in motion.
- If performing emergency work on a running engine (any adjustments), avoid making any contact with hot or rotating parts of the machine. Any work performed while the engine is running (e.g. adjustments) must be done with the presence of another person, who has immediate access to the emergency shutoff switch and maintains continuous communication with the person making the adjustment so engine can be turned OFF instantly if required.
- Use only the specified types of engine oil, transmission fluid, hydraulic oil and coolant.

5.1. Check the tightening of bolted joints

- Confirm regularly that bolted joints have not come loose.
- Use torque wrenches for tightening.

	TIGHTENING TORQUE			
	For screws 8.8 (8G)		For screws 10.9 (10K)	
Thread size	Nm	lb-ft	Nm	lb-ft
M6	10	7.4	14	10.3
M8	24	25.0	34	25.0
M8x1	19	14.0	27	19.9
M10	48	35.4	67	49.4
M10x1.25	38	28.0	54	39.8
M12	83	61.2	117	86.2
M12x1.25	66	48.7	94	69.3
M14	132	97.3	185	136.4
M14x1.5	106	78.2	148	109.1
M16	200	147.5	285	210.2
M16x1.5	160	118.0	228	168.1
M18	275	202.8	390	287.6

	TIGHTENING TORQUE			
	For screws 8.8 (8G)		For screws 10.9 (10K)	
Thread size	Nm	lb-ft	Nm	lb-ft
M18x1.5	220	162.2	312	230.1
M20	390	287.6	550	405.6
M20x1.5	312	230.1	440	324.5
M22	530	390.9	745	549.4
M22x1.5	425	313.4	590	435.1
M24	675	497.8	950	700.6
M24x2	540	398.2	760	560.5
M27	995	733.8	1400	1032.5
M27x2	795	586.3	1120	826.0
M30	1350	995.7	1900	1401.3
M30x2	1080	796.5	1520	1121.0

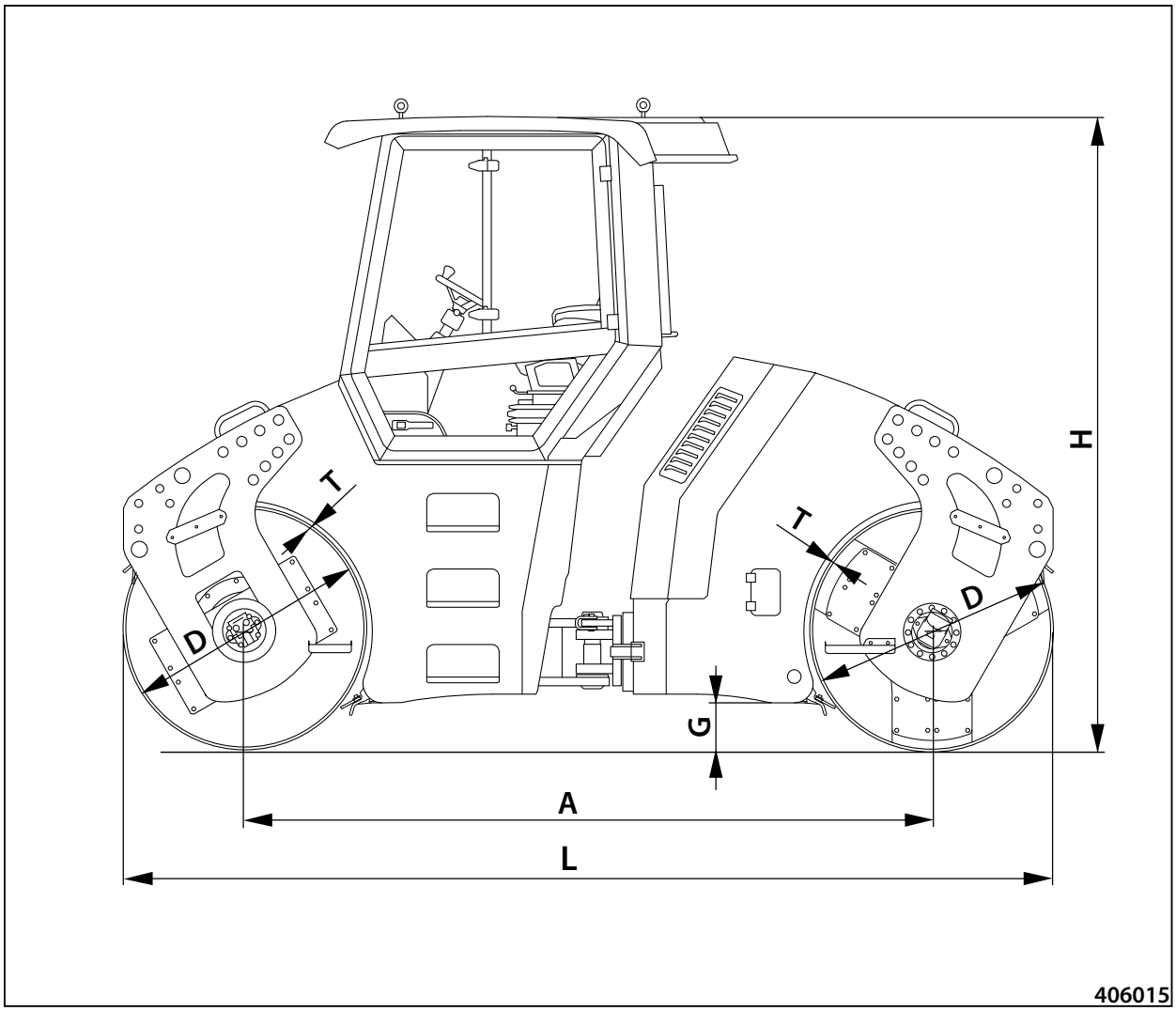
The values given in the table are torques at dry thread (at coefficient of friction = 0.14). These values do not apply to greased thread.

NOTE: *Different tightening torques have been stated in relevant chapters.*

Table with torques of cap nuts with O-ring – hoses

			Tightening torques for sliding nuts with O-ring – hoses					
			Nm			lb-ft		
Wrench size	Thread size	Hose	Nominal	Min	Max	Nominal	Min	Max
14	12x1.5	6	20	15	25	15	11	18
17	14x1.5	8	38	30	45	28	22	33
19	16x1.5	8	45	38	52	33	28	38
		10						
22	18x1.5	10	51	43	58	38	32	43
		12						
24	20x1.5	12	58	50	65	43	37	48
27	22x1.5	14	74	60	88	55	44	65
		15						
30	24x1.5	16	74	60	88	55	44	65
32	26x1.5	18	105	85	125	77	63	92
36	30x2	20	135	115	155	100	85	114
		22						
41	36x2	25	166	140	192	122	103	142
46		28						
50	42x2	30	240	210	270	177	155	199
50	45x2	35	290	255	325	214	188	240
	52x2	38	330	280	380	243	207	280
		42						

6.4. Dimensional diagram DV207



	A	C	D	G1	G	H
mm	3260	180	1150	965	240	3005
in	128.4	7.1	45.3	38	9.4	118.3
	H1	**L**	**T**	**W**	**W1**	
mm	2300	4410	15	1450	1550	
in	90.6	173.6	0.6	57.1	61	

Preparation work

Position the roller in the left/right-hand lock to make it easier to remove the engine from the machine.

Drain the engine oil.

Remove the hood (refer to “13. Removing the hood”).

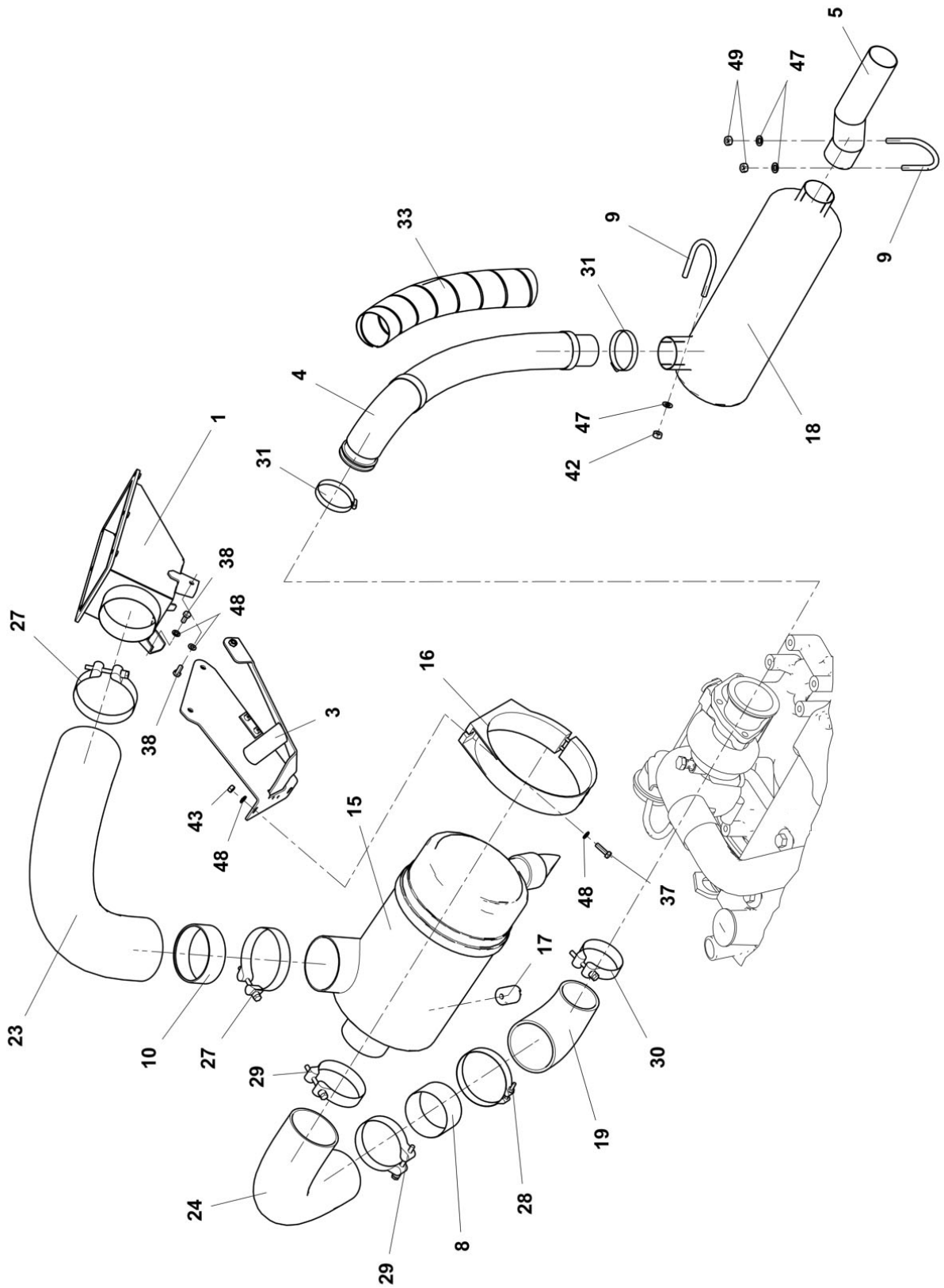
Remove the cooler (refer to “9. Removing the cooler”).

Remove the hydraulic hoses and wiring from the tandem pump. The tandem pump will remain mounted on the engine (refer to “11.3. Removing the tandem pumps for vibration and travel”)

Remove joining strips.

Remove the hose clamp.

Remove coolant pipes.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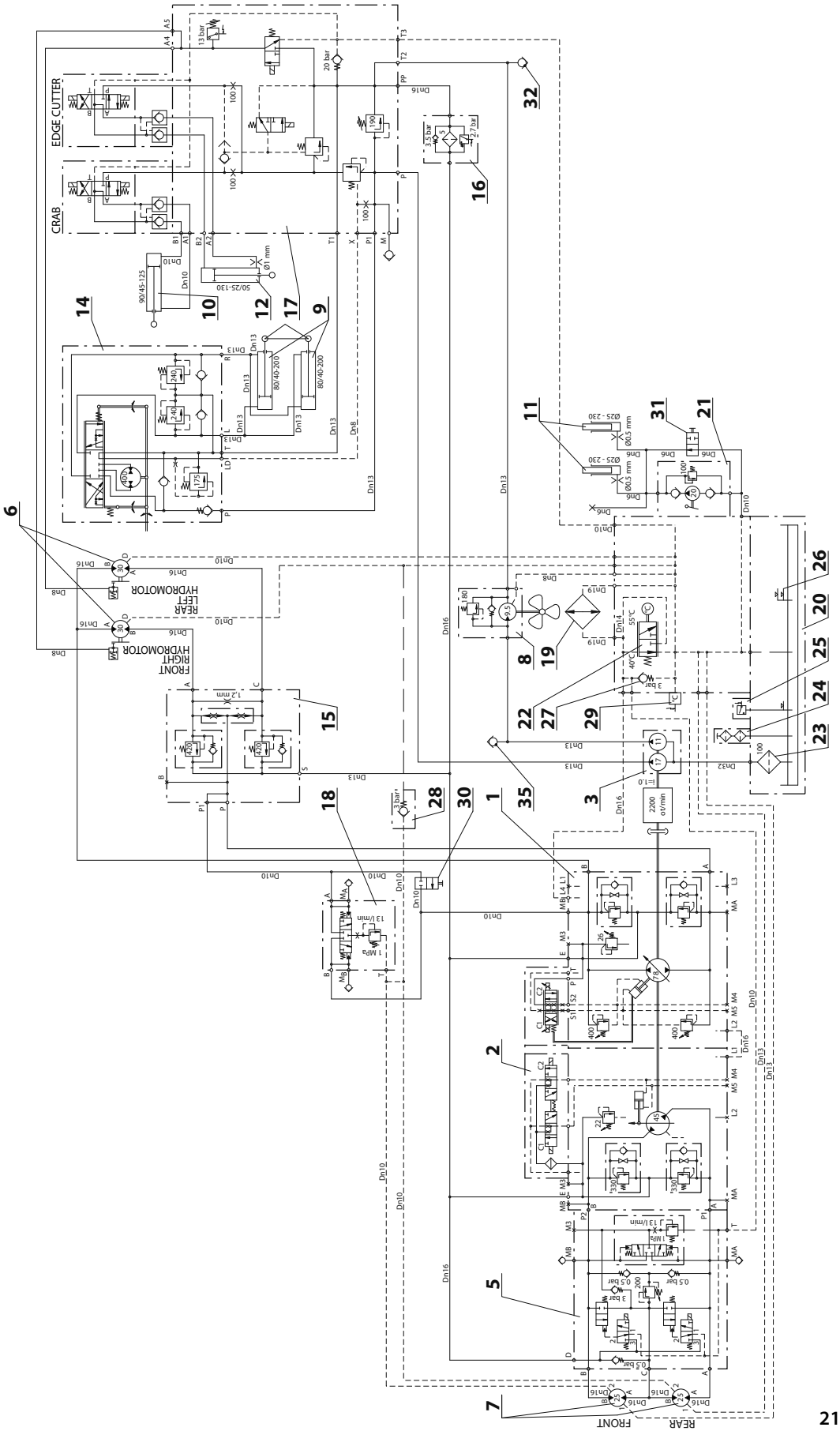
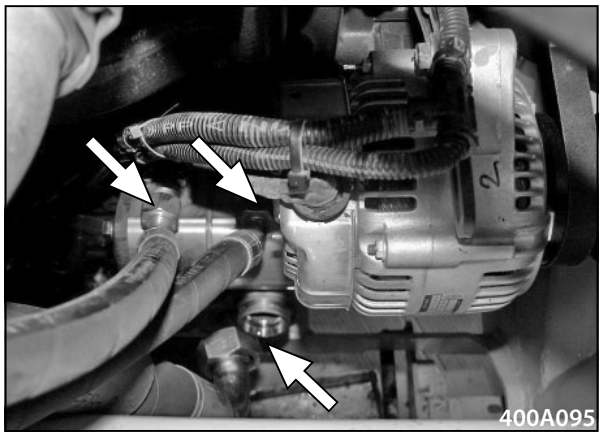

EDGE CUTTER
CRAB
REAR LEFT HYDROMOTOR
FRONT RIGHT HYDROMOTOR
FRONT
REAR
2200 rpm
211391en

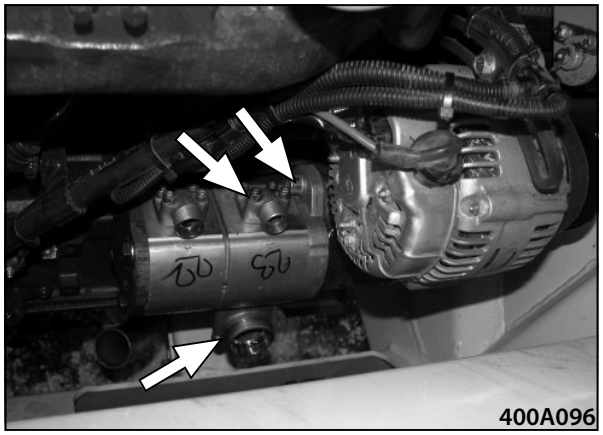
11.2. Removing the gear pump for steering

Mark and remove the hoses.



Remove the flanges. Remove the bolts of the mounting. Shift out the pump.

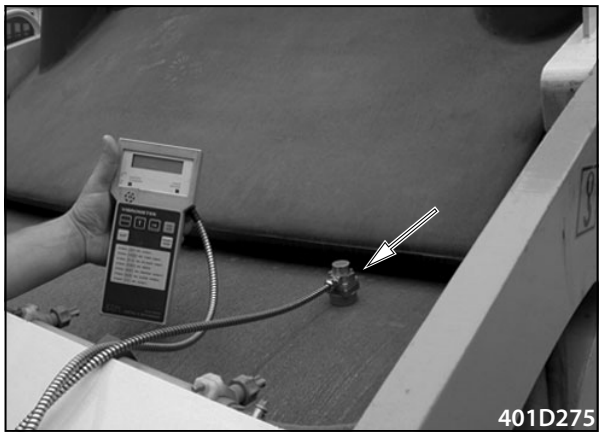
NOTE: *We recommend replacement of the sealing ring.*



11.4. Adjusting vibration frequency

To adjust vibration, check and, if necessary, adjust max. engine rpm. (refer to “8. Removing the engine””.

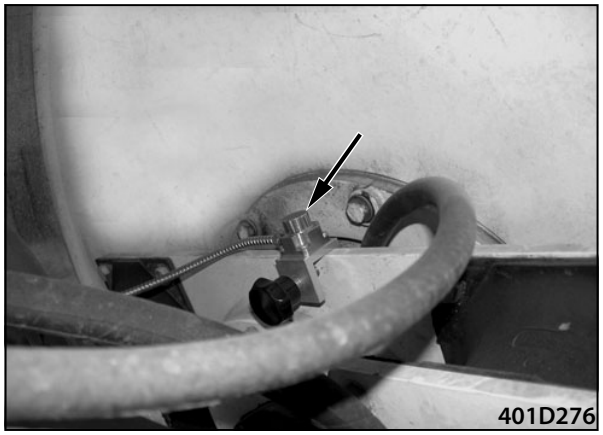
Check frequency values with the roller at standstill and placed on a test bench, or on tires laid down or on a soft surface at max engine speed (adjusted to 2100/2200). Position the gauge probe on the drum mantle and turn vibration ON at the measured drum only.



NOTICE

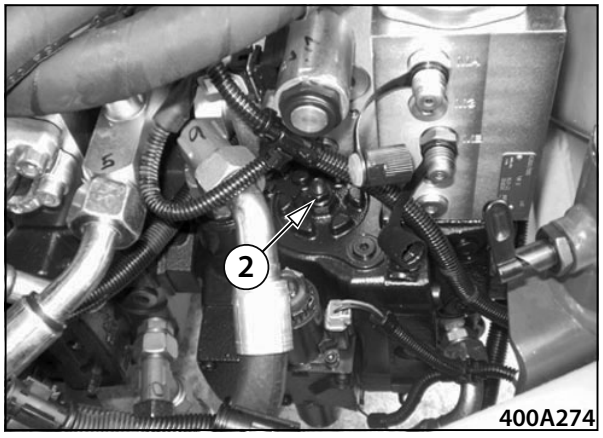
The maximum total vibrator run time with no drum rotation (to lubricate bearings) is 2 minutes!!!

Or position the gauge probe on the damper plate. When measuring this way, you can scan vibrator frequency while driving the machine.



Use Allen screws to adjust vibrator frequency (1) (low amplitude) and (2) (high amplitude) with the locking nut loosened.

Loosening (turning counterclockwise) increases frequency and vice versa. Start the engine and check the set value again with the engine running.



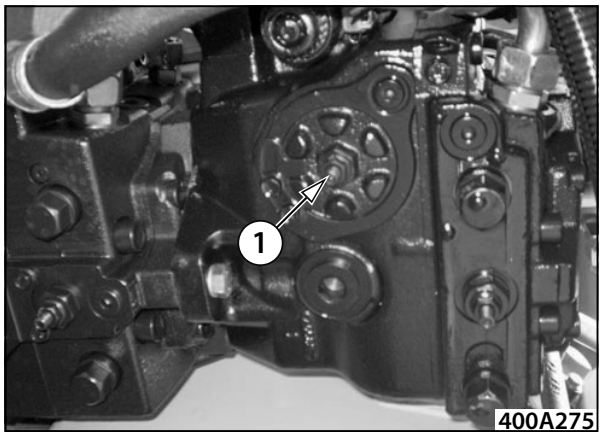
Vibration frequency set values

Roller has “CE” certification

Amplitude	low	52 -0.5 Hz (3120-30 VPM)
Amplitude	high	43 -0.5Hz (2580-30 VPM)

Roller has no “CE” certification

Amplitude	low	62 -0.5 Hz (3720-30 VPM)
Amplitude	high	48 -0.5Hz (2880-30 VPM)



WARNING

Adjust vibration frequency with the engine turned OFF!

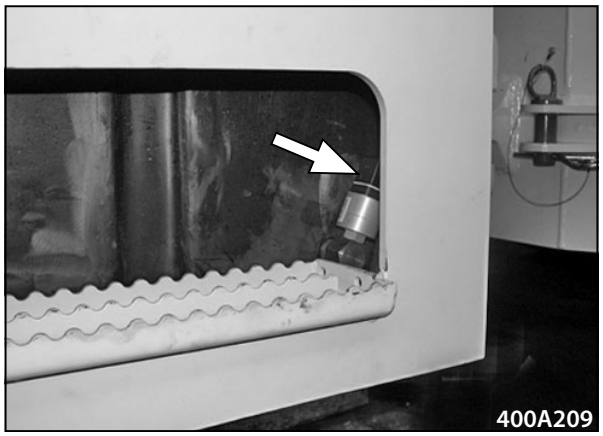
Failure to comply could result in death or serious injury.

Remove the hose clamp.

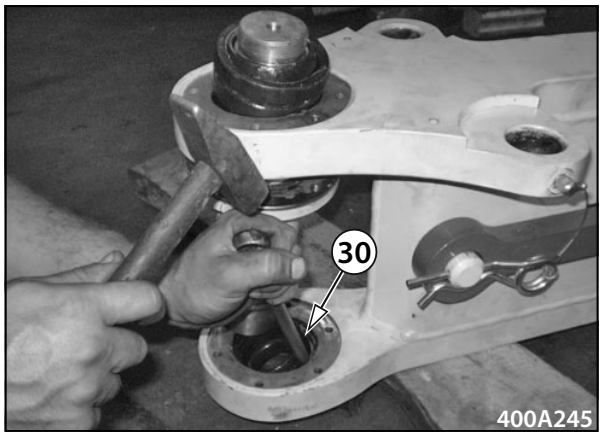
Remove the grommet of the power steering hoses.

Lift the cab slightly, pull through the connector and hoses of the cab and move the cab aside.

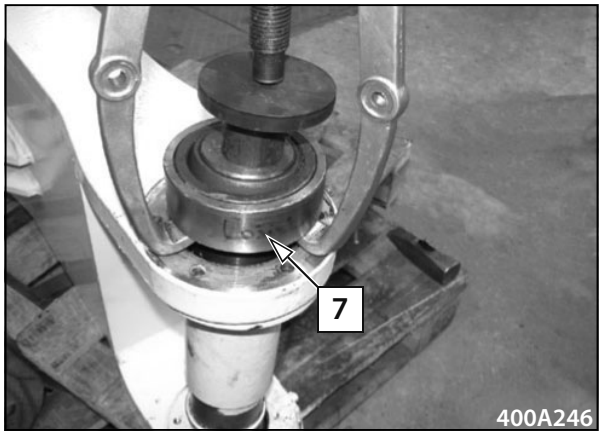
Disconnect the wiring for the alarm for water level in the tank.



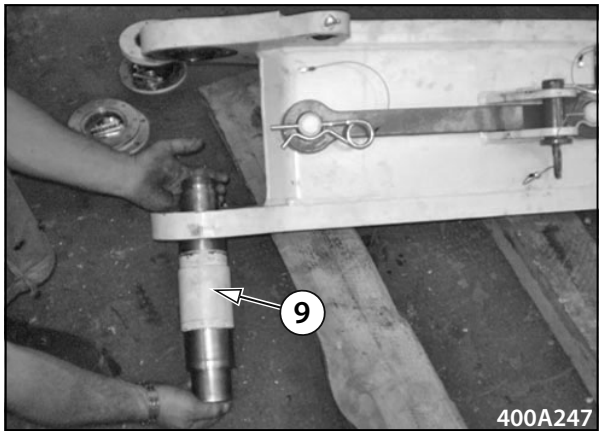
Turn the arm (see figure). Remove the cover (12) from the pin along with scraper ring (31). Press out the bearing (30).



Use fixture no. [7] and puller to pull down the second bearing (30).

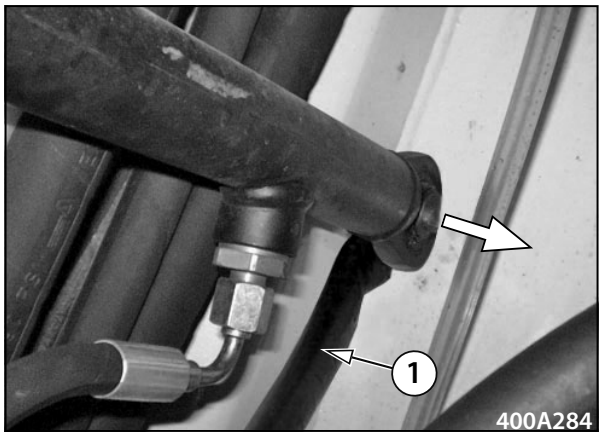


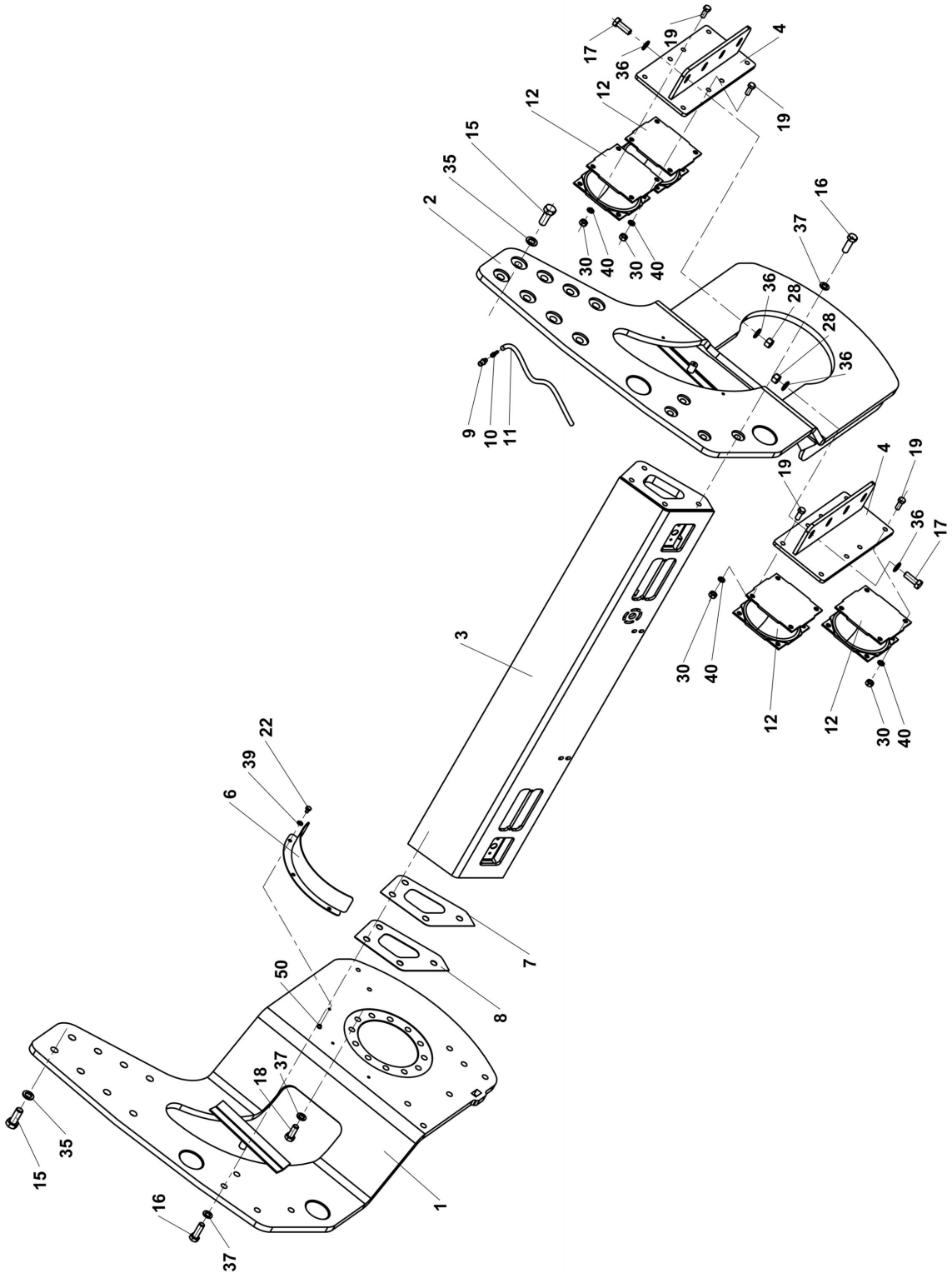
Drive the pin (9) out of the arm.



Use lever (1) to carefully slip the hydraulic cylinder out of the pin.

Remove the hose from the hydraulic cylinder.

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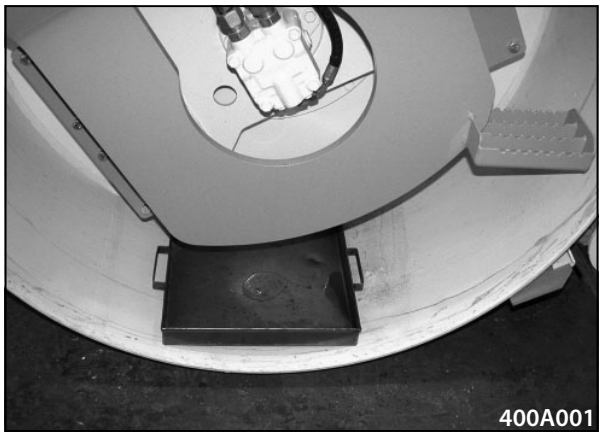
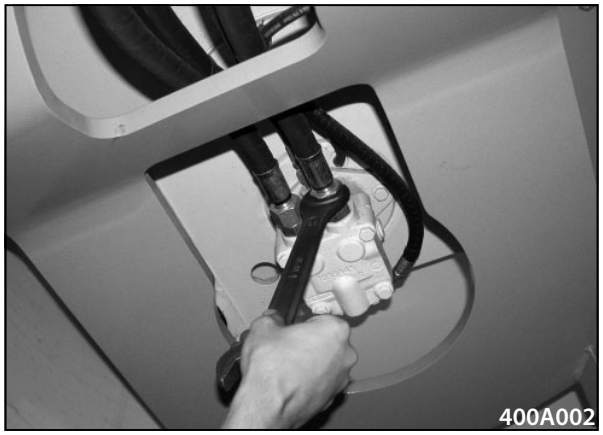
15.1. Removing the vibration hydromotor

The removal process is identical for the left-hand side of the front drum and the right-hand side of the rear drum.

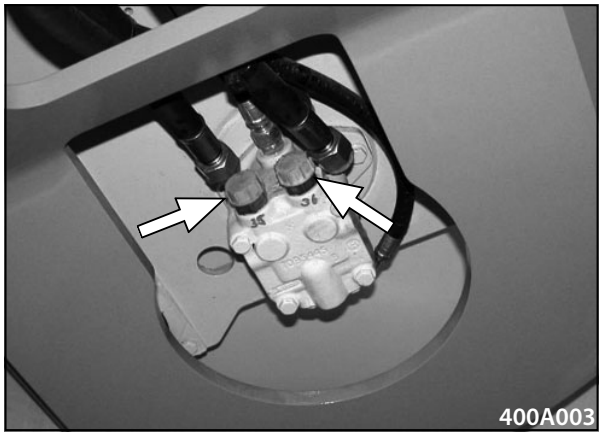
***NOTE**: Position an oil pan under the hydromotor.*



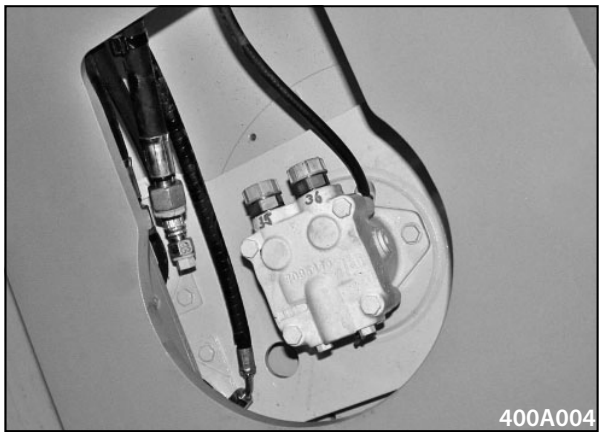
Mark and remove hoses one by one.



Blind the hydromotor hoses and outlets.



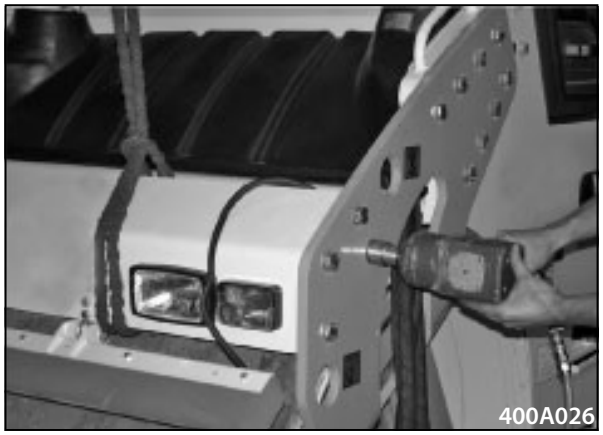
Detach the hoses and move them away.



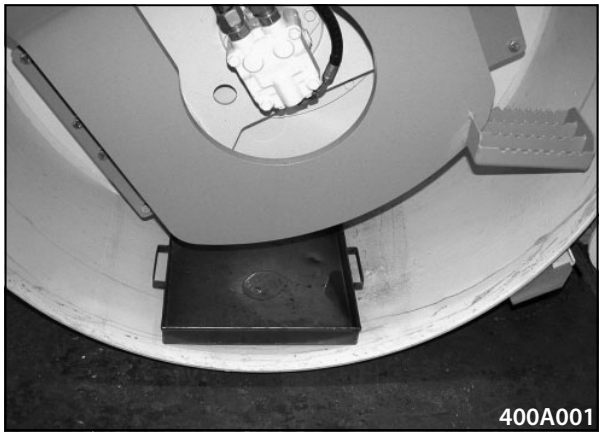
Disconnect wiring connectors (X35, X36).

Suspend the crossmember on the crane, remove the mounting bolts and move it aside.

NOTE: *When reinstalling, clean the contact surfaces and torque tighten the bolts to 200 Nm (148 lb-ft).*

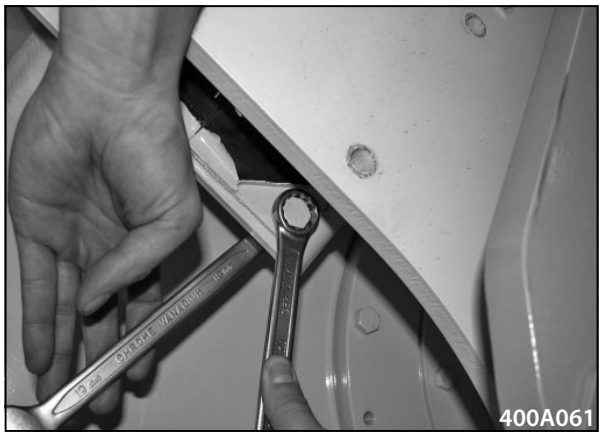


NOTE: *Position an oil pan under the hydromotor.*

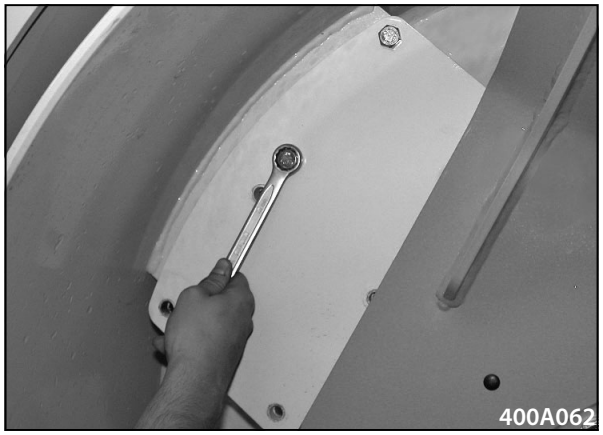


Mark and remove the hoses one by one.

Remove the bolts used to secure the rubber mounting to the bracket.

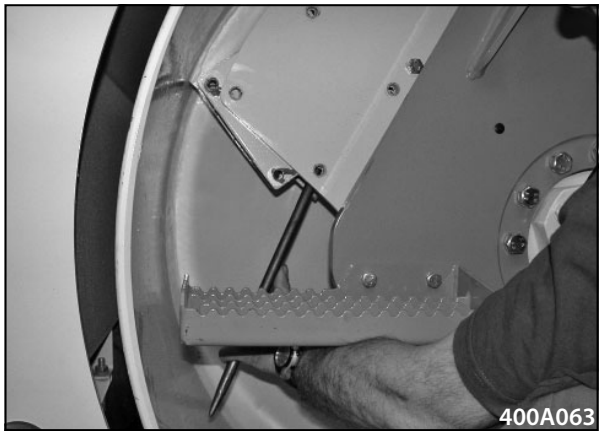


Slacken the bolts of the second rubber mounting to relieve the force on the rubber mountings clamped between the carrier and the bracket.



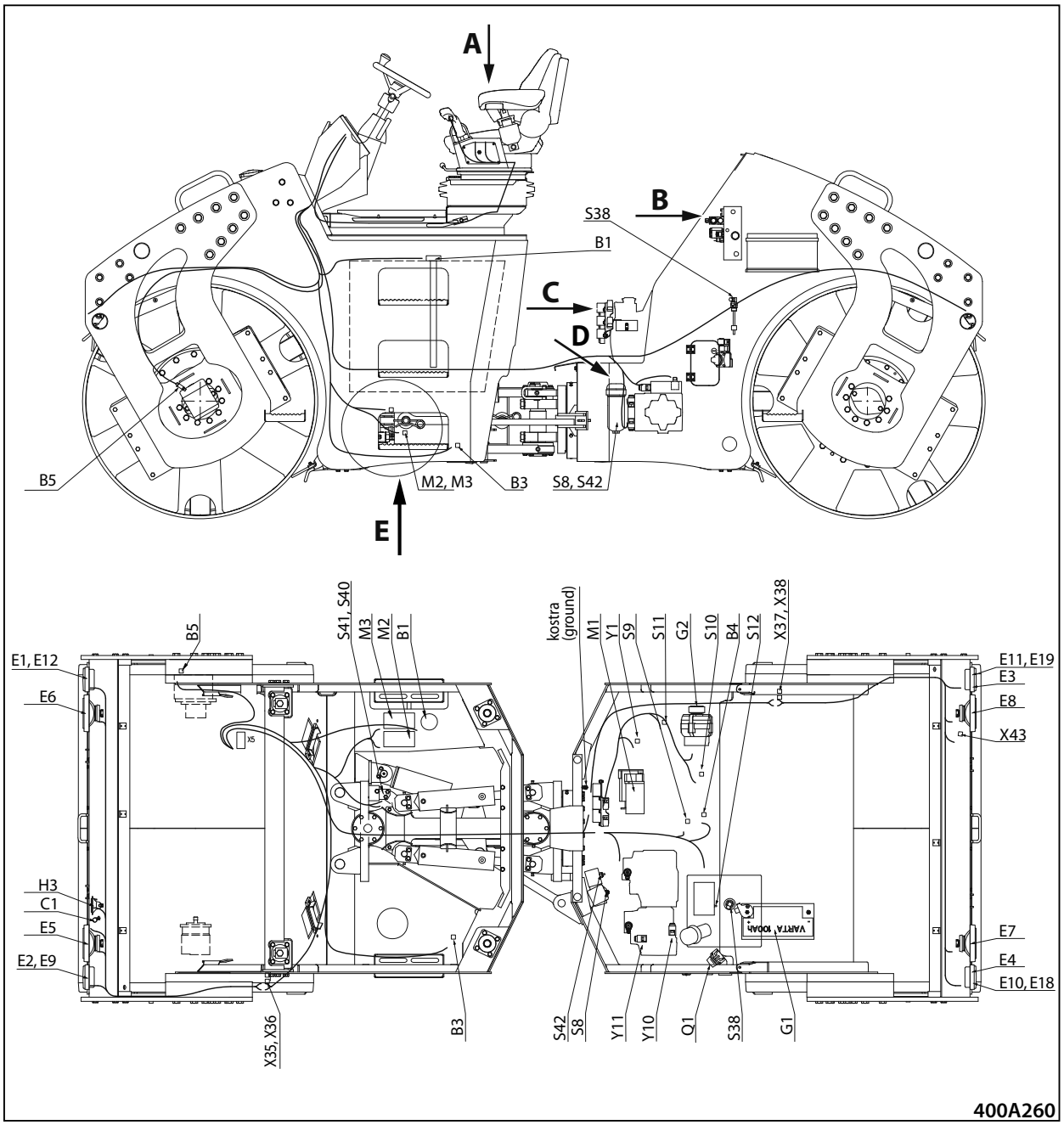
Detach the rubber mountings.

NOTE: *When reinstalling, torque tighten the rubber mounting bolts to 83 Nm (61 lb-ft).*



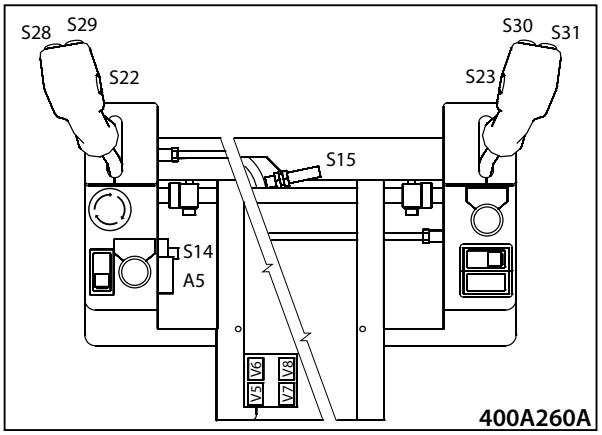
Notes

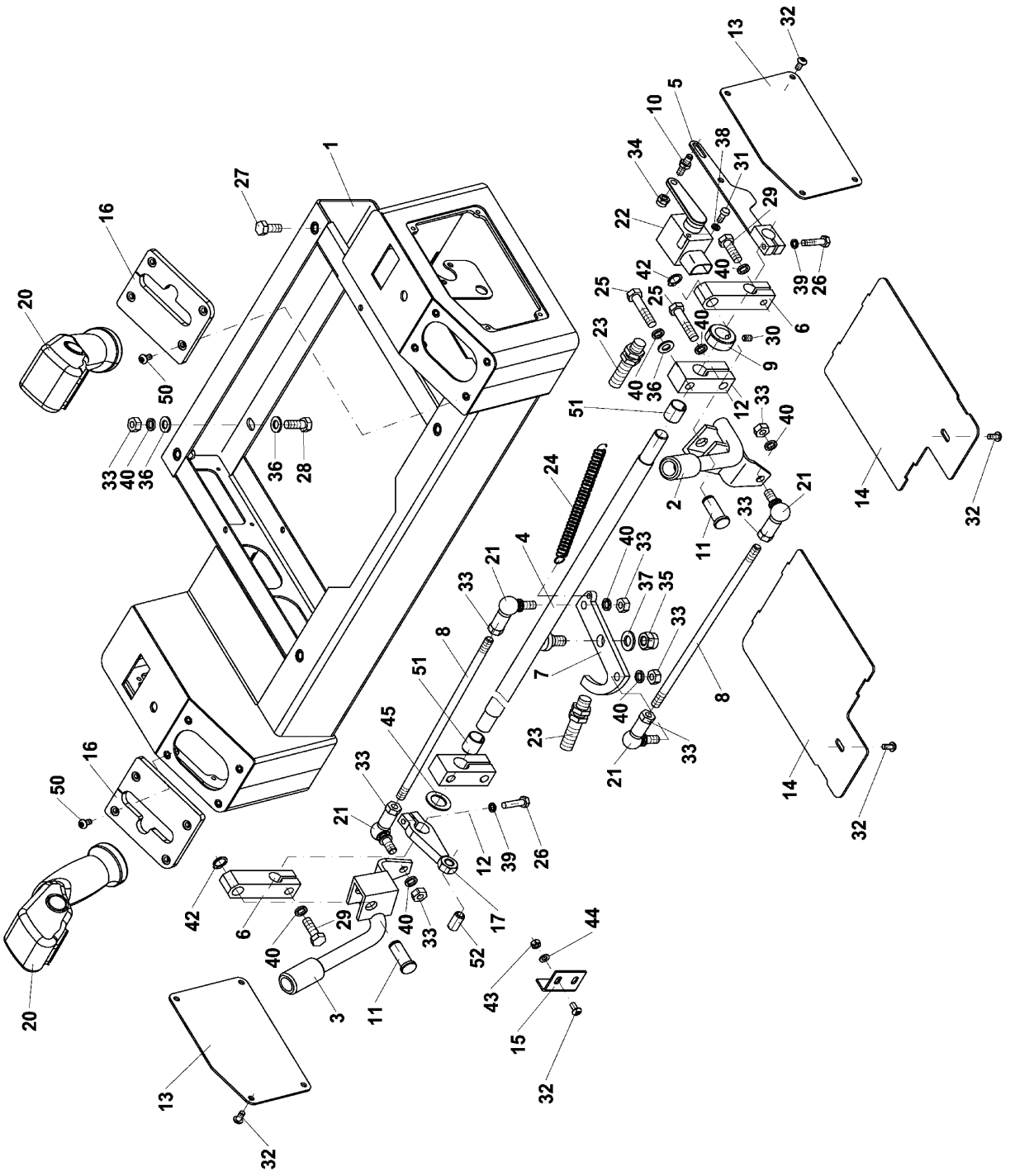
17.5. Layout of wiring elements in the machine



Description of the parts in individual figures as per the wiring diagram legend.

View A

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