

Manitou BT420 Sample File.

This single sample file contains samples for the Operators Manual, Parts Manual and Repair Manual



**BP 249
44158 ANCENIS CEDEX - FRANCE
TEL: 33 (0)2 40 09 10 11**

YOUR DEALER

547918 EN (14/02/2007)

**BT 420 Série 3-E2
BT 425 Série 3-E2
BTI 220 Série 3-E2
BTI 225 Série 3-E2**

OPERATOR'S MANUAL

THIS OPERATOR'S MANUAL MUST BE KEPT IN THE LIFT TRUCK AND MUST BE READ AND UNDERSTOOD BY OPERATORS.



1 - OPERATING AND SAFETY INSTRUCTIONS

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F - TAKING UP AND LAYING A HIGH LOAD ON TYRES

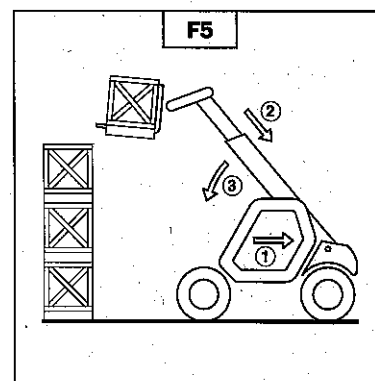
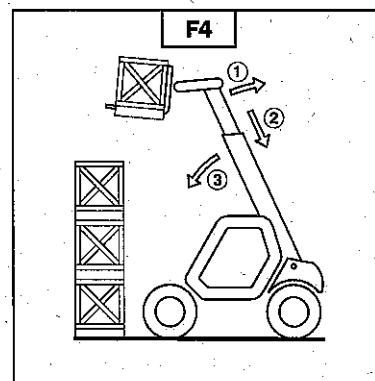
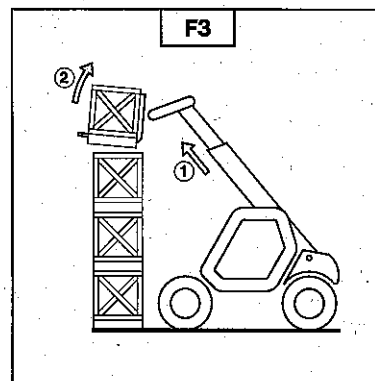
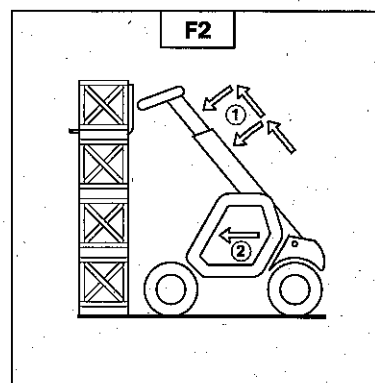
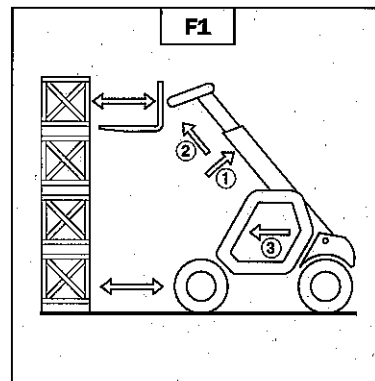


You must not raise the jib if you have not checked the transverse attitude of the lift truck (see: INSTRUCTIONS FOR HANDLING A LOAD: D - TRANSVERSE ATTITUDE OF THE LIFT TRUCK).

REMINDER: Make sure that the following operations can be performed with good visibility (see: OPERATIONS INSTRUCTIONS UNLADEN AND LADEN: D - VISIBILITY).

TAKING UP A HIGH LOAD ON TYRES

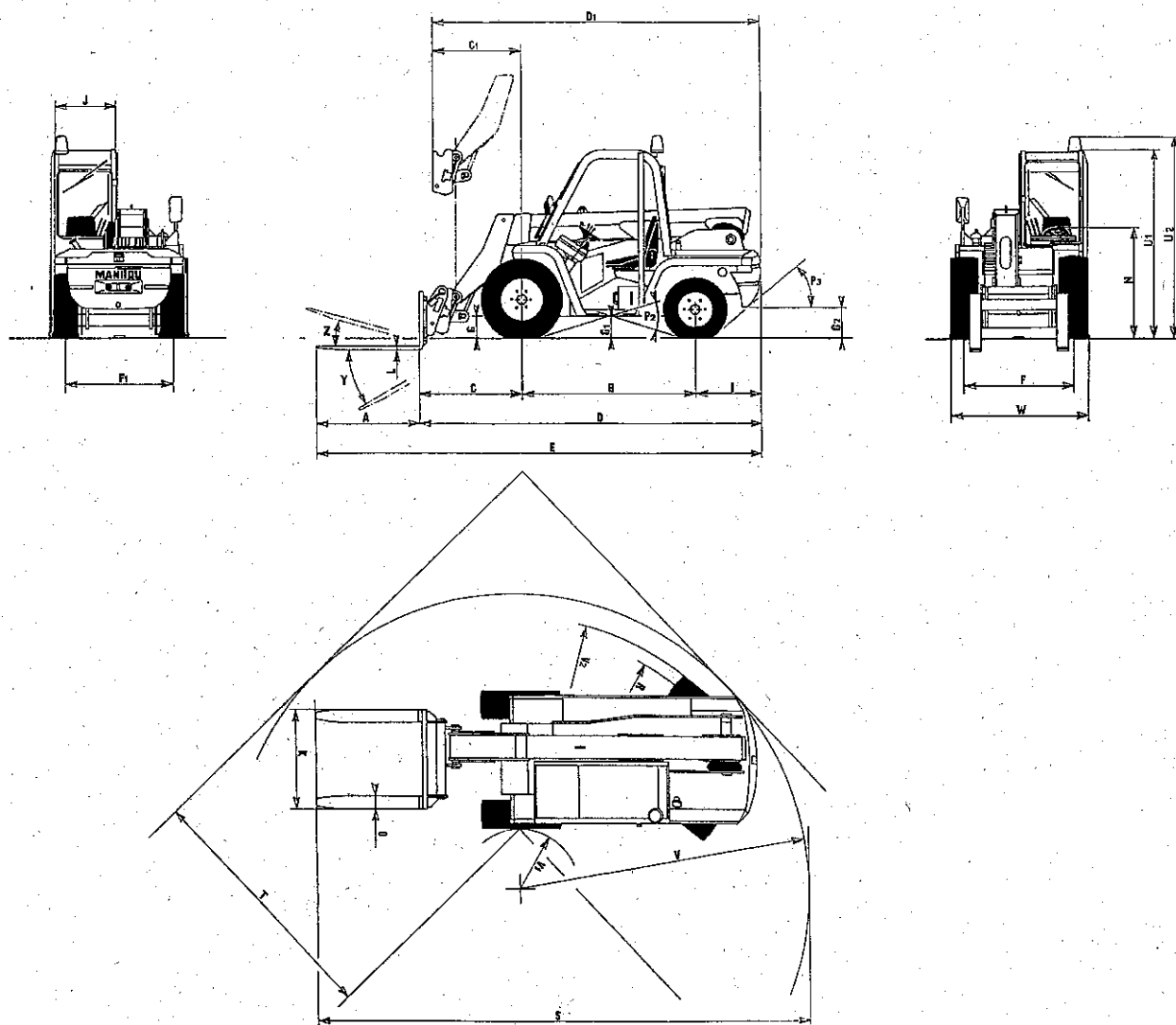
- Ensure that the forks will easily pass under the load.
- Lift and extend the jib (1) (2) until the forks are level with the load, moving the lift truck (3) forward if necessary (fig. F1), moving very slowly and carefully.
- Always think about keeping the distance necessary to fit the forks under the load, between the pile and the lift truck (fig. F1) and use the shortest possible length of jib.
- Stop the forks in front of the load by alternately extending and retracting the jib (1) or, if necessary, moving the lift truck forward (2) (fig. F2). Put the handbrake on and set the reverse gear to neutral.
- Slightly lift the load (1) and incline the carriage (2) backwards to stabilize the load (fig. F3).
- Tilt the load sufficiently backwards to ensure its stability.
- Watch the longitudinal stability alarm (see: INSTRUCTIONS FOR HANDLING A LOAD: C - LONGITUDINAL STABILITY ALARM). If it is overloaded, replace the load in the place from which it was taken.
- If possible lower the load without shifting the lift truck. Lift the jib (1) to release the load, retract (2) and lower the jib (3) to bring the load into the transport position (fig. F4).
- If this is not possible, back up the lift truck (1), manoeuvring very gently and carefully to release the load. Retract (2) and lower the jib (3) to bring the load into the transport position (fig. F5).



2 - DESCRIPTION

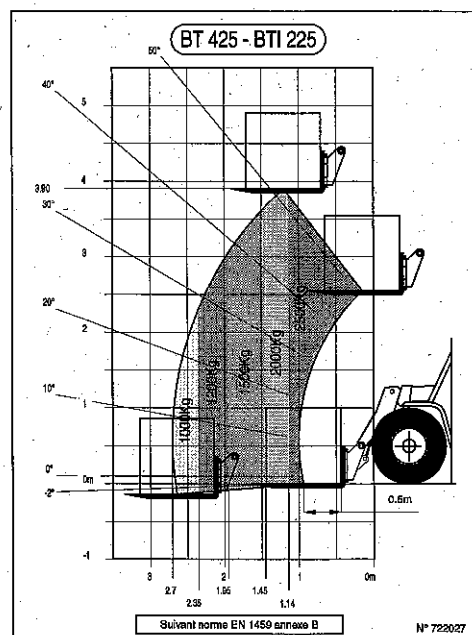
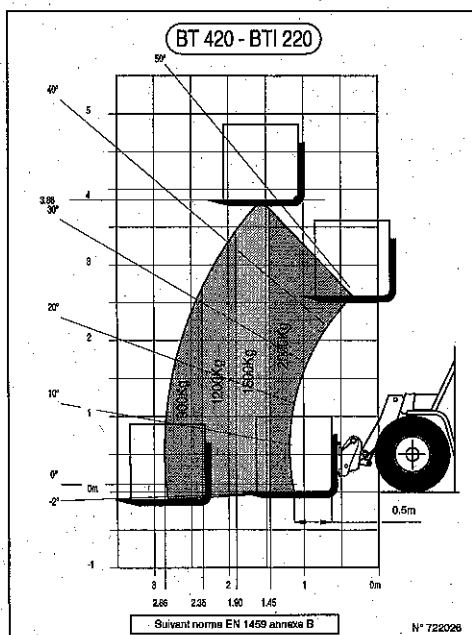
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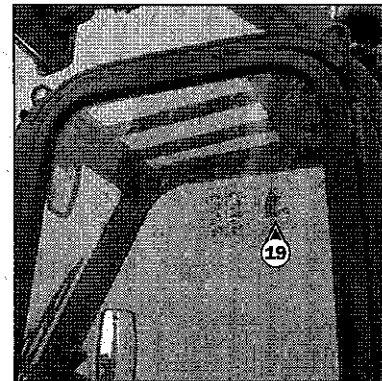
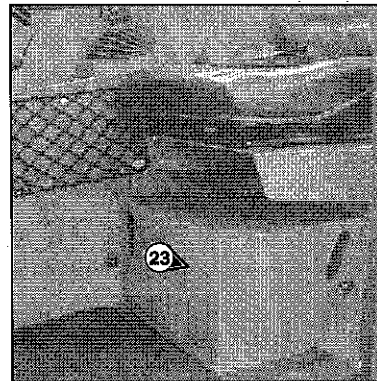
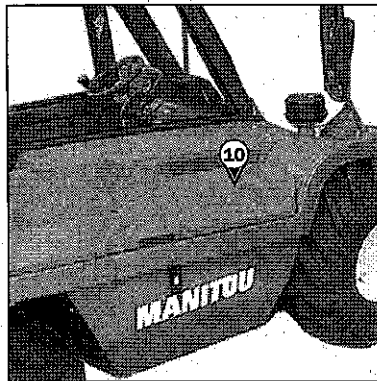
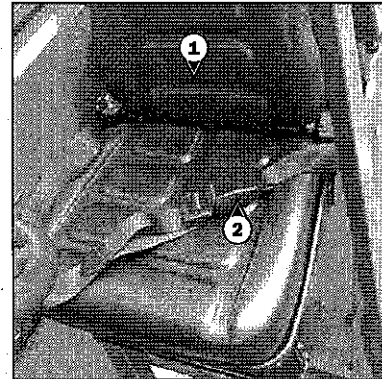
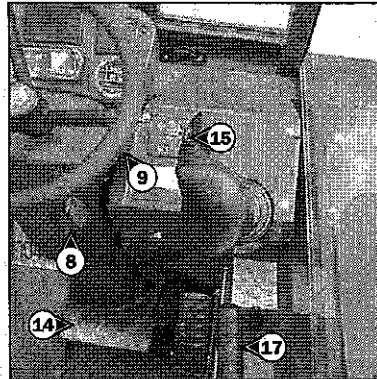
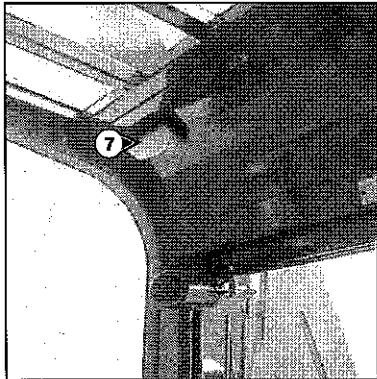
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BTI 220 SÉRIE 3-E2

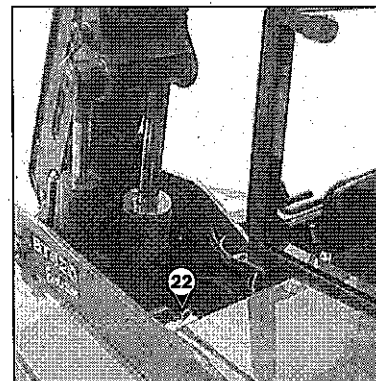
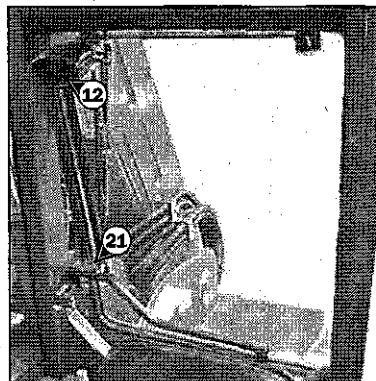
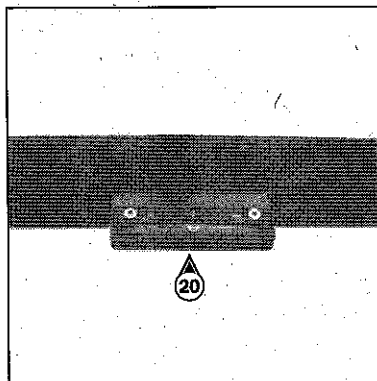
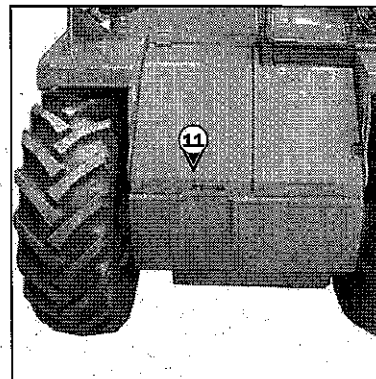
BTI 225 SÉRIE 3-E2





- 1 - DRIVER'S SEAT**
- 2 - SAFETY BELT**
- 3 - SIGNAL LIGHTS PANEL**
- 4 - FUEL LEVEL AND HOURMETER**
- 5 - LONGITUDINAL STABILITY ALARM**
- 6 - SWITCHES PANEL**
- 7 - ROOF LIGHT**
- 8 - IGNITION SWITCH**
- 9 - SOUND ALARM SWITCH**
- 10 - OPEN THE SIDE BONNET: ACCESS TO HYDRAULIC OIL TANK**
- 11 - FRONT BONNET: ACCESS TO FUSES AND RELAYS**
- 12 - REAR WINDOW WASHER SWITCH**
- 13 - ACCELERATOR PEDAL**
- 14 - SERVICE BRAKE PEDAL AND TRANSMISSION CUT-OFF**
- 15 - FORWARD/REVERSE SWITCH**
- 16 - HYDRAULIC CONTROL DISTRIBUTOR LEVERS**
- 17 - PARKING BRAKE LEVER**
- 18 - DOCUMENT HOLDER**
- 19 - LOAD CHARTS FILE**
- 20 - SPIRIT LEVEL**
- 21 - HANDLE FOR REAR WINDOW OPENING**
- 22 - WINDSCREEN WASHER TANK**
- 23 - BATTERY CASING**

NOTE: All the terms such as: RIGHT, LEFT, FRONT, REAR are meant for an observer seated on driver's seat and looking in front of him.



3 - MAINTENANCE

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A = AJUST
C = CHECK
D = DESCALE
G = GREASE

N = CLEAN
R = CHANGE
V = DRAIN

After the first 50 hours	Day or 10 hours	50 hours	6 month or 250 hours	1 year or 500 hours	1 year or 1000 hours	2000 hours	4000 hours
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BRAKE

Parking brake	C/A	◀◀	◀◀	◀◀	◀◀			PAGE
Parking brake lever mechanism			G	◀◀	◀◀	◀◀		3-21
Brake rods	G	◀◀	◀◀	◀◀	◀◀	◀◀		3-27
Brake				A**	◀◀	◀◀		3-18

CAB

Windscreen washer liquid level	C	◀◀	◀◀	◀◀	◀◀	◀◀		3-14
Seat belt				C	◀◀	◀◀		3-30
Condition of the rear view mirrors				C**	◀◀	◀◀		

ELECTRICITY

Battery electrolyte level	C	◀◀	◀◀	◀◀	◀◀	◀◀		3-16
Battery electrolyte density			C	◀◀	◀◀	◀◀		3-26
Condition of wiring harness and cables				C**	◀◀	◀◀		
Lights and signals				C**	◀◀	◀◀		
Warning indicators				C**	◀◀	◀◀		
Adjust the front headlamps								3-37

FRONT AND REAR AXLES

Rear wheels reducers pivots BTI 220/225 Série 3-E2	G	◀◀	◀◀	◀◀	◀◀	C**		3-17
Rear wheel steering cylinder base BTI 220/225 Série 3-E2	G	◀◀	◀◀	◀◀	◀◀	C**		3-17
Rear wheel hub BTI 220/225 Série 3-E2	G	◀◀	◀◀	◀◀	◀◀	C**		3-18
Rear axle oscillation	G	◀◀	◀◀	◀◀	C**	◀◀		3-17
Transmission universal joint BT 420/425 Série 3-E2	G	◀◀	◀◀	◀◀	◀◀	C**		3-17
Transfer box oil level		C	◀◀	◀◀	◀◀	◀◀		3-21
Front axle differential oil level		C	◀◀	◀◀	◀◀	◀◀		3-21
Rear axle differential oil level BT 420/425 Série 3-E2		C	◀◀	◀◀	◀◀	◀◀		3-21
Front axle/transfert box differential oil	V				V	◀◀	◀◀	3-30
Rear axle differential oil	V				V	◀◀	◀◀	3-30
Front wheels reducers oil level		C	◀◀	◀◀	◀◀	◀◀		3-21
Rear axle differential oil level BT 420/425 Série 3-E2		C	◀◀	◀◀	◀◀	◀◀		3-22
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Rear wheels reducers oil BT 420/425 Série 3-E2	V				V	◀◀	◀◀	3-31
Longitudinal stability alarm			G	◀◀	◀◀	◀◀		3-26
Wearing of front axle brake discs						C**		
Rear wheels reducers universal joint BT 420/425 Série 3-E2						C**		
Steering swivel joints						C**		
Front wheels reducers clearance						C**		
Rear wheels reducers clearance BT 420/425 Série 3-E2						C**		

CHASSIS

Structure					C**	◀◀	◀◀	
Bearings and articulation rings						C**	◀◀	

ATTACHMENTS

Forks wear				C**	◀◀	◀◀	◀◀	
Attachment carriage					C**	◀◀	◀◀	
Condition of attachments					C**	◀◀	◀◀	

LIFT TRUCK

Tow the lift truck								3-35
Sling the lift truck								3-36
Transport the lift truck on a platform								3-36
Raise the jib if there is a breakdown								3-35

(*): Every 10 hours during the first 50 hours, then once at 250 hours.

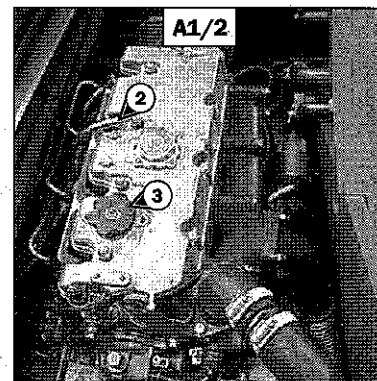
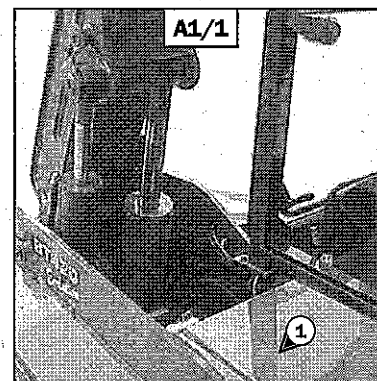
(**): Consult your dealer.

A1 - I.C. ENGINE OIL LEVEL

CHECK

Place the lift truck on a horizontal surface with the jib raised and the I.C. engine switched off, and let the oil drain into the sump.

- Open the I.C. engine bonnet 1 (fig. A1/1).
- Remove the dipstick 2 (fig. A1/2).
- Clean the dipstick and check the correct level between the two notches.
- If necessary, add oil (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) by the filler port 3 (fig. A1/2).
- Check visually that there is no leakage or seepage of oil in the I.C. engine.

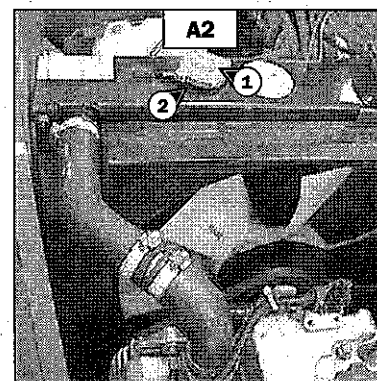


A2 - COOLING LIQUID LEVEL

CHECK

Place the lift truck on a horizontal surface with the jib raised and the I.C. engine switched off, and allow the I.C. engine to cool.

- Open the I.C. engine bonnet.
- Slowly turn the cap of the radiator 1 (fig. A2) anticlockwise up to the safety stop.
- Allow the pressure and vapour to escape.
- Press down and turn the cap so as to release the cap.
- If necessary, add cooling liquid (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL) in order to top up the level to 12 mm below the filler port 2 (fig. A2).
- Lubricate slightly the filler neck in order to facilitate the setting and the removal of the radiator cap.
- Check visually that there is no leakage in the radiator and pipes.



⚠ To avoid any risk of spraying or burning, wait until the I.C. engine has cooled down before removing the cooling circuit filler plug. If the cooling liquid is very hot, add only hot cooling liquid (80°C). In an emergency, you can use water as a cooling liquid, then change the cooling circuit liquid as soon as possible (see: 3 - MAINTENANCE: F1 - COOLING LIQUID).

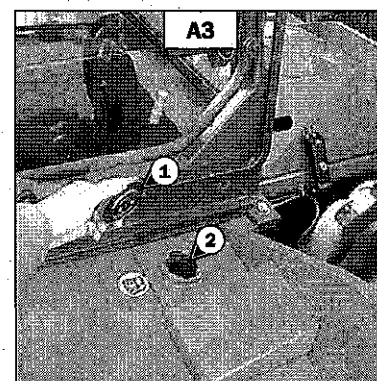
A3 - FUEL LEVEL

CHECK

Keep the fuel tank full, to reduce as much as possible any condensation due to the atmospheric conditions.

- Remove cap 1 (fig. A3).
- Fill the fuel tank with clean fuel (see: 3 - MAINTENANCE: LUBRICANTS AND FUEL), filtered through a strainer or a clean, lint free cloth, through filler port 2 (fig. A3).
- Put the cap back 1 (fig. A3).
- Check visually that there is no leakage in the tank and pipes.

⚠ Never smoke or approach with a flame during filling operations or when the tank is open. Never refill while I.C. engine is running.



⚠ The fuel tank is degassed via the filler plug. When changing it, always use an original part, with degassing hole.

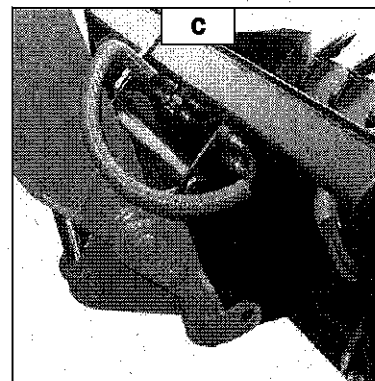
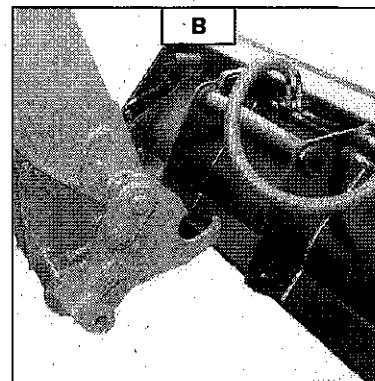
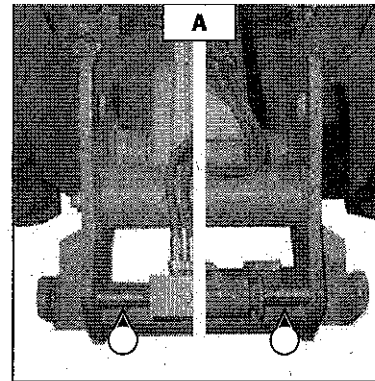
4 - ADAPTABLE ATTACHMENTS IN OPTION ON THE RANGE

BT 420 Série 3-E2

BTI 220 Série 3-E2

TAKING UP AN ATTACHMENT

- Ensure that the attachment is in a position facilitating the locking to the carriage. If it is not correctly oriented, take the necessary precautions in order to move it safely.
- Check that the rods on the locking cylinder are retracted (fig. A).
- Place the lift truck with the jib lowered in front of and parallel to the attachment, tilt the carriage forwards (fig. B).
- Bring the carriage under the locking tube of the attachment, slightly lift the jib, incline the carriage backwards in order to position the attachment (fig. C).
- Lift the attachment off the ground to facilitate locking.

**HYDRAULIC LOCKING AND CONNECTING THE ATTACHMENT**

- Press button 1 (fig. D) on the distributor lever to lock the accessory fully on the carriage.
- Visually check whether the cylinder is fully engaged in the accessory.
- Stop the I.C. engine and keep the ignition on the lift truck.
- Remove the pressure of the hydraulic circuit by pressing buttons 1 and 2 (fig. D) on the distributor lever 4 or 5 times.
- Connect the rapid connectors according to the logic of the attachment's hydraulic movements.

⚠ Make sure that the rapid connectors are clean and protect the holes which are not used, with the caps provided.

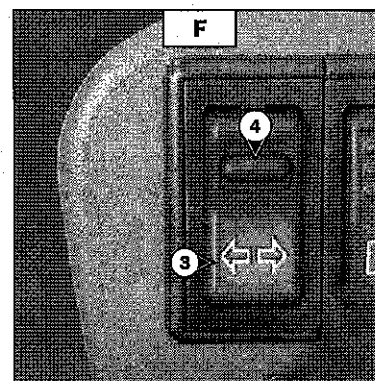
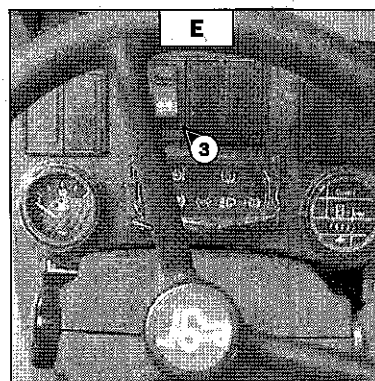
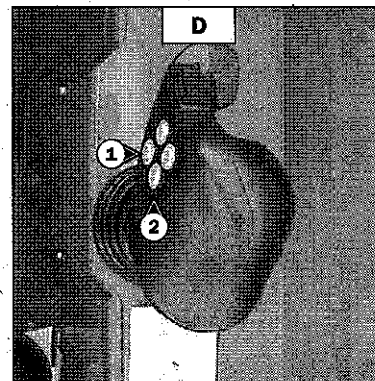
HYDRAULIC RELEASING AND DISCONNECTING THE ATTACHMENT

- Close the attachment.
- Hold down button 2 (fig. D) on the distributor and switch 3 (fig. E) simultaneously to lock the accessory fully.
- As a safety measure, the switch is provided with a lock. To operate this, you must move the latch 4 (fig. F) downwards while pressing the base of the switch.
- Visually check that the cylinder is completely clear of the accessory.
- Disconnect the rapid connectors of the attachment.

⚠ Make sure that the rapid connectors are clean and protect the holes which are not used, with the caps provided.

LAYING AN ATTACHMENT

- Proceed in the reverse order of paragraph TAKING UP AN ATTACHMENT while making sure you place the attachment flat on the ground and in closed position.





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44 158 ANCENIS CEDEX FRANCE
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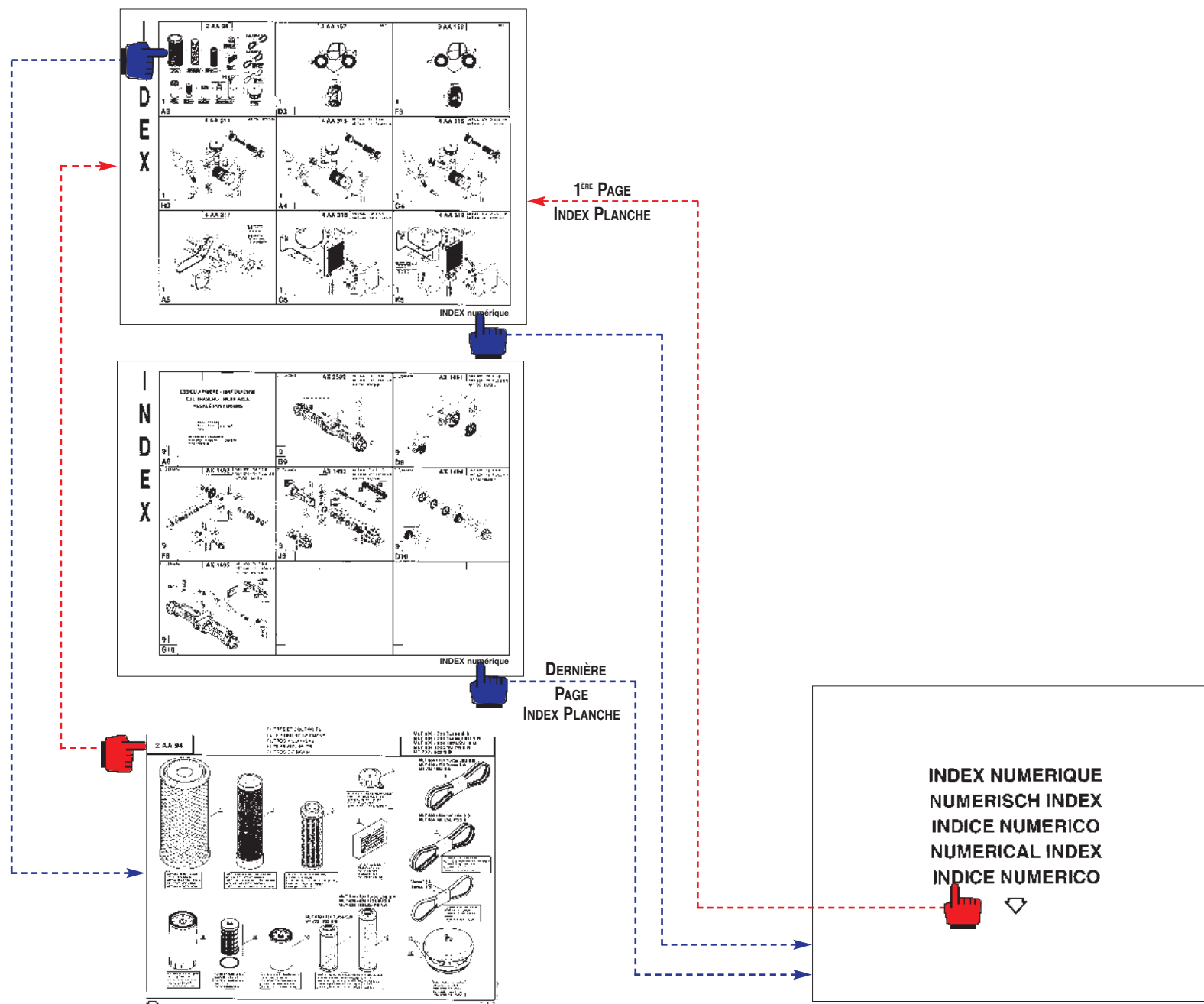
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BT 420 S.3-E2
BT 425 S.3-E2

CATALOGUE PIECES
ERSATZTEILKATALOG
CATALOGO DE PIEZAS
PARTS CATALOGUE
CATALOGO RICAMBI

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CATALOGUE PIÈCES INTERACTIF



IMPORTANT

NOMENCLATURES :

Les pages de texte portent en haut à gauche, un chiffre, ex : 1 et en bas un signe +.

- Le "1" signifie qu'il s'agit de la première page de texte.
- Le "+" indique que la nomenclature n'est pas terminée et qu'il existe d'autres pages à suivre, la dernière page ne comporte pas ce signe +.
- Le signe "X" dans les colonnes Qté = Suivant besoin.

COMMANDES DE PIECES :

Pour passer vos commandes, préciser toujours :

- N° de pièce rechange
- Désignation complète
- Quantité
- Type de machine
- N° dans la série de la machine
- N° d'identification du composant (mât, flèche, cabine, moteur, etc.)

PLANCHE DUPLICATA :

Planches ajoutées toutes les 2 ou 3 pages de texte.

ATTENTION :

Certaines pièces ou montages de pièces illustrés dans ce catalogue sont livrés seulement en option et non avec la machine standard.

SYMBOLISATION :

→ : A partir de (machine, moteur, date, etc.)

→I : Jusqu'à (machine, moteur, date, etc.)

□ □ : Pour (machine, moteur, etc.)

□ □ : Sauf pour (machine, moteur, etc.)

◀ : Voir planche

●, ■, ▲, ★, ... : Jusqu'à } machine N°,
○, □, △, ☆, ... : A partir } N° moteur, cabine,
transmission, etc.

WICHTIG

NOMENKLATUR :

Die Textseiten tragen links oben eine Zahl, zum Beispiel : 1 und unten das Zeichen +.

- die Zahl "1" bedeutet, daß es sich um die erste Textseite handelt.
- das Zeichen "+" gibt an, daß die Teileliste nicht abgeschlossen ist und daß noch weitere Seiten folgen werden, auf der letzten Seite ist kein + Zeichen vorgesehen.
- das Zeichen "X" in den Spalten Menge = je nach Bedarf.

BESTELLUNG VON TEILEN :

Bei Ihrer Bestellung bitte immer folgende Daten angeben :

- Nr. des Ersatzteiles
- komplette Bezeichnung
- Menge
- Typ der Maschine
- Seriennummer der Maschine
- Identifikationsnummer des Bestandteiles (Mast, Ausleger, Kabine, Motor, usw.)

DUPLIKAT SEITE :

Tafeln, die alle 2 oder 3 Seiten in das Dokument eingefügt werden.

ACHTUNG :

Bestimmte in diesem Katalog illustrierte Teile oder Montagen von Teilen werden ausschließlich als Option geliefert und nicht mit der Maschine in ihrer Standardausführung.

SYMBOLISIERUNG :

→ : Ab (Maschine, Motor, Datum, usw.)

→I : Bis (Maschine, Motor, Datum, usw.)

□ □ : Bei (Maschine, Motor, Datum, usw.)

□ □ : Außer bei (Maschine, Motor, Datum, usw.)

◀ : siehe Tafel

●, ■, ▲, ★, ... : Bis } Maschine N°,
○, □, △, ☆, ... : Ab } Motor Nr, kabine,
Transmission, usw.

IMPORTANTE

NOMENCLATURAS :

Las páginas de texto llevan una cifra en la parte superior izquierda, por ejemplo : 1, y un signo + en la parte inferior.

- El "1" significa que se trata de la primera página de texto.
- El "+" indica que la nomenclatura no está terminada y que seguirán otras páginas. La última página no lleva este signo +.
- El signo "X" en las columnas Cant. = Según las necesidades.

PEDIDOS DE PIEZAS :

Cuando efectúe sus pedidos, indique siempre :

- N° de pieza de recambio
- Designación completa
- Cantidad
- Tipo de máquina
- N° en la serie de la máquina
- N° de identificación del componente (mástil, pluma, cabina, motor, etc.)

LÁMINA DUPLICATA :

Láminas añadidas cada 2 ó 3 páginas de texto.

ATENCIÓN :

Ciertas piezas o montajes de piezas ilustrados en este catálogo se suministran únicamente como opción y no con la máquina estándar.

SÍMBOLOS :

→ : A partir de (máquina, motor, fecha, etc.)

→I : Hasta (máquina, motor, fecha, etc.)

□ □ : Para (máquina, motor, etc.)

□ □ : Salvo para (máquina, motor, etc.)

◀ : Ver la lámina

●, ■, ▲, ★, ... : Hasta } máquina N°,
○, □, △, ☆, ... : A partir } N° motor, cabina,
transmisión, etc.

IMPORTANT

PARTS LISTS :

The text pages have a figure (for example : 1) printed in the top left corner, and a sign at the bottom (+).

- "1" means that this is the first page of text.
- "+" means that the parts list is not finished, and that there are more pages. The last page does not have the "+" sign.
- "X" in the Quantity columns means = according to need.

PARTS ORDER :

When placing an order, always state :

- Spare part ref. number
- Complete description
- Quantity
- Type of machine
- Machine serial number.
- Component identification number (mast, jib, cab, engine, etc)

DUPLICATE DRAWING :

Drawing included every two or three pages of text.

CAUTION :

Certain parts, or part assemblies illustrated in this catalogue are only supplied as options, and not with the standard machine.

SYMBOLS :

→ : From (machine, engine, date, etc.)

→ : Up to (machine, engine, date, etc.)

□ □ : For (machine, engine, date, etc.)

□ □ : Except for (machine, engine, date, etc.)

◀ : See drawing

●, ■, ▲, ★, ... : Up to } machine N°,
○, □, △, ☆, ... : From } N° engine, cab,
transmission, etc.

IMPORTANTE

NOMENCLATURA :

Le pagine di testo hanno in alto a sinistra, una cifra, esempio : 1 e in basso un segno +.

- L' "1" significa che si tratta della prima pagina di testo.
- Il "+" indica che la nomenclatura non è terminata e che esistono altre pagine a seguire, l'ultima pagina è senza il segno +.
- Il segno "X" nelle colonne Qtà = secondo il bisogno.

ORDINE DI PEZZI :

Per passare i vostri ordini, precisare sempre :

- N° pezzo di ricambio
- Descrizione completa
- Quantità
- Tipo di macchina
- N° di serie della macchina
- N° d'identificazione componente (rampa, braccio, cabina, motore, ecc.)

TAVOLA DUPLICATA :

Tavole aggiuntive ogni 2 o 3 pagine di testo.

ATTENZIONE :

Alcuni pezzi o montaggio di pezzi illustrati in questo catalogo vengono spediti solamente come optional e non con la macchina standard.

SIMBOLI :

→ : A partire da (macchina, motore, data, ecc.)

→ : Fino a (macchina, motore, data, ecc.)

□ □ : Per (macchina, motore, ecc.)

□ □ : Escluso per (macchina, motore, ecc)

◀ : Vedere tavola

●, ■, ▲, ★, ... : Fino a } macchina N°,
○, □, △, ☆, ... : A partire da } N° motore, cabina,
trasmissione, ecc.

PIECES D'ORIGINE
ORIGINAL ERSATZTEILEN
PIEZAS LEGITIMAS
GENUINE PARTS
RICAMBI ORIGINALI



PIECES DE RECHANGE



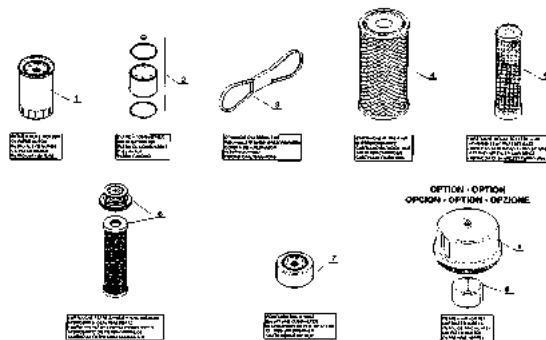
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FAX PIECES DE RECHANGE :

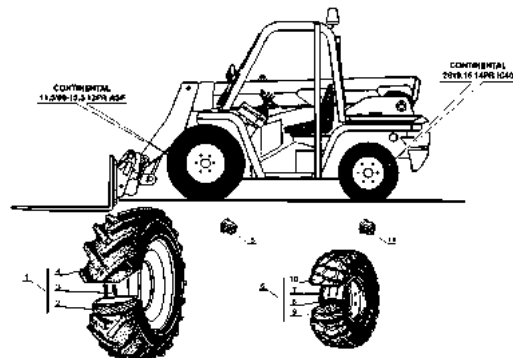
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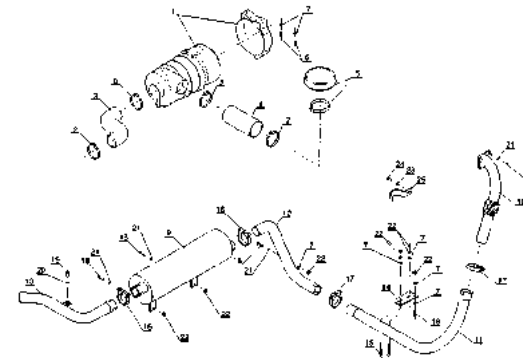
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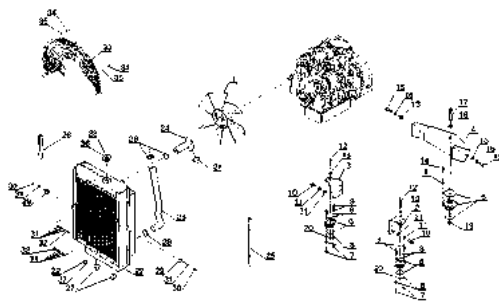
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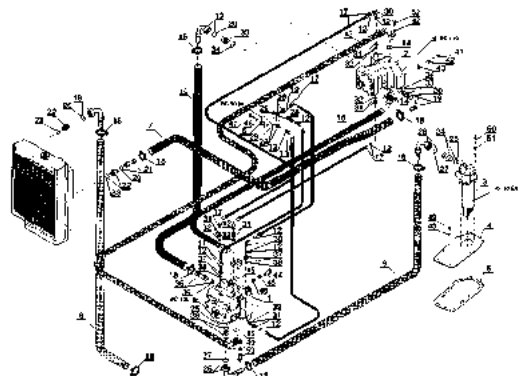
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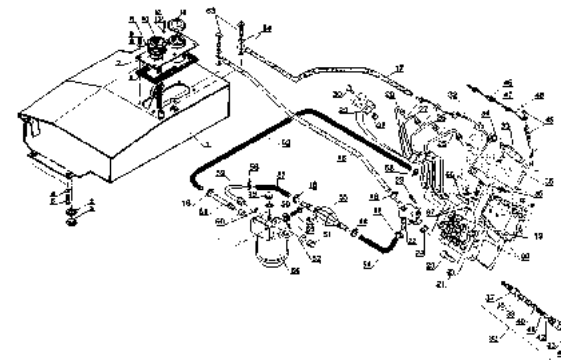
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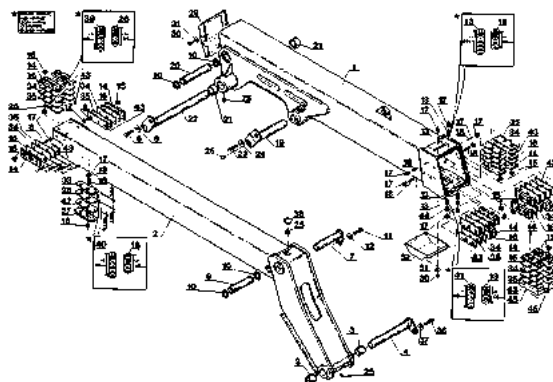
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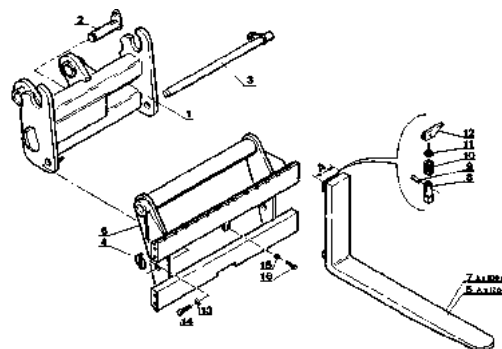
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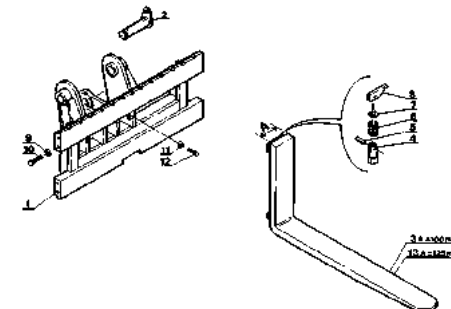
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5 BA 379 [] BT 420 S.3-E2



5 BA 380 [] BT 425 S.3-E2

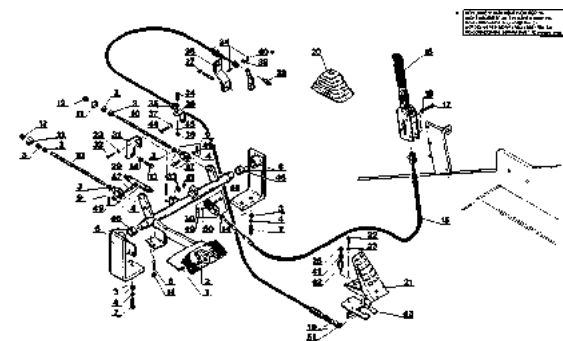


I N D E X

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6 BA 122

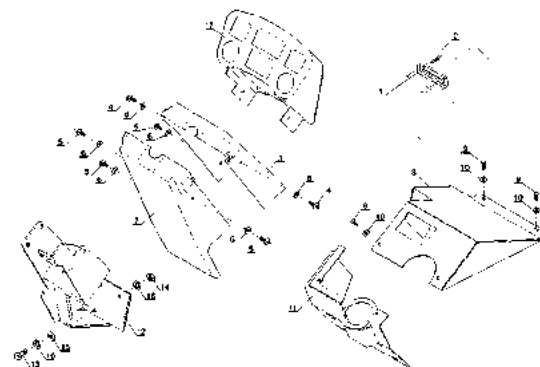
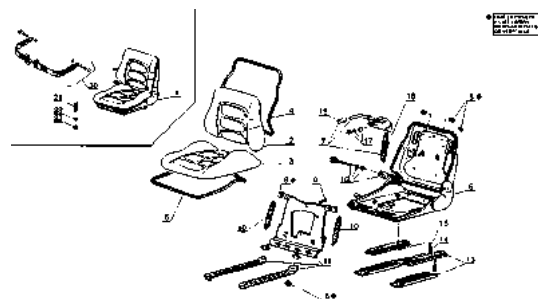
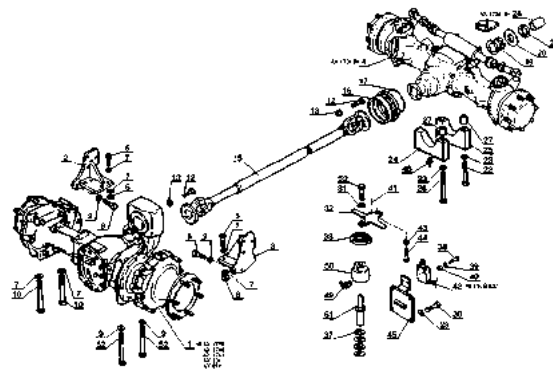
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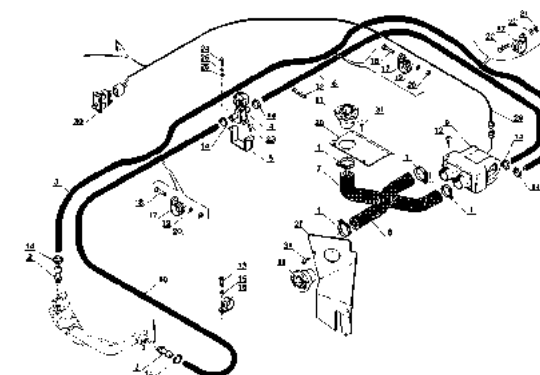
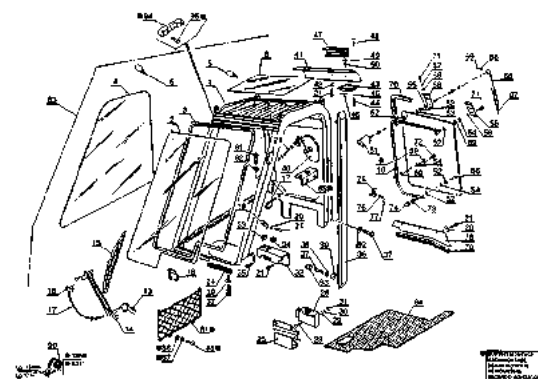
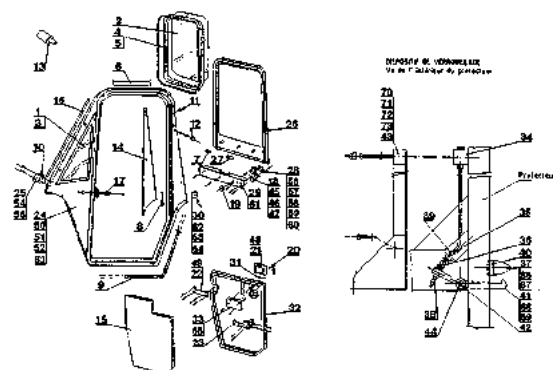
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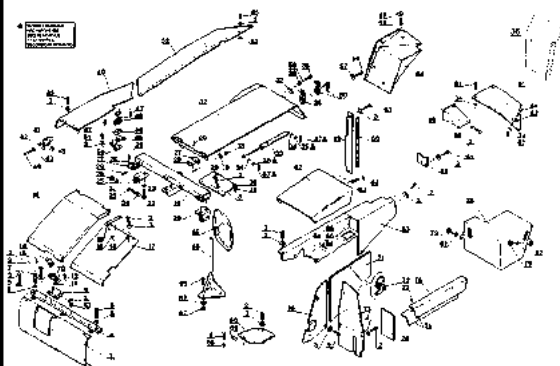
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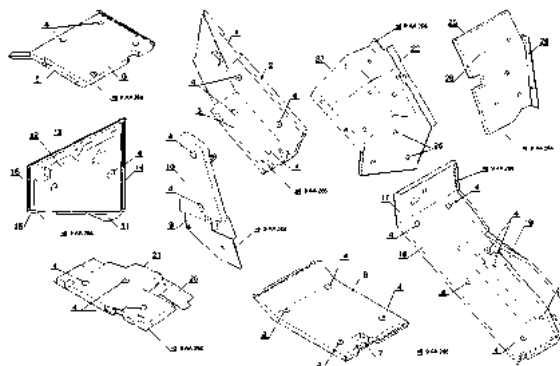
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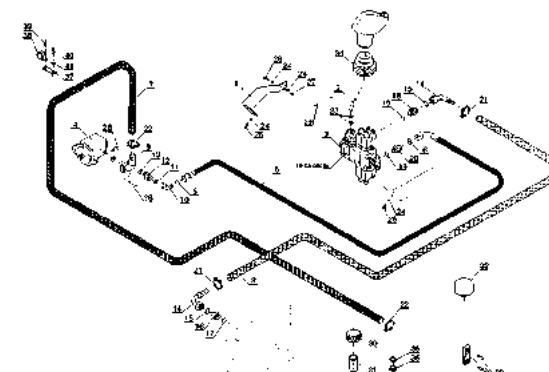
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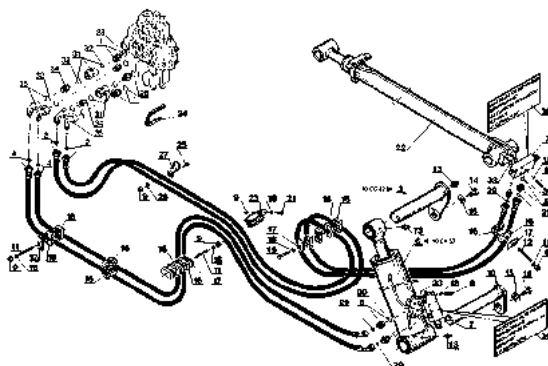
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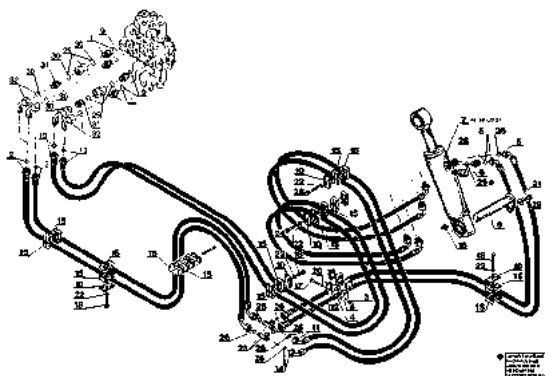
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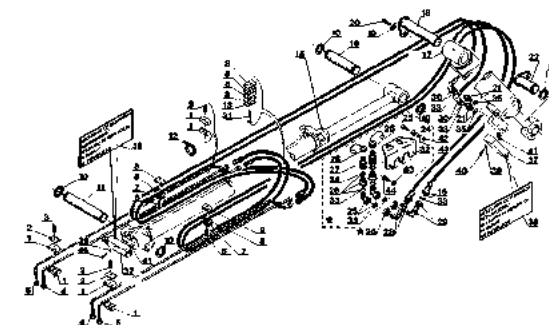
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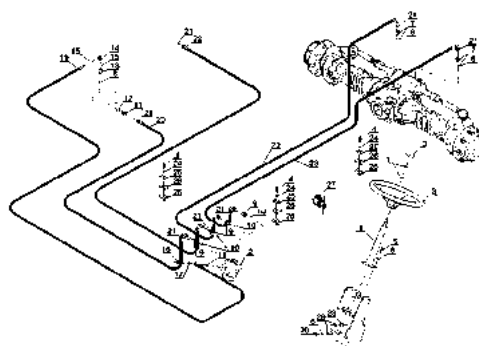
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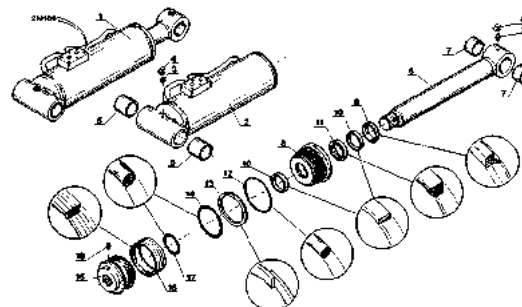


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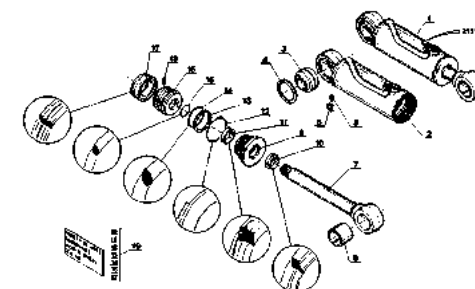
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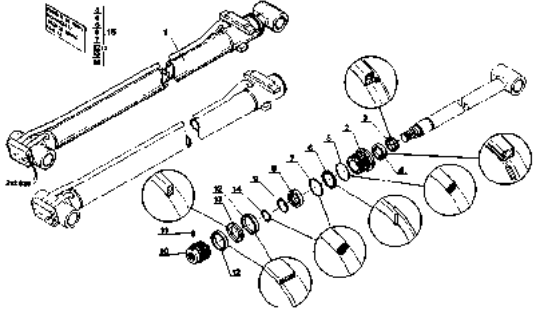
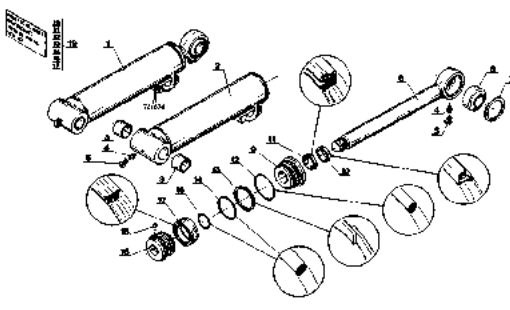
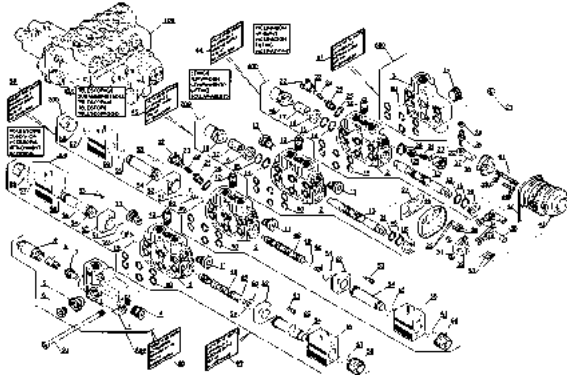
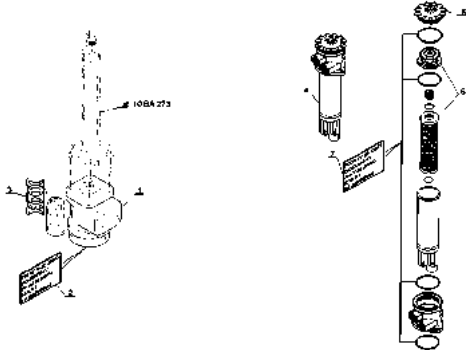
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CILINDRO DE LEVANTAMIENTO
LIFTING CYLINDER
CILINDRO DI SOLLEVAMENTO



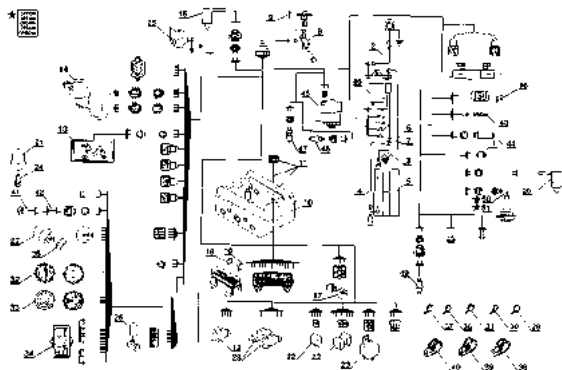
10 CB 21

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KOMPENSATION ZYLINDER
CILINDRO DE COMPENSACION
COMPENSATION CYLINDER
CILINDRO DI COMPENSAZIONE

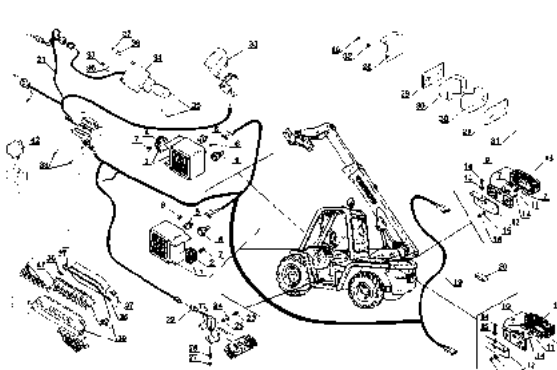


10 CC 42 VERIN DE TELESOPAGE ZUSAMMENSTROLL ZYLINDER CILINDRO DE TELESOPAJE TELESCOPE CYLINDER CILINDRO DI TELESOPAGGIO 	10 CD 106 VERIN D'INCLINAISON NEIGUNGZYLINDER CILINDRO DE INCLINACION TILTING CYLINDER CILINDRO DI INCLINAZIONE 	10 DA 293 
10 EA 163 		
		

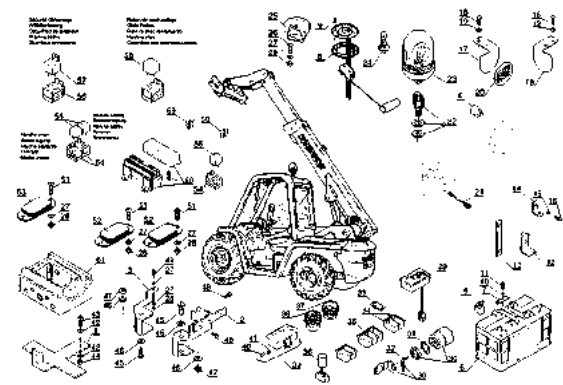
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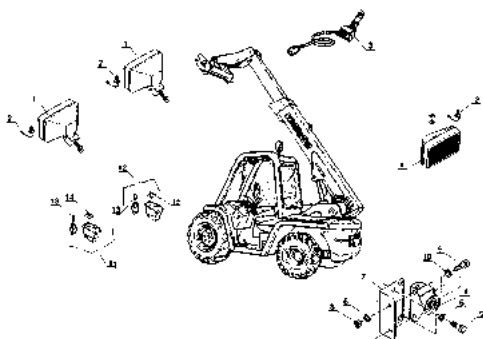
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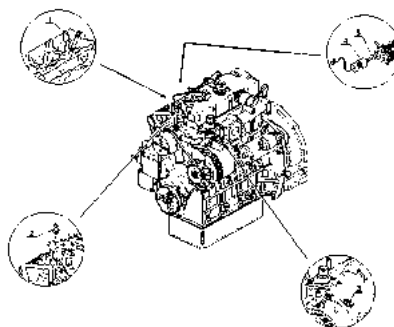
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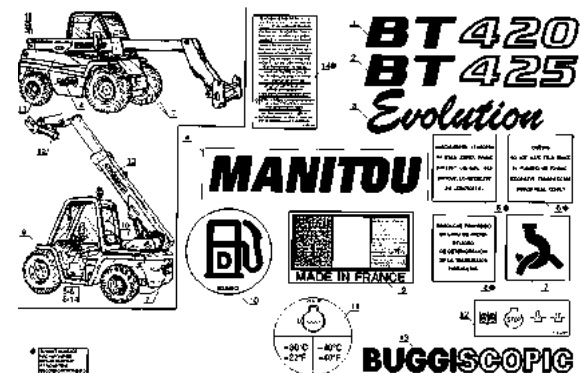
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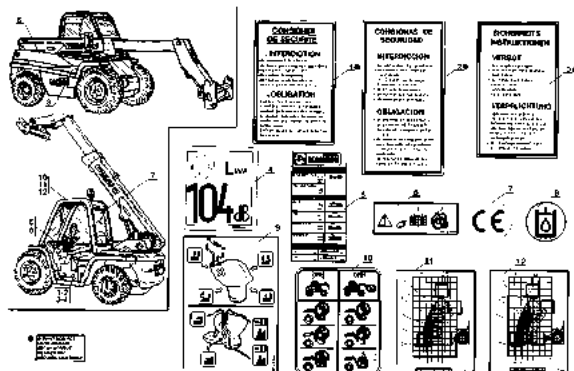
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12 AA 395



12 AA 396



MOTEUR - MOTOR
MOTOR - ENGINE
MOTORE

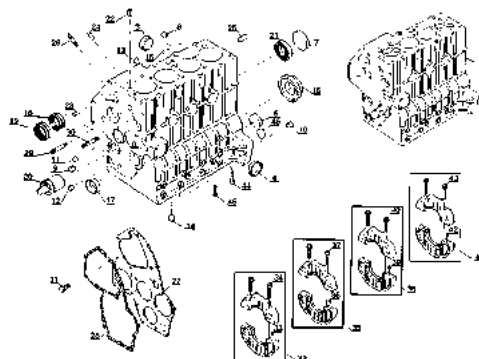
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TIPO - TYPE
TIPO

404 C 22

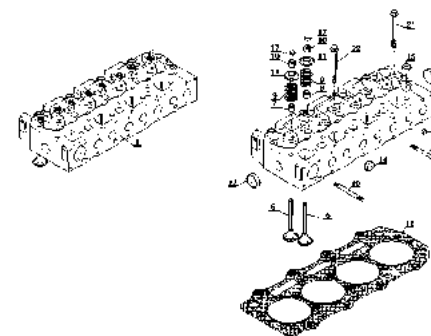
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RIFERIMENTO

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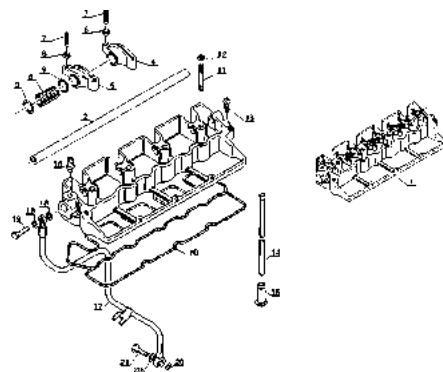
AP 1605



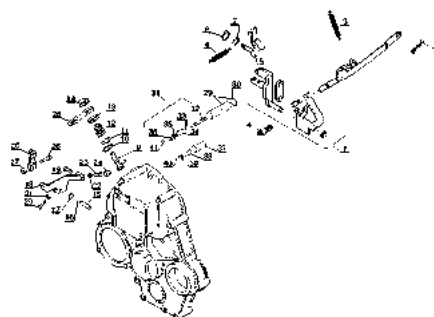
AP 1607



AP 1608



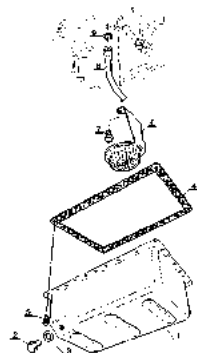
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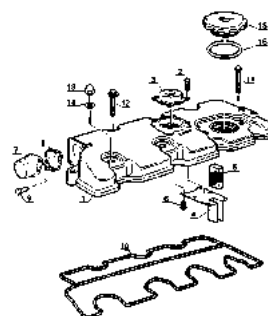
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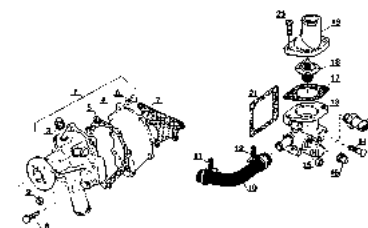
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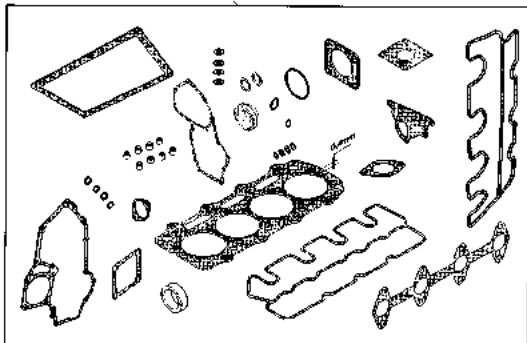
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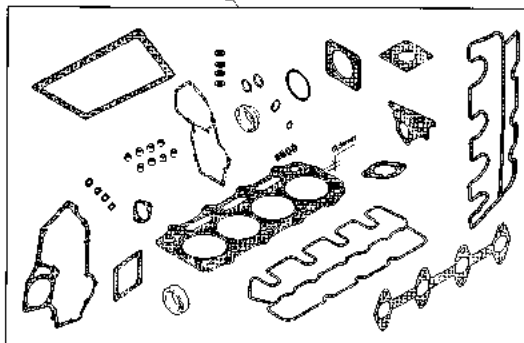
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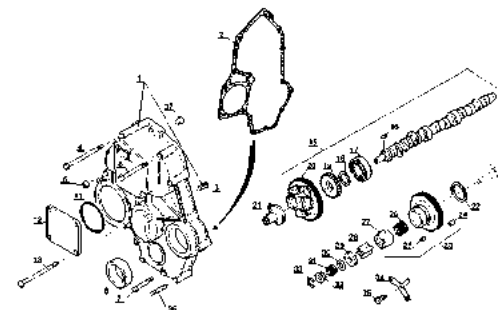
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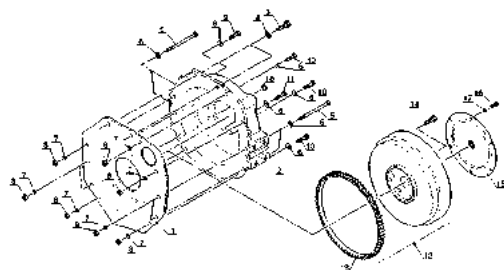
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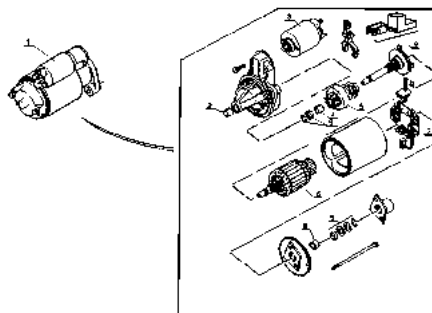
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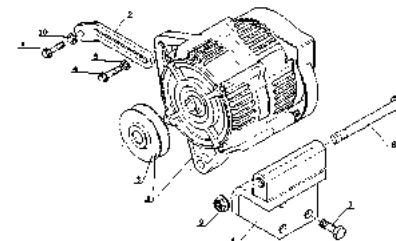
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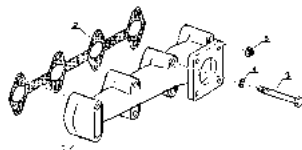
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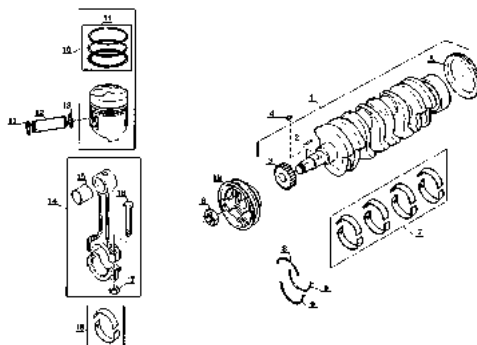
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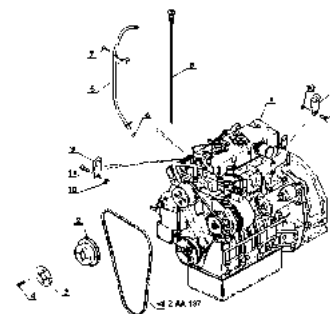
AP 1743



AP 1746

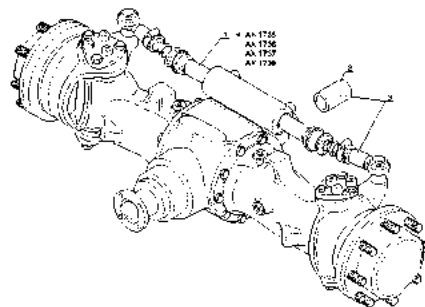


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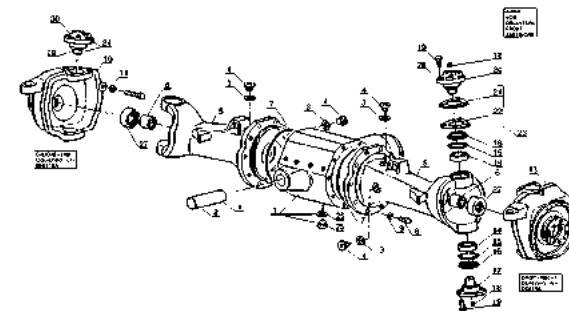


I N D E X

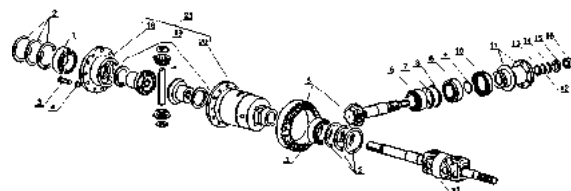
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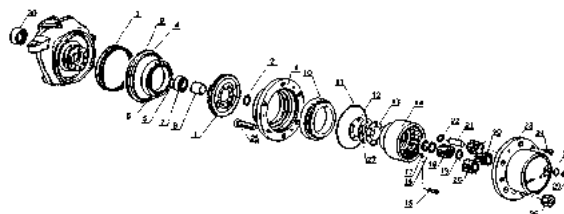
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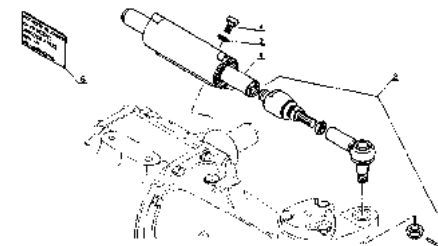
AX 1736



AX 1737



AX 1738



ESSIEU AVANT - VORNACHSE EJE DELANTERO - FRONT AXLE PONTE ANTERIORE

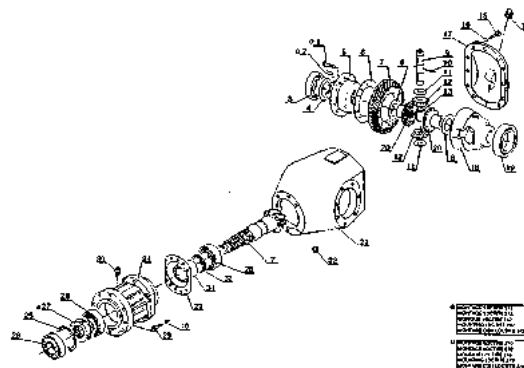
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TIPO

304 - 140 - 85

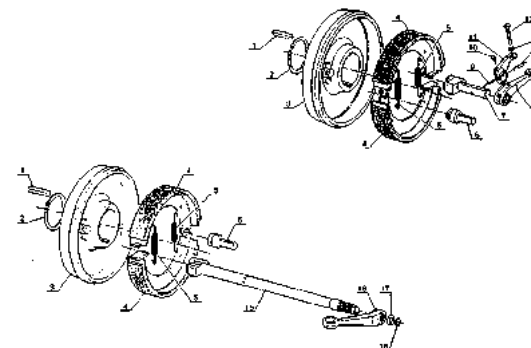
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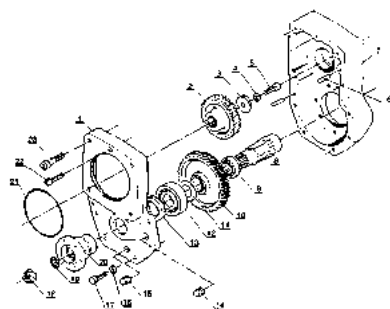
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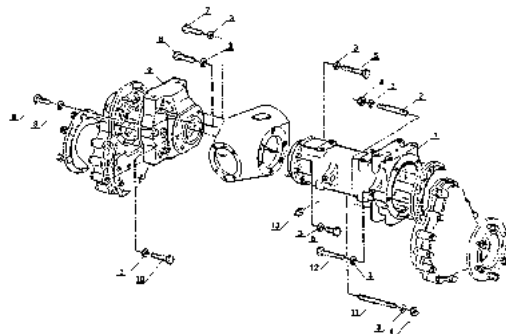
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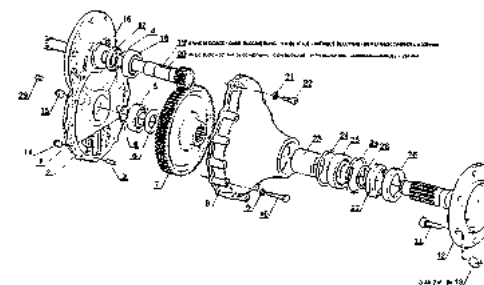
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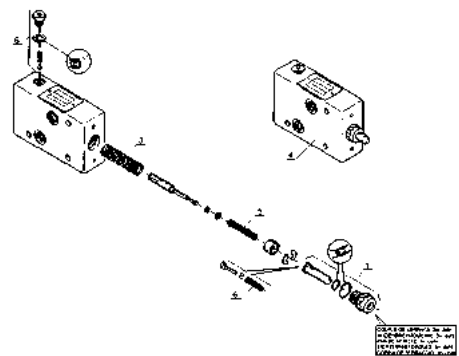
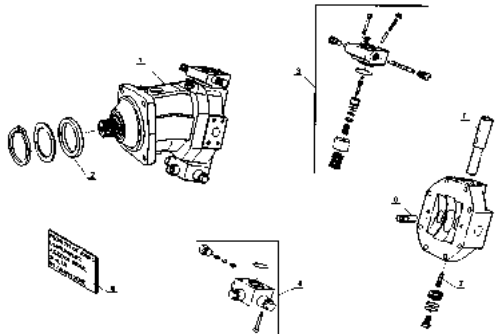
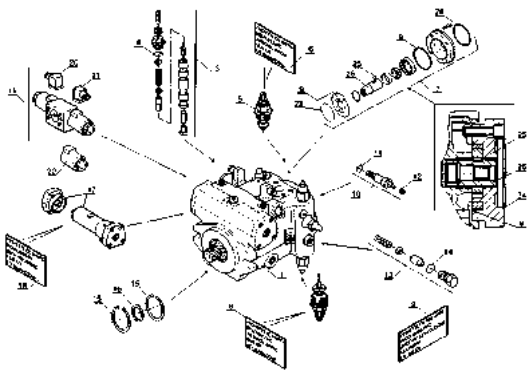


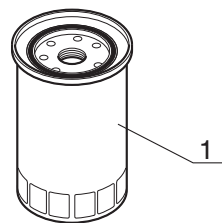
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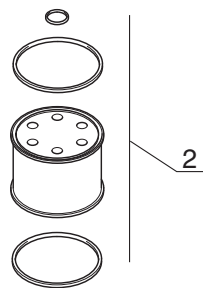
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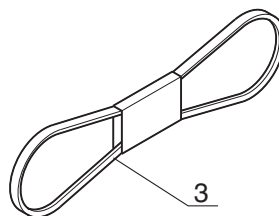
REDUCTEUR DE PRESSION DRUCKMINDERVENTIL REDUCTOR DE PRESION PRESSURE REDUCING VALVE RIDUTTORE DI PRESSIONE	BC 50 	
MOTEUR A CYLINDREE VARIABLE VERSTELLMOTOR MOTOR DE CILINDRADA VARIABLE VARIABLE MOTOR MOTORE A CILINDRATA VARIABLE TYPE - TYPEN A6VM800A/63W - 0327 - VZB027B SQUI 60 TIPO - TYPE TIPO REFERENCE - NUMMER 208700 NUMERO - NUMBER REFERIMENTO	BC 110 	
POMPE A CYLINDREE VARIABLE VERSTELLPUMPE BOMBA DE CILINDRADA VARIABLE VARIABLE DISPLACEMENT PUMP POMPA CILINDRATA VARIABLE TYPE - TYPEN A4VG400A1 D7/32RNZC02F015S TIPO - TYPE TIPO REFERENCE - NUMMER 225421 NUMERO - NUMBER REFERIMENTO	BC 136 	



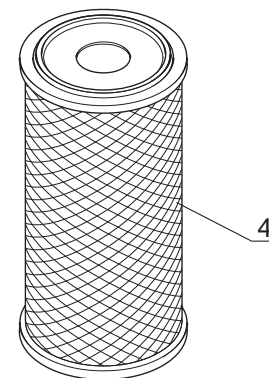
FILTRE À HUILE MOTEUR
OL FILTER MOTOR
FILTRO ACEITE MOTOR
OIL FILTER ENGINE
FILTRO OLIO MOTORE



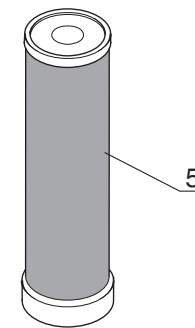
FILTRE À COMBUSTIBLE
BRENNSTOFFFILTER
FILTRO DE COMBUSTIBLE
FUEL FILTER
FILTRO GASOLIO



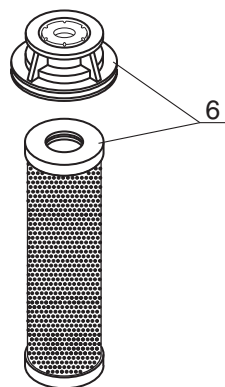
COURROIE D'ALTERNATEUR
WECHSELSTROMGENERATORRIEMEN
CORREA DE ALTERNADOR
ALTERNATOR BELT
CINGHIA DI ALTERNATORE



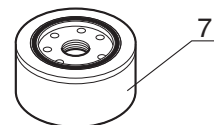
CARTOUCHE FILTRE À AIR
LUFTFILTEREINSATZ
CARTUCHO FILTRO DE AIRE
AIR FILTER CARTRIDGE
CARTUCCIA FILTRO ARIA



CARTOUCHE SÉCURITÉ FILTRE À AIR
SICHERHEIT LUFTFILTEREINSATZ
CARTUCHO SEGURIDAD FILTRO DE AIRE
SECURITY AIR FILTER CARTRIDGE
CARTUCCIA DI SICUREZZA FILTRO ARIA

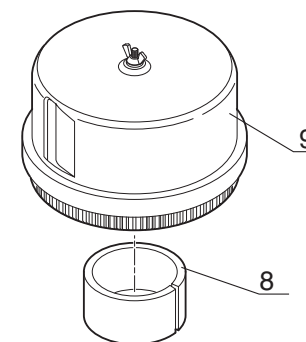


CARTOUCHE FILTRE À HUILE HYDROSTATIQUE
HYDROSTATIK OLFILTEREINSATZ
CARTUCHO FILTRO ACEITE HYDROSTATICO
HYDROSTATIC OIL FILTER CARTRIDGE
CARTUCCIA FILTRO OLIO IDROSTATICO



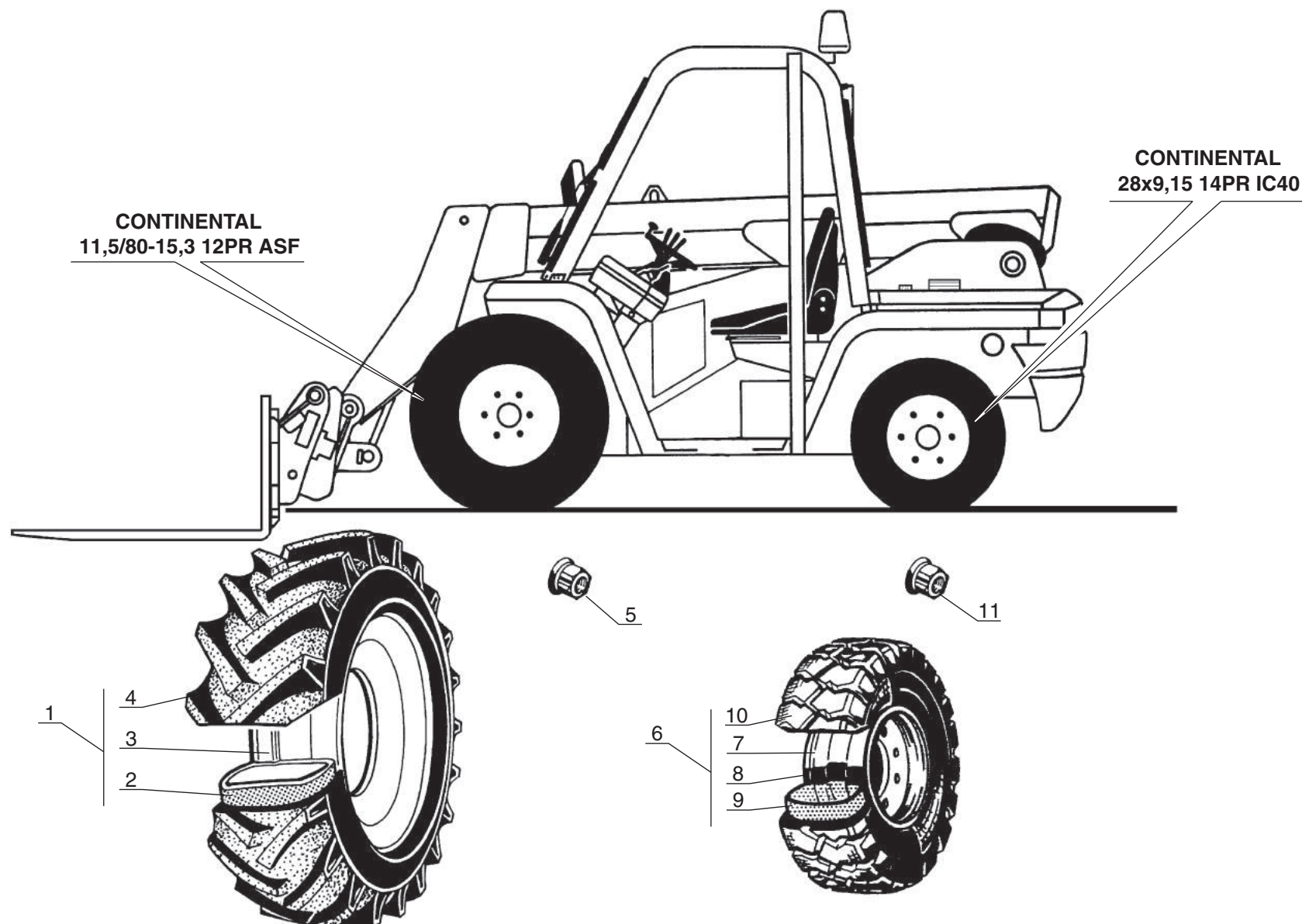
RENIFLARD BAC À HUILE
ENLUFTUNG OLBEHALTER
RESPIRADERO TANQUE DE ACEITE
OIL TANK AIR BREATHER
SFIATO SERBATOIO OLIO

OPTION - OPTION
OPCION - OPTION - OPZIONE



FILTRE À AIR VORTEX
LUFTFILTER VORTEX
FILTRO DE AIRE VORTEX
AIR FILTER VORTEX
FILTRO ARIA VORTEX

1	Catalogue : 547918			Qté-Menge-Cant-Qty-Q.ta										2 AA										137										B
	FILTRES ET COURROIES FILTERS UND KEILRIEMENS FILTROS Y CORREAS FILTERS AND BELTS FILTROS E CINGHIA			1- BT 420 S3-E2 11- 2- BT 425 S3-E2 12- 3- 13- 4- 14- 5- 15- 6- 16- 7- 17- 8- 18- 9- 19- 10- 20-																														
	Rep Hinw Fig Item Rif	Numéro Teil-Nr Numero Part-Nr Part-Nr	Désignation Bezeichnung Descripcion Description Descrizione	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20											
1	702577	Filtre à huile moteur - Ol filter motor Filtro aceite motor - Oil filter engine Filtro olio motore -	1	1																														
2	109401	Filtre à combustible - Brennstofffilter Filtro de combustible - Fuel filter Filtro gasolio -	1	1																														
3	703259	Courroie de ventilateur - Ventilatorriemen Correa de ventilador - Fan belt Cinghia ventola -	1	1																														
4	227959	Cartouche filtre à air - Luftfiltereinsatz Cartucho filtro de aire - Air filter cartridge Cartuccia filtro aria -	1	1																														
5	227960	Cartouche sécurité filtre à air Sicherheit luftfiltereinsatz Cartucho seguridad filtro de aire Security air filter cartridge Cartuccia di sicurezza filtro aria	1	1																														
6	686237	Cartouche filtrante complète - Kompletter filtereinsatz Cartucho filtrante completo - Complete filter cartridge Cartuccia filtrante completa -	1	1																														
7	457509	Reniflard bac à huile - Enluftung olbehälter Respiradero tanque de aceite - Oil tank air breather Sfiato serbatoio olio -	1	1																														
8	686273	Bague - Büchse Anillo - Bushing Anello -	1	1																														
9	240334	Préfiltre autonettoyant - Vorfilter Prefiltro - Pre-filter Prefiltro -	1	1																														



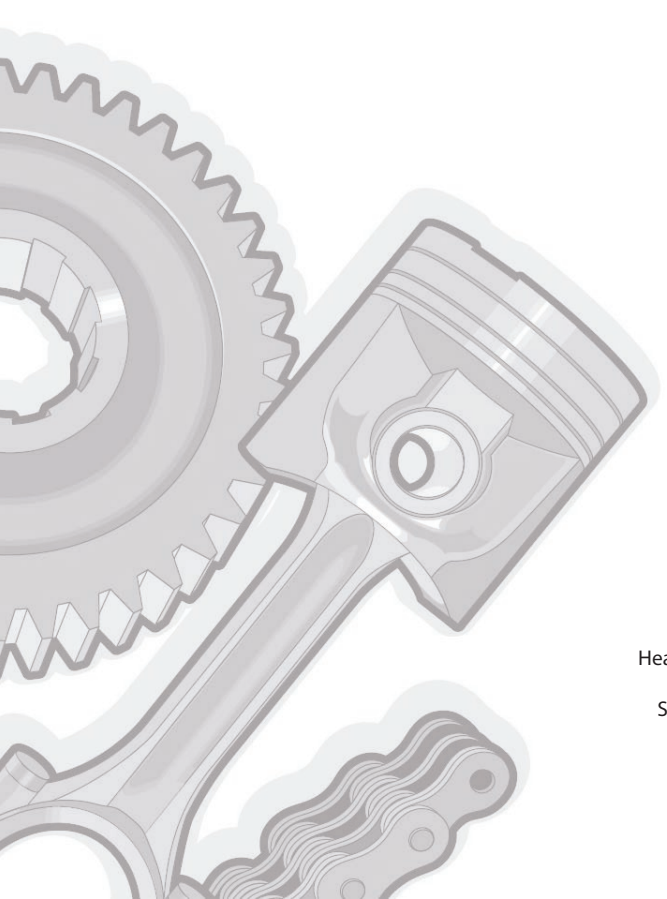
Catalogue : 547918				Qté-Menge-Cant-Qty-Q.ta										3 AA 216										B
1	ROUES RAD RUEDAS WHEELS RUOTA			1- BT 420 S3-E2 11- 2- BT 425 S3-E2 12- 3- 13- 4- 14- 5- 15- 6- 16- 7- 17- 8- 18- 9- 19- 10- 20-																				
Rep Hinw Fig Item Rif	Numéro Teil-Nr Numero Part-Nr Part-Nr	Désignation Bezeichnung Descripcion Description Descrizione		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1	721693	Roue avant complète Rueda delantera completa Ruota anteriore completa	- Kompletter vorn rad - Complete front wheel -	2	2																			
2	194548	Chambre à air Cámara de aire	- Reifenschlauch - Tube tyre	2	2																			
3	721686	Roue, nue Rueda, sola Ruota, nudo	- Scheibenrad - Wheel, stripped -	2	2																			
4	194547	Enveloppe Neumático Pneumatico	- Reifen - Tyre -	2	2																			
5	1767	Ecrou de roue Tuerca de rueda Dado ruote	- Radmutter - Wheel nut -	12	12																			
6	721694	Roue arrière complète Rueda trasera completa Ruota posteriore completa	- Kompletter hinter rad - Complete rear wheel -	2	2																			
7	721687	Roue, nue Rueda, sola Ruota, nudo	- Scheibenrad - Wheel, stripped -	2	2																			
8	44144F302071	Flap Protector	- Klappe - Flap	2	2																			
9	44103F302071	Chambre à air Cámara de aire	- Reifenschlauch - Tube tyre	2	2																			
10	44142F302071	Enveloppe Neumático Pneumatico	- Reifen - Tyre -	2	2																			
11	909	Ecrou de roue arrière Tuerca de rueda trasera Dado ruote posteriore	- Hinter radmutter - Rear wheel nut -	12	12																			

22/08/2005

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703228		AP	1610</																																				



REPAIR MANUAL



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CHARACTERISTICS

BT 420 Série 3-E2

BT 425 Série 3-E2

0-1-M127 EN

28 / 01 / 2006

BT 420 SÉRIE 3-E2 - BT 425 SÉRIE 3-E2



BT 420 SÉRIE 3-E2 - BT 425 SÉRIE 3-E2



I.C. ENGINE

- Type	PERKINS 404C-22
- Number of cylinders	4 in line
- Number of strokes	4
- Inlet system	Natural aspiration
- Injection system	Indirect
- Ignition sequence	1.3.4.2.
- Clearance of rocker valve (cold)	
. Inlet	0,20 mm
. Exhaust	0,20 mm
- Capacity	2200 cm ³
- Bore	84 mm
- Stroke	100 mm
- Compression ratio	23,3/1
- Nominal rating loaded	2800 rpm
- Rating slow unladen	930 ± 20 rpm
- Max. rating unladen	2990 rpm
- Power ISO/TR 14396	50 cv/38 kw
- Maximum torque ISO/TR 14396	143 Nm at 1800 rpm
- Air cleaner	Sec 3 µ

COOLING CIRCUIT

- Type	By water
- Fan	Blowing
. Number of blades	7
. Diameter	406 mm
- Thermostat	
. Start opening	77 °C
. Full opening	82 °C

ELECTRIC CIRCUIT

- Earth	Négative
- Battery	12 V - 110 Ah
- Alternator	12 V - 65 A
- Tension regulator	Incorporated into the alternator
- Starter	12 V

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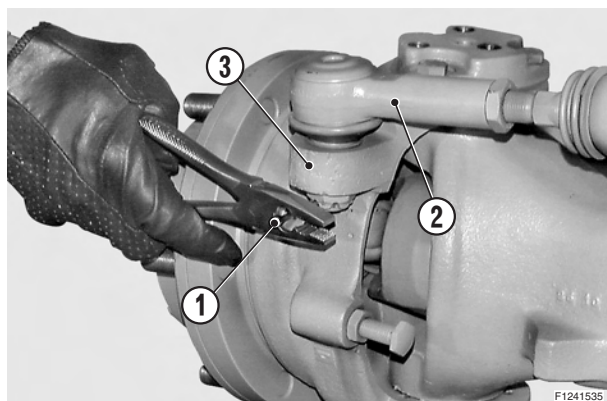
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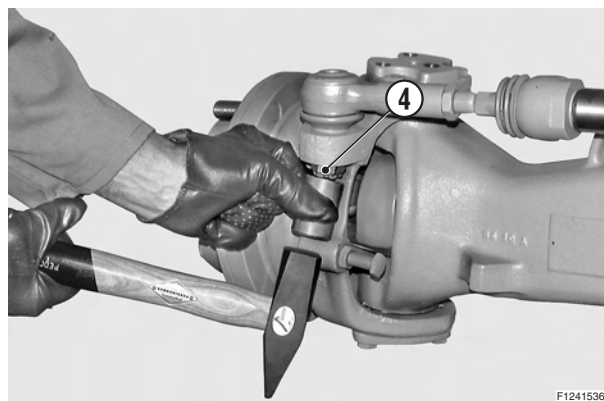
GB

a

REMOVAL

Take out the safety cotter pin (1) from the pivot of the steering bar (2) of the case (3) to be removed.

CAUTION! Dispose of the cotter pin.

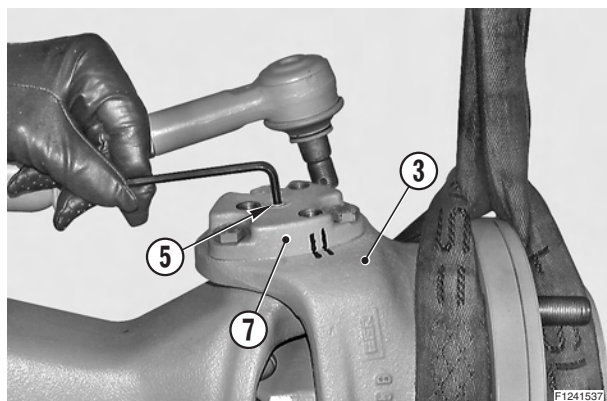


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b

Loosen and unscrew the castellated nut (4) until it is flush with the pivot.

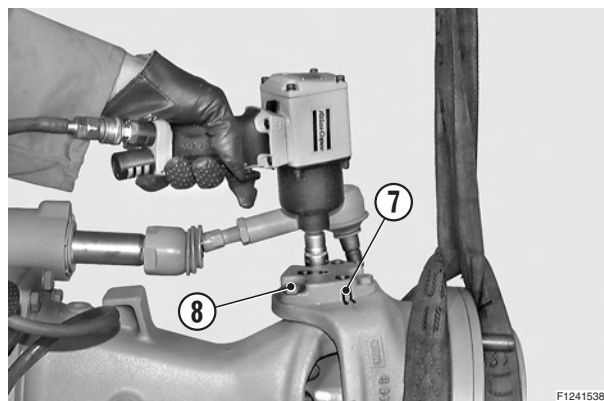
Using an aluminium punch, move the pivot; remove the nut (4) and lift the steering bar.



GB

c

Connect the complete steering case (3) to a hoist and slightly tension the sling rope. Remove the centre dowels (6) and (7).

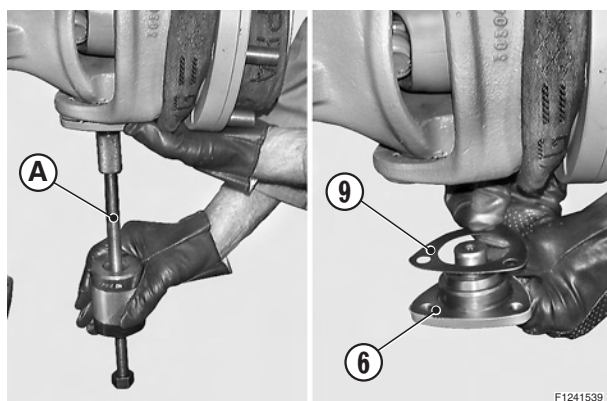


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d

Loosen and extract the check screws (8) of the lower and upper rotation pins, (6) and (7).

CAUTION! If both steering cases are to be removed, mark top right as well as top left pin.

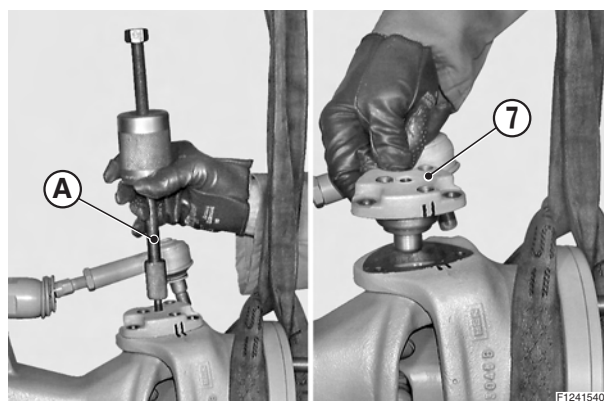


GB

e

With a beater puller "A", screwed in the centre hole, pull out the lower rotation pin (6) and distance washers (9).

NOTE. Make sure that right and left packs of shims do not get swapped.



GB

f

Using the same puller "A", pull out the upper rotation pin (7).

ITA Asportare la copiglia di sicurezza (1) del perno snodo della barra di sterzata (2) della scatola snodo (3) da rimuovere.
ATTENZIONE! Scartare la copiglia usata.

D Den Sicherheitssplint (1) vom Gelenkstift der Lenkstange (2) des Gelenkgehäuses (3) abmontieren.
ACHTUNG! Den gebrauchten Sicherheitssplint nicht wieder verwenden.

ESP Sacar la chaveta de seguridad (1) de la rotula de la barra de dirección (2) de la caja de rotulas (3) de sacar.
ATENCION! Desechar la chaveta utilizada.

F Retirer la goupille de sécurité (1) du joint à rotule du bras de direction (2) du boîtier du joint à rotule (3) à déposer.
ATTENTION! Eliminer la goupille usée.

ITA Allentare e svitare il dado ad intagli (4) fino a filo del perno snodo.
Con un punzone in alluminio, smuovere il perno snodo; asportare il dado (4) e sollevare il braccio di sterzata.

D Die Kronenmutter (4) lockern und bis zum Rande des Gelenkstiftes aufschrauben.
Mit einem Stößel aus Aluminium, den Gelenkstift lockern; die Mutter (4) abnehmen und den Gelenkarm anheben.

ESP Aflojar y destornillar la tuerca a ranuras (4) a tope de la rotula.
Con un punzon en aluminio, remover la rotula; sacar la tuerca (4) y levantar el brazo de dirección.

F Desserrer et dévisser l'écrou à encoches (4) jusqu'au ras du joint à rotule.
A l'aide d'un poinçon en aluminium, desserrer le joint à rotule, retirer l'écrou (4) et soulever le bras de direction.

ITA Collegare la scatola snodo completa (3) ad un mezzo di sollevamento e mettere in leggera tensione la fune. Rimuovere i grani centrali (5) dei perni di rotazione (6) e (7).

D Das komplette Gelenkgehäuse (3) an ein Hebezeug anschließen und das Seil leicht anziehen. Die zentralen Stifte des Drehstiftes (6) und (7) abnehmen.

ESP Conectar la cajas de rotulas completa (3) y un madio de levantamiento y poner en ligera tension la cuerda. Remover los granos centrales (5) de las rotulas de rotación (6).

F Assembler le boîtier du joint à rotule complet (3) à un moyen de levage et tendre légèrement le câble.
Retirer les grains centraux (5) des pivots de rotation (6) et (7).

ITA Allentare ed asportare le viti (8) di ritegno dei perni di rotazione inferiore (6) e superiore (7).
ATTENZIONE! Se si devono rimuovere ambedue le scatole snodo, contrassegnare i perni superiori destro e sinistro.

D Schrauben (8) zur Halterung der unteren (6) und oberen Drehstifte (7) lockern und abnehmen.
ACHTUNG! Wenn beide Gelenkgehäuse abmontiert werden sollen, die oberen rechten und linken Stifte markieren.

ESP Aflojar y sacar los tornillos (8) de retención de las rotulas de rotación inferior (6) y superior (7).
ATENCION! Si se deben remover las dos cajas de rotulas, señalar las rotulas superiores derechas y izquierdas.

F Desserrer et retirer les vis (8) de retenue du pivot de rotation inférieur (6) et de celui supérieur (7).
ATTENTION! En cas de nécessité de retirer les deux boîtiers du joint à rotule, marquer les pivots supérieurs droit et gauche.

ITA Utilizzando un estrattore a battente "A" avvitato nel foro centrale, estrarre il perno di rotazione inferiore (6) e gli spessori (9).
NOTA. Non scambiare il pacco di spessori del lato destro con quelli del lato sinistro.

D Mit einem Abzieher mit Schenkel "A", der in das zentrale Loch geschraubt wird, den unteren Drehstift (6) und die Unterlegscheiben (9) abnehmen.
BEMERKUNG. Den Satz Unterlegscheiben der rechten Seite nicht mit dem der linken Seite vertauschen.

ESP Utilizando un extractor batiente "A" atornillado en el agujero central, extraer la rotula de rotación inferior (6) y los espesores (9).
NOTA. No descambiar el paquete de los espesores del lado derecho con los del lado izquierdo.

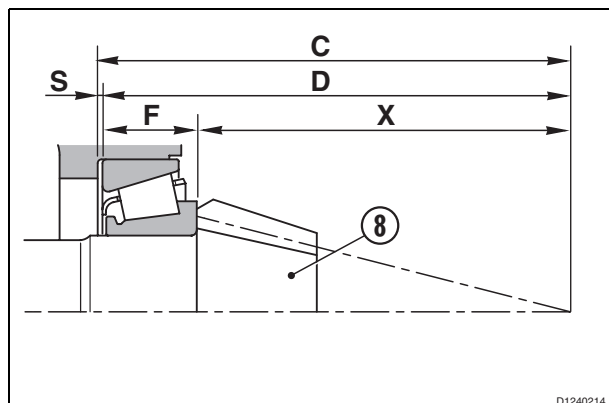
F A l'aide d'un outil d'arrachage à battant "A" vissé dans le trou central, extraire le pivot de rotation inférieur (6) et les cales (9).
NOTE. Ne pas inverser les cales du côté droit avec celles du côté gauche.

ITA Con lo stesso estrattore "A", estrarre il perno di rotazione superiore (7).

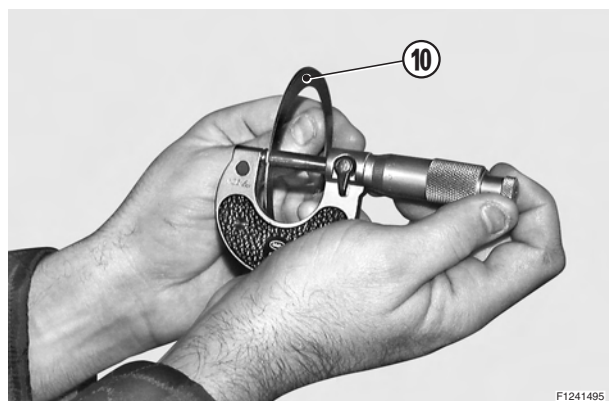
D Mit demselben Abzieher "A" den oberen Drehstift (7) abnehmen.

ESP Con el mismo extractor "A", extraer la rotula de rotación superior (7).

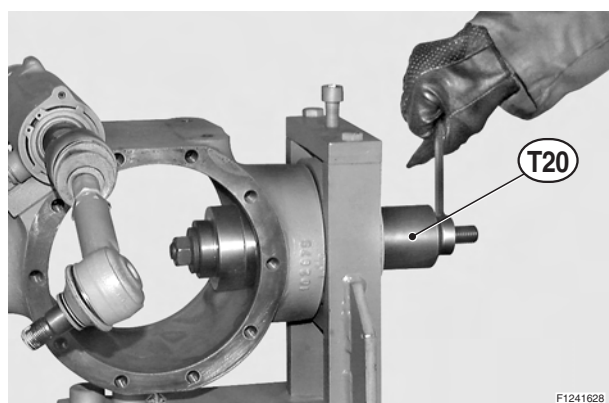
F A l'aide du même outil d'arrachage "A", arracher le pivot de rotation supérieur (7).



Add thickness "F" of bearing to size "X" of pinion (8) to find measure "D".
Example: $X = 98.05$ (value impressed on piston head); $F = 24.83$ (value measured as part of the operation described on page 64 step b);
 $D = 98.05 + 24.83 = 122.88$;
 $C = 124.24$ (values measured as part of the operation described on page 64 step f)



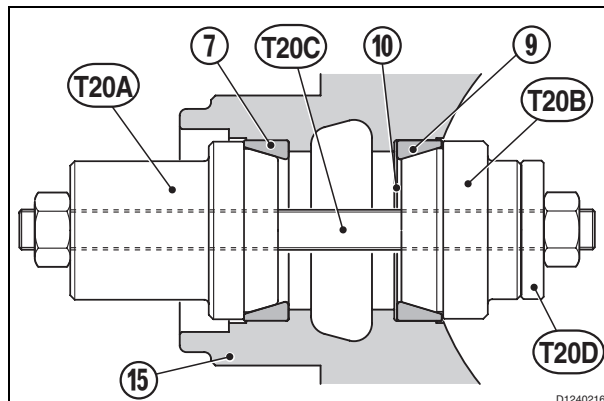
Prepare the pack of shims (10) ready to be inserted under the thrust block.



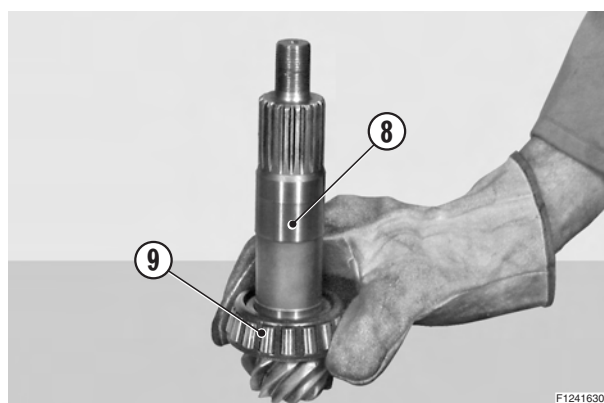
Lock-seal the nut on the bar of tool T20 to set outer rings of bearings (7) and (9) and shims (10) in position.
NOTE. Before going any further, make sure that the outer rings are inserted properly.



Calculate the difference between C and D to find thickness "S" of shim to be inserted under the outer thrust block of bearing (9).
Example: $C = 124.24 - D = 122.88 = S = 1.36$
CAUTION! Round "S" to the higher 5/100 figure
Example: $1.36 \rightarrow 1.40$ mm.



Insert shims (10), previously oiled outer rings of bearings (7) and (9), and tool T20 into the main body (15).
CAUTION! 1 - to hold shims in position, apply a thin coat of grease.
2 - Position thinner shims between two thick ones.



Heat up bearing (9) to a temperature of 100°C and fit it to the pinion (8).

ITA Sommare alla quota "X" del pignone (8) lo spessore "F" del cuscinetto per trovare la misura "D".

Esempio: $X = 98,05$ (quota stampigliata sulla testa del pistone); $F = 24,83$ (quota rilevata nell'operazione pag. 64 fase b); $D = 98,05 + 24,83 = 122,88$;
 $C = 124,24$ (quota rilevata nell'operazione pag. 64 fase f)

D Das Maß "X" des Kegelrads (8) und die Stärke "F" des Lagers addieren, um das Maß "D" auszurechnen.

Beispiel: $X = 98,05$ (auf dem Kolbenkopf gedrucktes Maß); $F = 24,83$ (beim Vorgang auf Seite 64, Teil b, ermitteltes Maß); $D = 98,05 + 24,83 = 122,88$;
 $C = 124,24$ (beim Vorgang auf Seite 64, Teil f, ermitteltes Maß)

ESP Sumar a la cuota "X" del pinon (8) el espesor "F" del cojinete para encontrar la medida "D".

Exemplo: $X = 98,05$ (cuota estampada sobre el cabezal del pistón); $F = 24,83$ (cuota relevada en la operación de pag. 64b); $D = 98,05 + 24,83 = 122,88$;
 $C = 124,24$ (cuota relevada en la operación de pag. 64f).

F Additionner la cote "X" du pignon (8) à l'épaisseur "F" du roulement pour trouver la mesure "D".

Exemple: $X = 98,05$ (cote estampillée sur la tête du piston); $F = 24,83$ (cote relevée durant l'opération page 64 phase b); $D = 98,05 + 24,83 = 122,88$;
 $C = 124,24$ (cote relevée durant l'opération page 64 phase f)

ITA Eseguire la differenza $C - D$ per trovare lo spessore "S" da inserire sotto la ralla esterna del cuscinetto (9).
Esempio: $C = 124,24 - D = 122,88 = S = 1,36$

ATTENZIONE! Arrotondare la misura "S" ai 5/100 superiori.
Esempio: $1,36 \rightarrow 1,40$ mm

D Das Maß D vom Maß C abziehen, um die Stärke "S" auszurechnen, die unter der äußeren Scheibe des Lagers (9) benötigt wird.

Beispiel: $C = 124,24 - D = 122,88 = S = 1,36$
ACHTUNG! Das Maß "S" auf die nächsten 5/100 abrunden.
Beispiel: $1,36 \rightarrow 1,40$ mm

ESP Efectuar la diferencia $C - D$ para encontrar el espesor "S" de introducir bajo la racla externa del cojinete (9).
Exemplo: $C = 124,24 - D = 122,88 = S = 1,36$

ATENCION! Llevar la medida "S" a los 5/100 superiores.
Exemplo: $1,36 \rightarrow 1,40$ mm

F Faire la différence $C - D$ pour trouver l'épaisseur "S" à insérer sous la crapaudine extérieure du roulement (9).

Exemple: $C = 124,24 - D = 122,88 = S = 1,36$
ATTENTION! Arrondir la mesure "S" aux 5/100 supérieurs.
Exemple: $1,36 \rightarrow 1,40$ mm

ITA Preparare il pacco degli spessori (10) da inserire sotto la ralla.

D Den Satz Unterlegscheiben (10) vorbereiten, der unter die Scheibe eingesetzt werden muss.

ESP Preparar el paquete de los espesores (10) de introducir bajo la racla.

F Préparer le paquet des cales d'épaisseur (10) à introduire sous la rondelle.

ITA Inserire nel corpo centrale (15) gli spessori (10), gli anelli esterni dei cuscinetti (7), (9), lubrificati con olio, e l'attrezzo T20.

ATTENZIONE! 1 - Per mantenere in posizione gli spessori, spalmarli leggermente con grasso. 2 - Posizionare gli spessori sottili tra due di maggior spessore.

D In den zentralen Körper (15) die Unterlegscheiben (10), die mit Öl geschmierten äußeren Ringe (7), (9), und das Werkzeug T20 einsetzen.

ACHTUNG! 1 - Um die Position der Unterlegscheiben einzubehalten, diese mit etwas Fett einschmieren. 2 - Die dünnen Unterlegscheiben zwischen die dickeren Unterlegscheiben legen.

ESP Introducir en el cuerpo central (15) los espesores (10), los anillos externos de los cojinetes (7), (9), lubricados con aceite, y la herramienta T20.

ATENCION! 1 - Para mantener en posición los espesores, pasar ligeramente con grasa. 2 - Colocar los espesores finos entre dos de espesor mayor.

F Introduire dans le corps central (15), les cales d'épaisseur (10), les bagues extérieures des roulements (7), (9), lubrifiées à l'huile, et l'outil T20.

ATTENTION! 1 - Pour conserver la position des cales d'épaisseur les enduire légèrement à la graisse. 2 - Mettre en place les cales minces entre deux cales d'une plus grande épaisseur.

ITA Avvitare a fondo il dado del tirante dell'attrezzo T20, per assestare gli anelli esterni dei cuscinetti (7), (9) e gli spessori (10).

NOTA. Prima di proseguire, assicurarsi dell'inserimento totale degli anelli esterni.

D Die Mutter des Zugglieds des Werkzeugs T20 festziehen, um die äußeren Ringe der Lager (7), (9) und die Unterlegscheiben (10) zu setzen.

BEMERKUNG. Vor den nächsten Vorgängen, kontrollieren, ob die äußeren Ringe richtig eingesetzt worden sind.

ESP Atornillar asta fondo la tuerca del tirante de la herramienta T20 para ordenar los anillos externos de los cojinetes (7), (9) y los espesores (10).

NOTA. Antes de seguir, asegurarse de la introducción total de los anillos externos.

F Serrer à fond l'écrou du tirant de l'outil T20 pour mettre en place les bagues extérieures des roulements (7), (9) et les cales d'épaisseur (10).

NOTE. Avant de continuer, s'assurer de l'introduction totale des bagues extérieures.

ITA Scaldare a circa 100 °C il cuscinetto (9) e montarlo sul pignone (8).

D Das Lager (9) auf circa 100 °C erhitzen und das Lager auf das Kegelrad (8) montieren.

ESP Calentar a 100 °C approx. el cojinete (9) y montarlo sobre el pinon (8).

F Chauffer à environ 100 °C le roulement (9) et le monter sur le pignon (8).

DISASSEMBLY OF THE JIB

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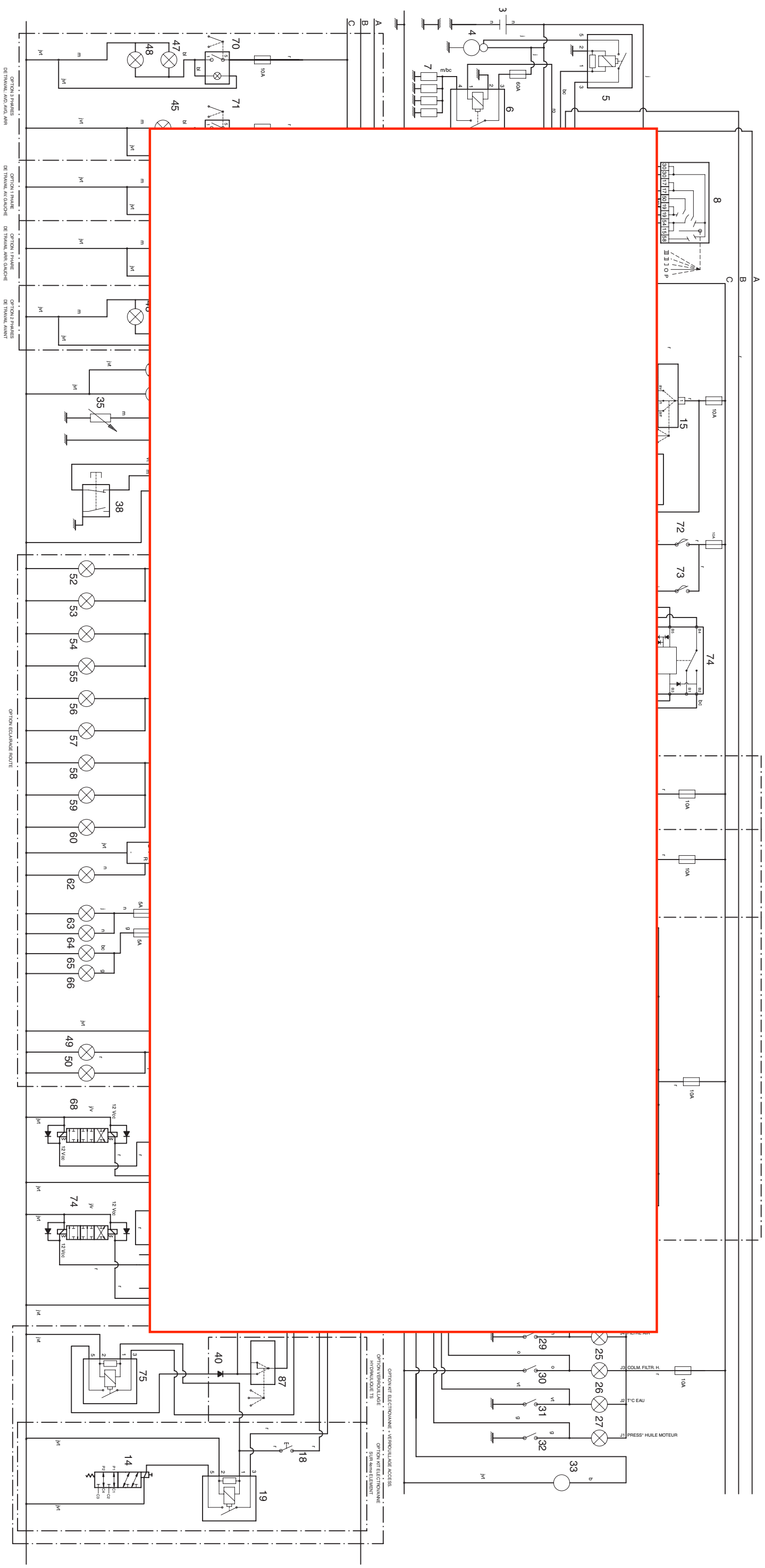
HYDRAULIC DIAGRAM

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HYDRAULIC DIAGRAM BT 420 Série 3-E2 - BT 425 Série 3-E2

- 1** Accessory connector
- 2** Hydrostatic motor
- 3** TH7 valve (inching)
- 4** Suction and return filter
- 5** Hydrostatic pump
- 6** I.C. engine
- 7** Oil tank
- 8** Hydraulic main pump
- 9** Oil cooler
- 10** Steering pump manual
- 11** Vale bank
- 12** Telescoping cylinder
- 13** Compensation cylinder
- 14** Tilting cylinder
- 15** Lifting cylinder
- 16** Steering cylinder
- 17** Balancing valve



HYDROSTATIC TRANSMISSION CIRCUIT
BT 420 - BT 425

