Werkstatthandbuch FL 912, B/FL 913/C

Deutsch	English	Français	Español
Motorgewicht nach DIN 70020 - A ca. kg	Engine weight acc. to DIN 70020 - A ca. kg	Poids du moteur selon DIN 70020 - A approx. kg	Peso del motor según DIN 70020 -A aprox. kg
Gesamthubvolumen cm^3	Engine swept volume cm^3	Cylindrée totale cm^3	Cilindrada total cm^3
Bohrung mm	Bore mm	Alésage mm	Calibre mm
Hub mm	Stroke mm	Course mm	Carrera mm
Drehrichtung	Direction of rotation	Sens de rotation	Sentido de giro
Nenndrehzahl max. 1/min	Rated speed max. rpm	Régime nominal maxi tr/mn	Régimen nom. máx. rpm
niedrigste Leerlaufdrehzahl 1/min	Minimum idle speed rpm	Ralenti extrême tr/mn	Régimen mín. en vacío rpm
Arbeitsweise	Working cycle	Principe de fonction-nement	Sistema de trabajo

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English

Adjust valve clearance only with engine cold. The engine must have cooled down to ambient temperature

1. Remove cylinder head covers.

2. Crank engine until valves of cyl. No. 1 overlap.

See Specification Data for valve clearance adjustment schematic.

Note: Valve overlap means. Exhaust valve about to close, inlet valve about to open. Neither pushrod can be turned in this position.

3. Adjust valve clearance on relevant cylinder with feeler gauge.

Note: Inlet valve clearance **0.15 + 0.05 mm**
Exhaust valve clearance **0.15 + 0.05 mm**

4. Tighten locknut.

   Tightening specification: **22 ± 2 Nm**

   Recheck the adjustment with feeler gauge.

Français

Pour régler le jeu aux soupapes, le moteur doit toujours être froid, donc le laisser refroidir à la température ambiante.

1. Déposer les cache-culbuteurs.

2. Virer le moteur jusqu'à ce que les soupapes soient en bascule, cyl. no. 1.

Schéma de réglage du jeu aux soupapes, voir caractéristiques techniques

Nota: soupapes en bascule signifie: soupape d'échappement pas encore fermée et soupape d'admission commence à s'ouvrir.
Lors de cette opération les deux tiges de culbuteurs ne peuvent plus tourner.

3. Régler le jeu aux soupapes sur le cylindre concerné à l'aide de jauges d'épaisseur.

Nota: jeu aux soupapes
ADM **0,15 + 0,05 mm**
ECH **0,15 + 0,05 mm**

4. Bloquer le contre-écrou.

   Consigne de serrage: **22 ± 2 Nm**

   Contrôler à nouveau le réglage à l'aide de jauges d'épaisseur.

Español

Ajustar el juego de válvulas sólo con el motor frío. El motor deberá estar enfriado a la temperatura ambiente.

1. Desmontar las tapas de culata.

2. Girar el cigüeñal hasta el cruce de las válvulas en el cilindro No. 1.

Para el esquema de ajuste del juego de válvulas, ver los Datos Técnicos.

Nota: Cruce de válvulas significa: La válvula de escape aún no está cerrada y la válvula de admisión comienza a abrirse.

3. Ajustar el juego de válvulas en el cilindro correspondiente utilizando una galga de espesores.

Nota: Juego de válvulas
- Admisión **0,15 + 0,05 mm**
- Escape **0,15 + 0,05 mm**

4. Apretar la contratuerca.

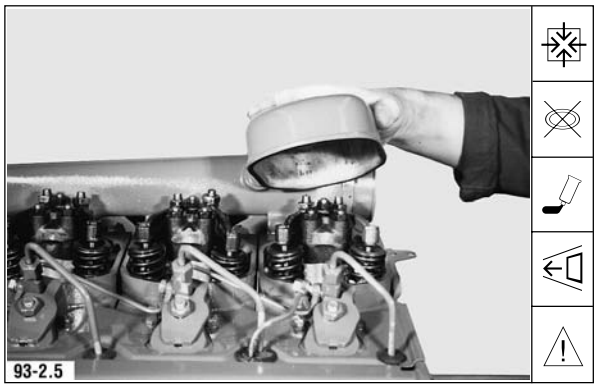
   Prescripción de apriete: **22 ± 2 Nm**

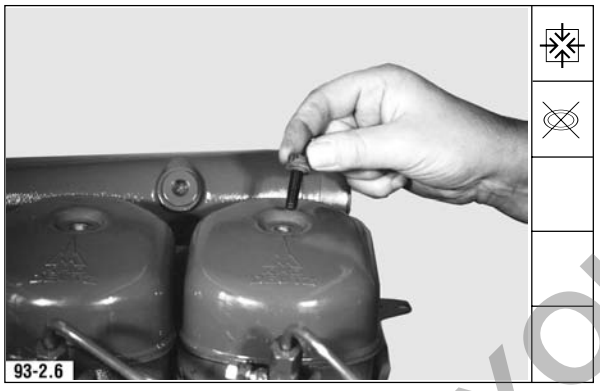
   Verificar de nuevo el ajuste efectuado, mediante la galga de espesores.

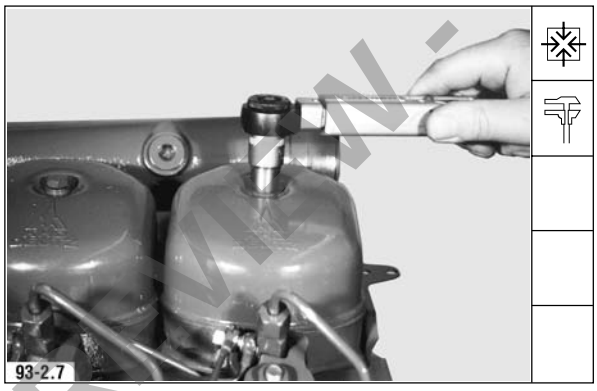
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Werkstatthandbuch FL 912, B/FL 913/C







Deutsch

5. Neue Dichtung mit Klebstoff **Deutz KL 8** an Zylinderkopfhaube ankleben. Zylinderkopfhauben auflegen.

Hinweis: Graphitierte Fläche der Dichtung weist zum Zylinderkopf.

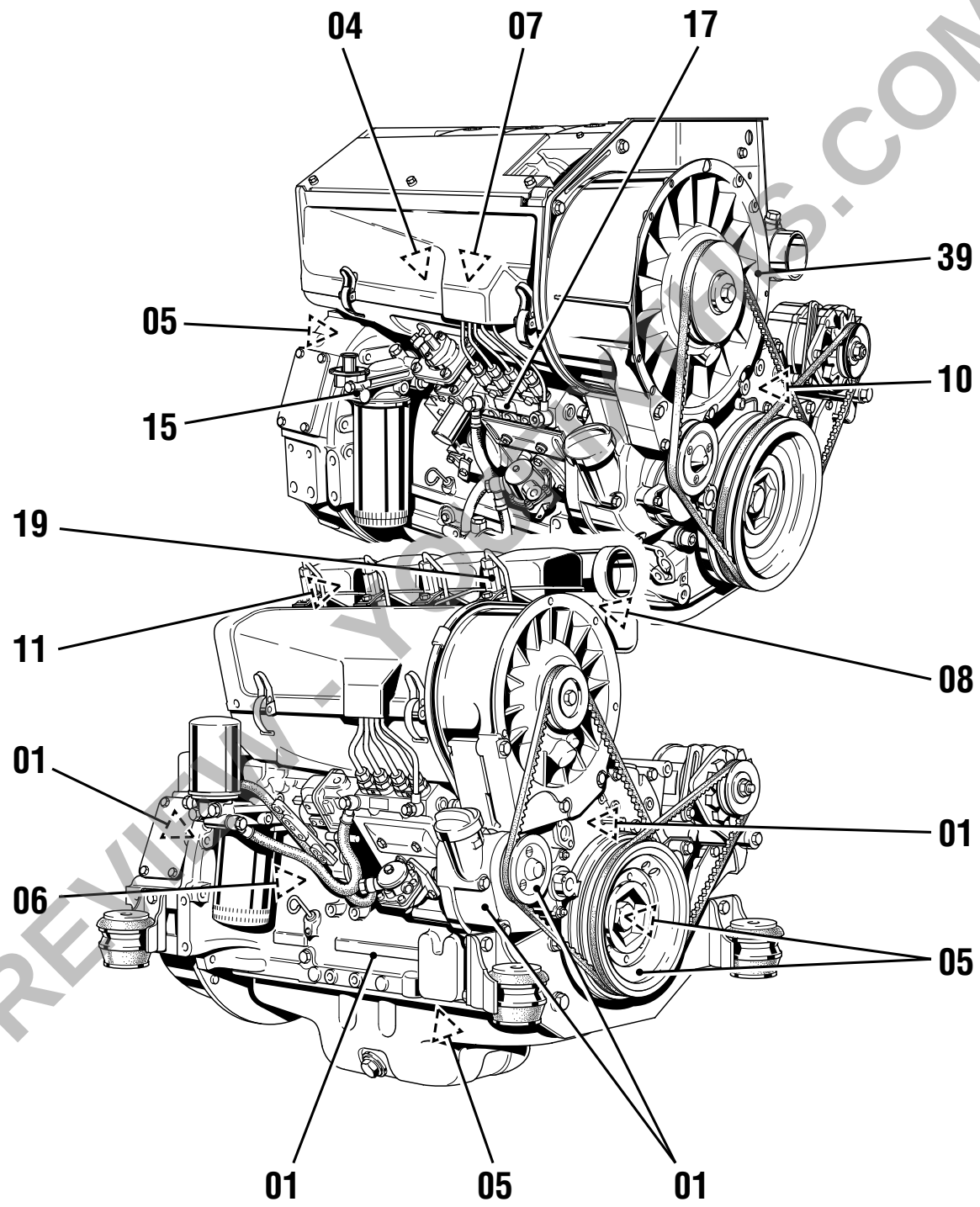
6. Schrauben mit Scheibe und neuem Dichtring einschrauben.

7. Schrauben festdrehen.

   Anziehvorschrift: **12 ± 1,2 Nm**

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F3 - 6L 912	F3/4/6L 913	BF4/6L 913	BF6L 913C
F3L = 270 F4L = 300 F5L = 380 F6L = 410	F3L = 277 F4L = 320 F6L = 420	BF4L = 360 BF6L = 485	510
F3L = 2827 F4L = 3770 F5L = 4712 F6L = 5655	F3L = 3064 F4L = 4086 F6L = 6128	BF4L = 4086 BF6L = 6128	6128
100	102		
120	125		
Auf Schwungrad gesehen links When facing flywheel counter-clockwise Vu sur volant à gauche Mirándose sobre el volante a la izquierda			
2500			
650 - 700			
Viertakt - Diesel Four-stroke diesel Diesel 4 temps Diesel a 4 tiempos			

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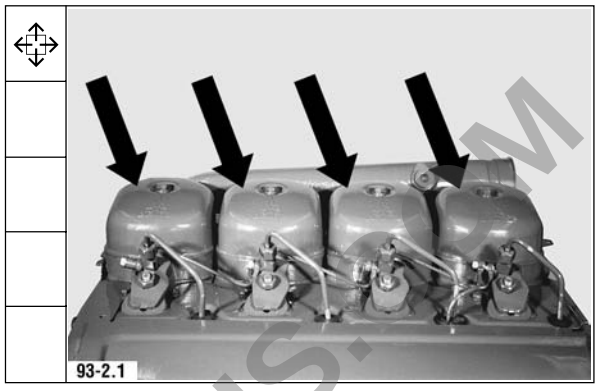
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Deutsch

Ventilspiel nur am kalten Motor einstellen. Der Motor soll auf Umgebungstemperatur abgekühlt sein.

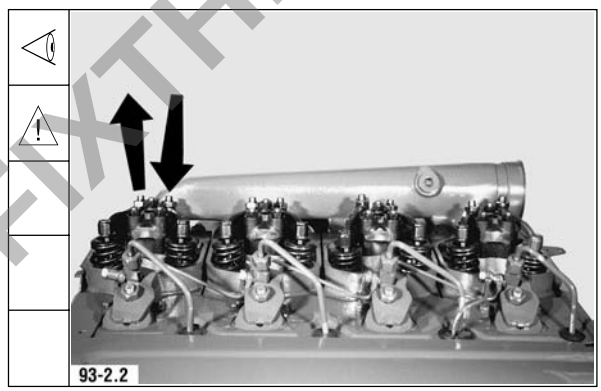
1. Zylinderkopfhauben abbauen.



2. Motor durchdrehen bis zum Erreichen der Ventilüberschneidung, Zyl. Nr. 1.

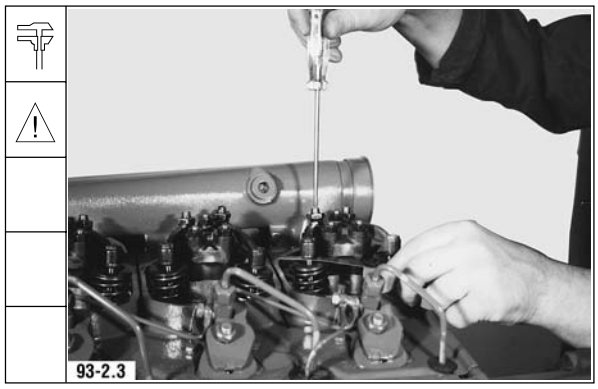
Ventilspieleinstellschema siehe Techn. Daten

Hinweis: Ventilüberschneidung bedeutet:
Auslaßventil ist noch nicht geschlossen, Einlaßventil beginnt zu öffnen.
Dabei sind beide Stoßstangen nicht drehbar.



3. Ventilspieleinstellung am entsprechenden Zylinder mit Fühlerlehrenblatt einstellen.

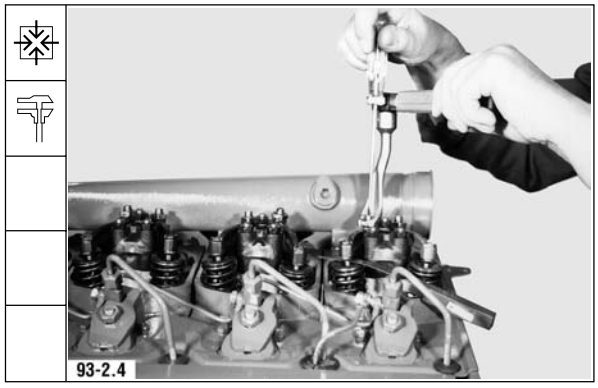
Hinweis: Ventilspiel Einlaß **0,15 + 0,05 mm**
Ventilspiel Außlaß **0,15 + 0,05 mm**



4. Kontermutter festdrehen.

Anziehvorschrift: **22 ± 2 Nm**

Einstellung nochmals mit Fühlerlehrenblatt überprüfen.



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English

5. Affix new gasket onto each cylinder head cover using **Deutz KL 8** adhesive. Place on cylinder head covers.

Note: Graphitized gasket surface points towards cylinder head.

6. Screw in bolts with washer and new sealing ring.

7. Tighten bolts.

Tightening specification: **12 ± 1.2 Nm**

Français

5. Coller sur le cache-culbuteurs un joint neuf avec de la colle **Deutz KL 8**. Mettre en place les cache-culbuteurs.

Nota: la surface graphitée du joint doit être orientée vers la culasse.

6. Serrer les vis avec la rondelle et un joint Cu neuf.

7. Bloquer les vis.

Consigne de serrage: **12 ± 1,2 Nm**

Español

5. Pegar, con pegamento **Deutz KL 8**, una junta nueva en cada tapa de culata. Colocar las tapas de culata.

Nota: La cara grafitada de la junta indica hacia la culata.

6. Enroscar los tornillos con arandela y un anillo de junta nuevo.

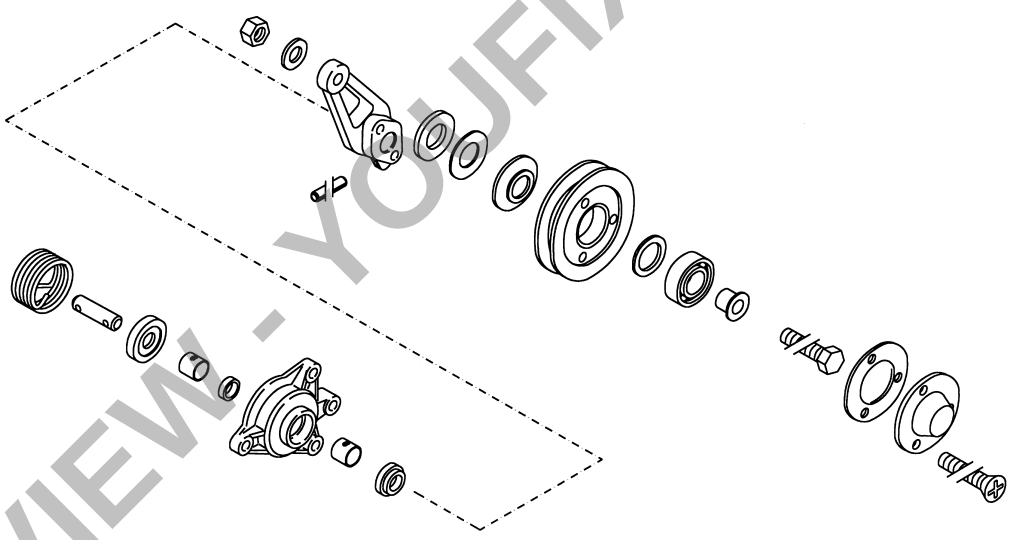
7. Apretar los tornillos.

Prescripción de apriete: **12 ± 1,2 Nm**

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Technische Daten

Specification data

Caractéristiques techniques

Datos técnicos

912/913

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Hinweis zum Gebrauch des Werkstatthandbuches
In diesem Werkstatthandbuch sind alle technischen Daten, Einstellwerte und Anziehvorschriften den Stellen zugeordnet, wo sie bei Servicearbeiten, De- und Montage am Motor benötigt werden.

Notes for the user of this Workshop Manual
In this Workshop Manual all specification data, adjustment values and tightening specifications are allocated to those parts where they are needed for service work, disassembly and reassembly on the engine.

Remarque quant à l'utilisazion du Manuel d'atelier
Dans le présent Manuel d'atelier, toutes les caractéristiques techniques, valeurs de réglage et préconisations de serrage nécessaires se trouvent dans les chapitres correspondant aux travaux de service après-vente et montage et démontage du moteur.

Indicación para el uso del manual de taller
En este manual de taller se indican todos los datos técnicos, valores de ajuste y prescripciones de apriete en los puntos donde son requeridos para la realización de trabajos de servicio, desmontaje y montaje en el motor.

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FOREWORD

Reliable engine operation is dependent on properly executed repairs as well as adjustment work.

This Workshop Manual describes the appropriate operations for any repair and adjustment work on the engine and engine components. It is presumed that this work will be carried out by qualified personnel.

The Manual has been laid out to ensure quick comprehension of the contents, i. e illustrations have been placed adjacent to the brief text passages to clearly show the working operations.

Aspects of operation and maintenance are dealt with in the respective Operation Manual.

For spare parts orders the respective spare parts catalogue should be referred to.

This Workshop Manual is not subject to engineering change service and is valid until next issue.

Therefore please refer to the information in our Technical Circulars when carrying out repairs.

General information:

- Please read carefully and observe the instructions given in this Workshop Manual to avoid accidents and ensure that your engine always functions properly and reliably.
- Make sure that this Workshop Manual is readily available for all those carrying out repairs or adjustments and that the contents are well understood.
- Non-compliance with these repair instructions may result in malfunction and engine damage as well as personal injuries for which the manufacturer shall not accept any liability.
- The accident prevention regulations and all other generally recognized regulations on safety and occupational medicine are to be observed.
- A prerequisite for successful repair is that all required equipment, hand and special tools are available and in perfect working order.
- Optimal operation economy, reliability and durability of the engine can only be ensured when genuine parts of DEUTZ AG are used.
- Engine components such as springs, clamps, snap rings, etc. may cause injury if not handled with care.
- Engine repairs must be carried out in accordance with intended use as defined by the equipment manufacturer. For conversions, only parts approved by DEUTZ AG for a specific purpose should be used.

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English

16. Remove TDC adjusting device. Affic new gasket to cylinder head cover using **Deutz KL 8** adhesive. Mount cylinder head cover with new gasket and new sealing ring. Tighten bolt.

    Tightening specification: **12 ± 1.2 Nm**

Note: Graphitized gasket surface points towards cylinder head.

Français

16. Déposer l'appareil de réglage du PMH. Placer un nouveau joint avec de la colle **Deutz KL 8** sur le cache-culbuteurs. Monter le cache-culbuteurs avec un joint neuf et une bague d'étanchéité neuve. Serrer la vis.

    Consigne de serrage: **12 ± 1,2 Nm**

Nota: la surface graphitée du joint doit être dirigée vers la culasse.

Español

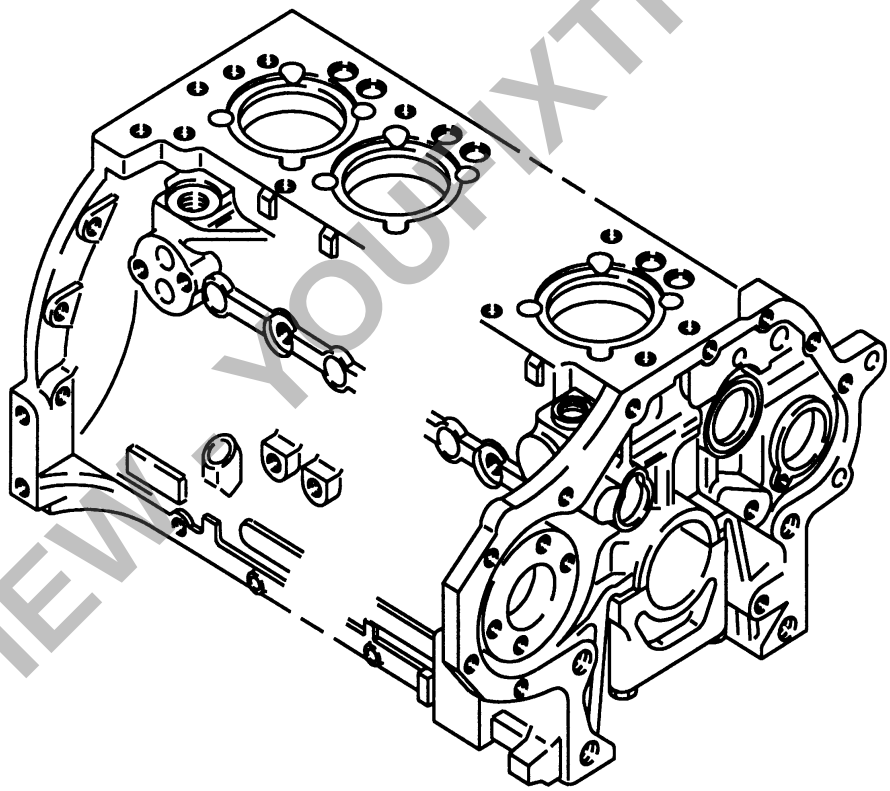
16. Desmontar el dispositivo para el ajuste del punto muerto superior. Pegar una junta nueva con pegamento **Deutz KL 8** a la tapa de cada culata. Montar la tapa en la culata con una junta y un anillo de junta nuevo. Apretar el tornillo.

    Prescripción de apriete: **12 ± 1,2 Nm**

Nota: La cara grafitada de la junta indica hacia la culata.

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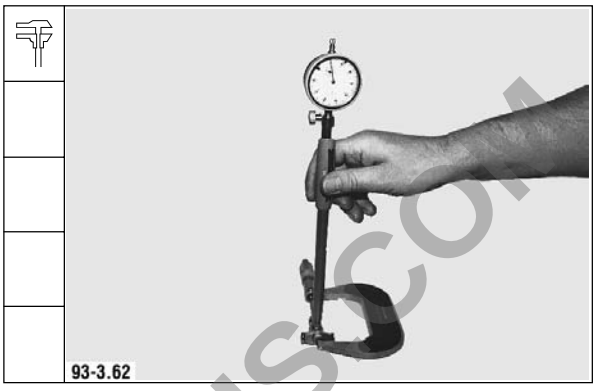
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Deutsch

Werkstatthandbuch FL 912, B/FL 913/C

1. Innenmeßgerät einstellen.

   FL 912 auf **100 mm**
   B/FL 913 / C auf **102 mm**

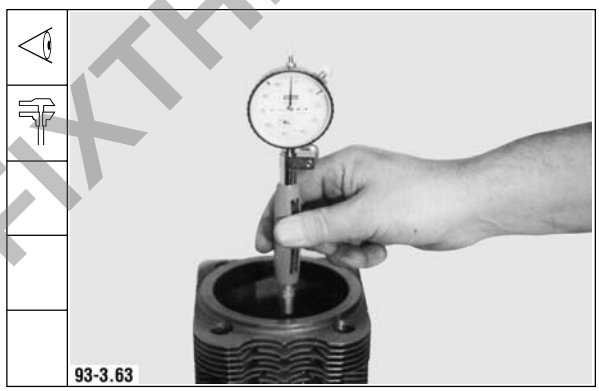


2. Zylinder reinigen und auf Beschädigung sichtprüfen.
   Zylinder messen: -

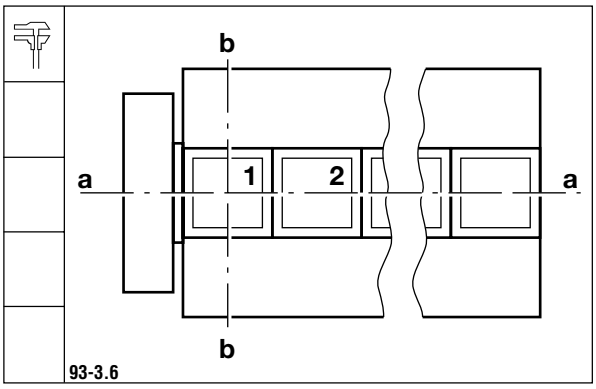
   FL 912 **100,010 - 100,032 mm**
   B/FL 913 / C **102,010 - 102,032 mm**

   Verschleißgrenze:
   FL 912 **100,10 mm**
   B/FL 913 / C **102,10 mm**

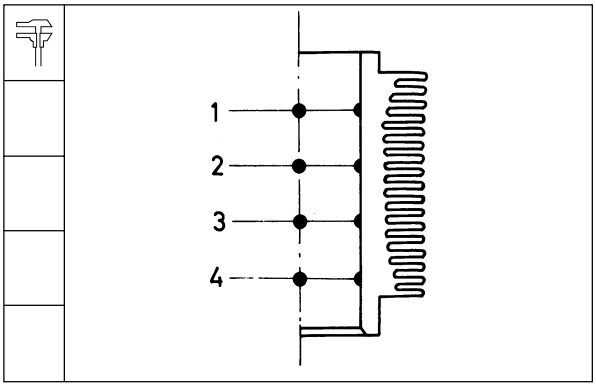
   Übermaßstufe **0,5 mm**
   Anzahl der Übermaßstufen:
   FL 912 **2**
   B/FL 913 / C **1**



   - in der Motorlängsachse „a“ und Motorquerachse „b“



   - und in den Ebenen 1 - 4



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Deutsch

8. Zwischenstück mit den Zentrierstiften in die Bohrungen des Düsenhalters einsetzen.

Hinweis: Die Ansenkung weist zum Druckbolzen.

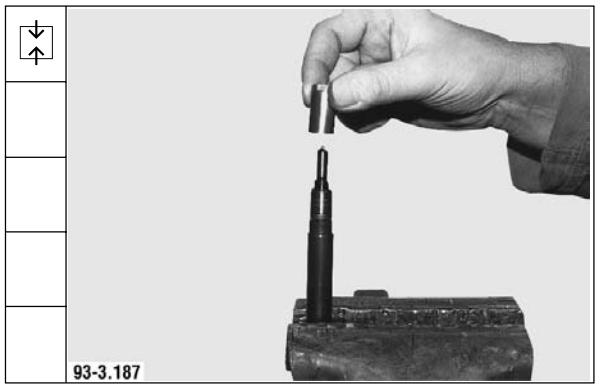


9. Einspritzdüse mit den Zentrierbohrungen auf die Zentrierstifte des Zwischenstückes aufsetzen.

Hinweis: Die Düsennadel darf nicht aus dem Düsenkörper fallen.



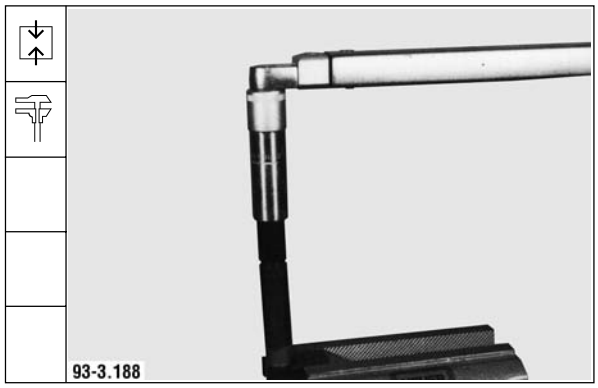
10. Düsenspannmutter aufschrauben.



11. Düsenspannmutter festdrehen.

Anziehvorschrift: **40 - 50 Nm**

Einspritzventil prüfen und einstellen, siehe Kapitel 2.



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English	Français	Español
2. Mount clamping angles. **Note:** Remove blanking plug.	2. Monter l'équerre d'ablocage. **Nota:** ôter la vis filetée.	2. Montar los angulares de fijación. **Nota:** Quitar el tapón de cierre.
3. Align engine on single-sided assembly stand. Tighten bolts. **Drain and catch remaining oil and dispose of in accordance with antipollution regulations.**	3. Aligner le moteur sur un chevalet de montage unilatéral. Serrer les boulons. **Vidanger l'huile ou respectivement l'huile restante, la récupérer et s'en débarrasser en respectant la réglementation antipollution.**	3. Alinear el motor sobre el cabellete de montaje unilateral. Apretar los tornillos. **Dejar salir el aceite o resto del mismo, recogerlo en recipientes adecuados y eliminarlo en forma reglamentaria.**
4. Remove air cowling upper part.	4. Déposer la partie supérieure de la manche d'air.	4. Desmontar la parte superior de la conducción de aire.
5. Remove injection lines, leak-fuel lines and overflow line. **Note:** Close openings on injection pump and injectors.	5. Déposer les conduites d'injection, les conduites de retour des fuites et le conduit de trop-plein. **Nota:** obturer les orifices de la pompe d'injection et des injecteurs.	5. Desmontar las tuberías de inyección, las tuberías de combustible sobrante y la tubería de rebose. **Nota:** Cerrar las aberturas de la bomba de inyección y los inyectores.

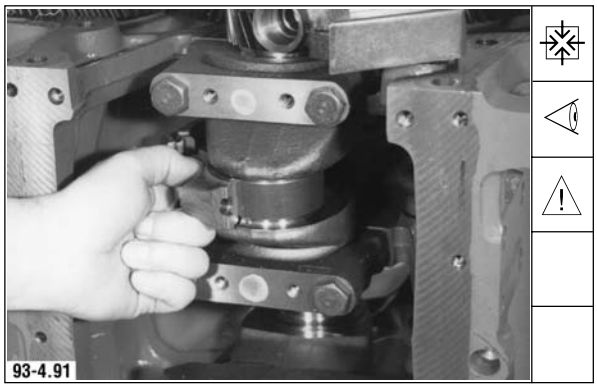
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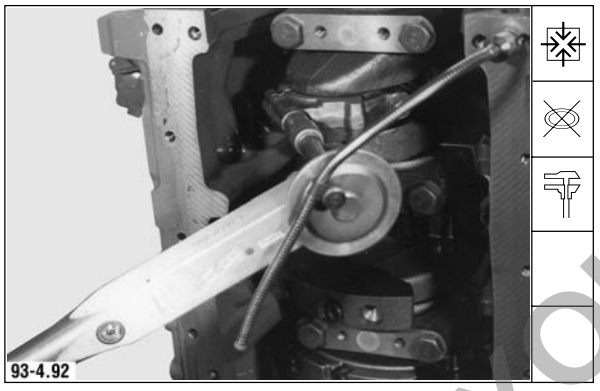
Werkstatthandbuch FL 912, B/FL 913/C

Deutsch



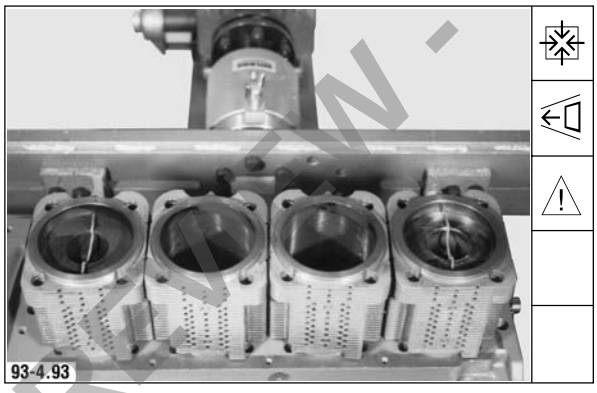
49. Durch Verdrehen auf dem Hubzapfen prüfen ob beide Pleuellagerschalen am Fixierstift anliegen.
Pleuelstange vorsichtig gegen den Hubzapfen drücken.

Hinweis: Nummernkennzeichnung beachten.



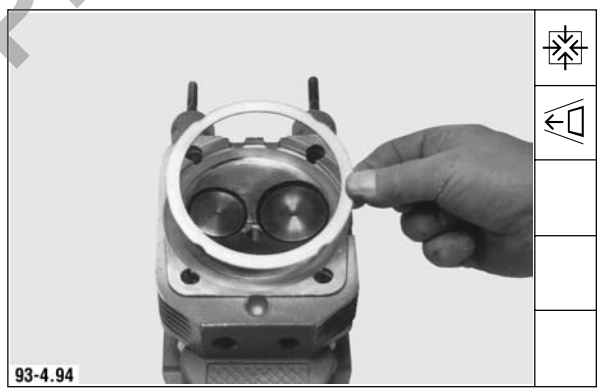
50. Pleuellagerdeckel mit **neuen** Pleuelschrauben montieren und festdrehen.

Anziehvorschrift:
Vorspannwert **20 - 30 Nm**
Nachspannwinkel **60° + 30°**



51. Einen 2 mm dicken Bleidraht quer zur Motorachse auf jeden Kolben auflegen.

Hinweis: Vor Aufsetzen der Zylinderköpfe müssen alle Kolben unterhalb des OT stehen.



52. Ausgleichring auflegen und ausrichten.

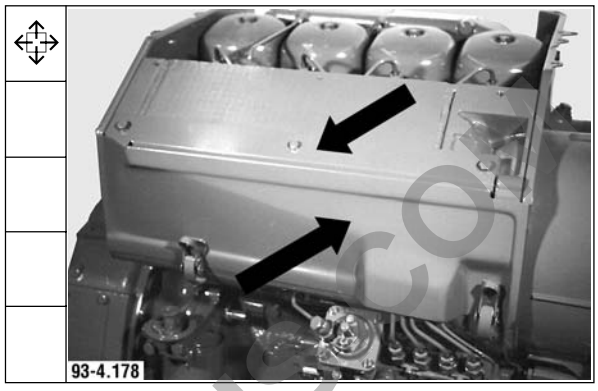
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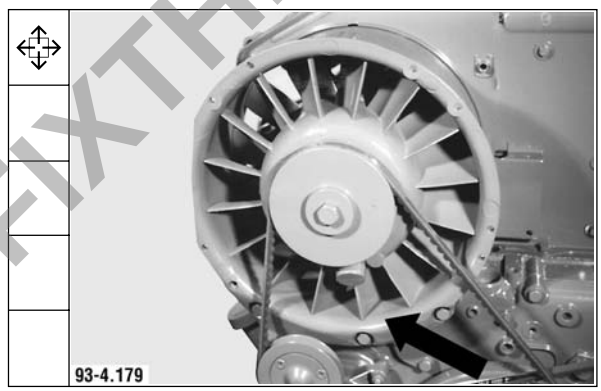
Bauteile bei BF4L 913

Schmierölkühler ab- und anbauen.

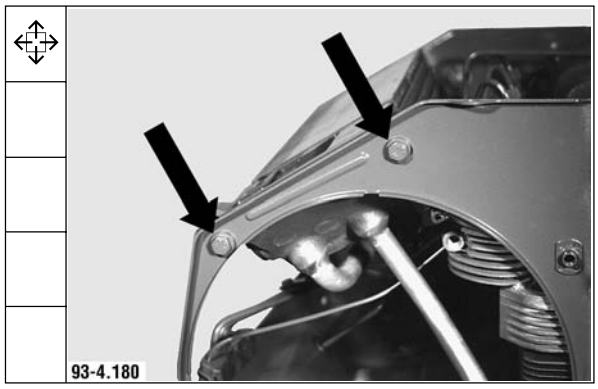
1. Luftzuführung-Oberteil und Abdeckblech abbauen.



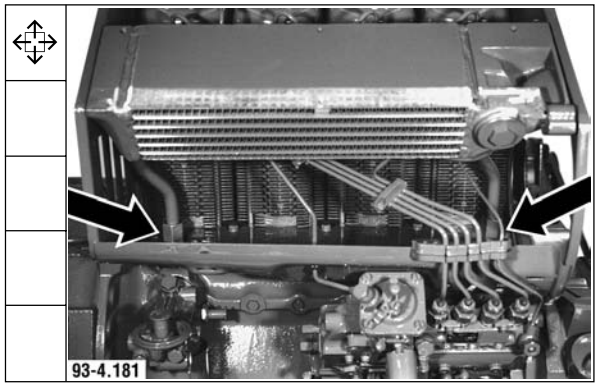
2. Keilriemen abnehmen und Kühlgebläse abbauen.



3. Schrauben am vorderen und hinteren Standblech herausschrauben.



4. Schmierölkühler abbauen.



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