

**845B VHP  
865B VHP  
885B VHP  
865B AWD  
885B AWD  
Motor Graders**

**Service Manual**

**Part Number**  
**48050419D**  
4<sup>th</sup> Edition  
English 10/2017





## SERVICE MANUAL

**845B Direct drive transmission, Tier 3, made in Brazil [HBZN0845VBAF00184 - ], 845B Torque converter transmission, Tier 3, made in Brazil [HBZN0845VCAF01093 - ], 865B Direct drive transmission, Tier 3, made in Brazil [NBAF15000 - ], 865B Torque converter transmission, Tier 3, made in Brazil [NBAF14004 - ], 865B AWD Direct drive transmission, All wheel drive (AWD), Tier 3, made in Brazil [HBZN0865TBAF00840 - ], 885B Direct drive transmission, Tier 3, made in Brazil [HBZN0885LBAF00098 - ], 885B Torque converter transmission, Tier 3, made in Brazil [HBZN0885PCAF00871 - ], 885B AWD Direct drive transmission, All wheel drive (AWD), Tier 3, made in Brazil [HBZN0885TBAF00558 - ]**

## Link Product / Engine

| Product                                                                                     | Market Product        | Engine         |
|---------------------------------------------------------------------------------------------|-----------------------|----------------|
| 845B Transmissão de acionamento direto, Tier 3, produzido no Brasil [HBZN0845VBAF00184 - ]  | Australia New Zealand | F4HE9687W*J101 |
| 845B Transmissão de acionamento direto, Tier 3, produzido no Brasil [HBZN0845VBAF00184 - ]  | Latin America         | F4HE9687W*J101 |
| 845B Transmissão de acionamento direto, Tier 3, produzido no Brasil [HBZN0845VBAF00184 - ]  | Asia Pacific          | F4HE9687W*J101 |
| 845B Transmissão de acionamento direto, Tier 3, produzido no Brasil [HBZN0845VBAF00184 - ]  | Middle East Africa    | F4HE9687W*J101 |
| 845B Transmissão de acionamento direto, Tier 3, produzido no Brasil [HBZN0845VBAF00184 - ]  | North America         | F4HE9687W*J101 |
| 845B Transmissão do conversor de torque, Tier 3, produzido no Brasil [HBZN0845VCAF01093 - ] | Australia New Zealand | F4HE9687W*J101 |
| 845B Transmissão do conversor de torque, Tier 3, produzido no Brasil [HBZN0845VCAF01093 - ] | North America         | F4HE9687W*J101 |
| 845B Transmissão do conversor de torque, Tier 3, produzido no Brasil [HBZN0845VCAF01093 - ] | Latin America         | F4HE9687W*J101 |
| 845B Transmissão do conversor de torque, Tier 3, produzido no Brasil [HBZN0845VCAF01093 - ] | Asia Pacific          | F4HE9687W*J101 |
| 845B Transmissão do conversor de torque, Tier 3, produzido no Brasil [HBZN0845VCAF01093 - ] | Middle East Africa    | F4HE9687W*J101 |
| 865B Transmissão de acionamento direto, Tier 3, produzido no Brasil [NBAF15000 - ]          | Latin America         | F4HE9687C*J100 |
| 865B Transmissão de acionamento direto, Tier 3, produzido no Brasil [NBAF15000 - ]          | Australia New Zealand | F4HE9687C*J100 |
| 865B Transmissão de acionamento direto, Tier 3, produzido no Brasil [NBAF15000 - ]          | Asia Pacific          | F4HE9687C*J100 |
| 865B Transmissão de acionamento direto, Tier 3, produzido no Brasil [NBAF15000 - ]          | Middle East Africa    | F4HE9687C*J100 |
| 865B Transmissão de acionamento direto, Tier 3, produzido no Brasil [NBAF15000 - ]          | North America         | F4HE9687C*J100 |
| 865B Transmissão do conversor de torque, Tier 3, produzido no Brasil [NBAF14004 - ]         | Asia Pacific          | F4HE9687C*J100 |

| Product                                                                                                                        | Market Product        | Engine         |
|--------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------|
| 865B Transmissão do conversor de torque, Tier 3, produzido no Brasil [NBAF14004 - ]                                            | North America         | F4HE9687C*J100 |
| 865B Transmissão do conversor de torque, Tier 3, produzido no Brasil [NBAF14004 - ]                                            | Australia New Zealand | F4HE9687C*J100 |
| 865B Transmissão do conversor de torque, Tier 3, produzido no Brasil [NBAF14004 - ]                                            | Middle East Africa    | F4HE9687C*J100 |
| 865B Transmissão do conversor de torque, Tier 3, produzido no Brasil [NBAF14004 - ]                                            | Latin America         | F4HE9687C*J100 |
| 865B AWD Transmissão de acionamento direto, tração em todas as rodas (AWD), Tier 3, produzido no Brasil [HBZN0865TBAF00840 - ] | North America         | F4HE9687C*J100 |
| 885B Transmissão de acionamento direto, Tier 3, produzido no Brasil [HBZN0885LBAF00098 - ]                                     | Middle East Africa    | F4HE9684L*J100 |
| 885B Transmissão de acionamento direto, Tier 3, produzido no Brasil [HBZN0885LBAF00098 - ]                                     | Latin America         | F4HE9684L*J100 |
| 885B Transmissão de acionamento direto, Tier 3, produzido no Brasil [HBZN0885LBAF00098 - ]                                     | North America         | F4HE9684L*J100 |
| 885B Transmissão de acionamento direto, Tier 3, produzido no Brasil [HBZN0885LBAF00098 - ]                                     | Asia Pacific          | F4HE9684L*J100 |
| 885B Transmissão de acionamento direto, Tier 3, produzido no Brasil [HBZN0885LBAF00098 - ]                                     | Australia New Zealand | F4HE9684L*J100 |
| 885B Transmissão do conversor de torque, Tier 3, produzido no Brasil [HBZN0885PCAF00871 - ]                                    | Australia New Zealand | F4HE9687K*J105 |
| 885B Transmissão do conversor de torque, Tier 3, produzido no Brasil [HBZN0885PCAF00871 - ]                                    | Middle East Africa    | F4HE9687K*J105 |
| 885B Transmissão do conversor de torque, Tier 3, produzido no Brasil [HBZN0885PCAF00871 - ]                                    | Latin America         | F4HE9687K*J105 |
| 885B Transmissão do conversor de torque, Tier 3, produzido no Brasil [HBZN0885PCAF00871 - ]                                    | North America         | F4HE9687K*J105 |
| 885B Transmissão do conversor de torque, Tier 3, produzido no Brasil [HBZN0885PCAF00871 - ]                                    | Asia Pacific          | F4HE9687K*J105 |
| 885B AWD Transmissão de acionamento direto, tração em todas as rodas (AWD), Tier 3, produzido no Brasil [HBZN0885TBAF00558 - ] | North America         | F4HE9684L*J100 |

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## INTRODUCTION

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## INTRODUCTION

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(\*) See content for specific models

## Safety rules - Batteries

|      |  |
|------|--|
| 845B |  |
| 865B |  |
| 885B |  |

### WARNING

Improper operation or service of this machine can result in an accident.  
Before working on any component(s) of the electrical circuit, put the starter switch key in the off (shut down) position. When disconnecting batteries, always disconnect the negative (-) cable first. When reconnecting batteries, always connect the negative (-) cable last.  
Failure to comply could result in death or serious injury.

W0264A

### WARNING

Electrical shock hazard!  
Before working on any part of the electrical system, disconnect the battery ground cable. Complete all electrical work before connecting the cable.  
Failure to comply could result in death or serious injury.

W0129A

### WARNING

Battery gas can explode!  
To prevent an explosion: 1. Always disconnect the negative (-) battery cable first. 2. Always connect the negative (-) battery cable last. 3. Do not short circuit the battery posts with metal objects. 4. Do not weld, grind, or smoke near a battery.  
Failure to comply could result in death or serious injury.

W0011A

### WARNING

Explosion hazard!  
When jump-starting the machine, connect and disconnect the jumper cables exactly as indicated in this manual. DO NOT connect the jumper cables to the machine battery terminals. Make sure no persons are near the connecting points before starting the engine. Start the engine from the operator's seat.  
Failure to comply could result in death or serious injury.

W0342A

### WARNING

Explosive gas!  
Batteries emit explosive hydrogen gas and other fumes while charging. Ventilate the charging area. Keep the battery away from sparks, open flames, and other ignition sources. Never charge a frozen battery.  
Failure to comply could result in death or serious injury.

W0005A

### WARNING

Hazardous chemicals!  
Battery electrolyte contains sulfuric acid. Contact with skin and eyes could result in severe irritation and burns. Always wear splash-proof goggles and protective clothing (gloves and aprons). Wash hands after handling.  
Failure to comply could result in death or serious injury.

W0006A

## **WARNING**

**Battery gas can explode!**

To prevent an explosion: 1. Always disconnect the negative (-) battery cable first. 2. Always connect the negative (-) battery cable last. 3. Do not short circuit the battery posts with metal objects. 4. Do not weld, grind, or smoke near a battery.

Failure to comply could result in death or serious injury.

W0011A

## **WARNING**

**Explosion hazard!**

If battery electrolyte is frozen, attempting to charge the battery or jump-start the engine can cause the battery to explode. Always keep batteries at full charge to prevent frozen battery electrolyte. Never charge a frozen battery.

Failure to comply could result in death or serious injury.

W0203A

## **WARNING**

**Improper operation or service of this machine can result in an accident.**

An error connecting auxiliary starting cables or short-circuiting battery terminals can cause an accident. Connect auxiliary starting cables as instructed in this manual.

Failure to comply could result in death or serious injury.

W0263A

## **WARNING**

**Explosion hazard!**

Batteries emit explosive gases. Always ventilate when using in an enclosed area or when charging. Keep the battery away from sparks, open flames, and other ignition sources.

Failure to comply could result in death or serious injury.

W0369A

## **WARNING**

**Eye injury hazard!**

Wear eye protection when jump-starting the machine and when charging the battery.

Failure to comply could result in death or serious injury.

W0382A

## **WARNING**

**Chemical hazard!**

Battery acid can cause severe burns. Some batteries have a ventilation tube. If there is battery acid in the tube, this acid can be released when the battery is turned upside down. If you turn the battery upside down, point the ventilation tube away from you and any other people in the area.

Failure to comply could result in death or serious injury.

W1084A

## Variable displacement pump - Safety rules

|                                                                                                          |                                    |
|----------------------------------------------------------------------------------------------------------|------------------------------------|
| 845B                                                                                                     | ANZ --- APAC --- LA --- MEA --- NA |
| 865B AWD Direct drive transmission, All wheel drive (AWD), Tier 3, made in Brazil [HBZN0865TBAF00840 - ] | NA                                 |
| 865B                                                                                                     | ANZ --- APAC --- LA --- MEA --- NA |
| 885B AWD Direct drive transmission, All wheel drive (AWD), Tier 3, made in Brazil [HBZN0885TBAF00558 - ] | NA                                 |
| 885B                                                                                                     | ANZ --- APAC --- LA --- MEA --- NA |

### Personal safety



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.

Throughout this manual and on machine safety signs, you will find the signal words DANGER, WARNING, and CAUTION followed by special instructions. These precautions are intended for the personal safety of you and those working with you.

Read and understand all the safety messages in this manual before you operate or service the machine.

 **DANGER** indicates a hazardous situation that, if not avoided, will result in death or serious injury. The color associated with DANGER is RED.

 **WARNING** indicates a hazardous situation that, if not avoided, could result in death or serious injury. The color associated with WARNING is ORANGE.

 **CAUTION** indicates a hazardous situation that, if not avoided, could result in minor or moderate injury. The color associated with CAUTION is YELLOW.

### FAILURE TO FOLLOW DANGER, WARNING, AND CAUTION MESSAGES COULD RESULT IN DEATH OR SERIOUS INJURY.

### Machine safety

**NOTICE:** Notice indicates a situation that, if not avoided, could result in machine damage or property damage. The color associated with Notice is BLUE.

Throughout this manual you will find the signal word Notice followed by special instructions to prevent machine damage or property damage. The word Notice is used to address practices not related to personal safety.

### Information

**NOTE:** Note indicates additional information that clarifies steps, procedures, or other information in this manual.

Throughout this manual you will find the word Note followed by additional information about a step, procedure, or other information in the manual. The word Note is not intended to address personal safety or property damage.

## Torque - Minimum tightening torques for normal assembly

|                                                                                                           |                                    |
|-----------------------------------------------------------------------------------------------------------|------------------------------------|
| 845B                                                                                                      | ANZ --- APAC --- LA --- MEA --- NA |
| 865B AWD Direct drive transmission, All wheel drive (AWD), Tier 3, made in Brazil [HBZN0865TBFAF00840 - ] | NA                                 |
| 865B                                                                                                      | ANZ --- APAC --- LA --- MEA --- NA |
| 885B AWD Direct drive transmission, All wheel drive (AWD), Tier 3, made in Brazil [HBZN0885TBFAF00558 - ] | NA                                 |
| 885B                                                                                                      | ANZ --- APAC --- LA --- MEA --- NA |

### METRIC NON-FLANGED HARDWARE

| NOM.<br>SIZE | CLASS 8.8 BOLT and<br>CLASS 8 NUT |                     | CLASS 10.9 BOLT and<br>CLASS 10 NUT |                      | LOCKNUT<br>CL.8<br>W/CL8.8<br>BOLT | LOCKNUT<br>CL.10<br>W/CL10.9<br>BOLT |
|--------------|-----------------------------------|---------------------|-------------------------------------|----------------------|------------------------------------|--------------------------------------|
|              | UNPLATED                          | PLATED<br>W/ZnCr    | UNPLATED                            | PLATED<br>W/ZnCr     |                                    |                                      |
| M4           | 2.2 N·m (19 lb in)                | 2.9 N·m (26 lb in)  | 3.2 N·m (28 lb in)                  | 4.2 N·m (37 lb in)   | 2 N·m (18 lb in)                   | 2.9 N·m (26 lb in)                   |
| M5           | 4.5 N·m (40 lb in)                | 5.9 N·m (52 lb in)  | 6.4 N·m (57 lb in)                  | 8.5 N·m (75 lb in)   | 4 N·m (36 lb in)                   | 5.8 N·m (51 lb in)                   |
| M6           | 7.5 N·m (66 lb in)                | 10 N·m (89 lb in)   | 11 N·m (96 lb in)                   | 15 N·m (128 lb in)   | 6.8 N·m (60 lb in)                 | 10 N·m (89 lb in)                    |
| M8           | 18 N·m (163 lb in)                | 25 N·m (217 lb in)  | 26 N·m (234 lb in)                  | 35 N·m (311 lb in)   | 17 N·m (151 lb in)                 | 24 N·m (212 lb in)                   |
| M10          | 37 N·m (27 lb ft)                 | 49 N·m (36 lb ft)   | 52 N·m (38 lb ft)                   | 70 N·m (51 lb ft)    | 33 N·m (25 lb ft)                  | 48 N·m (35 lb ft)                    |
| M12          | 64 N·m (47 lb ft)                 | 85 N·m (63 lb ft)   | 91 N·m (67 lb ft)                   | 121 N·m (90 lb ft)   | 58 N·m (43 lb ft)                  | 83 N·m (61 lb ft)                    |
| M16          | 158 N·m (116 lb ft)               | 210 N·m (155 lb ft) | 225 N·m (166 lb ft)                 | 301 N·m (222 lb ft)  | 143 N·m (106 lb ft)                | 205 N·m (151 lb ft)                  |
| M20          | 319 N·m (235 lb ft)               | 425 N·m (313 lb ft) | 440 N·m (325 lb ft)                 | 587 N·m (433 lb ft)  | 290 N·m (214 lb ft)                | 400 N·m (295 lb ft)                  |
| M24          | 551 N·m (410 lb ft)               | 735 N·m (500 lb ft) | 762 N·m (560 lb ft)                 | 1016 N·m (750 lb ft) | 501 N·m (370 lb ft)                | 693 N·m (510 lb ft)                  |

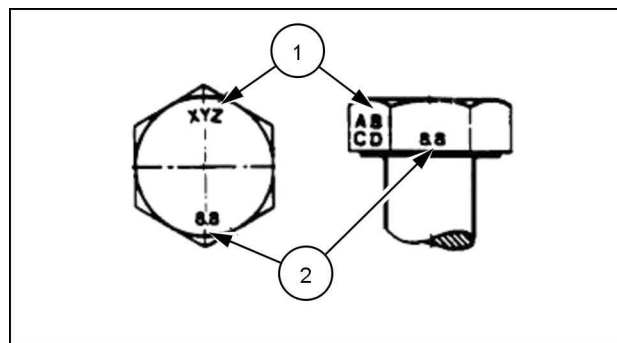
**NOTE:** M4 through M8 hardware torque specifications are shown in pound-inches. M10 through M24 hardware torque specifications are shown in pound-feet.

## METRIC FLANGED HARDWARE

| NOM.<br>SIZE | CLASS 8.8 BOLT and<br>CLASS 8 NUT |                        | CLASS 10.9 BOLT and<br>CLASS 10 NUT |                         | LOCKNUT<br>CL.8<br>W/CL8.8<br>BOLT | LOCKNUT<br>CL.10<br>W/CL10.9<br>BOLT |
|--------------|-----------------------------------|------------------------|-------------------------------------|-------------------------|------------------------------------|--------------------------------------|
|              | UNPLATED                          | PLATED<br>W/ZnCr       | UNPLATED                            | PLATED<br>W/ZnCr        |                                    |                                      |
| M4           | 2.4 N·m (21 lb<br>in)             | 3.2 N·m (28 lb<br>in)  | 3.5 N·m (31 lb<br>in)               | 4.6 N·m (41 lb<br>in)   | 2.2 N·m (19 lb<br>in)              | 3.1 N·m (27 lb<br>in)                |
| M5           | 4.9 N·m (43 lb<br>in)             | 6.5 N·m (58 lb<br>in)  | 7.0 N·m (62 lb<br>in)               | 9.4 N·m (83 lb<br>in)   | 4.4 N·m (39 lb<br>in)              | 6.4 N·m (57 lb<br>in)                |
| M6           | 8.3 N·m (73 lb<br>in)             | 11 N·m (96 lb<br>in)   | 12 N·m (105 lb<br>in)               | 16 N·m (141 lb<br>in)   | 7.5 N·m (66 lb<br>in)              | 11 N·m (96 lb<br>in)                 |
| M8           | 20 N·m (179 lb<br>in)             | 27 N·m (240 lb<br>in)  | 29 N·m (257 lb<br>in)               | 39 N·m (343 lb<br>in)   | 18 N·m (163 lb<br>in)              | 27 N·m (240 lb<br>in)                |
| M10          | 40 N·m (30 lb ft)                 | 54 N·m (40 lb<br>ft)   | 57 N·m (42 lb ft)                   | 77 N·m (56 lb<br>ft)    | 37 N·m (27 lb ft)                  | 53 N·m (39 lb ft)                    |
| M12          | 70 N·m (52 lb ft)                 | 93 N·m (69 lb<br>ft)   | 100 N·m (74 lb<br>ft)               | 134 N·m (98 lb<br>ft)   | 63 N·m (47 lb ft)                  | 91 N·m (67 lb ft)                    |
| M16          | 174 N·m (128 lb<br>ft)            | 231 N·m (171 lb<br>ft) | 248 N·m (183 lb<br>ft)              | 331 N·m (244 lb<br>ft)  | 158 N·m (116 lb<br>ft)             | 226 N·m (167 lb<br>ft)               |
| M20          | 350 N·m (259 lb<br>ft)            | 467 N·m (345 lb<br>ft) | 484 N·m (357 lb<br>ft)              | 645 N·m (476 lb<br>ft)  | 318 N·m (235 lb<br>ft)             | 440 N·m (325 lb<br>ft)               |
| M24          | 607 N·m (447 lb<br>ft)            | 809 N·m (597 lb<br>ft) | 838 N·m (618 lb<br>ft)              | 1118 N·m<br>(824 lb ft) | 552 N·m (407 lb<br>ft)             |                                      |

## IDENTIFICATION

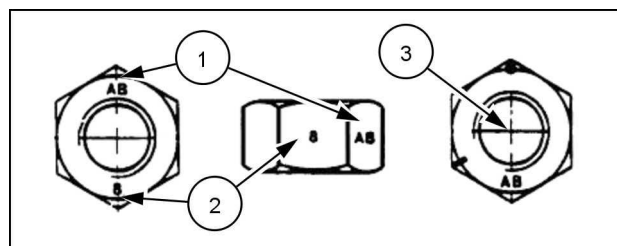
### Metric Hex head and carriage bolts, classes 5.6 and up



20083680 1

1. Manufacturer's Identification
2. Property Class

### Metric Hex nuts and locknuts, classes 05 and up



20083681 2

1. Manufacturer's Identification
2. Property Class
3. Clock Marking of Property Class and Manufacturer's Identification (Optional), i.e. marks **60°** apart indicate Class 10 properties, and marks **120°** apart indicate Class 8.

## INCH NON-FLANGED HARDWARE

| NOMINAL SIZE | SAE GRADE 5 BOLT and NUT   |                     | SAE GRADE 8 BOLT and NUT   |                      | LOCKNUT GrB W/ Gr5 BOLT | LOCKNUT GrC W/ Gr8 BOLT |
|--------------|----------------------------|---------------------|----------------------------|----------------------|-------------------------|-------------------------|
|              | UN-PLATED or PLATED SILVER | PLATED W/ZnCr GOLD  | UN-PLATED or PLATED SILVER | PLATED W/ZnCr GOLD   |                         |                         |
| 1/4          | 8 N·m (71 lb in)           | 11 N·m (97 lb in)   | 12 N·m (106 lb in)         | 16 N·m (142 lb in)   | 8.5 N·m (75 lb in)      | 12.2 N·m (109 lb in)    |
| 5/16         | 17 N·m (150 lb in)         | 23 N·m (204 lb in)  | 24 N·m (212 lb in)         | 32 N·m (283 lb in)   | 17.5 N·m (155 lb in)    | 25 N·m (220 lb in)      |
| 3/8          | 30 N·m (22 lb ft)          | 40 N·m (30 lb ft)   | 43 N·m (31 lb ft)          | 57 N·m (42 lb ft)    | 31 N·m (23 lb ft)       | 44 N·m (33 lb ft)       |
| 7/16         | 48 N·m (36 lb ft)          | 65 N·m (48 lb ft)   | 68 N·m (50 lb ft)          | 91 N·m (67 lb ft)    | 50 N·m (37 lb ft)       | 71 N·m (53 lb ft)       |
| 1/2          | 74 N·m (54 lb ft)          | 98 N·m (73 lb ft)   | 104 N·m (77 lb ft)         | 139 N·m (103 lb ft)  | 76 N·m (56 lb ft)       | 108 N·m (80 lb ft)      |
| 9/16         | 107 N·m (79 lb ft)         | 142 N·m (105 lb ft) | 150 N·m (111 lb ft)        | 201 N·m (148 lb ft)  | 111 N·m (82 lb ft)      | 156 N·m (115 lb ft)     |
| 5/8          | 147 N·m (108 lb ft)        | 196 N·m (145 lb ft) | 208 N·m (153 lb ft)        | 277 N·m (204 lb ft)  | 153 N·m (113 lb ft)     | 215 N·m (159 lb ft)     |
| 3/4          | 261 N·m (193 lb ft)        | 348 N·m (257 lb ft) | 369 N·m (272 lb ft)        | 491 N·m (362 lb ft)  | 271 N·m (200 lb ft)     | 383 N·m (282 lb ft)     |
| 7/8          | 420 N·m (310 lb ft)        | 561 N·m (413 lb ft) | 594 N·m (438 lb ft)        | 791 N·m (584 lb ft)  | 437 N·m (323 lb ft)     | 617 N·m (455 lb ft)     |
| 1            | 630 N·m (465 lb ft)        | 841 N·m (620 lb ft) | 890 N·m (656 lb ft)        | 1187 N·m (875 lb ft) | 654 N·m (483 lb ft)     | 924 N·m (681 lb ft)     |

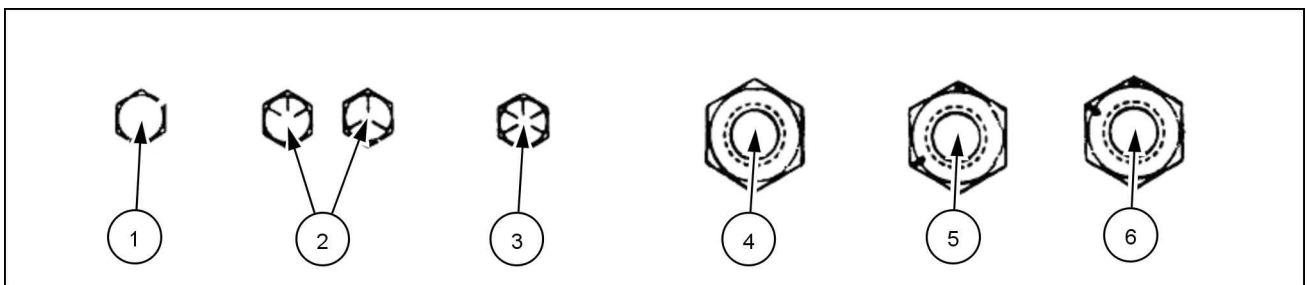
**NOTE:** For Imperial Units, **1/4 in** and **5/16 in** hardware torque specifications are shown in pound-inches. **3/8 in** through **1 in** hardware torque specifications are shown in pound-feet.

## INCH FLANGED HARDWARE

| NOM-<br>INAL<br>SIZE | SAE GRADE 5 BOLT and<br>NUT     |                          | SAE GRADE 8 BOLT and<br>NUT     |                          | LOCKNUT<br>GrF W/ Gr5<br>BOLT | LOCKNUT<br>GrG W/ Gr8<br>BOLT |
|----------------------|---------------------------------|--------------------------|---------------------------------|--------------------------|-------------------------------|-------------------------------|
|                      | UNPLATED<br>or PLATED<br>SILVER | PLATED<br>W/ZnCr<br>GOLD | UNPLATED<br>or PLATED<br>SILVER | PLATED<br>W/ZnCr<br>GOLD |                               |                               |
| 1/4                  | 9 N·m (80 lb in)                | 12 N·m (106 lb in)       | 13 N·m (115 lb in)              | 17 N·m (150 lb in)       | 8 N·m (71 lb in)              | 12 N·m (106 lb in)            |
| 5/16                 | 19 N·m (168 lb in)              | 25 N·m (221 lb in)       | 26 N·m (230 lb in)              | 35 N·m (310 lb in)       | 17 N·m (150 lb in)            | 24 N·m (212 lb in)            |
| 3/8                  | 33 N·m (25 lb ft)               | 44 N·m (33 lb ft)        | 47 N·m (35 lb ft)               | 63 N·m (46 lb ft)        | 30 N·m (22 lb ft)             | 43 N·m (32 lb ft)             |
| 7/16                 | 53 N·m (39 lb ft)               | 71 N·m (52 lb ft)        | 75 N·m (55 lb ft)               | 100 N·m (74 lb ft)       | 48 N·m (35 lb ft)             | 68 N·m (50 lb ft)             |
| 1/2                  | 81 N·m (60 lb ft)               | 108 N·m (80 lb ft)       | 115 N·m (85 lb ft)              | 153 N·m (113 lb ft)      | 74 N·m (55 lb ft)             | 104 N·m (77 lb ft)            |
| 9/16                 | 117 N·m (86 lb ft)              | 156 N·m (115 lb ft)      | 165 N·m (122 lb ft)             | 221 N·m (163 lb ft)      | 106 N·m (78 lb ft)            | 157 N·m (116 lb ft)           |
| 5/8                  | 162 N·m (119 lb ft)             | 216 N·m (159 lb ft)      | 228 N·m (168 lb ft)             | 304 N·m (225 lb ft)      | 147 N·m (108 lb ft)           | 207 N·m (153 lb ft)           |
| 3/4                  | 287 N·m (212 lb ft)             | 383 N·m (282 lb ft)      | 405 N·m (299 lb ft)             | 541 N·m (399 lb ft)      | 261 N·m (193 lb ft)           | 369 N·m (272 lb ft)           |
| 7/8                  | 462 N·m (341 lb ft)             | 617 N·m (455 lb ft)      | 653 N·m (482 lb ft)             | 871 N·m (642 lb ft)      | 421 N·m (311 lb ft)           | 594 N·m (438 lb ft)           |
| 1                    | 693 N·m (512 lb ft)             | 925 N·m (682 lb ft)      | 979 N·m (722 lb ft)             | 1305 N·m (963 lb ft)     | 631 N·m (465 lb ft)           | 890 N·m (656 lb ft)           |

## IDENTIFICATION

### Inch Bolts and free-spinning nuts



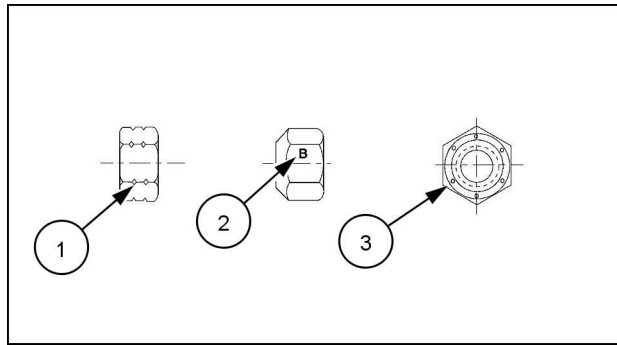
20083682 3

### Grade Marking Examples

| SAE Grade Identification |                       |   |                                       |
|--------------------------|-----------------------|---|---------------------------------------|
| 1                        | Grade 2 - No Marks    | 4 | Grade 2 Nut - No Marks                |
| 2                        | Grade 5 - Three Marks | 5 | Grade 5 Nut - Marks <b>120°</b> Apart |
| 3                        | Grade 8 - Five Marks  | 6 | Grade 8 Nut - Marks <b>60°</b> Apart  |

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## Inch Lock Nuts, All Metal (Three optional methods)



20090268 4

### Grade Identification

| Grade   | Corner Marking Method (1)   | Flats Marking Method (2) | Clock Marking Method (3) |
|---------|-----------------------------|--------------------------|--------------------------|
| Grade A | No Notches                  | No Mark                  | No Marks                 |
| Grade B | One Circumferential Notch   | Letter B                 | Three Marks              |
| Grade C | Two Circumferential Notches | Letter C                 | Six Marks                |

## Maintenance chart and Lubrication

|      |                                                                                                                                                                                                                                 |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 845B | ANZ (6 x 3 torque converter) OR (Tier 1) --- APAC (6 x 3 torque converter) OR (Tier 1) --- LA (6 x 3 torque converter) OR (Tier 1) --- MEA (6 x 3 torque converter) OR (Tier 1)                                                 |
| 865B | ANZ (6 x 3 torque converter) OR (Tier 2) OR (Tier 0) --- APAC (6 x 3 torque converter) OR (Tier 2) OR (Tier 0) --- LA (6 x 3 torque converter) OR (Tier 2) OR (Tier 0) --- MEA (6 x 3 torque converter) OR (Tier 2) OR (Tier 0) |
| 885B | ANZ (8 x 8 direct drive) OR (Tier 2) OR (Tier 0) --- APAC (8 x 8 direct drive) OR (Tier 2) OR (Tier 0) --- LA (8 x 8 direct drive) OR (Tier 2) OR (Tier 0) --- MEA (8 x 8 direct drive) OR (Tier 2) OR (Tier 0)                 |

|                                                                                             | SERVICE POINTS                                                   | A | B   | C   | D   | E | F   |
|---------------------------------------------------------------------------------------------|------------------------------------------------------------------|---|-----|-----|-----|---|-----|
| As Required<br>(AR)                                                                         | Air cleaner (Note 1)                                             | 1 | AR  |     |     |   |     |
|                                                                                             | Hydraulic filter (Note 2)                                        | 1 | AR  |     |     |   |     |
|                                                                                             | Cab Air Filter (if equipped)                                     | 1 | AR  |     |     |   |     |
|                                                                                             | Batteries (See Electrical System)                                | 2 |     |     |     |   | AR  |
| 10 hours<br>or daily                                                                        | Engine oil level (including filters)                             | 1 | 10  |     |     |   |     |
|                                                                                             | Radiator (coolant level) (Note 3)                                | 1 | 10  |     |     |   |     |
|                                                                                             | Transmission Oil Level (warm, engine running)<br>(Transmission ) | 1 | 10  |     |     |   |     |
|                                                                                             | Differential Lock Oil Filter (if equipped)                       | 1 | 10  |     |     |   |     |
| 50 hours<br>or every<br>week                                                                | Fuel Reservoir Filter (wash screen)                              | 1 |     |     |     |   | 50  |
|                                                                                             | Fuel Water Separator (drain water)                               | 2 |     |     |     |   | 50  |
|                                                                                             | Hydraulic tank (complete system)                                 | 1 | 50  |     |     |   |     |
| 100 hours<br>or every<br>15 days                                                            | Moldboard Lift Cylinder Pivots                                   | 4 |     |     | 100 |   |     |
|                                                                                             | Moldboard Lift Cylinders Balls                                   | 2 |     |     | 100 |   |     |
|                                                                                             | Moldboard Side Shift Cylinders Balls                             | 2 |     |     | 100 |   |     |
|                                                                                             | Articulation of Tilt Cylinders                                   | 2 |     |     | 100 |   |     |
|                                                                                             | Moldboard Tilt Pivots                                            | 2 |     |     | 100 |   |     |
|                                                                                             | Articulation Cylinders Pivots                                    | 4 |     |     | 100 |   |     |
|                                                                                             | Articulation Bearings                                            | 2 |     |     | 100 |   |     |
|                                                                                             | Drawbar Ball and Socket                                          | 1 |     |     | 100 |   |     |
| 250 hours<br>or every<br>1 month                                                            | Alternator and Air Conditioner Belt                              | 2 | 250 |     |     |   |     |
|                                                                                             | Universal Joints and Drive Shaft                                 | 2 |     |     | 250 |   |     |
|                                                                                             | Circle Turn Gearbox Oil Level                                    | 1 | 250 |     |     |   |     |
|                                                                                             | Differential Lock Oil Filter (if equipped)                       | 1 |     | 250 |     |   |     |
|                                                                                             | Front Axle Articulation Pin                                      | 2 |     |     | 250 |   |     |
|                                                                                             | Front Wheel Lean Bar Pivots                                      | 2 |     |     | 250 |   |     |
|                                                                                             | Front Wheel Lean Cylinder Pivots                                 | 2 |     |     | 250 |   |     |
|                                                                                             | Front Wheel Knuckle Lean Pivots                                  | 4 |     |     | 250 |   |     |
|                                                                                             | Knuckle King Pin Bearings                                        | 4 |     |     | 250 |   |     |
|                                                                                             | Moldboard Lift Cylinder Articulation Bearings                    | 2 |     |     | 250 |   |     |
|                                                                                             | Tandem Swing Bearing                                             | 2 |     |     | 250 |   |     |
|                                                                                             | Tires Condition and Pressure                                     | 6 | 250 |     |     |   |     |
|                                                                                             | Cab Air Filter (if equipped)                                     | 1 |     |     |     |   | 250 |
|                                                                                             | Steering Bar Ball Joints                                         | 4 |     |     | 250 |   |     |
|                                                                                             | Moldboard Articulation Pivots                                    | 4 |     |     | 250 |   |     |
|                                                                                             | Moldboard Side Shift Terminal Pivots                             | 2 |     |     | 250 |   |     |
|                                                                                             | Engine Oil and Oil Filter                                        | 2 |     | 250 |     |   |     |
| <b>A – Points / B – Check / C – Change / D – Lubricate / E – Adjust / F – Clean / Drain</b> |                                                                  |   |     |     |     |   |     |

|                                                                                             | SERVICE POINTS                                                 | A  | B   | C    | D   | E    | F    |
|---------------------------------------------------------------------------------------------|----------------------------------------------------------------|----|-----|------|-----|------|------|
| 500 hours<br>or every<br>3 months                                                           | Fuel Filters and Water Separator                               | 2  |     | 500  |     |      |      |
|                                                                                             | Fuel Tank Drain Plug (drain sediment)                          | 1  |     |      |     |      | 500  |
|                                                                                             | Hydraulic System Oil Filter                                    | 1  |     | 500  |     |      |      |
|                                                                                             | Transmission Oil Filter (Note 4) (Transmission )               | 1  |     | 500  |     |      |      |
|                                                                                             | Transmission Oil Filter (Transmission )                        | 2  |     | 500  |     |      |      |
|                                                                                             | Front Wheel Bearing Grease                                     | 2  |     | 500  |     |      |      |
|                                                                                             | Tandem Wheel Shafts Bearings (Graziano)                        | 8  |     |      | 500 |      |      |
|                                                                                             | Tandem Case Oil Level                                          | 2  | 500 |      |     |      |      |
|                                                                                             | Rear Axle Differential and Planetary Gear Oil Level (Graziano) | 1  | 500 |      |     |      |      |
|                                                                                             | ROPS Fixing Bolts Torque                                       | 16 |     |      |     | 500  |      |
|                                                                                             | Seat Belts Fixing Bolts Torque                                 | 2  |     |      |     | 500  |      |
| 1000 hours<br>or every<br>6 months                                                          | Transmission Screen (Transmission )                            | 1  |     |      |     |      | 1000 |
|                                                                                             | Transmission Oil (Note 4) (Transmission )                      | 1  |     | 1000 |     |      |      |
|                                                                                             | Transmission Oil (Transmission )                               | 1  |     | 1000 |     |      |      |
|                                                                                             | Engine Valves Clearance                                        | 12 |     |      |     | 1000 |      |
|                                                                                             | Circle Turn Gear Housing Oil                                   | 1  |     | 1000 |     |      |      |
|                                                                                             | Alternator and Air Conditioning Belts                          | 2  |     | 1000 |     |      |      |
|                                                                                             | Air Cleaner Elements (See Air Cleaner System)                  | 2  |     | 1000 |     |      |      |
|                                                                                             | Tandem Case Oil                                                | 2  |     | 1000 |     |      |      |
| 2000 hours<br>or every<br>year                                                              | Rear Axle Differential and Planetary Gear Oil (Graziano)       | 1  |     | 2000 |     |      |      |
|                                                                                             | Hydraulic System Oil (Note 5)                                  | 1  |     | 2000 |     |      |      |
|                                                                                             | Engine Coolant                                                 | 2  |     | 2000 |     |      |      |
|                                                                                             | Turbocharger Fixing Bolts Torque                               | 4  |     |      |     | 2000 |      |
| <b>A – Points / B – Check / C – Change / D – Lubricate / E – Adjust / F – Clean / Drain</b> |                                                                |    |     |      |     |      |      |

**ATTENTION:** See **Consumables** for specifications and detailed capacities about Fluids and Lubricants.

**NOTE:** (1) – Carry out maintenance on the air filter element if the main warning display (Non-Critical Warnings – YELLOW) shows "AIR FILTER".

**NOTE:** (2) – Carry out maintenance on the hydraulic filter element if the main warning display (Non-Critical Warnings – YELLOW) shows "HYDRAULIC FILTER".

**NOTE:** (3) – Check the coolant level in the expansion tank if the main stop display (Critical Warnings – RED) shows "COOLANT LEVEL".

**NOTE:** (4)- Change the transmission fluid and replace the filter after the first 100 hours of operation.

**NOTE:** (5)- Change every 2000 hours or once a year, whichever comes first.

## Maintenance chart and Lubrication

|      |                                                                  |
|------|------------------------------------------------------------------|
| 845B | (8 x 8 direct drive) OR (6 x 3 torque converter) OR (Tier 3-VHP) |
| 865B | (8 x 8 direct drive) OR (6 x 3 torque converter) OR (Tier 3-VHP) |
| 885B | (8 x 8 direct drive) OR (6 x 3 torque converter) OR (Tier 3-VHP) |

|                                                                                             | SERVICE POINTS                                                                                        | A | B   | C   | D   | AND | F   |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|---|-----|-----|-----|-----|-----|
| As Required<br>(AR)                                                                         | Air cleaner (Note 1)                                                                                  | 1 | AR  |     |     |     |     |
|                                                                                             | Hydraulic filter (Note 2)                                                                             | 1 | AR  |     |     |     |     |
|                                                                                             | Cab Air Filter (if equipped)                                                                          | 1 | AR  |     |     |     |     |
|                                                                                             | Batteries (See Electrical System)                                                                     | 2 |     |     |     |     | AR  |
| 10 hours<br>or daily                                                                        | Engine oil level (including filters)                                                                  | 1 | 10  |     |     |     |     |
|                                                                                             | Radiator (coolant level) (Note 3)                                                                     | 1 | 10  |     |     |     |     |
|                                                                                             | Transmission Oil Level (warm, engine running)<br>(Transmission 6X3 Torque Converter 8X4 Direct Drive) | 1 | 10  |     |     |     |     |
|                                                                                             | Differential Lock Oil Filter (if equipped)                                                            | 1 | 10  |     |     |     |     |
| 50 hours<br>or every<br>week                                                                | Fuel Reservoir Filter (wash screen)                                                                   | 1 |     |     |     |     | 50  |
|                                                                                             | Fuel Water Separator (drain water)                                                                    | 2 |     |     |     |     | 50  |
|                                                                                             | Hydraulic tank (complete system)                                                                      | 1 | 50  |     |     |     |     |
| 100 hours<br>or every<br>15 days                                                            | Moldboard Lift Cylinder Pivots                                                                        | 4 |     |     | 100 |     |     |
|                                                                                             | Moldboard Lift Cylinders Balls                                                                        | 2 |     |     | 100 |     |     |
|                                                                                             | Moldboard Side Shift Cylinders Balls                                                                  | 2 |     |     | 100 |     |     |
|                                                                                             | Articulation of Tilt Cylinders                                                                        | 2 |     |     | 100 |     |     |
|                                                                                             | Moldboard Tilt Pivots                                                                                 | 2 |     |     | 100 |     |     |
|                                                                                             | Articulation Cylinders Pivots                                                                         | 4 |     |     | 100 |     |     |
|                                                                                             | Articulation Bearings                                                                                 | 2 |     |     | 100 |     |     |
|                                                                                             | Drawbar Ball and Socket                                                                               | 1 |     |     | 100 |     |     |
| 250 hours<br>or every<br>1 month                                                            | Alternator and Air Conditioner Belt                                                                   | 2 | 250 |     |     |     |     |
|                                                                                             | Universal Joints and Drive Shaft                                                                      | 2 |     |     | 250 |     |     |
|                                                                                             | Circle Turn Gearbox Oil Level                                                                         | 1 | 250 |     |     |     |     |
|                                                                                             | Differential Lock Oil Filter (if equipped)                                                            | 1 |     | 250 |     |     |     |
|                                                                                             | Front Axle Articulation Pin                                                                           | 2 |     |     | 250 |     |     |
|                                                                                             | Front Wheel Lean Bar Pivots                                                                           | 2 |     |     | 250 |     |     |
|                                                                                             | Front Wheel Lean Cylinder Pivots                                                                      | 2 |     |     | 250 |     |     |
|                                                                                             | Front Wheel Knuckle Lean Pivots                                                                       | 4 |     |     | 250 |     |     |
|                                                                                             | Knuckle King Pin Bearings                                                                             | 4 |     |     | 250 |     |     |
|                                                                                             | Moldboard Lift Cylinder Articulation Bearings                                                         | 2 |     |     | 250 |     |     |
|                                                                                             | Tandem Swing Bearing                                                                                  | 2 |     |     | 250 |     |     |
|                                                                                             | Tires Condition and Pressure                                                                          | 6 | 250 |     |     |     |     |
|                                                                                             | Cab Air Filter (if equipped)                                                                          | 1 |     |     |     |     | 250 |
|                                                                                             | Steering Bar Ball Joints                                                                              | 4 |     |     | 250 |     |     |
|                                                                                             | Moldboard Articulation Pivots                                                                         | 4 |     |     | 250 |     |     |
|                                                                                             | Moldboard Side Shift Terminal Pivots                                                                  | 2 |     |     | 250 |     |     |
| <b>A – Points / B – Check / C – Change / D – Lubricate / E – Adjust / F – Clean / Drain</b> |                                                                                                       |   |     |     |     |     |     |

|                                                                                             | SERVICE POINTS                                                                                                                                            | A  | B   | C    | D   | AND  | F    |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----|------|-----|------|------|
| 500 hours<br>or every<br>3 months                                                           | Fuel Filters and Water Separator                                                                                                                          | 2  |     | 500  |     |      |      |
|                                                                                             | Fuel Tank Drain Plug (drain sediment)                                                                                                                     | 1  |     |      |     |      | 500  |
|                                                                                             | Engine Oil and Oil Filter                                                                                                                                 | 2  |     | 500  |     |      |      |
|                                                                                             | Hydraulic System Oil Filter                                                                                                                               | 1  |     | 500  |     |      |      |
|                                                                                             | Transmission Oil Filter (Note 4) (Transmission 6X3 Torque Converter – Models 845B 6X3 Torque Converter – Models 865B 6X3 Torque Converter – Models 885B ) | 1  |     | 500  |     |      |      |
|                                                                                             | Transmission Oil Filter (Transmission 8X4 Direct Drive – Models 845B 8X4 Direct Drive – Models 865B 8X4 Direct Drive – Models 885B )                      | 2  |     | 500  |     |      |      |
|                                                                                             | Front Wheel Bearing Grease                                                                                                                                | 2  |     | 500  |     |      |      |
|                                                                                             | Tandem Wheel Shafts Bearings (Graziano)                                                                                                                   | 8  |     |      | 500 |      |      |
|                                                                                             | Tandem Case Oil Level                                                                                                                                     | 2  | 500 |      |     |      |      |
|                                                                                             | Rear Axle Differential and Planetary Gear Oil Level (Graziano)                                                                                            | 1  | 500 |      |     |      |      |
|                                                                                             | ROPS Fixing Bolts Torque                                                                                                                                  | 16 |     |      |     | 500  |      |
|                                                                                             | Seat Belts Fixing Bolts Torque                                                                                                                            | 2  |     |      |     | 500  |      |
| 1000 hours<br>or every<br>6 months                                                          | Transmission Screen (Transmission 8X4 Direct Drive – Models 845B 8X4 Direct Drive – Models 865B 8X4 Direct Drive – Models 885B )                          | 1  |     |      |     |      | 1000 |
|                                                                                             | Transmission Oil (Note 4) (Transmission 6X3 Torque Converter – Models 845B 6X3 Torque Converter – Models 865B 6X3 Torque Converter – Models 885B )        | 1  |     | 1000 |     |      |      |
|                                                                                             | Transmission Oil (Transmission 8X4 Direct Drive – Models 845B 8X4 Direct Drive – Models 865B 8X4 Direct Drive – Models 885B )                             | 1  |     | 1000 |     |      |      |
|                                                                                             | Engine Valves Clearance                                                                                                                                   | 12 |     |      |     | 1000 |      |
|                                                                                             | Circle Turn Gear Housing Oil                                                                                                                              | 1  |     | 1000 |     |      |      |
|                                                                                             | Alternator and Air Conditioning Belts                                                                                                                     | 2  |     | 1000 |     |      |      |
|                                                                                             | Air Cleaner Elements (See Air Cleaner System)                                                                                                             | 2  |     | 1000 |     |      |      |
|                                                                                             | Tandem Case Oil                                                                                                                                           | 2  |     | 1000 |     |      |      |
| 2000 hours<br>or every<br>year                                                              | Rear Axle Differential and Planetary Gear Oil (Graziano)                                                                                                  | 1  |     | 2000 |     |      |      |
|                                                                                             | Hydraulic System Oil (Note 5)                                                                                                                             | 1  |     | 2000 |     |      |      |
|                                                                                             | Engine Coolant                                                                                                                                            | 2  |     | 2000 |     |      |      |
|                                                                                             | Turbocharger Fixing Bolts Torque                                                                                                                          | 4  |     |      |     | 2000 |      |
| <b>A – Points / B – Check / C – Change / D – Lubricate / E – Adjust / F – Clean / Drain</b> |                                                                                                                                                           |    |     |      |     |      |      |

**ATTENTION:** See **Consumables** for specifications and detailed capacities about Fluids and Lubricants.

**NOTE:** (1) – Carry out maintenance on the air filter element if the main warning display (Non-Critical Warnings – YELLOW) shows "AIR FILTER".

**NOTE:** (2) – Carry out maintenance on the hydraulic filter element if the main warning display (Non-Critical Warnings – YELLOW) shows "HYDRAULIC FILTER".

**NOTE:** (3) – Check the coolant level in the expansion tank if the main stop display (Critical Warnings – RED) shows "COOLANT LEVEL".

**NOTE:** (4)- Change the transmission fluid and replace the filter after the first 100 hours of operation.

**NOTE:** (5)- Change every 2000 hours or once a year, whichever comes first.

## Maintenance chart and Lubrication

|      |                                               |
|------|-----------------------------------------------|
| 865B | (8 x 8 direct drive) OR (Tier 3-VHP) OR (AWD) |
| 885B | (8 x 8 direct drive) OR (Tier 3-VHP) OR (AWD) |

|                                                                                             | SERVICE POINTS                                                 | A  | B   | C   | D   | E   | F   |
|---------------------------------------------------------------------------------------------|----------------------------------------------------------------|----|-----|-----|-----|-----|-----|
| As Required<br>(AR)                                                                         | Air cleaner (Note 1)                                           | 1  | AR  |     |     |     |     |
|                                                                                             | Hydraulic filter (Note 2)                                      | 1  | AR  |     |     |     |     |
|                                                                                             | Cab Air Filter (if equipped)                                   | 1  | AR  |     |     |     |     |
|                                                                                             | Batteries (See Electrical System)                              | 2  |     |     |     |     | AR  |
| 10 hours<br>or daily                                                                        | Engine oil level (including filters)                           | 1  | 10  |     |     |     |     |
|                                                                                             | Radiator (coolant level) (Note 3)                              | 1  | 10  |     |     |     |     |
|                                                                                             | Transmission oil level (warm, engine running)                  | 1  | 10  |     |     |     |     |
|                                                                                             | Differential Lock Oil Filter (if equipped)                     | 1  | 10  |     |     |     |     |
| 50 hours<br>or every<br>week                                                                | Fuel Reservoir Filter (wash screen)                            | 1  |     |     |     |     | 50  |
|                                                                                             | Fuel Water Separator (drain water)                             | 2  |     |     |     |     | 50  |
|                                                                                             | Hydraulic tank (complete system)                               | 1  | 50  |     |     |     |     |
| 100 hours<br>or every<br>15 days                                                            | Moldboard Lift Cylinder Pivots                                 | 4  |     |     | 100 |     |     |
|                                                                                             | Moldboard Lift Cylinders Balls                                 | 2  |     |     | 100 |     |     |
|                                                                                             | Moldboard Side Shift Cylinders Balls                           | 2  |     |     | 100 |     |     |
|                                                                                             | Articulation of Tilt Cylinders                                 | 2  |     |     | 100 |     |     |
|                                                                                             | Moldboard Tilt Pivots                                          | 2  |     |     | 100 |     |     |
|                                                                                             | Articulation Cylinders Pivots                                  | 4  |     |     | 100 |     |     |
|                                                                                             | Articulation Bearings                                          | 2  |     |     | 100 |     |     |
|                                                                                             | Drawbar Ball and Socket                                        | 1  |     |     | 100 |     |     |
| 250 hours<br>or every<br>1 month                                                            | Alternator and Air Conditioner Belt                            | 2  | 250 |     |     |     |     |
|                                                                                             | Universal Joints and Drive Shaft                               | 2  |     |     | 250 |     |     |
|                                                                                             | Circle Turn Gearbox Oil Level                                  | 1  | 250 |     |     |     |     |
|                                                                                             | Differential Lock Oil Filter (if equipped)                     | 1  |     | 250 |     |     |     |
|                                                                                             | Front Axle Articulation Pin                                    | 2  |     |     | 250 |     |     |
|                                                                                             | Front Wheel Lean Bar Pivots                                    | 2  |     |     | 250 |     |     |
|                                                                                             | Front Wheel Lean Cylinder Pivots                               | 2  |     |     | 250 |     |     |
|                                                                                             | Front Wheel Knuckle Lean Pivots                                | 4  |     |     | 250 |     |     |
|                                                                                             | Knuckle King Pin Bearings                                      | 4  |     |     | 250 |     |     |
|                                                                                             | Moldboard Lift Cylinder Articulation Bearings                  | 2  |     |     | 250 |     |     |
|                                                                                             | Tandem Swing Bearing                                           | 2  |     |     | 250 |     |     |
|                                                                                             | Tires Condition and Pressure                                   | 6  | 250 |     |     |     |     |
|                                                                                             | Cab Air Filter (if equipped)                                   | 1  |     |     |     |     | 250 |
|                                                                                             | Steering Bar Ball Joints                                       | 4  |     |     | 250 |     |     |
|                                                                                             | Moldboard Articulation Pivots                                  | 4  |     |     | 250 |     |     |
|                                                                                             | Moldboard Side Shift Terminal Pivots                           | 2  |     |     | 250 |     |     |
| 500 hours<br>or every<br>3 months                                                           | Fuel Filters and Water Separator                               | 2  |     | 500 |     |     |     |
|                                                                                             | Fuel Tank Drain Plug (drain sediment)                          | 1  |     |     |     |     | 500 |
|                                                                                             | Front Wheel Drive (AWD) Pump Filter (Note 6)                   | 1  |     | 500 |     |     |     |
|                                                                                             | Engine Oil and Oil Filter                                      | 2  |     | 500 |     |     |     |
|                                                                                             | Hydraulic System Oil Filter                                    | 1  |     | 500 |     |     |     |
|                                                                                             | Transmission Oil and Oil Filter                                | 1  |     | 500 |     |     |     |
|                                                                                             | Front Wheel Bearing Grease                                     | 2  |     | 500 |     |     |     |
|                                                                                             | Tandem Wheel Shafts Bearings (Graziano)                        | 8  |     |     | 500 |     |     |
|                                                                                             | Tandem Case Oil Level                                          | 2  | 500 |     |     |     |     |
|                                                                                             | Rear Axle Differential and Planetary Gear Oil Level (Graziano) | 1  | 500 |     |     |     |     |
|                                                                                             | ROPS Fixing Bolts Torque                                       | 16 |     |     |     | 500 |     |
|                                                                                             | Seat Belts Fixing Bolts Torque                                 | 2  |     |     |     | 500 |     |
| <b>A – Points / B – Check / C – Change / D – Lubricate / E – Adjust / F – Clean / Drain</b> |                                                                |    |     |     |     |     |     |

|                                                                                             | SERVICE POINTS                                           | A  | B | C    | D | E    | F    |
|---------------------------------------------------------------------------------------------|----------------------------------------------------------|----|---|------|---|------|------|
| 1000 hours<br>or every<br>6 months                                                          | Transmission Screen                                      | 1  |   |      |   |      | 1000 |
|                                                                                             | Transmission Oil                                         | 1  |   | 1000 |   |      |      |
|                                                                                             | Engine Valves Clearance                                  | 12 |   |      |   | 1000 |      |
|                                                                                             | Circle Turn Gear Housing Oil                             | 1  |   | 1000 |   |      |      |
|                                                                                             | Alternator and Air Conditioning Belts                    | 2  |   | 1000 |   |      |      |
|                                                                                             | Air Cleaner Elements (See Air Cleaner System)            | 2  |   | 1000 |   |      |      |
|                                                                                             | Front Wheel Drive (AWD) Gear Housing Oil (Note 5)        | 2  |   | 1000 |   |      |      |
|                                                                                             | Tandem Case Oil                                          | 2  |   | 1000 |   |      |      |
| 2000 hours<br>or every<br>year                                                              | Rear Axle Differential and Planetary Gear Oil (Graziano) | 1  |   | 2000 |   |      |      |
|                                                                                             | Hydraulic System Oil (Note 4)                            | 1  |   | 2000 |   |      |      |
|                                                                                             | Engine Coolant                                           | 2  |   | 2000 |   |      |      |
|                                                                                             | Turbocharger Fixing Bolts Torque                         | 4  |   |      |   | 2000 |      |
| <b>A – Points / B – Check / C – Change / D – Lubricate / E – Adjust / F – Clean / Drain</b> |                                                          |    |   |      |   |      |      |

**ATTENTION:** See **Consumables** for specifications and detailed capacities about Fluids and Lubricants.

**NOTE:** (1) – Carry out maintenance on the air filter element if the main warning display (Non-Critical Warnings – YELLOW) shows "AIR FILTER".

**NOTE:** (2) – Carry out maintenance on the hydraulic filter element if the main warning display (Non-Critical Warnings – YELLOW) shows "HYDRAULIC FILTER".

**NOTE:** (3) – Check the coolant level in the expansion tank if the main stop display (Critical Warnings – RED) shows "COOLANT LEVEL".

**NOTE:** (4)- Change every 2000 hours or once a year, whichever comes first.

**NOTE:** (5) – Change the oil in the front wheel drive gear housings after the first 100 hours of operation.

**NOTE:** (6) – Replace the front wheel drive pump hydraulic filter after the first 100 hours.

## Consumables

|      |                                                                                                                                                                                                                                 |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 845B | ANZ (6 x 3 torque converter) OR (Tier 1) --- APAC (6 x 3 torque converter) OR (Tier 1) --- LA (6 x 3 torque converter) OR (Tier 1) --- MEA (6 x 3 torque converter) OR (Tier 1)                                                 |
| 865B | ANZ (6 x 3 torque converter) OR (Tier 2) OR (Tier 0) --- APAC (6 x 3 torque converter) OR (Tier 2) OR (Tier 0) --- LA (6 x 3 torque converter) OR (Tier 2) OR (Tier 0) --- MEA (6 x 3 torque converter) OR (Tier 2) OR (Tier 0) |
| 885B | ANZ (8 x 8 direct drive) OR (Tier 2) OR (Tier 0) --- APAC (8 x 8 direct drive) OR (Tier 2) OR (Tier 0) --- LA (8 x 8 direct drive) OR (Tier 2) OR (Tier 0) --- MEA (8 x 8 direct drive) OR (Tier 2) OR (Tier 0)                 |

## Fuel Reservoir

|                |                   |
|----------------|-------------------|
| Specifications | No. 2 DIESEL      |
| Total capacity | 341 l (90 US gal) |

## Engine Oil

|                                  |                               |
|----------------------------------|-------------------------------|
| Specifications                   | CASE AKCELA ENGINE OIL 15W-40 |
| Capacity with a filter change    |                               |
| Capacity without a filter change |                               |

## Engine Cooling System

|                |                                                 |
|----------------|-------------------------------------------------|
| Specifications | 50% Water + 50% CASE AKCELA PREMIUM ANTI-FREEZE |
| Total capacity | 32 l (8.5 US gal)                               |

## Hydraulic System

|                    |                                                        |
|--------------------|--------------------------------------------------------|
| Specifications     | CASE AKCELA HY-TRAN® ULTRA™ HYDRAULIC TRANSMISSION OIL |
| Total capacity     | 180 l (47.6 US gal)                                    |
| Tank with a filter | 90 l (23.8 US gal)                                     |

## Transmission

|                                         |  |
|-----------------------------------------|--|
| Specifications                          |  |
| Refill capacity (with filter change)    |  |
| Refill capacity (without filter change) |  |

## Power Rear Axle

|                                    |                                                                                                          |
|------------------------------------|----------------------------------------------------------------------------------------------------------|
| Specifications                     | CASE AKCELA LIMITED SLIP ADDITIVE                                                                        |
| Central compartment (differential) | 845B Models – 40 l (10.6 US gal)<br>865B Models – 44 l (11.6 US gal)<br>885B Models – 44 l (11.6 US gal) |

## Tandem and Brakes

|                 |                                    |
|-----------------|------------------------------------|
| Specifications  | CASE AKCELA TRANSAXLE FLUID 20W-40 |
| Refill capacity | 69 l (18.2 US gal)                 |

## Circle Turn Gear Reducer

|                |                                  |
|----------------|----------------------------------|
| Specifications | CASE AKCELA GEAR 135 H EP 80W-90 |
| Refill         | 2.8 l (0.7 US gal)               |

---

## Grease fittings

|                                |                                                 |
|--------------------------------|-------------------------------------------------|
| Specifications                 | <b>CASE AKCELA 251H EP MULTI-PURPOSE GREASE</b> |
| Rear Ripper/Scarifier/Blade    | –                                               |
| Front Axle Wheel Hubs/Bearings | –                                               |

## Consumables

|      |                                                                                                                                                                                                                                                                                                                                                                                     |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 845B | ANZ (8 x 8 direct drive) OR (6 x 3 torque converter) OR (Tier 3-VHP) ---<br>APAC (8 x 8 direct drive) OR (6 x 3 torque converter) OR (Tier 3-VHP) --- LA<br>(8 x 8 direct drive) OR (6 x 3 torque converter) OR (Tier 3-VHP) --- MEA (8 x<br>8 direct drive) OR (6 x 3 torque converter) OR (Tier 3-VHP) --- NA (8 x 8<br>direct drive) OR (6 x 3 torque converter) OR (Tier 3-VHP) |
| 865B | ANZ (8 x 8 direct drive) OR (6 x 3 torque converter) OR (Tier 3-VHP) ---<br>APAC (8 x 8 direct drive) OR (6 x 3 torque converter) OR (Tier 3-VHP) --- LA<br>(8 x 8 direct drive) OR (6 x 3 torque converter) OR (Tier 3-VHP) --- MEA (8 x<br>8 direct drive) OR (6 x 3 torque converter) OR (Tier 3-VHP) --- NA (8 x 8<br>direct drive) OR (6 x 3 torque converter) OR (Tier 3-VHP) |
| 885B | ANZ (8 x 8 direct drive) OR (6 x 3 torque converter) OR (Tier 3-VHP) ---<br>APAC (8 x 8 direct drive) OR (6 x 3 torque converter) OR (Tier 3-VHP) --- LA<br>(8 x 8 direct drive) OR (6 x 3 torque converter) OR (Tier 3-VHP) --- MEA (8 x<br>8 direct drive) OR (6 x 3 torque converter) OR (Tier 3-VHP) --- NA (8 x 8<br>direct drive) OR (6 x 3 torque converter) OR (Tier 3-VHP) |

## Fuel Reservoir

|                |                          |
|----------------|--------------------------|
| Specifications | No. 2 DIESEL             |
| Total capacity | <b>341 l (90 US gal)</b> |

## Engine Oil

|                                  |                                      |
|----------------------------------|--------------------------------------|
| Specifications                   | <b>CASE AKCELA ENGINE OIL 15W-40</b> |
| Capacity with a filter change    | <b>16 l (4.2 US gal)</b>             |
| Capacity without a filter change | <b>15 l (4.0 US gal)</b>             |

## Engine Cooling System

|                |                                                            |
|----------------|------------------------------------------------------------|
| Specifications | <b>50% Water + 50% CASE AKCELA PREMIUM<br/>ANTI-FREEZE</b> |
| Total capacity | <b>32 l (8.5 US gal)</b>                                   |

## Hydraulic System

|                    |                                                                                                                                                                    |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Specifications     | For a Cold Climate – <b>CASE AKCELA HY-TRAN®<br/>ULTRA™ HYDRAULIC TRANSMISSION OIL</b><br>For a Tropical Climate – <b>CASE AKCELA AW<br/>HYDRAULIC FLUID 68 HV</b> |
| Total capacity     | <b>180 l (47.6 US gal)</b>                                                                                                                                         |
| Tank with a filter | <b>90 l (23.8 US gal)</b>                                                                                                                                          |

## Transmission

|                                         |  |
|-----------------------------------------|--|
| Specifications                          |  |
| Refill capacity (with filter change)    |  |
| Refill capacity (without filter change) |  |

## Power Rear Axle

|                                    |                                                                                                                               |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Specifications                     | <b>CASE AKCELA LIMITED SLIP ADDITIVE</b>                                                                                      |
| Central compartment (differential) | 845B Models – <b>40 l (10.6 US gal)</b><br>865B Models – <b>44 l (11.6 US gal)</b><br>885B Models – <b>44 l (11.6 US gal)</b> |

## Tandem and Brakes

|                 |                                           |
|-----------------|-------------------------------------------|
| Specifications  | <b>CASE AKCELA TRANSAXLE FLUID 20W-40</b> |
| Refill capacity | <b>69 l (18.2 US gal)</b>                 |

---

## Circle Turn Gear Reducer

|                |                                         |
|----------------|-----------------------------------------|
| Specifications | <b>CASE AKCELA GEAR 135 H EP 80W-90</b> |
| Refill         | <b>2.8 l (0.7 US gal)</b>               |

## Grease fittings

|                                |                                                 |
|--------------------------------|-------------------------------------------------|
| Specifications                 | <b>CASE AKCELA 251H EP MULTI-PURPOSE GREASE</b> |
| Rear Ripper/Scarifier/Blade    | –                                               |
| Front Axle Wheel Hubs/Bearings | –                                               |

## Consumables

|      |                                                                                                                                                                                                                                                                          |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 865B | ANZ (8 x 8 direct drive) OR (Tier 3-VHP) OR (AWD) --- APAC (8 x 8 direct drive) OR (Tier 3-VHP) OR (AWD) --- LA (8 x 8 direct drive) OR (Tier 3-VHP) OR (AWD) --- MEA (8 x 8 direct drive) OR (Tier 3-VHP) OR (AWD) --- NA (8 x 8 direct drive) OR (Tier 3-VHP) OR (AWD) |
| 885B | ANZ (8 x 8 direct drive) OR (Tier 3-VHP) OR (AWD) --- APAC (8 x 8 direct drive) OR (Tier 3-VHP) OR (AWD) --- LA (8 x 8 direct drive) OR (Tier 3-VHP) OR (AWD) --- MEA (8 x 8 direct drive) OR (Tier 3-VHP) OR (AWD) --- NA (8 x 8 direct drive) OR (Tier 3-VHP) OR (AWD) |

## Fuel Reservoir

|                |                          |
|----------------|--------------------------|
| Specifications | No. 2 DIESEL             |
| Total capacity | <b>341 l (90 US gal)</b> |

## Engine Oil

|                                  |                                      |
|----------------------------------|--------------------------------------|
| Specifications                   | <b>CASE AKCELA ENGINE OIL 15W-40</b> |
| Capacity with a filter change    | <b>16 l (4.2 US gal)</b>             |
| Capacity without a filter change | <b>15 l (4.0 US gal)</b>             |

## Engine Cooling System

|                |                                                        |
|----------------|--------------------------------------------------------|
| Specifications | <b>50% Water + 50% CASE AKCELA PREMIUM ANTI-FREEZE</b> |
| Total capacity | <b>32 l (8.5 US gal)</b>                               |

## Hydraulic System

|                    |                                                                                                                                                            |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Specifications     | For a Cold Climate – <b>CASE AKCELA HY-TRAN® ULTRA™ HYDRAULIC TRANSMISSION OIL</b><br>For a Tropical Climate – <b>CASE AKCELA AW HYDRAULIC FLUID 68 HV</b> |
| Total capacity     | <b>200 l (52.8 US gal)</b>                                                                                                                                 |
| Tank with a filter | <b>90 l (23.8 US gal)</b>                                                                                                                                  |

## Transmission

|                                         |  |
|-----------------------------------------|--|
| Specifications                          |  |
| Refill capacity (with filter change)    |  |
| Refill capacity (without filter change) |  |

## Power Rear Axle

|                                    |                                          |
|------------------------------------|------------------------------------------|
| Specifications                     | <b>CASE AKCELA LIMITED SLIP ADDITIVE</b> |
| Central compartment (differential) | <b>44 l (11.6 US gal)</b>                |

## Tandem and Brakes

|                 |                                           |
|-----------------|-------------------------------------------|
| Specifications  | <b>CASE AKCELA TRANSAXLE FLUID 20W-40</b> |
| Refill capacity | <b>69 l (18.2 US gal)</b>                 |

## Circle Turn Gear Reducer

|                |                                         |
|----------------|-----------------------------------------|
| Specifications | <b>CASE AKCELA GEAR 135 H EP 80W-90</b> |
| Refill         | <b>2.8 l (0.7 US gal)</b>               |

---

## Front Wheel Reducer

|                 |                                          |
|-----------------|------------------------------------------|
| Specifications  | <b>CASE AKCELA LIMITED SLIP ADDITIVE</b> |
| Refill capacity | <b>4.1 l (1.1 US gal)</b>                |

## Grease fittings

|                                |                                                 |
|--------------------------------|-------------------------------------------------|
| Specifications                 | <b>CASE AKCELA 251H EP MULTI-PURPOSE GREASE</b> |
| Rear Ripper/Scarifier/Blade    | –                                               |
| Front Axle Wheel Hubs/Bearings | –                                               |

## Conversion factors

|      |  |
|------|--|
| 845B |  |
| 865B |  |
| 885B |  |

### Area

| Metric System to U.S. System                                                             | U.S. System to Metric System               |
|------------------------------------------------------------------------------------------|--------------------------------------------|
| 1 m <sup>2</sup> = 10.76391 ft <sup>2</sup>                                              | 1 ft <sup>2</sup> = 0.09290 m <sup>2</sup> |
| 1 ha = 2.47105 ac                                                                        | 1 ac = 0.40469 ft <sup>2</sup>             |
| m <sup>2</sup> – Square meter / ft <sup>2</sup> – Square foot / ha – Hectare / ac – Acre |                                            |

### Force

| Metric System to U.S. System | U.S. System to Metric System |
|------------------------------|------------------------------|
| 1 N = 3.59694 oz             | 1 oz = 0.27801 N             |
| 1 N = 0.22481 lb             | 1 lb = 4.44822 N             |

### Length

| Metric System to U.S. System | U.S. System to Metric System |
|------------------------------|------------------------------|
| 1 mm = 0.03937 in            | 1 in = 25.4 mm               |
| 1 m = 3.28084 ft             | 1 ft = 0.30480 m             |
| 1 km = 0.62137 miles         | 1 miles = 1.60934 km         |

### Mass

| Metric System to U.S. System | U.S. System to Metric System |
|------------------------------|------------------------------|
| 1 kg = 2.20462 lb            | 1 lb = 0.45359 kg            |
| 1 g = 0.03527 oz             | 1 oz = 28.34952 g            |

### Mass/Area

| Metric System to U.S. System | U.S. System to Metric System |
|------------------------------|------------------------------|
| 1 kg/ha = 0.89300 lbs/ac     | 1 lbs/ac = 1.11982 kg/ha     |

### Mass/Energy

| Metric System to U.S. System | U.S. System to Metric System |
|------------------------------|------------------------------|
| 1 g/kWh = 0.00164 lb/(HP/h)  | 1 lb/(HP/h) = 608,277 g/kWh  |

### Mass/Volume

| Metric System to U.S. System                     | U.S. System to Metric System                     |
|--------------------------------------------------|--------------------------------------------------|
| 1 kg/m <sup>3</sup> = 1.68556 lb/yd <sup>3</sup> | 1 lb/yd <sup>3</sup> = 0.59328 kg/m <sup>3</sup> |

### Horse Power

| Metric System to U.S. System | U.S. System to Metric System |
|------------------------------|------------------------------|
| 1 kW = 1.35962 Hp            | 1 Hp = 0.73550 kW            |

## Pressure

| Metric System to U.S. System         | U.S. System to Metric System        |
|--------------------------------------|-------------------------------------|
| 1 bar = 14.50377 lbf/in <sup>2</sup> | 1 lbf/in <sup>2</sup> = 0.06894 bar |
| 1 kPa = 0.14503 lbf/in <sup>2</sup>  | 1 lbf/in <sup>2</sup> = 6.89475 kPa |

## Engine coolant

| Metric System to U.S. System | U.S. System to Metric System |
|------------------------------|------------------------------|
| 1 °C = ((1.8 x °C) + 32) °F  | 1 °F = (0.56 x (°F - 32)) °C |

## Torque

| Metric System to U.S. System | U.S. System to Metric System |
|------------------------------|------------------------------|
| 1 N·m = 0.73756 lb ft        | 1 lb ft = 1.35582 N·m        |
| 1 N·m = 8.85075 lb in        | 1 lb in = 0.11298 N·m        |

## Velocity

| Metric System to U.S. System | U.S. System to Metric System |
|------------------------------|------------------------------|
| 1 km/h = 0.62137 mph         | 1 mph = 1.60934 km/h         |

## Volume

| Metric System to U.S. System                | U.S. System to Metric System                 |
|---------------------------------------------|----------------------------------------------|
| 1 cm <sup>3</sup> = 0.06102 in <sup>3</sup> | 1 in <sup>3</sup> = 16.38706 cm <sup>3</sup> |
| 1 m <sup>3</sup> = 35.31467 ft <sup>3</sup> | 1 ft <sup>3</sup> = 0.02832 m <sup>3</sup>   |
| 1 m <sup>3</sup> = 1.30795 yd <sup>3</sup>  | 1 yd <sup>3</sup> = 0.76455 m <sup>3</sup>   |
| 1 ml = 0.03381 US fl oz                     | 1 US fl oz = 29.57353 ml                     |
| 1 litre = 1.05669 US qt                     | 1 US qt = 0.94635 litre                      |
| 1 litre = 0.87988 l                         | 1 l = 1.13652 litre                          |
| 1 litre = 0.26417 l                         | 1 l = 3.78541 litre                          |
| 1 litre = 0.21997 l                         | 1 l = 4.54610 litre                          |

## Volume/Time

| Metric System to U.S. System | U.S. System to Metric System |
|------------------------------|------------------------------|
| 1 l/min = 0.26417 US gpm     | 1 US gpm = 3.78541 l/min     |
| 1 l/min = 0.21997 UK gpm     | 1 UK gpm = 4.54610 l/min     |



## **SERVICE MANUAL**

### **Transmission**

**845B Direct drive transmission, Tier 3, made in Brazil [HBZN0845VBAF00184 - ], 845B Torque converter transmission, Tier 3, made in Brazil [HBZN0845VCAF01093 - ], 865B Direct drive transmission, Tier 3, made in Brazil [NBAF15000 - ], 865B Torque converter transmission, Tier 3, made in Brazil [NBAF14004 - ], 865B AWD Direct drive transmission, All wheel drive (AWD), Tier 3, made in Brazil [HBZN0865TBAF00840 - ], 885B Direct drive transmission, Tier 3, made in Brazil [HBZN0885LBAF00098 - ], 885B Torque converter transmission, Tier 3, made in Brazil [HBZN0885PCAF00871 - ], 885B AWD Direct drive transmission, All wheel drive (AWD), Tier 3, made in Brazil [HBZN0885TBAF00558 - ]**

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## **Transmission - 21**

### **Powershift transmission - 113**

**845B Direct drive transmission, Tier 3, made in Brazil [HBZN0845VBAF00184 - ], 845B Torque converter transmission, Tier 3, made in Brazil [HBZN0845VCAF01093 - ], 865B Direct drive transmission, Tier 3, made in Brazil [NBAF15000 - ], 865B Torque converter transmission, Tier 3, made in Brazil [NBAF14004 - ], 865B AWD Direct drive transmission, All wheel drive (AWD), Tier 3, made in Brazil [HBZN0865TBAF00840 - ], 885B Direct drive transmission, Tier 3, made in Brazil [HBZN0885LBAF00098 - ], 885B Torque converter transmission, Tier 3, made in Brazil [HBZN0885PCAF00871 - ], 885B AWD Direct drive transmission, All wheel drive (AWD), Tier 3, made in Brazil [HBZN0885TBAF00558 - ]**

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| Install (*)             | 166 |
| Remove (*)              | 167 |
| Install (*)             | 168 |

(\*) See content for specific models

|                   |     |
|-------------------|-----|
| Install (*) ..... | 169 |
| Install (*) ..... | 170 |

(\*) See content for specific models

## Powershift transmission - General specification

|                                                                                      |                                                                  |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------|
| 845B Torque converter transmission, Tier 3, made in Brazil<br>[HBZN0845VCAF01093 - ] | (6 x 3 torque converter) OR (Tier 1) OR (Tier 3-VHP)             |
| 865B Torque converter transmission, Tier 3, made in Brazil [NBAF14004 - ]            | (6 x 3 torque converter) OR (Tier 2) OR (Tier 3-VHP) OR (Tier 0) |

### Denomination of standard dimensions

**NOTE:** Linear density in kg/m. Area density in t/m<sup>2</sup>.

| "Units"                                                                                                                                                                                                                                                                       | Symbol | New                       | Old      | Turn                                                            | Note                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------------|----------|-----------------------------------------------------------------|-----------------------|
| The decals indicate the approximate speeds and all of the speeds at the three different engine speeds: , (engine speed at which of the Power Take-Off (PTO) is reached, marked by a white spot on the center of each black bar on the decals) and , the maximum engine speed. | m      | Kg (kilogram)             | kg       |                                                                 |                       |
| Torque                                                                                                                                                                                                                                                                        | F      | N (Newton)                | kp       | 1 kp = <b>9.81 N</b>                                            |                       |
| Service                                                                                                                                                                                                                                                                       | A      | J (Joule)                 | kpm      | 0.102 kpm = 1J = <b>1 N·m</b>                                   |                       |
| Horse Power                                                                                                                                                                                                                                                                   | P      | kW (kilowatt)             | HP (DIN) | <b>1 Hp = 0.7355 kW</b><br><b>1 kW = 1.36 Hp</b>                |                       |
| Torque                                                                                                                                                                                                                                                                        | T      | Nm (Newton meter)         | kpm      | 1 kpm = <b>9.81 N·m</b>                                         | T (Nm) = F (N). r (m) |
| Moment (Force)                                                                                                                                                                                                                                                                | M      | Nm (Newton meter)         | kpm      | 1 kpm = <b>9.81 N·m</b>                                         | M (Nm) = F (N). r (m) |
| Pressure (over-)                                                                                                                                                                                                                                                              | pü     | Bar                       | atü      | 1.02 atü = 1.02 kp/cm <sup>2</sup><br>= <b>1 bar</b> = 750 torr |                       |
| Speed                                                                                                                                                                                                                                                                         | n      | Min -1<br>RPM<br>tr / min |          |                                                                 |                       |

## Powershift transmission - General specification

|                                                                                      |                                                                  |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------|
| 845B Torque converter transmission, Tier 3, made in Brazil<br>[HBZN0845VCAFO1093 - ] | (6 x 3 torque converter) OR (Tier 1) OR (Tier 3-VHP)             |
| 865B Torque converter transmission, Tier 3, made in Brazil [NBAF14004 - ]            | (6 x 3 torque converter) OR (Tier 2) OR (Tier 3-VHP) OR (Tier 0) |

### Conversion table

|                                              |   |                                                |
|----------------------------------------------|---|------------------------------------------------|
| <b>25.40 mm</b>                              | = | <b>1 in</b>                                    |
| <b>1 kg</b>                                  | = | <b>2.205 lb</b>                                |
| <b>9.81 N·m</b> (1 kpm)                      | = | <b>7.233 lb ft x ft</b> (pound force per foot) |
| <b>1.356 N·m</b> (0.138 kpm)                 | = | <b>1 lb ft x ft</b> (pound force per foot)     |
| <b>1 Kg/cm</b>                               | = | <b>5.560 lb in</b> (pound per inch)            |
| <b>1 bar</b> (1.02 kp/cm <sup>2</sup> )      | = | <b>14.233 psi</b>                              |
| <b>0.070 bar</b> (0.071 kp/cm <sup>2</sup> ) | = | <b>1 psi</b>                                   |
| <b>1 l</b>                                   | = | <b>0.264 US gal</b> (Imp.)                     |
| <b>4.456 l</b>                               | = | <b>1 US gal</b> (Imp.)                         |
| <b>1 l</b>                                   | = | <b>0.220 US gal</b> (USA)                      |
| <b>3.785 l</b>                               | = | <b>1 US gal</b> (USA)                          |
| <b>1609.344 m</b>                            | = | <b>1 Mile</b> (land mile)                      |
| <b>0 °C</b>                                  | = | <b>+ 32 °F</b>                                 |
| <b>0 °C</b>                                  | = | <b>273.15 Kelvin</b>                           |

## Powershift transmission - Torque

|                                                                                      |                                                                  |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------|
| 845B Torque converter transmission, Tier 3, made in Brazil<br>[HBZN0845VCAFO1093 - ] | (6 x 3 torque converter) OR (Tier 1) OR (Tier 3-VHP)             |
| 865B Torque converter transmission, Tier 3, made in Brazil [NBAF14004 - ]            | (6 x 3 torque converter) OR (Tier 2) OR (Tier 3-VHP) OR (Tier 0) |

### Tightening torques for the bolts

Friction coefficient:  $\mu_{tot.} = 0.12$  for the plugs and nuts without reworking, as well as for the phosphated nuts. Leave finger tight.

Take tightening torques from the following chart, unless otherwise specified:

Metric ISO standard thread DIN 13.

| Dimension | 8.8  | 10.9 | 12.9 |
|-----------|------|------|------|
| M4        | 2.8  | 4.1  | 4.8  |
| M5        | 5.5  | 8.1  | 9.5  |
| M6        | 9.5  | 14   | 16.5 |
| M7        | 15   | 23   | 28   |
| M8        | 23   | 34   | 40   |
| M10       | 46   | 68   | 79   |
| M12       | 79   | 115  | 135  |
| M14       | 125  | 185  | 215  |
| M16       | 195  | 280  | 330  |
| M18       | 280  | 390  | 460  |
| M20       | 390  | 560  | 650  |
| M22       | 530  | 750  | 880  |
| M24       | 670  | 960  | 1100 |
| M27       | 1000 | 1400 | 1650 |
| M30       | 1350 | 1900 | 2250 |
| M33       | 1850 | 2600 | 3000 |
| M36       | 2350 | 3300 | 3900 |
| M39       | 3000 | 4300 | 5100 |

Metric ISO fine thread DIN 13.

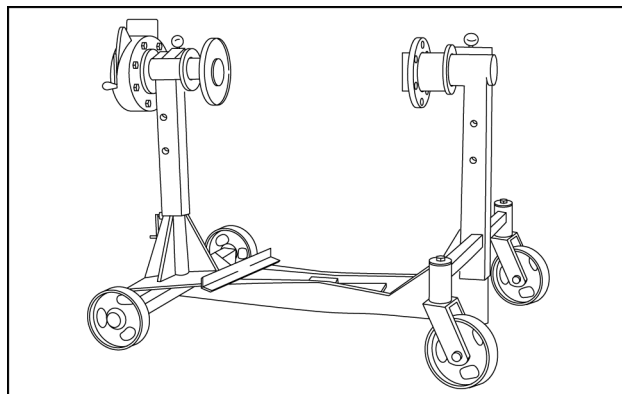
| <b>Dimension</b> | <b>8.8</b> | <b>10.9</b> | <b>12.9</b> |
|------------------|------------|-------------|-------------|
| M8 x 1           | 24         | 36          | 43          |
| M9 x 1           | 36         | 53          | 62          |
| M10 x 1          | 52         | 76          | 89          |
| M10 X 1.25       | 49         | 72          | 84          |
| M12 x 1.25       | 87         | 125         | 150         |
| M12 x 1.5        | 83         | 120         | 145         |
| M14 x 1.5        | 135        | 200         | 235         |
| M16 x 1.5        | 205        | 300         | 360         |
| M18 x 1.5        | 310        | 440         | 520         |
| M18 x 2          | 290        | 420         | 490         |
| M20 x 1.5        | 430        | 620         | 720         |
| M22 x 1.5        | 580        | 820         | 960         |
| M24 x 1.5        | 760        | 1100        | 1250        |
| M24 x 2          | 730        | 1050        | 1200        |
| M27 x 1.5        | 1100       | 1600        | 1850        |
| M27 x 2          | 1050       | 1500        | 1800        |
| M30 x 1.5        | 1550       | 2200        | 2550        |
| M30 x 2          | 1500       | 2100        | 2500        |
| M33 x 1.5        | 2050       | 2900        | 3400        |
| M33 x 2          | 2000       | 2800        | 3300        |
| M36 x 1.5        | 2700       | 3800        | 4450        |
| M36 x 3          | 2500       | 3500        | 4100        |
| M39 x 1.5        | 3450       | 4900        | 5700        |
| M39 x 3          | 3200       | 4600        | 5300        |

## Powershift transmission - Special tools

|                                                                                      |                                                                  |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------|
| 845B Torque converter transmission, Tier 3, made in Brazil<br>[HBZN0845VCAF01093 - ] | (6 x 3 torque converter) OR (Tier 1) OR (Tier 3-VHP)             |
| 865B Torque converter transmission, Tier 3, made in Brazil [NBAF14004 - ]            | (6 x 3 torque converter) OR (Tier 2) OR (Tier 3-VHP) OR (Tier 0) |

### 5870 350 000

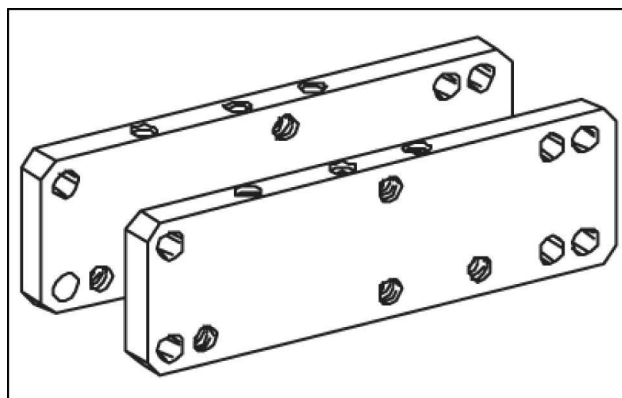
Mounting stand assembly with a tilting device.



LAIL11MG2026A0A 1

### 5870 350 063

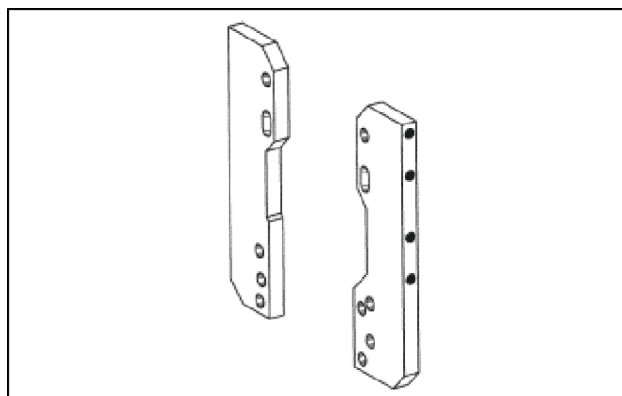
Fasteners.



LAIL11MG1758A0A 2

### 5870 350 090

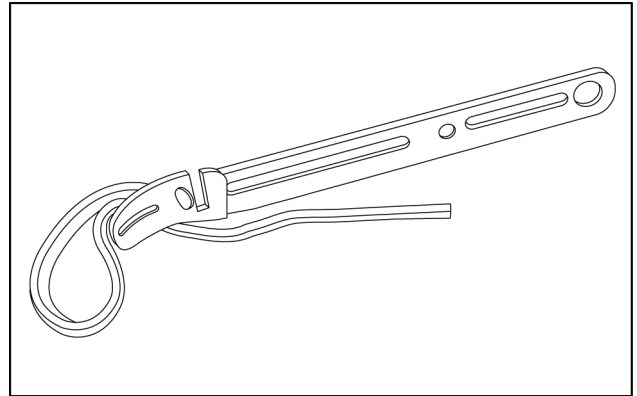
Clamping profile.



LAIL11MG1759A0A 3

### 5870 105 005

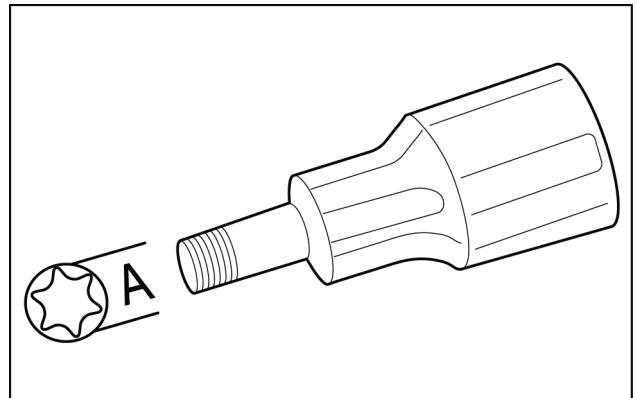
Belt spanner.



LAIL11MG1882A0A 4

### 5873 042 004

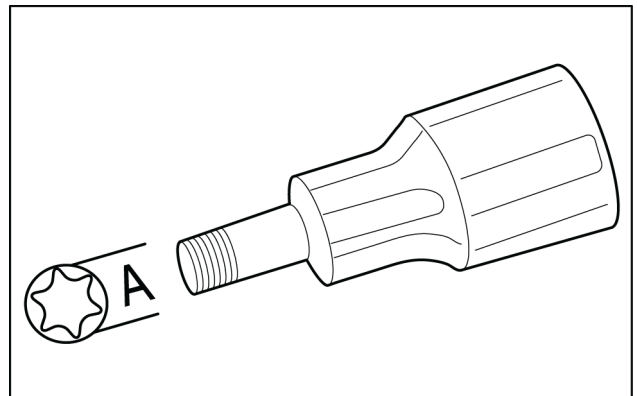
Socket TX 40.



LAIL11MG1883A0A 5

### 5873 042 002

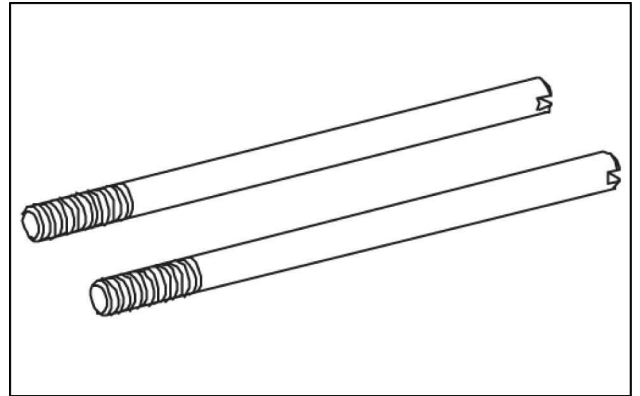
Socket TX 27.



LAIL11MG1883A0A 6

### 5870 204 063

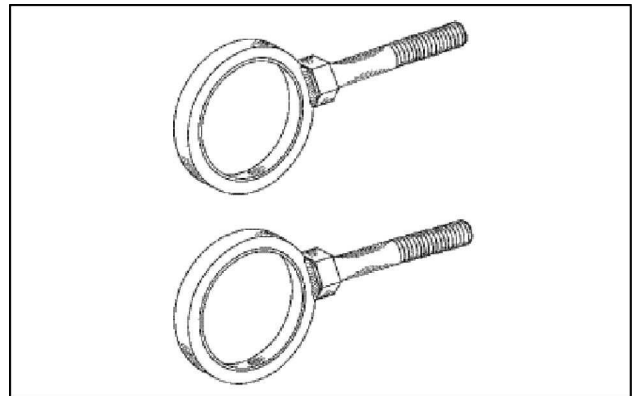
M6 adjusting screws.



LAIL11MG1762A0A 7

### 5870 204 002

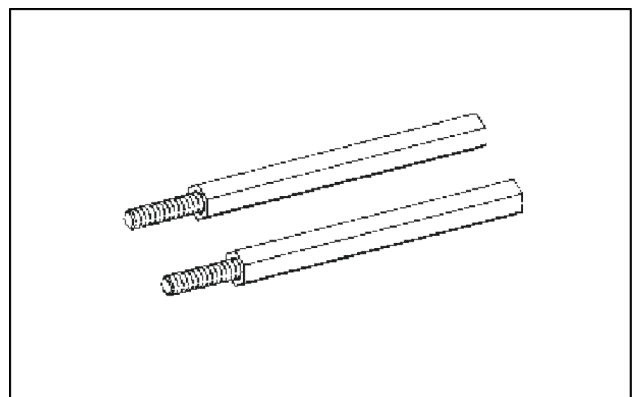
Assortment of eyelets.



LAIL11MG1763A0A 8

### 5870 204 036

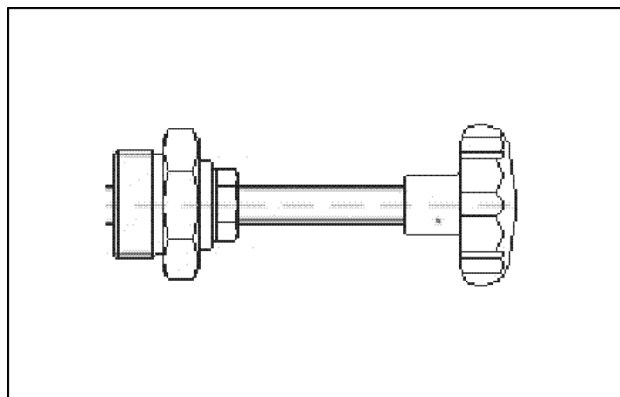
Adjusting screws.



LAIL11MG1764A0A 9

### 5870 345 107

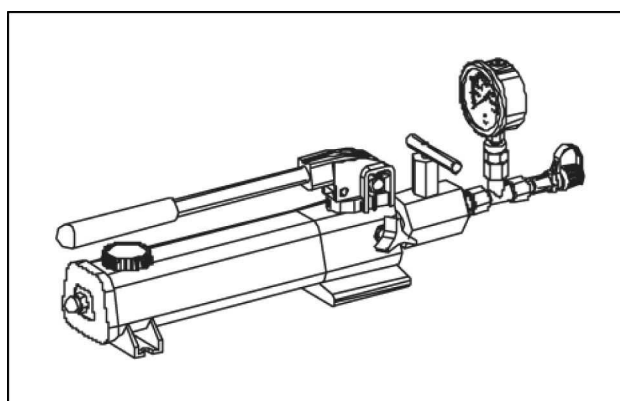
Mounting Device.



LAIL11MG1765A0A 10

### 5870 287 007

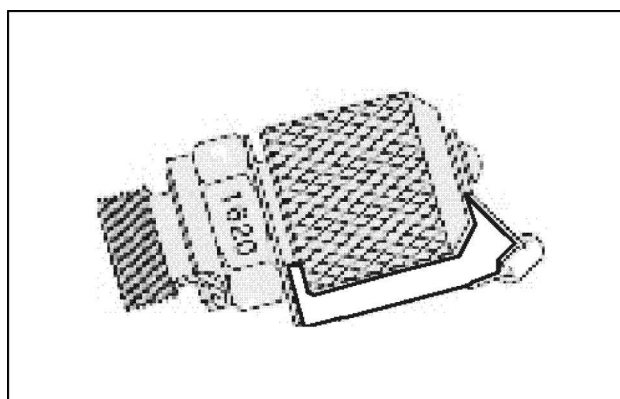
HP hand operated pump



LAIL11MG1766A0A 11

### 5870 950 101

Minimess fitting ( M12 x 1.5).

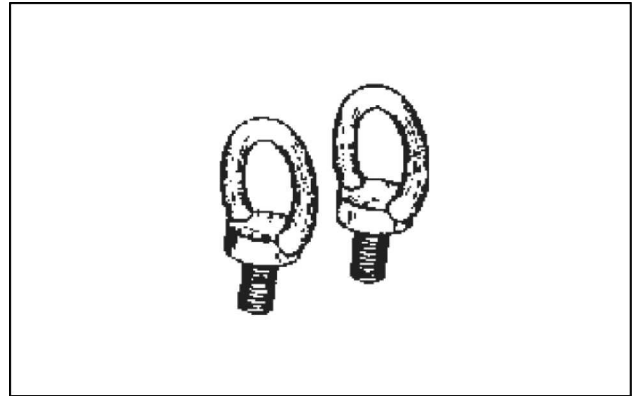


LAIL11MG1767A0A 12

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**0636 804 003**

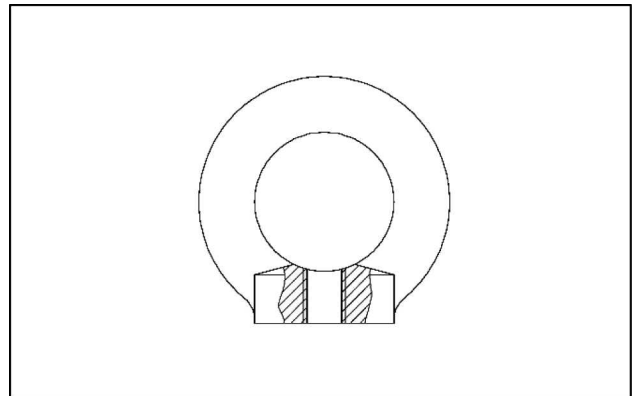
M20 eyelet.



LAIL11MG1768A0A 13

**0664 462 774**

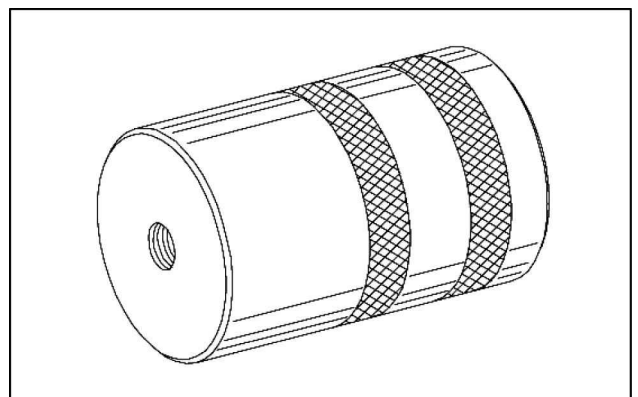
M12 eyelet.



LAIL11MG1769A0A 14

**5870 260 010**

Cable.

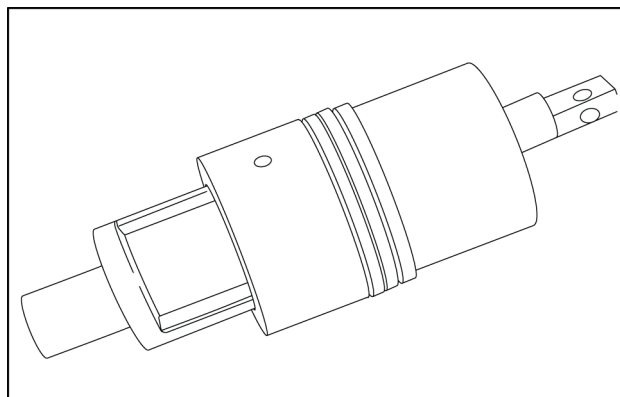


LAIL11MG1770A0A 15

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**5870 600 003**

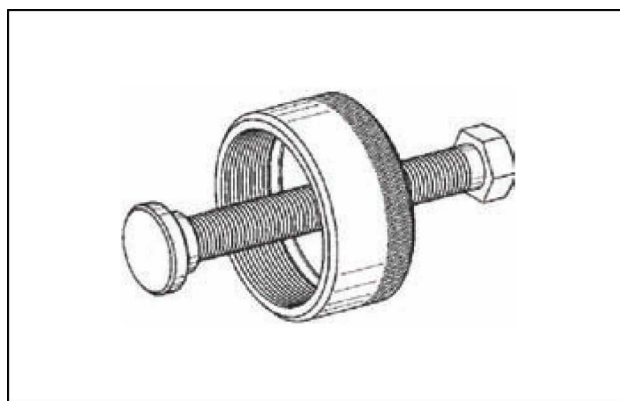
Special tool.



LAIL11MG1884A0A 16

**5870 026 100**

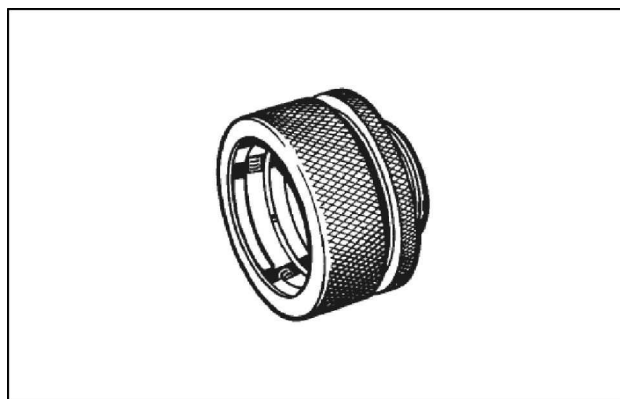
Puller insert.



LAIL11MG1771A0A 17

**5873 001 057**

Grab sleeve.

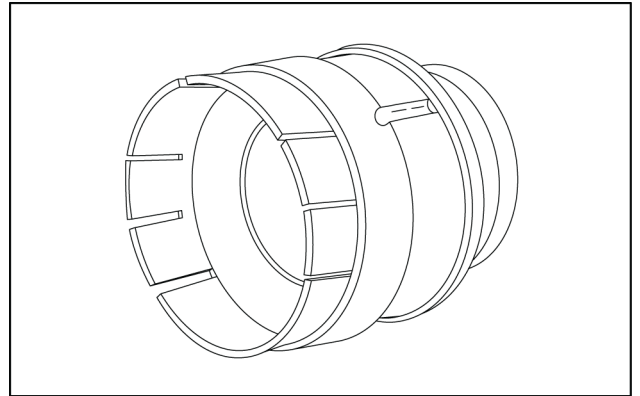


LAIL11MG1772A0A 18

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**5873 011 011**

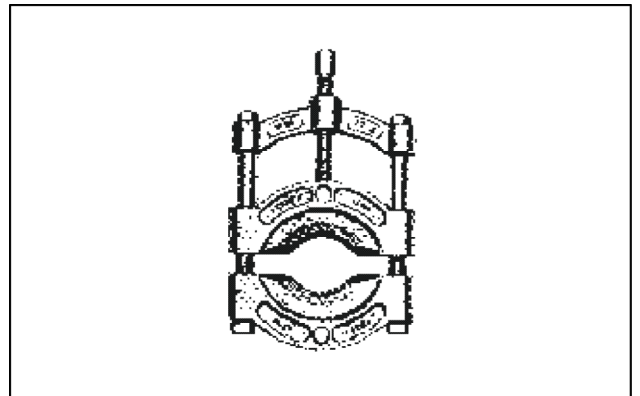
Quick grip.



LAIL11MG1885A0A 19

**5870 300 028**

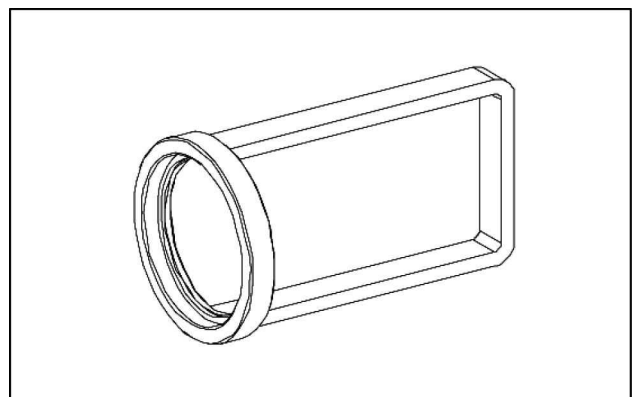
Cutting device.



LAIL11MG1773A0A 20

**5870 345 088**

Mounting Device.

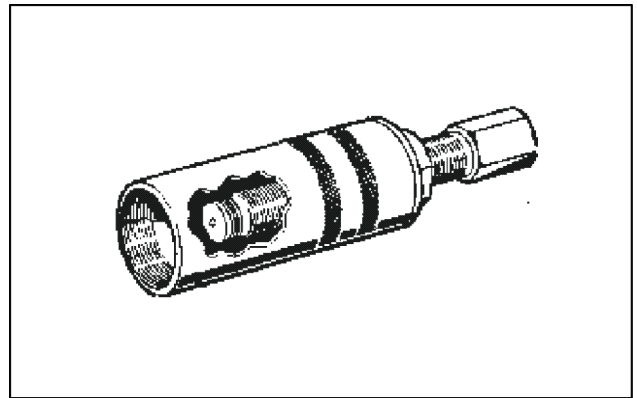


LAIL11MG1774A0A 21

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### 5873 001 000

Basic tool.



LAIL11MG1775A0A 22

### 5873 001 058

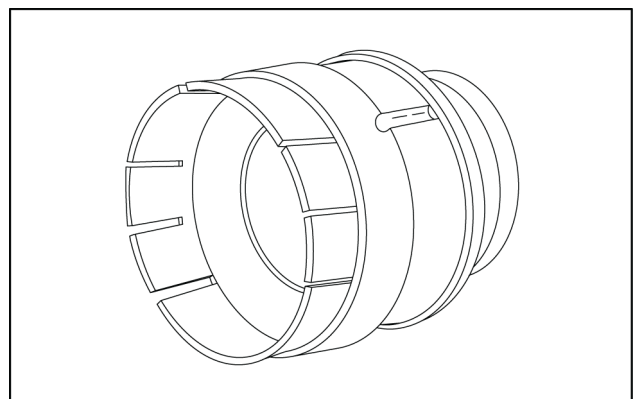
Grab sleeve.



LAIL11MG1776A0A 23

### 5873 011 014

Quick grip.

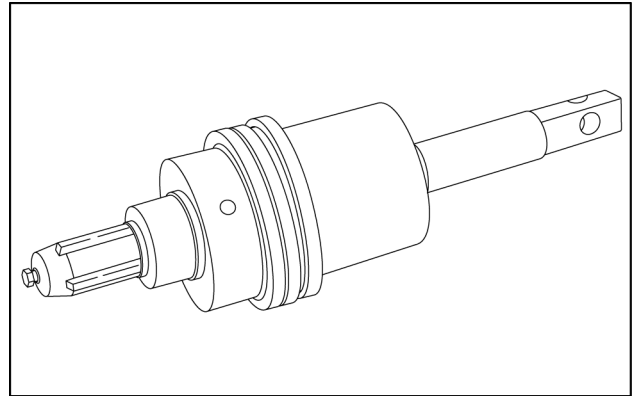


LAIL11MG1885A0A 24

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**5870 600 005**

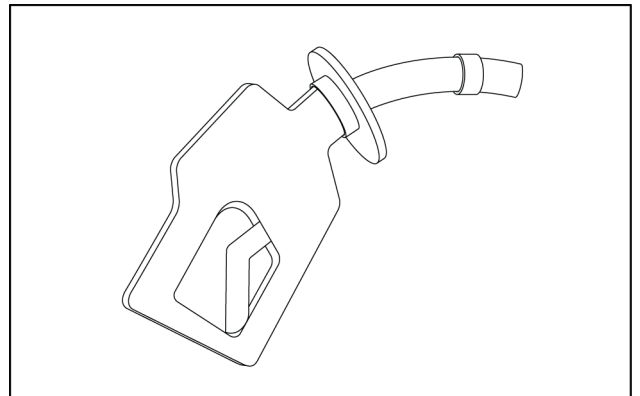
Special tool.



LAIL11MG1887A0A 25

**5870 451 006**

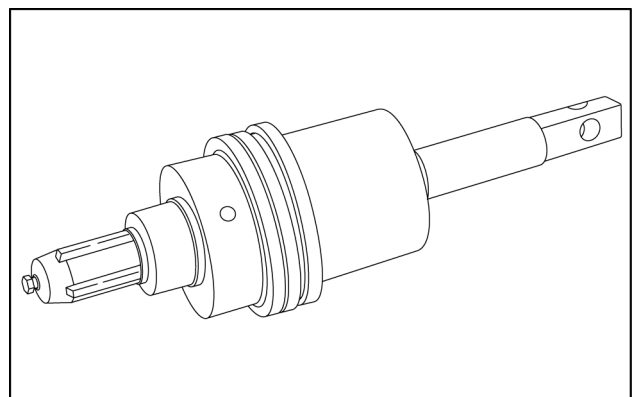
Lubricant.



LAIL11MG1922A0A 26

**5870 600 006**

Special Tool



LAIL11MG1888A0A 27

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