



# SERVICE INSTRUCTIONS

Model 100  
Service Bulletin S1

## SERVICE INFORMATION FOR MODEL 100 INTRAVANCE® TIMING DEVICES

### REASON FOR BULLETIN:

To provide Timing Advance Figures for the above units.

### INFORMATION:

CT 8583A  
Advance: 14° Total  
Start: 750-950 RPM  
End: 1750-1950 RPM  
Rotation: CLW  
Stamped Ident. Code: 83  
Customer: I.H.

CT 8587A  
Advance: 14° Total  
Start: 750-950 RPM  
End: 1750-1950 RPM  
Rotation: CLW  
Stamped Ident. Code: 87  
Customer: I.H.

CT 8588A  
(Supersedes CT 8584A)  
Advance: 14° Total  
Start: 1150-1350 RPM  
End: 2400-2600 RPM  
(Superseded by CT 85113A)  
Rotation: CLW  
Stamped Ident. Code: 88  
Customer: Hercules

CT 8590A  
(Superseded by CT 85109A)  
Advance: 14° Total  
Start: 300-500 RPM  
End: 1720-1920 RPM  
Rotation: CLW  
Stamped Ident. Code: 90  
Customers: I.H.

CT 8591A  
Pre-advance: 6°\*  
Operational Advance: 14°  
Start: 750-950 RPM  
End: 1750-1950 RPM  
Rotation: CLW  
Stamped Ident. Code: 91  
Customer: I.H.  
\*Occurs between 385-550 RPM

CT 8592A  
(Superseded by CT 8599A)  
Pre-advance: 4°\*  
Operational Advance: 5°  
Start: 1800-2000 RPM  
End: 2240-2440 RPM  
Rotation: CLW  
Stamped Ident. Code: 92  
Customer: I.H.  
\*Occurs between 390-500 RPM

CT 8593A  
Pre-advance: 6°\*  
Operational Advance: 14°  
Start: 650-850 RPM  
End: 1500-1700 RPM  
Rotation: CLW  
Stamped Ident. Code: 93  
Customer: Allis-Chalmers  
\*Occurs between 385-550 RPM

CT 8596A  
(Superseded by CT 85100A)  
Pre-advance: 9°\*  
Operational Advance: 5°  
Start: 2120-2320 RPM  
End: 2280-2480 RPM  
Rotation: CLW  
Stamped Ident. Code: 96  
Customer: I.H.  
\*Occurs between 390-500 RPM

CT 8599A  
Pre-advance: 4°\*  
Operational Advance: 5°  
Start: 1800-2000 RPM  
End: 2240-2440 RPM  
Rotation: CLW  
Stamped Ident. Code: 99  
Customer: I.H.  
Hydraulically Damped  
\*Occurs between 390-500 RPM

CT 85100A  
Pre-advance: 9°\*  
Operational Advance: 5°  
Start: 2120-2320 RPM  
End: 2280-2480 RPM  
Rotation: CLW  
Stamped Ident. Code: 100  
Customer: I.H.  
Hydraulically Damped  
\*Occurs between 390-500 RPM

CT 85108A  
(Superseded by CT 85110A)  
Advance: 14° Total  
Start: 300-500 RPM  
End: 1925-2125 RPM  
Rotation: CLW  
Stamped Ident. Code: 108  
Customer: I.H.

CT 85109A  
Advance: 14° Total  
Start: 300-500 RPM  
End: 1720-1920 RPM  
Rotation: CLW  
Stamped Ident. Code: 109  
Customer: I.H.  
Hydraulically Damped

CT 85110A  
Advance: 14° Total  
Start: 300-500 RPM  
End: 1925-2125 RPM  
Rotation: CLW  
Stamped Ident. Code: 110  
Customer: I.H.  
Hydraulically Damped

CT 85112A  
(For Calif. Trucks - 3.8 mm Lift Cam)  
Advance: 5.4° Total  
Start: 1800-2000 RPM  
End: 2100-2300 RPM  
Rotation: CLW  
Stamped Ident. Code: 112  
Customer: I.H.  
Hydraulically Damped

**LOW IDLE SCREW CAPSULE ASSEMBLY KT 85226****PRODUCT AFFECTED:**

Model 100 pumps equipped with subject assembly.

**INFORMATION:**

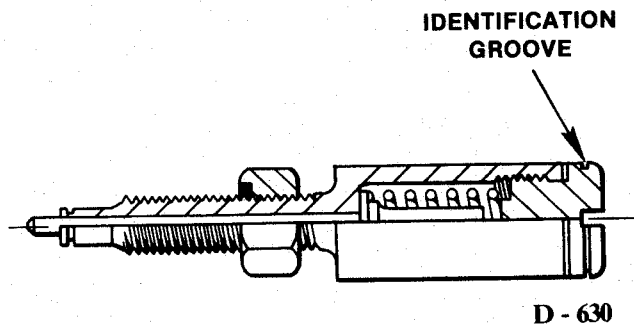
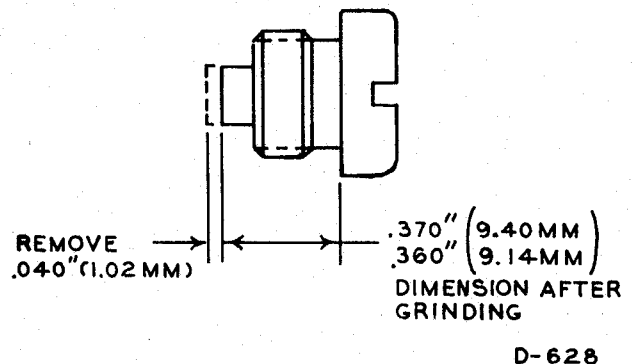
Reports have been received indicating an inability to achieve low idle shut-off on certain M-100 pumps equipped with low idle screw capsules (KT 85226). This condition can be corrected by either modifying the existing assembly or by replacing the assembly with KT 85226-1. The new low idle screw capsule allows increased piston travel in order to achieve engine shutdown. This assembly can be identified by a groove around the O.D. of the capsule screw plug. (Refer to Figure 1).

**INSTRUCTIONS:**

Modification of the **existing** low idle screw capsule (KT 85226) can be done as follows:

- (1) Remove retaining ring from end of screw (inside governor).

- (2) Remove low idle screw capsule and clamp in a soft-jawed vise with screw plug facing upward.
- (3) Use an impact tool to loosen and remove screw plug from the assembly.
- (4) Grind .040" from screw plug (end opposite screw head) as indicated in Fig. 2, below.
- (5) Reinstall screw plug using a new copper gasket (GA 7965) between screw plug and capsule body.
- (6) Torque screw plug to 15 - 20 lb. ft. (20 - 27 Nm).
- (7) Reinstall low idle screw capsule assy. using a new "O" ring (GA 1074) and torque retaining nut to 50 - 60 lbs. in. (5.5 - 7.0 Nm).
- (8) Install retaining ring in groove at end of capsule screw. Retaining ring installation tools (Waldes EX 0214, or equivalent) are available from tool manufacturers and will assist in ring installation.

**FIGURE 1. KT85226-1****FIGURE 2. KT85226**



# SERVICE INSTRUCTIONS

I.H.

## Model 100 Service Bulletin S3

### MODEL 100 FUEL INJECTION PUMPS APPLIED TO I.H. ENGINES USED AS "POWER UNITS"

#### INFORMATION:

The following Model 100 Pumps are applied to "Power Unit" engines that have more than one full load speed

rating. When one of these pumps requires calibration or a Service check of fuel deliveries, refer to "Instructions" on this bulletin.

PUMP	"POWER UNIT" ENGINE	FULL LOAD SPEED RATINGS	RATED B.H.P.
100 6A 90A 9235-1	UD 312	2400 R.P.M. 2500 " 2600 "	90 91 92
100 6A 90A 9235-2	UD 360	2000 R.P.M. 2200 " 2400 "	94 100 104
100 6A 100A 9236-6	UDT 360	2200 R.P.M. 2400 " 2600 "	142 148 149
100 6A 100A 9236-7	UD 414	2200 R.P.M. 2400 " 2600 "	115 119 122
100 6A 100A 9236-8	UDT 414	2200 R.P.M. 2400 " 2600 "	163 168 171
100 6A 100A 9236-9	UD 466	2200 R.P.M. 2400 " 2500 "	128 134 136
100 6A 100A 9236-10	UDT 466	2200 R.P.M. 2400 " 2500 "	180 185 186
100 6A 100A 9236-12	UD 360	2500 R.P.M. 2600 "	105 104
100 6A 90A 9264-1	UD 312	2400 R.P.M. 2500 " 2600 "	86 90 91

**DELIVERY VALVE AREA EROSION IN THE MODEL 100 HYDRAULIC HEAD****REASON FOR BULLETIN:**

To advise of possible cause for stalling or hard-start condition

**INFORMATION:**

If a stalling or hard-start condition is noted with a Model 100 fuel injection pump, the cause could be erosion on the lower delivery valve body where contact is made with the hydraulic head. This stalling occurs as a result of fuel leakage past the outside of the valve body where the erosion has created a path for the fuel to travel. The condition can be corrected by replacement of the eroded delivery valve assembly. A complete delivery valve kit, which includes the delivery valve spring, holder, etc. would **not** be required, however, delivery valve opening pressure should be checked to verify it is within specified limits (1150-1450 PSI). If out of spec, a new delivery valve spring guide should be installed to obtain the proper opening pressure.

In extreme cases, erosion can damage the hydraulic head itself in the area where the delivery valve body seats. This, too, can result in leakage past the delivery valve body. If the erosion is not overly severe, the seating surface should be lapped using tool #TSE 7986 which includes lapping arbor #TSE 7986-1 (see picture below).

Lapping compound #TSE 77103, is recommended for use with the above tool and it should be applied to the lower angular surface of the arbor. The knurled portion of the tool is then threaded into the upper hydraulic head and the arbor is twisted or rotated in order to work the lapping compound against the valve seat in the head. Care must be taken to remove all the pitting, scoring or erosion in the valve seat area, leaving a smooth seating surface for the valve body.

After lapping the valve seating surface, the head should be thoroughly cleaned and flushed to remove contaminants. This includes removal of set screw (SC 1867) and sealing ball (BB 1070) so that the fuel duct can be adequately flushed.

Next, thoroughly clean and dry the threads of set screw and hydraulic head screw hole threads. Apply Loctite "Locquic Primer Grade T" to both screw and hole threads. Allow to dry for 3-5 minutes and apply Loctite #271 sealant to set screw threads. Install a **new** sealing ball into head, then install set screw and torque to 120 - 130 lb.-in. (14 - 15 Nm).

If the lapping arbor is scored or damaged during usage, the lapping surface can be machined to regain the 150° included angle which contacts the hydraulic head. The lapping arbor itself can also be ordered separately in the event that replacement of the arbor is desired.

