

**Publication 60994 de la CEI**  
(Première édition - 1991)

**Guide pour la mesure *in situ*  
des vibrations et fluctuations sur  
machines hydrauliques (turbines,  
pompes d'accumulation  
et pompes-turbines)**

**IEC Publication 60994**  
(First edition - 1991)

**Guide for field measurement of  
vibrations and pulsations in hydraulic  
machines (turbines, storage pumps and  
pump-turbines)**

## **CORRIGENDUM 1**

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### Page 6 - AVANT-PROPOS

*Dans la liste des publications citées de la CEI,  
à la cinquième ligne, au lieu de*

\*\*\* Actuellement document 4(Bureau Central)48

*lire:*

CEI 41 (1991): Essais de réception sur place des turbines hydrauliques, pompes d'accumulation et pompes-turbines en vue de la détermination de leurs performances (troisième édition)

*Corrections en anglais uniquement*

### Page 7 - PREFACE

*In the list of other IEC publications quoted, fifth line,  
instead of*

\*\*\* At present Document 4(Central Office)48

*read:*

IEC 41 (1991): Field acceptance tests to determine the hydraulic performance of hydraulic turbines, storage pumps and pump-turbines (third edition)

### Page 17 – Subclause 2.3.2.7

*In the definitions column, third line, instead of  
...quantity. A is... read ...**quantity**, **A** is... (comma instead  
of full stop) \**

### Page 19

*In the footnote, at end of first line, instead of ...N in  
the denomination... read ...N in the denominator...*

### Page 21

*In the definitions column, fifth line, instead of  
...function, X(t) over... read ...**function X(t) over**...  
(no comma)*

### Page 25 – 2.3.4.11

*In the definitions column, first and second line,  
instead of ...length of the connecting pipe connecting  
the pressure transducer... read ...**length of the pipe  
connecting the pressure transducer**...*

### Page 41 – 4.1.1

*In item d), second and third line, instead of  
...unbalance; also and if... read ...**unbalance and  
also if**...*

*4.1.3 - In the first line, instead of ...to the machine  
water passages... read ...**to the water passages**...*

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\* Bold types are for clarity only

Corrections en anglais uniquement

Page 49 – 5.2.3

*In the eighth line, instead of ...in the draft tube at a distance of  $0.5 D_5$  to  $1.0 D_5$  from... read ...**0.5 to 1.0 times the suction diameter of the runner ( $D_S$ )** from...*

*Tenth line, instead of ... $0.2 D_5$  –  $0.8 D_5$  from... read ... **$0.2 D_S$  –  $0.8 D_S$**  from...*

*Eleventh line, instead of ... $D_5$  being... read ... **$D_S$**  being...*

*Twelfth line, instead of ...outer contour of the elbow, read ...**outer side of the elbow.***

Page 51 – 5.2.10

*Item b), instead of ...thrust bearing load pulsations, by means of strain measurements on every bearing element; read ...**thrust bearing load pulsations, on every bearing element by means of strain measurements;***

Page 53 – 5.6.1

*In item b), first line, instead of ...and runner blade angle... read ...**and runner/impeller blade angle...***

Page 55 – 5.7.4

*In the second line, instead of ...position of a runner vane or nozzle and/or guide blade... read ...**position of a guide vane or nozzle and/or runner blades...***

Page 58 – 6.1.1

*Au point b), au lieu de  
Limite supérieure de fréquence\*\*:  
— turbines Pelton:  
lire **Limite supérieure de fréquence:**  
— turbines Pelton\*\**

Corrections en anglais uniquement

Page 59 – 6.1.1

*In item b), instead of Upper frequency\*\*:  
— for Pelton turbines:  
read **Upper frequency:**  
— for Pelton turbines\*\**

*In the first footnote (\*), end of first line, instead of ...lower than the vortex rope... read ...**lower than the suction vortex...***

Page 65 – 6.3.5

*In the second line, instead of ...any measuring point. read ...**any measuring operating condition.***

Page 71 – Clause 6.8

*In the seventh line (second dash), remove the words ...(see Figure 7)... and place them in next line so as to obtain ...**are eliminated (see Figure 7).***

Page 85 – 8.3

*In the seventh line, instead of ...A/D conversion... read ...**A/D (analog to digital) conversion...***

Page 95 – 9.2.4

*Ninth line, instead of* Only in the last case is phase information preserved, *read:* **Only in the last case phase information is preserved.**

Page 99 – 10.3

*In the second line, instead of* ...should be agreed with the concerned parties,... *read* **...should be agreed between the concerned parties,...**

Page 103 – Clause A2.

*In the last but one line, instead of* ...conversion of the signals from the three signals... *read* **...conversion of the three signals...**

Page 108 – Article B2.

*Dans la dernière formule de la page, ajouter un signe moins à la suite du second signe égale (= -)*

*Corrections en anglais uniquement*

Page 109 – B2.

*In the last formula of the page, add a minus sign just after the second equal sign (= -)*

Page 115 – C7.

*In the fifth line (third dash), instead of* (...recorder or plotter, output)... *read* **(...recorder or plotter output)...** (no comma)

Page 117 – Figure C1.

*In the heading of the table, last column, instead of* Conditions test/... *read* **Test conditions/...**

Page 118 – Figure C2.

*Sous le tableau, à la cinquième ligne (4ème tiret), au lieu de*  
– rendement de la pompe ou de la turbine,  
*lire*  
– rendement de la pompe ou de la turbine, **etc.**

Page 119 – Figure C2.

*Below the table, fifth line (4th dash), instead of*  
– turbine or pump efficiency,  
*read*  
– turbine or pump efficiency, **etc.**

Page 132 – Figure D1.

*Dans le schéma, au lieu de  $l_B$  lire  $l$*

Page 133 – Figure D1.

*In the diagram, instead of  $l_B$  read  $l$*