INSTRUCTIONS 1101-Q00 e

Section	1101
Effective	February 2016
Replaces	November 2013

Original instructions

Setting the hose compression for Pumps A/AS/HD 25 to 125

Not pre-set in the factory

a DOVER company

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Your distributor :

1. PREAMBLE

The hose compression setting for pumps A/AS/HD 25 to 125 basically depends on the discharge pressure and the pump rotation speed.

2. SETTING THE HOSE COMPRESSION

The pumps are set in the factory for a discharge pressure less than or equal to 5 bar (72,5 PSI) using fixed shims. Removable 0,5 mm (0,1968 in) shims are used for increasing the pump service pressure from 5 bar (72,5 PSI) to 7,5, 10 or 15 bar (108,75, 145 or 217,5 PSI). Thus, pumps which were not assembled in the factory and which, therefore, could not be pre-set in the factory, have to be set in the following manner :

- pre-set the pump compression for a differential pressure of 5 bar (72,5 PSI) using fixed shims, 0,2 and 0,3 mm (0,0787 and 0,1181 in) thick, whatever the required pump discharge pressure.
- readjust the hose compression setting to obtain the setting suited to the required differential pressure using removable shims.

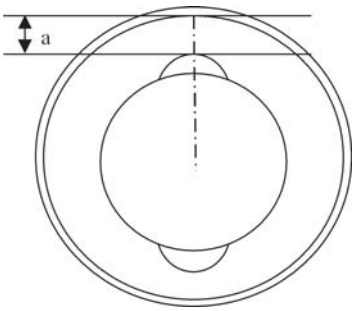
The advantage of this type of setting is that it enables users to easily adapt the compression of their pump hoses according to the necessary differential pressure without losing the 5 bar (72,5 PSI) pre-setting carried out using fixed shims. It is important to note that this pre-setting is valid for a range of rotation speeds (see the settings' tables below).

3. REMOVABLE AND FIXED SHIMS

Removable shims are shaped like this :

Fixed shims are shaped like this :

4. DEFINITION OF THE DISTANCE "A" BETWEEN THE TOP OF THE SHOE AND THE INTERNAL DIAMETER OF THE PUMP BODY



5. HOW TO USE THE SETTINGS' TABLES

The settings' tables below should be used for :

- Checking that the pump speed (N) is authorized for the required differential pressure (△P).
- Pre-setting the pump rotation speed taken into account at 5 bar (72,5 PSI) using 0,2 and 0,3 mm (0,0787 and 0,1181 in) shims. The lowest speed shall be taken into account in the event of varying speeds so as to avoid any lack of hose compression which could lead to rapid deterioration of the hose.
- Adapting the hose compression setting to the required differential pressure :
  - Transfer from △P ≤ 5 bar (72,5 PSI) to 5 bar (72,5 PSI) < △P ≤ 7,5 bar (108,75 PSI), add one removable shim
  - Transfer from △P ≤ 5 bar (72,5 PSI) to 7,5 bar (108,75 PSI) < △P ≤ 10 bar (145 PSI), add 2 removable shims
  - Transfer from △P ≤ 5 bar (72,5 PSI) to 10 bar (145 PSI) < △P ≤ 15 bar (217,5 PSI), add 3 removable shims

One shim should be removed from the above settings if the temperature of the pumped product is greater than 60°C (140°F) it is necessary to remove one shim (when possible) in relation to the setting above (only removable shims should be removed).

Too little hose compression leads to internal leaks which lead to rapid deterioration of the inside of the hose.

Too much hose compression puts significant internal strain on the pump as well as leading to abnormal overheating of the hose which greatly reduces its operational life.

NOTE
There must be the same number of shims under each shoe.

6. SETTINGS' TABLES

A/AS/HD 25

bar (psi)	tr/rpm	mm (inch)
△P ≤ 5 (72.5)	5 ≤ N ≤ 40	25.6 (1.008") < a ≤ 26.1 (1.028")
	40 < N ≤ 120	26.1 (1.028") < a ≤ 26.6 (1.047")
	120 < N ≤ 160	26.6 (1.047") < a ≤ 27.1 (1.067")

Permissible speed ranges for higher pressures :

bar (psi)	tr/mn - rpm
5 (72.5) < △P ≤ 7.5 (108.75)	5 ≤ N ≤ 40
	40 < N ≤ 120
	120 < N ≤ 135
7.5 (108.75) < △P ≤ 10 (145)	5 ≤ N ≤ 40
	40 < N ≤ 115
10 (145) < △P ≤ 15 (217.5)	5 ≤ N ≤ 40
	40 < N ≤ 90

HD 32

bar (psi)	tr/rpm	mm (inch)
△P ≤ 5 (72.5)	5 ≤ N ≤ 45	27.6 (1.087”) < a ≤ 28.1 (1.106”)
	40 < N ≤ 105	28.1 (1.106”) < a ≤ 28.6 (1.126”)
	105 < N ≤ 140	28.6 (1.126”) < a ≤ 29.1 (1.146”)

Permissible speed ranges for higher pressures :

bar (psi)	tr/mn - rpm
5 (72.5) < △P ≤ 7.5 (108.75)	5 ≤ N ≤ 45
	45 < N ≤ 105
	105 < N ≤ 115
7.5 (108.75) < △P ≤ 10 (145)	5 ≤ N ≤ 45
	45 < N ≤ 100
10 (145) < △P ≤ 15 (217.5)	5 ≤ N ≤ 45
	45 < N ≤ 75

A/AS/HD 40

bar (psi)	tr/rpm	mm (inch)
△P ≤ 5 (72.5)	5 ≤ N ≤ 45	22.9 (0.902”) < a ≤ 23.4 (0.921”)
	45 < N ≤ 115	23.4 (0.921”) < a ≤ 23.9 (0.941”)
	115 < N ≤ 140	23.9 (0.941”) < a ≤ 24.4 (0.961”)

Permissible speed ranges for higher pressures :

bar (psi)	tr/mn - rpm
5 (72.5) <△P ≤ 7.5 (108.75)	5 ≤ N ≤ 45
	45 < N ≤ 115
7.5 (108.75) < △P ≤ 10 (145)	5 ≤ N ≤ 45
	45 < N ≤ 100
10 (145) < △P ≤ 15 (217.5)	5 ≤ N ≤ 45
	45 < N ≤ 75

A/AS/HD X40

bar (psi)	tr/rpm	mm (inch)
△P ≤ 5 (72.5)	5 ≤ N ≤ 55	24.5 (0.965”) < a ≤ 25 (0.984”)
	55 < N ≤ 100	25 (0.984”) < a ≤ 25.5 (1.004”)
	100 < N ≤ 120	25.5 (1.004”) < a ≤ 26 (1.024”)

Permissible speed ranges for higher pressures :

bar (psi)	tr/mn - rpm
5 (72.5) < △P ≤ 7.5 (108.75)	5 ≤ N ≤ 55
	55 < N ≤ 100
7.5 (108.75) < △P ≤ 10 (145)	5 ≤ N ≤ 55
	55 < N ≤ 85
10 (145) < △P ≤ 15 (217.5)	5 ≤ N ≤ 55
	55 < N ≤ 65

HD 50

bar (psi)	tr/rpm	mm (inch)
△P ≤ 5 (72.5)	5 ≤ N ≤ 30	27.2 (1.071”) < a ≤ 27.7 (1.091”)
	30 < N ≤ 65	27.7 (1.091”) < a ≤ 28.2 (1.11”)
	65 < N ≤ 90	28.2 (1.11”) < a ≤ 28.7 (1.13”)

Permissible speed ranges for higher pressures :

bar (psi)	tr/mn - rpm
5 (72.5) < △P ≤ 7.5 (108.75)	5 ≤ N ≤ 30
	30 < N ≤ 65
	65 < N < 75
7.5 (108.75) < △P ≤ 10 (145)	5 ≤ N ≤ 30
	30 < N ≤ 65
10 (145) < △P ≤ 15 (217.5)	5 ≤ N ≤ 30
	30 < N ≤ 50

A/AS/HD 65

bar (psi)	tr/rpm	mm (inch)
△P ≤ 5 (72.5)	5 ≤ N ≤ 30	24.3 (0.957") < a ≤ 24.8 (0.976")
	30 < N ≤ 65	24.8 (0.976") < a ≤ 25.3 (0.996")
	65 < N ≤ 90	25.3 (0.996") < a ≤ 25.8 (1.016")

Permissible speed ranges for higher pressures :

bar (psi)	tr/mn - rpm
5 (72.5) < △P ≤ 7.5 (108.75)	5 ≤ N ≤ 30
	30 < N ≤ 65
	65 < N ≤ 75
7.5 (108.75) < △P ≤ 10 (145)	5 ≤ N ≤ 30
	30 < N ≤ 65
10 (145) < △P ≤ 15 (217.5)	5 ≤ N ≤ 30
	30 < N ≤ 50

HD X65

bar (psi)	tr/rpm	mm (inch)
△P ≤ 5 (72.5)	5 ≤ N ≤ 25	30.9 (1.217") < a ≤ 31.4 (1.236")
	25 < N ≤ 45	31.4 (1.236") < a ≤ 31.9 (1.256")
	45 < N ≤ 65	31.9 (1.256") < a ≤ 32.4 (1.276")

Permissible speed ranges for higher pressures :

bar (psi)	tr/mn - rpm
5 (72.5) < △P ≤ 7.5 (108.75)	5 ≤ N ≤ 25
	25 < N ≤ 45
	45 < N < 50
7.5 (108.75) < △P ≤ 10 (145)	5 ≤ N ≤ 25
	25 < N ≤ 45
10 (145) < △P ≤ 15 (217.5)	5 ≤ N ≤ 25
	25 < N ≤ 35

A/AS/HD X80

bar (psi)	tr/rpm	mm (inch)
△P ≤ 5 (72.5)	5 ≤ N ≤ 25	30.9 (1.217”) < a ≤ 31.4 (1.236”)
	25 < N ≤ 45	31.4 (1.236”) < a ≤ 31.9 (1.256”)
	45 < N ≤ 65	31.9 (1.256”) < a ≤ 32.4 (1.276”)

Permissible speed ranges for higher pressures :

bar (psi)	tr/mn - rpm
5 (72.5) < △P ≤ 7.5 (108.75)	5 ≤ N ≤ 25
	25 < N ≤ 45
	45 < N ≤ 50
7.5 (108.75) < △P ≤ 10 (145)	5 ≤ N ≤ 25
	25 < N ≤ 45
10 (145) < △P ≤ 15 (217.5)	5 ≤ N ≤ 25
	25 < N ≤ 35

A/AS/HD 80

bar (psi)	tr/rpm	mm (inch)
△P ≤ 5 (72.5)	5 ≤ N ≤ 15	38.5 (1.516”) < a ≤ 39 (1.535”)
	15 < N ≤ 30	39 (1.535”) < a ≤ 39.5 (1.555”)
	30 < N ≤ 45	39.5 (1.555”) < a ≤ 40 (1.575”)
	45 < N ≤ 60	40 (1.575”) < a ≤ 40.5 (1.594”)

Permissible speed ranges for higher pressures :

bar (psi)	tr/mn - rpm
5 (72.5) < △P ≤ 7.5 (108.75)	5 ≤ N ≤ 15
	15 < N ≤ 30
	30 < N ≤ 45
	45 < N ≤ 50
7.5 (108.75)<△P ≤ 10 (145)	5 ≤ N ≤ 15
	15 < N ≤ 30
	30 < N ≤ 40
10 (145) < △P ≤ 15 (217.5)	5 ≤ N ≤ 15
	15 < N ≤ 30

A/AS/HD 100

bar (psi)	tr/rpm	mm (inch)
△P ≤ 5 (72.5)	5 ≤ N ≤ 15	40.2 (1.583") < a ≤ 40.7 (1.602")
	15 < N ≤ 25	40.7 (1.602") < a ≤ 41.2 (1.622")
	25 < N ≤ 35	41.2 (1.622") < a ≤ 41.7 (1.642")
	35 < N ≤ 45	41.7 (1.642") < a ≤ 42.2 (1.661")

Permissible speed ranges for higher pressures :

bar (psi)	tr/mn - rpm
5 (72.5) <△P ≤ 7.5 (108.75)	5 ≤ N ≤ 10
	10 < N ≤ 20
	20 < N ≤ 25
7.5 (108.75) < △P ≤ 10 (145)	5 ≤ N ≤ 10
	10 < N ≤ 20
	20 < N ≤ 25
10 (145) < △P ≤ 15 (217.5)	5 ≤ N ≤ 10
	10 < N ≤ 15

AS 125

bar (psi)	tr/rpm	mm (inch)
△P ≤ 5 (72.5)	5 ≤ N ≤ 10	39.4 (1.551") < a ≤ 39.9 (1.571")
	10 < N ≤ 20	39.9 (1.571") < a ≤ 40.4 (1.591")
	20 < N ≤ 30	40.4 (1.591") < a ≤ 40.9 (1.61")
	30 < N ≤ 35	40.9 (1.61") < a ≤ 41.4 (1.63")

Permissible speed ranges for higher pressures :

bar (psi)	tr/mn - rpm
5 (72.5) < △P ≤ 7.5 (108.75)	5 ≤ N ≤ 15
	15 < N ≤ 25
	25 < N ≤ 35
7.5 (108.75) < △P ≤ 10 (145)	5 ≤ N ≤ 10
	10 < N ≤ 20
	20 < N ≤ 25
10 (145) < △P ≤ 15 (217.5)	5 ≤ N ≤ 10
	10 < N ≤ 15