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VIBROPOWER

ДИЗЕЛЬНЫЕ ЭЛЕКТРОСТАНЦИИ

ИНСТРУКЦИЯ ПО ЭКСПЛУАТАЦИИ

: VP _____

: _____

: _____

: _____

2008 .



энергокомплекс

VibroPower™

GLOBAL POWER
INDAMEX

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VP.

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VIBROPOWER

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I		
A	7
C	8
D	9
E	10
F	10
G	11
H	13
J	14
	/	17
	18
N	19
P	/	20
	21
	22
II		
R	23
S	24
T	27
U	31
V	33
III		
	35
	37
	cos	43
	45
	47
	49
	55

A

A.1

A.2

A.3

A.4

A.5

A.6

B

B.1

2

-1,5 ., 1 .

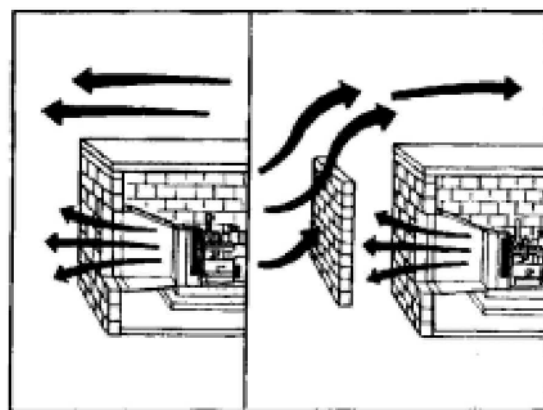
()

0,5 .

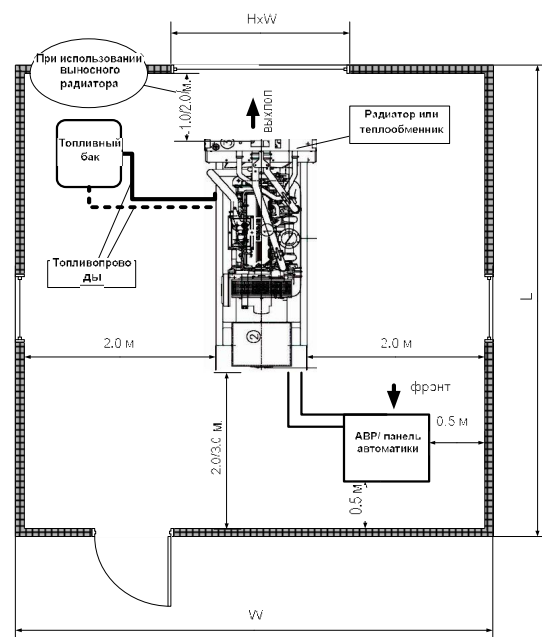
B.2

B.3

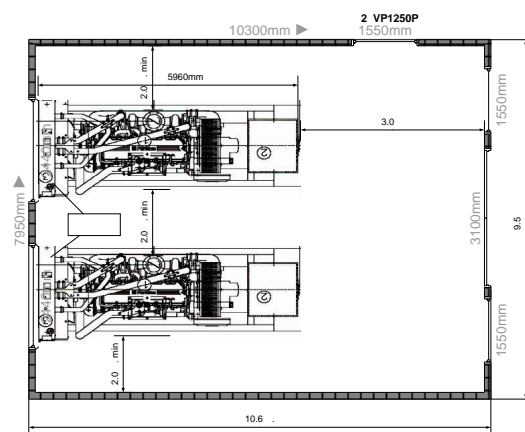
B.4



. A.2



. B.1



B.5

C.

C.1

/

:

-
-
-
-
-

C.2

C.3

()

2.25 1.5
3

3

C.4

4.

6

C.5

A)

C.5 (A).

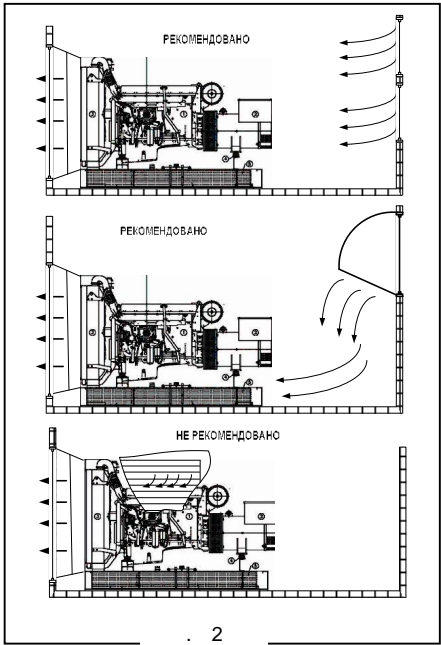
).

B)

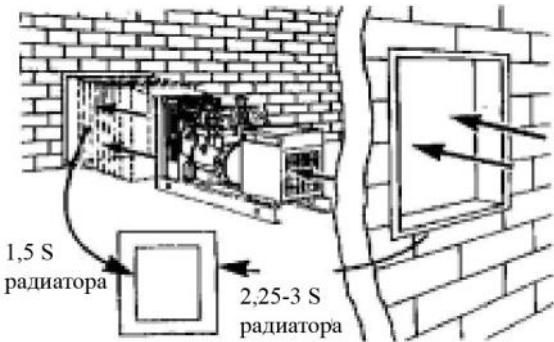
C.5(B).

).

(

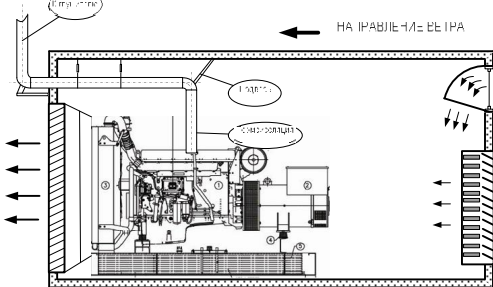


2



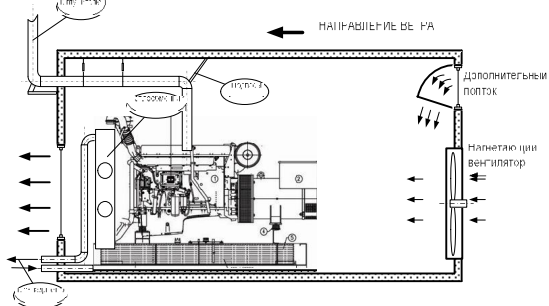
3

ТИПОВАЯ КОМПОНОВКА ЭЛЕКТРОСТАНЦИИ РАДИАТОРНОГО ОХЛАЖДЕНИЯ В ШУМОЗАЩИТНОМ КОЖУХЕ



4

ТИПОВАЯ КОМПОНОВКА ЭЛЕКТРОСТАНЦИИ С ВЫНОСНЫМ ОХЛАЖДЕНИЕМ В ШУМОЗАЩИТНОМ КОЖУХЕ ВАР. А



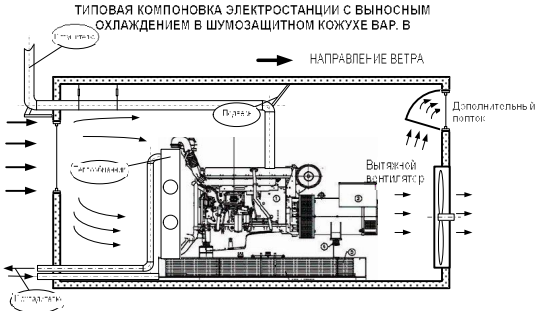
5 ()

C.6

C.7

1

1500 /



5 ()

C.8

/ :

$$V^3 / = \frac{H}{1,099*0,017*T} + ECA$$

10 ° C
10 40° C
40° C

30 ° C
10° C
5° C

V =
=
=
ECA=

$$40^{\circ} = 1,099 / ^3$$

$$= 0,017 / ^{\circ}$$

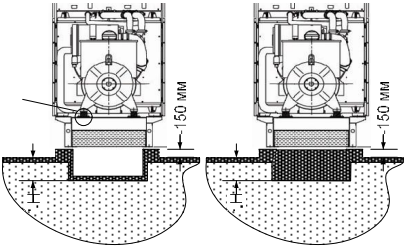
7

C.9

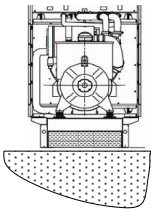
- 1.
- 2.
- 3.
- 4.

1

/ ()



C.10



D
D.1
D.2

VP

D.3

	(5000 kg/m)	
	(mm)	(mm)
750-2000	1500	600
625	1200	400
320-500	1200	400
200-320	1000	400
80-200	900	400
80	450	200

D3

150 150

D.4 300 mm 150-

D.5 (24

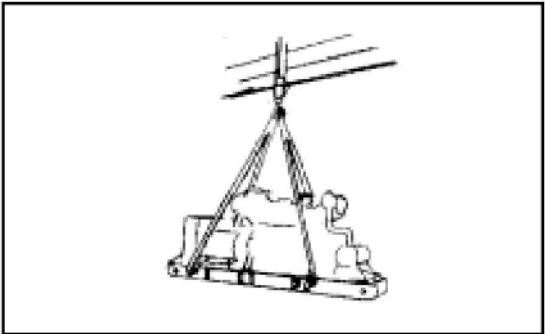
D.6) 100

D.7

D.8 ±0,5°

/

1,5



E

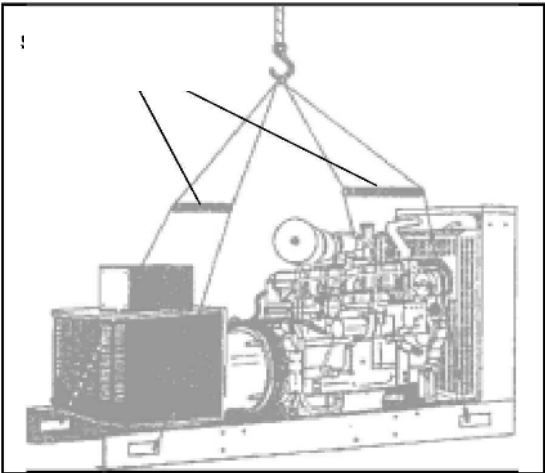
E.1 /

VP 3

E.2 /

E.3

E.4



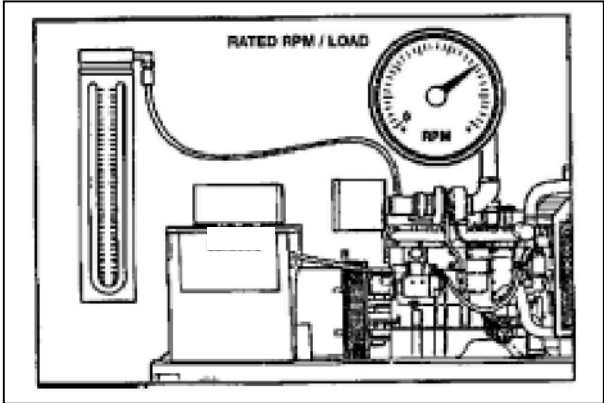
F.

F.1.

4

:				
X-Series	S-Series	S-Series		
250	250	250	250	380
400	380	500	635	635
:				
-	-	-	-	-

F.2



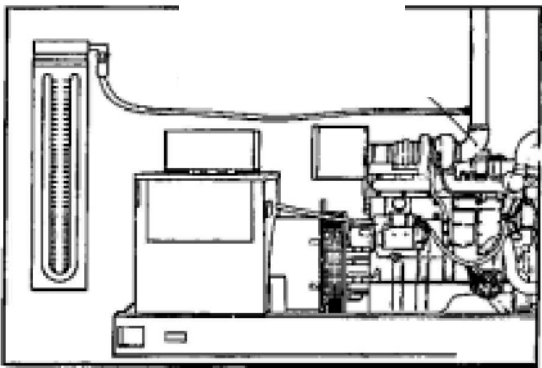
.F1

F.3

F.4

G.

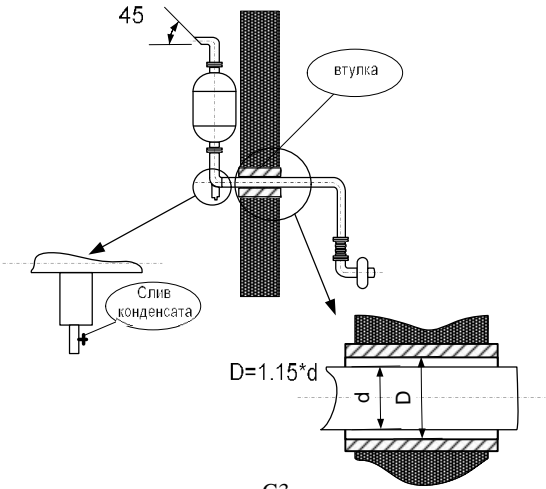
G.1



G.2

G.2

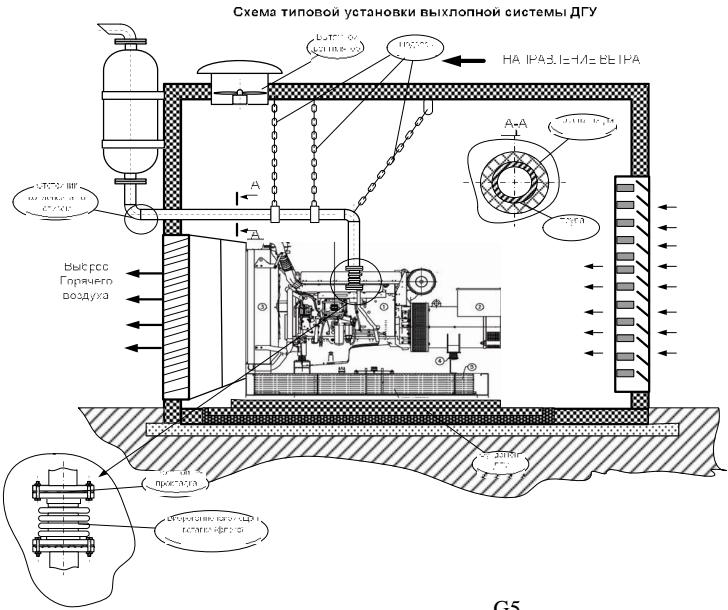
1500		51
300	1500	76
300		81



G.3

12

G.3



- ЗАМЕТКИ
1. Соединение выхлопной системы с коллектором двигателя производить через виброкомпенс. вставку (флеко)
 2. Выхлопная труба подвешивается к потолку на цепных растяжках.
 3. Крепление глушителя к стене производить на специальных кронштейнах с обтяжкой металлическими лентами. Крепление кронштейнов к стене производить анкерными болтами. Расстояние от корпуса глушителя до стены > 100 мм.
 4. Теплоизоляцию выхлопных труб производить обмоткой фольгированным асбестом.
 5. Слив конденсата из выхлопной системы производить через каждые 200 часов работы при постоянном режиме и перед каждым регламентным пуском при работе в резерве.

G.5

G.4

- 50

G.5

()

640

G5.

2

7

G.6

1

4

10

G.7

()

G.8

'V'-

2*L/5

(4L-1.5)/5

4*L/5

(2L-4.5)/5

G.9

()

'V'-

L/5

(3L-10)/5

G.9, L -

3*L/5

G.10

G9

H=h+0.2x

H -

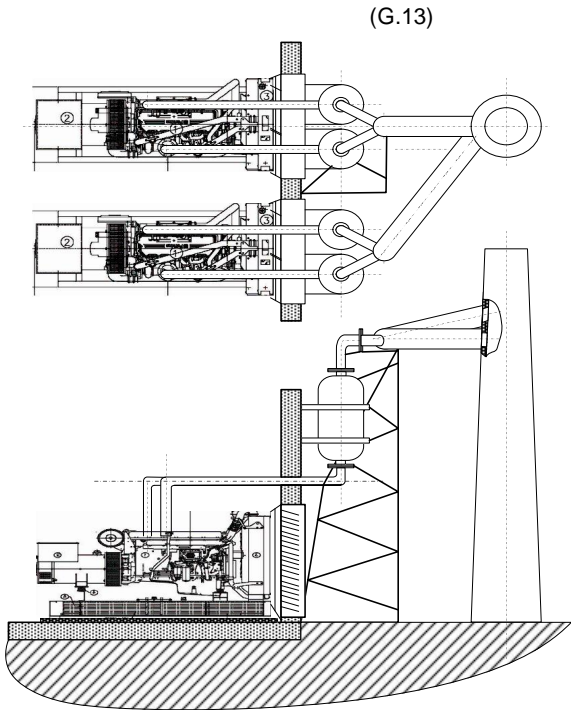
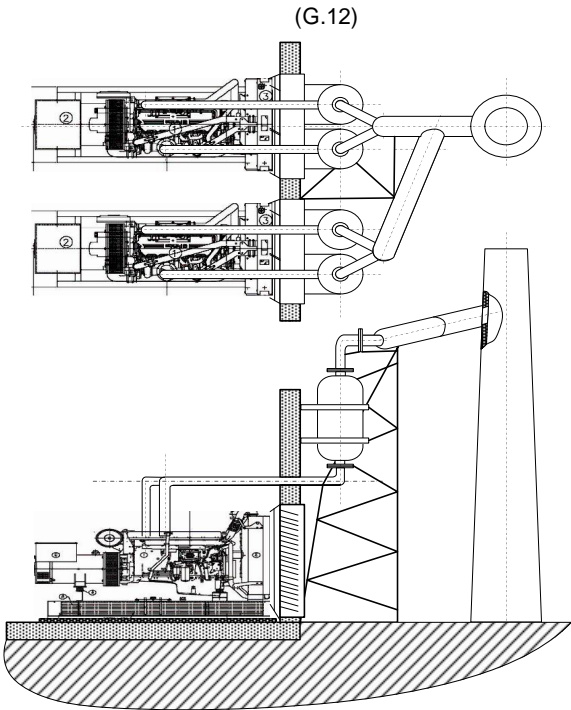
h -

G11

G.12

V

G.13

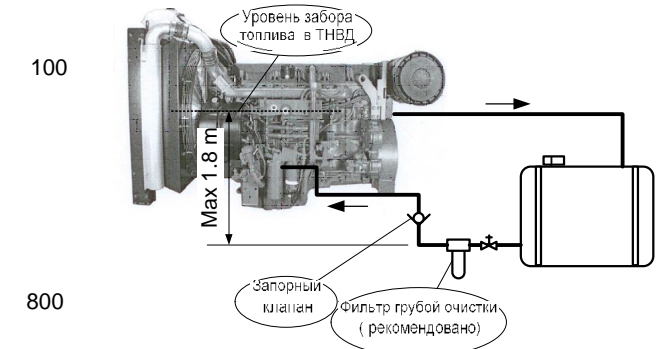


H.
H.1

...

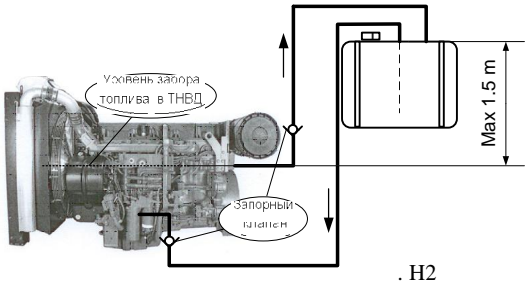
H.2

VP



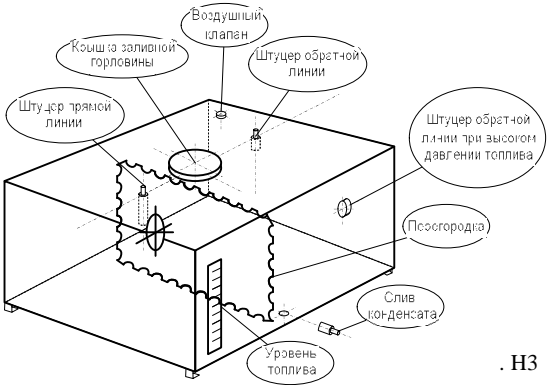
1.8

1.5



H.3

990



. H3

H.4

H.5

H.6

H.7

1.

10

10 ,

J

J.1

50

J.2

J.2.

CaCO ₃	170 ppm max
PH –	6.5-7.5
PH –	5.0-9.0
	40 ppm max
TDS	400 ppm max
	100 ppm max

TWG TD QS	50% 50%
CAC (OCA2) + Water	

. J2

J.2A

J.3

7-11

~ 32

1.

J.4

J.5

3.5 / ² (50 psi).

J.6

J.7

1

J.8

J.9

J.10

J.11

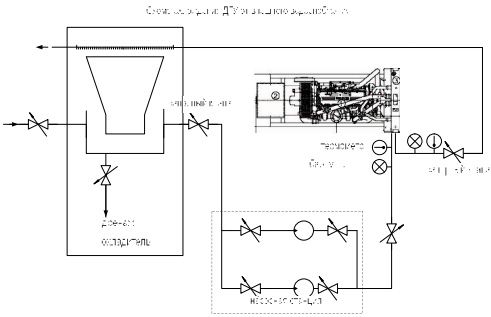
J.11

J.12

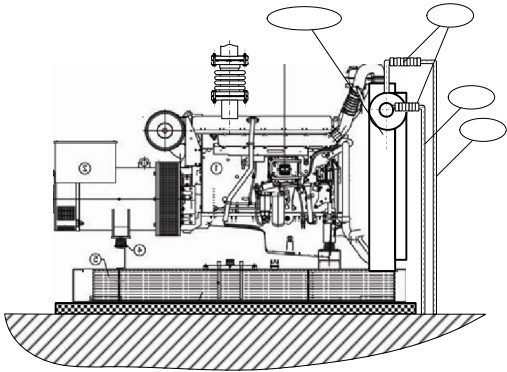
/

J.13

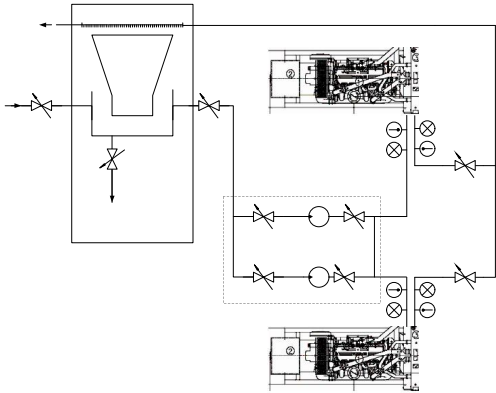
J.14



J.5



J.8



J.9

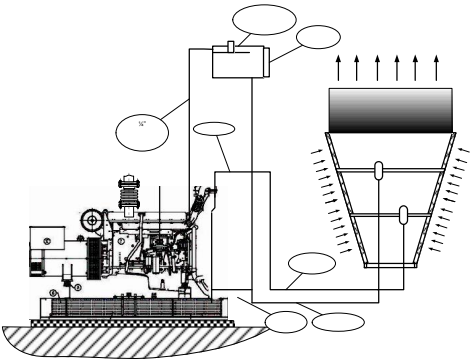
1875	2000	7.5	(10 . .)
750	1500	5.5	(7.5 . .)
400	625	3.7	(5 . .)
380		2.2	(3 . .)

- (,).
- 5 .
- 10 .
- 150 200 ..
- -1 .

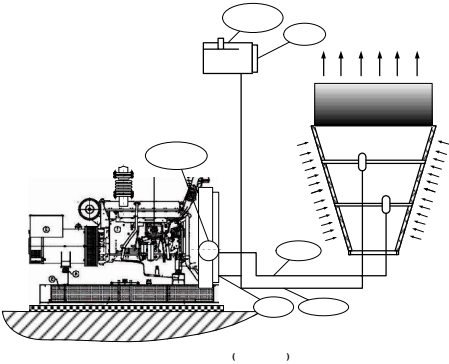


Cummins

QSK60G4	2000	FCW-160 (LT + H)	FCW-200
KTA50GB-1	1500	FCW-140 (LT + H)	FCW-180
KTA50G3	1250	FCW-120	FCW-140
KTA50G3 1 P2L	1250	FCW-120 (LT + H)	FCW-140
KTA3BG5	1000	FCW-100 (LT + H)	FCW-120
KTA2300	750	FCW-080	FCW-100
VTA2BG5	600/625	FCW-060	FCW-080
KTA19G4	500	FCW-060 (LT + H)	FCW-080



(4 psi) 0.35 / ² (5 psi) 0.28 / ²



K /

K.1 72-80 ,

K.2

K.3 K3

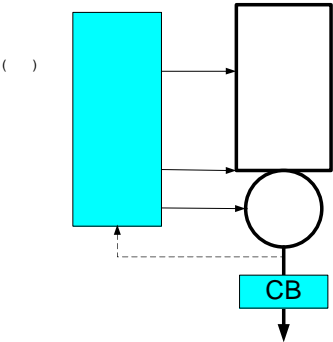
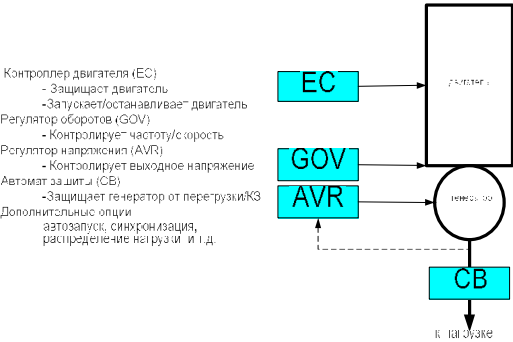
– 2 .

K.4 2 .
VP



		AH		
630		360	70	24
325	630	180	70	24
200	630	180	50	24
100	200	150	50	24
100		120	50	25

L /



L.1

L.2 « »

L.3 /

LA

L.5

L.6

L.7

VibroPower (VP)



(AMF)

A)

10-15

B)

10-15

C)

10-15

AMF:

(cos)
(cos)

- Cos
- Cos
- Cos

cos

0.8

cos

0.8

cos

cos

4

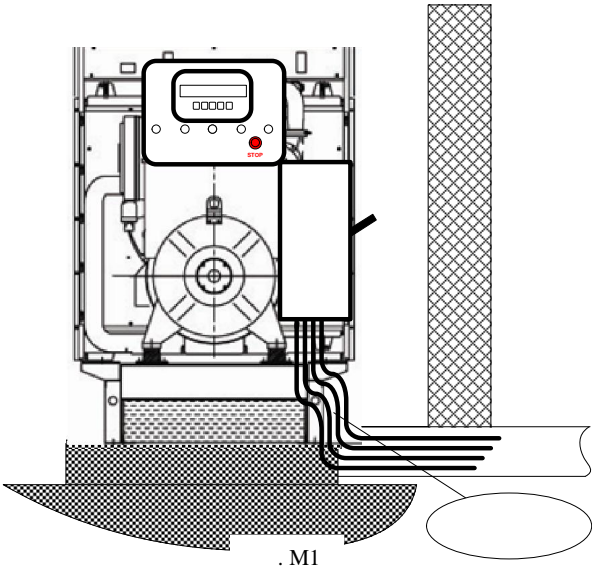
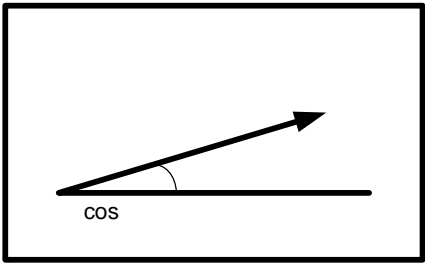
M

M.1

M.2

M.3

(ATS)



M.4 ()

M.5

M.6

M.7 8/10 2.5 2

M.8 400

M.7.

M.9 /

M.10

M.11 /

30

N

N.1

N.2

-2 /

-2

N.3 /

1 / /

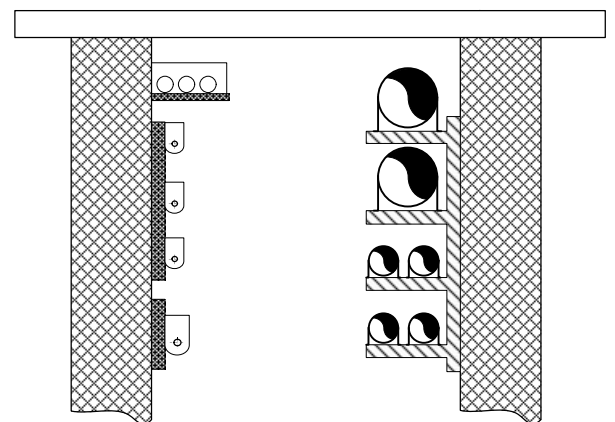
1 /

N.4 2

O.

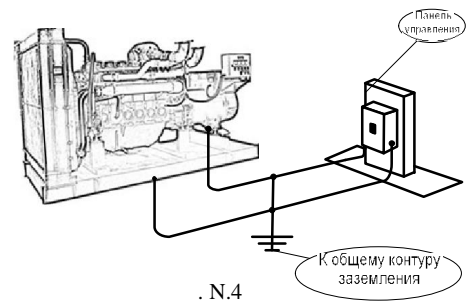
.1

.1



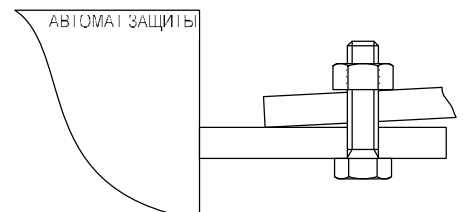
4

N.2



N.4

НЕВЕРНОЕ ПЯТНО КОНТАКТА



.1

0.2

(. 0.2).

0.3

(IS:4232

may be referred to for guidelines).
.3

P

/

P.1

/

P.2

/

P.3

P.4

P.5

A/B/C (,)

P.6

/

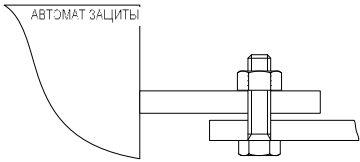
P.7

P.8

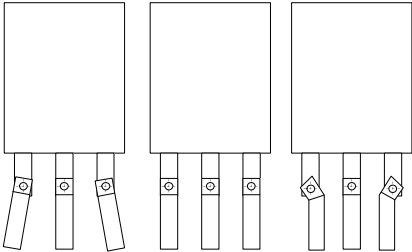
P.9

1

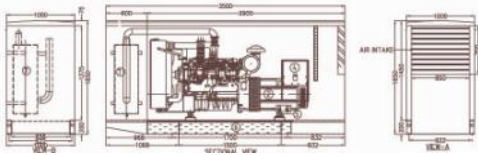
ЗАЗОР МЕЖДУ ШИНОЙ/НАКОНЕЧНИКОМ



. 2



. 3



. P.3

P.10

(.)

P.11

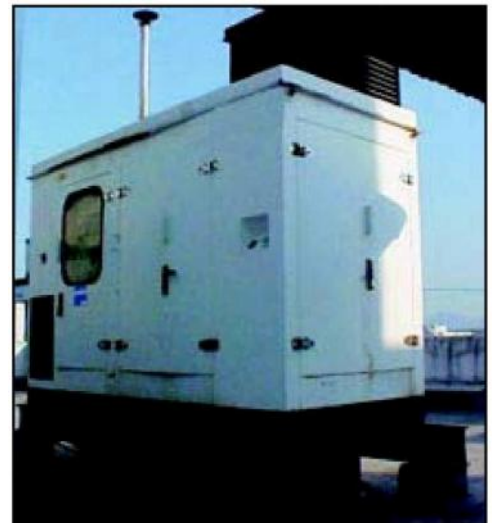
10° C 5 ° C 40° C,
30° C 20 40° C
5 ° C.

P.12

15-30° C

.13

-6 . . .



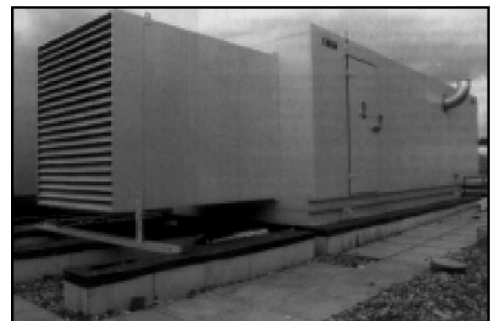
a)

75-80%

b)

98%

c)



/

75 ()

1

800
1

450

$\begin{aligned} 1 &= 3.28 \\ 1 &= 39.37 \\ 1 &= 25.44 \end{aligned}$	$\begin{aligned} 1^2 &= 10.76 \\ 1 &= 1550 \\ 1^2 &= 645.2 \end{aligned}$	$\begin{aligned} 1^3 &= 35.31 \\ 1 &= 1000 \\ 1^3 &= 28.32 \\ 1 &= 3.78 \end{aligned}$
$\begin{aligned} 1 / &= 3.28 / \\ &= 196.85 / \end{aligned}$	$\begin{aligned} 1 / &= 0.2642 / \\ 1^3 / &= 16.7 / \end{aligned}$	
$\begin{aligned} 1 &= 1.34 \\ 1 &= 0.746 \\ 1 / &= 14.34 \end{aligned}$ <p> $\dots = (\quad * \cos) / (0.746 * \quad) + \quad$ $\dots + \quad \dots$ $(3 \quad) = (1.723 * V * I * \cos) 1000$ $(1 \quad) = V * I * \cos / 1000$ </p>		$\begin{aligned} 1 / ^2 &= 14.2 \text{ PSI} \\ &= 32.81 \\ &= 10 \\ 1 &= 1.033 / ^2 \\ &= 14.3 \\ 1 \text{ PSI} &= 0.7 \\ &= 2.3 \\ &= 6.89 \end{aligned}$

11 -

R

a)

1.

2.

3.

4.

5.

6.

7.

b)

c)

S

a)

b)

c)

d)

4, 6-8.

e)

f)

1)

2)

3)



a)

b)

$$50 \quad) \quad 1800$$

2-2½

(60).

1500

(

()

(.

(,

$$).$$

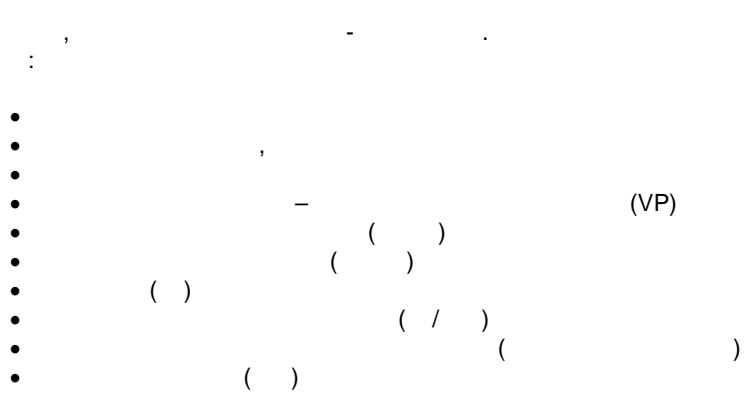
« » ,

$$\left(\begin{array}{c} \cdot \\ \cdot \end{array} \right).$$

()

()

e)



f)

) 14 (

U
a)

-
-
-
-
-
-
-

:

/	A
	B
	C
	D
	E
	F
	G
	H
	I

	A	B	C	D	E	F	G	H	I
		X	X		X	X			
		X		X					
		X	X		X	X			
				X	X	X			
	X			X					
	X	X	X					X	
		X	X					X	
		X	X					X	
	X								
			X						X
	X		X						X
	X		X						X
	X	X	X				X	X	X
	X		X				X	X	X
		X						X	
/				X					
		X							

		X							
		X							
		X							
		X							
/ /	X								
	X								
	X								
	X								
				X					
	X		X				X	X	X
/	X		X		X	X			X
					X	X			
/				X	X				X
	X	X	X				X		X

V

a)

-
-
-
-
-
-
-

(

b)

(. .7)

		² X		
2000	2782	500 x 10	-	-
1800	2504	400 x 10	-	-
1500	2087	400 x 8	300 x 9	240 x 10
1250	1739	400 x 7	300 x 8	240 x 9
1000	1391	300 x 6	225 x 7	-
750	1043	400 x 4	240 x 5	185 x 6
650	904	300 x 4	225 x 5	150 x 6
625	870	300 x 4	185 x 5	120 x 6
600	835	240 x 4	185 x 5	120 x 6
500	696	300 x 3	185 x 4	120 x 5
450	626	240 x 3	150 x 4	95 x 5
380	529	400 x 2	185 x 3	120 x 4
320	445	300 x 2	150 x 3	95 x 4
285	396	225 x 2	120 x 3	70 x4
250	348	400 x 1	185 x 2	95 x 3
225	313	400 x 1	150 x 2	-
200	278	300 x 1	-	-
180	250	240 x 1	-	-
160	223	185 x 1	-	-
140	195	150 x 1	-	-
125	174	120 x 1	-	-
100	139	95 x 1	-	-
82.5	115	70 x 1	-	-
75	104	50 x 1	-	-
62.5	87	35 x 1	-	-
50	70	25 x 1	-	-
30	42	16 x 1	-	-
25	40	10 x 4	-	-
20	40	10 x 4	-	-
15	32	6x4	-	-
25 ()	125	5IX 2	-	-
20 ()	80	3x2	-	-
15 ()	63	2x2	-	-

- :
1. 3-1/2
(AYFY)
 2. 40⁰ C.
 3. 0.75 .
 4. AYFY: , , ,
 5. ².
 6. 1000
 - 7.

			* max. 4 Max. 10 Min. 1		10		(H R)	() +						
								T = 40°C	T < 40°C				*	*
			x	/c				/	/	/		TR		
QSK60-G4	2000	12.5 x 7.5 x 6.5	2 x 325	2 x 2805	50	400	550 (H) 750 (R)	41915	22090	32285	2.3 X 2.4	1760	200	125
QSK60-G3	1875	12.5 x 7.5 x 6.5	2 x 325	2 x 2700	50	400	550 (H) 750 (R)	38525	20310	32285	2.3 X 2.4	1760	200	125
KTA50-G8-1	1500	12.0 x 7.0 x 6.5	2 x 250	2 x 2220	25	177	320 (H) 555 (R)	34955	18275	28400	2.2 X 1.95	1300	150	125
KTA50-G3	1250	12.0 x 7.0 x 6.5	2 x 250	2 x 1910	25	177	310 (H) 440 (R)	31475	16420	27375	2.1 x 2.0	1300	125	125
KTA38-G5	1000	11.0 x 7.0 x 6.5	2 x 250	2 x 1460	25	145	199 (H) 260 (R)	26980	14050	23855	1.9 x 1.8	900	100	100
KTA38-G21 (2300	750	9.0 x 6.0 x 5.0	2 x 200	2 x 1245	25	118	230 (H) 300 (R)	21795	11395	22655	1.9 x 1.65	625	70	100
VTA28-G5	625	8.5 x 6.0 x 5.0	2 x 125	2 x 945	20	95	212 (H) 250 (R)	17770	9270	22655	1.9 x 1.65	540	60	75
VTA28-G3	600	8.5 x 6.0 x 5.0	2 x 125	2 x 930	20	95	210 (H) 240 (R)	17405	9060	18880	1.9x1.6	480	60	75
KTA19-G4	500	8.5 x 5.5 x 5.0	1 x 200	1 x 1600	20	55	125 (H) 175 (R)	14410	7480	20280	1.48 x 1.58	** 385 + 150	60	75 + 40
KTA19-G3	450	8.5 x 5.5 x 5.0	1 x 200	1 x 1460	20	55	125 (H) 165 (R)	13110	6800	13000	1.48 x 1.58	385	45	75
KTA1150-G	380	8.0 x 5.5 x 5.0	1 x 125	1 x 1095	20	55	80(H)115(R)	12070	6255	10385	1.14 x 1.22	300	35	65
NTA14-G3	380	8.0 x 5.5 x 5.0	1 x 125	1 x 1055	20	39	45 (H) 76 (R)	11110	5750	10385	1.58 X 1.48	300	35	65
NT A855-G2 BC	320	7.5 x 5.0 x 5.0	1 x 125	1 x 990	20	39	40 (H) 95 (R)	9385	4855	10070	1.18 X 1.22	** 275 + 125	35	65 + 40
NT855-G6 BC	285	7.5 x 5.0 x 5.0	1 x 125	1 x 1160	20	39	47 (H) 80 (R)	8975	4650	10070	1.08 X 1.27	275	30	50
NT855-G5 BC	250	7.5 x 5.0 x 5.0	1 x 125	1 x 960	20	39	47 (H) 80 (R)	8285	4300	10070	1.08 X 1.27	240	25	50
NT855-G4 BC	225	7.5 x 5.0 x 5.0	1 x 125	1 x 860	20	39	47 (H) 80 (R)	7305	3795	10070	1.08 X 1.27	240	25	50
6CTAA8.3-G1-1	200	6.5 x 4.5 x 3.5	1 x 100	1 x 610	15	24	28 (R)	6245	3225	7385	0.7x1.0	NA	NA	NA
6CTA8.3-G2- I	180	6.5 x 4.5 x 3.5	1 x 100	1 x 550	15	24	27 (R)	6035	3115	5540	0.73 X 0.74	NA	NA	NA
6CTA8.3-G 1- I	160	6.5 x 4.5 x 3.5	1 x 100	1 x 540	15	24	27 (R)	5565	2880	5540	0.73 X 0.74	NA	NA	NA
6CT8.3-G2-1	140	6.5 x 4.5 x 3.5	1 x 100	1 x 470	15	24	27 (R)	4955	2555	5540	0.73 X 0.74	NA	NA	NA
6BTA5.9-G2-1	125	6.0 x 4.0 x 3.5	1 x 100	1 x 225	15	14.3	25 (R)	4920	2525	4000	0.7 X 0.7	121	-	45
6BT5.9-G1-1	82.5	6.0 x 4.0 x 3.5	1 x 100	1 x 225	15	14.3	22 (R)	3420	1760	2880	0.7 X 0.7	NA	NA	NA
S3.8-G7	62.5	6.0 x 3.5 x 3.0	1 x 75	1 x 190	10	9	13 (R)	2450	1260	1880	0.6 X 0.6	NA	NA	NA
S3.8-G6	50	6.0 x 3.5 x 3.0	1 x 75	1 x 150	10	9	11 (R)	2090	1075	1880	0.5 X 0.5	NA	NA	NA
S3.8-G5	45	6.0 x 3.5 x 3.0	1 x 75	1 x 150	10	9	11 (R)	2090	1075	1880	0.5 X 0.5	NA	NA	NA
S3.8-G4	40	6.0 x 3.5 x 3.0	1 x 75	1 x 150	10	9	11 (R)	1715	890	1880	0.5 X 0.5	NA	NA	NA
S3.8-G3	35	6.0 x 3.5 x 3.0	1 x 75	1x115	10	9	11 (R)	1420	730	1880	0.5 X 0.5	NA	NA	NA
S3.8-G2	30	6.0 x 3.5 x 3.0	1 x 75	1x115	10	9	11 (R)	1240	640	1880	0.5 X 0.5	NA	NA	NA
X2.5-G2	25	4.0 x 1.5 x 2.0	1 x 50	1 x 75	10	6.5	7.5 (R)	1060	542	1250	0.4 X 0.4	NA	NA	NA
X2.5-G1	20	4.0 x 1.5 x 2.0	1 x 50	1 x 75	10	6.5	7.5 (R)	930	475	1250	0.4 X 0.4	NA	NA	NA
X1.7-G1	15	4.0 x 1.5 x 2.0	1 x 50	1 x 50	10	5	6 (R)	670	345	1050	0.4 X 0.4	NA	NA	NA

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4016 TAG2A	2000	9.7 x 6 x 6.5	2 x 325	405	50	400	700	2621	2.8 3.5
4016 TAG1	1875	9.7 x 6 x 6.5	2 x 325	336	50	400	700	2556	2.8 3.5
4016 TAG2	1750	9.7 x 6 x 6.5	2 x 325	253	50	400	700	2438	2.8 3.5
4012 TAG2	1250	9.0x4.0x 4.0	2 x 250	274	25	320	450	1792	2.2x2.5
4012 TWG	1250	9.0x4.0x 4.0	2 x 250	268	25	320	400	1792	2.2x2.3
4008 TAG2A	1000	9.0x4.0x 4.0	2 x 250	200	25	150	300	1396	2.1x2.3
4006-23TAG3A	800	8.0x4.0x4.0	2 x 200	193	25	130	250	1400	1.8x2.2
4006-23TAG3A	750	8.0x4.0x4.0	2 x 200	193	25	130	250	1400	1.8x2.2
2806C-E18TAG2	640	7.5x4.0x4.0	1x 150	123	20	58	90	826	1.9x1.6
2806C-E18TAG1	550	7.5x4.0x4.0	1x 150	92	20	58	80	826	1.9x1.6
2806C-E14TAG2	500	7.5x4.0x4.0	1x 150	90	20	58	75	695	1.9x1.6
2806C-E14TAG2	450	7.5x4.0x4.0	1x 150	90	20	58	75	695	1.9x1.6
2306C-E14TAG3	400	7.0x3.5x3.5	1x 150	87	20	40	75	589	1.2 2.0
2306C-E14TAG2	350	7.0x3.5x3.5	1x 150	80	20	35	60	550	1.2 2.0
1306C-E87TAG6	250	7.0x3.5x3.5	1x 150	45	20	30	50	550	1.2 2.0
1306C-E87TAG3	200	7.0x3.2x3.0	1x 150	40	15	30	30	380	1.0 1.8
1006C-TAG2	150	6.0x2.7x3.0	1x 100	30	15	20	30	351	0.9 1.5
1006C-TAG	135	6.0x2.7x3.0	1x 100	19	15	15	25	236	0.9 1.5
1006-TG2	100	6.0x2.7x3.0	1x 100	17	15	15	20	197	0.9 1.5
1006-TG1	90	6.0x2.7x3.0	1x 100	15	15	15	15	196	0.9 1.5
1004F-44TG2	80	6.0x2.7x3.0	1x 100	15	20	15	15	196	0.9 1.5
1103A-33TG2	60	6.0x2.7x3.0	1x 100	13	20	10	12	147	0.8 1.4
1103A-33TG1	45	6.0x2.7x3.0	1x 75	12	20	9	12	135	0.8 1.4
1103A-33G	30	6.0x2.7x3.0	1x 75	11	20	9	10	98	0.8 1.4
404C-2G2	20	4.0x2.0x2.0	1x 75	11	20	9	10	98	0.5 0.5

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TAD 1642GE	570	6.5x4.0x4.0	1x 150	90	20	48	60	700	1.3 1.9
TAD 1631GE	500	6.5x4.0x4.0	1x 150	84	20	64	52	650	1.3 1.9
TAD 1630 GE	450	6.5x4.0x4.0	1x 150	84	20	48	59	650	1.3 1.9
TAD 1242 GE	400	6.5x4.0x4.0	1x 150	75	20	35	59	600	1.3 1.9
TAD 1241 GE	375	6.5x4.0x4.0	1x 150	70	20	35	59	500	1.3 1.9
TAD 941 GE	325	6.0x4.0x3.0	1x 150	60	20	33.5	24	420	1.2 1.7
TAD 940 GE	300	6.0x4.0x3.0	1x 150	60	20	33.5	24	380	1.2 1.7
TAD 740 GE	250	6.0x2.7x3.0	1x 150	35	20	29	37	300	1.1 1.7
TAD 722 GE	200	6.0x2.7x3.0	1x 150	29	20	20	24	250	0.9 1.6
TAD 710 G	180	6.0x2.7x3.0	1x 150	21	20	29	42	230	0.9 1.5
TAD 720 G	150	6.0x2.7x3.0	1x 150	18	20	20	22	205	0.9 1.5
TAD 720 G	125	6.0x2.7x3.0	1x 150	18	20	20	22	205	0.9 1.5
TAD 520 G	100	6.0x2.7x3.0	1x 150	15	20	13	20	178	0.8 1.4
TD 520 G	80	6.0x2.7x3.0	1x 150	15	20	13	18	150	0.7 1.4

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			100%	80 %	100%	80 %	100%	80 %	100%	80 %	100%	80 %
1	2750	2200	4967	3974	4675	3740	4416	3532	4183	3347	3974	3179
2	2500	2000	4516	3613	4250	3400	4014	3211	3803	3042	3613	2890
3	2200	1760	3974	3179	3740	2992	3532	2826	3347	2677	3179	2543
4	2000	1600	3613	2890	3400	2720	3211	2569	3042	2434	2890	2312
5	1875	1500	3387	2710	3188	2550	3011	2408	2852	2282	2710	2168
6	1500	1200	2710	2168	2550	2040	2408	1927	2282	1825	2168	1734
7	1250	1000	2258	1806	2125	1700	2007	1606	1901	1521	1806	1445
8	1000	800	1806	1445	1700	1360	1606	1285	1521	1217	1445	1156
9	750	600	1355	1084	1275	1020	1204	963	1141	913	1084	867
10	625	500	1129	903	1063	850	1004	803	951	761	903	723
11	500	400	903	723	850	680	803	642	761	608	723	578
12	450	360	813	650	765	612	723	578	685	548	650	520
13	380	304	686	549	646	517	610	488	578	462	549	439
14	320	256	578	462	544	435	514	411	487	389	462	370
15	285	228	515	412	485	388	458	366	434	347	412	329
16	250	200	452	361	425	340	401	321	380	304	361	289
17	225	180	406	325	383	306	361	289	342	274	325	260
18	200	160	361	289	340	272	321	257	304	243	289	231
19	180	144	325	260	306	245	289	231	274	219	260	208
20	160	128	289	231	272	218	257	206	243	195	231	185
21	140	112	253	202	238	190	225	180	213	170	202	162
22	125	100	226	181	213	170	201	161	190	152	181	145
23	100	80	181	145	170	136	161	128	152	122	145	116
24	80	64	145	116	136	109	128	103	122	97	116	92
25	60	48	108	87	102	82	96	77	91	73	87	69
26	50	40	90	72	85	68	80	64	76	61	72	58
27	45	36	81	65	77	61	72	58	68	55	65	52
28	40	32	72	58	68	54	64	51	61	49	58	46
29	35	28	63	51	60	48	56	45	53	43	51	40
30	30	24	54	43	51	41	48	39	46	37	43	35
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