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## Thermal-Hydraulic Experiments with a Cluster of 12 Roughened Rods

### Abstract

Distributions of temperatures and pressures were measured on a cluster of 12 electrically heated tubes. 84 thermocouples were used to measure the temperatures. The heated part of the tubes was artificially roughened by trapezoidal transverse ribs. The experiments with helium and nitrogen as coolants covered a range of Reynolds numbers between 470 and  $1.8 \times 10^5$ . The maximum linear rod power was  $45.8 \text{ kWm}^{-1}$ , the maximum measured wall temperature 1062K (789°C). The report contains the description of the test section and all tabulated experimental results.

## Thermohydraulische Untersuchungen an einem Stabbündel von 12 rauhen Rohren

### Zusammenfassung

Im Heliumversuchsstand wurden an einem Bündel aus 12 elektrisch beheizten Rohren Temperatur- und Druckverteilungen gemessen. Zur Temperaturmessung wurden 84 Thermoelemente benutzt. Der beheizte Teil der Rohre war mit künstlichen Rauigkeiten, trapezförmigen Querrippen, versehen. Die Versuche mit Helium und Stickstoff als Kühlgase erstreckten sich über einen Reynoldszahlbereich von 470 bis  $1.8 \times 10^5$ . Die maximale lineare Stableistung betrug  $45.8 \text{ kWm}^{-1}$ , die maximal gemessene Wandtemperatur 1062K (789°C). Der Bericht enthält die Beschreibung der Teststrecke sowie alle tabellierten Versuchsergebnisse.

## 1. Introduction

Artificial roughness is used in Gas-Cooled Fast Breeder Reactors to improve the heat transfer performance of the fuel elements. It is necessary for the prediction of the thermodynamic and fluid dynamic behaviour of such fuel elements to develop computer codes to calculate the detailed distributions of the mass flow and the wall and fluid temperatures with high accuracy. The problem developing such codes is to apply the extensive data for roughened surfaces mainly obtained from experiments in annuli with roughened inner tubes. Moreover, the influences of the spacers on the mass flow and temperature distributions have to be taken into account. Experiments on the temperature distribution near spacer grids have been performed only in rod bundles with a small number of rods. The results of those investigations have to be transferred to large rod bundles. To get the required high accuracy in predicting distributions of the pin temperatures in a cluster it is unavoidable to compare calculated temperature distributions with detailed wall temperature measurements in clusters and - if necessary - to adjust the codes against the measurements. Since no code was available to solve the thermodynamic and fluid dynamic problem for rod bundles with artificially roughened rods contained in a smooth wrapper tube the SAGAPO code was developed /1,2/. Simultaneously, heat transfer experiments have been performed with different clusters of electrically heated roughened rods in the High Pressure Helium Loop. The clusters consisted of 19 /3,4/ and of 12 rods /5,6/.

The original purpose of the experiments with the bundles of 12 rods was to get information relevant to the thermodynamic and fluid dynamic design of the rod clusters under irradiation in the BR2 /5/.

## 2. Experimental Setup

### 2.1 Test Section

The measurements were performed with a test section which was slightly modified during the runs. Therefore, the test section (calibration element) is characterized by different symbols for the different steps of modification: CE1 to CE4.

The test section consists of 12 tubes of  $D=8.0$  mm O.D. (stainless steel No. 1.4981) and a wall thickness of  $s=0.61$  mm. The tubes are arranged in a triangular array with a pitch of  $P=11.1$  mm (Fig.1); the pitch-to-diameter ratio accordingly is  $P/D=1.39$ . The distance between the centers of the outer row of rods and the wall of the wrapper is  $a=5.78$  mm (CE1 and CE2) giving a wall-to-diameter ratio of  $W/D=1.22$ . The blocking triangles of the wrapper have a height of  $h_B=2.27$  mm (CE1 and CE2) with a base angle of 30 deg. All geometrical parameters were chosen as to meet the conditions of the BR2 irradiation test after some simple thermo- and fluid dynamic calculations. The profile of the wrapper was chosen to give an uniform temperature distribution across the heated tubes in the cluster.

The axial subdivision of the test section is shown in Fig. 2. The inlet nozzle of  $l_B=12.8$  mm is not included in the figure. The overall length of the test section is  $L=908.8$  mm. This length is made up of the inlet nozzle mentioned above, the first unheated part of  $l_1=281$  mm of smooth copper tube, an unheated rough length of  $l_2=5$  mm, the heated rough part of  $l_3=590$  mm, another unheated rough length of  $l_4=5$  mm and, finally, an unheated smooth part of  $l_5=14$  mm.

The roughness has a trapezoidal shape (Fig.3) with an average height of  $h_R=0.112$  mm. It was cut into the outer surfaces of the stainless steel tubes. The mean volumetric diameter of the tubes is  $D_{V01}=7.86$  mm. The tubes are heated by direct current. Two groups of 6 tubes connected in parallel were connected in series. The tubes of one group (22,42,61,62,120,121, Fig.20) are longer by  $l=92$ mm than the second group (60,82,83,96,97,110). This differential length of copper tube is necessary for the electrical connections of the two groups at different axial levels (Fig.4). Fig.4 also shows the design of the inlet section and the gas flow in the pressure vessel. At the downstream end of the cluster the tubes are electrically connected by a short-circuit ring (Fig.5). The differential elongation between the heater tubes are accommodated by flexible copper strips. Fig.6 shows the top of one heater tube together with the thermocouples.

The wrapper tube (stainless steel No. 1.4550) is made up of two parts. The inner one forms the profile of the wrapper (Fig.7) and fits into an outer tube. Both parts are split for easy dismantling. The inner part is made up of 26 pieces, because of the fabrication process (electro-chemical), which does not allow axial lengths in excess of 200 mm (Fig.8). The shells of the inner part are slotted for the spacer grids.

5 spacer grids are used to fix the heater tubes inside the wrapper. The grids are fabricated by spark erosion. They are 14 mm long and the standoff insulators are made of ceramics to insulate the tubes heated directly (Fig.9). A full view of the cluster is shown in Fig.10 and 11.



## Modifications

The original test section CE1 was modified in three ways for CE2:

- Six heater tubes were replaced since some of the thermocouples had failed during the first series of tests.
- Some thermocouples on the wrapper and at the inlet and outlet were repaired.
- The spacer grid was modified. The first runs with CE1 had shown that the pressure drop at the spacers was very high. It was therefore tried to reduce the pressure drop by beveling the sharp leading edge. However, during the subsequent tests with CE2 the pressure drop at the spacer grids was even higher than with CE1. This was due to burrs at the leading edges which caused a higher blockage of the flow cross section for the CE2 spacer compared with that of CE1 /7/.

The results of the tests with CE1 and CE2 showed that the temperature distribution across the cluster was not uniform. The wall temperatures of the tubes adjacent to the wrapper were clearly higher than in the central part of the cluster. Therefore, a new wrapper was fabricated which had a larger cross section compared with the original one.

The distance between the centers of the tubes of the outer row and the wrapper was changed from  $a=5.784$  mm to  $a=6.03$  mm and the height of the blocking triangle was reduced from  $h_B=2.269$  mm to  $h_B=1.537$  mm. Moreover, the spacer grids were replaced by new ones giving a lower flow blockage in the subchannels near the wrapper. The total blockage was reduced from  $\epsilon=0.34$  to  $\epsilon=0.29$  in the roughened part of the cluster. The spacer grids were also rounded at their leading edges. Fig.12 shows a detail of the spacer grid before rounding of the leading edges (a) and afterwards (b).

In the new wrapper also the positions of the spacer grids and the locations of the pressure taps were changed. Fig.13 shows the axial distribution of the spacer grids and of the pressure taps for CE3. Fig.14 is a photograph of the test section CE3 after operation. This figure clearly shows the effect of the spacer grids on heat transfer. Due to the blockage of the cross section the heat transfer is improved /8/. The detail with one spacer grid (Fig.15) also shows the relative elongation of the heater tubes during operation under power with respect to the spacer grid.

During the runs with the test section CE3 a short-circuit occurred and the test section was damaged in the downstream part (Fig.16 and 17). However, the test section was repaired (CE4) and all tubes were equipped with new thermocouples. The test section CE4 has a roughened heated length of  $L_H=437$  mm which is shorter than for CE1-CE3. The downstream unheated smooth portion was elongated by  $590-437=153$  mm. All other dimensions remained unchanged (Fig.18).

The test sections CE1-CE4 were insulated against heat losses by asbestos tape. The cross section of the insulated test section is shown in Fig.19.

The main data of the test sections used for the measurements are given in Table 1, together with the blockage of the cross section due to the spacer grid. Table 2 displays the modifications of the different test sections.

The complete test section with instrumented tubes was fabricated by KWU, Erlangen.

## 2.2 Instrumentation

Each of the 12 tubes was equipped with 6 thermocouples (NiCr/Ni) of 0.5 mm outer diameter with insulated junctions (thermocouple No. 1-72). The axial distribution measured from the inlet is given in the data tables. An average value for the different test sections is:

CE1-CE3:  $x=624-634-644-824-834-844$  mm  
CE4-CE4/PT:  $x=355-410-479-534-589-644$  mm.

In all tubes the thermocouples were at the same axial levels, however, their circumferential orientation was different. The circumferential orientation is also included in the data tables and is shown in Fig.20 for CE1,CE2,CE4 and CE4/PT, and in Fig.21 for CE3.

The thermocouples were fixed in the tube wall inside holes. The location of the thermocouple junction is on the average at the radius  $r_T=3.64$  for CE1-CE3, and at the radius  $r_T=3.7$  for CE4 and CE4/PT.

Besides the 72 thermocouples inside the tube walls, 12 thermocouples were used to measure the temperatures in the wrapper. The three levels are at the axial distances  $x=430.6, 630.6, 830.6$  mm. At each level four thermocouples were fixed at the circumferential positions: 30,90,210, and 270 deg (Fig.20).

The gas inlet temperature was measured by 3 (CE1) and 5 (CE2-CE4) thermocouples, respectively. The gas outlet temperature was measured by 3 thermocouples. The thermovoltages of all thermocouples were measured against the room temperature, except for one thermocouple at the inlet. The thermovoltage of this thermocouple, which was soldered to another thermocouple, was measured against the ice point. The difference between the readings of the two thermocouples was the reference of the room temperature. Fig.22 is a photograph of the instrumentation and the electrical connections. The voltages of the 92

thermocouples were tape recorded on a data logger. The mass flow rate through the cluster was measured by different devices, i.e., Venturi tubes, orifices and for the experimental runs later than 1.1.1978 by a quarter-circle orifice for low flow. The total range of mass flow rates covered is between  $2 \times 10^{-3}$  and  $1.2 \text{ kg s}^{-1}$ . The pressure drop along the test section was measured by 6 pressure taps in the wrapper. Their axial distribution is given in Fig.2,13 and 18, respectively. Besides these pressures those at the inlet and the outlet of the cluster were recorded. The absolute pressure was measured at the inlet of the cluster.

### 2.3 Range of Measurements

The measurements were performed in the High Temperature Helium Loop with both helium and nitrogen as coolants. The Reynolds numbers covered by the experiments ranged from  $Re=650$  to  $Re=1.8 \times 10^5$ . 112 isothermal and 434 runs with uniform heating were performed. The maximum electrical power was  $Q_{\max}=324 \text{ kW}$ , i.e. a linear rod power of  $q=45.8 \text{ kWm}^{-1}$  or a heat flux of  $q=1.85 \text{ kWm}^{-2}$ . The maximum wall temperature measured was  $1062 \text{ K}$  ( $789^{\circ}\text{C}$ ). Typical data of the different runs are given in Table 3.

In addition to the experiments with uniform power distribution 38 runs were performed with 6 tube heated only (CE4/PT). For this purpose the rods 110,42,62,114,120,97 (Fig.21) were cut off from the power supply. All experimental results are tabulated in the Appendix.

### 3. Results

#### 3.1 Friction Factors

The bulk friction factors of the rod bundle are calculated from the measured pressure drop as

$$\lambda = \frac{\frac{\Delta P}{\Delta L} - \left(\frac{\dot{m}}{F}\right)^2 \left[\frac{1}{\rho_2} - \frac{1}{\rho_1}\right]}{\left(\frac{\dot{m}}{F}\right)^2 \frac{1}{\rho_1 + \rho_2} \frac{1}{D_{hVol}}} \quad (1)$$

with the pressure loss due to expansion taken into account. The friction factors are based in the rough part on the volumetric hydraulic diameter of the cluster

$$D_{hVol} = 7.158 \text{ mm}$$

and the cross section of the cluster based on the volumetric diameter of the rods,

$$F_{Vol} = 796.994 \text{ mm}^2 \text{ (CE3)}$$

The friction factors in the rough part are plotted in Fig.23 versus the Reynolds number /9/ for the test section CE2. The isothermal data are about four times higher than the friction factors of the smooth tube. The results are somewhat lower compared with the friction factors measured in the test section CE1 /10,11/.

For the test section CE3 the friction factors are about 40% lower than those of the test section CE1 and CE2 (Fig.24). Only isothermal

data are shown in Fig.24. The reason for the lower friction factors is mainly the larger flow cross section of the cluster CE3. Also shown in Fig.4 are the calculated friction factors for the unheated smooth part of the rod bundle. The friction factors are rather high compared with experimental data in smooth rod bundles /12/. The reason is that the wrapper tube was not hydraulically smooth /13/, especially the bores and bolts to fix the profiled shell inside the outer part of the wrapper caused the higher pressure losses compared with a smooth surface. This was also clearly shown from the evaluation of the experimental results with the SAGAPO code /5,6/.

The friction factors of the non-isothermal runs are plotted in Fig.25 for helium as a coolant and in Fig.26 for nitrogen as a coolant. As expected the friction factors are lower than those for the isothermal runs.

The friction factors of the rough part of the runs with the test section CE4 are shown in Fig.27 for the helium runs and in Fig.28 for the nitrogen runs. Again, the isothermal friction factors are higher than those of the non-isothermal runs. However, for  $Re < 3000$  the tendency is the reverse (Fig.27), indicating the transition to a hydraulically smooth surface.

It is possible to calculate the transformed friction factors of the rough surface from the bulk friction factors by applying a method developed by Lyall /14/.

For a Reynolds number of  $Re=10^5$  the isothermal friction factor is  $\lambda = 0.059$ . With the ratio of rough to smooth surface in the cluster of

$$\frac{U_R}{U_S} = 1.99$$

we find from Fig.4 of Lyall's paper

$$\lambda_1 = 0.0768.$$

Applying the Maubach's geometry factors /15/ for annuli and assuming an equivalent annulus for the central subchannels of the cluster, we can write

$$\sqrt{\frac{8}{\lambda}} = 2.5 \ln \frac{L}{h_R} + R(h^+) - G \quad (2)$$

to find the roughness parameter  $R(h^+)$ .

With

$$L = \frac{P}{2} \sqrt{\frac{2\sqrt{3}}{\pi}} - \frac{D_{vol}}{2} \quad (3)$$

and  $P = 11.1 \text{ mm}$   
 $D_{vol} = 7.86 \text{ mm}$   
 $\rightarrow L = 1.898 \text{ mm}$

and with  $h_R = 0.112 \text{ mm}$

$$\frac{h_R}{L} = 0.059 .$$

We can write /15/:

$$G = \frac{3.75 + 1.25\gamma}{1+\gamma} \quad (4)$$

with

$$\gamma = \frac{D_{vol/2} + L}{D_{vol/2}} \quad (5)$$

For  $\gamma = 1.4830$

$\rightarrow G = 2.257,$

and, finally,

$$R(h^+) = \sqrt{\frac{8}{\lambda}} + G - 2.5 \ln 19.949 \quad (6)$$

$$R(h^+) = 5.39.$$

From test with a single pin of the cluster Meyer /16/ found a value of  $R(h^+) = 4.85$  which is slightly lower than 5.39. However, for the isothermal runs of /16/ an average value is  $R(h^+) \approx 5.0$  which is in good agreement with the results from the cluster applying the Lyall/Maubach method.

### 3.2 Drag Coefficients of the Spacer

The drag coefficients of the spacer grid in the rough part of the CE3 test section (Fig.29 and 30) are in very good agreement with the Eq.(4) by Jung and Böhner /17/, developed from the measurements in water /7/. However, there seems to be a minor  $T_w/T_B$ -effect on the drag coefficients, because the drag coefficients are decreasing with increasing  $T_w/T_B$ . From the experimental results in the range  $T_w/T_B = 1.3 - 1.48$  the dependence on the  $T_w/T_B$  ratio of the drag coefficient can be expressed as

$$\zeta = \zeta_0 \left( \frac{T_w}{T_B} \right)^{-0.47} \quad (7)$$

Accurate calculation of the friction factors in the smooth part of the rod bundle was impossible due to the small differential pressure between the pressure taps 1 and 2 (Fig.13). Therefore, also the drag coefficient of the spacer grid in the smooth part of the cluster could not be calculated. The same is true for the test section CE4. In this case also the drag coefficients of the spacer in the rough



part cannot be calculated with accuracy, since there is a small portion of smooth surface between the pressure taps 4 and 5 (Fig.18).

#### 4. Conclusions

This experimental investigation on the thermal-hydraulics of a 12 rod bundle resulted in a number of detailed temperature and pressure data in a gas-cooled cluster. By evaluating the results with a computer code, e.g. SAGPO, it is possible to verify the code and/or to improve it. Many runs already have been analyzed showing that SAGAPO is a useful tool to calculate the thermal-hydraulics of gas-cooled clusters in a broad range of Reynolds numbers. Comparisons between experimental and computed results are published for the test sections CE1 /11/, CE3 /5,6,18,19/ and CE4 /19,20/.

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Nomenclature

a	m	distance
D	m	outer tube diameter
$D_h$	m	hydraulic diameter
F	$m^2$	cross section
G	-	geometry parameter
$h_R$	m	height of roughness
$h_B$	m	height of blocking triangle
$h^+$	-	non-dimensional height of roughness
k	$Wm^{-1}s^{-1}$	thermal conductivity
l	m	length
L	m	length
$L_H$	m	heated length
m	$kgs^{-1}$	mass flow rate
P	-	tube pitch
$\Delta p$	$Nm^{-2}$	pressure drop
Q	W	heating power
q	$Wcm^{-1}$	linear rod power
q	$Wcm^{-2}$	heat flux
$R(h^+)$	-	roughness parameter of velocity profile
$r_T$	m	radius of thermocouples location
s	m	thickness of tube walls
T	K	temperature
U	m	wetted perimeter
W	m	tube diameter plus distance between tube and wrapper
Re	-	Reynolds number
$\gamma$	-	ratio of radii
$\epsilon$	-	blockage ratio due to the spacer grid
$\lambda$	-	friction factor
$\zeta$	-	drag coefficient of spacer
$\rho$	$kgm^{-3}$	density

Subscripts

R	rough
S	smooth
1	transformed
vol	volumetric

		CE1/CE2	CE3/CE4
O.D. of smooth rods	(mm)	8.0	
O.D. of rough rods	(mm)	8.0	
volumetric diameter, rough	(mm)	7.86	
tube pitch	(mm)	11.1	
distance from shroud wall to center of external rods	(mm)	5.784	6.03
height of blocking triangle	(mm)	2.269	1.537
base angle of blocking triangle	(deg)	30	
outer diameter of the circular shroud (average)	(mm)	67	

Lengths of axial sections:

smooth unheated (copper)	(mm)	293.8 from bundle entrance	
rough unheated	(mm)	5.0	
rough heated	(mm)	590	437
rough unheated	(mm)	5.0	
smooth unheated (copper)	(mm)	14	167

Roughness: trapezoidal ribs

height	(mm)	0.112	} mean values
width at the tip	(mm)	0.332	
width at the base	(mm)	0.548	
pitch	(mm)	1.214	

Table 1: Main data of the test sections

Spacers:

number of spacers		5	
width of spacer	(mm)	14	
distance to middle of spacers			
from the inlet		CE1/CE2	CE3/CE4
S <sub>1</sub>	(mm)	69.8	
S <sub>2</sub>	(mm)	269.8	
S <sub>3</sub>	(mm)	469.8	
S <sub>4</sub>	(mm)	669.8	703.8
S <sub>5</sub>	(mm)	869.8	899.8

blockage ratio in the spacer region:		CE1/CE2		CE3/CE4	
		smooth	rough	smooth	rough
edge channel without stand-off		0.125	0.122	0.136	0.133
edge channel with stand-off		0.491	0.478	0.453	0.443
wall channel with 1/2 stand-off	}	0.382	0.372	0.148	0.145
wall channel with 1 stand-off				0.366	0.357
central channel		0.33	0.32	0.33	0.32
total bundle		0.348	0.338	0.295	0.287

Material properties:

thermal conductivity		$k = 0.007805 + 1.5823 \cdot 10^{-5} T$
		T (K)
		k (KW m <sup>-1</sup> K <sup>-1</sup> )
thermal expansion	steel	$\beta = 12.89 \cdot 10^{-6} + 0.993 \cdot 10^{-8} T$
		$- 0.488 \cdot 10^{-11} T^2$
		T (K); $\beta$ (K <sup>-1</sup> )
	copper	$\beta = 14.83 \cdot 10^{-6} + 0.667 \cdot 10^{-8} T$

Table 1: Main data of the test sections (Cont.)



	Rods	Heated Length (mm)	Spacer	Blockage of Spacers	Axial Distribution of Spacers	Wrapper	a (mm)	$h_B$ (mm)	Pressure Taps	Thermocouples axial	Thermocouples circumferential
CE1	Fig.20	0.59	original	0.34	Fig.2	original	5.784	2.269	Fig.2	Table	Fig.20
CE2	Fig.20	0.59	with burrs	0.34	Fig.2	original	5.784	2.269	Fig.2	Table	Fig.20
CE3	Fig.21	0.59	new	0.29	Fig.13	new	6.03	1.537	Fig.13	Table	Fig.21
CE4	Fig.21	0.437	new	0.29	Fig.18	new	6.03	1.537	Fig.18	Table	Fig.20
CE4/PT	Fig.21	0.437	new	0.29	Fig.18	new	6.03	1.537	Fig.18	Table	Fig.20

Table 2: Modifications of test section

Test Section	Date	Gas	Number of Runs	Reynolds Number	max. Power (KW)	max. wall temperature (C)
CE1	12.3.1975	He	24	9100- $8.4 \times 10^4$	-	-
	13.3.1975	He	11	8590- $7.1 \times 10^4$	125.2	420
	18.3.1975	He	9	8990- $6.3 \times 10^4$	210.1	528
	19.3.1975	He	11	7540- $6.3 \times 10^4$	238.6	645
	20.3.1975	He	11	7070- $5.9 \times 10^4$	303.6	759
CE2	25.6.1975	He	13	9030- $6.2 \times 10^4$	-	-
	25.6.1975	He	10	8890- $7.9 \times 10^4$	151.1	473
	26.6.1975	He	10	9000- $6.3 \times 10^4$	239.1	631
	27.6.1975	He	11	6980- $6.0 \times 10^4$	324.2	789
CE3	2.12.1975	He	9	$1.0 \times 10^4$ - $8.3 \times 10^4$	164.5	449
	3.12.1975	He	10	9610- $7.6 \times 10^4$	322.6	713
	3.12.1975	He	13	$1.2 \times 10^4$ - $1.0 \times 10^5$	-	-
	9.12.1975	N <sub>2</sub>	9	$2.9 \times 10^4$ - $1.8 \times 10^5$	145.4	693
	27.5.1978	N <sub>2</sub>	15	$3.1 \times 10^4$ - $1.3 \times 10^5$	49.5	402
	28.5.1978	N <sub>2</sub>	15	$2.8 \times 10^4$ - $1.1 \times 10^5$	74.3	576
	29.5.1978	N <sub>2</sub>	15	$2.6 \times 10^4$ - $1.0 \times 10^5$	97.2	714
	30.5.1978	He	24	1280- $1.4 \times 10^4$	35.6	412
CE4	28.2.1979	He	17	9390- $5.2 \times 10^4$	108.9	435
	29.2.1979	He	17	1830- $5.9 \times 10^4$	-	-
	29.2.1979	He	21	5600- $2.9 \times 10^4$	-	-
	30.2.1979	He	21	1540- $1.3 \times 10^4$	31.8	440
	2.3.1979	He	21	1500- $1.3 \times 10^4$	45.0	558
	3.3.1979	He	17	8920- $5.0 \times 10^4$	142.0	527
	4.3.1979	He	21	1400- $1.2 \times 10^4$	55.9	667
	6.3.1979	He	16	9010- $4.1 \times 10^4$	173.0	652
	9.3.1979	N <sub>2</sub>	24	7500- $8.8 \times 10^4$	35.0	427
	10.3.1979	N <sub>2</sub>	24	7120- $8.2 \times 10^4$	46.1	520
	11.3.1979	N <sub>2</sub>	23	6820- $7.4 \times 10^4$	57.6	649
	17.3.1979	N <sub>2</sub>	24	$1.0 \times 10^4$ - $1.1 \times 10^5$	-	-
	15.5.1979	He	18	470-4890	21.2	736
	CE4 PT	6.6.1979	He	21	650-6250	12.6
31.7.1979		He	16	9830- $5.2 \times 10^4$	96.2	679

Table 3: Range of experiments

Date: 13.3.1975 (CE1)

Run Nr.	$\dot{m}$ kgs <sup>-1</sup>	V Volt	I Ampere
1	0.2309	45.95	2724
2	0.1869	41.375	2455
3	0.1528	38.02	2260
4	0.1230	34.575	2057.5
5	0.09873	31.45	1867.5
6	0.07932	28.138	1672.5
7	0.06363	25.365	1512.5
8	0.05185	22.65	1351.5
9	0.04199	20.65	1230
10	0.03446	18.825	1122.5
11	0.02801	17.00	1015

Date: 18.3.1975 (CE1)

1	0.2152	60.825	3455
2	0.1720	54.6	3107.5
3	0.1416	50.075	2850
4	0.1138	44.64	2545
5	0.09176	40.5	2310
6	0.07542	37.5	2130
7	0.04913	30.4	1730
8	0.03917	27.3	1530
9	0.03100	24.49	1395

Date: 19.3.1975 (CE1)

1	0.2151	65.09	3665
2	0.1697	58.335	3290
3	0.1385	53.32	3010
4	0.1112	48.25	2725
5	0.08934	43.975	2481
6	0.07183	40.4	2272.5
7	0.05806	36.25	2045
8	0.04734	32.925	1860
9	0.03812	29.875	1687.5
10	0.03200	27.325	1542.5
11	0.02603	24.41	1380

Table 4: Detailed experimental data

Date: 20.3.1975 (CE1)

Run Nr.	$\dot{m}$ kgs <sup>-1</sup>	V Volt	I Ampere
1	0.2132	74.6	4070
2	0.1735	67.625	3695
3	0.1396	61.56	3368
4	0.1123	55.52	3040.5
5	0.09094	50.935	2786.5
6	0.07394	46.75	2527.5
7	0.05888	41.725	2283.5
8	0.04806	37.882	2073.5
9	0.03899	33.975	1857.5
10	0.03161	30.375	1666
11	0.02543	27.05	1485.5

Date: 25.6.1975 (CE2)

1	0.2068	50.8	2975
2	0.1665	46.175	2707.5
3	0.1363	42.25	2482.5
4	0.1096	38.16	2245
5	0.08788	34.545	2035
6	0.07053	31.35	1847.5
7	0.05611	27.55	1627.5
8	0.04589	25.1	1480
9	0.03669	22.815	1342.5
10	0.02963	20.5	1210

Date: 26.6.1975 (CE2)

1	0.07197	39.25	2225
2	0.05932	35.8	2030
3	0.04864	32.56	1847.5
4	0.03865	29.0	1648
5	0.03108	26.2	1491.5
6	0.09171	44.55	2527.5
7	0.1144	49.475	2805
8	0.1406	54.2	3072.5
9	0.1881	61.25	3443
10	0.2193	65.2	3667.5

Table 4: Detailed experimental data (Cont.)

Date: 27.6.1975 (CE2)

Run Nr.	$\dot{m}$ kgs <sup>-1</sup>	V Volt	I Ampere
1	0.2166	77.225	4198
2	0.1779	70.55	3840
3	0.1449	64.1	3497.5
4	0.1173	58.65	3200
5	0.09393	52.2	2861
6	0.07565	47.35	2596
7	0.06260	43.325	2374
8	0.05001	39.0	2140
9	0.04092	35.4	1942.5
10	0.03298	31.8	1750
11	0.02509	27.55	1519

•Date: 2.12.1975 (CE3)

1	0.2705	52.975	3105
2	0.2086	47.5	2781.5
3	0.1658	42.175	2471
4	0.1331	38.3	2243.5
5	0.1045	34.185	2003
6	0.08364	31.05	1820
7	0.06637	27.18	1597.5
8	0.05288	24.58	1447.5
9	0.03316	19.75	1160

Date: 3.12.1975 (CE3)

1	0.2654	76.8	4201
2	0.2099	70.0	3825
3	0.1670	63.1	3450
4	0.1337	56.7	3105
5	0.1059	50.9	2787
6	0.08464	45.7	2505
7	0.06585	40.95	2242.5
8	0.05357	37.35	2042.5
9	0.04242	32.7	1795.5
10	0.03396	29.3	1610

Table 4: Detailed experimental data (Cont.)

Date: 9.12.1975 (CE3)

Run Nr.	$\dot{m}$ kgs <sup>-1</sup>	V Volt	I Ampere
1	0.5694	51.525	2822.5
2	0.4374	46.085	2525
3	0.3546	41.8	2294
4	0.2769	37.375	2050
5	0.2198	33.82	1857.5
6	0.1746	30.525	1677
7	0.1468	28.4	1560
8	0.1122	24.5	1354.5
9	0.0912	22.65	1250

Date: 27.5.1978 (CE3)

1	0.3367	28.54	1734.2
2	0.2996	27.45	1663.1
3	0.2682	25.91	1577.6
4	0.2341	24.52	1483.3
5	0.2097	23.15	1411.5
6	0.1869	22.20	1351.1
7	0.1690	21.23	1286.8
8	0.1512	20.35	1226.6
9	0.1362	19.27	1163.9
10	0.1223	18.30	1114.8
11	0.1254	18.535	1118.9
12	0.1160	17.899	1082.6
13	0.1053	17.286	1034.7
14	0.09414	16.040	977.9
15	0.08482	15.302	925.1

Date: 28.5.1978 (CE3)

1	0.3183	36.02	2064
2	0.2921	34.72	1988
3	0.2660	33.11	1903
4	0.2330	31.38	1794.8
5	0.2115	30.26	1736.5
6	0.1890	28.48	1629.0
7	0.1690	27.20	1558.1
8	0.1512	25.95	1482.8
9	0.1365	24.56	1409.9
10	0.1223	23.38	1341.2
11	0.1227	23.31	1335.7
12	0.1133	22.55	1292.3
13	0.1040	21.68	1242.1
14	0.09229	20.52	1175.3
15	0.08363	19.64	1125.3

Table 4: Detailed experimental data (Cont.)

Date: 29.5.1978 (CE3)

Run Nr.	$\dot{m}$ kgs <sup>-1</sup>	V Volt	I Ampere
1	0.3158	42.01	2313
2	0.2895	40.50	2226
3	0.2623	38.42	2116
4	0.2322	36.40	2002
5	0.2080	34.82	1916
6	0.1861	33.15	1828
7	0.1678	31.67	1741.9
8	0.1497	30.01	1652.1
9	0.1360	28.53	1575.6
10	0.1218	27.29	1505.1
11	0.1222	27.37	1505.9
12	0.1124	26.27	1447.0
13	0.1030	25.24	1388.9
14	0.09076	23.61	1303.6
15	0.08317	22.80	1256.5

Date: 30.5.1978 (CE3)

1	0.04203	24.20	1471.1
2	0.03891	23.20	1405.5
3	0.03602	23.00	1388.2
4	0.03285	20.88	1270.7
5	0.02924	20.15	1220.2
6	0.02632	19.06	1159.0
7	0.02315	18.161	1094.8
8	0.02114	17.088	1036.2
9	0.01907	16.152	979.6
10	0.01707	15.347	930.1
11	0.01545	14.535	880.8
12	0.01550	14.441	877.9
13	0.01375	13.507	821.6
14	0.01235	12.976	787.3
15	0.01116	12.336	745.8
16	0.009943	11.913	712.6
17	0.008965	11.361	689.7
18	0.007802	10.969	659.9
19	0.007153	10.709	634.2
20	0.006293	10.040	603.1
21	0.005616	9.730	586.3
22	0.004936	9.242	555.7
23	0.004488	8.671	521.1
24	0.003844	8.418	508.4

Table 4: Detailed experimental data (Cont.)

DATUM 28. 2.79				DATUM 29. 2.79			
RUN NR.	M KG/S	U VOLT	I AMPERE	RUN NR.	M KG/S	U VOLT	I AMPERE
1	0.15993	37.540	2900.0	1	0.16125		
2	0.14562	35.740	2767.0	2	0.14342		
3	0.12850	34.180	2640.0	3	0.12550		
4	0.11249	31.750	2460.0	4	0.11055		
5	0.10055	30.450	2354.0	5	0.09951		
6	0.09012	29.470	2271.0	6	0.08950		
7	0.08106	27.920	2148.0	7	0.07748		
8	0.07351	26.940	2071.0	8	0.07242		
9	0.06722	25.800	1985.0	9	0.06687		
10	0.06140	25.040	1919.0	10	0.06105		
11	0.05497	23.650	1818.0	11	0.05438		
12	0.04970	22.530	1727.6	12	0.04911		
13	0.04432	21.450	1647.4	13	0.04387		
14	0.03995	20.390	1569.4	14	0.03931		
15	0.03582	19.310	1481.2	15	0.03536		
16	0.03221	18.379	1419.6	16	0.03191		
17	0.02913	17.562	1351.2	17	0.02876		

DATUM 29. 2.79				DATUM 30. 2.79			
RUN NR.	M KG/S	U VOLT	I AMPERE	RUN NR.	M KG/S	U VOLT	I AMPERE
1	0.04109			1	0.04131	20.280	1569.5
2	0.03755			2	0.03768	19.500	1513.3
3	0.03467			3	0.03484	18.646	1446.4
4	0.03166			4	0.03179	18.004	1390.6
5	0.02825			5	0.02835	17.365	1339.3
6	0.02551			6	0.02563	16.187	1252.7
7	0.02276			7	0.02291	15.636	1207.1
8	0.02045			8	0.02058	14.779	1140.8
9	0.01838			9	0.01857	14.077	1084.9
10	0.01654			10	0.01665	13.294	1026.8
11	0.01502			11	0.01511	12.583	979.3
12	0.01359			12	0.01334	11.668	909.6
13	0.01201			13	0.01192	11.061	856.7
14	0.01076			14	0.01070	10.468	814.3
15	0.00968			15	0.00955	10.227	793.3
16	0.00868			16	0.00859	9.553	751.3
17	0.00788			17	0.00777	9.086	713.3
18	0.00700			18	0.00693	9.046	714.3
19	0.00612			19	0.00612	8.836	680.1
20	0.00545			20	0.00545	8.569	663.5
21	0.00477			21	0.00475	8.225	633.2



DATUM 2. 3.79				DATUM 3. 3.79			
RUN NR.	M KG/S	U VOLT	I AMPERE	RUN NR.	M KG/S	U VOLT	I AMPERE
1	0.04117	24.530	1833.0	1	0.15954	43.690	3250.0
2	0.03755	23.650	1755.3	2	0.14274	41.470	3082.0
3	0.03485	22.680	1690.0	3	0.12612	39.460	2934.0
4	0.03176	21.720	1615.8	4	0.11130	37.450	2780.0
5	0.02823	20.510	1533.1	5	0.10018	35.550	2638.0
6	0.02550	19.690	1464.8	6	0.08972	33.940	2516.0
7	0.02273	18.877	1405.4	7	0.08071	32.300	2398.0
8	0.02034	17.430	1302.2	8	0.07333	31.090	2303.0
9	0.01827	16.698	1247.7	9	0.06717	30.120	2231.0
10	0.01656	15.820	1177.9	10	0.06136	28.800	2137.0
11	0.01496	14.790	1106.1	11	0.05469	27.230	2013.0
12	0.01334	13.711	1028.8	12	0.04963	25.990	1915.0
13	0.01193	13.111	985.1	13	0.04424	24.510	1816.0
14	0.01073	12.553	937.5	14	0.03948	23.430	1733.1
15	0.00965	11.950	893.6	15	0.03571	22.110	1639.3
16	0.00866	11.734	876.9	16	0.03207	21.260	1573.0
17	0.00788	11.381	848.6	17	0.02896	20.010	1483.9
18	0.00691	11.021	821.2				
19	0.00614	10.693	793.5				
20	0.00545	10.240	767.0				
21	0.00480	9.726	730.7				

DATUM 4. 3.79				DATUM 6. 3.79			
RUN NR.	M KG/S	U VOLT	I AMPERE	RUN NR.	M KG/S	U VOLT	I AMPERE
1	0.04132	27.910	2002.0	1	0.02942	24.560	1765.3
2	0.03757	26.510	1900.0	2	0.03241	25.600	1831.0
3	0.03488	25.690	1842.0	3	0.03609	26.910	1929.0
4	0.03181	24.490	1755.7	4	0.04014	28.200	2016.0
5	0.02831	23.390	1673.5	5	0.04477	29.400	2109.0
6	0.02563	22.290	1588.5	6	0.05029	31.000	2223.0
7	0.02290	21.100	1506.9	7	0.05530	32.390	2312.0
8	0.02064	19.910	1431.9	8	0.06193	34.360	2451.0
9	0.01844	18.766	1344.1	9	0.06797	35.680	2546.0
10	0.01653	17.491	1260.8	10	0.07414	36.790	2620.0
11	0.01502	16.666	1194.5	11	0.08170	38.640	2747.0
12	0.01336	15.475	1121.3	12	0.09141	40.980	2907.0
13	0.01192	15.026	1080.1	13	0.10204	42.840	3041.0
14	0.01077	14.271	1030.4	14	0.11331	45.000	3201.0
15	0.00966	13.951	1001.9	15	0.12700	47.120	3350.0
16	0.00869	13.600	979.2	16	0.14019	49.370	3504.0
17	0.00788	13.079	938.4				
18	0.00698	12.886	923.7				
19	0.00616	12.354	883.7				
20	0.00548	11.897	851.5				
21	0.00483	11.430	816.8				

DATUM 9. 3.79				DATUM 10. 3.79			
RUN NR.	M KG/S	U VOLT	I AMPERE	RUN NR.	M KG/S	U VOLT	I AMPERE
1	0.24263	21.320	1653.1	1	0.23459	24.860	1856.0
2	0.21449	20.160	1566.1	2	0.21051	23.530	1762.0
3	0.18913	18.808	1462.7	3	0.19003	22.470	1675.3
4	0.16901	18.280	1409.7	4	0.17002	21.680	1616.3
5	0.15143	17.466	1346.8	5	0.15274	20.470	1535.4
6	0.13583	16.636	1293.7	6	0.13714	19.460	1453.5
7	0.12228	15.935	1234.9	7	0.12352	18.745	1403.8
8	0.11095	15.224	1188.2	8	0.11179	17.926	1334.8
9	0.10214	15.000	1156.3	9	0.10265	17.385	1302.3
10	0.09324	14.277	1103.6	10	0.09400	16.700	1243.5
11	0.08318	13.579	1052.3	11	0.08373	15.841	1177.6
12	0.07528	12.892	995.5	12	0.07560	14.731	1099.1
13	0.06708	12.253	947.4	13	0.06748	14.192	1056.4
14	0.06044	11.701	905.8	14	0.06080	13.578	1010.7
15	0.05406	11.273	860.9	15	0.05452	13.094	963.4
16	0.04872	10.685	824.7	16	0.04906	12.242	909.3
17	0.04403	10.125	783.0	17	0.04439	11.648	867.0
18	0.03963	9.528	744.3	18	0.03977	11.160	831.7
19	0.03507	9.159	702.5	19	0.03552	10.520	787.1
20	0.03154	8.589	666.4	20	0.03177	10.056	748.5
21	0.02842	7.880	613.0	21	0.02838	9.166	685.9
22	0.02570	8.045	618.1	22	0.02583	9.003	670.9
23	0.02309	7.519	584.7	23	0.02337	8.570	651.2
24	0.02054	7.170	550.8	24	0.02049	8.082	604.8

DATUM 11. 3.79				DATUM 17. 3.79			
RUN NR.	M KG/S	U VOLT	I AMPERE	RUN NR.	M KG/S	U VOLT	I AMPERE
1	0.22389	28.380	2029.0	1	0.26070		
2	0.19882	26.780	1914.0	2	0.23668		
3	0.17698	25.520	1824.0	3	0.21061		
4	0.15712	24.190	1724.3	4	0.18976		
5	0.13964	22.960	1637.7	5	0.16936		
6	0.12440	21.730	1560.5	6	0.15160		
7	0.11255	20.870	1485.2	7	0.13709		
8	0.10383	20.290	1455.8	8	0.12219		
9	0.09487	19.490	1391.6	9	0.10674		
10	0.08463	18.356	1317.7	10	0.10184		
11	0.07656	17.632	1255.8	11	0.09280		
12	0.06841	16.589	1182.3	12	0.08303		
13	0.06146	15.944	1131.9	13	0.07488		
14	0.05487	15.101	1071.8	14	0.06709		
15	0.04964	14.359	1023.4	15	0.06041		
16	0.04495	13.853	980.4	16	0.05410		
17	0.03987	12.843	919.8	17	0.04875		
18	0.03545	12.295	876.4	18	0.04419		
19	0.03182	11.425	816.3	19	0.03934		
20	0.02882	11.052	784.1	20	0.03503		
21	0.02586	10.366	745.1	21	0.03149		
22	0.02346	9.950	708.8	22	0.02805		
23	0.02072	9.352	675.4	23	0.02546		
				24	0.02309		

DATUM 15. 5.79				DATUM 6. 6.79			
RUN NR.	M KG/S	U VOLT	I AMPERE	RUN NR.	M KG/S	U VOLT	I AMPERE
1	0.01541	17.016	1248.3	1	0.01835	18.670	673.3
2	0.01457	16.464	1209.5	2	0.01678	17.578	638.2
3	0.01288	15.526	1133.5	3	0.01549	16.905	612.1
4	0.01135	14.824	1087.9	4	0.01406	16.757	604.3
5	0.01013	14.358	1039.8	5	0.01252	15.522	564.4
6	0.00912	13.950	1009.6	6	0.01129	14.894	540.4
7	0.00821	13.571	979.0	7	0.01010	14.421	522.6
8	0.00741	13.103	963.4	8	0.00908	14.110	510.8
9	0.00669	12.946	942.1	9	0.00814	13.963	499.4
10	0.00590	12.381	900.1	10	0.00730	13.612	485.5
11	0.00515	11.793	848.6	11	0.00664	12.972	466.1
12	0.00446	11.481	830.3	12	0.00582	12.762	459.2
13	0.00388	10.871	782.9	13	0.00516	12.293	439.7
14	0.00336	10.462	762.5	14	0.00457	11.782	423.7
15	0.00287	10.083	730.0	15	0.00399	11.489	410.0
16	0.00235	9.555	688.9	16	0.00360	11.082	395.9
17	0.00157	7.959	578.5	17	0.00319	10.515	377.7
18	0.00161	8.527	453.3	18	0.00278	10.313	368.0
				19	0.00248	10.011	358.0
				20	0.00219	9.681	346.0
				21	0.00197	9.344	334.7

DATUM 31. 7.79			
RUN NR.	M KG/S	U VOLT	I AMPERE
1	0.15332	51.790	1857.0
2	0.13932	49.950	1788.0
3	0.12589	47.950	1712.5
4	0.11273	45.110	1615.5
5	0.10150	43.470	1552.6
6	0.09086	41.170	1472.9
7	0.08174	38.920	1394.3
8	0.07401	37.660	1345.1
9	0.06812	35.410	1273.9
10	0.06201	33.990	1222.5
11	0.05545	32.590	1169.1
12	0.05006	30.940	1110.0
13	0.04474	29.410	1054.2
14	0.03601	26.880	960.3
15	0.03258	25.430	910.7
16	0.02950	24.320	869.2

Explanation of tabulated data

DATUM: Date

VERSUCH NR.: Run Nr.

DURCHSATZ (KG/S): Mass flow rate ( $\text{kgs}^{-1}$ )

EL. ENERGIE (KW): Electrical power (kW)

WAERMEENERGIE (KW): Thermal power (kW)

WAERMEBILANZ (O/O): Heat balance (%)

REYNOLDSZAHL E-04: Reynolds number multiplied by  $10^{-4}$

DRUCKVERLUST

( $1.E+01 \text{ N/M}^{**2}$ ): Pressure drop ( $\text{Nm}^{-2}=\text{Pa}$ ) divided by 10

GES. X = 895.6 (MM): between inlet and outlet of the cluster

BIS X = ... (MM): between inlet and the axial position of  
the pressure tap

EINTR. DRUCK (BAR): Absolute pressure at the inlet (bar)

EINTR. TEMP.GRADC: Gas temperature at the inlet (deg C)

TE NR: Number of thermocouple

TE NR: 1-72 thermocouples in the tubes

TE NR: 73-75 gas inlet temperature

TE NR: 76-78 gas outlet temperature

TE NR: 79-90 thermocouple in the wrapper

TE NR: 91-92 gas inlet temperature

R NR.: Rod number

AX POS (MM): Axial position of the thermocouples, measured from  
the inlet

RAD POS (GRD): Circumferential position of the thermocouples, as  
shown in Fig.20 and 21, respectively

T GRAD C: Temperatures in deg C.

Comments:

- Some of the thermocouples are defect, this can be noticed from the data. The temperatures are also given from some of the isothermal runs, this gives some information on the accuracy of the thermocouple readings
- The electrical power is calculated as

$$Q_{el} = U \cdot I$$

with U and I from Table 4.

- The thermal power is calculated by

$$Q_g = \dot{m} (c_p T_A - c_p T_E)$$

with the gas outlet temperature

$$T_A = T_{76} \quad (\text{CE1-CE3})$$

$$T_A = \frac{1}{3} (T_{76} + T_{77} + T_{78}) \quad (\text{CE4})$$

and the gas inlet temperature

$$T_E = \frac{1}{3} (T_{73} + T_{74} + T_{75})$$

- The heat balance is calculated as

$$\text{WB} = \frac{Q_g - Q_{el}}{Q_{el}} \cdot 100$$

A bad heat balance does not necessarily mean high heat losses, since there was no mixing chamber at the outlet and sometimes only one thermocouple was working at the outlet, therefore, the gas outlet temperature is rather uncertain.

- The Reynolds number is calculated as

$$\text{Re} = \frac{4 \dot{m}}{U \cdot \mu}$$

The viscosity is calculated for the absolute pressure at the inlet of the cluster and an average temperature between inlet and outlet

$$T_m = \frac{1}{2} (T_E + T_A).$$

DATUM 12.03.1975

VERSUCH NR.	81	82	83	84	85	86	87	88	89	90	91	92
DURCHSATZ (KG/S)	0.2460	0.2209	0.1977	0.1772	0.1819	0.1580	0.1424	0.1275	0.1142	0.1034	0.0930	0.0834
EL. ENERGIE (KW)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
REYNOLDSZAHL*E-04	8.399	7.521	6.721	5.999	6.158	5.339	4.818	4.320	3.871	3.508	3.159	2.837
DRUCKVERLUST (1.E+01 N/M**2)												
GES.X= 896.9(MM)	0.	0.	0.	0.	0.	7659.	6254.	5095.	4079.	3370.	2766.	2251.
BIS X= 112.6(MM)	3073.	2832.	2277.	1857.	1980.	1513.	1238.	1008.	810.	672.	569.	462.
BIS X= 244.6(MM)	3074.	3072.	2670.	2004.	2321.	1783.	1405.	1192.	959.	798.	657.	553.
BIS X= 382.6(MM)	5591.	5145.	4334.	3551.	3781.	2899.	2367.	1928.	1554.	1290.	1066.	867.
BIS X= 517.6(MM)	8811.	7816.	6482.	5284.	5621.	4312.	3512.	2872.	2302.	1913.	1574.	1283.
BIS X= 672.6(MM)	12459.	10860.	8944.	7282.	7776.	5901.	4818.	3931.	3147.	2611.	2145.	1741.
BIS X= 797.6(MM)	13788.	11957.	9836.	7990.	8515.	6467.	5266.	4298.	3440.	2851.	2338.	1898.
EINTR.DRUCK (BAR)	39.99	40.00	40.13	40.21	40.21	39.97	40.21	39.83	39.83	39.81	39.75	39.68
EINTR.TEMP. GRADC	177.0	179.0	180.0	183.0	183.0	184.0	183.0	182.0	182.0	181.5	180.5	179.3

VERSUCH NR.	93	94	95	96	97	98	99	100	101	102	103	104
DURCHSATZ (KG/S)	0.0754	0.0760	0.0679	0.0610	0.0554	0.0497	0.0447	0.0399	0.0363	0.0329	0.0295	0.0261
EL. ENERGIE (KW)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
REYNOLDSZAHL*E-04	2.570	2.610	2.332	2.090	1.904	1.707	1.535	1.375	1.252	1.137	1.024	0.910
DRUCKVERLUST (1.E+01 N/M**2)												
GES.X= 896.9(MM)	1843.	1862.	1494.	1214.	1002.	810.	651.	524.	434.	352.	280.	215.
BIS X= 112.6(MM)	378.	382.	304.	250.	207.	168.	134.	108.	90.	74.	59.	45.
BIS X= 244.6(MM)	451.	457.	365.	300.	249.	203.	164.	132.	111.	91.	74.	57.
BIS X= 382.6(MM)	711.	720.	576.	476.	397.	323.	261.	212.	179.	147.	120.	93.
BIS X= 517.6(MM)	1047.	1059.	846.	697.	579.	471.	381.	308.	257.	211.	170.	134.
BIS X= 672.6(MM)	1425.	1441.	1155.	951.	791.	646.	521.	420.	353.	290.	234.	182.
BIS X= 797.6(MM)	1550.	1568.	1256.	1033.	858.	699.	562.	455.	381.	312.	250.	195.
EINTR.DRUCK (BAR)	39.62	39.54	39.49	39.49	39.48	39.35	39.35	39.28	39.20	39.19	39.10	39.10
EINTR.TEMP. GRADC	178.0	173.0	173.0	174.0	173.0	173.0	173.0	171.5	170.0	169.0	166.5	164.0



DATUM		18.03.1975									
VERSUCH NR.	21	22	23	24	25	26	27	28	29		
DURCHSATZ (KG/S)	0.2152	0.1720	0.1416	0.1138	0.0918	0.0754	0.0491	0.0392	0.0310		
EL. ENERGIE (KW)	210.1	169.7	142.7	113.6	93.6	79.9	52.6	41.8	34.2		
WAERMEENERGIE(KW)	205.6	165.3	139.7	111.0	89.9	77.2	48.7	39.1	30.5		
WAERMEBILANZ(0/0)	-2.2	-2.6	-2.1	-2.3	-3.9	-3.4	-7.5	-6.3	-10.8		
REYNOLDSZAHL#E-04	6.312	5.054	4.150	3.334	2.673	2.186	1.424	1.135	0.899		
DRUCKVERLUST (1.E+01 N/M**2)											
GES.X= 896.9(MM)	0.	0.	0.	0.	3798.	2593.	1174.	767.	506.		
BIS X= 112.6(MM)	2909.	1949.	1319.	913.	633.	449.	210.	137.	92.		
BIS X= 244.6(MM)	3061.	2296.	1519.	1089.	751.	536.	250.	167.	112.		
BIS X= 382.6(MM)	5403.	3845.	2605.	1808.	1248.	863.	402.	266.	181.		
BIS X= 517.6(MM)	8704.	6024.	4073.	2809.	1930.	1328.	611.	405.	269.		
BIS X= 672.6(MM)	12799.	8734.	5907.	4052.	2787.	1908.	867.	577.	384.		
BIS X= 797.6(MM)	14444.	9774.	6577.	4507.	3087.	2106.	951.	631.	419.		
EINTR.DRUCK (BAR)	40.50	39.91	39.62	38.10	37.80	37.80	37.46	37.04	35.99		

TE NR.	R NR.	AX POS (MM)	RAD POS (GRD)	T GRAD C
1	83	845.9	270	468.9
2	83	835.1	270	471.6
3	83	824.3	270	468.4
4	84	645.9	270	439.4
5	83	635.1	270	440.2
6	83	624.3	270	437.9
7	96	835.3	270	453.1
8	96	846.1	270	471.1
9	96	824.5	270	473.7
10	96	646.1	270	440.5
12	96	624.5	270	432.5
14	121	835.4	30	502.2
15	121	824.6	30	502.0
16	121	646.2	30	463.9
17	121	635.4	30	460.4
18	121	624.6	30	464.7
19	22	846.1	90	476.8
20	22	835.3	90	475.5
21	22	824.5	90	472.2
22	22	646.1	90	447.1
23	22	635.3	90	445.3
24	22	624.5	90	445.4
25	61	846.1	150	496.2
27	61	824.5	150	495.5
28	61	646.1	150	466.3
29	61	635.3	150	468.9
30	61	624.5	150	460.7
31	110	845.7	30	502.2
32	110	834.9	30	502.0
33	110	824.1	30	504.8
34	110	645.7	30	471.6
35	110	634.9	30	473.7
36	110	624.1	30	469.3
37	42	846.3	150	481.4
38	42	835.5	150	480.0
39	42	824.7	150	480.0
40	42	646.3	150	444.1
41	42	635.5	150	445.4
42	42	624.7	150	442.7
43	62	846.1	30	483.0
44	62	835.3	30	484.7
45	62	824.5	30	485.6
46	62	646.1	30	446.9
47	62	635.3	30	448.0
48	62	624.5	30	450.0
49	82	846.1	150	501.8
50	82	835.3	150	507.9
51	82	824.5	150	502.2
52	82	646.1	150	469.3
53	82	635.3	150	466.5
54	82	624.5	150	467.9
55	60	846.3	330	492.9
56	60	835.5	330	494.8
57	60	824.7	330	493.1
58	60	646.3	330	459.4
59	60	635.5	330	458.3
60	60	624.7	330	456.5
61	120	846.2	90	478.6
62	120	835.4	90	478.4
63	120	824.6	90	480.0
64	120	646.2	90	447.4
65	120	635.4	90	448.2
66	120	624.6	90	446.6
67	97	846.3	210	492.9
68	97	835.5	210	496.6
69	97	824.7	210	494.1
70	97	646.3	210	464.6
71	97	635.5	210	470.2
72	97	624.7	210	466.3
73	0	0.0	0	201.6
77	0	896.9	0	385.4
79	0	430.6	270	326.4
80	0	430.6	210	320.0
84	0	630.6	210	362.1
90	0	830.6	90	318.3





DATUM		20.03.1975										
VERSUCH NR.	61	62	63	64	65	66	67	68	69	70	71	
DURCHSATZ (KG/S)	0.2132	0.1735	0.1396	0.1123	0.0909	0.0739	0.0589	0.0481	0.0390	0.0316	0.0254	
EL. ENERGIE (KW)	303.6	249.9	207.3	168.8	141.9	116.6	95.3	78.6	63.1	50.6	40.2	
WAERMEENERGIE(KW)	300.1	249.6	201.6	162.3	132.4	107.2	86.1	70.3	57.4	45.1	35.2	
WAERMEBILANZ(O/O)	-1.2	-0.1	-2.8	-3.9	-6.7	-8.1	-9.7	-10.5	-9.0	-10.9	-12.3	
REYNOLDSZAHL*E-04	5.949	4.840	3.888	3.120	2.518	2.042	1.625	1.326	1.079	0.877	0.707	
DRUCKVERLUST (1.E+01 N/MM*2)												
GES.X=	896.9(MM)	0.	0.	0.	6866.	4809.	3303.	2288.	1607.	1071.	726.	479.
BIS X=	112.6(MM)	3066.	2218.	1528.	1048.	730.	540.	371.	263.	179.	123.	81.
BIS X=	244.6(MM)	3068.	2623.	1809.	1244.	880.	624.	450.	316.	217.	150.	101.
BIS X=	382.6(MM)	5705.	4425.	3063.	2094.	1481.	1048.	722.	511.	351.	241.	163.
BIS X=	517.6(MM)	9075.	7072.	4869.	3327.	2330.	1627.	1124.	789.	537.	370.	245.
BIS X=	672.6(MM)	14090.	10473.	7227.	4929.	3447.	2399.	1654.	1167.	786.	543.	357.
BIS X=	797.6(MM)	16149.	11852.	8129.	5523.	3847.	2666.	1831.	1276.	865.	592.	391.
EINTR.DRUCK (BAR)	36.19	35.79	35.11	34.47	33.83	33.29	31.54	30.99	28.34	28.19	28.05	

TE NR.	R NR.	AX POS (MM)	RAD POS (GRD)	T GRAD C
1	83	845.9	270	598.8
2	83	835.1	270	607.3
3	83	824.3	270	620.0
4	84	845.9	270	551.7
5	83	835.1	270	553.5
6	83	824.3	270	546.7
8	96	846.1	270	633.2
9	96	824.5	270	637.2
10	96	846.1	270	550.3
12	96	824.5	270	535.5
14	121	835.4	30	717.2
15	121	824.6	30	719.3
16	121	846.2	30	606.1
17	121	835.4	30	603.8
18	121	824.6	30	612.7
19	22	846.1	90	637.6
20	22	835.3	90	641.4
21	22	824.5	90	627.8
22	22	846.1	90	557.5
23	22	835.3	90	561.5
24	22	824.5	90	558.0
25	61	846.1	150	657.9
27	61	824.5	150	681.1
28	61	846.1	150	612.7
29	61	835.3	150	620.0
30	61	824.5	150	601.6
31	110	845.7	30	711.9
32	110	834.9	30	708.3
33	110	824.1	30	729.3
34	110	845.7	30	628.7
35	110	834.9	30	620.2
36	110	824.1	30	616.7
37	42	846.3	150	627.5
38	42	835.5	150	652.4
39	42	824.7	150	653.6
40	42	846.3	150	554.2
41	42	835.5	150	557.5
42	42	824.7	150	549.1
43	62	846.1	30	646.8
44	62	835.3	30	662.2
45	62	824.5	30	664.8
46	62	846.1	30	562.2
47	62	835.3	30	570.1
48	62	824.5	30	575.8
49	82	846.1	150	689.9
50	82	835.3	150	732.7
52	82	846.1	150	597.2
53	82	835.3	150	611.3
54	82	824.5	150	611.3
56	60	835.5	330	669.1
57	60	824.7	330	680.6
58	60	846.3	330	568.1
59	60	835.5	330	572.7
60	60	824.7	330	567.1
62	120	835.4	90	631.3
63	120	824.6	90	636.7
64	120	846.2	90	561.7
65	120	835.4	90	563.4
66	120	824.6	90	561.5
67	97	846.3	210	672.2
68	97	835.5	210	686.6
69	97	824.7	210	681.1
70	97	846.3	210	600.5
71	97	835.5	210	611.1
72	97	824.7	210	588.5
75	0	0.0	0	202.4
77	0	896.9	0	473.2
79	0	430.6	270	249.3
80	0	430.6	210	249.3
84	0	630.8	210	341.0
90	0	830.6	90	456.8

DATUM	25.06.1975												
VERSUCH NR.	61	62	63	64	65	66	67	68	69	70	71	72	31
DUROCHSATZ (KG/S)	0.2331	0.1881	0.1746	0.1350	0.1126	0.0908	0.0735	0.0616	0.0481	0.0392	0.0321	0.0253	0.2355
EL. ENERGIE (KWh)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
REYNOLDSZAHL *E-04	7.797	6.339	5.900	4.711	3.833	3.099	2.521	2.131	1.672	1.368	1.124	0.889	7.872
DRUCKVERLUST (1.E+5) N/M**2)													
GES.X= 896.9(MM)	0.	0.	10057.	6518.	4318.	2864.	1924.	1333.	815.	544.	370.	224.	0.
BIS X= 112.6(MM)	3069.	2347.	2011.	1305.	862.	596.	398.	277.	168.	113.	77.	47.	3049.
BIS X= 244.6(MM)	3074.	2765.	2380.	1545.	1035.	691.	477.	328.	207.	136.	94.	60.	3051.
BIS X= 382.6(MM)	5569.	4430.	3915.	2471.	1651.	1115.	739.	519.	321.	216.	148.	93.	5607.
BIS X= 517.6(MM)	8756.	6603.	5684.	3665.	2445.	1622.	1095.	745.	473.	308.	214.	130.	8882.
BIS X= 672.6(MM)	12420.	9086.	7789.	5011.	3330.	2211.	1486.	1024.	629.	421.	288.	178.	12668.
BIS X= 797.6(MM)	13750.	9938.	8531.	5478.	3640.	2399.	1624.	1095.	694.	453.	315.	190.	14097.
EINTR.DRUCK (BAR)	38.65	38.41	38.22	38.07	37.97	37.88	37.84	37.82	37.93	38.14	38.32	38.37	37.07
EINTR.TEMP. GRAD C	191.3	189.3	184.3	182.0	179.3	177.0	174.0	166.0	165.5	162.0	159.3	157.0	191.8

VERSUCH NR.	1	2	3	4	5	6	7	8	9	10
CURCHSATZ (KG/S)	0.2068	0.1665	0.1363	0.1096	0.0879	0.0705	0.0561	0.0459	0.0367	0.0296
EL. ENERGIE (KW)	151.1	125.0	104.9	95.7	70.3	57.9	44.8	37.1	30.6	24.8
WÄRMEENERGIE (KW)	156.8	127.5	107.6	88.4	71.3	56.9	45.0	36.8	29.9	24.2
WÄRMEBILANZ (°/°)	3.7	2.6	2.6	3.2	1.4	-1.7	0.3	-0.8	-2.2	-2.5
REYNOLDSZAHLE-04	6.234	5.124	4.129	3.319	2.657	2.131	1.706	1.394	1.115	0.903
CRUCKVERLUST (1.0 C°) N/MM**2)										
FES. X = 056.9 (MM)	0.	0.	8419.	5624.	3734.	2576.	1664.	1142.	739.	494.
EIS X = 112.6 (MM)	3°13.	2115.	144.	967.	647.	469.	298.	206.	133.	89.
EIS X = 244.6 (MM)	3°65.	2503.	1711.	1152.	774.	551.	361.	299.	164.	111.
EIS X = 382.6 (MM)	5451.	4107.	2877.	1884.	1255.	880.	572.	357.	257.	175.
EIS X = 517.6 (MM)	8759.	6345.	4321.	2808.	1918.	1327.	833.	499.	387.	257.
EIS X = 672.6 (MM)	12851.	9556.	6174.	4113.	2727.	1881.	1231.	849.	555.	372.
EIS X = 757.6 (MM)	14493.	10182.	6859.	4586.	3046.	2078.	1358.	0.	600.	402.
EINTR. CRUCK (BAR)	34.81	34.23	33.73	33.49	33.15	32.41	32.02	31.75	31.58	31.58

TE NR.	H NR.	AX FOS (MP)	RAC POS (GRD)	T POS (GRAD C)
1	83	645.9	27°	426.6
2	83	635.1	27°	432.7
3	83	624.2	27°	434.2
4	84	645.5	27°	388.8
5	83	625.1	27°	388.1
6	83	624.3	27°	364.5
7	96	635.2	27°	439.5
8	96	646.1	27°	439.7
9	96	624.5	27°	439.7
10	96	646.1	27°	368.5
11	96	635.3	27°	368.5
12	96	624.5	27°	362.2
13	121	646.2	30°	459.2
14	121	635.4	30°	464.5
15	121	624.6	30°	464.5
16	121	646.2	30°	413.1
17	121	635.4	30°	411.6
18	121	624.6	30°	411.0
19	22	646.1	90°	439.7
20	22	635.3	90°	438.1
21	22	624.5	90°	432.2
22	22	646.1	90°	399.0
23	22	635.3	90°	397.7
24	22	624.5	90°	389.3
25	61	646.1	15°	471.2
26	61	635.3	15°	476.1
27	61	624.5	15°	473.6
28	61	646.1	15°	421.8
29	61	635.3	15°	418.9
30	61	624.5	15°	417.4
31	110	646.1	30°	464.7
32	110	635.3	30°	462.6
33	110	624.5	30°	464.1
34	110	646.1	30°	429.2
35	110	635.3	30°	428.2
36	110	624.5	30°	422.7
37	42	646.3	15°	446.0
38	42	635.5	15°	444.7
39	42	624.7	15°	443.8
40	42	646.3	15°	388.8
41	42	635.5	15°	389.0
42	42	624.7	15°	383.5
43	62	646.1	30°	446.1
44	62	635.3	30°	447.9
45	62	624.5	30°	447.6
46	62	646.1	30°	353.4
47	62	635.3	30°	359.7
48	62	624.5	30°	359.7
49	82	646.1	15°	471.7
50	82	635.3	15°	472.9
51	82	624.5	15°	468.1
52	82	646.1	15°	408.5
53	82	635.3	15°	418.1
54	82	624.5	15°	413.4
55	60	646.3	30°	415.9
56	60	635.5	30°	415.2
57	60	624.7	30°	468.7
58	60	646.3	30°	418.4
59	60	635.5	30°	415.5
60	60	624.7	30°	415.8
61	120	646.2	90°	441.7
62	120	635.4	90°	435.7
63	120	624.6	90°	426.4
64	120	646.2	90°	388.7
65	120	635.4	90°	386.4
66	120	624.6	90°	384.3
67	97	646.2	21°	457.7
68	97	635.5	21°	461.5
69	97	624.7	21°	455.8
70	97	646.2	21°	410.1
71	97	635.5	21°	413.8
72	97	624.7	21°	408.1
73	0	0.0	0	156.6
74	0	0.0	0	199.1
75	0	0.0	0	157.1
76	0	856.9	0	349.4
77	0	856.9	0	342.9
78	0	856.9	0	347.0
79	0	430.6	27°	225.0
80	0	430.6	21°	222.3
81	0	430.6	90°	224.1
82	0	430.6	30°	221.1
83	0	630.6	27°	267.9
84	0	630.6	21°	272.9
85	0	630.6	30°	266.9
86	0	630.6	90°	278.2
87	0	630.6	21°	325.1
88	0	630.6	27°	319.9
89	0	630.6	30°	314.9
90	0	630.6	90°	333.8

DATUM	26.06.1975									
VERSUCH NR.	21	22	23	24	25	26	27	28	29	30
DUCHSATZ [KG/S]	0,0720	0,0593	0,0486	0,0386	0,0311	0,0917	0,1144	0,1406	0,1881	0,2193
EL. ENERGIE [KW]	87,3	72,7	63,2	47,8	39,1	112,6	138,8	166,5	210,9	239,1
WAERMEENERGIE [KW]	83,6	68,5	56,3	44,5	35,9	111,1	136,4	167,1	210,6	235,8
WAERMEILANZ [10/0]	-4,3	-5,8	-6,4	-7,0	-8,2	-1,3	-1,7	0,3	-0,1	-1,4
REYNOLDSZAHL *E-04	2,086	1,719	1,408	1,120	0,900	2,688	3,355	4,124	5,408	6,327
DRUCKVERLUST (1.E+C1 N/M**2)										
GES.X= 896,9(MM)	2846.	1988.	1386.	871.	588.	4262.	6541.	9341.	0.	0.
BIS X= 112,6(MM)	481.	336.	234.	150.	102.	682.	1026.	1469.	2369.	3007.
BIS X= 244,6(MM)	581.	407.	286.	185.	127.	818.	1219.	1756.	2786.	3043.
BIS X= 382,6(MM)	922.	646.	453.	294.	198.	1337.	2016.	2899.	4612.	5487.
BIS X= 517,6(MM)	1425.	990.	690.	445.	300.	2082.	3143.	4576.	7244.	8884.
BIS X= 672,6(MM)	2058.	1434.	1003.	648.	436.	3041.	4604.	6690.	10588.	13346.
BIS X= 797,6(MM)	2287.	1589.	1105.	709.	481.	3400.	5164.	7532.	11949.	15201.
EINTR.DRUCK [BAR]	32,41	32,07	31,77	31,48	31,19	32,17	32,41	32,85	37,95	38,25

TE NR.	R NR.	AX POS (MM)	RAD POS (MM)	T (GRD)GRAD C
1	83	845,9	270	536,5
2	83	835,1	270	540,9
3	83	824,3	270	542,1
4	84	645,9	270	469,2
5	83	635,1	270	471,4
6	83	624,3	270	465,6
7	96	835,3	270	529,2
8	96	824,5	270	544,4
9	96	813,7	270	546,6
10	96	802,9	270	548,8
11	96	792,1	270	551,0
12	96	781,3	270	553,2
13	121	846,2	30	577,0
14	121	835,4	30	595,3
15	121	824,6	30	596,5
16	121	813,8	30	598,8
17	121	803,0	30	599,0
18	121	792,2	30	599,2
19	22	846,1	90	535,3
20	22	835,3	90	539,5
21	22	824,5	90	532,7
22	22	813,7	90	537,9
23	22	802,9	90	543,1
24	22	792,1	90	548,3
25	61	846,1	150	590,6
26	61	835,3	150	599,3
27	61	824,5	150	595,3
28	61	813,7	150	507,4
29	61	802,9	150	511,0
30	61	792,1	150	504,9
31	110	845,7	30	591,8
32	110	834,9	30	586,9
33	110	824,1	30	596,0
34	110	813,3	30	526,4
35	110	802,5	30	529,7
36	110	791,7	30	522,2
37	42	846,3	150	544,0
38	42	835,5	150	545,2
39	42	824,7	150	541,6
40	42	813,9	150	545,5
41	42	803,1	150	557,1
42	42	792,3	150	551,7
43	62	846,1	30	544,7
44	62	835,3	30	548,7
45	62	824,5	30	545,2
46	62	813,7	30	462,1
47	62	802,9	30	464,4
48	62	792,1	30	463,8
49	82	846,1	150	595,8
50	82	835,3	150	609,9
51	82	824,5	150	603,1
52	82	813,7	150	497,6
53	82	802,9	150	496,2
54	82	792,1	150	490,8
55	60	846,3	330	610,9
56	60	835,5	330	622,6
57	60	824,7	330	614,6
58	60	813,9	330	510,0
59	60	803,1	330	538,4
60	60	792,3	330	503,7
61	120	846,2	90	539,5
62	120	835,4	90	539,8
63	120	824,6	90	538,4
64	120	813,8	90	465,1
65	120	803,0	90	464,7
66	120	792,2	90	461,6
67	97	846,3	210	578,9
68	97	835,5	210	586,4
69	97	824,7	210	580,0
70	97	813,9	210	502,1
71	97	803,1	210	508,4
72	97	792,3	210	500,7
73	0	0,0	0	191,2
74	0	0,0	0	195,2
75	0	0,0	0	190,4
76	0	896,9	0	409,6
77	0	896,9	0	414,5
78	0	896,9	0	422,7
79	0	430,6	270	236,2
80	0	430,6	210	232,9
81	0	430,6	90	236,0
82	0	430,6	30	232,4
83	0	630,6	270	302,3
84	0	630,6	210	310,0
85	0	630,6	30	301,8
86	0	630,6	90	316,7
87	0	830,6	210	391,8
88	0	830,6	270	379,5
89	0	830,6	30	381,5
90	0	830,6	90	408,9



Table with columns: DATUM 2.12.1975, VERSUCH NR., DURCHSATZ (KG/S), EL ENERGIE (KW), WÄRMEENERGIE (KW), WÄRMEBILANZ (0/0), REYNOLDSZAHL WE=04, DRUCKVERLUST (1.e+C1 N/M\*\*2), GES. X, BIS X, etc.

Large data table with columns: TS NR, R NR, AX FOS (MM), RAD FOS (GRD), T GRAD C. Contains a grid of numerical data points.

DATUM

3.12.1975

VERSUCH NR.	31	32	33	34	35	36	37	38	39	40	41	42	43
DURCHSATZ (KG/S)	0.2043	0.1834	0.1663	0.1480	0.1329	0.1125	0.0950	0.0819	0.0694	0.0550	0.0445	0.0351	0.3158
EL. ENERGIE (KW)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
REYNOLDSZAHL *E-04	6.793	6.084	5.518	4.908	4.410	3.735	3.160	2.743	2.328	1.851	1.500	1.187	10.411
DRUCKVERLUST (1.E+01 N/M**2)													
GES. X= 895.6 (MM)	9380.	7578.	6402.	5111.	4193.	3096.	2260.	1738.	1288.	843.	589.	385.	0.
BIS X= 132.0 (MM)	1900.	1539.	1303.	1040.	852.	631.	471.	362.	264.	175.	117.	76.	3051.
BIS X= 230.1 (MM)	2296.	1856.	1576.	1261.	1041.	772.	580.	445.	329.	214.	146.	96.	3056.
BIS X= 532.0 (MM)	5103.	4114.	3487.	2781.	2284.	1692.	1233.	925.	676.	447.	300.	197.	9016.
BIS X= 673.0 (MM)	6348.	5113.	4325.	3447.	2847.	2093.	1521.	1136.	836.	542.	368.	238.	9039.
BIS X= 730.1 (MM)	7479.	6025.	5092.	4060.	3350.	2461.	1781.	0.	0.	0.	0.	0.	11757.
BIS X= 800.0 (MM)	8456.	6804.	5745.	4573.	3776.	2768.	2008.	0.	0.	0.	0.	0.	14172.
EINTR. DRUCK (BAR)	37.04	36.92	36.68	36.58	36.48	36.38	36.24	36.16	35.99	35.99	35.93	35.84	36.90
EINTR. TEMP. GRADC	198.5	200.0	200.0	200.0	200.0	199.5	198.3	193.0	192.5	190.5	188.0	186.0	204.5





CALUM		9.12.1975								
VERSUCH-NR.		51	52	53	54	55	56	57	58	59
DURCHSATZ (KG/S)		0.5654	0.4274	0.3546	0.2765	0.2150	0.1746	0.1460	0.1122	0.0512
EL. ENERPIE (Kw)		145.4	116.4	95.9	76.4	62.8	51.2	44.3	35.2	28.3
WAERMEENERGIE (Kw)		142.2	114.7	94.8	75.6	62.5	45.9	43.4	32.2	27.2
WAERMEBILANZ (C/O)		-2.2	-1.5	-1.1	-2.2	-1.8	-10.4	-2.0	-5.1	-3.5
REYNOLDSZAHL 4C-04		18.015	13.737	11.141	8.711	6.963	5.522	4.588	3.531	2.858
DRUCKVERLUST										
(J./F./C/N/M**2)										
GIS-X= 859.6 (MM)	J.	J.	8559.	1328.	3400.	2244.	1584.	579.	675.	
BIS X= 102.0 (MM)		3146.	1591.	1055.	677.	525.	340.	236.	141.	94.
BIS X= 236.1 (MM)		3147.	2354.	1536.	956.	616.	413.	0.	0.	0.
BIS X= 502.0 (MM)		9077.	5604.	5434.	3372.	2151.	1350.	0.	0.	0.
BIS X= 676.0 (MM)		5124.	7380.	6084.	4193.	2652.	1745.	0.	0.	0.
BIS X= 756.1 (MM)		12155.	9711.	0.	0.	0.	0.	0.	0.	0.
BIS X= 866.0 (MM)		15154.	11447.	0.	0.	0.	0.	0.	0.	0.
FINTR. DRUCK (BAR)		21.77	31.41	21.13	20.97	20.85	20.79	20.61	20.46	20.35

TE NR.	F NR.	ZK FCS	RAD FCS	T (ORD) GRAD C
1	03	849.9	150	616.0
2	03	839.1	150	614.0
3	03	824.3	150	613.0
4	03	845.9	150	614.7
5	03	835.1	150	612.6
6	03	824.3	150	613.3
7	51	825.2	30	622.8
8	51	846.1	30	621.6
9	51	824.5	30	621.6
10	51	846.1	30	621.6
11	51	835.3	30	622.2
12	51	824.5	30	622.8
13	7	846.2	30	616.1
14	7	835.4	30	612.0
15	7	824.4	30	614.5
16	7	846.2	30	614.8
17	7	835.4	30	612.2
18	7	846.6	30	614.6
19	22	846.1	50	621.9
20	22	835.3	50	617.1
21	22	824.5	50	622.8
22	22	846.1	50	622.8
23	22	835.3	50	617.1
24	22	824.5	50	622.8
25	78	846.1	210	622.8
26	78	835.3	210	617.1
27	78	824.5	210	622.8
28	78	846.1	210	622.8
29	78	835.3	210	617.1
30	78	824.5	210	622.8
31	110	846.7	50	617.1
32	110	835.9	50	617.1
33	110	824.1	50	617.1
34	110	846.7	50	617.1
35	110	835.9	50	617.1
36	110	824.1	50	617.1
37	42	846.3	270	622.8
38	42	835.5	270	617.1
39	42	824.7	270	617.1
40	42	846.3	270	617.1
41	42	835.5	270	617.1
42	42	824.7	270	617.1
43	62	846.1	30	622.8
44	62	835.3	30	617.1
45	62	824.5	30	622.8
46	62	846.1	30	622.8
47	62	835.3	30	617.1
48	62	824.5	30	622.8
49	23	846.1	150	622.8
50	23	835.3	150	617.1
51	23	824.5	150	622.8
52	23	846.1	150	622.8
53	23	835.3	150	617.1
54	23	824.5	150	622.8
55	114	846.3	330	622.8
56	114	835.5	330	617.1
57	114	824.7	330	617.1
58	114	846.3	330	622.8
59	114	835.5	330	617.1
60	114	824.7	330	622.8
61	120	846.2	210	622.8
62	120	835.4	210	617.1
63	120	824.6	210	622.8
64	120	846.2	210	622.8
65	120	835.4	210	617.1
66	120	824.6	210	622.8
67	57	846.3	210	622.8
68	57	835.5	210	617.1
69	57	824.7	210	617.1
70	57	846.3	210	622.8
71	57	835.5	210	617.1
72	57	824.7	210	622.8
73	0	0.0	0	182.8
74	0	0.0	0	182.8
75	0	0.0	0	182.8
76	0	0.0	0	182.8
77	0	0.0	0	182.8
78	0	0.0	0	182.8
79	0	0.0	0	182.8
80	0	0.0	0	182.8
81	0	0.0	0	182.8
82	0	0.0	0	182.8
83	0	0.0	0	182.8
84	0	0.0	0	182.8
85	0	0.0	0	182.8
86	0	0.0	0	182.8
87	0	0.0	0	182.8
88	0	0.0	0	182.8
89	0	0.0	0	182.8
90	0	0.0	0	182.8
91	0	0.0	0	182.8
92	0	0.0	0	182.8



DATUM 28. 5.78

VERSUCH NR.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DURCHSATZ (KG/S)	0.3193	0.2921	0.2660	0.2330	0.2115	0.1890	0.1690	0.1512	0.1365	0.1223	0.1227	0.1133	0.1040	0.0923	0.0836
EL. ENERGIE (KW)	74.3	69.0	63.0	56.3	52.5	46.4	42.4	38.5	34.6	31.4	31.1	29.1	26.9	24.1	22.1
REYNOLDSZAHL RE-J0	11.149	10.222	9.280	8.070	7.301	6.532	5.821	5.201	4.692	4.189	4.198	3.866	3.539	3.136	2.838
DRUCKVERLUST															
(L*E+01 N/M**2)															
GES.X= 895.6(NM)	90339.	76982.	64861.	53396.	42330.	34157.	27655.	22761.	18623.	15295.	15392.	13317.	11386.	9032.	7517.
RIS X= 102.0(NM)	0.	0.	0.	7848.	6552.	5302.	4317.	3552.	2911.	2411.	2442.	2122.	1809.	1466.	1223.
RIS X= 236.1(NM)	41178.	35226.	29650.	23441.	19620.	15889.	12870.	10566.	8704.	7196.	7245.	6259.	5306.	4255.	3538.
RIS X= 502.0(NM)	66154.	56477.	47422.	39417.	32587.	26886.	21996.	18188.	15188.	12795.	10795.	9206.	7674.	6255.	5011.
RIS X= 670.0(NM)	79606.	67985.	57040.	48017.	40457.	33811.	28886.	24886.	21488.	18488.	16088.	14088.	12288.	10788.	9388.
RIS X= 736.1(NM)	92129.	78657.	65955.	55451.	46451.	38851.	32351.	27351.	23351.	20351.	18351.	16351.	14851.	13351.	12351.
DTS X= 866.0(NM)	104176.	89886.	74449.	63396.	54311.	46811.	40411.	35011.	30611.	27211.	24811.	22411.	20911.	19411.	18411.
EINTR. DRUCK (BAR)	14.10	14.05	13.96	13.85	13.80	13.74	13.70	13.68	13.64	13.60	13.55	13.54	13.52	13.50	13.46
EINTR. TEMP. GRAD C	110.8	111.2	113.5	117.1	117.0	119.2	118.4	120.7	120.5	121.0	123.8	125.3	125.4	127.2	127.5

TE R AX RAD T  
NR NR. POS POS I  
(MM) (GRD)GRAD C

TE NR.	R NR.	AX POS (MM)	RAD POS (GRD)	T GRAD C
1	83	845.9	150	512.4
2	83	835.1	150	504.7
3	83	824.3	150	499.6
4	83	845.9	150	0.0
5	83	835.1	150	431.9
6	83	824.3	150	0.0
7	91	835.3	30	517.6
8	91	846.1	30	516.2
9	91	824.5	30	509.2
10	91	846.1	30	437.7
11	91	835.3	30	432.1
12	91	824.5	30	423.7
13	7	846.2	30	512.9
14	7	835.4	30	510.3
15	7	824.6	30	509.4
16	7	846.2	30	445.5
17	7	835.4	30	443.4
18	7	824.6	30	438.0
19	22	846.1	90	563.0
20	22	835.3	90	557.9
21	22	824.5	90	550.8
22	22	846.1	90	467.6
23	22	835.3	90	462.4
24	22	824.5	90	457.6
25	78	846.1	210	537.0
26	78	835.3	210	537.3
27	78	824.5	210	532.8
28	78	846.1	210	463.7
29	78	835.3	210	455.4
30	78	824.5	210	450.4
31	110	845.7	90	527.1
32	110	834.9	90	532.1
33	110	824.1	90	523.4
34	110	845.7	90	454.9
35	110	834.9	90	451.7
36	110	824.1	90	443.8
37	42	846.3	270	557.9
38	42	835.5	270	552.2
39	42	824.7	270	547.8
40	42	846.3	270	456.9
41	42	835.5	270	456.6
42	42	824.7	270	446.2
43	62	846.1	30	566.3
44	62	835.3	30	562.6
45	62	824.5	30	558.1
46	62	846.1	30	472.4
47	62	835.3	30	467.8
48	62	824.5	30	465.2
49	23	846.1	150	510.1
50	23	835.3	150	506.8
51	23	824.5	150	500.7
52	23	846.1	150	436.9
53	23	835.3	150	432.7
54	23	824.5	150	426.7
55	114	846.3	330	508.9
56	114	835.5	330	508.2
57	114	824.7	330	502.6
58	114	846.3	330	453.0
59	114	835.5	330	446.3
60	114	824.7	330	441.1
61	120	846.2	210	502.6
62	120	835.4	210	497.9
63	120	824.6	210	0.0
64	120	846.2	210	427.0
65	120	835.4	210	422.3
66	120	824.6	210	419.1
67	97	846.3	210	504.9
68	97	835.5	210	502.8
69	97	824.7	210	500.0
70	97	846.3	210	446.9
71	97	835.5	210	444.8
72	97	824.7	210	439.5
73	0	0.0	0	109.8
74	0	0.0	0	110.9
75	0	0.0	0	111.5
76	0	896.9	0	329.8
77	0	896.9	0	0.0
78	0	896.9	0	0.0
79	0	430.6	270	134.8
80	0	430.6	210	132.7
81	0	430.6	90	134.9
82	0	430.6	30	134.0
83	0	630.6	270	191.3
84	0	630.6	210	194.4
85	0	630.6	90	197.3
86	0	630.6	30	196.1
87	0	830.6	270	256.6
88	0	830.6	210	252.6
89	0	830.6	90	264.5
90	0	830.6	30	257.3
91	0	0.0	0	110.7
92	0	0.0	0	110.7

DATA 29. 5.78

VERSUCH NR.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DURCHSATZ (KG/S)	0,3158	0,2895	0,2623	0,2322	0,2080	0,1861	0,1678	0,1497	0,1360	0,1213	0,1222	0,1124	0,1030	0,0938	0,0832
EL. ENERGIE (KJ)	37,2	40,2	41,3	42,9	46,7	50,6	55,2	60,6	65,0	71,1	71,2	78,0	85,1	90,8	98,6
REYNOLDSZAHL RE=34	10.416	9.506	8.615	7.576	6.760	6.043	5.438	4.843	4.395	3.929	3.915	3.604	3.296	2.897	2.648
DRUCKVERLUST (1.2*10 <sup>4</sup> N/M**2)	100228	47110	69921	56094	46097	37707	30095	24968	20920	16961	17297	14789	12582	9861	8420
GES. X= 895,61 (MM)	0	0	0	3141	6672	5464	4492	3643	3063	2523	2578	2227	1898	1508	1289
BIS X= 102,01 (MM)	0	0	0	3141	6672	5464	4492	3643	3063	2523	2578	2227	1898	1508	1289
BIS X= 236,11 (MM)	49946	37312	30967	2719	3030	3030	3030	3030	3030	3030	3030	3030	3030	3030	3030
BIS X= 502,01 (MM)	70983	60270	49914	25262	20759	16827	13799	11141	9593	7676	7824	6743	5705	506	3815
BIS X= 673,01 (MM)	36132	73205	60499	33338	27766	22655	18628	14893	12436	10165	10353	8903	7599	5978	5362
BIS X= 736,11 (MM)	100499	85290	70287	41734	34136	27890	22388	18363	15233	12527	12750	10963	9298	7342	6202
BIS X= 866,01 (MM)	114102	97098	80105	49270	40331	32918	26938	21652	18010	14747	15305	12863	10930	8616	7275
EINTR. DRUCK (BAR)	13,87	13,85	13,83	13,66	13,56	13,46	13,39	13,37	13,33	13,29	13,25	13,25	13,24	13,22	13,19
EINTR. TEMP. GRAD C	121,3	124,2	127,3	130,1	131,3	133,0	133,0	134,0	135,7	135,7	141,1	141,8	142,8	143,9	145,5

TE R	AX	RAD	T
NR.	POS	POS	
(MM)	(MM)	(GRAD)	GRAD C
1	83	845,9	150
2	33	835,1	150
3	33	824,3	150
4	33	845,9	150
5	33	835,1	150
6	33	824,3	150
7	91	835,3	30
8	71	846,1	30
9	91	824,5	30
10	91	846,1	30
11	91	835,3	30
12	91	824,5	30
13	7	846,2	30
14	7	835,4	30
15	7	824,6	30
16	7	846,2	30
17	7	835,4	30
18	7	824,6	30
19	22	846,1	90
20	22	835,3	90
21	22	824,5	90
22	22	846,1	90
23	22	835,3	90
24	22	824,5	90
25	78	846,1	210
26	78	835,3	210
27	78	824,5	210
28	78	846,1	210
29	78	835,3	210
30	78	824,5	210
31	110	845,7	90
32	110	834,9	90
33	110	824,1	90
34	110	845,7	90
35	110	834,9	90
36	110	824,1	90
37	42	846,3	270
38	42	835,5	270
39	42	824,7	270
40	42	846,3	270
41	42	835,5	270
42	42	824,7	270
43	62	846,1	330
44	62	835,3	330
45	62	824,5	330
46	62	846,1	330
47	62	835,3	330
48	62	824,5	330
49	23	846,1	150
50	23	835,3	150
51	23	824,5	150
52	23	846,1	150
53	23	835,3	150
54	23	824,5	150
55	114	846,3	330
56	114	835,5	330
57	114	824,7	330
58	114	846,3	330
59	114	835,5	330
60	114	824,7	330
61	120	846,2	210
62	120	835,4	210
63	120	824,6	210
64	120	846,2	210
65	120	835,4	210
66	120	824,6	210
67	97	846,3	210
68	97	835,5	210
69	97	824,7	210
70	97	846,3	210
71	97	835,5	210
72	97	824,7	210
73	0	0,0	0
74	0	0,0	0
75	0	0,0	0
76	0	896,9	0
77	0	896,9	0
78	0	896,9	0
79	0	430,6	270
80	0	430,6	270
81	0	430,6	270
82	0	430,6	270
83	0	630,6	270
84	0	630,6	270
85	0	630,6	270
86	0	630,6	270
87	0	930,6	270
88	0	930,6	270
89	0	930,6	270
90	0	930,6	270
91	0	0,0	0
92	0	0,0	0



DATUM 30. 5.78

VERSUCH NR.	12	13	14	15	16	17	18	19	20	21	22	23	24
DURCHSATZ (KG/S)	0.0155	0.0137	0.0124	0.0112	0.0099	0.0090	0.0078	0.0072	0.0063	0.0056	0.0049	0.0045	0.0038
EL. ENERGIE (KW)	12.7	11.1	10.2	9.2	8.5	7.8	7.2	6.8	6.1	5.7	5.1	4.5	4.3
REYNOLDSZAHL*E-04	0.526	0.467	0.419	0.379	0.337	0.305	0.264	0.241	0.212	0.189	0.165	0.150	0.128
DRUCKVERLUST (1.E*01 N/M**2)													
GES.X= 895.6(MM)	2555.	2028.	1677.	1394.	1142.	951.	760.	647.	510.	415.	328.	250.	177.
BIS X= 102.0(MM)	532.	431.	361.	302.	250.	211.	169.	145.	118.	99.	82.	68.	53.
BIS X= 236.1(MM)	659.	539.	452.	380.	316.	266.	217.	185.	155.	133.	106.	88.	74.
BIS X= 502.0(MM)	1383.	1122.	935.	782.	646.	539.	437.	374.	312.	268.	218.	183.	151.
BIS X= 670.0(MM)	1678.	1349.	1124.	941.	782.	659.	535.	461.	378.	323.	265.	223.	183.
BIS X= 736.1(MM)	2022.	1622.	1352.	1127.	938.	794.	648.	559.	462.	394.	325.	273.	222.
BIS X= 866.0(MM)	2262.	1821.	1516.	1269.	1054.	885.	722.	624.	520.	442.	366.	303.	252.
EINTR.DRUCK (BAR)	9.24	9.24	9.24	9.24	9.23	9.22	9.21	9.21	9.20	9.19	9.18	9.16	9.16
EINTR.TEMP. GRADC	107.7	107.3	107.9	107.7	106.8	106.6	106.1	106.9	105.5	104.6	104.1	103.0	102.6

TE NR.	R NR.	AX POS (MM)	RAD POS (MM)	T GRAD C
1	83	845.9	150	375.3
2	83	835.1	150	370.4
3	83	824.3	150	363.0
4	83	845.9	150	0.0
5	83	835.1	150	314.5
6	83	824.3	150	0.0
7	91	835.3	30	363.6
8	91	846.1	30	358.9
9	91	824.5	30	354.4
10	91	846.1	30	308.4
11	91	835.3	30	305.1
12	91	824.5	30	299.8
13	7	846.2	30	378.9
14	7	835.4	30	374.4
15	7	824.6	30	371.5
16	7	846.2	30	325.4
17	7	835.4	30	322.5
18	7	824.6	30	318.5
19	22	846.1	90	388.6
20	22	835.3	90	386.4
21	22	824.5	90	383.2
22	22	846.1	90	321.4
23	22	835.3	90	318.4
24	22	824.5	90	315.4
25	78	846.1	210	379.3
26	78	835.3	210	376.5
27	78	824.5	210	373.0
28	78	846.1	210	327.3
29	78	835.3	210	322.3
30	78	824.5	210	319.5
31	110	845.9	30	391.0
32	110	834.9	30	397.1
33	110	824.1	90	393.0
34	110	845.9	30	338.0
35	110	834.9	30	334.8
36	110	824.1	90	329.5
37	42	846.3	270	384.8
38	42	835.5	270	381.7
39	42	824.7	270	379.5
40	42	846.3	270	316.8
41	42	835.5	270	313.3
42	42	824.7	270	308.5
43	62	846.1	30	391.3
44	62	835.3	30	389.2
45	62	824.5	30	386.4
46	62	846.1	30	322.7
47	62	835.3	30	318.8
48	62	824.5	30	316.9
49	23	846.1	150	362.5
50	23	835.3	150	378.2
51	23	824.5	150	371.8
52	23	846.1	150	330.4
53	23	835.3	150	326.6
54	23	824.5	150	322.0
55	114	846.3	330	384.1
56	114	835.5	330	379.5
57	114	824.7	330	373.2
58	114	846.3	330	336.1
59	114	835.5	330	331.5
60	114	824.7	330	326.9
61	120	846.2	210	366.4
62	120	835.4	210	363.3
63	120	824.6	210	0.0
64	120	846.2	210	310.6
65	120	835.4	210	306.7
66	120	824.6	210	303.4
67	97	846.3	210	386.6
68	97	835.5	210	383.1
69	97	824.7	210	377.6
70	97	846.3	210	338.0
71	97	835.5	210	334.7
72	97	824.7	210	330.1
73	0	0.0	0	106.5
74	0	0.0	0	107.8
75	0	0.0	0	108.8
76	0	896.7	0	261.2
77	0	896.9	0	0.0
78	0	896.9	0	0.0
79	0	430.6	270	130.3
80	0	430.6	210	130.3
81	0	430.6	90	131.2
82	0	430.6	30	129.7
83	0	630.6	270	173.0
84	0	630.6	210	173.9
85	0	630.6	150	174.0
86	0	630.6	90	173.8
87	0	630.6	30	172.9
88	0	830.6	270	220.9
89	0	830.6	210	221.9
90	0	830.6	150	222.2
91	0	0.0	0	110.0
92	0	0.0	0	110.0





DATUM 28. 2.79

VERSUCH NR.	1	2	3	4	5	6	7	8	9
DURCHSATZ (KG/S)	0.1599	0.1456	0.1285	0.1125	0.1005	0.0901	0.0811	0.0735	0.0672
EL. ENERGIE (KW)	108.9	98.9	90.2	78.1	71.7	66.9	60.0	55.8	51.2
WAERMEEENERGIE (KW)	113.8	103.9	94.7	82.0	75.1	70.6	63.4	58.3	53.0
WAERMEBILANZ(%)	4.5	5.0	4.9	5.0	4.8	5.5	5.7	4.6	3.6
REYNOLDSZAHL*E-04	5.236	4.772	4.192	3.680	3.273	2.922	2.632	2.378	2.175
DRUCKVERLUST (1.E+01 N/M**2)									
GES.X= 895.6(MM)	54157.	45557.	36540.	28091.	22967.	18775.	15315.	12744.	10932.
BIS X= 102.0(MM)	10261.	8581.	6855.	5323.	4339.	3534.	2894.	2417.	2089.
BIS X= 236.1(MM)	11694.	10292.	8167.	6339.	5198.	4245.	3511.	2917.	2519.
BIS X= 502.0(MM)	29370.	25041.	19945.	15432.	12561.	10204.	8374.	6962.	5959.
BIS X= 670.0(MM)	38182.	32392.	25785.	19762.	16162.	13169.	10763.	8892.	7611.
BIS X= 736.1(MM)	45651.	38617.	30770.	23581.	19281.	15723.	12834.	10615.	9077.
BIS X= 866.0(MM)	48699.	41131.	32860.	25198.	20649.	16843.	13810.	11425.	9789.
EINTR.DRUCK (BAR)	37.79	37.68	37.52	37.46	37.63	37.48	37.46	37.41	37.53
EINTR.TEMP. GRADC	141.1	140.2	141.3	140.0	142.0	141.4	140.4	142.1	142.5

TE R AX RAD T  
NR NR. PCS POS  
(MM) (GRD)GRAD C

1	83	644.0	270	401.5	396.9	400.9	396.8	399.5	410.5	406.5	412.6	411.1
2	83	589.0	270	376.5	372.3	376.0	372.0	374.8	384.7	381.1	385.7	384.8
3	83	534.0	270	350.6	346.9	349.9	345.6	347.9	356.2	352.5	356.3	355.4
4	83	479.0	270	315.3	312.3	313.9	308.8	310.2	316.3	312.4	314.7	312.9
5	83	410.0	270	332.4	329.0	331.0	326.1	328.1	335.5	331.5	334.9	333.8
6	83	355.0	270	303.5	300.2	301.9	298.1	299.1	305.4	301.9	304.6	303.6
7	91	644.0	270	403.3	399.0	404.7	400.3	404.1	417.2	414.6	422.0	420.3
8	91	589.0	270	379.7	374.9	380.4	375.8	378.6	390.1	387.4	393.5	392.4
9	91	534.0	270	362.5	357.9	361.5	356.0	358.0	368.3	365.2	370.7	369.2
10	91	479.0	270	335.5	330.1	332.4	325.7	326.7	333.5	329.0	331.2	329.2
11	91	410.0	270	338.4	333.5	336.3	330.5	332.2	339.7	335.5	339.0	338.0
12	91	355.0	270	316.1	312.0	313.8	307.9	309.2	315.6	311.6	314.3	313.0
13	7	644.0	30	411.1	405.2	408.8	402.7	405.6	414.8	408.4	414.4	411.1
14	7	589.0	30	381.2	377.6	379.1	373.2	375.3	383.6	378.0	383.2	379.8
15	7	534.0	30	359.0	356.0	357.1	351.2	352.6	360.5	354.9	359.4	356.1
16	7	479.0	30	322.3	318.8	320.3	314.3	315.5	321.3	316.2	318.6	314.9
17	7	410.0	30	316.5	313.5	315.0	309.3	311.2	318.0	314.4	317.4	313.8
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	408.8	404.0	408.1	401.9	404.8	414.1	408.3	413.8	409.2
20	22	589.0	90	383.6	379.2	383.1	376.8	379.7	388.2	382.4	387.2	383.1
21	22	534.0	90	364.8	360.1	363.1	357.0	359.4	367.0	361.4	365.2	361.4
22	22	479.0	90	322.8	319.6	320.7	315.7	318.1	323.1	318.0	320.6	316.6
23	22	410.0	90	315.1	312.5	313.6	308.3	311.2	317.0	312.6	316.1	313.1
24	22	355.0	90	293.5	290.7	291.2	286.7	288.6	294.1	289.6	293.5	290.6
25	78	644.0	150	405.1	400.3	404.0	397.9	400.7	411.4	406.5	412.4	408.0
26	78	589.0	150	386.3	381.6	385.0	378.0	380.4	389.8	385.2	390.8	386.0
27	78	534.0	150	363.4	359.3	361.5	355.1	357.8	366.0	361.7	366.3	361.8
28	78	479.0	150	327.6	323.4	324.6	317.9	320.6	325.0	321.3	323.3	319.3
29	78	410.0	150	319.6	316.5	317.6	312.0	314.4	320.6	317.2	319.9	316.2
30	78	355.0	150	302.6	299.6	300.3	294.5	296.9	302.6	299.0	300.7	297.5
31	110	644.0	30	397.7	394.1	398.7	395.1	399.1	410.7	408.1	414.8	414.0
32	110	589.0	30	377.7	374.4	378.1	374.6	378.5	388.9	386.8	392.6	391.9
33	110	534.0	30	361.1	357.5	359.9	355.8	359.0	367.6	365.1	370.2	369.3
34	110	479.0	30	331.0	326.7	327.5	322.8	324.2	330.2	326.4	328.9	326.9
35	110	410.0	30	339.1	334.3	335.9	331.1	333.4	341.2	338.0	341.8	339.8
36	110	355.0	30	321.1	315.6	316.4	311.7	312.8	319.8	315.9	319.5	317.5
37	42	644.0	150	401.3	396.3	399.1	394.5	397.3	407.6	401.4	408.2	404.9
38	42	589.0	150	380.4	375.4	377.7	371.7	374.6	384.2	377.7	383.6	380.9
39	42	534.0	150	358.1	355.3	357.1	350.3	353.3	361.8	355.8	361.3	359.0
40	42	479.0	150	317.8	316.3	317.1	311.3	313.4	319.5	313.8	316.6	314.3

41	42	410.0	150	312.7	310.1	311.3	305.7	308.2	314.4	309.3	311.5	310.5
42	42	355.0	150	297.7	296.2	296.3	290.0	292.7	297.7	292.7	294.2	293.4
43	62	644.0	30	384.1	380.0	383.3	377.5	382.1	391.8	388.9	392.3	390.3
44	62	589.0	30	364.0	359.4	362.1	356.5	361.3	368.7	366.7	369.4	367.8
45	62	534.0	30	409.7	404.4	408.7	402.1	407.5	416.9	414.4	418.0	416.3
46	62	479.0	30	325.5	322.1	324.5	318.4	321.4	327.4	324.7	325.3	324.3
47	62	410.0	30	323.7	319.5	321.0	315.8	318.2	325.1	321.9	323.2	322.5
48	62	355.0	30	304.9	300.0	300.9	295.9	297.8	303.7	300.5	302.0	302.5
49	23	644.0	150	395.1	390.1	393.8	388.6	393.2	403.1	400.6	405.6	406.0
50	23	589.0	150	368.9	363.8	367.8	362.2	367.1	375.0	372.5	377.0	377.6
51	23	534.0	150	348.3	344.2	347.9	342.0	346.1	352.7	350.6	353.7	354.0
52	23	479.0	150	310.8	308.0	310.5	305.0	307.5	312.7	309.9	311.4	311.1
53	23	410.0	150	317.2	312.5	316.3	309.5	312.5	318.2	315.5	319.2	319.1
54	23	355.0	150	300.0	296.8	297.8	291.7	293.8	298.4	294.9	298.0	297.4
55	114	644.0	330	388.0	384.1	388.8	382.2	387.3	396.3	392.6	397.7	397.2
56	114	589.0	330	366.2	362.6	366.0	360.0	364.9	373.0	370.0	374.0	373.3
57	114	534.0	330	347.8	343.5	346.0	339.2	343.2	350.6	347.7	350.6	349.8
58	114	479.0	330	315.5	309.6	311.6	306.4	309.6	314.2	311.7	313.3	311.8
59	114	410.0	330	316.8	310.9	312.2	307.9	310.4	315.4	313.5	315.5	314.4
60	114	355.0	330	300.9	296.1	295.6	291.5	293.4	297.7	295.7	297.0	296.1
61	120	644.0	90	391.3	387.3	390.2	385.5	390.2	399.6	397.2	401.6	401.1
62	120	589.0	90	368.8	364.0	367.9	362.0	365.6	373.2	370.8	374.2	373.6
63	120	534.0	90	351.9	346.8	350.2	344.2	347.7	354.1	351.1	353.8	352.9
64	120	479.0	90	325.1	320.7	323.2	316.9	319.2	323.8	320.2	321.7	319.7
65	120	410.0	90	323.4	319.6	321.3	316.1	318.8	324.2	320.4	323.6	322.2
66	120	355.0	90	303.1	300.4	300.8	294.8	297.4	301.6	297.1	300.1	298.5
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	370.6	366.0	369.1	364.2	368.5	376.9	372.1	377.3	376.4
69	97	534.0	210	351.2	346.8	348.6	344.0	347.7	353.5	349.5	353.7	352.7
70	97	479.0	210	316.6	312.6	313.8	309.5	311.7	316.5	311.9	314.7	313.7
71	97	410.0	210	311.4	306.9	308.5	303.5	306.3	311.6	307.9	312.1	311.6
72	97	355.0	210	295.7	292.0	292.5	287.3	289.3	293.8	289.7	293.3	293.3
73	0	0.0	0	140.1	139.1	140.9	140.4	142.3	142.1	141.8	143.3	144.3
74	0	0.0	0	142.4	139.5	141.3	139.6	140.6	138.9	136.8	140.1	139.1
75	0	0.0	0	140.9	142.0	141.7	139.9	143.2	143.0	142.7	142.8	144.0
76	0	896.9	0	281.8	281.4	286.9	284.4	289.8	296.5	295.9	299.6	299.1
77	0	896.9	0	274.5	273.7	279.3	276.0	281.5	287.4	286.0	289.7	289.1
78	0	896.9	0	277.7	277.1	282.6	280.4	285.8	292.1	290.7	294.8	294.5
79	0	430.6	270	159.6	159.6	160.1	158.9	160.5	162.1	162.7	163.7	165.1
80	0	430.6	210	159.1	159.7	160.6	158.8	160.6	162.3	163.5	164.3	166.1
81	0	430.6	90	162.1	162.7	163.1	162.2	164.4	166.6	166.6	167.2	167.7
82	0	430.6	30	159.4	159.5	160.0	158.9	161.0	162.8	162.9	163.7	164.0
83	0	630.6	270	208.8	208.5	210.5	209.3	212.4	215.6	214.9	217.3	218.5
84	0	630.6	210	204.4	205.0	206.8	205.4	208.6	212.1	212.0	214.0	215.4
85	0	630.6	30	206.8	206.4	208.3	206.7	209.9	213.3	213.1	215.1	215.3
86	0	630.6	90	214.4	214.4	216.3	214.8	218.1	222.1	221.8	223.5	223.6
87	0	830.6	210	246.5	246.7	249.8	248.3	252.4	257.3	257.8	260.8	262.4
88	0	830.6	270	251.0	250.5	254.0	252.7	256.7	261.0	260.4	263.9	265.3
89	0	830.6	30	246.1	245.6	248.7	247.5	251.5	256.1	255.9	259.6	260.1
90	0	830.6	90	256.1	255.6	259.0	257.3	261.5	267.4	266.7	269.7	269.8
91	0	0.0	0	141.0	140.2	141.5	138.0	141.4	140.4	136.7	138.3	139.8
92	0	0.0	0	141.0	140.2	141.5	138.0	141.4	140.4	136.7	138.3	139.8

DATUM 28. 2.79

VERSUCH NR.	10	11	12	13	14	15	16	17
DURCHSATZ (KG/S)	0.0614	0.0550	0.0497	0.0443	0.0400	0.0358	0.0322	0.0291
EL. ENERGIE (KW)	48.1	43.0	38.9	35.3	32.0	28.6	26.1	23.7
WAERMEENERGIE(KW)	49.9	44.1	39.8	36.2	32.4	28.9	26.6	23.5
WAERMEBILANZ(D/O)	3.9	2.6	2.3	2.3	1.3	1.1	1.9	-1.1
REYNOLDSZAHLE=04	1.981	1.776	1.602	1.427	1.287	1.152	1.037	0.939
DRUCKVERLUST (1.E+01 N/M**2)								
GES-X= 895.6(MM)	9222.	7527.	6232.	4994.	4121.	3327.	2722.	2231.
BIS X= 102.0(MM)	1761.	1448.	1206.	979.	808.	660.	552.	456.
BIS X= 236.1(MM)	2152.	1761.	1464.	1198.	991.	804.	669.	558.
BIS X= 502.0(MM)	5042.	4102.	3375.	2743.	2251.	1826.	1501.	1243.
BIS X= 670.0(MM)	6422.	5217.	4275.	3442.	2833.	2271.	1867.	1547.
BIS X= 736.1(MM)	7670.	6236.	5117.	4119.	3389.	2724.	2234.	1851.
BIS X= 866.0(MM)	8271.	6721.	5531.	4458.	3675.	2955.	2425.	2019.
EINTR.DRUCK (BAR)	37.49	37.39	37.34	37.36	37.34	37.27	37.22	37.26
EINTR.TEMP. GRADC	142.1	142.2	144.0	143.6	143.6	145.3	142.7	143.6

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD)GRAD C

1	83	644.0	270	418.4	416.1	416.5	420.1	420.5	421.9	424.0	421.3
2	83	589.0	270	391.2	389.2	389.6	393.1	393.4	395.1	396.7	394.9
3	83	534.0	270	360.9	358.9	359.4	362.3	362.4	363.5	364.1	362.3
4	83	479.0	270	316.4	313.6	313.2	315.1	313.5	313.6	312.9	309.7
5	83	410.0	270	338.3	335.9	336.3	339.5	338.5	340.4	341.2	340.3
6	83	355.0	270	307.5	305.1	305.6	309.1	307.5	308.9	309.8	308.6
7	91	644.0	270	429.0	425.4	428.5	433.5	433.3	434.0	434.6	432.8
8	91	589.0	270	399.9	396.7	399.9	404.7	405.2	406.1	407.0	405.6
9	91	534.0	270	375.5	372.5	375.7	380.1	380.9	381.1	382.0	380.8
10	91	479.0	270	332.0	327.4	328.8	329.9	327.5	325.0	322.3	317.8
11	91	410.0	270	342.5	339.0	341.7	344.5	344.1	344.2	343.9	342.3
12	91	355.0	270	317.1	314.0	316.2	319.3	318.4	318.3	318.7	316.3
13	7	644.0	30	417.3	414.7	414.3	416.7	416.2	416.0	420.4	418.0
14	7	589.0	30	385.1	383.8	383.2	385.7	386.4	386.8	392.0	390.1
15	7	534.0	30	361.3	359.8	359.1	361.5	362.8	363.2	368.3	366.8
16	7	479.0	30	318.1	315.5	312.9	312.6	312.3	309.6	312.0	308.1
17	7	410.0	30	318.9	317.8	316.3	318.6	320.3	318.9	323.6	322.5
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	416.1	413.8	413.1	415.1	416.8	415.2	419.1	415.9
20	22	589.0	90	389.3	387.7	386.6	389.2	390.3	389.1	392.9	390.1
21	22	534.0	90	367.1	365.5	364.5	367.9	368.8	367.7	371.9	369.8
22	22	479.0	90	319.5	317.0	314.7	315.7	314.0	311.2	312.1	307.9
23	22	410.0	90	318.1	316.3	315.8	318.7	318.1	318.2	320.5	318.4
24	22	355.0	90	295.5	294.0	293.6	296.7	295.5	296.3	298.6	296.2
25	78	644.0	150	416.0	412.9	413.2	417.1	415.5	415.0	415.9	411.3
26	78	589.0	150	393.5	390.4	391.3	394.7	393.2	393.0	394.1	389.5
27	78	534.0	150	368.8	365.3	366.9	369.5	368.5	368.7	370.0	365.8
28	78	479.0	150	323.3	319.5	320.0	319.5	317.7	315.8	314.9	308.8
29	78	410.0	150	321.2	318.8	319.4	321.6	322.1	321.7	322.6	318.6
30	78	355.0	150	301.5	299.7	299.4	301.7	302.3	301.4	302.5	297.8
31	110	644.0	30	421.4	420.9	421.0	424.9	427.5	428.0	432.2	431.7
32	110	589.0	30	398.6	397.6	396.9	400.3	402.7	403.3	407.1	407.0
33	110	534.0	30	374.9	374.0	372.7	375.7	377.3	378.5	381.6	381.2
34	110	479.0	30	329.5	326.6	323.4	323.6	322.7	321.4	321.2	318.8
35	110	410.0	30	344.6	342.9	341.0	342.6	343.9	343.7	346.5	345.5
36	110	355.0	30	321.6	320.2	317.6	318.6	319.4	319.3	321.6	319.7
37	42	644.0	150	412.4	411.1	408.6	409.4	411.6	411.7	415.5	412.5
38	42	589.0	150	387.8	386.9	385.3	386.2	388.3	388.9	393.6	391.1
39	42	534.0	150	366.6	365.4	363.5	364.9	367.1	367.0	371.7	369.6
40	42	479.0	150	319.6	317.3	314.0	314.0	313.7	311.2	313.0	308.7

41	42	410.0	150	316.3	315.0	313.3	314.8	316.3	315.5	319.4	317.0
42	42	355.0	150	298.6	297.5	295.9	297.4	298.7	297.9	301.9	299.1
43	62	644.0	30	398.9	396.1	395.6	397.8	398.1	396.9	399.2	396.4
44	62	589.0	30	375.2	373.2	372.8	375.1	375.9	374.5	377.0	375.1
45	62	534.0	30	424.9	422.0	421.4	423.7	424.8	422.7	424.4	421.6
46	62	479.0	30	328.7	325.5	323.5	323.3	322.4	318.4	317.3	313.6
47	62	410.0	30	327.6	325.1	324.3	325.9	325.9	323.6	324.5	322.5
48	62	355.0	30	306.6	303.5	303.3	305.3	305.0	303.3	304.5	303.4
49	23	644.0	150	412.1	409.3	409.4	413.9	413.7	411.7	413.4	411.8
50	23	589.0	150	383.1	380.5	380.7	385.7	384.7	383.5	384.6	384.6
51	23	534.0	150	358.9	356.5	357.3	361.2	359.4	358.6	359.4	359.7
52	23	479.0	150	314.4	310.8	311.5	312.3	309.0	307.0	305.6	304.2
53	23	410.0	150	323.5	321.8	323.1	325.2	324.4	324.0	325.1	325.6
54	23	355.0	150	301.6	299.3	299.4	301.6	300.2	298.9	300.6	300.2
55	114	644.0	330	403.8	399.9	400.6	404.0	405.6	403.3	406.7	405.3
56	114	589.0	330	379.3	375.9	376.6	380.4	381.8	380.5	383.7	382.6
57	114	534.0	330	354.4	351.6	352.2	355.5	356.7	356.1	358.6	358.1
58	114	479.0	330	313.6	311.0	310.4	310.6	309.7	308.5	308.3	306.4
59	114	410.0	330	317.8	316.4	317.0	318.9	318.8	319.3	321.8	321.6
60	114	355.0	330	298.8	297.1	297.2	298.6	297.6	298.6	300.2	299.6
61	120	644.0	90	407.3	405.5	406.1	408.9	408.9	408.4	411.9	410.0
62	120	589.0	90	379.3	378.0	378.3	380.8	381.1	380.9	384.9	383.5
63	120	534.0	90	358.0	356.3	356.3	358.7	358.2	357.4	360.7	358.5
64	120	479.0	90	323.1	319.9	318.8	318.8	316.1	313.6	314.2	310.0
65	120	410.0	90	326.9	325.1	325.1	327.9	326.3	325.5	329.0	326.8
66	120	355.0	90	302.7	300.2	299.9	302.1	300.5	298.9	301.8	300.0
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	383.1	380.3	381.1	383.0	383.8	381.2	384.9	383.7
69	97	534.0	210	357.8	355.1	355.9	357.0	357.8	355.1	357.7	357.8
70	97	479.0	210	315.6	311.5	311.3	310.2	308.5	305.0	304.8	302.4
71	97	410.0	210	314.7	311.9	312.9	314.0	313.8	312.0	313.8	313.2
72	97	355.0	210	295.8	293.2	293.7	295.6	294.2	292.3	294.0	293.9
73	0	0.0	0	144.5	145.4	145.6	145.5	144.1	144.5	143.2	145.3
74	0	0.0	0	140.7	138.3	141.0	140.4	141.6	145.0	140.3	142.3
75	0	0.0	0	141.2	142.8	145.6	144.9	145.1	146.3	144.5	143.4
76	0	896.9	0	303.3	301.6	303.2	306.1	305.7	305.0	306.4	304.4
77	0	896.9	0	293.6	291.0	292.6	295.0	293.3	294.8	295.4	291.4
78	0	896.9	0	298.7	297.2	298.7	300.5	300.2	301.8	302.3	300.3
79	0	430.6	270	166.2	166.2	167.6	168.7	167.3	168.2	168.3	168.3
80	0	430.6	210	166.7	166.8	168.0	169.3	167.5	167.8	167.2	167.4
81	0	430.6	90	168.4	168.4	169.7	171.5	170.0	171.4	171.3	170.3
82	0	430.6	30	164.7	164.7	165.6	167.1	166.1	167.7	168.2	167.8
83	0	630.6	270	220.6	220.5	221.6	223.2	222.1	223.6	223.8	224.0
84	0	630.6	210	217.4	217.4	218.9	220.5	219.5	220.6	220.7	220.8
85	0	630.6	30	217.5	217.3	218.7	220.6	220.3	222.1	223.4	223.3
86	0	630.6	90	225.8	225.2	226.5	228.6	227.5	228.6	229.2	228.1
87	0	630.6	210	265.4	265.4	267.1	269.4	268.8	270.2	270.9	270.7
88	0	630.6	270	268.5	268.2	269.8	271.8	271.2	272.5	273.4	273.4
89	0	630.6	30	263.7	263.7	265.7	268.4	268.8	271.0	272.9	272.8
90	0	630.6	90	273.3	272.4	274.0	276.3	275.6	276.8	277.7	276.5
91	0	0.0	0	142.3	140.6	143.2	143.2	141.1	143.5	141.7	143.2
92	0	0.0	0	142.3	140.6	143.2	143.2	141.1	143.5	141.7	143.2

DATUM 29. 2.79

VERSUCH NR. 1  
 DURCHSATZ (KG/S) 0.1612 0.1434 0.1255 0.1105 0.0995 0.0895 0.0775 0.0724  
 EL. ENERGIE (KM) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0  
 REYNOLDSZAHL\*E-04 5.925 5.283 4.621 4.075 3.667 3.314 2.857 2.685  
 DRUCKVERLUST  
 (1.E+01 N/M\*\*2)  
 GES-X= 895.6(MM) 45895. 36657. 28577. 22488. 18427. 14975. 11364. 10101.  
 BIS X= 102.0(MM) 10267. 8205. 6392. 5033. 4127. 3369. 2556. 2275.  
 BIS X= 236.1(MM) 11694. 9783. 7681. 6017. 4970. 4048. 3111. 2752.  
 BIS X= 502.0(MM) 27036. 22071. 17228. 13514. 11117. 9020. 6862. 6071.  
 BIS X= 670.0(MM) 33685. 27542. 21562. 16710. 13730. 11120. 8453. 7483.  
 BIS X= 736.1(MM) 39189. 31176. 24762. 19382. 15916. 12884. 9783. 8662.  
 BIS X= 866.0(MM) 43244. 33485. 26175. 20492. 16050. 13662. 10396. 9187.  
 EINTR.-DRUCK (BAR) 37.69 37.62 37.56 37.51 37.48 37.45 37.41 37.38  
 EINTR.-TEMP. GRADC 132.3 130.6 131.1 130.6 130.5 127.5 130.3 126.4

TE R AX RAD T  
 NR NR. POS POS  
 (MM) (GRD) GRAD C

1	83	646.0	270	132.3	131.7	130.5	129.4	130.7	128.8	129.0	127.8
2	83	589.0	270	132.4	131.4	130.7	129.6	130.3	128.8	129.2	128.1
3	83	534.0	270	132.3	131.2	130.8	129.8	131.0	128.9	129.3	128.5
4	83	479.0	270	132.4	131.2	130.9	129.9	130.9	129.1	129.5	128.5
5	83	410.0	270	132.5	131.2	130.9	129.7	130.9	129.1	129.6	128.6
6	83	355.0	270	132.4	131.3	131.1	129.8	129.0	129.1	129.5	128.7
7	91	646.0	270	132.2	131.1	131.0	129.9	130.3	128.9	129.2	128.7
8	91	589.0	270	131.9	130.9	130.9	129.6	129.7	128.7	129.0	128.6
9	91	534.0	270	131.7	130.7	130.5	129.4	129.5	128.5	129.0	128.7
10	91	479.0	270	132.3	131.1	131.2	130.1	130.4	129.0	129.8	129.1
11	91	410.0	270	132.2	131.0	131.2	129.9	130.4	129.0	129.9	128.9
12	91	355.0	270	132.6	131.2	131.3	130.4	130.3	129.2	130.5	129.2
13	7	646.0	30	132.2	131.2	130.9	129.2	129.7	126.7	129.0	127.9
14	7	589.0	30	132.4	131.9	131.4	129.0	129.6	126.6	129.0	128.4
15	7	534.0	30	132.2	131.6	131.2	128.7	129.2	126.4	128.8	128.0
16	7	479.0	30	131.9	131.5	131.4	129.2	129.5	126.8	129.2	128.0
17	7	410.0	30	131.5	131.1	129.4	129.6	126.4	128.3	127.7	127.7
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	646.0	90	131.8	131.2	130.9	129.8	129.6	127.4	128.8	128.4
20	22	589.0	90	132.4	131.9	131.3	130.2	130.1	128.0	129.2	128.1
21	22	534.0	90	132.6	131.5	131.1	130.0	129.3	127.8	129.0	127.4
22	22	479.0	90	133.1	131.8	131.4	130.8	129.3	128.1	129.4	128.0
23	22	410.0	90	133.0	131.7	131.3	130.8	128.5	128.0	129.4	128.0
24	22	355.0	90	132.9	131.5	131.4	130.4	128.9	127.8	129.5	127.9
25	78	646.0	150	132.9	131.6	131.6	130.7	129.8	128.9	130.7	128.4
26	78	589.0	150	132.8	131.8	131.3	130.4	130.0	129.0	130.8	128.0
27	78	534.0	150	132.4	131.4	130.9	130.2	129.7	128.7	130.7	127.7
28	78	479.0	150	132.2	131.7	130.8	130.0	129.7	128.6	130.4	127.6
29	78	410.0	150	132.4	131.7	131.0	130.2	129.9	128.6	130.5	127.7
30	78	355.0	150	132.8	132.1	131.4	130.8	130.7	129.2	130.8	128.5
31	110	646.0	30	131.5	130.3	129.4	129.2	129.3	127.2	128.7	127.8
32	110	589.0	30	131.6	130.6	129.4	129.2	129.3	127.3	128.7	127.8
33	110	534.0	30	131.4	130.7	129.8	129.1	129.1	127.4	128.5	127.6
34	110	479.0	30	131.1	130.5	129.8	128.8	128.9	127.5	128.2	127.3
35	110	410.0	30	131.5	130.7	129.5	128.7	128.9	127.6	127.9	127.3
36	110	355.0	30	131.5	130.9	129.3	128.9	129.0	127.5	127.8	127.3
37	42	646.0	150	131.1	130.6	129.7	128.2	128.6	127.0	126.9	126.4
38	42	589.0	150	131.3	130.8	129.9	128.1	128.7	126.9	126.9	126.7
39	42	534.0	150	131.5	130.7	130.0	127.7	128.7	126.6	126.6	126.5
40	42	479.0	150	131.5	131.0	130.5	128.7	128.8	126.8	127.1	127.2
41	42	410.0	150	131.8	131.3	130.4	129.7	130.0	126.8	127.3	127.7
42	42	355.0	150	132.1	131.2	130.3	129.7	129.9	127.0	127.3	127.9

43	62	644.0	30	132.1	131.9	131.1	130.7	130.6	128.4	129.5	128.9
44	62	589.0	30	132.1	132.1	131.7	130.5	130.4	128.3	129.7	128.6
45	62	534.0	30	132.3	131.8	131.6	130.3	130.4	128.1	129.5	128.7
46	62	479.0	30	131.6	131.9	131.6	129.6	129.7	127.7	128.8	128.7
47	62	410.0	30	131.7	132.1	131.2	129.9	129.7	127.5	128.3	128.8
48	62	355.0	30	131.3	131.6	131.4	130.2	130.1	127.7	128.0	128.8
49	23	644.0	150	130.8	131.0	130.9	129.8	130.0	127.8	128.5	128.7
50	23	589.0	150	131.1	131.5	130.9	130.1	130.6	129.0	129.4	129.2
51	23	534.0	150	131.8	131.5	130.8	129.6	130.3	128.7	129.4	128.9
52	23	479.0	150	131.9	130.7	131.4	130.1	130.4	128.5	129.6	129.1
53	23	410.0	150	132.1	131.4	131.2	130.4	130.5	128.4	129.1	129.1
54	23	355.0	150	132.7	131.8	131.4	130.4	131.0	129.1	129.2	129.4
55	114	644.0	330	131.8	130.6	131.1	128.5	128.9	126.7	127.7	126.9
56	114	589.0	330	131.4	131.1	131.1	128.4	128.3	126.7	127.5	126.6
57	114	534.0	330	130.7	130.9	130.6	127.7	127.9	126.2	127.1	126.3
58	114	479.0	330	131.6	130.1	130.5	127.9	127.3	126.5	126.7	126.2
59	114	410.0	330	131.5	130.3	130.0	128.1	127.4	126.0	126.4	126.3
60	114	355.0	330	131.2	131.0	130.2	128.5	127.2	126.4	127.1	126.9
61	120	644.0	90	131.6	131.2	130.7	129.2	129.5	127.6	128.5	128.1
62	120	589.0	90	131.5	130.6	130.4	129.1	128.9	127.4	128.4	127.9
63	120	534.0	90	131.4	130.3	130.5	128.8	128.7	127.1	128.2	127.5
64	120	479.0	90	130.9	130.3	130.6	128.8	128.7	126.8	128.5	127.3
65	120	410.0	90	131.5	131.0	130.3	128.9	129.1	127.0	128.5	127.1
66	120	355.0	90	131.4	131.0	130.1	128.3	129.3	127.3	128.4	127.0
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	132.1	131.3	130.9	128.8	129.6	127.1	128.8	127.6
69	97	534.0	210	131.8	131.4	130.4	129.1	129.3	126.6	128.6	128.0
70	97	479.0	210	131.8	130.9	130.4	130.1	129.9	127.1	129.0	128.5
71	97	410.0	210	132.2	130.6	131.0	130.0	130.4	127.6	129.3	128.2
72	97	355.0	210	132.1	131.1	131.0	129.8	130.4	127.8	129.6	127.7
73	0	0.0	0	131.8	130.7	129.4	130.1	128.6	128.6	129.1	127.7
74	0	0.0	0	132.9	130.2	132.1	131.1	131.6	125.5	131.0	124.4
75	0	0.0	0	132.2	130.9	131.9	130.7	131.3	128.5	130.7	127.2
76	0	896.9	0	132.6	131.3	131.3	130.7	130.9	128.2	130.3	128.1
77	0	896.9	0	131.4	129.9	130.2	129.3	129.7	126.9	129.0	126.5
78	0	896.9	0	131.6	130.3	130.0	128.9	129.7	126.8	129.1	126.7
79	0	430.6	270	131.2	130.6	129.8	128.9	129.0	126.8	128.2	127.5
80	0	430.6	210	131.9	131.3	130.7	130.0	130.4	128.3	129.8	129.2
81	0	430.6	90	132.5	131.9	131.5	130.8	131.3	129.1	130.7	129.6
82	0	430.6	30	132.0	131.3	131.0	130.1	130.5	128.2	129.9	128.4
83	0	630.6	270	131.0	130.5	130.0	128.9	129.2	126.9	128.5	127.7
84	0	630.6	210	131.6	131.2	130.8	129.8	130.1	128.0	129.6	128.4
85	0	630.6	30	131.6	131.0	130.6	129.4	129.8	127.2	129.0	127.8
86	0	630.6	90	131.8	131.5	131.0	129.9	130.3	127.9	129.7	128.6
87	0	830.6	210	132.2	131.7	131.2	130.3	130.6	128.5	129.9	129.3
88	0	830.6	270	130.9	130.5	130.1	128.8	129.1	126.7	128.5	127.6
89	0	830.6	30	130.7	130.4	130.1	128.7	129.1	126.6	128.3	127.3
90	0	830.6	90	131.0	130.9	130.7	129.5	130.0	127.6	129.5	128.6
91	0	0.0	0	132.3	132.2	131.4	128.3	128.4	126.2	127.2	128.9
92	0	0.0	0	132.3	132.2	131.4	128.3	128.4	126.2	127.2	128.9

DATUM 29. 2.79

VERSUCH NR.	9	10	11	12	13	14	15	16	17
DURCHSATZ (KG/S)	0.0669	0.0610	0.0544	0.0491	0.0439	0.0393	0.0354	0.0319	0.0288
EL. ENERGIE (KW)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
REYNOLDSZAHL*E-04	2.488	2.271	2.025	1.830	1.635	1.470	1.321	1.197	1.082
DRUCKVERLUST (1.E+01 N/M**2)									
GES. X= 895.6(MM)	8777.	7404.	5975.	4901.	3950.	3185.	2564.	2106.	1706.
BIS X= 102.0(MM)	1978.	1689.	1364.	1127.	915.	748.	612.	504.	417.
BIS X= 236.1(MM)	2392.	2041.	1658.	1369.	1116.	912.	753.	618.	520.
BIS X= 502.0(MM)	5254.	4449.	3606.	2960.	2387.	1943.	1585.	1298.	1078.
BIS X= 670.0(MM)	6488.	5468.	4389.	3604.	2906.	2345.	1911.	1564.	1280.
BIS X= 736.1(MM)	7512.	6333.	5082.	4176.	3368.	2719.	2212.	1810.	1480.
BIS X= 866.0(MM)	7966.	6728.	5414.	4449.	3590.	2903.	2369.	1943.	1589.
EINTR.DRUCK (BAR)	37.24	37.23	37.21	37.21	37.21	37.18	37.16	37.13	37.10
EINTR.TEMP. GRADC	124.9	124.4	124.1	123.6	123.6	121.3	122.5	119.6	118.1

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD)GRAD C

1	83	644.0	270	125.3	125.9	125.0	125.1	123.6	122.8	121.7	120.9	119.6
2	83	589.0	270	125.2	125.9	125.1	125.1	123.5	122.8	121.6	120.9	119.6
3	83	534.0	270	125.0	126.0	125.2	125.3	123.6	123.0	121.8	121.1	119.9
4	83	479.0	270	124.8	126.1	125.3	125.2	123.5	123.0	121.8	121.1	120.0
5	83	410.0	270	124.9	126.2	125.4	125.2	123.3	123.0	121.6	121.2	120.0
6	83	355.0	270	124.9	126.1	125.2	125.3	123.0	122.9	121.5	121.1	119.9
7	91	644.0	270	124.7	125.9	125.0	125.7	123.9	123.2	121.8	121.3	120.1
8	91	589.0	270	124.7	125.9	124.9	125.6	123.7	123.1	121.7	121.3	120.0
9	91	534.0	270	124.6	125.9	124.9	125.7	123.7	122.8	121.6	121.4	119.9
10	91	479.0	270	124.9	126.1	124.9	125.7	123.8	122.7	121.6	121.3	119.8
11	91	410.0	270	125.0	126.2	125.0	125.6	123.9	122.6	121.6	121.2	119.8
12	91	355.0	270	125.4	126.5	125.1	125.7	124.2	122.8	121.8	121.5	119.8
13	7	644.0	30	123.5	126.6	124.1	124.9	123.0	122.3	120.5	120.4	118.9
14	7	589.0	30	123.7	126.9	124.2	125.0	123.1	122.2	120.6	120.4	118.8
15	7	534.0	30	123.6	126.9	124.0	124.9	122.7	121.8	120.3	120.3	118.7
16	7	479.0	30	124.0	127.0	124.2	124.7	122.7	121.4	120.5	120.6	119.0
17	7	410.0	30	124.0	127.0	124.2	124.1	122.4	120.8	120.3	120.7	119.0
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	124.7	127.3	124.8	125.2	123.3	121.6	121.5	121.3	119.8
20	22	589.0	90	124.9	127.4	124.8	125.2	123.2	121.5	121.5	121.2	119.7
21	22	534.0	90	124.7	126.9	124.2	124.7	123.0	121.1	121.4	121.0	119.3
22	22	479.0	90	125.0	126.8	123.8	124.5	123.0	121.4	121.6	121.3	119.4
23	22	410.0	90	124.5	126.4	123.5	124.1	122.8	121.4	121.4	121.1	119.3
24	22	355.0	90	124.1	126.2	123.8	123.9	122.3	121.4	121.1	120.7	119.1
25	78	644.0	150	125.5	125.9	124.6	124.9	123.5	122.2	121.7	121.1	119.7
26	78	589.0	150	125.5	125.6	124.6	124.9	123.5	122.3	121.6	121.0	119.6
27	78	534.0	150	125.5	125.6	124.8	124.7	123.6	122.4	121.6	120.8	119.3
28	78	479.0	150	125.2	125.7	124.9	124.3	123.6	122.6	121.9	120.7	119.4
29	78	410.0	150	125.0	125.6	124.8	124.2	123.5	122.4	122.0	120.6	119.4
30	78	355.0	150	125.2	125.3	124.4	124.4	123.7	122.4	122.3	120.8	119.4
31	110	644.0	30	124.9	125.5	124.6	124.3	122.9	121.6	121.0	120.4	118.4
32	110	589.0	30	124.9	125.8	124.7	124.2	122.9	121.8	121.1	120.5	118.4
33	110	534.0	30	124.5	125.7	124.5	124.0	122.9	121.7	121.1	120.4	118.2
34	110	479.0	30	123.9	125.1	124.1	123.6	122.6	121.5	121.1	120.1	117.9
35	110	410.0	30	124.1	125.4	124.1	123.7	122.6	121.7	121.3	120.4	118.1
36	110	355.0	30	124.1	125.5	124.1	123.7	122.3	121.7	121.3	120.3	118.1
37	42	644.0	150	123.8	124.9	123.4	123.0	122.2	121.3	121.7	120.2	117.9
38	42	589.0	150	124.1	125.1	123.5	123.4	122.2	121.5	121.9	120.3	118.2
39	42	534.0	150	123.9	124.8	123.4	123.7	122.0	121.5	121.9	120.1	118.2
40	42	479.0	150	123.9	125.3	123.6	124.4	122.0	121.7	122.1	120.2	118.4
41	42	410.0	150	124.1	125.5	123.8	125.0	122.5	122.1	122.3	120.8	118.6
42	42	355.0	150	124.1	125.3	124.0	125.2	122.9	122.3	121.5	121.1	118.4

43	62	644.0	30	124.7	125.4	125.1	125.6	123.8	123.1	122.0	121.2	119.0
44	62	589.0	30	124.7	125.4	125.1	125.8	123.9	123.3	121.9	121.1	119.0
45	62	534.0	30	124.7	125.2	125.1	125.8	124.0	123.2	121.9	121.1	119.0
46	62	479.0	30	124.5	125.1	124.8	125.8	124.3	123.1	121.4	120.9	118.5
47	62	410.0	30	124.2	125.1	124.6	125.7	124.3	123.0	121.4	121.1	118.4
48	62	355.0	30	124.3	125.1	124.6	125.6	124.4	123.0	121.5	121.3	118.3
49	23	644.0	150	124.3	124.9	124.7	125.3	124.2	122.9	121.5	121.1	118.7
50	23	589.0	150	125.3	125.6	125.4	125.7	124.6	123.2	121.9	121.6	118.7
51	23	534.0	150	125.0	125.7	125.2	125.5	124.4	122.9	121.6	121.5	118.6
52	23	479.0	150	124.8	126.1	125.3	125.6	124.3	122.9	121.6	121.6	118.6
53	23	410.0	150	124.9	126.1	125.2	125.2	124.3	122.8	121.4	121.3	118.5
54	23	355.0	150	125.3	126.4	125.1	125.2	124.3	122.9	121.5	121.2	118.6
55	114	644.0	330	124.8	124.9	124.5	124.5	123.1	122.0	120.5	120.5	117.9
56	114	589.0	330	124.1	124.7	124.4	124.4	122.6	121.7	120.3	120.3	117.6
57	114	534.0	330	123.3	124.1	124.1	124.3	122.0	121.3	120.0	119.8	117.2
58	114	479.0	330	123.5	123.9	123.8	124.5	121.9	121.1	120.4	119.9	117.4
59	114	410.0	330	123.5	123.9	123.5	124.4	121.8	120.9	120.4	119.6	117.5
60	114	355.0	330	123.9	124.6	123.1	124.0	121.5	120.5	120.3	119.5	117.5
61	120	644.0	90	125.0	125.6	124.8	125.3	123.4	122.3	121.5	120.7	118.6
62	120	589.0	90	124.7	125.4	124.6	125.0	123.2	121.9	121.5	120.6	118.6
63	120	534.0	90	124.3	125.3	124.4	124.7	123.0	121.7	121.5	120.5	118.6
64	120	479.0	90	124.1	125.4	124.7	124.5	123.1	121.8	121.4	120.6	118.9
65	120	410.0	90	124.4	125.4	124.7	124.8	123.4	122.1	121.3	120.8	119.3
66	120	355.0	90	124.3	125.1	124.9	124.9	123.4	122.3	121.1	120.4	119.4
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	124.8	125.2	125.3	124.9	123.8	123.0	121.8	120.7	119.6
69	97	534.0	210	124.6	124.9	125.5	125.0	123.8	123.0	121.9	120.5	119.7
70	97	479.0	210	125.0	125.7	125.7	125.5	124.1	123.1	122.2	120.5	119.9
71	97	410.0	210	125.1	125.7	125.5	125.5	124.2	122.9	122.3	120.7	119.8
72	97	355.0	210	125.2	125.7	125.2	125.4	124.1	122.5	122.4	120.7	119.7
73	0	0.0	0	124.5	125.5	124.9	124.3	123.6	122.1	123.0	120.3	119.4
74	0	0.0	0	126.4	122.7	124.2	123.8	124.3	121.4	121.6	118.9	117.0
75	0	0.0	0	123.7	125.1	123.3	122.6	123.0	120.3	122.9	119.5	117.8
76	0	896.9	0	124.4	124.9	124.1	124.2	123.6	121.9	122.0	119.9	118.4
77	0	896.9	0	123.7	124.2	123.4	123.4	122.8	120.9	121.2	119.4	117.8
78	0	896.9	0	124.1	124.7	124.0	124.0	123.5	121.5	121.5	120.0	118.4
79	0	430.6	270	124.3	125.3	124.9	125.2	123.4	122.4	121.4	120.9	119.4
80	0	430.6	210	125.3	125.9	125.5	125.8	124.2	123.2	122.1	121.3	119.7
81	0	430.6	90	125.1	125.8	125.1	125.3	124.2	122.7	122.1	120.9	119.6
82	0	430.6	30	124.8	125.7	124.9	125.0	123.8	122.4	121.7	120.5	119.2
83	0	630.6	270	124.5	125.3	124.8	124.9	123.8	122.5	121.5	120.7	119.4
84	0	630.6	210	124.9	125.5	125.1	125.3	124.1	123.1	122.2	121.2	119.7
85	0	630.6	30	124.0	125.0	124.3	124.4	123.2	122.0	121.5	120.4	119.0
86	0	630.6	90	124.0	124.9	124.3	124.6	123.4	122.2	121.6	120.6	119.1
87	0	830.6	210	125.2	125.9	125.4	125.7	124.5	123.2	122.3	121.4	120.0
88	0	830.6	270	123.4	124.8	124.4	124.9	123.3	122.4	121.5	120.6	119.3
89	0	830.6	30	123.2	124.4	123.9	124.2	122.7	121.8	121.0	120.1	118.8
90	0	830.6	90	123.7	124.8	124.4	124.6	123.2	122.1	121.3	120.5	119.0
91	0	0.0	0	123.4	124.0	123.2	123.5	124.8	120.0	119.4	121.4	118.4
92	0	0.0	0	123.4	124.0	123.2	123.5	124.8	120.0	119.4	121.4	118.4



DATUM 29. 2.79

VERSUCH NR.	1	2	3	4	5	6	7	8	9	10	11
DURCHSATZ (KG/S)	0.0411	0.0375	0.0347	0.0317	0.0283	0.0255	0.0228	0.0204	0.0184	0.0165	0.0150
EL. ENERGIE (KW)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
REYNOLDSZAHLE-04	1.515	1.385	1.280	1.170	1.045	0.947	0.845	0.759	0.684	0.616	0.560
DRUCKVERLUST (1.E+01 N/M**2)											
GES.X= 895.6(MM)	13175.	11140.	9575.	8066.	6547.	5384.	4354.	3564.	2901.	2373.	1971.
BIS X= 102.0(MM)	3047.	2591.	2242.	1906.	1563.	1298.	1063.	879.	726.	600.	507.
BIS X= 236.1(MM)	3723.	3172.	2742.	2328.	1914.	1602.	1303.	1084.	898.	745.	628.
BIS X= 502.0(MM)	7955.	6712.	5765.	4851.	3939.	3292.	2660.	2194.	1800.	1479.	1240.
BIS X= 670.0(MM)	9615.	8111.	6959.	5848.	4721.	3878.	3169.	2592.	2114.	1744.	1450.
BIS X= 736.1(MM)	11170.	9425.	8089.	6803.	5493.	4511.	3681.	3012.	2456.	2023.	1682.
BIS X= 866.0(MM)	11910.	10052.	8620.	7250.	5869.	4828.	3937.	3227.	2635.	2178.	1811.
EINTR.-DRUCK (BAR)	9.90	9.88	9.87	9.86	9.85	9.84	9.83	9.82	9.81	9.80	9.79
EINTR.-TEMP. GRADC	130.3	129.8	129.2	128.5	127.9	125.8	126.0	125.7	124.7	123.7	123.5

TE NR.	R NR.	AX POS (MM)	RAD POS (GRD)	T GRAD C	1	2	3	4	5	6	7	8	9	10	11
1	83	644.0	270	129.3	129.0	128.8	128.7	128.3	126.5	126.7	126.7	125.3	124.4	123.2	
2	83	589.0	270	129.3	129.0	128.8	128.7	128.4	126.5	126.7	126.7	125.3	124.4	123.2	
3	83	534.0	270	129.4	129.1	128.9	128.8	128.4	126.6	126.8	126.8	125.4	124.4	123.3	
4	83	479.0	270	129.4	129.2	129.0	128.8	128.5	126.6	126.8	126.8	125.4	124.4	123.3	
5	83	410.0	270	129.5	129.2	129.0	128.8	128.4	126.6	126.8	126.8	125.4	124.3	123.3	
6	83	355.0	270	129.4	129.1	129.0	128.7	128.4	126.5	126.7	126.8	125.3	124.3	123.2	
7	91	644.0	270	129.1	128.8	128.7	128.5	128.1	126.3	126.6	126.5	125.3	124.3	123.1	
8	91	589.0	270	129.1	128.8	128.8	128.5	128.1	126.2	126.6	126.5	125.2	124.2	123.1	
9	91	534.0	270	129.1	128.8	128.7	128.4	128.1	126.2	126.5	126.5	125.2	124.2	123.1	
10	91	479.0	270	128.7	128.4	128.4	128.1	127.8	125.9	126.3	126.2	124.9	123.9	122.6	
11	91	410.0	270	128.7	128.3	128.4	128.0	127.6	125.7	126.1	126.0	124.8	123.6	122.5	
12	91	355.0	270	129.0	128.6	128.4	128.1	127.8	125.9	126.3	126.1	124.8	123.8	122.5	
13	7	644.0	30	130.6	130.1	129.9	129.5	129.1	127.1	127.1	126.9	125.4	123.7	122.7	
14	7	589.0	30	130.7	130.2	130.0	129.6	129.2	127.2	127.1	126.9	125.4	123.7	122.8	
15	7	534.0	30	130.6	130.1	129.8	129.4	129.1	127.1	127.1	126.9	125.2	123.4	122.7	
16	7	479.0	30	130.8	130.4	130.0	129.6	129.4	127.3	127.1	126.8	125.5	123.4	122.8	
17	7	410.0	30	130.8	130.5	130.0	129.6	129.3	127.2	127.1	126.7	125.5	123.4	122.7	
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
19	22	644.0	90	130.4	130.0	129.5	129.0	128.7	126.7	126.5	126.2	124.9	123.2	122.5	
20	22	589.0	90	130.1	129.8	129.2	128.8	128.3	126.4	126.2	125.9	124.6	122.8	122.2	
21	22	534.0	90	130.1	129.6	129.1	128.8	128.1	126.1	126.1	125.7	124.4	122.6	122.1	
22	22	479.0	90	130.4	130.1	129.5	129.2	128.5	126.4	126.4	126.0	124.7	122.8	122.2	
23	22	410.0	90	130.1	130.0	129.5	129.1	128.4	126.4	126.4	126.1	124.6	122.8	122.2	
24	22	355.0	90	130.1	130.1	129.5	129.2	128.4	126.5	126.4	126.0	124.5	122.8	122.3	
25	78	644.0	150	129.5	129.2	128.8	128.5	127.9	125.9	126.1	126.0	124.6	123.4	122.4	
26	78	589.0	150	129.4	129.1	128.7	128.4	127.8	125.9	126.0	126.0	124.5	123.3	122.5	
27	78	534.0	150	129.5	129.1	128.7	128.5	127.9	125.8	126.1	126.1	124.6	123.4	122.6	
28	78	479.0	150	129.5	129.0	128.7	128.5	127.8	125.8	126.2	126.1	124.5	123.3	122.7	
29	78	410.0	150	129.5	128.8	128.8	128.6	127.8	125.8	126.3	126.2	124.6	123.3	122.7	
30	78	355.0	150	129.3	128.5	128.3	128.3	127.6	125.6	126.1	125.9	124.3	123.1	122.3	
31	110	644.0	30	130.3	129.8	129.7	129.4	129.0	127.0	127.3	127.0	125.8	124.4	122.8	
32	110	589.0	30	130.4	129.9	129.7	129.5	129.1	127.1	127.4	127.1	125.9	124.4	122.8	
33	110	534.0	30	130.4	129.9	129.8	129.4	129.1	127.1	127.4	127.1	125.8	124.4	122.8	
34	110	479.0	30	130.2	129.8	129.7	129.4	129.1	127.0	127.2	126.9	125.7	124.3	122.7	
35	110	410.0	30	130.5	129.9	129.8	129.6	129.2	127.1	127.4	127.1	125.9	124.4	122.9	
36	110	355.0	30	130.5	129.9	129.9	129.6	129.2	127.1	127.4	127.0	125.9	124.4	122.8	
37	42	644.0	150	130.1	129.7	129.5	128.9	128.5	126.5	126.3	125.7	124.7	123.2	121.7	
38	42	589.0	150	130.3	130.0	129.7	129.0	128.7	126.7	126.5	125.8	124.8	123.2	121.8	
39	42	534.0	150	130.2	129.9	129.7	128.8	128.6	126.5	126.3	125.5	124.6	123.0	121.6	
40	42	479.0	150	129.8	129.6	129.5	128.5	128.3	126.2	125.9	125.1	124.5	122.7	121.3	
41	42	410.0	150	130.1	130.0	129.8	129.0	128.7	126.6	126.2	125.4	124.8	123.0	121.7	
42	42	355.0	150	130.2	130.2	129.9	129.2	128.8	126.7	126.3	125.6	124.9	123.1	121.8	

43	62	644.0	30	129.0	128.7	128.3	127.8	127.5	125.4	125.3	125.2	123.9	123.1	121.9
44	62	589.0	30	129.2	128.8	128.4	128.0	127.5	125.4	125.3	125.2	124.0	123.2	121.9
45	62	534.0	30	129.3	129.0	128.6	128.2	127.7	125.6	125.5	125.3	124.1	123.3	122.0
46	62	479.0	30	129.2	128.7	128.5	128.1	127.5	125.4	125.2	125.1	123.9	123.2	121.9
47	62	410.0	30	129.4	128.8	128.5	128.0	127.4	125.4	125.2	125.2	123.8	123.1	121.9
48	62	355.0	30	129.5	128.8	128.5	128.0	127.4	125.5	125.2	125.4	123.8	123.1	122.0
49	23	644.0	150	129.3	128.7	128.5	128.1	127.7	125.7	125.7	125.9	124.5	123.7	122.6
50	23	589.0	150	129.3	128.6	128.4	128.0	127.6	125.6	125.7	125.9	124.4	123.7	122.5
51	23	534.0	150	129.3	128.5	128.4	128.0	127.7	125.7	125.7	125.9	124.4	123.7	122.4
52	23	479.0	150	129.5	128.6	128.5	128.1	127.6	125.7	125.7	125.8	124.5	123.6	122.2
53	23	410.0	150	129.3	128.5	128.4	127.9	127.6	125.5	125.7	125.7	124.4	123.7	122.2
54	23	355.0	150	129.3	128.6	128.6	128.0	127.7	125.6	125.8	125.8	124.5	123.9	122.3
55	114	644.0	330	130.3	129.3	129.0	128.6	128.0	126.1	126.0	125.7	124.7	123.6	121.6
56	114	589.0	330	130.2	129.2	128.9	128.7	127.9	126.1	125.9	125.6	124.6	123.5	121.5
57	114	534.0	330	129.8	128.9	128.4	128.3	127.4	125.7	125.5	125.3	124.2	123.2	121.0
58	114	479.0	330	129.9	128.9	128.6	128.4	127.4	125.7	125.5	125.3	124.1	123.0	120.7
59	114	410.0	330	129.9	129.0	128.7	128.4	127.4	125.7	125.6	125.3	124.0	123.1	120.7
60	114	355.0	330	129.2	128.8	128.3	128.1	127.2	125.2	125.1	124.7	123.6	122.7	120.2
61	120	644.0	90	129.4	128.8	128.4	128.0	127.3	125.5	125.4	125.4	124.2	123.4	121.4
62	120	589.0	90	129.3	128.8	128.4	128.0	127.2	125.4	125.3	125.3	124.0	123.3	121.3
63	120	534.0	90	129.0	128.6	128.3	127.9	127.1	125.2	125.2	125.1	123.8	123.1	120.9
64	120	479.0	90	129.0	128.5	128.3	127.9	127.1	125.0	125.0	125.1	123.7	123.2	120.9
65	120	410.0	90	129.0	128.6	128.5	128.0	127.1	125.1	125.0	125.3	123.8	123.3	120.8
66	120	355.0	90	129.0	128.5	128.6	128.2	127.1	125.1	125.1	125.4	123.9	123.4	120.7
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	128.9	128.3	128.3	127.9	127.0	125.1	125.0	125.4	123.9	123.9	121.5
69	97	534.0	210	129.0	128.2	128.3	127.9	127.1	125.1	125.1	125.3	124.0	124.0	121.4
70	97	479.0	210	128.8	128.0	128.0	127.7	126.9	124.9	125.0	125.2	123.9	124.1	121.3
71	97	410.0	210	128.8	128.1	128.1	127.9	127.1	125.1	125.2	125.3	124.0	124.2	121.6
72	97	355.0	210	128.6	128.1	128.2	127.9	127.1	125.2	125.3	125.3	124.0	124.3	121.7
73	0	0.0	0	128.1	127.8	127.2	126.4	125.5	124.0	124.3	123.6	122.7	123.5	122.5
74	0	0.0	0	132.1	131.8	130.5	129.6	128.9	126.2	126.4	126.4	126.1	122.5	123.9
75	0	0.0	0	130.7	129.9	130.0	129.5	129.4	127.1	127.2	127.1	125.3	125.0	124.2
76	0	896.9	0	129.7	129.1	128.9	128.7	128.1	126.2	126.1	126.1	124.6	124.0	122.7
77	0	896.9	0	129.7	129.0	129.0	128.8	128.3	126.4	126.4	126.4	125.0	124.2	122.7
78	0	896.9	0	130.0	129.5	129.4	129.1	128.6	126.6	126.6	126.5	125.0	124.3	122.7
79	0	430.6	270	129.3	128.8	128.7	128.3	127.9	126.0	126.2	126.2	125.1	124.4	122.8
80	0	430.6	210	128.9	128.4	128.3	128.0	127.6	125.8	126.1	126.2	125.0	124.2	123.0
81	0	430.6	90	129.4	128.9	128.9	128.6	128.4	126.6	126.9	127.0	125.8	124.9	123.6
82	0	430.6	30	130.2	129.7	129.7	129.4	129.1	127.3	127.4	127.4	126.2	125.3	123.8
83	0	630.6	270	128.9	128.4	128.3	128.1	127.8	125.9	126.2	126.4	125.4	124.7	123.1
84	0	630.6	210	128.8	128.4	128.2	128.0	127.7	125.8	126.1	126.3	125.3	124.7	123.3
85	0	630.6	30	129.6	129.2	129.2	128.9	128.6	126.7	126.8	126.9	125.8	124.8	123.6
86	0	630.6	90	128.9	128.4	128.4	128.2	127.9	126.0	126.3	126.4	125.3	124.6	123.4
87	0	830.6	210	129.4	128.9	128.7	128.5	128.1	126.4	126.7	126.9	125.8	125.0	123.6
88	0	830.6	270	129.0	128.5	128.4	128.0	127.7	125.8	126.0	126.2	125.1	124.5	123.1
89	0	830.6	30	129.5	129.0	129.0	128.7	128.4	126.5	126.5	126.7	125.5	124.8	123.4
90	0	830.6	90	128.3	127.9	127.9	127.5	127.1	125.2	125.2	125.5	124.4	123.7	122.7
91	0	0.0	0	130.4	130.0	129.9	129.2	128.3	126.9	123.4	121.6	121.9	121.3	120.4
92	0	0.0	0	130.4	130.0	129.9	129.2	128.3	126.9	123.4	121.6	121.9	121.3	120.4

DATUM 29. 2.79

VERSUCH NR.	12	13	14	15	16	17	18	19	20	21
DURCHSATZ (KG/S)	0.0136	0.0120	0.0108	0.0097	0.0087	0.0079	0.0070	0.0061	0.0054	0.0048
EL. ENERGIE (KW)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
REYNOLDSZAHL*E-04	0.513	0.453	0.407	0.367	0.330	0.300	0.267	0.234	0.209	0.183
DRUCKVERLUST (1.E+01 N/MM**2)										
GES.X= 895.6(MM)	1551.	1221.	991.	804.	652.	538.	429.	326.	257.	189.
BIS X= 102.0(MM)	408.	330.	271.	225.	186.	159.	130.	105.	87.	70.
BIS X= 236.1(MM)	508.	411.	343.	285.	238.	204.	168.	136.	114.	88.
BIS X= 502.0(MM)	992.	796.	655.	538.	445.	378.	313.	255.	214.	171.
BIS X= 670.0(MM)	1157.	926.	760.	625.	517.	437.	358.	291.	246.	195.
BIS X= 736.1(MM)	1339.	1071.	885.	729.	603.	510.	418.	340.	285.	228.
BIS X= 866.0(MM)	1446.	1156.	951.	785.	652.	555.	459.	372.	315.	252.
EINTR.DRUCK (BAR)	9.72	9.72	9.71	9.71	9.70	9.69	9.68	9.68	9.67	9.66
EINTR.TEMP. GRADC	115.4	115.6	114.2	111.9	110.2	109.4	108.6	107.7	106.5	104.3

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD)GRAD C

1	83	644.0	270	117.5	117.5	115.9	113.8	112.4	111.8	110.6	109.8	108.0	107.0
2	83	589.0	270	117.5	117.6	116.0	113.8	112.4	111.8	110.5	109.8	107.9	106.8
3	83	534.0	270	117.7	117.7	116.1	113.9	112.4	111.8	110.5	109.7	107.7	106.8
4	83	479.0	270	117.6	117.6	116.1	113.9	112.4	111.7	110.5	109.7	107.6	106.7
5	83	410.0	270	117.6	117.6	115.8	113.6	112.1	111.4	110.1	109.2	107.1	106.2
6	83	355.0	270	117.6	117.6	115.7	113.6	112.0	111.3	110.0	109.0	106.8	105.9
7	91	644.0	270	117.7	117.7	116.3	114.2	113.2	112.6	111.4	110.5	108.7	107.6
8	91	589.0	270	117.7	117.7	116.3	114.3	113.2	112.6	111.4	110.5	108.7	107.6
9	91	534.0	270	117.7	117.7	116.3	114.3	113.2	112.6	111.4	110.4	108.6	107.5
10	91	479.0	270	117.4	117.4	115.9	113.9	112.8	112.2	110.9	110.0	108.0	106.9
11	91	410.0	270	117.2	117.2	115.8	113.7	112.6	112.0	110.8	109.8	107.7	106.6
12	91	355.0	270	117.3	117.3	115.9	113.8	112.7	112.0	110.8	109.8	107.7	106.6
13	7	644.0	30	116.5	116.8	114.9	112.5	111.0	110.6	109.2	108.4	106.4	105.9
14	7	589.0	30	116.5	116.7	114.8	112.4	110.8	110.5	109.0	108.2	106.2	105.7
15	7	534.0	30	116.3	116.6	114.7	112.1	110.6	110.3	108.7	108.0	105.9	105.4
16	7	479.0	30	116.3	116.7	114.7	111.9	110.4	110.2	108.5	107.7	105.5	105.1
17	7	410.0	30	116.4	116.7	114.7	111.8	110.3	110.1	108.5	107.6	105.4	105.0
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	116.6	116.7	115.0	112.5	111.4	111.1	109.5	108.7	106.3	105.6
20	22	589.0	90	116.3	116.4	114.6	112.1	111.0	110.6	109.1	108.3	105.9	105.2
21	22	534.0	90	116.3	116.2	114.5	111.9	110.8	110.4	108.9	108.1	105.8	105.0
22	22	479.0	90	116.6	116.3	114.4	112.0	110.9	110.5	108.9	108.0	105.8	105.0
23	22	410.0	90	116.6	116.4	114.4	112.0	110.9	110.4	108.9	108.0	105.7	104.9
24	22	355.0	90	116.7	116.4	114.4	112.0	110.8	110.4	108.9	108.0	105.7	104.9
25	78	644.0	150	117.1	117.0	115.5	113.5	112.7	112.0	110.8	109.9	108.0	106.9
26	78	589.0	150	117.0	117.0	115.5	113.5	112.7	111.9	110.7	109.9	107.8	106.7
27	78	534.0	150	117.1	117.1	115.5	113.5	112.6	111.9	110.7	109.7	107.7	106.5
28	78	479.0	150	117.1	117.1	115.2	113.4	112.5	111.6	110.5	109.5	107.5	106.2
29	78	410.0	150	117.2	117.1	115.2	113.4	112.6	111.7	110.6	109.6	107.6	106.2
30	78	355.0	150	117.0	116.8	114.9	113.1	112.2	111.2	110.2	109.2	107.2	105.6
31	110	644.0	30	116.9	117.0	115.2	113.1	111.6	111.2	109.8	109.1	107.5	107.1
32	110	589.0	30	116.9	117.0	115.2	113.1	111.6	111.1	109.7	109.0	107.3	106.9
33	110	534.0	30	116.8	117.0	115.1	113.0	111.5	111.1	109.5	108.7	107.1	106.6
34	110	479.0	30	116.9	116.9	114.9	112.7	111.2	110.8	109.1	108.3	106.7	106.2
35	110	410.0	30	116.9	116.9	114.9	112.7	111.2	110.7	109.0	108.2	106.6	106.1
36	110	355.0	30	116.8	116.9	114.8	112.5	111.0	110.5	108.7	107.9	106.2	105.7
37	42	644.0	150	116.0	115.9	114.1	111.9	110.7	110.2	108.5	107.7	105.9	105.3
38	42	589.0	150	116.2	116.0	114.2	112.1	110.8	110.3	108.6	107.8	106.0	105.3
39	42	534.0	150	116.1	115.9	114.1	111.9	110.7	110.1	108.5	107.6	105.9	105.0
40	42	479.0	150	116.0	115.6	113.8	111.8	110.3	109.8	108.1	107.2	105.6	104.6
41	42	410.0	150	116.2	115.7	113.8	111.8	110.3	109.9	108.2	107.4	105.7	104.7
42	42	355.0	150	116.2	115.7	113.6	111.8	110.3	109.9	108.2	107.3	105.6	104.5

43	62	644.0	30	116.9	116.5	114.8	113.2	112.2	111.5	110.1	109.1	107.3	106.1
44	62	589.0	30	116.9	116.5	114.8	113.3	112.2	111.5	110.1	109.1	107.3	106.0
45	62	534.0	30	116.9	116.6	115.0	113.3	112.3	111.6	110.3	109.2	107.4	106.2
46	62	479.0	30	116.7	116.3	114.8	113.2	112.3	111.4	110.3	109.0	107.3	105.7
47	62	410.0	30	116.7	116.3	114.8	113.1	112.2	111.4	110.2	109.0	107.2	105.7
48	62	355.0	30	116.7	116.3	114.9	113.2	112.3	111.4	110.2	109.0	107.2	105.7
49	23	644.0	150	117.6	117.5	115.9	114.4	113.5	112.7	111.7	110.7	109.0	107.9
50	23	589.0	150	117.4	117.3	115.8	114.2	113.2	112.5	111.4	110.3	108.7	107.5
51	23	534.0	150	117.3	117.2	115.8	114.2	113.1	112.3	111.3	110.2	108.4	107.1
52	23	479.0	150	117.2	117.1	115.8	114.1	113.0	112.2	111.2	110.0	108.3	106.9
53	23	410.0	150	117.1	117.2	115.7	114.1	113.0	112.2	111.2	110.0	108.2	106.9
54	23	355.0	150	117.1	117.4	115.8	114.2	113.0	112.2	111.2	110.0	108.2	106.8
55	114	644.0	330	116.0	116.0	114.6	113.0	111.6	111.0	109.8	108.9	107.5	106.8
56	114	589.0	330	115.9	115.9	114.4	112.8	111.5	110.9	109.7	108.8	107.3	106.5
57	114	534.0	330	115.5	115.6	114.1	112.5	111.1	110.4	109.3	108.3	106.9	106.0
58	114	479.0	330	115.4	115.5	113.9	112.4	111.1	110.2	109.1	108.3	106.7	105.7
59	114	410.0	330	115.4	115.6	113.9	112.4	111.1	110.2	109.1	108.3	106.7	105.6
60	114	355.0	330	114.9	115.2	113.3	112.0	110.5	109.7	108.5	107.7	106.0	105.0
61	120	644.0	90	115.9	116.1	114.7	113.3	112.2	111.5	110.3	109.3	107.8	106.8
62	120	589.0	90	115.8	116.1	114.7	113.3	112.1	111.4	110.1	109.3	107.7	106.7
63	120	534.0	90	115.6	116.0	114.5	113.1	111.9	111.2	110.0	109.1	107.5	106.4
64	120	479.0	90	115.5	115.9	114.4	113.1	111.9	111.1	109.9	109.0	107.4	106.2
65	120	410.0	90	115.6	116.0	114.5	113.1	112.0	111.2	109.9	109.1	107.5	106.2
66	120	355.0	90	115.4	115.8	114.3	112.9	111.8	111.0	109.7	108.8	107.3	105.9
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	116.4	116.7	115.3	113.9	112.9	112.1	111.0	110.0	108.5	107.3
69	97	534.0	210	116.3	116.6	115.2	113.8	112.7	112.0	110.8	109.9	108.3	107.0
70	97	479.0	210	116.1	116.4	114.8	113.5	112.3	111.6	110.2	109.5	108.0	106.4
71	97	410.0	210	116.1	116.6	115.0	113.6	112.5	111.8	110.4	109.6	108.1	106.6
72	97	355.0	210	116.0	116.6	115.0	113.7	112.4	111.8	110.4	109.5	108.1	106.4
73	0	0.0	0	114.9	115.9	114.9	112.7	111.6	109.8	110.4	108.7	108.1	105.6
74	0	0.0	0	113.6	114.1	113.1	110.7	107.9	108.5	108.0	106.7	106.6	104.5
75	0	0.0	0	117.6	116.7	114.5	112.4	111.2	109.9	107.4	107.8	105.0	102.7
76	0	896.9	0	116.7	116.7	115.0	113.0	111.8	111.1	110.0	109.3	107.7	106.8
77	0	896.9	0	116.8	117.0	115.1	113.3	112.2	111.5	110.5	109.9	108.5	107.8
78	0	896.9	0	116.7	116.9	115.2	113.5	112.2	111.7	110.6	110.0	108.7	108.1
79	0	430.6	270	117.4	117.9	116.5	115.1	114.0	113.5	112.4	111.7	110.3	109.5
80	0	430.6	210	117.7	118.0	116.6	115.2	114.2	113.6	112.6	111.8	110.2	109.3
81	0	430.6	90	118.2	118.3	116.9	115.2	114.0	113.3	112.3	111.5	109.9	109.1
82	0	430.6	30	118.2	118.3	116.7	114.9	113.6	113.0	111.9	111.2	109.7	108.9
83	0	630.6	270	117.6	117.9	116.6	115.3	114.3	113.8	112.7	112.0	110.7	109.9
84	0	630.6	210	117.9	118.3	116.9	115.6	114.6	114.1	113.2	112.4	111.1	110.2
85	0	630.6	30	118.1	118.3	116.8	115.1	114.0	113.5	112.5	111.8	110.5	109.8
86	0	630.6	90	118.1	118.4	116.9	115.3	114.2	113.6	112.7	112.1	110.7	109.9
87	0	830.6	210	118.3	118.5	117.2	115.8	114.9	114.3	113.4	112.7	111.3	110.6
88	0	830.6	270	117.7	118.0	116.7	115.4	114.4	114.0	113.0	112.3	111.1	110.4
89	0	830.6	30	117.9	118.2	116.7	115.1	114.0	113.6	112.6	112.1	110.9	110.2
90	0	830.6	90	117.4	117.7	116.1	114.6	113.5	113.2	112.2	111.5	110.4	109.7
91	0	0.0	0	112.0	112.0	112.0	109.9	108.8	108.1	107.0	106.0	104.5	104.4
92	0	0.0	0	112.0	112.0	112.0	109.9	108.8	108.1	107.0	106.0	104.5	104.4

DATUM 30. 2.79

VERSUCH NR.	1	2	3	4	5	6	7	8	9	10	11
DURCHSATZ (KG/S)	0.0413	0.0377	0.0348	0.0318	0.0284	0.0256	0.0229	0.0206	0.0186	0.0167	0.0151
EL. ENERGIE (KW)	31.8	29.5	27.0	25.0	23.3	20.3	18.9	16.9	15.3	13.7	12.3
WAERMEENERGIE(KW)	32.6	29.8	27.3	25.4	23.6	20.5	18.8	16.7	15.3	13.4	12.0
WAERMEBILANZ(0/0)	2.5	0.9	1.2	1.6	1.3	1.0	-0.2	-1.2	-0.0	-1.9	-2.3
REYNOLDSZAHL*E-04	1.345	1.223	1.133	1.034	0.920	0.834	0.745	0.670	0.607	0.543	0.495
DRUCKVERLUST (1.E+01 N/CM**2)											
GES. X= 895.6(MM)	16391.	13847.	11998.	10113.	8257.	6857.	5609.	4636.	3844.	3157.	2642.
BIS X= 102.0(MM)	3194.	2717.	2363.	2006.	1642.	1381.	1131.	945.	783.	651.	548.
BIS X= 236.1(MM)	3905.	3334.	2913.	2475.	2022.	1686.	1405.	1163.	975.	806.	681.
BIS X= 502.0(MM)	8936.	7578.	6546.	5527.	4481.	3728.	3057.	2522.	2096.	1725.	1445.
BIS X= 670.0(MM)	11203.	9444.	8185.	6906.	5606.	4613.	3788.	3117.	2568.	2106.	1765.
BIS X= 736.1(MM)	13462.	11343.	9805.	8275.	6723.	5537.	4547.	3744.	3085.	2535.	2123.
BIS X= 866.0(MM)	14556.	12282.	10648.	8983.	7316.	6018.	4959.	4092.	3375.	2781.	2331.
EINTR.DRUCK (BAR)	9.61	9.59	9.58	9.56	9.53	9.50	9.47	9.44	9.40	9.37	9.33
EINTR.TEMP. GRADC	137.7	140.1	139.5	137.6	136.1	136.8	135.6	135.8	132.3	134.9	132.5

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD) GRAD C

1	83	644.0	270	402.5	406.2	403.7	408.5	415.0	411.7	420.1	419.8	425.0	426.7	422.8
2	83	589.0	270	376.6	380.2	378.3	382.5	388.7	385.7	392.5	391.4	393.4	393.6	390.0
3	83	534.0	270	347.1	350.1	348.4	351.5	356.3	352.7	356.9	354.3	354.5	353.3	348.7
4	83	479.0	270	301.4	303.3	301.2	301.9	303.7	299.7	301.0	298.3	297.2	295.6	292.1
5	83	410.0	270	325.1	328.1	326.8	329.5	334.4	331.7	337.5	337.1	339.4	339.3	336.0
6	83	355.0	270	295.4	298.4	297.3	299.1	302.9	300.2	303.5	301.3	301.2	299.5	295.4
7	91	644.0	270	412.4	416.2	414.4	418.8	426.1	422.9	432.5	433.3	439.6	440.1	435.3
8	91	589.0	270	385.7	389.7	388.2	392.3	399.4	396.8	406.0	406.4	411.0	410.7	406.5
9	91	534.0	270	361.8	365.6	364.6	368.5	375.1	372.7	379.7	377.8	379.0	377.1	371.7
10	91	479.0	270	312.2	313.3	310.9	311.0	313.0	308.1	309.1	305.4	305.0	303.9	300.5
11	91	410.0	270	327.1	330.2	329.5	332.4	338.3	335.1	341.2	341.5	347.6	351.5	350.8
12	91	355.0	270	302.2	305.3	304.7	307.3	312.6	310.0	315.1	314.5	317.5	318.1	315.6
13	7	644.0	30	402.7	404.5	402.6	404.8	411.4	404.4	411.1	406.1	407.5	407.5	406.7
14	7	589.0	30	374.1	376.1	375.1	377.1	383.6	377.8	384.5	380.6	383.3	384.8	384.9
15	7	534.0	30	351.7	353.8	352.9	354.9	360.8	355.5	362.0	358.3	359.7	359.1	355.4
16	7	479.0	30	303.4	303.8	301.4	300.3	301.6	294.9	295.9	290.6	287.8	284.5	278.8
17	7	410.0	30	309.7	311.8	310.6	312.1	316.3	311.2	316.1	313.2	314.8	315.7	314.7
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	397.4	399.5	397.8	400.9	406.9	400.9	408.1	403.9	407.0	407.5	406.6
20	22	589.0	90	372.3	374.7	373.1	375.9	381.7	376.4	382.8	379.5	383.6	386.2	386.1
21	22	534.0	90	351.7	354.6	353.6	356.3	362.5	358.4	365.1	363.3	366.0	365.6	360.8
22	22	479.0	90	301.1	302.3	299.7	299.0	300.6	294.8	295.0	291.0	288.4	285.5	279.4
23	22	410.0	90	305.0	307.6	306.1	307.3	311.8	308.0	310.9	309.1	309.8	311.3	310.4
24	22	355.0	90	283.8	286.3	284.8	285.9	290.0	286.6	289.1	288.1	289.0	290.7	289.1
25	78	644.0	150	395.6	398.1	396.2	399.0	405.1	399.2	404.5	400.7	402.6	402.9	401.5
26	78	589.0	150	375.2	377.8	376.0	378.2	384.0	378.4	383.0	379.8	381.3	382.0	381.3
27	78	534.0	150	351.9	354.7	353.2	355.3	361.3	356.2	361.2	359.1	360.6	360.0	356.5
28	78	479.0	150	303.9	305.1	302.4	301.6	303.6	297.2	297.3	293.2	290.2	287.3	282.7
29	78	410.0	150	306.7	309.2	307.8	309.2	314.2	309.6	313.6	311.7	312.4	312.8	312.2
30	78	355.0	150	287.0	289.4	288.2	289.1	293.2	289.1	292.5	291.2	291.6	292.1	291.0
31	110	644.0	30	411.4	415.1	413.5	418.2	427.4	422.3	434.2	435.1	439.9	439.8	434.8
32	110	589.0	30	388.8	392.0	390.7	394.9	403.3	398.6	409.2	409.3	411.9	411.9	407.9
33	110	534.0	30	364.8	368.0	366.6	370.4	377.2	372.0	379.1	376.8	375.6	373.3	368.5
34	110	479.0	30	314.3	315.3	312.9	313.0	315.3	308.6	311.0	308.6	306.5	305.8	302.8
35	110	410.0	30	333.3	335.9	334.7	337.2	343.3	338.1	345.8	346.5	349.2	351.3	349.1
36	110	355.0	30	310.7	312.8	311.7	313.1	318.0	312.5	317.8	316.3	315.5	315.3	312.3
37	42	644.0	150	397.7	399.8	397.8	400.9	407.7	399.7	407.2	404.7	405.0	406.6	406.9
38	42	589.0	150	375.2	377.7	376.3	379.5	386.7	379.9	387.3	385.8	387.1	389.5	389.8
39	42	534.0	150	354.8	357.6	356.2	358.8	365.6	359.5	366.6	365.4	365.7	365.7	362.2
40	42	479.0	150	304.0	305.2	302.3	302.5	304.4	297.7	299.1	295.3	291.7	288.4	283.5

41	42	410.0	150	305.9	308.8	306.8	308.8	313.4	308.2	312.8	311.1	310.5	311.6	311.4
42	42	355.0	150	288.9	291.6	290.0	291.6	296.0	291.2	295.2	294.1	293.5	294.5	293.5
43	62	644.0	30	380.4	383.1	380.8	384.1	392.2	384.0	392.8	391.1	394.0	396.8	396.9
44	62	589.0	30	359.2	361.9	360.0	363.2	371.4	364.1	373.0	371.3	372.9	372.5	368.6
45	62	534.0	30	404.9	407.6	404.5	408.3	417.4	407.8	417.7	415.2	417.8	420.3	420.1
46	62	479.0	30	309.4	310.2	306.3	306.3	309.5	301.7	304.2	299.7	297.0	294.4	289.3
47	62	410.0	30	312.5	314.7	312.0	313.4	319.3	312.4	318.5	316.4	317.6	319.9	320.0
48	62	355.0	30	292.1	294.6	292.6	293.8	299.5	293.6	299.7	297.8	299.4	301.5	299.9
49	23	644.0	150	394.9	397.8	395.5	398.9	409.1	399.9	410.5	407.9	411.4	413.8	411.9
50	23	589.0	150	367.9	370.7	368.8	372.1	381.6	373.3	382.7	380.1	382.7	384.6	382.8
51	23	534.0	150	344.4	347.5	345.3	348.3	356.8	349.3	357.4	354.4	355.9	355.8	351.5
52	23	479.0	150	296.8	298.7	295.8	296.2	300.4	293.0	296.1	292.2	290.8	288.9	284.4
53	23	410.0	150	310.9	314.3	312.4	314.7	322.7	316.2	324.1	321.9	324.3	325.5	323.5
54	23	355.0	150	287.6	290.9	288.8	290.3	296.5	290.5	296.4	293.8	294.9	295.0	292.2
55	114	644.0	330	389.7	393.3	390.6	394.3	404.5	395.4	406.3	402.6	405.5	407.1	404.9
56	114	589.0	330	367.9	371.1	368.9	372.7	382.3	374.2	384.1	380.7	382.7	383.6	381.5
57	114	534.0	330	344.2	347.3	345.3	348.6	357.2	350.1	358.4	355.2	355.7	354.8	350.5
58	114	479.0	330	300.4	301.5	299.2	299.5	303.2	296.1	299.2	294.3	292.1	289.1	283.5
59	114	410.0	330	309.1	311.1	310.2	312.7	319.5	314.0	321.6	319.3	321.0	321.9	318.3
60	114	355.0	330	290.2	291.2	290.6	292.2	297.5	292.6	298.0	295.5	295.2	294.7	290.0
61	120	644.0	90	393.7	395.8	393.8	397.4	407.0	398.5	408.3	404.9	407.8	410.3	408.2
62	120	589.0	90	366.8	368.9	367.1	370.8	379.9	372.6	382.0	379.4	382.0	384.3	381.1
63	120	534.0	90	345.0	346.9	345.0	347.6	355.3	348.1	355.5	352.6	353.7	353.8	348.9
64	120	479.0	90	305.3	305.5	302.4	302.6	306.1	298.5	300.9	297.1	295.7	293.9	289.3
65	120	410.0	90	314.2	315.8	314.0	316.5	323.3	316.6	322.8	320.7	322.1	322.8	319.8
66	120	355.0	90	289.4	291.0	289.2	290.8	296.8	290.8	295.6	293.9	294.2	293.7	289.2
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	366.8	369.5	366.8	370.1	379.0	370.5	379.1	376.3	379.0	381.1	379.2
69	97	534.0	210	342.2	344.6	342.0	345.1	352.9	345.5	353.5	351.5	353.8	355.4	352.0
70	97	479.0	210	295.9	296.8	293.5	293.8	297.4	290.3	293.3	289.6	287.9	286.4	281.6
71	97	410.0	210	300.9	303.3	301.0	303.3	309.7	303.3	310.0	308.4	310.5	313.7	312.8
72	97	355.0	210	282.1	284.6	282.3	284.3	289.7	284.3	290.2	288.8	290.1	291.9	289.9
73	0	0.0	0	137.0	138.5	138.2	136.9	135.5	135.4	135.4	134.9	134.4	136.1	134.2
74	0	0.0	0	139.4	141.5	140.4	137.9	134.2	136.6	137.7	138.1	130.7	131.2	128.8
75	0	0.0	0	136.7	140.4	139.8	137.8	138.6	138.3	133.9	134.4	131.8	137.5	134.6
76	0	896.9	0	292.8	295.6	293.9	295.0	299.8	293.5	297.2	294.8	293.7	293.5	289.8
77	0	896.9	0	284.5	286.6	284.9	285.8	289.6	285.0	287.8	285.5	284.8	284.0	280.0
78	0	896.9	0	291.3	294.0	291.7	293.5	298.5	292.8	296.3	294.0	292.7	291.4	287.7
79	0	430.6	270	159.9	161.9	161.8	161.4	162.4	163.0	162.6	163.8	162.9	163.3	161.9
80	0	430.6	210	158.9	161.1	161.1	160.6	161.5	161.7	161.5	162.6	161.9	162.7	161.5
81	0	430.6	90	161.7	164.1	164.4	163.9	164.5	164.5	163.6	164.3	163.2	163.9	162.8
82	0	430.6	30	160.9	163.3	163.3	162.6	163.1	163.0	162.1	162.8	161.7	162.2	161.0
83	0	630.6	270	213.5	215.9	215.6	216.1	218.7	218.9	219.4	220.3	219.7	220.2	218.6
84	0	630.6	210	209.6	212.2	212.1	212.6	215.1	215.2	216.0	217.2	217.0	217.9	216.4
85	0	630.6	30	213.4	216.1	216.0	216.3	218.4	218.2	218.3	219.1	218.5	219.1	217.5
86	0	630.6	90	217.2	220.0	219.7	219.8	221.7	221.2	221.1	221.6	220.6	221.2	219.5
87	0	830.6	210	258.0	260.9	260.8	261.9	265.6	265.3	266.6	267.8	268.0	269.2	267.6
88	0	830.6	270	261.4	263.9	263.5	264.3	267.6	267.4	268.6	269.5	269.4	270.0	268.1
89	0	830.6	30	260.9	263.8	263.7	264.6	268.0	267.6	268.5	269.5	269.6	270.4	268.9
90	0	830.6	90	264.4	267.1	266.6	267.0	269.9	269.1	269.6	270.2	269.8	270.4	268.5
91	0	0.0	0	138.3	136.4	136.7	134.8	134.7	133.5	134.1	132.5	132.9	130.1	129.1
92	0	0.0	0	138.3	136.4	136.7	134.8	134.7	133.5	134.1	132.5	132.9	130.1	129.1

DATUM 30. 2.79

VERSUCH NR.	12	13	14	15	16	17	18	19	20	21
DURCHSATZ (KG/S)	0.0133	0.0119	0.0107	0.0095	0.0086	0.0078	0.0069	0.0061	0.0054	0.0047
EL. ENERGIE (KW)	10.6	9.5	8.5	8.1	7.2	6.5	6.5	6.0	5.7	5.2
WAERMEENERGIE(KW)	10.4	9.3	8.1	7.7	6.9	6.4	6.0	5.6	5.1	4.7
WAERMEBILANZ(O/O)	-1.6	-2.1	-4.5	-5.2	-3.3	-1.5	-7.2	-7.3	-9.9	-10.1
REYNOLDSZAHL*E-O4	0.439	0.393	0.354	0.315	0.284	0.256	0.228	0.200	0.178	0.154
DRUCKVERLUST (1.E+01 N/M**2)										
GES. X= 895.6(MM)	1966.	1606.	1324.	1096.	907.	760.	630.	505.	414.	316.
BIS X= 102.0(MM)	414.	341.	284.	234.	191.	164.	132.	108.	90.	71.
BIS X= 236.1(MM)	522.	438.	363.	297.	251.	212.	174.	143.	120.	98.
BIS X= 502.0(MM)	1090.	906.	750.	615.	514.	433.	357.	296.	251.	205.
BIS X= 670.0(MM)	1327.	1099.	914.	757.	635.	535.	446.	369.	312.	256.
BIS X= 736.1(MM)	1590.	1314.	1089.	906.	763.	648.	543.	450.	381.	315.
BIS X= 866.0(MM)	1752.	1455.	1212.	1004.	845.	713.	598.	500.	432.	351.
EINTR. DRUCK (BAR)	9.56	9.57	9.56	9.55	9.57	9.60	9.61	9.63	9.64	9.65
EINTR. TEMP. GRADC	130.4	129.6	129.6	127.3	125.8	125.3	123.3	122.0	120.2	119.3

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD) GRAD C

1	83	644.0	270	414.2	410.9	402.5	409.5	404.6	403.0	406.2	411.6	412.3	413.3
2	83	589.0	270	381.6	378.8	370.9	377.2	372.5	371.0	374.9	381.3	383.1	384.5
3	83	534.0	270	339.9	336.5	329.7	335.3	331.4	331.0	335.4	342.5	345.9	349.2
4	83	479.0	270	285.7	284.7	281.6	290.0	290.5	294.5	301.7	308.9	311.1	312.7
5	83	410.0	270	328.1	324.3	317.0	321.4	314.3	310.7	311.1	312.0	310.4	308.6
6	83	355.0	270	287.6	283.1	276.8	279.5	273.4	270.2	270.4	271.8	271.1	269.9
7	91	644.0	270	426.7	421.7	413.2	420.6	414.5	412.4	414.8	418.9	418.8	419.3
8	91	589.0	270	398.7	393.4	385.1	391.3	385.0	382.8	385.4	389.2	390.1	392.4
9	91	534.0	270	362.4	356.9	349.6	355.1	349.3	347.5	350.2	354.5	357.1	360.6
10	91	479.0	270	294.1	291.6	289.0	297.1	296.7	301.2	309.7	317.4	321.3	323.1
11	91	410.0	270	343.5	338.2	330.5	334.8	327.4	323.5	323.1	322.4	319.6	315.8
12	91	355.0	270	307.2	301.5	294.4	297.2	290.3	286.4	285.3	283.9	281.3	277.6
13	7	644.0	30	407.5	410.8	406.7	418.5	411.8	408.7	412.3	415.2	416.0	415.9
14	7	589.0	30	383.3	382.6	375.4	384.0	377.0	374.3	378.1	381.3	382.6	383.2
15	7	534.0	30	348.0	343.7	335.3	341.1	334.3	331.9	335.2	338.6	340.8	342.7
16	7	479.0	30	272.2	268.6	262.5	268.3	266.1	268.7	278.5	288.5	294.0	298.4
17	7	410.0	30	316.4	318.5	314.9	323.6	317.1	313.5	314.3	313.0	309.6	305.3
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	410.8	414.5	412.2	423.1	414.6	411.5	415.5	417.8	417.9	417.1
20	22	589.0	90	385.6	383.6	377.6	385.6	378.0	375.5	380.4	383.5	384.3	384.8
21	22	534.0	90	352.3	345.8	337.9	343.1	336.2	334.2	338.8	342.7	344.7	347.6
22	22	479.0	90	271.8	268.2	263.7	270.8	271.1	276.8	290.1	301.6	306.2	309.0
23	22	410.0	90	311.8	315.1	314.5	324.5	319.1	316.0	317.6	316.1	311.0	304.8
24	22	355.0	90	286.4	284.2	279.5	284.5	278.9	276.0	277.1	275.9	271.2	266.1
25	78	644.0	150	402.3	404.5	403.4	414.8	407.4	404.5	409.6	412.5	411.2	410.6
26	78	589.0	150	379.5	377.4	373.2	382.3	375.1	372.5	377.8	380.9	380.4	381.0
27	78	534.0	150	349.1	343.4	337.6	344.0	337.2	335.1	340.1	343.5	344.2	346.2
28	78	479.0	150	275.0	271.1	267.8	275.2	274.5	279.7	293.5	302.6	306.5	309.8
29	78	410.0	150	311.7	313.7	313.4	323.9	318.4	315.5	318.1	316.3	312.0	306.5
30	78	355.0	150	287.4	285.2	281.3	287.3	281.2	278.2	280.0	277.9	274.0	269.4
31	110	644.0	30	424.3	417.1	408.9	417.2	408.9	406.2	412.6	416.0	417.6	418.7
32	110	589.0	30	398.3	391.2	382.7	389.3	381.0	378.0	383.9	388.0	390.5	392.4
33	110	534.0	30	358.4	352.3	344.6	350.1	343.0	340.9	346.7	351.8	355.6	358.3
34	110	479.0	30	296.4	293.8	290.1	297.3	294.5	295.5	304.0	312.0	317.8	320.5
35	110	410.0	30	340.8	335.1	327.5	332.0	323.6	319.1	321.5	320.9	319.4	315.4
36	110	355.0	30	304.4	299.1	291.9	294.8	286.9	282.4	283.2	282.3	280.5	276.8
37	42	644.0	150	409.8	412.0	410.5	421.3	411.1	406.5	412.1	414.5	415.7	414.2
38	42	589.0	150	388.1	384.8	379.7	387.5	378.0	374.0	379.3	382.5	384.7	384.5
39	42	534.0	150	354.5	347.8	341.1	346.0	337.4	334.3	338.9	343.1	346.8	348.9
40	42	479.0	150	276.8	273.3	270.9	277.8	275.9	279.2	290.0	301.3	307.5	310.3

41	42	410.0	150	314.0	316.2	317.3	326.9	320.1	316.2	317.4	315.7	312.4	305.7
42	42	355.0	150	290.7	287.5	283.8	288.3	281.2	277.6	277.7	276.4	273.5	267.6
43	62	644.0	30	394.2	389.6	384.7	390.8	381.0	377.1	382.7	386.0	387.7	387.5
44	62	589.0	30	359.7	352.0	345.6	349.1	340.4	336.8	341.9	346.1	349.5	352.3
45	62	534.0	30	421.2	421.3	419.0	427.8	417.2	412.3	418.1	420.7	421.0	420.2
46	62	479.0	30	281.7	277.4	275.0	281.0	279.2	281.6	291.9	302.6	309.6	313.4
47	62	410.0	30	321.7	322.2	322.4	330.4	322.6	317.8	318.7	317.2	314.4	308.2
48	62	355.0	30	296.8	292.9	289.3	292.6	284.8	280.0	280.1	278.5	276.0	270.8
49	23	644.0	150	408.7	406.1	403.3	412.5	404.0	400.6	407.7	411.1	413.5	412.1
50	23	589.0	150	378.7	374.7	371.0	378.2	370.5	367.4	374.0	377.9	381.1	380.5
51	23	534.0	150	344.1	338.0	333.5	338.8	332.0	329.3	334.6	338.3	342.2	343.5
52	23	479.0	150	278.1	274.1	272.8	279.4	277.3	279.9	290.1	301.0	309.7	312.7
53	23	410.0	150	321.2	318.9	318.0	325.1	317.7	313.2	314.4	313.5	313.6	310.9
54	23	355.0	150	288.3	284.3	281.7	285.7	278.9	274.5	274.5	273.5	273.3	270.9
55	114	644.0	330	403.7	401.3	400.5	411.8	403.9	400.7	407.7	410.9	414.5	413.7
56	114	589.0	330	379.2	375.5	372.7	381.7	374.0	370.6	377.0	380.4	384.7	385.0
57	114	534.0	330	344.0	338.2	333.5	339.3	332.5	329.5	334.9	338.7	343.4	345.9
58	114	479.0	330	276.1	271.4	268.3	274.6	273.1	274.8	285.2	296.5	307.1	312.3
59	114	410.0	330	315.9	313.9	311.8	319.3	312.4	307.9	310.1	309.4	310.6	308.6
60	114	355.0	330	285.1	281.3	277.5	281.6	275.0	270.5	271.8	271.0	271.7	270.0
61	120	644.0	90	407.7	405.5	404.0	414.0	405.4	401.2	407.0	408.6	411.1	410.5
62	120	589.0	90	379.0	375.2	372.7	380.6	372.3	368.2	373.6	375.6	378.5	379.4
63	120	534.0	90	343.0	337.9	334.2	340.0	332.3	328.9	333.6	336.2	340.5	344.2
64	120	479.0	90	284.8	282.0	281.4	289.6	286.8	288.0	295.9	302.5	309.4	313.7
65	120	410.0	90	316.5	313.7	311.2	317.6	309.9	305.9	308.3	307.4	307.1	304.3
66	120	355.0	90	284.2	279.5	275.7	278.9	271.5	267.4	268.2	267.3	266.5	264.5
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	379.1	377.9	375.8	384.6	375.9	372.6	379.0	381.8	384.4	384.1
69	97	534.0	210	347.9	343.9	339.6	345.7	337.8	335.0	340.1	343.0	346.5	348.5
70	97	479.0	210	274.8	271.5	268.7	274.4	271.1	272.5	280.9	289.1	297.9	304.4
71	97	410.0	210	314.0	315.1	314.8	322.4	314.5	310.8	312.9	311.9	311.4	308.3
72	97	355.0	210	286.8	284.9	281.7	285.3	277.7	273.8	274.2	272.9	271.8	269.4
73	0	0.0	0	131.3	131.7	132.5	131.8	129.1	127.3	125.3	124.5	123.2	123.5
74	0	0.0	0	128.1	124.0	125.2	122.3	122.0	122.0	120.9	119.2	118.2	118.4
75	0	0.0	0	131.9	133.1	131.0	128.0	126.4	126.6	123.8	122.4	119.4	116.0
76	0	896.9	0	285.3	283.6	280.9	287.7	286.5	288.5	296.1	303.8	309.7	316.1
77	0	896.9	0	275.0	274.2	269.7	275.8	275.8	278.1	283.9	291.1	292.6	302.2
78	0	896.9	0	283.0	280.4	277.0	283.7	281.5	283.4	289.2	296.5	301.2	309.2
79	0	430.6	270	158.7	158.2	158.2	159.6	159.7	161.2	161.4	163.4	165.3	169.1
80	0	430.6	210	158.2	158.1	158.2	159.9	160.3	162.0	162.3	164.2	165.8	169.3
81	0	430.6	90	159.7	160.0	159.6	161.3	161.8	163.7	164.0	165.9	167.6	171.3
82	0	430.6	30	158.3	158.5	158.0	159.6	159.8	161.7	162.1	164.2	166.4	170.3
83	0	630.6	270	215.2	214.8	215.1	218.4	220.5	224.7	227.1	232.8	239.2	247.4
84	0	630.6	210	213.2	213.4	214.1	217.6	219.7	224.1	226.2	231.4	237.3	245.0
85	0	630.6	30	214.9	215.8	216.3	220.0	222.3	227.1	229.6	235.3	241.9	249.9
86	0	630.6	90	216.4	217.1	217.7	221.4	223.7	228.4	230.7	235.9	241.9	249.5
87	0	830.6	210	264.2	263.4	263.6	267.4	269.6	274.3	276.2	281.2	286.2	292.1
88	0	830.6	270	264.8	264.0	264.3	268.0	270.1	274.6	276.5	281.7	286.9	293.0
89	0	830.6	30	265.9	265.7	265.8	269.5	271.7	276.2	277.9	282.9	287.9	293.7
90	0	830.6	90	264.6	264.9	265.0	269.0	271.1	275.7	277.4	282.3	287.1	292.5
91	0	0.0	0	126.1	124.9	124.4	123.0	122.3	122.2	121.9	121.1	119.4	116.8
92	0	0.0	0	126.1	124.9	124.4	123.0	122.3	122.2	121.9	121.1	119.4	116.8



DATUM 2. 3.79

VERSUCH NR. DURCHSATZ (KG/S)	1	2	3	4	5	6	7	8	9	10	11
EL. ENERGIE (KW)	45.0	41.5	38.3	35.1	31.4	28.8	26.5	22.7	20.8	18.6	16.4
WAERMEENERGIE (KW)	46.5	42.4	39.3	36.1	31.5	29.1	26.4	22.4	20.6	18.3	16.2
WAERMEBILANZ (D/O)	3.3	2.2	2.4	3.0	0.3	0.9	-0.6	-1.3	-0.9	-2.0	-1.2
REYNOLDSZAHL *E-04 DRUCKVERLUST (1.E+01 N/M**2)	1.315	1.194	1.110	1.010	0.895	0.811	0.720	0.648	0.582	0.531	0.480
GES.X= 895.6(MM)	16757.	14176.	12364.	10449.	8426.	7024.	5737.	4693.	3839.	3187.	2643.
BIS X= 102.0(MM)	3020.	2575.	2252.	1911.	1563.	1302.	1072.	889.	722.	608.	506.
BIS X= 236.1(MM)	3692.	3161.	2747.	2364.	1927.	1598.	1309.	1102.	895.	757.	634.
BIS X= 502.0(MM)	8741.	7407.	6411.	5446.	4392.	3637.	2952.	2447.	1981.	1658.	1374.
BIS X= 670.0(MM)	11162.	9476.	8144.	6925.	5572.	4608.	3732.	3069.	2482.	2060.	1717.
BIS X= 736.1(MM)	13580.	11522.	9908.	8406.	6768.	5604.	4548.	3732.	3023.	2511.	2087.
BIS X= 866.0(MM)	14777.	12572.	10828.	9199.	7400.	6122.	4985.	4105.	3329.	2760.	2304.
EINTR.DRUCK (BAR)	9.79	9.78	9.78	9.76	9.82	9.81	9.80	9.79	9.80	9.79	9.78
EINTR.TEMP. GRADC	119.6	123.0	121.7	121.4	125.9	121.9	122.9	123.8	121.3	119.2	120.4

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD)GRAD C

1	83	644.0	270	505.4	512.7	509.7	514.5	517.0	521.1	533.9	525.4	532.2	520.8	515.7
2	83	589.0	270	467.8	474.5	472.7	477.5	480.0	482.9	491.8	481.6	485.4	474.0	470.0
3	83	534.0	270	423.6	429.6	427.9	431.0	431.9	433.0	438.2	427.9	428.9	416.6	412.1
4	83	479.0	270	355.9	359.4	356.3	356.9	355.8	354.6	356.4	348.5	347.6	337.7	336.0
5	83	410.0	270	397.2	403.5	401.7	405.3	406.8	410.5	419.0	411.8	414.4	403.7	400.5
6	83	355.0	270	352.5	358.0	356.4	359.2	360.2	361.1	364.9	356.8	356.3	345.6	342.7
7	91	644.0	270	515.9	523.0	520.3	525.0	527.7	534.6	550.6	542.0	549.1	536.7	531.6
8	91	589.0	270	477.5	485.0	483.0	487.8	490.5	497.2	511.9	502.2	507.6	496.0	492.0
9	91	534.0	270	444.4	451.6	450.2	454.6	456.4	460.7	470.2	458.7	460.1	447.5	441.9
10	91	479.0	270	368.3	371.2	367.4	367.1	364.6	363.4	366.1	356.7	357.6	348.9	347.0
11	91	410.0	270	401.7	408.0	406.2	410.1	410.9	414.8	426.7	420.4	429.8	422.2	420.8
12	91	355.0	270	363.4	369.7	368.9	372.2	373.6	376.2	384.8	376.9	380.6	371.0	368.6
13	7	644.0	30	502.3	508.5	503.4	505.8	504.3	507.0	515.2	503.1	510.9	503.5	507.0
14	7	589.0	30	461.4	467.8	464.1	467.3	466.9	470.2	478.7	469.5	477.6	470.9	472.1
15	7	534.0	30	428.5	434.3	431.3	434.7	434.8	438.2	445.0	435.5	439.5	428.6	424.1
16	7	479.0	30	353.6	355.1	351.1	350.5	347.2	345.1	344.7	334.7	332.6	321.6	317.1
17	7	410.0	30	371.9	376.6	374.3	376.7	377.0	378.8	384.9	376.7	382.4	376.5	379.8
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	496.2	501.4	498.9	501.1	502.4	504.9	515.7	502.7	511.1	504.4	510.0
20	22	589.0	90	461.1	465.4	463.2	465.6	467.6	470.0	480.5	469.3	480.0	473.7	475.2
21	22	534.0	90	431.4	435.3	433.4	437.7	440.4	444.0	454.8	443.3	448.4	436.5	430.3
22	22	479.0	90	353.2	352.8	348.7	349.5	347.4	345.4	347.1	335.6	333.8	322.9	317.2
23	22	410.0	90	365.8	368.0	365.9	369.4	370.2	371.3	378.6	368.7	374.9	369.0	372.4
24	22	355.0	90	334.5	336.8	335.2	338.5	339.5	340.9	347.4	338.4	344.0	338.0	337.5
25	78	644.0	150	493.9	498.4	495.7	499.5	499.9	501.8	513.1	497.0	505.7	499.0	500.4
26	78	589.0	150	464.0	468.0	466.0	469.7	469.8	471.4	481.7	466.7	475.3	468.9	467.8
27	78	534.0	150	429.3	433.5	432.0	436.0	437.2	439.5	450.3	436.0	442.1	431.8	426.2
28	78	479.0	150	355.2	357.2	353.7	354.5	351.5	349.8	351.8	338.1	338.1	327.4	322.5
29	78	410.0	150	367.7	372.6	370.4	373.9	374.5	376.8	385.2	372.5	378.5	372.4	373.3
30	78	355.0	150	339.7	344.0	342.1	345.2	345.4	347.2	354.2	343.5	348.3	341.7	340.5
31	110	644.0	30	512.9	521.1	519.3	526.7	529.8	538.1	557.6	543.9	552.8	540.7	531.4
32	110	589.0	30	481.9	489.5	487.2	493.2	496.6	504.0	520.8	506.2	513.0	502.3	493.9
33	110	534.0	30	448.2	455.0	452.5	456.7	458.3	461.6	472.1	456.5	459.0	447.0	437.2
34	110	479.0	30	371.5	373.9	369.7	369.6	367.8	367.7	373.0	360.8	362.7	355.1	349.2
35	110	410.0	30	407.7	413.2	410.8	413.6	415.9	420.6	434.6	422.9	431.2	423.6	415.9
36	110	355.0	30	372.9	377.2	374.8	376.8	377.8	380.0	388.2	375.6	378.2	370.3	363.1
37	42	644.0	150	495.5	500.0	497.5	500.4	501.0	504.7	518.2	500.6	512.3	507.9	507.7
38	42	589.0	150	463.3	468.5	467.0	470.5	472.2	476.6	490.6	475.0	485.8	480.8	476.3
39	42	534.0	150	432.8	438.1	436.4	440.2	441.8	446.3	459.0	443.8	449.3	439.9	430.2
40	42	479.0	150	355.7	357.6	354.2	354.1	352.5	351.9	355.1	341.6	340.0	331.1	322.2

41	42	410.0	150	365.2	369.8	367.9	370.6	372.4	374.8	383.8	371.3	377.2	373.4	372.1
42	42	355.0	150	340.8	345.0	343.2	345.7	347.2	349.6	357.6	346.8	351.2	346.3	341.1
43	62	644.0	30	472.7	478.6	475.6	479.7	480.8	485.5	499.5	484.6	496.6	491.5	487.6
44	62	589.0	30	441.4	447.7	444.6	449.4	451.5	456.6	468.2	454.0	459.6	449.8	440.4
45	62	534.0	30	507.0	512.7	509.3	513.8	514.1	519.2	534.4	517.9	530.3	525.7	524.6
46	62	479.0	30	363.9	365.6	360.8	361.1	359.2	358.1	361.3	347.9	347.2	337.8	329.8
47	62	410.0	30	374.8	378.8	375.5	378.9	379.7	382.1	392.1	380.5	388.4	385.2	384.4
48	62	355.0	30	345.7	350.1	347.6	351.2	352.6	354.8	363.6	353.8	359.5	354.5	350.1
49	23	644.0	150	492.2	499.3	496.6	501.4	503.6	507.9	522.7	507.6	518.4	511.5	507.0
50	23	589.0	150	453.5	460.5	457.7	463.3	465.8	469.7	481.9	467.6	477.2	470.9	465.6
51	23	534.0	150	418.1	424.7	422.2	427.4	429.8	433.2	443.1	428.9	434.6	425.3	417.2
52	23	479.0	150	348.3	351.2	347.5	349.7	348.4	348.5	351.8	339.5	340.8	332.1	325.2
53	23	410.0	150	377.4	383.1	381.5	386.6	388.0	392.5	403.0	390.6	398.3	392.2	388.3
54	23	355.0	150	342.3	346.7	345.0	348.4	349.3	352.4	359.3	348.2	353.6	346.3	341.2
55	114	644.0	330	485.0	490.9	488.6	493.9	496.1	501.4	516.6	501.0	510.9	506.1	498.6
56	114	589.0	330	453.5	458.3	457.5	462.3	465.8	470.2	483.3	468.8	476.2	470.9	462.8
57	114	534.0	330	417.3	422.3	421.1	426.0	429.5	433.1	444.2	430.0	433.3	425.5	414.7
58	114	479.0	330	350.3	352.7	349.7	351.5	350.8	350.0	353.4	341.6	339.3	331.3	320.8
59	114	410.0	330	372.1	376.5	375.8	380.4	383.5	387.3	398.4	387.0	392.1	387.4	379.2
60	114	355.0	330	343.2	347.0	346.0	349.3	352.2	354.4	361.8	351.1	352.0	346.3	336.6
61	120	644.0	90	491.3	496.0	493.3	497.2	500.1	504.4	517.3	502.4	513.9	508.6	503.5
62	120	589.0	90	453.3	458.1	456.7	460.2	464.1	468.7	481.5	467.6	476.9	470.9	464.2
63	120	534.0	90	421.1	425.5	423.1	426.2	428.8	432.2	442.2	428.7	433.9	425.6	415.2
64	120	479.0	90	359.4	361.1	357.4	356.8	356.5	355.5	359.1	347.7	348.6	341.7	333.4
65	120	410.0	90	377.6	382.8	381.1	383.9	387.1	389.6	398.8	387.3	393.8	388.0	380.4
66	120	355.0	90	340.4	344.8	342.9	345.8	348.4	350.3	357.3	346.8	350.6	343.4	334.1
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	451.7	456.4	455.0	458.0	460.5	465.2	476.8	462.4	474.1	468.5	464.4
69	97	534.0	210	415.3	419.3	418.3	421.2	424.1	429.0	439.3	426.3	436.2	428.1	420.9
70	97	479.0	210	345.3	346.2	343.7	343.5	343.8	343.3	346.0	334.1	336.9	328.1	320.4
71	97	410.0	210	359.6	363.7	363.0	365.4	368.4	371.5	380.2	369.6	381.2	377.2	375.3
72	97	355.0	210	332.4	336.2	335.4	337.9	340.4	343.1	350.5	340.1	348.8	342.7	337.7
73	0	0.0	0	120.8	122.7	120.7	121.5	125.4	123.4	126.1	126.1	125.0	123.9	124.4
74	0	0.0	0	116.7	122.2	120.9	117.7	126.3	119.9	119.9	125.7	122.3	118.7	114.8
75	0	0.0	0	121.4	124.1	123.6	125.1	126.1	122.3	122.7	119.7	116.6	114.9	122.0
76	0	896.9	0	341.6	345.8	343.9	345.7	346.2	346.6	351.7	341.0	343.9	336.5	334.2
77	0	896.9	0	329.7	332.5	330.3	332.5	332.3	333.5	337.3	326.9	329.9	322.7	320.3
78	0	896.9	0	338.8	342.7	341.0	342.8	343.7	344.3	349.2	339.2	341.8	334.5	330.1
79	0	430.6	270	150.2	153.3	154.0	156.3	159.9	160.3	161.0	162.2	161.7	159.9	158.3
80	0	430.6	210	149.9	153.0	153.5	155.6	159.0	159.2	160.0	161.0	161.1	159.2	158.7
81	0	430.6	90	154.0	157.4	158.0	159.5	161.9	161.5	161.6	162.0	161.4	159.2	159.9
82	0	430.6	30	152.6	155.7	155.9	157.3	159.5	159.1	159.3	160.0	159.3	157.3	157.7
83	0	630.6	270	226.2	230.2	230.8	234.2	238.1	239.1	241.3	240.2	241.1	237.9	236.5
84	0	630.6	210	221.0	225.3	225.9	228.9	233.2	234.4	236.9	236.4	237.4	234.7	233.9
85	0	630.6	30	226.4	230.6	231.0	233.7	236.8	237.6	239.6	238.8	239.0	236.0	235.6
86	0	630.6	90	231.7	235.9	236.2	238.3	241.1	241.7	243.4	242.1	241.7	238.6	238.2
87	0	830.6	210	289.5	294.3	294.9	297.8	302.2	303.7	307.2	306.2	307.1	303.9	302.2
88	0	830.6	270	293.8	298.1	298.6	301.5	305.6	307.1	310.3	309.3	309.5	306.0	303.4
89	0	830.6	30	293.1	297.9	298.5	301.5	305.3	306.8	309.8	309.4	309.3	306.0	304.6
90	0	830.6	90	298.5	302.9	303.1	305.1	308.2	309.3	312.0	310.3	309.9	306.0	304.5
91	0	0.0	0	117.6	119.1	118.1	118.6	121.0	118.8	119.6	119.2	116.4	117.6	114.8
92	0	0.0	0	117.6	119.1	118.1	118.6	121.0	118.8	119.6	119.2	116.4	117.6	114.8

DATUM 2. 3.79

VERSUCH NR.	12	13	14	15	16	17	18	19	20	21
DURCHSATZ (KG/S)	0.0133	0.0119	0.0107	0.0096	0.0087	0.0079	0.0069	0.0061	0.0055	0.0048
EL. ENERGIE (KW)	14.1	12.9	11.8	10.7	10.3	9.7	9.1	8.5	7.9	7.1
WAERMEENERGIE (KW)	13.9	12.4	11.4	10.4	9.7	8.9	8.4	7.8	7.1	6.4
WAERMEBILANZ (O/O)	-1.8	-4.1	-3.1	-2.7	-5.5	-7.6	-7.0	-8.3	-9.9	-9.8
REYNOLDSZAHL * E-04	0.427	0.383	0.344	0.308	0.276	0.250	0.218	0.193	0.171	0.150
DRUCKVERLUST (1.E+01 N/M**2)										
GES.X= 895.6(MM)	2081.	1714.	1424.	1185.	1001.	852.	689.	571.	461.	369.
BIS X= 102.0(MM)	406.	335.	277.	229.	191.	164.	131.	107.	89.	70.
BIS X= 236.1(MM)	509.	425.	352.	292.	247.	209.	169.	145.	115.	89.
BIS X= 502.0(MM)	1097.	911.	756.	627.	529.	450.	365.	309.	252.	205.
BIS X= 670.0(MM)	1354.	1128.	937.	783.	669.	572.	467.	399.	327.	263.
BIS X= 736.1(MM)	1643.	1362.	1136.	950.	813.	699.	578.	492.	408.	332.
BIS X= 866.0(MM)	1823.	1518.	1273.	1068.	911.	784.	640.	546.	461.	376.
EINTR.DRUCK (BAR)	9.77	9.78	9.80	9.80	9.81	9.81	9.83	9.85	9.86	9.88
EINTR.TEMP. GRAD C	126.1	125.3	123.1	124.2	122.7	122.8	119.4	119.7	117.3	118.3

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD) GRAD C

1	83	644.0	270	507.3	503.9	503.1	501.0	506.0	504.8	508.5	513.7	508.0	511.2
2	83	589.0	270	463.4	440.2	459.6	458.3	462.9	462.4	468.1	474.3	470.1	473.5
3	83	534.0	270	405.3	401.7	401.2	400.6	406.2	407.1	414.6	423.7	422.5	428.4
4	83	479.0	270	334.6	335.0	338.0	343.4	355.0	361.5	371.4	378.1	375.9	379.2
5	83	410.0	270	394.5	390.5	388.3	385.3	386.7	381.7	380.5	380.3	373.1	373.1
6	83	355.0	270	337.7	333.2	330.5	327.6	328.7	324.1	323.8	324.5	320.0	321.1
7	91	644.0	270	522.6	518.7	517.6	514.1	518.4	514.4	518.4	520.7	515.3	520.6
8	91	589.0	270	483.7	479.8	478.3	474.5	478.1	474.1	478.8	481.8	479.5	486.9
9	91	534.0	270	433.3	429.4	428.0	425.2	428.4	424.8	430.7	436.3	437.0	445.4
10	91	479.0	270	343.9	343.9	347.5	351.1	362.3	368.9	383.7	390.8	389.8	392.6
11	91	410.0	270	412.9	408.4	405.6	400.9	401.6	394.0	394.1	391.4	382.7	380.6
12	91	355.0	270	361.7	356.9	353.5	349.4	349.2	341.7	341.6	339.2	331.7	330.1
13	7	644.0	30	511.3	514.9	515.7	513.4	517.2	512.2	517.4	519.3	513.7	515.9
14	7	589.0	30	470.3	469.6	467.8	465.7	469.6	465.0	471.1	473.8	470.1	473.5
15	7	534.0	30	416.6	412.7	408.8	406.3	409.2	406.1	412.3	416.5	415.9	422.0
16	7	479.0	30	313.9	311.2	308.7	311.1	319.5	325.4	344.4	356.5	359.8	365.7
17	7	410.0	30	385.0	388.5	387.8	387.6	390.2	384.7	385.1	381.9	372.9	369.0
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	516.9	522.0	521.4	518.1	521.7	515.3	520.5	522.6	516.7	518.5
20	22	589.0	90	473.4	472.8	471.0	468.5	473.0	468.1	474.3	477.4	473.6	477.0
21	22	534.0	90	421.6	416.5	413.2	410.3	414.4	410.6	417.6	422.6	422.6	429.5
22	22	479.0	90	314.1	312.4	312.9	317.2	331.0	340.3	363.5	373.9	374.0	377.4
23	22	410.0	90	379.6	384.9	388.2	388.9	392.0	385.7	385.5	381.6	372.1	367.0
24	22	355.0	90	337.2	335.6	334.5	333.2	335.3	330.0	330.0	326.9	319.2	314.9
25	78	644.0	150	505.7	508.9	510.4	508.2	513.0	505.7	511.3	513.2	508.5	511.2
26	78	589.0	150	467.4	465.8	465.7	463.8	468.4	462.2	468.1	471.0	468.6	472.6
27	78	534.0	150	419.7	415.0	413.4	411.5	415.3	410.0	416.1	420.6	420.7	427.2
28	78	479.0	150	320.1	317.5	319.2	324.0	337.3	343.9	363.9	372.8	374.7	377.9
29	78	410.0	150	379.9	384.5	388.5	389.4	392.6	385.1	385.7	382.0	373.4	369.5
30	78	355.0	150	340.3	339.1	338.8	338.0	339.8	332.8	333.1	329.6	322.4	319.5
31	110	644.0	30	519.5	514.2	510.4	506.8	512.3	506.4	513.7	516.9	515.3	519.4
32	110	589.0	30	483.0	477.2	472.9	469.0	473.7	468.3	476.0	480.6	480.2	485.2
33	110	534.0	30	427.9	422.9	419.2	416.4	421.6	417.8	426.9	433.7	435.1	441.8
34	110	479.0	30	346.9	345.7	346.4	348.5	357.8	359.1	373.7	385.1	387.0	390.8
35	110	410.0	30	408.4	403.0	398.2	394.1	396.8	389.5	392.1	390.4	383.0	380.4
36	110	355.0	30	357.5	352.7	347.4	343.5	345.1	338.4	340.2	338.2	331.7	329.4
37	42	644.0	150	513.7	517.3	516.0	512.4	517.0	508.7	515.5	518.1	513.0	515.4
38	42	589.0	150	474.3	473.0	470.1	466.9	471.8	464.8	472.2	475.9	472.7	477.0
39	42	534.0	150	423.2	418.5	413.8	410.5	415.0	409.6	418.0	424.0	423.8	432.5
40	42	479.0	150	320.6	320.3	319.9	323.7	335.7	340.2	361.9	375.0	375.8	381.5

41	42	410.0	150	380.6	387.2	388.8	389.6	393.7	385.7	386.5	383.7	373.5	369.7
42	42	355.0	150	341.5	340.3	336.8	335.8	338.5	331.5	332.5	330.4	321.7	318.6
43	62	644.0	30	483.7	481.8	477.3	472.9	476.8	469.5	477.2	481.4	476.5	482.8
44	62	589.0	30	430.9	426.2	420.4	416.2	419.5	413.3	422.2	428.4	427.6	438.2
45	62	534.0	30	526.3	528.5	525.1	520.4	524.9	515.3	522.8	526.1	519.5	524.1
46	62	479.0	30	326.2	324.5	324.5	328.0	340.0	343.4	363.1	375.9	377.4	383.8
47	62	410.0	30	390.2	394.3	394.8	393.5	396.8	387.8	388.5	385.6	376.1	372.0
48	62	355.0	30	349.6	347.1	343.9	341.0	342.9	334.8	335.1	332.6	324.9	321.3
49	23	644.0	150	504.8	504.9	502.6	500.3	507.4	499.8	509.2	513.2	508.0	511.0
50	23	589.0	150	460.8	459.7	457.0	454.7	461.5	455.5	464.8	470.0	466.4	469.9
51	23	534.0	150	409.5	406.5	403.1	401.2	406.9	401.7	410.2	416.2	415.4	421.5
52	23	479.0	150	322.2	322.4	322.6	326.4	336.9	340.7	360.5	373.4	375.5	379.4
53	23	410.0	150	388.0	390.1	388.8	387.6	391.6	383.1	384.4	382.6	376.4	375.4
54	23	355.0	150	339.3	338.4	335.2	333.2	335.4	327.9	328.5	327.0	321.9	320.8
55	114	644.0	330	498.0	502.1	501.7	500.5	509.7	501.9	511.3	514.8	510.6	513.1
56	114	589.0	330	460.8	462.3	460.5	459.5	468.4	461.0	470.6	474.8	472.0	475.2
57	114	534.0	330	408.5	406.7	403.3	401.5	409.3	403.1	412.8	418.5	418.5	424.3
58	114	479.0	330	316.9	315.9	314.3	317.2	330.0	331.7	355.0	370.9	375.2	378.7
59	114	410.0	330	378.7	380.8	379.3	378.4	384.6	376.2	380.7	379.9	374.0	371.5
60	114	355.0	330	333.2	332.0	328.1	326.3	330.4	323.2	327.0	326.3	321.6	319.5
61	120	644.0	90	501.0	505.3	504.0	502.4	510.2	501.0	509.9	512.0	506.4	507.9
62	120	589.0	90	460.0	461.3	459.4	458.0	465.1	457.0	465.5	468.3	464.3	467.8
63	120	534.0	90	408.1	407.8	404.0	402.9	409.1	402.2	411.1	415.9	416.1	422.4
64	120	479.0	90	331.0	333.9	334.6	339.0	350.2	349.9	365.1	374.0	376.0	379.7
65	120	410.0	90	377.4	379.5	376.6	375.8	380.8	372.3	377.2	375.6	368.4	364.0
66	120	355.0	90	329.5	329.2	324.5	322.9	325.5	317.6	320.7	319.3	313.3	309.6
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	462.7	466.8	463.3	462.1	468.9	461.2	472.0	475.5	471.5	472.1
69	97	534.0	210	414.9	415.6	410.9	409.6	414.9	408.4	418.4	423.5	422.6	426.0
70	97	479.0	210	316.1	316.3	314.3	317.2	326.3	327.4	344.4	357.0	362.9	368.9
71	97	410.0	210	377.5	384.1	383.1	383.0	387.2	379.3	383.1	381.4	373.8	369.8
72	97	355.0	210	335.4	337.1	333.2	331.5	333.5	326.3	328.8	327.0	320.1	317.2
73	0	0.0	0	129.4	128.0	129.2	127.9	126.5	125.5	123.1	124.1	119.6	120.7
74	0	0.0	0	117.9	120.5	115.8	118.6	118.3	123.0	117.0	117.6	116.9	117.5
75	0	0.0	0	131.0	127.5	124.3	126.1	123.4	120.0	118.0	117.4	115.2	116.6
76	0	896.9	0	332.5	332.9	334.1	338.2	347.9	348.5	362.6	372.4	376.1	386.7
77	0	896.9	0	317.9	315.7	320.9	323.9	329.8	332.6	345.0	354.3	357.3	363.8
78	0	896.9	0	327.4	326.6	327.7	331.5	338.4	340.8	353.5	363.4	367.0	374.1
79	0	430.6	270	161.4	162.4	163.4	164.7	166.9	168.4	171.4	174.3	176.7	182.0
80	0	430.6	210	161.6	162.7	164.1	165.9	168.0	169.3	172.3	175.2	177.4	182.6
81	0	430.6	90	164.3	165.0	166.2	168.0	170.4	171.6	174.8	177.8	180.4	185.9
82	0	430.6	30	162.0	162.6	163.4	165.1	167.7	169.3	172.9	176.2	179.2	184.7
83	0	630.6	270	237.5	239.8	243.4	246.7	252.1	257.5	265.6	274.6	283.7	294.3
84	0	630.6	210	235.8	238.4	242.4	246.0	251.3	256.1	263.7	272.0	280.5	290.6
85	0	630.6	30	238.8	241.4	245.4	249.2	255.4	260.9	269.4	278.5	288.3	298.9
86	0	630.6	90	241.4	243.8	247.8	251.4	257.2	262.2	270.0	278.5	287.4	297.8
87	0	830.6	210	302.3	304.9	309.0	312.4	318.3	323.4	330.8	338.6	345.3	352.5
88	0	830.6	270	303.6	306.2	310.1	313.2	319.3	324.4	331.8	339.9	346.6	353.7
89	0	830.6	30	306.0	308.4	312.3	315.5	321.3	326.7	333.7	341.3	348.3	355.2
90	0	830.6	90	305.2	307.6	311.6	314.8	320.9	325.9	332.7	340.2	346.5	353.4
91	0	0.0	0	117.7	117.8	118.0	118.8	119.0	120.6	119.0	116.4	115.8	114.3
92	0	0.0	0	117.7	117.8	118.0	118.8	119.0	120.6	119.0	116.4	115.8	114.3

DATUM 3. 3-79

VERSUCH NR.	1	2	3	4	5	6	7	8	9
DURCHSATZ (KG/S)	0.1595	0.1427	0.1261	0.1113	0.1002	0.0897	0.0807	0.0733	0.0672
EL. ENERGIE (KW)	142.0	127.8	115.8	104.1	93.8	85.4	77.5	71.6	67.2
WAERMEENERGIE(KW)	149.4	134.8	121.0	109.4	98.8	90.6	81.4	75.8	69.8
WAERMEBILANZ(O/O)	5.2	5.5	4.6	5.0	5.4	6.2	5.1	5.8	3.8
REYNOLDSZAHL*E-04	4.995	4.468	3.934	3.462	3.114	2.786	2.499	2.269	2.074
DRUCKVERLUST (1.E+01 N/M**2)									
GES.X= 895.6(MM)	56879.	46670.	37236.	29387.	24085.	19525.	16088.	13396.	11596.
BIS X= 102.0(MM)	10378.	8394.	6706.	5300.	4378.	3542.	2941.	2456.	2128.
BIS X= 236.1(MM)	11689.	9988.	8050.	6378.	5253.	4300.	3550.	2956.	2597.
BIS X= 502.0(MM)	30111.	24897.	19919.	15727.	12894.	10498.	8608.	7166.	6216.
BIS X= 670.0(MM)	39427.	32611.	26070.	20524.	16786.	13612.	11154.	9261.	7985.
BIS X= 736.1(MM)	47485.	39150.	31288.	24649.	20161.	16344.	13395.	11133.	9597.
BIS X= 866.0(MM)	50827.	41838.	33464.	26373.	21634.	17567.	14416.	12013.	10357.
EINTR.DRUCK (BAR)	38.24	38.17	38.10	38.09	38.10	37.90	37.85	37.82	37.92
EINTR.TEMP. GRADC	153.3	152.7	154.0	154.0	154.1	152.6	155.2	153.2	154.6

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD)GRAD C

1	83	644.0	270	491.8	491.2	494.2	496.6	497.0	499.2	499.1	506.3	510.1
2	83	589.0	270	459.3	458.2	459.8	463.6	463.1	465.3	465.4	471.0	474.5
3	83	534.0	270	424.7	423.4	423.8	426.3	426.1	428.0	427.5	431.5	435.1
4	83	479.0	270	380.7	378.7	377.7	378.3	377.5	377.0	375.5	377.3	379.4
5	83	410.0	270	402.3	400.7	401.1	402.0	401.2	402.6	400.9	405.5	407.8
6	83	355.0	270	364.4	363.4	363.9	364.2	363.5	363.4	362.1	365.9	367.2
7	91	644.0	270	492.0	493.3	497.0	499.6	502.0	504.4	507.3	515.7	520.7
8	91	589.0	270	461.2	461.7	464.5	466.7	468.4	470.4	471.9	478.5	483.4
9	91	534.0	270	438.4	437.1	439.6	440.2	441.6	443.1	443.0	448.2	452.9
10	91	479.0	270	402.5	400.1	399.9	398.9	397.3	396.3	393.8	395.0	397.2
11	91	410.0	270	408.8	407.1	407.2	408.1	407.1	407.7	406.4	409.9	413.0
12	91	355.0	270	380.1	377.6	376.4	377.0	376.0	376.3	374.7	376.8	379.3
13	7	644.0	30	500.2	498.0	499.8	501.8	501.3	500.4	497.7	506.3	507.3
14	7	589.0	30	462.1	461.5	460.7	463.4	461.5	461.1	457.9	466.6	467.4
15	7	534.0	30	432.0	431.1	431.5	432.0	430.4	429.9	427.5	435.3	436.4
16	7	479.0	30	384.9	383.2	382.5	381.7	379.9	378.5	376.0	380.8	380.1
17	7	410.0	30	380.3	379.5	378.4	378.9	377.1	377.6	375.7	382.3	383.6
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	497.4	496.3	497.2	499.9	498.2	499.7	495.8	504.5	507.1
20	22	589.0	90	467.3	465.7	465.7	467.4	465.5	466.5	463.1	470.5	472.2
21	22	534.0	90	443.1	439.9	439.5	439.8	437.8	438.6	434.6	441.1	442.6
22	22	479.0	90	389.7	386.3	386.3	385.5	383.6	382.0	377.2	382.5	381.8
23	22	410.0	90	380.3	377.3	377.1	377.3	375.6	376.5	372.6	379.1	380.8
24	22	355.0	90	352.5	349.7	348.6	348.3	347.3	348.0	344.0	348.9	351.6
25	78	644.0	150	494.4	491.6	493.5	495.0	494.2	495.9	493.2	499.8	504.3
26	78	589.0	150	468.5	465.5	466.7	467.2	466.2	468.0	465.2	471.0	474.5
27	78	534.0	150	438.7	436.1	436.9	436.4	435.2	436.1	434.5	438.8	441.4
28	78	479.0	150	391.1	388.2	387.1	386.5	384.5	384.5	381.6	383.4	383.5
29	78	410.0	150	382.6	381.6	380.8	380.8	379.2	380.5	379.1	381.8	382.8
30	78	355.0	150	360.8	359.4	359.3	358.0	357.1	357.9	355.5	356.8	357.8
31	110	644.0	30	484.3	483.4	488.6	493.1	493.8	498.5	500.0	505.6	511.1
32	110	589.0	30	460.2	459.3	464.0	467.9	468.1	471.6	473.3	477.8	483.4
33	110	534.0	30	434.7	433.6	436.9	438.4	438.5	441.1	442.6	445.8	451.6
34	110	479.0	30	397.7	395.5	396.6	396.6	393.4	393.2	391.6	391.8	394.8
35	110	410.0	30	407.4	405.0	407.3	407.4	406.3	407.6	408.0	411.7	415.2
36	110	355.0	30	384.7	381.4	381.3	381.4	379.9	380.6	380.4	383.0	386.3
37	42	644.0	150	488.1	487.0	489.7	490.7	490.3	491.5	490.9	495.8	500.5
38	42	589.0	150	459.7	457.4	459.1	459.9	458.7	460.4	458.8	463.8	468.3
39	42	534.0	150	432.8	429.7	430.7	432.1	430.8	432.9	430.4	435.9	439.1
40	42	479.0	150	382.1	379.7	379.8	380.6	379.0	379.6	376.1	379.0	379.3

41	42	410.0	150	375.1	373.1	373.2	374.5	372.4	373.7	371.4	374.5	375.9
42	42	355.0	150	356.4	354.7	354.1	353.6	350.7	352.7	350.7	352.8	353.9
43	62	644.0	30	468.8	466.2	469.2	472.2	471.1	475.2	471.8	478.3	481.8
44	62	589.0	30	442.0	440.6	440.9	443.6	441.6	442.2	442.2	448.2	451.2
45	62	534.0	30	498.8	497.0	499.8	503.2	502.2	506.0	503.7	510.1	513.9
46	62	478.0	30	392.6	390.3	391.8	391.7	389.8	391.3	389.2	391.2	393.4
47	62	410.0	30	390.1	388.3	388.0	388.8	387.0	389.1	387.2	389.7	393.1
48	62	355.0	30	366.1	363.5	363.2	363.3	360.4	362.3	360.8	362.4	365.8
49	23	644.0	150	481.5	480.2	481.8	486.5	483.9	487.4	481.4	495.1	499.8
50	23	589.0	150	447.8	446.3	448.3	452.3	450.3	453.8	453.2	459.3	462.9
51	23	534.0	150	420.4	418.0	419.7	421.8	421.5	422.2	422.5	427.6	430.6
52	23	478.0	150	373.3	370.9	371.3	371.1	370.3	373.1	370.3	373.1	374.1
53	23	410.0	150	379.7	376.3	377.5	380.0	379.5	382.2	381.2	385.7	388.4
54	23	355.0	150	356.5	354.1	352.6	354.5	352.5	353.3	354.4	357.9	360.1
55	114	644.0	330	473.9	473.6	474.8	478.5	476.9	480.5	481.7	486.9	490.9
56	114	589.0	330	445.1	443.7	444.9	448.1	446.7	450.4	451.0	455.8	458.7
57	114	534.0	330	419.5	417.4	417.4	419.9	417.8	419.8	419.9	424.2	425.8
58	114	478.0	330	375.8	373.3	373.9	374.5	372.7	372.3	374.6	374.2	374.6
59	114	410.0	330	378.4	375.5	376.1	377.6	375.9	376.0	376.5	379.6	381.4
60	114	355.0	330	359.1	355.5	356.0	357.3	354.5	354.3	354.0	356.4	358.1
61	120	644.0	90	479.1	477.4	480.0	483.5	482.3	486.3	486.2	493.5	496.1
62	120	589.0	90	448.8	446.5	448.8	451.9	449.3	452.5	452.6	458.7	460.3
63	120	534.0	90	426.7	423.4	423.6	427.6	426.7	427.7	427.1	432.2	433.4
64	120	478.0	90	389.0	386.8	387.3	387.2	384.7	385.3	384.0	387.1	387.0
65	120	410.0	90	389.1	386.0	386.8	387.5	385.9	388.4	387.5	392.0	392.9
66	120	355.0	90	362.1	359.5	358.5	359.3	357.4	358.3	357.5	360.8	359.9
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	448.7	447.2	449.3	453.1	451.3	454.9	454.2	460.5	461.0
69	97	534.0	210	422.4	419.6	421.4	423.7	422.4	423.6	422.9	428.1	427.9
70	97	478.0	210	377.4	374.4	376.4	378.2	376.6	372.9	372.1	374.1	372.6
71	97	410.0	210	370.3	368.8	369.8	370.5	369.1	369.4	370.3	373.2	374.5
72	97	355.0	210	350.2	348.8	349.2	349.4	346.4	347.4	346.9	349.5	350.8
73	0	0.0	0	154.2	151.9	154.2	154.0	154.3	154.0	155.8	154.6	154.1
74	0	0.0	0	151.0	151.7	153.5	154.1	153.9	149.3	154.8	148.8	152.3
75	0	0.0	0	154.8	154.4	154.5	154.0	154.1	154.4	154.9	155.2	155.4
76	0	896.9	0	336.4	336.0	342.3	346.7	347.5	350.9	352.6	356.0	359.0
77	0	896.9	0	328.5	329.1	333.2	336.9	337.7	340.5	343.2	345.7	348.2
78	0	896.9	0	335.3	335.9	340.5	345.5	346.3	349.4	351.6	354.3	356.0
79	0	430.6	270	176.3	176.0	177.2	178.1	178.8	178.6	182.0	183.4	183.6
80	0	430.6	210	176.0	176.5	177.6	178.5	179.5	180.5	182.5	183.8	184.0
81	0	430.6	90	181.0	181.1	182.3	182.6	183.8	185.1	185.9	186.8	187.7
82	0	630.6	30	177.3	177.0	178.3	179.1	179.8	180.6	182.4	183.1	183.4
83	0	630.6	270	241.2	241.7	243.8	246.1	246.7	248.2	250.2	252.6	253.5
84	0	630.6	210	235.9	236.8	239.0	241.0	242.1	243.8	245.6	248.3	249.2
85	0	630.6	30	239.2	240.0	241.6	243.3	244.1	245.6	247.8	250.1	250.9
86	0	630.6	90	248.8	249.3	251.7	253.0	253.9	255.7	257.3	259.6	260.9
87	0	830.6	210	289.4	291.1	294.0	297.3	299.1	302.0	304.7	307.9	309.7
88	0	830.6	270	295.6	296.7	300.3	303.3	304.6	306.7	309.4	313.0	314.4
89	0	830.6	30	289.1	290.0	293.4	296.4	298.1	301.1	304.2	307.8	309.5
90	0	830.6	90	303.1	304.2	307.6	310.2	311.3	314.5	316.4	319.8	321.8
91	0	0.0	0	151.8	154.4	152.9	153.6	154.3	154.7	155.2	150.8	155.0
92	0	0.0	0	151.8	154.4	152.9	153.6	154.3	154.7	155.2	150.8	155.0

DATUM 3. 3.79

VERSUCH NR.	10	11	12	13	14	15	16	17
DURCHSATZ (KG/S)	0.0614	0.0547	0.0496	0.0442	0.0395	0.0357	0.0321	0.0290
EL. ENERGIE (KW)	61.5	54.8	49.8	44.5	40.6	36.2	33.4	29.7
WAERMEENERGIE (KW)	63.7	56.8	51.4	45.7	41.9	37.2	33.9	30.1
WAERMEBILANZ (O/O)	3.5	3.7	3.4	2.7	3.1	2.7	1.3	1.3
REYNOLDSZAHL*E-04	1.891	1.687	1.532	1.365	1.213	1.102	0.987	0.892
DRUCKVERLUST (1.E+01 N/M**2)								
GES.X= 895.6(MM)	9785.	7870.	6583.	5266.	4281.	3487.	2859.	2343.
BIS X= 102.0(MM)	1800.	1472.	1227.	997.	814.	669.	552.	459.
BIS X= 236.1(MM)	2206.	1777.	1519.	1222.	997.	825.	682.	567.
BIS X= 502.0(MM)	5228.	4190.	3518.	2812.	2275.	1872.	1534.	1265.
BIS X= 670.0(MM)	6738.	5373.	4497.	3586.	2893.	2348.	1923.	1592.
BIS X= 736.1(MM)	8087.	6469.	5407.	4315.	3483.	2830.	2323.	1919.
BIS X= 866.0(MM)	8742.	6995.	5856.	4682.	3794.	3089.	2540.	2105.
EINTR.-DRUCK (BAR)	37.93	37.87	37.77	37.68	37.71	37.81	37.78	37.72
EINTR.-TEMP. GRADC	156.0	155.4	154.8	155.6	156.3	154.6	155.7	156.3

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD) GRAD C

1	83	644.0	270	510.9	508.7	507.9	508.0	514.0	512.2	519.8	513.1
2	83	589.0	270	476.2	473.4	473.3	472.6	479.3	478.1	485.4	479.6
3	83	534.0	270	436.8	433.9	433.3	433.5	438.7	436.7	443.0	436.9
4	83	479.0	270	379.3	375.9	374.2	372.3	375.5	371.8	374.4	368.0
5	83	410.0	270	409.1	406.8	405.7	405.5	411.3	408.6	415.7	410.3
6	83	355.0	270	368.9	367.0	364.7	365.5	371.0	368.5	374.3	369.3
7	91	644.0	270	523.5	521.1	519.9	521.1	528.0	522.3	531.8	525.1
8	91	589.0	270	486.5	483.9	483.3	485.5	491.9	487.0	496.2	490.6
9	91	534.0	270	455.3	453.1	452.5	454.2	460.4	455.6	464.6	458.9
10	91	479.0	270	396.8	392.6	389.5	387.7	389.2	381.4	384.4	376.2
11	91	410.0	270	414.2	411.6	410.9	411.6	416.6	411.2	419.6	413.3
12	91	355.0	270	381.0	378.6	377.4	377.7	383.1	378.4	385.5	379.8
13	7	644.0	30	507.8	504.5	501.1	501.0	508.1	504.1	512.1	504.9
14	7	589.0	30	467.6	465.3	462.8	463.1	471.6	467.9	475.3	470.3
15	7	534.0	30	435.3	434.4	432.7	432.4	440.7	438.0	444.4	440.5
16	7	479.0	30	376.7	374.6	370.1	368.3	371.2	366.7	367.3	361.6
17	7	410.0	30	381.4	381.1	378.5	379.6	385.9	383.5	388.2	384.0
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	505.9	501.0	499.5	499.1	506.0	501.9	509.8	502.6
20	22	589.0	90	472.2	467.4	466.1	465.9	472.7	469.5	476.7	470.5
21	22	534.0	90	443.1	438.7	437.6	437.8	444.8	443.2	450.7	446.0
22	22	479.0	90	380.2	375.0	372.2	368.9	373.1	368.2	369.8	363.0
23	22	410.0	90	380.0	376.9	376.3	376.1	383.3	380.3	385.3	380.5
24	22	355.0	90	350.5	348.0	347.6	348.3	355.0	352.6	356.9	353.1
25	78	644.0	150	503.8	501.2	499.5	500.5	507.2	499.8	506.3	499.8
26	78	589.0	150	474.3	473.1	471.8	472.4	478.4	471.7	477.7	471.7
27	78	534.0	150	442.2	440.9	440.1	439.8	446.7	441.3	447.1	441.8
28	78	479.0	150	383.0	379.7	378.0	374.7	378.0	370.5	372.6	365.4
29	78	410.0	150	383.4	382.4	382.0	381.5	387.2	381.3	386.9	381.6
30	78	355.0	150	357.9	357.2	356.3	355.9	360.7	355.5	360.0	354.8
31	110	644.0	30	513.0	510.6	510.0	511.3	521.5	517.6	526.9	522.5
32	110	589.0	30	485.1	482.3	482.2	482.0	491.0	486.5	495.5	490.9
33	110	534.0	30	453.3	450.8	450.6	450.0	458.6	453.4	460.4	455.5
34	110	479.0	30	394.2	389.2	386.1	383.0	386.3	379.1	381.2	374.5
35	110	410.0	30	415.9	413.3	411.8	410.6	416.9	411.6	417.1	412.5
36	110	355.0	30	386.7	383.2	381.0	379.9	385.0	379.7	384.0	379.2
37	42	644.0	150	501.5	496.6	496.0	494.7	502.5	496.1	503.2	495.5
38	42	589.0	150	469.3	465.0	465.1	464.5	472.7	468.3	475.1	469.7
39	42	534.0	150	440.2	436.8	437.5	436.4	444.5	439.7	446.4	442.7
40	42	479.0	150	379.3	374.6	372.7	368.8	372.1	365.9	367.2	362.3

41	42	410.0	150	378.5	374.7	375.5	373.3	379.7	374.5	380.2	377.4
42	42	355.0	150	356.9	351.9	354.3	351.1	357.3	352.2	357.5	355.4
43	62	644.0	30	483.2	480.1	481.2	478.1	484.4	476.1	483.5	477.7
44	62	589.0	30	452.4	450.0	451.5	448.5	455.7	447.4	455.4	450.2
45	62	534.0	30	514.8	511.5	511.7	508.5	517.2	507.6	516.1	508.7
46	62	479.0	30	391.3	388.0	383.7	379.2	384.4	372.9	374.5	367.6
47	62	410.0	30	392.1	390.6	388.7	386.1	393.2	383.7	388.3	383.0
48	62	355.0	30	365.0	363.8	363.4	360.2	366.8	358.8	363.2	359.0
49	23	644.0	150	498.7	498.0	497.6	495.4	503.7	493.7	501.6	494.8
50	23	589.0	150	461.7	461.7	461.3	459.8	467.7	459.3	466.1	460.1
51	23	534.0	150	429.4	430.2	429.4	427.9	435.1	427.1	432.7	428.3
52	23	479.0	150	372.2	370.8	368.8	365.0	368.5	359.5	360.7	356.5
53	23	410.0	150	387.9	388.8	388.6	386.5	392.6	385.2	391.1	388.2
54	23	355.0	150	358.7	359.2	358.7	355.7	360.3	353.1	358.1	354.4
55	114	644.0	330	490.3	488.8	487.5	486.2	495.5	487.7	496.2	490.2
56	114	589.0	330	458.4	457.8	456.8	456.4	465.6	458.0	466.3	461.4
57	114	534.0	330	425.2	424.6	424.0	423.2	433.1	424.6	432.3	428.1
58	114	479.0	330	372.2	369.3	367.8	365.2	372.3	361.3	363.8	358.7
59	114	410.0	330	380.6	379.9	380.5	380.2	390.0	379.9	386.4	382.9
60	114	355.0	330	357.5	355.5	356.2	355.1	363.6	353.4	358.1	354.7
61	120	644.0	90	495.2	494.4	493.9	492.3	502.0	491.2	499.5	493.4
62	120	589.0	90	459.6	459.3	458.2	457.8	466.3	457.3	465.1	460.1
63	120	534.0	90	432.6	431.5	429.7	429.3	436.4	426.8	433.2	427.7
64	120	479.0	90	385.4	382.4	378.9	375.7	379.1	368.3	369.7	362.5
65	120	410.0	90	392.8	392.2	390.6	389.3	396.3	388.0	392.1	386.9
66	120	355.0	90	360.8	359.7	358.0	356.3	361.5	353.5	356.5	351.7
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	462.4	462.4	460.9	459.6	466.3	457.9	463.0	457.3
69	97	534.0	210	429.0	429.1	426.7	424.9	432.1	423.4	427.8	423.8
70	97	479.0	210	372.1	370.1	365.2	361.9	365.9	356.0	356.9	351.5
71	97	410.0	210	375.3	374.2	371.7	370.9	377.6	368.5	373.0	369.1
72	97	355.0	210	351.5	350.2	347.1	346.9	352.7	343.1	348.0	344.4
73	0	0.0	0	158.3	157.4	157.0	156.8	156.6	152.1	153.4	153.3
74	0	0.0	0	151.8	153.9	153.5	153.0	152.1	151.4	153.1	153.3
75	0	0.0	0	157.9	154.8	154.0	157.1	160.2	160.2	160.5	162.3
76	0	896.9	0	360.7	360.1	358.6	358.9	364.9	360.2	363.8	361.6
77	0	896.9	0	349.6	349.1	348.0	348.6	354.0	349.0	351.4	349.2
78	0	896.9	0	357.0	356.5	356.1	355.4	362.0	355.9	361.2	357.5
79	0	430.6	270	185.3	186.0	185.9	185.6	188.1	184.5	185.3	185.7
80	0	430.6	210	185.6	186.5	186.2	185.4	187.5	183.3	183.6	183.9
81	0	430.6	90	188.9	189.3	189.3	189.6	192.1	191.3	191.8	191.9
82	0	430.6	30	184.8	184.6	184.5	185.2	187.9	187.2	187.9	188.7
83	0	630.6	270	255.2	255.4	255.2	255.0	258.7	255.2	257.2	257.0
84	0	630.6	210	251.1	252.0	252.1	251.5	255.0	251.0	252.7	253.0
85	0	630.6	30	252.8	252.9	253.2	254.4	258.5	257.9	260.2	260.7
86	0	630.6	90	262.4	262.5	262.5	262.9	266.2	265.0	266.8	266.3
87	0	830.6	210	312.1	313.0	313.5	313.2	317.6	313.7	316.2	316.2
88	0	830.6	270	316.7	317.0	317.1	316.9	321.4	317.8	320.3	319.8
89	0	830.6	30	312.0	312.6	313.5	315.1	320.5	320.1	323.3	323.7
90	0	830.6	90	323.8	323.4	323.5	323.8	328.0	326.4	328.9	328.0
91	0	0.0	0	155.3	153.8	153.9	153.3	158.1	156.8	154.2	155.5
92	0	0.0	0	155.3	153.8	153.9	153.3	158.1	156.8	154.2	155.5



DATUM 4. 3.79

VERSUCH NR.	1	2	3	4	5	6	7	8	9	10	11
DURCHSATZ (KG/S)	0.0413	0.0376	0.0349	0.0318	0.0283	0.0256	0.0229	0.0206	0.0184	0.0165	0.0150
EL. ENERGIE (KW)	55.9	50.4	47.3	43.0	39.1	35.4	31.8	28.5	25.2	22.1	19.9
WAERMEENERGIE(KW)	57.3	51.7	48.4	43.6	39.4	35.2	31.7	28.2	24.9	21.8	19.3
WAERMEFLANZ(O/O)	2.6	2.7	2.3	1.3	0.8	-0.5	-0.2	-1.2	-1.4	-1.0	-3.3
REYNOLDSZAHL*E-04	1.244	1.125	1.045	0.952	0.844	0.765	0.684	0.617	0.553	0.498	0.454
DRUCKVERLUST (1.E+01 N/M**2)											
GES.X= 895.6(MM)	18245.	15291.	13381.	11400.	9325.	7772.	6378.	5259.	4290.	3520.	2967.
BIS X= 102.0(MM)	3180.	2719.	2367.	2023.	1670.	1398.	1156.	962.	791.	650.	552.
BIS X= 236.1(MM)	3898.	3303.	2930.	2508.	2055.	1719.	1422.	1188.	984.	816.	692.
BIS X= 502.0(MM)	9319.	7870.	6877.	5834.	4765.	3958.	3246.	2675.	2196.	1808.	1517.
BIS X= 670.0(MM)	12050.	10121.	8810.	7461.	6079.	5050.	4111.	3397.	2758.	2249.	1904.
BIS X= 736.1(MM)	14745.	12375.	10775.	9107.	7426.	6172.	5034.	4151.	3372.	2752.	2327.
BIS X= 866.0(MM)	16083.	13530.	11789.	9996.	8146.	6781.	5529.	4576.	3726.	3043.	2575.
EINTR.DRUCK (BAR)	9.89	9.92	9.90	9.90	9.88	9.85	9.83	9.85	9.83	9.82	9.80
EINTR.TEMP. GRAD C	141.3	146.7	145.3	148.3	148.8	150.0	148.9	149.3	148.9	147.0	148.4

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD)GRAD C

1	83	644.0	270	621.2	622.9	628.7	625.8	634.1	636.1	643.6	644.5	639.2	624.2	612.9
2	83	589.0	270	574.9	577.8	583.9	582.0	588.7	588.3	592.1	590.6	584.9	570.8	560.7
3	83	534.0	270	519.2	522.0	526.6	524.2	528.0	525.8	526.2	523.6	516.0	502.2	491.4
4	83	479.0	270	431.0	432.5	433.0	430.2	431.1	427.7	426.5	424.3	418.5	409.0	402.4
5	83	410.0	270	490.8	492.8	498.0	496.8	502.7	503.5	508.2	507.9	502.9	490.7	481.5
6	83	355.0	270	432.8	436.0	439.4	438.5	442.0	440.4	439.7	437.0	430.9	419.8	410.8
7	91	644.0	270	632.0	632.8	639.0	636.8	646.1	650.1	660.1	659.6	652.1	637.1	627.2
8	91	589.0	270	587.1	589.3	595.5	594.3	603.8	606.5	613.7	612.3	605.8	591.7	581.6
9	91	534.0	270	545.9	549.7	554.7	553.9	561.1	559.7	561.1	557.1	549.0	534.1	522.6
10	91	479.0	270	445.0	446.1	444.9	441.5	442.5	438.1	436.4	433.7	429.3	420.3	413.6
11	91	410.0	270	495.7	498.9	502.4	501.5	508.8	509.6	517.3	521.0	522.1	512.3	502.4
12	91	355.0	270	446.7	451.5	454.3	454.5	461.0	460.5	463.1	462.3	459.0	448.3	438.8
13	7	644.0	30	617.7	618.2	620.4	617.8	621.4	618.9	623.1	622.6	623.7	619.0	619.5
14	7	589.0	30	568.8	570.9	573.4	572.6	577.9	576.8	582.4	583.3	585.1	578.1	572.4
15	7	534.0	30	526.9	529.3	531.7	532.1	536.9	536.1	539.8	536.9	532.4	519.8	508.7
16	7	479.0	30	428.3	427.2	425.2	423.0	421.8	416.8	413.6	407.1	399.9	389.5	380.0
17	7	410.0	30	459.6	460.9	462.8	463.3	467.3	466.5	470.5	469.8	471.4	468.0	467.0
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	612.5	611.2	614.3	613.8	619.8	617.8	623.1	622.1	627.2	624.2	627.2
20	22	589.0	90	568.8	568.2	571.0	570.7	576.7	575.6	582.2	582.6	587.7	580.9	576.6
21	22	534.0	90	532.0	531.6	535.7	536.1	544.0	543.3	548.5	544.7	540.6	525.9	515.1
22	22	479.0	90	429.5	426.5	425.9	422.6	422.9	417.3	414.6	406.9	400.0	388.5	380.5
23	22	410.0	90	450.1	449.7	452.5	451.6	456.9	455.3	458.5	456.6	458.7	456.2	458.2
24	22	355.0	90	410.2	411.4	413.7	413.7	418.3	417.0	419.9	418.1	418.2	411.9	407.6
25	78	644.0	150	605.9	606.2	610.3	609.1	614.8	612.6	616.8	614.4	617.3	611.5	613.8
26	78	589.0	150	568.3	569.3	573.1	572.1	577.4	574.9	578.2	576.5	579.2	570.5	567.3
27	78	534.0	150	524.5	526.5	530.5	531.2	537.2	536.1	539.3	535.8	532.6	518.8	509.9
28	78	479.0	150	429.6	429.9	428.8	426.6	426.7	421.2	417.8	410.7	404.2	392.4	385.3
29	78	410.0	150	451.9	454.5	456.2	457.0	461.4	459.7	462.6	459.7	460.4	454.7	456.4
30	78	355.0	150	416.0	418.9	419.8	420.9	424.7	422.8	425.0	422.2	420.9	413.2	410.0
31	110	644.0	30	629.5	632.3	637.1	641.1	654.3	659.2	670.7	667.0	659.7	641.1	629.1
32	110	589.0	30	591.3	594.5	598.5	600.8	613.4	616.1	624.8	620.7	615.0	597.6	585.8
33	110	534.0	30	549.4	551.8	554.4	554.6	561.8	560.2	563.9	557.8	550.7	532.2	520.2
34	110	479.0	30	449.7	450.3	448.3	446.3	448.0	443.9	444.6	439.2	434.1	426.7	420.4
35	110	410.0	30	502.5	504.5	506.7	507.1	515.4	515.9	523.9	522.9	521.4	509.2	498.7
36	110	355.0	30	457.5	459.3	460.1	459.9	465.1	462.8	465.2	460.8	456.6	444.9	435.2
37	42	644.0	150	610.2	608.8	611.5	609.3	617.7	615.6	622.2	621.0	627.0	622.5	622.5
38	42	589.0	150	571.6	571.9	575.2	575.0	584.5	583.4	590.7	590.1	592.9	583.7	577.1
39	42	534.0	150	533.7	534.4	537.3	538.0	547.5	546.6	551.5	547.5	543.2	528.0	516.2
40	42	479.0	150	431.3	430.7	428.9	426.6	429.6	423.9	422.3	415.2	408.2	395.8	388.5

41	42	410.0	150	450.1	451.7	453.8	453.7	461.2	458.9	463.8	462.0	464.4	459.9	461.6
42	42	355.0	150	418.8	421.2	422.7	422.8	429.4	427.7	431.5	429.3	429.0	419.8	414.5
43	62	644.0	30	580.0	581.5	584.9	583.9	593.0	591.4	599.6	598.1	602.3	593.1	585.6
44	62	589.0	30	541.4	544.1	547.9	547.8	557.1	555.1	561.1	555.4	551.6	536.9	524.2
45	62	534.0	30	622.2	622.7	627.0	624.8	634.6	632.3	641.0	638.8	644.6	638.5	635.2
46	62	479.0	30	440.7	440.4	439.4	435.5	437.4	431.0	429.2	421.3	414.9	403.3	393.7
47	62	410.0	30	461.7	463.0	464.8	463.1	469.6	467.2	472.8	471.2	475.3	471.9	471.6
48	62	355.0	30	425.6	427.9	429.5	428.5	435.0	433.1	437.9	436.2	436.4	428.6	422.8
49	23	644.0	150	604.5	605.1	609.6	608.1	618.1	617.1	626.0	623.1	624.9	615.9	609.8
50	23	589.0	150	557.3	559.3	563.3	563.0	572.7	570.9	578.2	575.5	576.2	566.6	558.9
51	23	534.0	150	513.1	516.2	519.8	520.0	528.7	526.3	531.1	526.4	521.8	508.8	497.7
52	23	479.0	150	421.8	423.4	423.2	420.8	424.0	418.7	418.0	411.9	405.6	395.1	387.8
53	23	410.0	150	466.2	469.1	473.0	472.7	482.0	480.5	485.7	483.0	482.2	474.5	470.0
54	23	355.0	150	420.0	422.8	425.5	425.2	431.6	429.0	431.6	427.8	425.1	416.2	409.4
55	114	644.0	330	596.0	596.1	600.4	599.9	610.8	609.5	619.1	617.2	619.2	610.3	606.0
56	114	589.0	330	556.2	558.1	561.9	562.6	573.9	572.6	580.8	577.7	578.7	568.9	561.9
57	114	534.0	330	511.0	514.3	517.4	518.5	528.5	527.0	532.6	527.1	524.0	510.4	499.8
58	114	479.0	330	424.7	425.3	424.3	423.0	426.4	421.4	420.6	413.8	407.5	395.4	385.8
59	114	410.0	330	460.1	462.2	465.6	467.0	476.6	476.3	483.1	480.8	480.8	470.8	464.5
60	114	355.0	330	422.4	424.3	426.6	427.6	434.9	433.2	436.3	431.8	428.5	417.3	407.8
61	120	644.0	90	602.6	602.2	606.1	605.1	614.6	612.3	621.0	618.8	620.9	613.6	607.7
62	120	589.0	90	558.0	559.0	562.9	563.0	573.2	572.3	580.1	577.4	577.1	568.0	559.6
63	120	534.0	90	517.3	518.5	520.7	520.7	529.0	527.2	532.6	527.6	523.3	510.6	499.6
64	120	479.0	90	435.7	434.3	432.7	430.5	433.3	428.7	428.7	422.9	418.2	409.2	401.8
65	120	410.0	90	467.9	468.4	470.8	471.1	478.5	476.5	482.5	479.3	478.7	470.4	463.3
66	120	355.0	90	418.7	419.9	421.5	422.3	429.0	426.4	429.9	425.5	422.0	412.5	402.8
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	555.7	556.9	560.3	559.3	568.1	566.5	574.2	572.3	574.3	567.5	562.4
69	97	534.0	210	508.9	511.7	514.4	514.3	522.6	521.8	528.6	526.4	524.4	514.6	505.7
70	97	479.0	210	417.0	418.0	416.7	414.8	417.0	413.2	412.7	407.6	401.9	392.2	384.0
71	97	410.0	210	442.1	445.6	447.4	447.5	454.6	454.5	461.0	461.7	464.0	461.0	460.5
72	97	355.0	210	407.5	411.6	412.3	413.2	418.9	418.8	423.0	421.7	420.6	413.6	408.8
73	0	0.0	0	140.9	146.6	144.3	148.0	148.0	149.0	148.2	150.4	149.9	150.2	149.3
74	0	0.0	0	141.9	146.1	145.3	146.9	147.1	151.6	148.4	147.4	146.3	142.9	144.0
75	0	0.0	0	141.0	147.5	146.3	150.0	151.3	149.4	150.0	150.1	150.6	148.0	151.9
76	0	896.9	0	412.7	416.4	417.6	417.5	422.1	420.1	421.4	418.3	414.9	407.2	401.4
77	0	896.9	0	399.2	402.7	402.6	401.6	407.5	403.6	404.6	401.1	397.3	391.8	385.2
78	0	896.9	0	412.5	415.8	416.5	416.2	420.9	419.1	419.7	416.3	412.8	404.4	398.2
79	0	430.6	270	177.6	185.1	183.6	188.1	192.2	192.9	193.2	194.6	193.8	193.3	191.1
80	0	430.6	210	176.0	184.0	182.1	186.6	190.0	190.6	191.0	192.7	192.2	192.1	190.4
81	0	430.6	90	181.3	189.5	188.0	191.9	195.1	195.1	194.5	195.7	195.2	194.9	193.2
82	0	430.6	30	179.3	187.2	185.5	189.2	192.4	192.6	192.4	193.7	193.0	192.7	190.9
83	0	630.6	270	272.7	280.0	279.6	283.9	289.4	290.4	291.9	292.8	291.9	290.2	287.5
84	0	630.6	210	265.9	273.8	273.1	277.6	283.0	284.2	286.1	287.5	287.0	286.1	283.6
85	0	630.6	30	272.6	280.6	280.1	283.9	289.2	289.8	291.2	292.1	291.5	290.6	287.8
86	0	630.6	90	278.8	286.7	286.2	289.3	293.7	293.8	294.6	294.8	293.8	292.4	289.6
87	0	830.6	210	348.8	355.8	355.5	359.3	365.0	366.4	368.4	369.2	368.1	365.7	361.8
88	0	830.6	270	354.9	360.7	360.5	363.7	369.5	370.5	372.4	372.4	370.8	368.2	364.0
89	0	830.6	30	354.0	361.2	361.4	364.9	371.0	372.0	374.0	374.2	372.9	370.6	366.3
90	0	830.6	90	360.9	367.1	366.7	369.2	374.0	374.0	375.2	374.3	372.3	369.5	365.0
91	0	0.0	0	139.1	142.5	139.3	143.4	145.7	144.9	146.0	145.4	144.1	142.7	142.3
92	0	0.0	0	139.1	142.5	139.3	143.4	145.7	144.9	146.0	145.4	144.1	142.7	142.3

DATUM 4. 3.79

VERSUCH NR.	12	13	14	15	16	17	18	19	20	21
DURCHSATZ (KG/S)	0.0134	0.0119	0.0108	0.0097	0.0087	0.0079	0.0070	0.0062	0.0055	0.0048
EL. ENERGIE (KW)	17.4	16.2	14.7	14.0	13.3	12.3	11.9	10.9	10.1	9.3
WAERMEENERGIE (KW)	17.1	15.6	14.3	13.2	12.4	11.5	10.8	9.9	9.1	8.3
WAERMEBILANZ (O/O)	-1.7	-3.9	-2.7	-5.8	-6.8	-6.6	-9.4	-9.6	-10.0	-11.1
REYNOLDSZAHL *E-04	0.403	0.358	0.324	0.289	0.259	0.234	0.205	0.180	0.160	0.140
DRUCKVERLUST (1.E+01 N/M**2)										
GES.X= 895.6(MM)	2342.	1952.	1640.	1373.	1162.	988.	818.	664.	547.	449.
BIS X= 102.0(MM)	437.	363.	306.	249.	210.	176.	144.	116.	95.	77.
BIS X= 236.1(MM)	551.	459.	387.	320.	272.	227.	186.	159.	129.	107.
BIS X= 502.0(MM)	1203.	1005.	847.	704.	595.	502.	414.	348.	289.	242.
BIS X= 670.0(MM)	1507.	1257.	1062.	895.	762.	655.	543.	455.	375.	311.
BIS X= 736.1(MM)	1837.	1531.	1296.	1091.	931.	804.	675.	569.	475.	398.
BIS X= 866.0(MM)	2044.	1711.	1449.	1227.	1053.	906.	758.	630.	533.	456.
EINTR.DRUCK (BAR)	9.76	9.76	9.79	9.80	9.82	9.84	9.85	9.86	9.87	9.87
EINTR.TEMP. GRADC	151.1	151.8	147.0	148.3	147.3	147.2	147.5	144.1	142.3	142.9

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD)GRAD C

1	83	644.0	270	609.9	612.7	609.5	617.7	620.3	618.2	625.5	623.0	625.0	625.9
2	83	589.0	270	558.5	561.0	558.4	566.5	570.2	570.0	579.7	578.5	580.5	581.5
3	83	534.0	270	488.7	490.8	489.0	497.6	503.0	505.6	519.0	521.6	526.7	529.0
4	83	479.0	270	406.2	412.1	416.5	433.2	447.7	454.1	465.5	465.7	467.8	467.0
5	83	410.0	270	478.5	478.4	473.8	477.1	475.2	469.1	470.0	463.6	461.8	456.8
6	83	355.0	270	407.7	406.4	401.4	404.0	402.6	398.1	400.2	396.8	396.5	392.9
7	91	644.0	270	624.7	626.1	622.5	629.5	631.6	628.1	631.9	628.4	633.7	635.8
8	91	589.0	270	579.3	580.2	576.4	583.1	585.0	582.2	587.2	587.0	594.4	597.0
9	91	534.0	270	519.4	520.3	516.7	522.9	525.3	524.4	533.3	537.1	545.6	548.2
10	91	479.0	270	415.0	420.0	423.6	440.4	459.9	469.7	482.0	483.2	484.1	481.7
11	91	410.0	270	497.8	496.4	490.2	493.2	490.6	484.3	483.2	474.3	469.7	462.5
12	91	355.0	270	434.2	431.9	426.1	428.6	425.9	420.3	418.9	411.6	407.4	400.9
13	7	644.0	30	629.9	633.2	627.7	633.2	633.9	630.2	636.1	631.9	632.5	632.5
14	7	589.0	30	575.3	576.7	571.4	577.0	578.4	575.6	583.2	580.9	583.4	585.2
15	7	534.0	30	507.0	506.0	500.3	504.4	506.3	504.9	513.6	515.1	522.0	528.1
16	7	479.0	30	381.9	383.1	380.8	390.5	405.6	419.1	441.4	449.1	455.8	458.7
17	7	410.0	30	478.1	483.2	478.9	483.0	482.4	476.5	476.7	466.8	460.5	453.5
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	636.5	640.5	633.8	638.7	640.5	635.4	642.0	637.1	637.9	637.9
20	22	589.0	90	577.5	579.8	573.8	579.6	582.9	579.6	587.4	584.9	588.5	590.9
21	22	534.0	90	509.8	509.3	503.6	508.4	512.2	511.0	520.7	523.0	531.4	537.9
22	22	479.0	90	380.7	383.9	384.7	400.6	422.7	440.4	464.5	468.1	470.5	470.9
23	22	410.0	90	470.6	479.6	476.7	482.2	482.2	475.6	474.5	464.3	458.2	450.7
24	22	355.0	90	409.3	411.5	406.5	410.2	410.4	405.8	405.7	397.2	392.0	386.6
25	78	644.0	150	620.7	626.1	620.6	627.6	630.2	625.1	631.2	627.2	629.2	629.9
26	78	589.0	150	567.9	571.5	566.6	573.2	576.8	573.3	580.4	578.7	582.9	584.5
27	78	534.0	150	505.8	507.4	502.4	508.2	512.2	510.6	519.0	520.7	528.5	533.2
28	78	479.0	150	384.8	388.9	389.9	406.5	428.9	445.6	465.0	467.4	470.5	470.0
29	78	410.0	150	466.9	477.1	475.9	482.1	482.6	476.6	475.7	465.3	460.4	453.4
30	78	355.0	150	411.1	415.0	411.4	415.6	415.9	411.1	410.3	401.3	397.2	392.5
31	110	644.0	30	621.7	622.8	615.0	620.5	623.8	621.3	627.9	626.7	631.8	634.2
32	110	589.0	30	578.4	579.1	570.5	575.4	578.4	576.6	585.1	585.8	592.3	595.8
33	110	534.0	30	514.5	515.6	508.0	512.9	516.8	517.6	529.3	533.1	541.7	546.6
34	110	479.0	30	420.9	426.1	424.8	435.9	446.7	455.8	475.0	479.2	483.6	482.9
35	110	410.0	30	493.9	494.3	484.7	485.9	485.5	480.7	482.0	474.5	471.2	465.6
36	110	355.0	30	431.6	431.6	422.2	422.7	421.7	417.3	418.3	411.6	408.7	404.6
37	42	644.0	150	629.7	636.9	626.0	630.2	631.8	627.6	635.2	631.0	634.4	633.5
38	42	589.0	150	577.5	581.4	571.7	576.3	578.7	575.9	584.6	582.7	588.5	589.7
39	42	534.0	150	512.4	513.7	504.0	507.7	511.0	510.3	521.4	524.4	536.0	542.3
40	42	479.0	150	390.6	395.7	392.9	406.5	424.4	438.7	462.9	470.3	475.9	475.6

41	42	410.0	150	474.6	484.7	479.4	483.9	483.6	477.3	476.9	467.1	462.5	453.3
42	42	355.0	150	416.4	419.1	412.0	414.7	414.4	409.4	409.9	401.6	397.8	390.1
43	62	644.0	30	584.3	587.5	577.3	582.2	584.8	580.8	589.3	586.7	594.2	595.6
44	62	589.0	30	518.7	519.3	509.6	513.8	516.6	514.8	525.8	527.9	541.4	547.7
45	62	534.0	30	640.7	646.1	634.5	639.4	641.5	635.9	643.9	638.7	644.1	642.9
46	62	479.0	30	393.6	398.6	397.3	412.4	429.6	441.6	464.5	469.0	477.0	478.2
47	62	410.0	30	481.6	490.5	484.4	488.7	487.3	479.8	479.9	469.0	465.6	457.2
48	62	355.0	30	423.3	426.4	418.6	421.2	419.1	413.0	413.7	404.4	401.9	394.9
49	23	644.0	150	611.8	618.6	609.5	617.5	621.0	617.3	627.2	622.7	626.2	624.0
50	23	589.0	150	556.9	562.4	554.8	562.5	566.7	564.7	575.9	573.1	577.7	576.3
51	23	534.0	150	493.4	497.1	490.2	496.7	500.4	499.3	511.3	512.0	520.1	522.2
52	23	479.0	150	388.6	395.1	394.7	406.9	422.4	434.5	458.8	463.4	470.0	468.2
53	23	410.0	150	474.5	482.3	476.9	481.1	481.2	474.1	475.9	466.4	467.1	461.1
54	23	355.0	150	410.2	414.3	408.1	410.8	409.4	403.7	405.6	398.3	399.6	395.5
55	114	644.0	330	609.5	620.0	612.8	619.1	621.9	618.2	628.6	624.6	630.2	629.2
56	114	589.0	330	561.5	570.3	563.3	569.1	572.3	569.3	580.8	578.7	585.5	585.7
57	114	534.0	330	495.5	501.1	493.7	498.6	501.8	500.0	512.9	514.6	524.8	529.7
58	114	479.0	330	383.7	390.0	387.8	399.7	413.5	426.3	456.8	465.7	472.6	470.4
59	114	410.0	330	466.9	475.9	468.6	472.3	472.4	466.8	471.5	463.8	464.0	458.7
60	114	355.0	330	405.5	410.4	402.4	404.2	404.0	399.1	403.9	398.0	398.7	394.7
61	120	644.0	90	610.9	622.8	614.7	620.8	622.4	616.8	626.7	621.3	626.9	629.0
62	120	589.0	90	559.9	569.9	562.1	568.1	569.5	564.9	575.7	571.7	579.6	584.0
63	120	534.0	90	496.0	503.0	495.8	500.9	502.8	499.3	512.2	513.7	526.7	534.1
64	120	479.0	90	403.3	413.3	413.7	425.8	436.9	441.5	462.3	466.2	475.9	476.3
65	120	410.0	90	463.5	471.6	464.2	468.2	468.0	461.2	467.2	458.8	457.0	451.5
66	120	355.0	90	400.2	404.2	396.8	398.3	397.2	391.0	395.8	389.0	388.5	384.4
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	564.8	573.9	564.9	571.4	573.9	569.1	582.0	579.2	584.5	587.3
69	97	534.0	210	503.0	509.3	500.3	506.3	508.6	505.2	519.0	519.7	528.1	533.2
70	97	479.0	210	381.9	388.3	384.9	395.7	406.3	413.0	436.7	446.6	458.4	462.0
71	97	410.0	210	467.2	478.7	471.9	477.0	476.3	469.0	473.8	465.6	462.9	457.2
72	97	355.0	210	408.7	416.4	406.5	409.4	407.8	401.4	405.4	398.2	396.2	392.6
73	0	0.0	0	154.3	156.2	152.2	153.2	151.1	149.8	149.7	147.2	146.0	147.4
74	0	0.0	0	142.2	144.5	139.7	143.1	142.9	142.9	145.0	140.3	141.3	141.8
75	0	0.0	0	156.7	154.8	149.2	148.6	147.7	148.8	147.8	144.7	139.7	139.7
76	0	896.9	0	404.2	411.2	410.1	420.9	431.9	438.1	455.4	463.2	474.3	483.6
77	0	896.9	0	386.7	393.9	393.4	399.4	410.2	415.1	434.0	441.6	450.0	462.0
78	0	896.9	0	399.0	405.3	404.0	411.2	423.5	427.6	445.5	452.4	462.2	474.9
79	0	430.6	270	194.6	197.4	197.5	200.1	203.1	206.0	210.4	214.7	220.1	227.8
80	0	430.6	210	194.2	197.3	197.9	201.1	204.5	207.4	211.6	215.7	221.0	228.7
81	0	430.6	90	197.8	200.4	200.8	204.0	207.8	210.4	214.8	219.4	224.9	232.2
82	0	430.6	30	195.8	198.3	198.3	201.0	204.7	207.7	212.5	217.6	223.4	231.1
83	0	630.6	270	291.5	297.4	300.8	308.9	318.2	326.2	337.3	349.5	364.9	381.1
84	0	630.6	210	288.9	295.1	298.9	307.3	316.7	324.2	334.9	346.3	360.9	376.2
85	0	630.6	30	294.1	300.3	304.2	312.8	322.6	330.5	342.2	355.0	370.6	386.0
86	0	630.6	90	295.8	302.0	305.8	314.4	324.1	331.5	342.5	354.8	370.1	384.9
87	0	830.6	210	365.5	372.2	376.4	385.4	395.2	402.3	412.1	421.6	432.8	443.9
88	0	830.6	270	367.9	374.5	378.4	386.9	396.2	403.4	413.5	423.3	434.4	445.5
89	0	830.6	30	371.3	377.5	381.6	389.8	399.0	406.1	415.7	425.3	436.4	446.9
90	0	830.6	90	370.0	376.3	380.3	388.9	398.4	405.4	414.6	423.7	434.9	445.4
91	0	0.0	0	144.4	143.5	142.1	141.2	142.0	145.4	142.6	141.8	138.6	140.2
92	0	0.0	0	144.4	143.5	142.1	141.2	142.0	145.4	142.6	141.8	138.6	140.2

DATUM 6- 3-79

VERSUCH NR.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
DURCHSATZ (KG/S)	0.0294	0.0324	0.0361	0.0401	0.0448	0.0503	0.0553	0.0619	0.0680	0.0741	0.0817	0.0914	0.1020	0.1133	0.1270	0.1402
EL. ENERGIE (KW)	43.4	46.9	51.9	56.9	62.0	68.9	74.9	84.2	90.8	96.4	106.1	119.1	130.3	144.0	157.9	173.0
WAERMEENERGIE (KW)	43.3	47.9	52.6	58.3	63.9	71.7	78.1	88.2	95.2	102.1	112.5	125.7	136.9	151.1	165.5	181.5
WAERMEBILANZ(D/O)	-0.2	2.1	1.3	2.5	3.0	4.1	4.3	4.8	4.8	6.0	6.0	5.5	5.1	4.9	4.9	4.9
REYNOLDSZAHL*E-04	0.901	0.988	1.094	1.211	1.348	1.510	1.654	1.838	2.025	2.194	2.406	2.691	3.014	3.341	3.753	4.143
DRUCKVERLUST																
(L/E+O1 N/M**2)																
GES. X=	895.0(1MM)	2442.	3209.	4676.	5504.	6865.	8306.	10326.	12327.	15146.	17245.	21340.	26439.	32185.	39766.	48200.
BIS X=	102.0(1MM)	517.	628.	776.	947.	1194.	1433.	1780.	2113.	2417.	2948.	3628.	4488.	5456.	6745.	8191.
BIS X=	236.0(1MM)	541.	635.	778.	953.	1159.	1456.	1753.	2145.	2581.	2948.	3578.	4411.	5441.	6534.	8128.
BIS X=	502.0(1MM)	1239.	1486.	1824.	2248.	2763.	3514.	4258.	5281.	6344.	7283.	8875.	11020.	13625.	16581.	20645.
BIS X=	670.0(1MM)	1600.	1915.	2361.	2921.	3637.	4570.	5547.	6899.	8303.	9608.	11661.	14526.	18093.	22034.	27377.
BIS X=	736.0(1MM)	1961.	2348.	2880.	3572.	4430.	5572.	6751.	8394.	10090.	11684.	14178.	17656.	22031.	26758.	33202.
BIS X=	866.0(1MM)	2158.	2581.	3168.	3903.	4836.	6065.	7339.	9132.	10942.	12630.	15028.	19028.	23629.	28780.	35649.
EINTR. DRUCK (BAR)	37.95	38.07	38.21	38.37	38.40	38.42	38.54	38.66	38.78	39.15	39.16	39.19	39.25	39.83	39.46	39.48
EINTR. TEMP. GRADC	119.5	122.6	128.9	133.3	137.7	140.0	144.6	149.8	149.1	157.0	161.1	161.5	162.0	164.3	165.2	166.1

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NR NR. POS POS  
(MM) (MM) (GRD) (GRAD) C

1	83	644.0	270	638.5	635.6	635.7	633.5	628.2	627.8	625.8	633.7	625.7	625.1	630.9	634.1	627.3	629.8	624.2	626.2
2	83	589.0	270	589.8	588.1	588.7	586.5	580.9	580.9	579.2	586.1	578.6	578.3	584.5	587.5	582.4	583.9	579.9	582.2
3	83	534.0	270	525.4	526.7	528.0	526.1	526.6	525.4	525.7	532.2	525.7	527.3	533.5	537.6	536.1	536.1	534.9	532.5
4	83	479.0	270	420.7	426.0	431.9	437.3	442.0	442.4	444.5	452.4	450.2	453.4	461.1	466.0	464.6	469.8	468.1	471.7
5	83	410.0	270	502.4	501.6	500.6	501.2	497.0	497.1	495.3	500.9	495.3	496.3	503.5	506.5	502.7	506.6	504.1	506.8
6	83	355.0	270	434.8	437.3	438.9	440.7	438.2	439.0	437.9	444.2	439.0	441.0	448.5	449.2	453.5	454.8	454.8	
7	91	644.0	270	650.4	645.6	646.7	640.9	639.3	639.3	637.1	643.3	633.4	633.0	639.1	639.8	633.6	626.8	626.0	
8	91	589.0	270	605.6	600.1	599.0	600.3	594.3	591.8	589.5	595.8	586.2	585.4	592.8	584.3	585.9	590.7	584.7	584.3
9	91	534.0	270	561.2	557.6	557.0	558.8	552.3	551.0	549.7	556.4	547.7	548.3	555.7	557.5	551.7	557.2	552.3	554.3
10	91	479.0	270	433.5	437.5	443.2	452.6	465.1	465.9	464.3	474.4	470.9	474.3	485.9	491.9	491.7	501.0	504.4	
11	91	410.0	270	510.4	505.8	505.7	508.0	502.7	502.7	501.0	508.8	501.8	502.7	510.5	513.3	510.9	516.0	513.2	515.9
12	91	355.0	270	456.2	453.6	454.5	457.5	453.7	453.4	452.6	460.3	455.7	457.2	463.3	467.5	466.1	472.0	470.6	474.7
13	7	644.0	30	625.6	626.4	626.3	628.1	625.6	625.6	621.5	623.8	623.8	625.6	632.0	637.9	636.4	630.3	632.6	
14	7	589.0	30	579.5	579.8	578.6	579.4	576.2	572.9	571.6	579.5	572.7	574.5	581.5	585.6	580.3	584.6	579.9	584.1
15	7	534.0	30	535.0	536.5	535.0	535.6	532.9	529.6	529.8	536.2	530.6	531.5	538.6	543.5	538.8	542.0	538.3	542.4
16	7	479.0	30	411.2	420.6	425.7	431.2	434.7	436.5	442.2	450.3	449.2	452.9	460.5	466.3	465.8	469.5	468.8	472.8
17	7	410.0	30	463.5	467.2	466.9	466.7	463.7	461.5	463.2	468.1	464.2	466.0	471.6	473.2	471.1	474.8	472.0	476.1
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	625.3	624.8	624.0	625.1	618.5	617.4	617.1	627.5	620.5	624.4	631.1	634.1	630.8	635.7	630.5	633.7
20	22	589.0	90	579.7	580.1	579.0	579.4	574.3	573.9	572.6	582.8	576.3	580.4	587.1	590.6	586.8	592.2	588.4	590.7
21	22	534.0	90	544.1	543.8	542.0	541.0	536.6	536.0	535.2	544.4	538.1	542.5	548.7	551.9	549.6	555.8	553.7	556.4
22	22	479.0	90	413.6	420.7	427.0	432.6	435.4	439.6	443.7	453.9	453.3	457.9	466.3	471.0	472.1	478.1	478.1	481.5
23	22	410.0	90	453.3	454.4	455.8	456.1	453.7	454.0	454.3	460.3	457.1	459.5	464.0	467.9	465.3	470.1	469.1	471.9
24	22	355.0	90	411.1	412.5	414.1	415.2	413.0	412.2	413.9	418.5	415.9	419.4	424.0	427.8	426.3	430.4	430.7	433.9
25	78	644.0	150	617.8	615.4	617.1	617.3	611.5	611.5	612.6	621.9	613.9	620.9	625.0	629.6	625.0	629.3	625.1	625.7
26	78	589.0	150	577.3	575.4	578.1	578.0	573.1	573.2	574.0	583.1	574.6	580.6	586.4	590.8	587.3	592.6	587.7	589.5
27	78	534.0	150	533.8	532.1	533.6	533.5	528.4	529.4	529.8	539.6	530.4	537.8	543.3	547.9	545.4	550.0	547.9	549.6
28	78	479.0	150	416.4	421.1	427.4	432.8	435.6	439.5	443.2	455.2	450.8	459.8	467.3	473.0	473.0	479.7	479.7	484.5
29	78	410.0	150	456.7	455.9	458.0	458.8	453.8	453.8	456.3	464.6	458.0	464.6	470.0	473.4	469.6	475.7	474.3	478.5
30	78	355.0	150	416.6	416.1	418.4	421.2	417.0	419.4	421.4	428.9	423.2	431.3	437.4	440.8	438.8	444.9	446.0	448.5
31	110	644.0	30	651.6	649.2	647.3	642.9	634.5	634.6	632.8	640.3	633.6	633.4	635.8	638.0	627.3	629.6	623.0	622.4
32	110	589.0	30	608.2	606.9	605.1	601.5	593.8	594.6	593.5	601.0	593.0	594.1	597.7	598.3	591.8	593.6	587.0	586.9
33	110	534.0	30	553.7	556.9	556.2	556.0	550.4	550.5	549.9	559.7	549.8	551.6	555.5	559.9	551.0	553.9	549.6	550.6
34	110	479.0	30	432.5	440.7	447.3	451.8	453.2	457.7	462.6	472.8	471.6	476.4	484.1	488.9	480.0	493.2	493.6	497.4
35	110	410.0	30	508.0	510.0	509.5	508.2	503.4	504.5	511.2	506.5	509.0	513.6	515.4	510.2	514.4	510.6	513.1	
36	110	355.0	30	452.9	458.4	459.9	460.0	457.7	460.0	463.7	469.4	465.1	468.8	475.0	476.3	471.9	476.7	474.8	480.6
37	42	644.0	150	615.2	617.9	616.9	618.8	609.3	611.5	612.3	620.0	612.7	616.4	619.0	624.9	617.5	622.3	618.5	620.6
38	42	589.0	150	579.0	581.2	579.7	581.2	571.3	571.3	574.3	584.3	571.8	584.3	588.3	593.0	579.2	582.4	582.4	582.4
39	42	534.0	150	539.9	541.9	540.9	539.1	533.8	533.9	534.0	540.4	534.8	536.9	541.4	545.6	542.6	545.7	543.2	546.8
40	42	479.0	150	413.6	421.7	427.5	431.1	433.5	438.7	442.7	451.6	450.9	455.7	462.6	468.4	462.6	468.4	471.1	474.7

41	42	410.0	150	451.5	454.0	454.8	453.2	449.7	451.9	452.3	458.4	454.4	457.4	461.6	466.0	464.9	466.7	465.5	468.0
42	42	355.0	150	417.6	420.0	421.3	420.4	417.2	420.3	420.0	426.8	428.1	428.3	431.9	436.3	434.5	439.5	437.5	441.0
43	62	644.0	30	593.3	591.1	590.8	589.5	582.5	585.6	584.1	591.8	587.8	591.7	596.3	600.9	593.2	598.3	593.4	595.1
44	62	589.0	30	554.9	552.0	551.9	550.4	543.4	545.1	544.8	550.7	548.4	552.1	556.2	560.3	553.8	558.9	555.6	558.1
45	62	534.0	30	637.8	634.4	634.3	633.3	625.6	627.1	626.2	633.9	630.9	634.5	638.7	643.3	634.8	639.5	634.3	635.9
46	62	479.0	30	426.2	431.5	437.8	443.8	444.9	449.5	456.0	463.9	468.0	474.6	481.0	487.7	485.2	490.7	489.3	492.7
47	62	410.0	30	465.5	465.4	466.8	467.2	464.6	464.0	466.9	472.8	473.7	478.3	483.3	488.4	484.7	487.4	487.0	490.6
48	62	355.0	30	427.3	429.1	429.0	429.2	427.5	425.3	428.6	434.4	435.0	441.5	446.7	451.1	447.5	451.3	452.3	455.6
49	23	644.0	150	617.6	613.7	612.7	611.6	606.0	604.0	604.8	611.3	609.0	613.4	617.5	621.4	612.5	615.2	610.1	611.9
50	23	589.0	150	569.6	565.1	565.0	564.0	558.4	557.0	557.6	562.9	562.5	566.4	570.9	575.3	566.2	570.0	566.8	568.9
51	23	534.0	150	522.1	518.2	519.1	518.5	514.1	514.0	514.1	520.1	519.9	524.9	530.0	533.9	527.3	531.2	529.8	531.4
52	23	479.0	150	410.0	411.4	416.7	422.7	423.2	427.2	431.2	438.4	440.9	448.2	455.6	459.7	458.5	463.8	462.4	466.4
53	23	410.0	150	476.5	471.8	471.6	471.7	465.6	465.9	466.7	471.0	468.5	472.9	476.7	479.3	476.0	477.6	475.7	480.3
54	23	355.0	150	420.7	418.7	420.1	421.5	418.3	420.6	423.6	428.0	426.9	431.1	436.4	439.8	437.9	440.5	440.6	444.8
55	114	644.0	330	609.1	606.2	606.3	604.6	596.9	600.5	598.7	600.3	600.5	601.8	605.2	611.1	602.1	606.5	601.1	603.6
56	114	589.0	330	568.2	566.5	565.7	564.0	556.3	559.4	557.9	566.9	568.5	561.5	564.6	569.7	562.5	565.9	560.7	564.6
57	114	534.0	330	519.5	518.2	518.4	518.3	511.8	514.0	513.8	521.9	514.2	519.8	522.5	528.2	524.3	526.8	524.7	529.3
58	114	479.0	330	411.5	416.9	421.7	427.8	427.1	431.3	435.8	446.7	442.6	450.0	454.8	459.1	459.3	462.9	462.9	466.8
59	114	410.0	330	469.3	468.0	466.7	467.7	460.8	460.8	461.6	469.1	461.6	466.1	469.7	471.0	469.4	472.9	471.8	474.9
60	114	355.0	330	422.7	424.3	424.8	427.2	422.6	424.6	426.4	434.4	428.5	433.2	438.0	439.6	440.0	444.9	442.9	446.8
61	120	644.0	90	615.9	613.2	612.2	612.8	603.5	606.3	605.8	615.3	609.0	611.9	617.0	618.1	613.0	615.7	609.4	611.9
62	120	589.0	90	571.7	568.6	566.6	566.8	557.9	560.8	560.9	569.7	563.9	567.1	572.5	574.3	570.4	572.9	569.9	571.9
63	120	534.0	90	524.4	522.9	523.5	525.5	518.1	522.9	523.7	533.4	528.3	533.6	539.3	541.4	538.3	542.9	539.9	543.6
64	120	479.0	90	420.2	424.3	431.4	438.2	437.8	446.3	451.1	462.5	461.6	468.8	476.3	481.4	479.8	486.3	485.1	490.2
65	120	410.0	90	472.1	470.8	472.4	473.1	468.3	471.7	472.6	480.7	476.1	481.1	486.2	487.3	484.2	488.1	484.4	489.7
66	120	355.0	90	416.1	416.3	419.4	420.5	418.5	422.0	424.6	433.5	430.1	436.7	442.6	444.4	443.0	446.8	445.3	451.0
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	567.0	562.5	563.6	563.3	558.4	560.1	558.1	569.7	562.5	568.5	572.5	574.6	566.9	571.9	567.1	569.8
69	97	534.0	210	516.9	514.5	516.0	515.0	511.1	513.7	513.1	523.6	518.7	524.9	529.5	532.5	526.2	532.2	529.1	533.5
70	97	479.0	210	402.2	407.1	413.5	418.2	419.6	426.2	429.7	442.7	441.4	449.9	456.9	460.6	459.3	464.5	464.1	468.7
71	97	410.0	210	445.2	444.4	447.0	446.5	443.3	445.4	445.0	454.7	450.5	456.5	461.0	462.7	459.6	462.7	461.7	464.0
72	97	355.0	210	406.1	405.3	409.8	409.3	407.2	410.0	410.8	420.3	416.7	423.0	427.2	430.3	428.5	431.5	431.6	435.7
73	0	0.0	0	117.1	118.7	127.2	130.0	134.3	137.9	141.3	150.1	146.5	158.3	162.0	162.3	163.8	164.3	166.1	166.3
74	0	0.0	0	118.8	121.4	128.7	132.8	137.0	140.7	146.9	149.3	150.9	157.0	160.2	161.8	162.1	164.2	164.5	164.8
75	0	0.0	0	122.4	127.6	130.9	137.3	141.7	141.5	145.7	150.0	150.0	155.6	161.0	160.4	160.3	164.6	165.1	167.0
76	0	896.9	0	413.1	414.4	417.7	419.2	418.6	421.2	422.0	429.8	424.5	429.1	433.0	434.5	427.0	428.6	423.8	422.1
77	0	896.9	0	387.4	395.6	397.1	402.9	403.2	405.8	408.0	416.1	410.1	412.2	416.3	415.4	410.2	410.6	405.2	405.3
78	0	896.9	0	406.2	410.0	412.7	415.9	414.5	416.3	418.6	425.7	421.3	424.6	428.7	428.2	423.3	423.5	418.7	417.8
79	0	430.6	270	158.8	162.9	167.7	171.5	174.3	177.8	183.2	187.9	188.7	194.7	197.6	197.1	197.5	198.0	198.5	199.3
80	0	430.6	210	156.7	160.5	165.2	169.2	172.9	175.9	180.4	185.9	186.8	190.1	193.8	196.2	196.5	197.7	197.9	198.5
81	0	430.6	90	164.4	169.2	173.1	177.7	181.9	184.0	188.0	191.4	191.4	195.7	200.3	200.9	201.6	203.3	203.9	204.2
82	0	430.6	30	160.2	165.5	169.7	173.7	177.5	179.4	183.8	187.9	188.2	192.7	196.6	196.7	197.3	198.3	198.7	199.1
83	0	630.6	270	260.3	264.0	267.7	270.4	270.9	274.0	278.2	283.3	282.4	288.0	291.0	290.9	289.3	290.1	288.8	289.2
84	0	630.6	210	253.9	256.9	260.0	262.7	263.1	265.7	268.7	274.1	273.3	279.7	282.8	282.7	280.8	282.1	280.6	280.8
85	0	630.6	30	262.3	266.8	269.9	272.3	273.2	274.3	277.0	281.4	280.1	286.5	286.5	286.5	286.5	285.0	285.9	284.6
86	0	630.6	90	269.6	273.7	277.1	280.4	282.3	283.8	286.7	291.0	289.7	293.1	297.4	298.2	296.7	298.0	296.6	296.7
87	0	830.6	210	341.5	343.7	345.8	347.7	346.9	348.7	350.8	355.4	353.7	358.9	361.4	360.7	357.8	357.5	355.0	354.2
88	0	830.6	270	347.6	350.5	353.5	355.7	354.9	357.2	360.2	365.2	363.3	367.3	369.7	369.5	366.5	366.5	363.6	363.0
89	0	830.6	30	350.0	353.4	355.2	356.5	355.3	355.7	357.3	361.1	358.4	359.5	361.9	361.2	358.0	357.8	354.3	353.2
90	0	830.6	90	356.7	360.3	363.1	365.8	366.1	367.4	369.5	374.0	371.7	373.7	377.5	378.1	375.0	376.0	372.9	372.5
91	0	0.0	0	118.0	124.4	129.5	134.8	141.9	143.2	148.6	152.0	154.6	156.1	158.7	161.8	164.0	164.5	165.3	164.9
92	0	0.0	0	118.0	124.4	129.5	134.8	141.9	143.2	148.6	152.0	154.6	156.1	156.7	161.8	164.0	164.5	165.3	164.9

DATUM 9. 3.79

VERSUCH NR.	1	2	3	4	5	6	7	8	9	10	11	12
DURCHSATZ (KG/S)	0.2426	0.2145	0.1891	0.1690	0.1514	0.1358	0.1223	0.1109	0.1021	0.0932	0.0832	0.0753
EL. ENERGIE (KW)	35.2	31.6	27.5	25.8	23.5	21.5	19.7	18.1	17.3	15.8	14.3	12.8
WAERMEENERGIE (KW)	37.0	33.2	29.0	27.1	24.7	22.7	20.6	19.1	17.9	16.2	14.7	13.2
WAERMEILANZ (O/O)	5.1	5.1	5.4	5.0	5.1	5.5	4.7	5.6	3.0	2.9	2.9	3.1
REYNOLDSZAHL *E-04	8.955	7.909	6.982	6.225	5.583	5.007	4.510	4.087	3.743	3.422	3.049	2.764
DRUCKVERLUST (1.E+01 N/M**2)												
GES.X= 895.6(MM)	50161.	39869.	31330.	25517.	20712.	16781.	13688.	11376.	9893.	8311.	6705.	5516.
BIS X= 102.0(MM)	9245.	7323.	5807.	4698.	3791.	3057.	2502.	2073.	1788.	1510.	1224.	1016.
BIS X= 236.1(MM)	10948.	8635.	6838.	5526.	4495.	3651.	2979.	2479.	2151.	1823.	1471.	1221.
BIS X= 502.0(MM)	27216.	21487.	16954.	13732.	11167.	8992.	7358.	6091.	5280.	4435.	3563.	2944.
BIS X= 670.0(MM)	35803.	28180.	22205.	18059.	14610.	11839.	9655.	7957.	6925.	5797.	4665.	3833.
BIS X= 736.1(MM)	42898.	33755.	26581.	21629.	17513.	14157.	11559.	9530.	8296.	6942.	5597.	4601.
BIS X= 866.0(MM)	45525.	35829.	28265.	23014.	18666.	15113.	12343.	10204.	8879.	7445.	5998.	4945.
EINTR.DRUCK (BAR)	12.61	12.56	12.52	12.49	12.46	12.44	12.44	12.44	12.45	12.45	12.44	12.43
EINTR.TEMP. GRADC	125.0	124.6	124.5	122.9	120.7	119.1	118.1	117.3	119.4	118.9	118.4	117.6

TE NR.	R NR.	AX PDS (MM)	RAD POS (GRD)	T GRAD C	1	2	3	4	5	6	7	8	9	10	11	12
1	83	644.0	270	388.5	387.7	381.3	388.5	390.1	391.3	392.0	393.6	400.0	395.4	401.2	394.5	
2	83	589.0	270	366.5	365.9	359.5	366.1	367.3	368.0	368.4	369.4	375.5	370.6	375.9	369.5	
3	83	534.0	270	343.1	342.1	335.5	341.0	341.7	341.7	341.4	341.9	347.5	342.5	346.4	340.3	
4	83	479.0	270	311.7	310.3	304.2	308.2	307.2	307.2	305.5	305.5	309.5	304.5	306.3	299.9	
5	83	410.0	270	323.8	322.3	315.9	320.9	321.4	320.7	318.9	319.2	324.5	318.9	321.7	314.9	
6	83	355.0	270	299.6	298.0	292.1	296.1	296.5	295.2	293.2	293.2	297.0	292.1	294.2	287.5	
7	91	644.0	270	395.7	395.0	388.8	396.9	399.4	401.1	401.4	402.1	410.3	405.3	410.5	403.1	
8	91	589.0	270	372.3	370.9	365.0	372.5	374.4	375.8	375.5	376.5	383.6	378.8	383.3	376.6	
9	91	534.0	270	355.4	353.3	347.1	353.3	354.6	355.0	354.2	354.8	360.7	356.0	359.7	353.5	
10	91	479.0	270	324.7	322.4	316.6	321.2	321.5	320.5	318.9	318.3	322.0	316.8	318.5	311.7	
11	91	410.0	270	329.3	326.4	320.9	326.3	326.9	326.3	325.2	325.0	329.4	324.3	327.2	321.0	
12	91	355.0	270	309.6	306.6	301.6	306.1	305.7	304.7	303.0	302.4	305.6	300.5	302.8	297.2	
13	7	644.0	30	403.3	402.8	395.6	401.8	402.6	402.4	403.0	406.1	414.1	406.9	410.8	403.6	
14	7	589.0	30	375.2	374.7	367.5	373.5	373.5	373.3	373.5	376.0	383.0	376.1	379.7	373.1	
15	7	534.0	30	354.0	352.7	345.8	350.9	350.4	350.0	349.6	351.5	357.6	351.0	353.7	347.9	
16	7	479.0	30	317.1	316.2	309.2	312.8	312.0	311.8	310.3	311.8	316.7	310.4	311.4	306.1	
17	7	410.0	30	311.8	310.3	303.9	307.2	306.9	307.0	305.5	307.4	312.7	307.0	308.5	304.5	
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
19	22	644.0	90	400.3	399.2	392.3	399.4	399.4	401.8	401.4	404.0	410.5	404.8	408.1	402.1	
20	22	589.0	90	376.1	374.5	368.0	374.5	373.8	376.0	375.2	377.6	382.8	378.0	380.3	375.5	
21	22	534.0	90	357.3	355.7	348.4	354.2	352.1	354.0	352.7	354.5	358.5	354.7	355.6	351.4	
22	22	479.0	90	317.3	315.8	309.8	314.1	312.0	313.2	311.9	313.3	315.6	312.7	312.2	308.1	
23	22	410.0	90	309.5	307.8	301.9	306.3	304.3	305.4	304.1	305.8	308.4	305.9	306.2	302.2	
24	22	355.0	90	289.9	288.1	282.4	285.9	283.8	283.7	281.9	283.4	285.2	282.8	282.8	278.4	
25	78	644.0	150	398.2	397.4	390.4	398.0	396.8	398.6	397.7	400.6	405.6	401.8	403.8	397.6	
26	78	589.0	150	377.4	376.3	369.2	376.0	374.3	375.5	374.7	377.2	381.2	377.9	379.5	373.5	
27	78	534.0	150	357.1	356.0	349.1	354.7	353.1	353.5	352.4	354.4	357.5	354.2	355.4	349.6	
28	78	479.0	150	318.5	316.8	311.5	315.3	313.6	313.3	312.7	314.5	315.9	313.0	313.6	307.6	
29	78	410.0	150	310.9	309.2	304.2	307.9	306.8	306.6	306.8	308.3	310.4	307.6	308.9	302.8	
30	78	355.0	150	295.2	293.6	288.5	291.1	289.9	289.2	288.9	289.3	290.8	287.4	288.4	282.1	
31	110	644.0	30	389.5	388.3	383.1	391.6	392.2	394.4	395.1	401.0	405.1	402.6	406.7	400.9	
32	110	589.0	30	370.6	369.2	364.0	372.1	372.6	374.1	374.8	380.5	383.8	381.1	385.3	379.9	
33	110	534.0	30	351.7	350.4	345.2	351.8	352.5	352.7	353.2	358.0	360.7	358.1	361.7	356.5	
34	110	479.0	30	322.3	320.2	314.9	319.9	320.1	318.6	318.2	321.4	322.4	319.2	320.5	314.7	
35	110	410.0	30	329.8	327.0	321.3	326.2	326.8	324.9	325.1	328.8	330.3	327.7	329.6	324.6	
36	110	355.0	30	314.2	310.7	304.7	308.6	307.9	305.6	305.3	308.0	309.3	306.6	307.4	302.8	
37	42	644.0	150	398.0	396.2	389.9	397.2	397.4	397.3	398.7	403.1	407.1	404.8	407.3	401.9	
38	42	589.0	150	375.7	373.9	368.1	374.2	373.9	373.9	374.8	378.4	382.2	380.0	381.7	376.5	
39	42	534.0	150	356.2	354.4	348.9	353.6	353.2	352.9	353.1	356.1	359.6	357.7	358.8	353.8	
40	42	479.0	150	316.1	314.7	310.0	313.5	312.8	311.8	311.3	313.4	316.1	314.2	314.0	309.4	

41	42	410.0	150	307.8	306.7	301.9	305.7	305.1	304.0	303.2	305.3	308.4	306.3	307.1	302.7
42	42	355.0	150	290.6	289.0	284.3	288.1	286.7	284.9	283.4	285.0	287.4	285.3	285.9	281.6
43	62	644.0	30	380.9	380.7	375.1	382.2	382.1	382.5	383.7	385.5	391.0	388.1	391.1	383.6
44	62	589.0	30	362.7	361.6	356.3	362.1	361.4	361.4	361.5	362.5	367.6	364.3	367.0	359.6
45	62	534.0	30	405.5	405.2	399.5	407.3	407.4	408.2	409.5	411.7	418.0	414.7	418.7	410.3
46	62	479.0	30	322.3	320.8	315.7	320.2	319.9	319.0	318.6	318.7	323.8	319.8	322.0	314.1
47	62	410.0	30	317.0	315.7	310.2	315.1	314.4	313.4	313.3	313.7	318.7	314.7	317.2	310.0
48	62	355.0	30	298.3	296.8	291.4	295.2	294.2	292.8	291.8	291.8	296.4	292.0	294.0	287.2
49	23	644.0	150	388.2	388.1	382.1	389.8	390.7	392.2	393.3	395.7	402.3	398.7	403.1	395.1
50	23	589.0	150	363.5	362.9	357.3	364.3	364.9	365.5	366.8	368.7	374.6	370.9	374.7	366.9
51	23	534.0	150	345.2	343.5	338.0	343.6	343.6	343.3	343.7	345.4	350.0	346.2	349.4	341.7
52	23	479.0	150	309.2	306.8	302.7	306.5	305.7	304.9	305.3	306.2	309.8	305.7	308.1	300.8
53	23	410.0	150	312.9	310.7	306.9	311.1	310.1	310.0	310.4	311.6	315.8	312.1	315.3	308.7
54	23	355.0	150	295.8	293.2	289.5	292.4	291.0	290.2	289.6	290.3	293.8	289.6	292.0	285.8
55	114	644.0	330	384.4	383.0	378.7	385.1	385.0	385.1	386.5	390.1	395.5	392.0	396.9	389.5
56	114	589.0	330	362.5	360.7	356.8	362.2	361.9	361.9	363.0	365.9	371.2	367.6	372.0	365.0
57	114	534.0	330	343.0	340.0	335.7	340.4	339.6	338.7	339.0	341.2	346.3	342.5	345.8	339.5
58	114	479.0	330	309.3	306.3	302.2	306.0	305.0	304.1	303.7	305.6	310.3	306.4	308.2	302.3
59	114	410.0	330	308.8	306.4	302.1	306.4	305.7	305.5	307.5	312.7	309.0	311.6	306.2	306.2
60	114	355.0	330	292.7	290.1	285.3	288.5	287.8	287.2	287.1	288.2	292.6	288.3	289.8	285.4
61	120	644.0	90	382.0	380.3	376.1	384.0	385.2	386.9	388.5	392.0	398.5	394.1	398.7	393.3
62	120	589.0	90	360.5	358.9	354.0	361.1	361.8	362.6	363.7	366.6	372.5	367.7	371.2	366.7
63	120	534.0	90	345.3	343.4	337.6	343.7	343.9	343.8	343.9	346.5	351.6	346.8	349.1	344.9
64	120	479.0	90	317.2	315.5	309.3	313.9	313.6	313.0	312.1	313.7	318.3	313.3	313.6	309.7
65	120	410.0	90	314.6	312.7	306.6	311.5	311.1	310.7	309.9	311.9	316.8	312.5	312.9	309.5
66	120	355.0	90	295.2	293.3	286.9	290.7	289.9	288.7	287.4	288.4	292.8	288.8	287.9	284.6
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	363.8	362.8	356.3	362.5	364.2	364.6	364.7	367.4	374.7	370.8	372.8	370.0
69	97	534.0	210	344.8	344.2	336.8	342.3	343.1	342.8	342.7	343.9	350.6	346.5	347.5	344.4
70	97	479.0	210	310.4	309.9	302.7	306.7	306.7	306.0	305.7	305.7	311.2	307.3	306.8	303.5
71	97	410.0	210	303.4	303.1	297.1	301.5	301.8	301.4	301.5	301.8	308.0	304.4	305.0	302.2
72	97	355.0	210	287.1	286.3	280.6	284.2	283.9	282.8	282.7	282.2	288.0	284.0	284.5	281.4
73	0	0.0	0	124.3	124.6	124.3	124.0	123.3	119.2	119.9	116.9	122.2	120.0	120.4	119.5
74	0	0.0	0	124.7	123.9	125.3	120.6	117.1	116.7	115.6	115.9	118.1	117.8	116.8	116.2
75	0	0.0	0	125.9	125.3	124.0	124.1	121.7	121.2	118.9	119.1	117.8	119.0	117.9	117.2
76	0	896.9	0	268.7	270.2	268.8	274.3	275.4	277.4	278.0	280.1	284.4	282.8	285.9	284.0
77	0	896.9	0	264.3	266.2	264.9	269.4	269.9	271.9	271.8	274.2	279.1	277.6	279.4	278.1
78	0	896.9	0	268.8	270.3	268.6	272.8	273.4	275.6	275.9	279.0	283.5	282.4	283.6	282.2
79	0	430.6	270	143.4	143.9	143.3	144.1	143.3	142.8	142.5	142.5	143.5	143.4	143.4	142.8
80	0	430.6	210	144.1	144.7	144.2	144.6	143.4	142.8	142.8	141.4	141.5	143.0	142.8	141.9
81	0	430.6	90	147.3	147.9	147.3	148.2	147.5	146.7	146.3	146.2	145.2	145.5	145.4	144.9
82	0	430.6	30	143.9	144.3	144.2	144.7	144.0	143.2	142.6	143.1	142.5	142.7	142.7	142.5
83	0	630.6	270	193.2	194.3	193.5	195.9	196.0	196.6	197.2	198.0	199.5	199.7	200.6	199.8
84	0	630.6	210	190.1	190.1	190.6	193.1	193.7	194.2	195.0	195.6	197.1	197.1	198.0	197.4
85	0	630.6	30	193.0	194.1	193.6	196.0	195.9	196.2	196.5	197.9	198.4	198.8	199.9	199.4
86	0	630.6	90	197.8	198.8	197.9	200.5	200.5	200.6	200.9	201.6	201.6	202.0	202.9	202.0
87	0	830.6	210	230.4	232.0	231.8	235.4	236.9	238.4	240.0	241.3	243.1	243.6	245.0	244.4
88	0	830.6	270	233.9	235.2	234.7	238.4	239.5	240.9	242.3	243.7	245.5	245.9	247.3	246.2
89	0	830.6	30	230.5	232.1	232.1	235.7	236.7	238.0	239.3	241.2	242.3	243.3	244.9	244.4
90	0	830.6	90	238.1	239.3	238.4	242.1	242.8	243.8	244.8	245.9	246.4	246.9	248.2	247.4
91	0	0.0	0	123.2	124.6	123.1	120.9	118.9	117.8	116.3	116.6	118.3	116.9	114.9	115.0
92	0	0.0	0	123.2	124.6	123.1	120.9	118.9	117.8	116.3	116.6	118.3	116.9	114.9	115.0



DATUM

9. 3.79

VERSUCH NR.	13	14	15	16	17	18	19	20	21	22	23	24
DURCHSATZ [KG/S]	0.0671	0.0604	0.0541	0.0487	0.0440	0.0396	0.0351	0.0315	0.0284	0.0257	0.0231	0.0205
EL. ENERGIE [KW]	11.6	10.6	9.7	8.8	7.9	7.1	6.4	5.7	4.8	5.0	4.4	3.9
WAERMEENERGIE [KW]	11.9	10.9	9.8	9.0	8.1	7.3	6.5	5.8	5.0	4.8	4.2	3.8
WAERMEBILANZ (0/0)	2.9	3.1	1.3	2.2	1.9	3.4	1.7	0.5	4.4	-4.0	-3.6	-2.8
REYNOLDSZAHL*E-04	2.460	2.220	1.985	1.795	1.624	1.467	1.298	1.170	1.063	0.956	0.861	0.763
DRUCKVERLUST (1.E+01 N/M**2)												
GES. X= 895.6(MM)	4471.	3655.	2919.	2388.	1930.	1488.	1170.	941.	753.	609.	485.	370.
BIS X= 102.0(MM)	827.	674.	548.	447.	374.	293.	228.	192.	159.	131.	108.	84.
BIS X= 236.1(MM)	987.	815.	669.	545.	450.	357.	279.	231.	195.	161.	137.	111.
BIS X= 502.0(MM)	2361.	1944.	1573.	1274.	1048.	819.	640.	524.	430.	353.	293.	238.
BIS X= 670.0(MM)	3074.	2506.	2019.	1641.	1351.	1052.	819.	669.	542.	454.	369.	292.
BIS X= 736.1(MM)	3695.	3017.	2434.	1981.	1624.	1267.	989.	811.	660.	557.	450.	359.
BIS X= 866.0(MM)	3990.	3254.	2630.	2147.	1770.	1384.	1088.	888.	721.	605.	493.	397.
EINTR.DRUCK (BAR)	12.40	12.38	12.36	12.34	12.34	12.45	12.45	12.44	12.42	12.40	12.39	12.37
EINTR.TEMP. GRADC	117.5	115.2	115.0	111.0	111.1	107.8	107.4	107.8	104.7	104.4	103.4	104.3

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD)GRAD C

1	83	644.0	270	398.8	402.7	400.5	403.9	400.9	403.4	405.3	407.3	405.0	409.6	412.7	414.9
2	83	589.0	270	373.0	376.8	374.8	377.9	374.8	376.7	379.3	380.9	378.7	384.0	387.0	388.6
3	83	534.0	270	343.0	346.5	344.6	347.3	344.1	345.9	348.0	349.0	346.4	351.5	353.9	354.1
4	83	479.0	270	300.5	302.4	299.4	300.1	295.6	295.3	293.5	289.5	291.9	292.3	290.4	
5	83	410.0	270	316.9	320.0	318.0	320.2	316.4	318.0	319.7	319.8	316.4	322.1	325.7	327.1
6	83	355.0	270	289.0	291.4	289.3	290.6	286.8	288.0	289.2	289.0	285.9	290.6	293.0	292.9
7	91	644.0	270	408.4	411.3	410.3	413.3	409.1	411.5	413.6	414.2	408.7	415.7	419.0	420.4
8	91	589.0	270	381.8	384.3	383.9	386.6	382.9	385.5	388.1	388.6	383.5	391.2	395.4	397.1
9	91	534.0	270	358.0	360.2	359.8	362.2	358.5	360.9	363.6	364.0	359.2	367.4	371.4	372.0
10	91	479.0	270	313.6	313.6	311.6	311.5	306.1	304.8	304.4	302.1	295.0	299.3	299.6	297.2
11	91	410.0	270	324.3	325.2	324.9	326.2	321.6	322.6	325.1	324.7	318.2	326.6	330.1	332.1
12	91	355.0	270	299.8	300.3	299.8	300.7	296.1	296.6	299.4	298.8	292.8	301.2	304.6	305.8
13	7	644.0	30	408.8	410.7	409.4	412.7	407.8	411.9	412.3	412.2	403.2	413.5	417.4	417.2
14	7	589.0	30	378.0	379.6	378.7	381.8	377.5	381.6	382.6	383.1	375.1	385.6	390.2	391.2
15	7	534.0	30	351.6	353.3	352.4	355.2	351.2	355.1	355.7	356.2	348.8	358.9	363.5	364.6
16	7	479.0	30	307.8	307.3	305.2	305.7	300.6	301.4	298.4	296.7	287.7	294.0	294.8	292.9
17	7	410.0	30	307.1	308.3	307.9	310.8	306.8	310.4	310.2	310.3	303.0	312.8	316.4	317.9
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	406.2	407.7	407.8	410.9	405.8	409.6	410.5	409.7	399.2	412.8	415.9	418.0
20	22	589.0	90	378.7	380.2	380.5	383.3	379.0	382.1	383.5	382.5	372.9	386.5	389.4	392.2
21	22	534.0	90	353.9	355.0	355.2	358.0	354.0	357.3	358.6	357.6	349.0	363.5	366.6	370.5
22	22	479.0	90	308.8	308.4	306.7	307.1	302.2	302.4	300.3	297.2	287.8	296.5	295.4	294.9
23	22	410.0	90	304.1	304.6	304.4	306.4	302.7	305.1	305.8	304.4	296.0	308.3	309.8	312.7
24	22	355.0	90	280.3	280.4	280.0	281.4	278.1	280.0	280.9	279.5	272.5	283.3	284.7	287.3
25	78	644.0	150	401.9	400.7	401.3	403.6	399.4	401.5	403.2	400.6	389.3	405.3	406.6	409.8
26	78	589.0	150	377.7	376.2	377.0	378.8	375.1	376.9	378.6	376.0	365.5	381.1	382.1	385.3
27	78	534.0	150	353.2	351.3	351.8	353.0	349.5	350.9	352.6	350.0	340.2	355.0	356.3	359.7
28	78	479.0	150	310.2	307.1	306.4	305.4	301.1	299.7	298.5	293.9	283.4	293.4	290.8	290.9
29	78	410.0	150	306.8	304.6	305.8	306.9	303.9	304.9	306.8	303.6	294.6	308.7	308.8	312.6
30	78	355.0	150	285.1	282.5	283.5	283.6	280.9	280.8	282.4	278.6	270.3	283.0	282.4	286.0
31	110	644.0	30	407.1	406.9	409.0	412.5	409.7	413.7	415.3	411.7	401.7	418.4	420.5	427.2
32	110	589.0	30	385.3	385.0	387.0	390.1	387.7	391.1	392.7	388.9	379.6	395.7	398.0	404.8
33	110	534.0	30	361.5	361.0	362.8	365.7	363.4	366.4	368.0	364.7	355.9	371.1	372.5	378.1
34	110	479.0	30	317.1	314.4	313.7	313.8	310.1	309.6	307.7	302.8	293.9	303.1	301.3	303.7
35	110	410.0	30	328.7	327.2	328.1	330.1	327.7	329.8	330.4	326.8	317.9	332.2	333.9	341.8
36	110	355.0	30	306.1	304.4	304.7	306.0	303.5	304.9	304.7	301.4	293.5	305.6	306.0	312.0
37	42	644.0	150	407.2	406.2	407.3	410.5	406.9	410.2	411.4	406.6	394.1	412.4	412.4	419.8
38	42	589.0	150	381.5	380.7	381.9	384.9	381.9	385.5	386.7	382.8	371.8	389.1	389.5	397.2
39	42	534.0	150	358.4	357.9	358.9	362.0	359.0	362.1	363.2	359.2	349.0	365.8	366.0	374.4
40	42	479.0	150	311.5	309.9	308.5	309.2	305.2	304.7	302.6	297.2	287.2	296.8	294.0	297.5

41	42	410.0	150	305.8	305.7	305.5	307.9	305.4	307.2	307.3	303.9	294.9	308.0	307.6	314.2
42	42	355.0	150	284.0	284.1	282.9	285.3	283.4	284.5	284.6	281.3	273.4	285.2	284.5	291.0
43	62	644.0	30	389.4	388.2	388.5	392.0	388.5	390.6	393.1	387.0	375.3	394.3	392.5	401.5
44	62	589.0	30	364.7	363.5	363.3	366.8	363.8	365.9	368.8	363.2	353.0	371.5	370.1	379.1
45	62	534.0	30	416.7	415.6	416.0	419.5	416.4	418.3	420.9	413.6	400.3	421.0	418.6	427.8
46	62	479.0	30	317.2	314.9	312.1	312.9	309.4	307.9	307.6	300.1	289.9	300.7	296.4	300.0
47	62	410.0	30	313.4	312.3	311.2	313.1	311.7	312.4	314.8	308.7	299.6	314.1	311.7	319.0
48	62	355.0	30	289.6	288.4	287.1	288.4	287.5	288.7	290.5	284.7	276.8	290.1	287.7	294.7
49	23	644.0	150	401.0	400.3	401.2	404.3	402.8	405.2	409.0	401.5	390.0	410.2	407.9	417.5
50	23	589.0	150	372.0	371.2	372.0	374.5	373.8	375.8	380.0	373.3	362.9	382.2	379.8	389.0
51	23	534.0	150	345.6	344.4	344.6	346.5	345.7	347.5	351.5	345.3	336.1	353.6	350.8	359.4
52	23	479.0	150	302.5	300.0	298.9	298.0	296.5	296.2	297.5	290.8	281.6	293.0	288.4	293.5
53	23	410.0	150	311.9	310.5	311.2	312.3	312.1	314.7	319.0	313.3	304.6	321.2	318.7	327.8
54	23	355.0	150	287.9	285.7	285.9	285.8	285.2	287.2	290.7	285.1	277.0	291.4	288.1	295.6
55	114	644.0	330	394.0	395.1	395.6	398.7	398.1	401.6	405.4	398.6	386.6	407.0	404.0	415.5
56	114	589.0	330	369.0	369.8	370.2	372.8	372.3	376.1	379.6	373.8	362.8	382.2	379.5	391.0
57	114	534.0	330	342.2	342.4	342.3	344.3	343.8	347.6	350.5	345.5	335.5	353.3	350.3	360.7
58	114	479.0	330	303.5	301.7	300.1	300.0	298.0	299.3	299.1	293.2	283.1	294.5	289.3	295.7
59	114	410.0	330	308.7	308.4	308.9	310.6	310.0	314.3	316.8	312.1	302.6	318.6	315.7	326.6
60	114	355.0	330	286.6	285.7	285.8	286.5	285.5	289.1	290.5	285.8	276.9	290.9	286.9	296.2
61	120	644.0	90	396.1	396.2	397.5	399.7	398.1	402.3	406.3	398.6	385.7	407.4	402.6	415.4
62	120	589.0	90	368.7	368.1	369.2	371.3	369.9	374.4	378.0	371.0	359.4	380.2	376.1	388.7
63	120	534.0	90	346.1	344.6	345.1	346.2	344.7	348.4	351.2	344.5	333.4	351.9	347.9	359.3
64	120	479.0	90	309.6	306.1	304.7	303.4	300.4	301.4	301.0	293.2	281.7	293.1	287.4	293.4
65	120	410.0	90	310.9	308.5	308.8	309.1	307.9	311.3	313.9	307.5	296.6	312.3	308.5	318.3
66	120	355.0	90	285.8	282.4	282.0	281.4	280.2	282.8	284.5	278.8	268.9	282.3	278.7	287.0
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	372.1	370.4	372.4	373.1	372.0	376.1	380.1	373.2	359.6	380.5	376.1	387.8
69	97	534.0	210	345.6	342.9	344.9	344.5	343.7	347.0	350.6	345.3	332.5	351.9	348.4	359.5
70	97	479.0	210	303.2	298.8	299.0	296.1	294.4	294.0	294.5	289.9	277.6	289.7	284.9	290.6
71	97	410.0	210	303.1	300.3	302.8	301.3	301.4	303.4	306.5	302.9	290.8	307.2	304.3	314.2
72	97	355.0	210	281.8	278.7	280.9	278.4	278.9	279.7	282.6	279.6	268.8	282.7	280.2	288.9
73	0	0.0	0	117.7	115.0	114.8	109.9	111.0	107.4	108.2	107.3	104.0	103.9	103.7	104.1
74	0	0.0	0	117.4	115.0	114.5	111.1	110.6	109.3	107.0	108.6	105.4	104.4	102.6	104.6
75	0	0.0	0	117.4	115.6	115.6	112.0	111.9	106.6	107.1	107.6	104.9	104.9	103.9	104.1
76	0	896.9	0	285.8	285.8	286.4	285.0	283.6	282.3	283.0	279.1	272.0	280.1	277.7	281.9
77	0	896.9	0	280.0	280.6	281.6	281.2	280.1	277.0	278.1	274.7	267.5	274.4	270.8	274.4
78	0	896.9	0	284.5	284.5	285.3	284.1	282.8	281.8	283.1	280.0	271.8	279.0	275.7	279.3
79	0	430.6	270	143.6	142.3	142.4	142.2	142.3	141.2	141.3	141.8	142.1	142.5	143.4	144.5
80	0	430.6	210	142.0	141.3	141.9	144.7	141.4	143.4	136.6	135.8	139.8	138.5	140.9	143.4
81	0	430.6	90	145.7	145.4	145.6	145.2	144.9	142.9	143.1	143.7	144.0	144.5	145.4	146.2
82	0	430.6	30	143.4	143.3	143.6	143.5	143.3	141.7	141.8	142.5	142.8	143.4	144.3	145.2
83	0	630.6	270	201.4	200.9	201.5	202.2	202.5	202.6	203.3	203.8	204.2	205.3	206.8	208.4
84	0	630.6	210	198.8	198.3	199.2	199.7	200.0	200.0	201.0	201.6	201.9	203.5	205.1	206.9
85	0	630.6	30	201.2	201.6	202.6	203.3	203.3	203.3	204.2	204.7	204.9	206.2	207.7	209.5
86	0	630.6	90	203.6	203.7	204.5	204.8	204.7	204.1	205.0	205.4	205.5	206.7	208.0	209.6
87	0	830.6	210	245.9	245.8	246.6	246.9	246.8	245.9	246.5	246.4	245.3	246.1	246.2	246.8
88	0	830.6	270	247.9	247.6	248.3	248.6	248.4	247.6	248.0	247.6	246.6	246.9	247.2	247.5
89	0	830.6	30	246.5	247.1	248.1	248.5	248.3	247.5	248.0	247.8	247.1	247.1	247.6	247.9
90	0	830.6	90	249.1	249.2	249.9	249.9	249.3	247.9	248.4	247.9	247.0	247.0	247.3	247.6
91	0	0.0	0	115.8	114.4	115.1	112.2	110.2	109.1	108.2	107.6	106.4	103.4	104.6	104.5
92	0	0.0	0	115.8	114.4	115.1	112.2	110.2	109.1	108.2	107.6	106.4	103.4	104.6	104.5

DATUM 10. 3.79

VERSUCH NR.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
DURCHSATZ (KG/S)	0.2346	0.2105	0.1900	0.1700	0.1527	0.1371	0.1235	0.1118	0.1026	0.0940	0.0837	0.0756	0.0675	0.0606	0.0545	0.0491
EL. ENERGIE (KW)	46.1	41.5	37.6	35.0	31.4	28.3	26.3	23.9	22.6	20.8	18.7	16.2	15.0	13.7	12.6	11.1
WAERMEENERGIE (KW)	48.6	43.6	39.6	37.1	33.1	29.9	27.4	25.1	23.0	21.5	19.3	16.9	15.4	14.1	12.7	11.4
WAERMEBILANZ (O/O)	5.4	5.3	5.1	5.9	5.3	5.6	4.0	4.9	1.7	3.6	3.4	4.6	2.9	2.7	0.7	2.6
REYNOLDSZAHL*E-04	8.334	7.470	6.728	5.985	5.379	4.821	4.331	3.914	3.578	3.264	2.908	2.641	2.348	2.116	1.900	1.716
DRUCKVERLUST (1.E+01 N/M**2)																
GES. X= 895.6(MM)	49788.	40815.	33666.	27331.	22413.	18192.	14950.	12430.	10687.	9099.	7281.	5987.	4815.	3962.	3180.	2601.
BIS X= 102.0(MM)	8664.	7086.	5867.	4727.	3891.	3133.	2602.	2148.	1659.	1578.	1273.	1051.	849.	702.	568.	471.
BIS X= 236.1(MM)	10211.	8398.	6863.	5633.	4617.	3758.	3086.	2586.	2242.	1898.	1523.	1266.	1038.	853.	691.	561.
BIS X= 502.0(MM)	26255.	21448.	17603.	14351.	11781.	9519.	7827.	6503.	5618.	4739.	3794.	3124.	2512.	2064.	1660.	1344.
BIS X= 670.0(MM)	34841.	28585.	23454.	19089.	15638.	12645.	10380.	8590.	7410.	6266.	5016.	4082.	3293.	2695.	2146.	1742.
BIS X= 736.1(MM)	42143.	34519.	28292.	23048.	18885.	15266.	12535.	10369.	8943.	7560.	6059.	4937.	3981.	3260.	2609.	2116.
BIS X= 866.0(MM)	44754.	36717.	30207.	24612.	20159.	16327.	13424.	11131.	9606.	8128.	6538.	5317.	4303.	3530.	2826.	2306.
EINTR. DRUCK (BAR)	12.62	12.60	12.59	12.57	12.51	12.47	12.44	12.51	12.51	12.50	12.48	12.46	12.46	12.46	12.45	12.44
EINTR. TEMP. GRADC	124.9	125.7	126.8	126.1	126.5	127.3	127.2	127.0	129.9	130.6	129.8	128.8	129.2	127.6	126.2	124.0

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD)GRAD C

1	83	644.0	270	477.1	474.4	476.9	485.8	481.5	482.0	483.8	485.9	487.8	494.6	494.3	484.6	457.2	493.1	493.7	492.2
2	83	589.0	270	447.9	444.7	446.9	455.5	451.5	451.3	453.0	454.4	456.7	462.3	462.2	453.5	455.7	460.5	461.2	460.2
3	83	534.0	270	416.3	412.9	414.3	421.4	417.4	416.8	417.6	418.2	420.4	425.2	425.0	416.4	417.9	422.3	422.6	421.3
4	83	479.0	270	373.9	371.3	372.0	377.1	373.2	371.8	371.4	370.7	372.0	374.8	373.6	364.9	363.9	365.6	363.7	360.9
5	83	410.0	270	392.0	388.6	389.6	395.7	391.8	390.5	390.9	390.4	392.6	395.8	395.4	386.9	387.2	391.1	390.6	389.7
6	83	355.0	270	359.6	359.6	357.2	362.0	358.1	356.9	356.8	355.9	357.6	360.3	359.9	351.7	350.9	354.0	353.3	351.9
7	91	644.0	270	487.2	484.7	487.3	496.5	492.3	492.7	496.9	497.3	500.0	505.8	505.5	495.3	498.0	502.9	504.2	502.5
8	91	589.0	270	455.6	453.1	455.1	463.3	459.3	459.7	464.0	463.4	466.8	471.8	471.6	461.7	464.8	469.5	471.0	469.9
9	91	534.0	270	432.8	429.0	430.2	437.9	433.4	433.5	436.8	435.5	438.7	443.2	442.2	432.9	435.4	439.4	439.9	439.7
10	91	479.0	270	390.9	387.3	388.5	394.1	389.2	388.4	389.8	387.2	389.0	391.7	388.7	378.9	378.1	378.9	377.5	373.9
11	91	410.0	270	399.9	396.0	396.9	403.3	398.2	398.3	400.9	398.6	401.2	405.1	402.8	393.8	395.0	398.1	398.8	397.2
12	91	355.0	270	373.4	369.2	369.6	374.5	369.2	368.8	371.0	368.0	370.4	373.9	371.0	362.8	363.2	365.8	366.4	364.8
13	7	644.0	30	444.6	443.1	444.4	450.3	446.5	446.2	450.2	449.7	452.3	458.4	457.2	449.1	448.7	452.9	453.3	452.3
14	7	589.0	30	460.8	455.2	456.5	464.3	458.3	457.9	460.9	460.8	463.2	469.2	468.6	457.7	460.3	464.3	465.0	464.2
15	7	534.0	30	431.4	425.8	426.4	433.4	427.7	426.8	428.8	428.7	430.5	436.8	435.8	425.4	427.9	431.1	431.4	431.0
16	7	479.0	30	380.4	375.5	376.1	381.5	376.7	375.4	375.8	375.6	377.3	383.1	380.8	370.9	371.1	371.2	368.5	366.1
17	7	410.0	30	377.5	372.3	372.2	378.5	373.6	372.6	374.2	373.7	376.2	383.0	381.7	372.4	374.7	377.3	377.0	376.9
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	498.0	491.9	492.0	501.2	495.5	495.0	498.8	499.9	502.5	508.9	506.2	494.9	498.2	502.0	502.6	501.6
20	22	589.0	90	464.8	459.4	459.0	467.1	462.1	460.9	464.0	465.8	467.7	473.3	470.9	460.7	463.9	467.4	468.0	467.3
21	22	534.0	90	439.6	433.4	432.8	439.7	434.0	432.4	433.9	435.2	437.0	442.0	439.4	429.6	432.7	435.2	436.3	435.2
22	22	479.0	90	384.8	379.4	379.0	384.5	379.6	377.9	379.0	379.6	381.8	385.1	381.8	372.9	373.7	373.1	371.7	368.7
23	22	410.0	90	374.2	369.5	369.2	375.5	370.9	369.4	370.6	371.6	374.4	378.2	375.9	368.2	371.0	372.4	373.4	372.1
24	22	355.0	90	346.0	343.6	342.8	348.1	343.7	341.9	342.3	342.5	345.3	348.1	345.5	338.6	340.2	341.4	342.1	340.7
25	78	644.0	150	492.2	486.3	485.9	495.4	491.3	490.6	493.4	495.0	497.4	501.4	497.6	486.7	490.7	493.3	495.3	492.0
26	78	589.0	150	462.9	458.0	457.7	465.2	460.9	459.9	462.6	463.7	466.1	469.4	466.0	456.0	459.6	462.0	464.0	461.1
27	78	534.0	150	435.6	431.1	429.8	437.0	432.8	431.1	433.0	433.5	435.3	438.3	434.9	424.7	427.4	429.6	431.4	428.3
28	78	479.0	150	382.7	378.7	377.6	383.4	379.8	378.3	379.7	379.7	381.2	382.9	379.9	369.8	370.5	371.1	370.6	365.6
29	78	410.0	150	376.3	372.4	371.5	377.3	374.0	373.3	374.5	375.1	376.4	378.8	376.6	367.4	370.0	372.1	374.8	371.4
30	78	355.0	150	355.8	351.6	350.8	355.5	351.5	350.4	350.8	350.6	350.7	352.9	349.9	340.5	342.2	343.6	345.6	341.5
31	110	644.0	30	480.0	475.7	476.6	487.6	484.8	485.9	489.7	492.4	495.5	501.1	499.9	490.7	496.8	495.9	502.4	500.4
32	110	589.0	30	454.8	450.6	451.2	461.7	459.3	460.2	463.3	465.3	468.7	474.0	472.7	463.6	469.5	472.2	474.5	472.6
33	110	534.0	30	429.5	425.6	425.8	435.5	433.1	433.3	435.6	436.8	439.9	444.6	443.1	434.0	439.5	442.4	444.3	442.6
34	110	479.0	30	390.1	386.0	385.6	392.7	390.0	388.7	389.3	388.4	390.4	392.7	389.3	379.0	381.5	381.0	379.9	375.7
35	110	410.0	30	400.2	395.6	395.2	402.8	400.6	399.2	401.1	400.6	403.1	406.7	404.4	394.3	399.6	401.4	402.7	400.4
36	110	355.0	30	378.6	373.4	372.4	378.2	375.5	373.2	374.2	373.4	375.4	378.3	375.6	366.0	370.4	371.6	372.3	369.9
37	42	644.0	150	492.9	486.8	486.4	496.8	494.1	491.5	495.5	496.9	499.5	504.6	503.0	490.0	499.9	501.2	497.6	497.6
38	42	589.0	150	462.9	457.8	457.4	466.2	463.1	460.9	464.0	465.3	467.7	472.3	470.4	458.6	465.0	467.6	469.0	466.3
39	42	534.0	150	422.7	422.6	421.0	431.0	429.6	433.4	435.6	437.2	439.1	443.6	441.4	429.9	436.4	438.5	439.9	437.5
40	42	479.0	150	382.7	378.8	377.4	383.5	380.8	378.8	379.7	381.2	382.5	385.5	382.5	371.6	375.5	374.6	373.3	369.4
41	42	410.0	150	373.9	369.8	368.4	374.0	371.7	369.8	370.9	372.9	374.2	377.5	375.5	365.7	371.1	372.0	372.9	371.7
42	42	355.0	150	351.4	347.2	345.4	349.5	347.0	344.6	345.0	346.7	347.7	350.4	347.9	338.6	343.4	343.8	344.5	343.5
43	62	644.0	30	470.6	465.6	465.2	474.1	471.6	470.9	474.2	476.5	478.3	480.6	479.2	466.6	473.3	475.5	476.7	474.6

38	42	589.0	150	462.9	457.8	457.4	466.2	463.1	460.9	464.0	465.3	467.7	472.3	470.4	490.0	497.0	499.9	501.2	497.6
39	42	534.0	150	422.7	432.6	431.0	439.0	435.7	433.4	435.6	437.2	439.1	443.6	441.4	458.6	465.0	467.6	469.0	466.3
40	42	479.0	150	382.7	378.8	377.4	383.5	380.8	378.8	379.7	381.2	382.5	365.5	382.5	371.6	375.5	374.6	373.3	369.4
41	42	410.0	150	373.9	369.8	368.4	374.0	371.7	369.8	370.9	372.9	374.2	377.5	375.5	365.7	371.1	372.0	372.9	371.7
42	42	355.0	150	351.4	347.2	345.4	349.5	347.0	344.8	345.0	346.7	347.7	350.4	347.9	338.8	343.4	343.8	344.5	343.5
43	62	644.0	30	470.6	465.6	465.2	474.1	471.6	470.9	474.2	476.5	478.3	480.6	479.2	466.6	473.3	475.5	476.7	474.6
44	62	589.0	30	445.2	440.0	439.1	447.0	444.0	443.1	445.4	446.7	448.7	449.8	447.7	435.9	441.9	443.7	444.9	443.5
45	62	534.0	30	503.9	498.3	497.4	507.8	504.2	504.2	507.9	510.0	512.1	515.2	513.5	499.6	507.4	509.7	510.3	507.9
46	62	479.0	30	390.4	386.3	384.7	391.3	387.2	387.5	389.5	390.6	391.2	387.2	376.1	379.2	378.5	376.8	373.8	
47	62	410.0	30	385.3	381.6	379.8	386.9	381.8	382.2	384.7	384.4	386.1	387.4	364.3	373.8	378.3	379.6	380.3	379.0
48	62	355.0	30	359.8	356.3	354.2	360.2	354.7	354.6	356.4	355.4	357.0	357.9	354.5	344.6	347.9	349.0	349.4	348.3
49	23	644.0	150	480.4	476.7	475.3	486.2	480.8	483.3	488.5	488.7	491.3	494.1	492.2	480.0	486.5	490.5	491.6	489.9
50	23	589.0	150	448.7	443.3	441.5	452.1	446.4	448.4	453.6	453.8	455.7	457.7	455.6	444.1	449.7	454.2	455.1	453.7
51	23	534.0	150	420.4	416.9	414.5	423.7	418.0	418.9	423.0	422.3	423.7	424.9	422.2	411.2	415.6	419.7	419.8	418.5
52	23	479.0	150	371.4	368.5	366.3	373.7	369.5	368.9	372.2	370.9	371.8	371.7	368.2	358.2	360.0	362.2	360.1	357.7
53	23	410.0	150	379.6	376.2	374.2	383.1	378.4	378.4	381.8	381.4	382.9	383.0	381.0	371.0	375.5	380.2	381.1	380.3
54	23	355.0	150	357.0	352.6	350.0	357.8	353.3	352.5	354.1	353.2	354.5	353.5	350.9	341.4	344.5	348.2	347.8	346.9
55	114	644.0	330	476.3	471.2	469.2	481.0	475.2	476.1	480.0	480.6	483.6	487.1	485.4	473.5	480.8	485.8	486.2	484.0
56	114	589.0	330	446.5	441.9	439.7	450.6	445.0	446.1	449.2	449.5	453.2	455.7	453.7	442.1	448.9	454.6	454.7	452.9
57	114	534.0	330	419.9	414.7	412.2	420.8	414.7	415.9	417.6	417.3	420.4	422.1	419.3	408.5	414.2	419.7	419.0	417.6
58	114	479.0	330	372.6	366.4	366.5	373.4	368.1	369.5	370.4	369.7	373.0	373.6	369.6	359.8	362.9	366.0	363.0	359.9
59	114	410.0	330	374.9	370.8	369.5	377.3	372.2	374.0	375.7	375.4	379.0	380.3	377.7	368.3	373.9	379.0	379.0	377.9
60	114	355.0	330	353.6	349.0	348.0	353.5	348.2	349.7	350.5	349.2	353.1	353.1	350.3	340.9	345.3	349.4	348.5	346.9
61	120	644.0	90	474.6	470.3	470.6	481.1	476.3	479.2	483.3	483.7	487.9	488.4	476.0	483.4	488.6	488.6	488.5	486.1
62	120	589.0	90	446.4	441.3	441.5	450.9	445.1	447.6	451.3	451.0	454.4	456.4	454.3	441.9	448.7	454.1	453.6	451.6
63	120	534.0	90	425.3	419.9	419.3	427.4	421.2	423.1	425.3	424.5	427.8	428.7	425.8	413.9	419.2	423.6	422.5	420.4
64	120	479.0	90	386.3	380.4	379.3	385.5	379.8	380.9	381.6	380.0	383.8	383.0	378.7	367.4	369.7	371.9	368.8	364.6
65	120	410.0	90	384.4	378.5	377.4	384.1	378.7	380.1	381.2	379.9	384.4	384.1	380.6	369.7	373.7	378.4	377.7	375.4
66	120	355.0	90	357.8	352.0	351.2	356.0	350.4	351.2	351.1	349.4	353.7	352.5	348.3	338.2	340.9	344.1	342.8	340.0
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	448.0	442.6	441.8	452.0	446.4	448.8	452.1	452.1	455.9	457.8	454.5	443.1	449.5	455.5	456.1	454.0
69	97	534.0	210	422.0	416.5	415.3	424.1	418.5	420.0	422.4	421.9	424.6	425.9	421.2	411.1	415.3	420.5	420.5	418.3
70	97	479.0	210	374.8	370.0	368.4	375.6	370.6	371.9	372.8	371.4	373.3	373.7	367.4	358.3	359.7	362.1	359.5	355.5
71	97	410.0	210	367.5	364.1	362.2	371.1	366.4	368.0	370.3	369.8	371.5	373.1	368.4	359.5	363.6	368.5	368.4	366.4
72	97	355.0	210	345.5	342.5	340.3	347.5	343.7	343.9	345.5	344.3	345.4	346.6	341.5	333.2	336.2	340.4	339.8	337.5
73	0	0.0	0	124.5	125.3	126.8	126.4	128.7	130.2	128.6	129.0	131.5	131.6	128.1	126.7	127.0	125.4	125.6	123.3
74	0	0.0	0	125.3	125.5	125.7	124.4	123.1	124.4	125.5	124.1	129.0	129.4	127.8	127.1	126.4	127.3	122.9	121.3
75	0	0.0	0	124.8	126.3	128.0	127.4	127.8	127.2	127.6	127.0	129.2	130.8	133.5	132.5	132.1	130.1	130.1	127.3
76	0	896.9	0	318.0	318.5	320.6	329.7	328.0	331.2	334.8	336.8	339.5	343.5	343.5	337.9	341.6	343.6	342.7	340.5
77	0	896.9	0	313.3	315.2	316.7	324.9	323.8	324.8	327.7	331.2	333.5	338.6	340.4	333.5	338.8	339.5	339.1	337.0
78	0	896.9	0	320.4	320.4	322.6	330.5	330.0	331.5	335.1	336.7	339.9	344.6	344.5	337.1	342.1	343.7	343.7	340.7
79	0	430.6	270	150.4	151.8	153.3	155.1	156.1	158.0	158.1	158.7	162.6	162.9	161.7	160.6	161.3	161.3	161.6	162.2
80	0	430.6	210	149.9	152.3	154.0	155.8	157.1	159.2	159.6	160.3	163.0	163.0	161.6	160.3	160.7	161.0	161.3	161.8
81	0	430.6	90	153.5	155.4	157.3	159.1	160.2	161.1	161.3	161.8	164.9	166.4	166.9	166.1	165.8	165.5	165.7	165.8
82	0	430.6	30	150.3	151.6	153.5	155.3	156.4	157.2	157.1	157.7	161.4	163.2	163.7	163.0	163.2	163.1	163.3	163.5
83	0	630.6	270	217.7	219.0	221.1	224.9	226.1	228.7	229.9	231.3	235.3	236.9	236.2	234.7	235.7	237.1	238.0	239.3
84	0	630.6	210	212.2	214.5	216.5	220.7	222.2	225.0	226.8	228.3	231.7	233.3	232.7	231.1	232.2	233.7	235.0	236.3
85	0	630.6	30	216.7	217.9	220.3	224.5	225.7	227.2	228.6	230.1	234.2	237.3	238.4	237.2	238.3	239.3	240.2	241.1
86	0	630.6	90	222.0	223.5	225.9	229.6	230.9	232.4	233.8	235.0	238.4	241.2	242.1	240.8	241.0	241.7	242.5	243.1
87	0	830.6	210	265.6	268.2	271.3	276.6	278.7	281.9	284.4	286.5	290.0	292.2	292.0	289.9	290.7	292.1	292.9	293.6
88	0	830.6	270	271.2	272.8	275.6	280.7	282.7	285.7	287.8	289.6	293.5	295.6	295.3	293.1	293.7	295.0	295.4	295.9
89	0	830.6	30	266.5	268.5	271.7	276.9	279.0	281.4	283.7	286.0	290.2	292.5	295.2	294.1	294.4	295.3	295.7	296.4
90	0	830.6	90	275.8	277.2	279.9	284.9	286.0	287.9	290.0	291.6	294.9	297.9	299.0	297.2	297.0	297.5	297.6	297.9
91	0	0.0	0	122.9	125.0	126.2	124.3	124.8	123.2	124.3	124.2	129.0	128.5	129.0	126.6	127.6	127.1	125.7	123.8
92	0	0.0	0	122.9	125.0	126.2	124.3	124.8	123.2	124.3	124.2	129.0	128.5	129.0	126.6	127.6	127.1	125.7	123.8

DATUM 10. 3. 79

VERSUCH NR. 17 18 19 20 21 22 23 24  
 DURCHSATZ (K2/S) 0.0444 0.0398 0.0355 0.0315 0.0284 0.0258 0.0234 0.0205  
 EL. ENERGIE (KW) 10.1 9.3 8.3 7.5 6.3 5.6 4.9  
 WAERMEVERGIE (KW) 10.3 9.4 8.3 7.5 6.5 5.8 5.1 4.8  
 WAERMEBILANZ(F/O) 2.3 1.3 0.4 -0.2 3.2 0.6 -2.3 -2.8  
 REYNOLDSZAHL\*E-04 1.550 1.389 1.244 1.112 1.001 0.909 0.824 0.722  
 DRUCKVERLUST  
 (1.E+01 N/m<sup>2</sup>)  
 GES.X= 895.6(MM) 2113. 1647. 1299. 1068. 828. 577. 546. 409.  
 BIS X= 102.0(MM) 387. 307. 246. 202. 163. 136. 115. 93.  
 BIS X= 236.1(MM) 474. 381. 309. 250. 202. 177. 144. 117.  
 BIS X= 502.0(MM) 1115. 886. 711. 571. 453. 386. 313. 252.  
 BIS X= 870.0(MM) 1446. 1133. 914. 736. 589. 494. 402. 314.  
 BIS X= 736.1(MM) 1754. 1375. 1104. 892. 718. 605. 494. 387.  
 BIS X= 956.0(MM) 1917. 1506. 1212. 978. 791. 658. 540. 427.  
 EINTR.-DRUCK (BARI) 12.43 12.39 12.39 12.38 12.39 12.40 12.40 12.41  
 EINTR.-TEMP. GRADC 124.9 123.3 122.3 121.7 119.9 118.7 118.2 118.7

TE R AX RAD T  
 NR NR. POS POS  
 (MM) (GRD)GRAD C

1	83	644.0	270	495.1	502.2	497.1	503.7	503.3	505.3	501.0	507.4
2	83	589.0	270	462.9	469.6	465.6	472.1	472.1	474.4	470.0	474.8
3	83	534.0	270	423.8	429.4	426.2	431.9	431.6	433.6	428.6	431.4
4	83	479.0	270	380.8	382.5	382.2	386.0	386.5	389.9	380.4	380.5
5	83	410.0	270	391.6	397.0	399.1	399.1	397.8	400.1	396.5	402.1
6	83	355.0	270	353.0	356.8	354.1	358.5	358.0	358.0	353.8	356.1
7	91	644.0	270	504.7	512.1	506.3	512.4	509.6	511.8	506.6	512.8
8	91	589.0	270	472.2	480.0	475.1	482.2	479.9	483.0	479.2	485.9
9	91	534.0	270	442.1	449.1	445.3	452.3	450.5	453.7	449.6	453.5
10	91	479.0	270	372.5	374.0	367.7	369.8	364.4	364.2	358.4	358.0
11	91	410.0	270	398.2	404.1	399.5	405.7	403.2	406.0	402.2	408.6
12	91	355.0	270	365.1	370.5	366.3	372.5	369.8	372.8	368.9	372.7
13	7	644.0	30	504.5	512.1	506.7	512.8	508.9	511.1	505.4	510.9
14	7	589.0	30	467.1	474.4	474.4	477.5	474.9	477.9	473.3	480.0
15	7	534.0	30	433.8	440.5	436.3	443.7	441.3	442.4	440.5	445.8
16	7	479.0	30	356.2	368.0	361.1	363.9	358.3	356.4	352.5	352.4
17	7	410.0	30	379.9	385.7	381.1	388.1	385.5	386.0	384.8	389.9
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	503.8	511.8	505.3	513.1	507.7	511.1	505.9	511.1
20	22	589.0	90	469.7	477.4	471.8	479.6	474.9	478.3	474.3	480.7
21	22	534.0	90	437.7	445.6	440.8	449.0	445.6	448.4	446.7	452.5
22	22	479.0	90	367.6	370.7	363.3	365.3	359.7	358.2	354.4	353.0
23	22	410.0	90	373.5	380.1	375.6	381.8	377.9	379.9	377.9	381.5
24	22	355.0	90	341.6	347.4	343.1	349.1	345.4	347.0	345.6	348.3
25	78	644.0	150	493.7	502.0	495.9	502.3	496.0	499.2	495.3	499.4
26	78	589.0	150	462.6	470.8	465.8	471.8	465.9	469.2	465.7	470.1
27	78	534.0	150	429.7	437.1	432.4	438.2	433.1	437.8	434.0	438.0
28	78	479.0	150	364.5	366.9	360.7	361.6	354.4	354.5	349.9	348.1
29	78	410.0	150	383.2	380.1	376.5	381.3	376.5	379.9	377.4	379.9
30	78	355.0	150	343.0	348.2	344.7	348.8	344.0	346.7	344.3	345.5
31	110	644.0	30	504.0	512.5	509.3	514.9	509.8	515.3	512.2	518.6
32	110	589.0	30	476.4	484.9	481.7	487.1	482.4	485.2	485.7	491.7
33	110	534.0	30	446.6	454.7	452.2	456.9	452.8	457.2	454.0	456.9
34	110	479.0	30	376.1	378.8	374.0	374.5	367.9	368.5	364.1	363.8
35	110	410.0	30	404.0	411.0	409.5	412.9	408.3	413.1	411.4	417.5
36	110	355.0	30	372.3	377.8	375.7	378.5	374.1	377.5	374.7	377.5
37	42	644.0	150	500.5	510.0	507.0	511.0	504.7	508.8	505.6	509.5
38	42	589.0	150	469.0	479.0	476.7	481.5	476.3	480.9	478.2	483.7
39	42	534.0	150	439.7	449.2	447.8	452.3	447.6	452.2	450.4	454.5
40	42	479.0	150	368.4	372.1	368.1	368.2	361.4	351.1	357.2	355.5

41	42	410.0	150	373.4	380.6	379.0	383.0	378.3	381.5	379.4	382.6
42	42	355.0	150	344.9	350.7	349.5	353.2	348.9	351.8	349.9	352.5
43	62	644.0	30	477.2	485.1	483.3	486.6	480.3	485.6	483.0	487.7
44	62	589.0	30	446.7	454.4	453.2	457.3	451.3	457.2	455.4	459.4
45	62	534.0	30	511.3	519.3	516.6	519.6	510.8	517.4	513.8	518.4
46	62	479.0	30	374.6	375.2	372.0	370.8	361.4	363.0	359.0	357.3
47	62	410.0	30	382.5	386.8	385.9	388.6	380.7	386.0	383.9	388.3
48	62	355.0	30	352.1	355.4	354.5	357.4	349.6	354.6	353.2	356.4
49	23	644.0	150	495.4	501.8	500.4	503.9	492.7	502.5	499.8	504.6
50	23	589.0	150	459.5	465.5	465.1	468.9	458.6	468.1	465.7	470.4
51	23	534.0	150	424.1	429.5	429.1	432.8	422.9	432.3	429.9	432.9
52	23	479.0	150	360.4	361.6	359.3	359.0	348.3	353.7	350.0	349.6
53	23	410.0	150	386.0	391.9	392.3	395.3	386.0	395.4	393.7	397.4
54	23	355.0	150	351.4	355.6	355.7	357.9	348.0	356.5	354.1	355.8
55	114	644.0	330	489.5	496.8	496.9	501.1	488.1	499.9	497.4	502.7
56	114	589.0	330	458.2	465.3	466.1	470.7	458.4	470.1	468.5	473.9
57	114	534.0	330	422.4	429.1	430.1	434.7	422.5	434.5	432.9	436.1
58	114	479.0	330	362.0	364.1	363.0	363.7	350.6	357.2	354.0	353.2
59	114	410.0	330	383.1	389.2	390.6	394.5	383.0	393.5	392.9	397.2
60	114	355.0	330	350.7	355.3	356.5	359.5	347.5	356.6	355.4	357.0
61	120	644.0	90	491.4	498.2	498.1	502.1	485.0	499.4	497.7	501.8
62	120	589.0	90	456.3	463.4	464.2	468.4	453.0	467.4	466.6	470.6
63	120	534.0	90	424.0	430.4	430.8	434.2	418.8	432.5	431.4	433.9
64	120	479.0	90	365.0	367.3	364.1	363.2	347.6	355.5	352.2	350.3
65	120	410.0	90	378.5	385.3	385.0	387.3	372.8	395.2	383.6	385.3
66	120	355.0	90	342.1	347.8	347.2	348.6	335.8	346.3	344.6	345.6
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	457.9	466.5	465.1	469.2	452.0	467.7	465.9	469.3
69	97	534.0	210	421.9	430.5	429.4	432.9	417.3	432.9	431.9	434.3
70	97	479.0	210	355.9	359.9	356.1	355.9	341.7	350.6	347.7	346.2
71	97	410.0	210	370.1	377.9	376.8	379.8	365.5	379.0	378.5	381.7
72	97	355.0	210	340.8	347.5	346.1	348.3	335.5	347.0	346.5	348.9
73	0	0.0	0	124.2	123.4	121.7	122.5	119.1	117.7	117.8	119.6
74	0	0.0	0	123.1	123.2	123.2	121.5	121.3	118.7	118.1	118.2
75	0	0.0	0	127.3	123.2	121.9	121.1	119.3	119.8	118.7	118.2
76	0	896.9	0	340.3	343.5	340.5	342.0	332.3	338.7	336.5	335.5
77	0	896.9	0	338.6	338.7	334.5	336.8	328.9	332.3	330.7	330.9
78	0	896.9	0	342.3	344.3	342.2	343.2	334.2	339.0	336.4	335.0
79	0	430.6	270	163.2	163.0	163.8	165.6	166.5	167.3	168.5	170.3
80	0	430.6	210	162.9	162.4	163.1	104.2	96.8	59.1	43.1	62.1
81	0	430.6	90	166.5	165.0	165.7	167.4	168.2	169.4	170.7	172.2
82	0	430.6	30	164.4	163.3	164.3	165.3	166.9	158.1	169.4	170.9
83	0	630.6	270	241.1	241.1	243.3	246.5	247.5	249.5	251.5	253.9
84	0	630.6	210	238.3	238.5	240.8	244.1	245.0	247.5	249.8	252.4
85	0	630.6	30	242.8	242.4	244.6	247.8	248.7	250.9	252.9	255.3
86	0	630.6	90	244.4	243.4	245.2	248.3	249.1	251.2	253.1	255.6
87	0	830.6	210	294.7	292.2	293.8	295.7	295.4	296.1	296.6	296.9
88	0	830.6	273	296.7	294.1	295.5	297.6	296.9	297.3	297.6	297.9
89	0	830.6	30	297.1	293.7	295.5	297.6	297.5	297.9	298.4	298.7
90	0	830.6	90	298.1	294.1	295.6	297.6	296.9	297.5	298.0	298.0
91	0	0.0	0	123.8	121.7	122.7	122.8	121.7	119.0	119.8	116.8
92	0	0.0	0	123.8	121.7	122.7	122.8	121.7	119.0	119.8	116.8

DATUM 11. 3.79

VERSUCH NR.	1	2	3	4	5	6	7	8	9	10	11	12
DURCHSATZ (KG/S)	0.2239	0.1988	0.1770	0.1571	0.1396	0.1244	0.1126	0.1038	0.0949	0.0846	0.0766	0.0684
EL. ENERGIE (KW)	57.6	51.3	46.5	41.7	37.6	33.9	31.0	29.5	27.1	24.2	22.1	19.6
WAERMEENERGIE (KW)	61.2	54.0	48.7	43.8	39.7	35.6	32.3	30.6	28.4	25.1	22.8	20.2
WAERMEBILANZ (Q/Q)	6.3	5.4	4.7	5.0	5.5	4.9	4.2	3.7	4.9	3.6	3.0	3.1
REYNOLDSZAHL * E-04	7.457	6.615	5.865	5.185	4.593	4.092	3.696	3.395	3.093	2.768	2.499	2.239
DRUCKVERLUST (1.E+01 N/M**2)												
GES. X= 895.6 (MM)	49475.	39472.	31749.	25370.	20300.	16317.	13519.	11805.	9954.	8029.	6644.	5340.
BIS X= 102.0 (MM)	8100.	6522.	5241.	4186.	3350.	2702.	2241.	1944.	1639.	1334.	1107.	896.
BIS X= 236.1 (MM)	9569.	7756.	6225.	4991.	3991.	3225.	2694.	2342.	1967.	1600.	1334.	1091.
BIS X= 502.0 (MM)	25201.	20324.	16279.	13001.	10376.	8339.	6928.	6000.	5044.	4059.	3380.	2718.
BIS X= 670.0 (MM)	33973.	27350.	21790.	17475.	13915.	11217.	9276.	8012.	6742.	5424.	4452.	3574.
BIS X= 736.1 (MM)	41387.	33278.	26527.	21261.	16940.	13633.	11289.	9750.	8215.	6607.	5436.	4374.
BIS X= 866.0 (MM)	44147.	35521.	28388.	22773.	18164.	14671.	12152.	10518.	8861.	7152.	5886.	4747.
EINTR. DRUCK (BAR)	12.82	12.82	12.80	12.77	12.73	12.68	12.65	12.62	12.62	12.60	12.58	12.55
EINTR. TEMP. GRADC	139.6	141.0	142.3	143.7	143.8	142.8	143.7	143.2	143.2	142.5	143.4	142.0

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD) GRAD C

1	83	644.0	270	593.8	588.6	590.7	593.2	598.4	595.3	599.4	607.1	614.4	606.6	610.2	605.2
2	83	589.0	270	557.0	552.0	553.1	554.8	559.9	556.6	560.4	568.1	574.4	567.1	570.4	565.7
3	83	534.0	270	516.5	511.3	511.9	512.6	516.3	512.5	515.7	522.6	528.1	521.0	523.4	519.1
4	83	479.0	270	461.0	455.5	456.2	456.5	458.3	453.8	455.0	459.9	462.1	454.9	455.0	448.8
5	83	410.0	270	488.4	482.4	482.5	482.9	485.9	481.7	483.8	490.3	494.8	487.5	489.2	484.5
6	83	355.0	270	445.9	440.4	440.0	440.5	442.3	437.6	439.2	445.6	448.6	441.6	442.2	437.5
7	91	644.0	270	607.0	601.8	603.8	605.9	612.0	609.4	614.9	620.5	627.9	620.0	622.6	618.1
8	91	589.0	270	566.6	561.8	562.7	565.3	570.4	567.8	573.3	578.6	585.5	578.4	581.5	577.4
9	91	534.0	270	536.6	532.1	531.6	533.2	537.2	534.1	538.2	543.3	549.2	542.3	544.7	541.4
10	91	479.0	270	485.3	479.9	478.9	479.1	481.0	476.2	477.5	480.0	482.9	473.9	472.8	466.8
11	91	410.0	270	498.2	491.8	491.3	492.2	496.0	492.9	495.5	499.0	504.2	497.4	499.0	495.5
12	91	355.0	270	462.4	456.3	455.3	455.1	458.1	454.4	456.4	459.3	463.1	456.9	458.4	455.0
13	7	644.0	30	617.8	611.4	611.1	613.7	618.6	613.4	617.3	624.7	630.2	622.6	624.5	621.4
14	7	589.0	30	570.3	564.4	563.7	566.9	570.9	565.7	569.1	576.7	581.3	574.6	576.7	574.8
15	7	534.0	30	532.6	526.3	525.5	527.8	531.3	525.6	528.8	535.5	539.6	533.9	534.8	533.7
16	7	479.0	30	465.0	459.5	459.4	459.4	462.3	457.3	459.8	463.9	466.6	461.4	459.6	456.5
17	7	410.0	30	466.2	461.2	462.3	462.2	465.8	461.7	465.1	470.7	475.2	470.8	471.6	471.0
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	616.4	610.7	610.9	612.3	617.0	613.6	618.0	623.3	629.3	622.6	625.2	624.7
20	22	589.0	90	575.7	570.2	569.9	570.9	575.1	571.7	575.6	580.5	586.0	579.5	582.4	582.4
21	22	534.0	90	543.2	537.0	536.3	536.3	538.8	535.0	538.4	542.6	546.4	540.0	542.6	542.6
22	22	479.0	90	473.8	468.5	467.8	467.5	468.9	465.3	467.6	469.8	472.8	465.8	466.3	463.7
23	22	410.0	90	461.7	457.7	458.1	458.4	460.2	458.0	460.9	463.9	468.3	463.2	465.6	466.1
24	22	355.0	90	428.3	424.1	423.7	423.4	424.4	421.0	423.8	425.6	429.3	424.1	425.9	425.9
25	78	644.0	150	609.6	603.4	603.4	605.0	609.5	607.0	612.3	613.4	619.9	612.5	616.0	618.1
26	78	589.0	150	572.2	566.3	566.5	567.6	570.9	569.0	573.0	574.4	580.1	573.2	576.5	578.6
27	78	534.0	150	537.3	531.2	531.1	531.6	534.1	532.0	534.2	536.0	540.5	533.4	536.0	537.4
28	78	479.0	150	470.6	465.0	464.2	464.9	465.8	463.9	464.5	465.8	468.7	461.6	463.0	462.0
29	78	410.0	150	465.5	459.8	459.7	461.1	463.5	462.0	463.3	465.1	469.4	463.0	466.1	467.7
30	78	355.0	150	440.3	433.6	433.4	432.8	433.9	432.0	432.0	432.8	435.5	428.9	430.7	431.0
31	110	644.0	30	596.2	592.1	597.0	599.8	605.5	604.2	608.6	613.9	620.1	613.7	617.0	618.8
32	110	589.0	30	564.5	561.1	565.1	567.4	573.2	571.5	574.9	580.3	586.2	580.3	583.3	585.0
33	110	534.0	30	533.6	530.0	533.0	534.8	539.8	536.9	540.0	544.9	549.9	544.4	547.0	547.9
34	110	479.0	30	483.9	479.2	480.5	481.2	483.8	478.8	479.2	481.4	483.4	475.8	475.4	472.5
35	110	410.0	30	497.7	493.2	494.6	496.2	500.0	495.7	497.0	501.3	504.9	499.9	501.8	501.8
36	110	355.0	30	468.6	462.8	463.3	463.7	466.3	461.4	465.3	468.0	462.7	463.7	462.7	
37	42	644.0	150	613.3	607.6	609.2	610.9	617.2	613.1	614.4	620.3	625.0	618.1	621.9	621.2
38	42	589.0	150	575.5	570.0	571.4	572.3	577.9	573.6	574.7	579.8	584.6	577.4	581.5	580.3
39	42	534.0	150	542.2	536.8	538.1	537.9	543.0	538.8	539.1	543.7	548.2	540.9	544.7	543.3
40	42	479.0	150	472.2	467.8	468.7	468.2	472.1	468.1	467.3	469.8	473.3	465.3	466.3	462.0

41	42	410.0	150	462.2	458.5	458.8	459.3	463.5	460.3	460.4	463.5	466.5	461.8	464.7	463.0
42	42	355.0	150	433.2	428.9	428.7	428.4	430.4	427.0	427.0	428.9	433.3	426.7	429.0	426.2
43	62	644.0	30	583.0	578.0	578.9	581.2	586.4	584.4	585.0	587.1	593.7	585.9	589.2	587.3
44	62	589.0	30	550.4	545.0	544.7	546.8	550.3	547.7	548.2	549.1	554.6	547.0	550.1	547.7
45	62	534.0	30	625.1	619.6	620.5	623.1	628.5	626.6	627.6	630.4	637.3	629.4	632.7	629.7
46	62	479.0	30	482.5	478.0	477.0	477.9	480.0	476.9	477.0	475.1	479.4	472.5	471.6	466.3
47	62	410.0	30	477.1	472.6	472.6	473.0	476.1	474.1	475.2	473.9	479.2	473.7	474.4	471.8
48	62	355.0	30	445.4	440.0	439.6	438.8	441.3	438.4	439.1	436.5	441.4	435.6	435.4	432.9
49	23	644.0	150	597.1	591.9	593.7	595.8	601.9	600.9	602.7	604.3	612.1	605.2	606.2	604.7
50	23	589.0	150	554.4	550.1	551.0	552.9	558.3	556.8	558.3	558.9	566.5	559.9	560.8	559.6
51	23	534.0	150	519.3	515.2	515.2	516.6	520.1	518.1	518.5	518.7	525.1	518.0	518.7	517.0
52	23	479.0	150	457.0	452.9	452.5	453.7	455.7	453.5	453.3	451.8	456.5	448.0	447.7	444.9
53	23	410.0	150	471.2	466.6	467.0	469.0	471.9	470.7	472.1	471.5	477.7	470.5	472.4	472.2
54	23	355.0	150	441.5	435.8	435.4	435.9	438.1	435.9	435.9	434.4	439.1	431.4	432.2	430.9
55	114	644.0	330	591.0	585.3	587.6	590.4	593.5	592.4	594.4	599.3	607.4	599.3	601.2	597.2
56	114	589.0	330	553.2	548.0	549.6	552.6	555.0	553.7	555.7	560.4	567.0	559.9	561.3	557.3
57	114	534.0	330	518.1	512.0	512.9	515.2	515.6	513.7	515.0	518.7	523.9	516.8	517.3	512.8
58	114	479.0	330	459.1	454.1	454.6	456.4	456.8	453.7	454.7	457.1	460.5	453.3	451.7	445.5
59	114	410.0	330	465.7	460.9	462.7	464.4	466.5	463.9	466.2	469.6	474.8	468.9	469.6	465.9
60	114	355.0	330	437.4	432.7	433.8	433.7	435.0	431.1	432.4	435.3	438.9	432.9	432.4	427.7
61	120	644.0	90	590.5	585.8	589.5	592.5	596.7	596.0	597.7	602.4	608.3	601.7	603.6	597.9
62	120	589.0	90	554.6	548.7	552.4	554.5	557.8	556.1	557.4	561.1	565.8	559.4	560.8	555.7
63	120	534.0	90	527.9	521.6	524.1	525.5	527.6	524.9	525.1	528.0	531.1	524.5	524.8	519.1
64	120	479.0	90	478.5	471.9	473.5	473.3	473.5	469.6	468.7	469.4	469.7	463.0	461.5	453.7
65	120	410.0	90	475.9	469.5	471.6	472.6	473.5	471.3	471.7	473.2	475.2	470.0	470.4	465.3
66	120	355.0	90	440.6	434.2	435.2	435.7	435.5	432.8	432.2	432.3	432.8	427.3	426.7	421.0
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	554.6	549.2	551.5	554.1	557.3	558.0	558.8	560.8	564.6	559.2	561.5	556.6
69	97	534.0	210	521.1	515.7	516.8	517.8	520.6	520.3	520.1	520.8	523.2	517.5	518.5	513.0
70	97	479.0	210	460.8	456.7	457.3	457.3	459.4	458.7	457.6	455.1	455.8	449.3	448.3	440.6
71	97	410.0	210	455.1	451.6	453.6	454.2	457.7	457.8	458.4	457.3	459.8	455.3	456.5	451.5
72	97	355.0	210	426.8	422.9	424.2	424.0	426.3	425.5	425.3	423.2	425.0	420.1	420.9	415.7
73	0	0.0	0	139.8	141.8	143.5	146.2	146.4	146.6	146.3	142.0	141.4	140.3	142.2	140.5
74	0	0.0	0	139.0	140.3	140.8	141.7	140.9	137.7	142.4	141.8	141.6	139.9	140.4	139.2
75	0	0.0	0	140.0	140.8	142.7	143.4	144.1	144.0	142.4	145.8	146.7	147.3	147.5	146.3
76	0	896.9	0	389.2	392.0	396.0	399.7	405.1	405.7	406.9	413.5	418.4	415.0	416.4	413.0
77	0	896.9	0	388.6	386.0	390.3	395.3	399.6	400.7	401.7	410.3	414.0	409.9	412.7	409.8
78	0	896.9	0	394.7	394.4	399.5	404.0	408.4	409.1	411.9	417.4	421.2	416.7	419.5	416.4
79	0	430.6	270	175.0	177.0	178.9	181.2	183.2	183.9	185.6	182.5	183.9	184.4	185.2	185.4
80	0	430.6	210	175.1	177.2	179.0	184.2	85.2	183.2	185.7	182.1	183.1	183.7	184.7	184.7
81	0	430.6	90	179.3	181.3	182.9	184.8	186.7	187.2	188.9	189.3	190.8	191.1	191.8	192.0
82	0	430.6	30	175.1	177.3	179.1	181.3	182.9	182.7	184.3	185.4	187.1	187.3	188.0	188.2
83	0	630.6	270	264.1	265.4	268.8	271.9	275.5	277.1	279.9	278.3	281.3	282.0	283.9	284.7
84	0	630.6	210	257.2	258.8	262.4	266.1	270.1	272.4	275.4	273.3	276.5	277.3	279.5	280.6
85	0	630.6	30	262.7	264.4	268.0	271.5	274.9	275.8	278.6	281.7	285.2	285.4	287.3	288.0
86	0	630.6	90	269.1	270.4	273.7	276.8	280.3	281.5	284.3	286.6	289.6	289.7	291.3	291.8
87	0	830.6	210	326.5	327.0	331.6	336.1	341.0	344.0	347.5	345.8	349.3	350.3	352.5	353.0
88	0	830.6	270	333.0	333.3	337.5	341.6	346.2	348.6	351.8	350.3	353.8	354.2	356.1	356.0
89	0	830.6	30	327.3	328.1	333.0	337.5	342.3	344.2	347.8	350.6	354.5	355.0	356.8	357.2
90	0	830.6	90	338.0	338.4	342.1	345.6	350.0	351.5	354.5	356.7	359.9	359.8	361.1	360.9
91	0	0.0	0	139.6	140.9	142.0	140.2	141.7	140.1	140.4	141.2	143.6	141.0	140.8	141.1
92	0	0.0	0	139.6	140.9	142.0	140.2	141.7	140.1	140.4	141.2	143.6	141.0	140.8	141.1



DATUM 11. 3.79

VERSUCH NR.	13	14	15	16	17	18	19	20	21	22	23
DURCHSATZ (KG/S)	0.0615	0.0549	0.0496	0.0449	0.0399	0.0354	0.0318	0.0288	0.0259	0.0235	0.0207
EL. ENERGIE (KW)	18.0	16.2	14.7	13.6	11.8	10.8	9.3	8.7	7.7	7.1	6.3
WAERMEENERGIE(KW)	18.4	16.4	14.9	13.7	11.9	10.9	9.4	8.6	7.6	6.9	6.0
WAERMEBILANZ(0/0)	2.0	1.6	1.7	0.8	0.6	0.9	0.3	-1.3	-2.0	-1.9	-4.7
REYNOLDSZAHL=E-04	2.009	1.796	1.624	1.470	1.307	1.158	1.049	0.948	0.853	0.774	0.686
DRUCKVERLUST (1.E+01 N/M**2)											
GES.X= 895.6(MM)	4366.	3500.	2832.	2326.	1755.	1385.	1116.	905.	721.	584.	449.
BIS X= 102.0(MM)	740.	600.	491.	413.	320.	255.	209.	176.	141.	116.	98.
BIS X= 236.1(MM)	896.	723.	605.	503.	389.	318.	263.	221.	198.	153.	120.
BIS X= 502.0(MM)	2225.	1785.	1459.	1207.	925.	747.	609.	501.	423.	337.	269.
BIS X= 670.0(MM)	2941.	2342.	1922.	1577.	1195.	972.	780.	654.	548.	434.	345.
BIS X= 736.1(MM)	3590.	2864.	2353.	1935.	1464.	1183.	956.	798.	672.	539.	428.
BIS X= 866.0(MM)	3910.	3103.	2556.	2109.	1612.	1310.	1055.	881.	740.	593.	479.
EINTR.DRUCK (BAR)	12.51	12.53	12.58	12.60	12.65	12.65	12.64	12.63	12.63	12.62	12.61
EINTR.TEMP. GRADC	141.3	140.3	139.8	138.8	140.0	138.8	138.1	138.2	137.8	136.9	135.5

TE R	AX	RAD	T
NR NR.	POS	POS	
	(MM)	(GRD)	GRAD C

1	83	644.0	270	611.3	610.0	611.9	616.9	606.4	614.5	602.9	611.7	610.7	614.0	614.0
2	83	589.0	270	571.8	570.9	572.8	578.3	569.1	578.0	567.2	576.7	575.5	578.0	576.8
3	83	534.0	270	524.5	523.7	525.1	530.5	522.2	530.5	520.6	528.7	526.5	527.7	523.9
4	83	479.0	270	450.7	446.9	445.3	447.8	437.4	441.8	430.8	434.2	429.6	428.6	423.3
5	83	410.0	270	490.1	488.3	489.5	495.4	486.4	495.4	484.7	492.8	490.9	493.9	492.1
6	83	355.0	270	441.3	439.1	439.9	445.0	436.8	444.5	434.7	441.2	438.1	438.7	433.9
7	91	644.0	270	624.0	622.4	622.5	627.9	617.0	625.1	611.8	619.2	616.4	619.6	618.0
8	91	589.0	270	583.3	583.1	583.6	589.8	580.6	589.8	578.2	586.1	584.4	588.6	586.0
9	91	534.0	270	546.5	546.4	546.9	553.0	545.2	554.8	544.0	551.8	548.8	551.3	545.5
10	91	479.0	270	467.9	464.9	461.4	462.8	451.5	454.8	442.4	444.8	438.6	438.3	431.0
11	91	410.0	270	499.4	499.5	498.9	504.5	496.0	505.7	493.4	500.1	496.8	501.7	500.0
12	91	355.0	270	457.9	458.3	457.1	462.5	454.7	464.3	453.2	459.7	456.4	459.3	454.2
13	7	644.0	30	624.5	624.1	623.4	631.9	621.5	632.6	618.4	623.7	619.9	622.7	617.1
14	7	589.0	30	577.4	578.2	578.5	587.7	579.4	591.7	579.4	585.8	583.5	587.4	582.5
15	7	534.0	30	535.0	536.3	536.8	545.7	538.4	550.6	539.1	545.3	542.9	546.4	539.4
16	7	479.0	30	454.3	453.0	450.4	455.0	445.6	451.4	438.7	438.8	433.0	432.1	421.8
17	7	410.0	30	471.4	473.0	474.1	482.7	475.8	487.4	476.3	480.9	479.0	482.0	477.4
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	625.4	625.7	626.5	634.5	623.9	637.1	620.3	625.8	623.2	626.2	618.7
20	22	589.0	90	582.6	582.9	584.8	592.6	583.1	597.3	581.5	587.2	585.8	589.3	584.1
21	22	534.0	90	543.2	543.1	545.2	553.0	544.5	559.3	544.9	552.3	551.8	554.8	547.6
22	22	479.0	90	461.5	458.4	457.5	460.3	449.5	456.8	441.6	442.0	437.1	434.8	424.7
23	22	410.0	90	467.1	467.2	468.9	475.7	468.2	481.5	467.1	472.6	471.5	473.0	468.5
24	22	355.0	90	426.5	426.0	427.6	433.6	427.1	439.2	426.0	431.0	430.0	430.9	425.2
25	78	644.0	150	618.3	616.8	616.8	623.5	612.3	626.5	606.9	613.6	611.5	612.1	604.8
26	78	589.0	150	579.3	577.7	578.7	585.1	575.1	589.5	570.9	578.3	576.4	577.3	570.7
27	78	534.0	150	538.1	536.5	537.0	542.7	534.2	547.8	530.9	538.5	537.1	538.0	531.0
28	78	479.0	150	460.9	456.0	454.4	454.9	444.6	451.0	434.5	436.2	431.5	427.7	418.3
29	78	410.0	150	469.4	468.8	470.4	474.9	468.3	480.9	465.0	471.8	470.9	471.0	465.7
30	78	355.0	150	431.2	429.8	431.1	434.6	427.7	439.0	423.5	430.0	428.7	428.0	421.7
31	110	644.0	30	619.1	618.9	620.1	627.0	618.7	634.0	614.4	623.0	623.0	625.5	620.6
32	110	589.0	30	585.4	585.5	586.9	593.8	586.7	601.5	582.9	591.5	592.4	594.5	589.5
33	110	534.0	30	548.6	549.2	550.8	557.4	551.5	566.3	548.0	555.4	554.6	554.8	547.4
34	110	479.0	30	469.3	466.4	466.7	466.2	458.5	466.2	448.5	450.8	447.5	445.3	437.7
35	110	410.0	30	502.0	502.3	503.8	509.9	504.7	519.7	499.7	508.1	508.7	511.5	507.5
36	110	355.0	30	462.7	462.6	463.8	468.6	464.0	476.6	458.3	464.6	463.8	463.8	457.3
37	42	644.0	150	621.6	621.0	622.5	628.4	621.3	638.5	613.9	622.8	621.3	622.5	617.3
38	42	589.0	150	581.6	581.3	583.9	590.5	584.8	602.7	580.5	589.6	589.1	591.4	587.7
39	42	534.0	150	544.4	544.5	547.3	554.4	549.4	567.0	546.1	555.4	554.9	556.2	550.6
40	42	479.0	150	461.1	458.2	457.6	459.5	451.8	461.1	441.9	444.8	439.7	436.8	428.6

41	42	410.0	150	465.1	465.8	468.4	474.4	470.4	486.1	467.5	474.9	473.6	474.6	471.5
42	42	355.0	150	427.8	428.4	430.9	436.4	432.9	447.5	430.3	437.1	435.8	436.1	432.5
43	62	644.0	30	592.0	593.5	595.5	599.5	591.9	609.1	585.9	595.5	594.5	595.6	593.8
44	62	589.0	30	552.6	553.2	555.3	561.2	555.0	572.6	551.5	561.2	560.7	560.7	556.7
45	62	534.0	30	634.6	634.2	635.6	641.1	632.3	649.3	624.5	633.4	632.2	632.3	630.0
46	62	479.0	30	468.2	465.4	464.7	464.5	455.7	464.3	445.5	448.0	443.0	438.4	431.5
47	62	410.0	30	476.7	476.6	479.9	483.9	483.9	492.8	481.4	480.1	479.9	479.9	478.8
48	23	354.0	30	436.9	436.9	440.6	444.3	439.0	452.4	435.9	441.7	440.5	440.1	437.7
49	23	644.0	150	611.3	612.1	614.2	620.4	611.9	628.4	605.7	612.9	612.6	613.5	612.1
50	23	589.0	150	565.9	567.2	570.0	576.4	569.3	585.8	565.3	572.2	572.9	573.3	572.1
51	23	534.0	150	522.4	523.9	527.0	532.4	528.2	542.2	523.9	530.1	530.0	530.0	527.0
52	23	479.0	150	446.5	445.7	446.2	447.6	438.8	448.4	432.1	433.0	430.6	428.0	423.5
53	23	410.0	150	477.5	480.7	483.9	489.5	483.9	499.8	482.9	487.9	489.7	489.7	488.1
54	23	355.0	150	435.2	437.5	439.6	444.6	438.4	452.8	437.3	441.0	440.9	440.3	436.4
55	114	644.0	330	603.8	605.5	609.1	615.2	608.1	625.8	604.3	609.4	611.0	612.3	612.1
56	114	589.0	330	563.8	565.8	570.0	576.2	570.9	588.8	569.3	575.2	576.9	578.5	577.8
57	114	534.0	330	519.6	521.3	525.5	531.7	527.2	544.5	526.9	531.9	533.8	534.0	531.2
58	114	479.0	330	449.1	447.9	448.8	450.8	444.3	454.0	437.2	437.5	435.4	433.3	426.9
59	114	410.0	330	473.0	475.4	479.7	486.0	482.7	499.1	481.7	486.5	487.7	489.0	487.6
60	114	355.0	330	433.5	435.0	438.2	443.6	439.9	454.4	437.9	441.2	440.7	440.7	436.2
61	120	644.0	90	606.1	606.4	609.5	617.1	608.8	627.4	605.5	610.5	610.5	611.9	610.3
62	120	589.0	90	563.1	563.7	567.2	575.5	568.6	587.4	568.1	573.6	574.0	576.1	574.5
63	120	534.0	90	525.7	524.8	527.7	535.4	528.3	545.9	527.1	531.9	532.2	533.0	529.8
64	120	479.0	90	456.7	452.6	452.0	455.7	445.3	454.5	436.9	436.9	432.9	430.6	423.4
65	120	410.0	90	472.1	471.4	473.8	482.0	475.0	490.4	473.3	477.4	476.5	476.9	473.9
66	120	355.0	90	426.2	425.0	426.5	433.3	426.8	440.0	424.4	428.4	426.6	426.6	421.8
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	565.5	565.3	567.5	577.8	569.3	586.5	566.7	573.1	571.5	574.0	572.1
69	97	534.0	210	521.0	520.8	522.7	532.4	525.5	541.7	523.9	530.8	529.6	532.3	529.3
70	97	479.0	210	444.7	441.9	440.1	445.4	435.7	443.9	427.3	429.8	424.9	424.3	417.7
71	97	410.0	210	459.1	460.6	461.9	471.5	465.6	480.4	463.2	470.3	468.8	471.7	470.5
72	97	355.0	210	421.5	423.8	423.8	431.5	426.6	438.8	423.6	429.8	428.2	430.4	426.7
73	0	0.0	0	141.8	140.4	139.5	138.2	139.0	137.7	136.5	137.2	137.7	136.6	134.6
74	0	0.0	0	135.8	135.3	137.0	135.7	137.9	137.9	137.9	138.0	137.8	136.6	134.8
75	0	0.0	0	146.4	145.4	143.0	142.4	141.4	141.0	139.8	139.3	137.8	137.6	137.2
76	0	896.9	0	416.8	415.2	415.5	418.4	413.7	420.5	408.2	411.7	407.2	409.1	403.9
77	0	896.9	0	411.8	412.4	413.0	413.3	409.3	415.8	403.9	407.0	402.4	404.3	398.6
78	0	896.9	0	418.7	418.0	419.1	421.7	416.7	422.9	411.1	412.8	410.0	409.1	404.9
79	0	430.6	270	186.4	188.2	189.2	191.4	192.6	195.3	197.0	199.4	201.5	203.9	205.8
80	0	430.6	210	186.2	188.1	189.2	190.9	191.7	194.9	196.1	198.6	200.8	203.1	205.3
81	0	430.6	90	192.6	193.9	194.3	196.1	195.9	198.5	200.1	202.4	204.4	206.7	208.7
82	0	430.6	30	188.7	190.1	191.1	193.1	193.7	196.5	198.2	200.6	202.8	205.2	207.2
83	0	630.6	270	286.9	289.9	292.4	296.1	295.1	300.7	303.4	307.6	311.2	314.9	318.5
84	0	630.6	210	283.5	286.7	289.2	293.1	292.0	298.2	300.7	305.3	309.2	313.2	317.0
85	0	630.6	30	289.8	292.4	294.7	298.3	297.1	303.0	305.3	309.6	313.1	316.9	320.8
86	0	630.6	90	293.5	295.7	297.2	300.4	298.2	303.7	305.9	310.0	313.3	317.0	320.6
87	0	830.6	210	354.9	356.5	357.6	359.6	353.8	357.8	358.2	360.1	361.0	361.9	361.7
88	0	830.6	270	357.3	358.6	359.6	361.5	355.6	359.6	361.4	362.5	362.0	362.8	362.4
89	0	830.6	30	358.0	359.4	360.3	362.1	356.0	359.9	360.7	362.5	363.3	364.0	363.8
90	0	830.6	90	361.5	362.2	362.5	363.8	356.6	360.1	360.4	362.0	362.5	363.1	362.8
91	0	0.0	0	138.0	139.8	138.6	138.1	138.7	140.0	139.3	139.6	138.2	138.6	135.8
92	0	0.0	0	138.0	139.8	138.6	138.1	138.7	140.0	139.3	139.6	138.2	138.6	135.8

DATUM 17. 3.79

VERSUCH NR.	1	2	3	4	5	6	7	8	9	10	11	12
DURCHSATZ (KG/S)	0.2607	0.2367	0.2106	0.1898	0.1694	0.1516	0.1371	0.1222	0.1067	0.1018	0.0928	0.0830
EL. ENERGIE (KW)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
REYNOLDSZAHL*E-04	11.426	10.360	9.233	8.308	7.434	6.674	6.032	5.400	4.724	4.487	4.095	3.666
DRUCKVERLUST (1.E+01 N/M**2)												
GES.X= 895.6(MM)	46013.	38079.	30675.	24938.	20011.	16098.	13130.	10554.	8140.	7524.	6317.	5102.
BIS X= 102.0(MM)	10334.	8552.	6896.	5631.	4506.	3631.	2966.	2381.	1841.	1693.	1427.	1162.
BIS X= 236.1(MM)	11693.	10052.	8146.	6584.	5334.	4287.	3521.	2834.	2209.	2006.	1693.	1412.
BIS X= 502.0(MM)	27161.	22850.	18417.	14961.	12041.	9641.	7904.	6355.	4898.	4497.	3768.	3094.
BIS X= 670.0(MM)	33935.	28445.	22944.	18583.	14991.	12019.	9880.	7883.	6100.	5596.	4682.	3831.
BIS X= 736.1(MM)	39541.	33079.	26648.	21591.	17395.	13939.	11439.	9131.	7062.	6479.	5426.	4429.
BIS X= 866.0(MM)	41570.	34771.	28030.	22725.	18320.	14693.	12088.	9629.	7462.	6853.	5742.	4699.
EINTR.DRUCK (BAR)	12.01	11.99	11.97	11.95	11.94	11.94	11.94	11.95	11.94	12.00	11.98	11.97
EINTR.TEMP. GRADC	92.7	93.6	92.5	93.3	91.9	90.6	91.1	88.3	87.8	89.5	89.1	88.7

TE NR.	R NR.	AX POS (MM)	RAD POS (MM)	T (GRAD) GRAD C
1	83	644.0	270	91.2
2	83	589.0	270	91.2
3	83	534.0	270	91.3
4	83	479.0	270	91.3
5	83	410.0	270	91.1
6	83	355.0	270	90.8
7	91	644.0	270	90.4
8	91	589.0	270	90.1
9	91	534.0	270	90.1
10	91	479.0	270	90.0
11	91	410.0	270	90.1
12	91	355.0	270	90.4
13	7	644.0	30	92.3
14	7	589.0	30	92.4
15	7	534.0	30	92.4
16	7	479.0	30	92.7
17	7	410.0	30	93.0
18	7	355.0	30	0.0
19	22	644.0	90	92.7
20	22	589.0	90	92.6
21	22	534.0	90	92.5
22	22	479.0	90	92.6
23	22	410.0	90	92.4
24	22	355.0	90	92.5
25	78	644.0	150	92.7
26	78	589.0	150	92.7
27	78	534.0	150	92.6
28	78	479.0	150	92.3
29	78	410.0	150	91.9
30	78	355.0	150	91.7
31	110	644.0	30	92.4
32	110	589.0	30	92.5
33	110	534.0	30	92.7
34	110	479.0	30	92.9
35	110	410.0	30	92.7
36	110	355.0	30	92.6
37	42	644.0	150	93.1
38	42	589.0	150	93.4
39	42	534.0	150	90.0
40	42	479.0	150	93.7
41	42	410.0	150	93.6
42	42	355.0	150	93.4

43	62	644.0	30	93.7	93.9	93.7	93.9	93.7	93.9	94.1	91.8	91.0	90.7	89.0	88.2	89.6	88.5	88.7
44	62	589.0	30	93.7	94.1	93.8	94.1	93.8	94.1	94.2	92.2	91.2	90.7	89.1	88.4	89.4	88.6	88.8
45	62	534.0	30	93.6	94.0	93.6	94.0	93.6	94.0	94.1	92.1	91.2	90.5	89.1	88.2	89.5	88.6	88.7
46	62	479.0	30	93.6	94.1	93.5	94.1	93.6	94.1	94.1	92.0	91.5	90.6	89.0	88.0	89.7	88.5	88.5
47	62	410.0	30	93.8	94.0	93.8	94.0	93.8	94.0	93.7	92.7	91.6	90.6	89.0	87.9	88.6	88.5	88.4
48	62	355.0	30	93.5	93.6	93.5	93.6	93.5	93.6	93.6	92.5	91.6	90.7	88.7	87.9	88.8	88.6	88.2
49	23	644.0	150	93.1	93.3	93.4	93.3	93.1	93.4	93.4	91.9	90.8	90.1	88.4	87.8	88.8	88.4	88.2
50	23	589.0	150	93.5	93.5	93.8	93.5	93.5	93.7	93.7	92.0	90.9	90.6	88.4	88.0	88.5	88.3	88.1
51	23	534.0	150	93.3	93.6	93.5	93.6	93.3	93.7	93.7	91.9	90.7	90.8	88.2	87.8	88.2	88.3	88.0
52	23	479.0	150	93.5	94.0	93.5	94.0	93.5	93.9	93.9	92.0	90.8	91.6	88.2	87.8	88.2	88.1	88.1
53	23	410.0	150	93.7	93.6	93.4	93.6	93.7	93.6	94.0	92.1	91.0	91.2	88.5	87.9	88.0	87.9	88.2
54	23	355.0	150	94.0	93.0	93.6	93.0	93.6	93.7	93.7	92.4	91.1	90.5	88.2	87.6	88.2	87.9	88.4
55	114	644.0	330	93.2	94.4	93.7	94.4	93.2	94.4	93.7	92.4	92.0	91.9	89.9	88.3	88.9	88.0	88.3
56	114	589.0	330	93.0	94.1	93.8	94.1	93.8	93.6	93.6	92.6	91.9	91.7	89.7	88.1	88.7	87.9	88.4
57	114	534.0	330	92.9	93.8	93.6	93.8	93.6	93.7	93.7	92.5	91.8	91.3	89.4	87.6	88.6	87.6	88.3
58	114	479.0	330	93.1	94.0	93.5	94.0	93.1	93.5	93.5	92.7	91.8	91.3	89.5	87.4	89.0	87.8	88.5
59	114	410.0	330	93.1	94.1	93.3	94.1	93.3	93.2	93.2	92.6	91.8	91.3	89.7	87.4	89.2	88.0	88.5
60	114	355.0	330	93.3	94.2	93.2	94.2	93.2	93.2	93.2	92.7	92.1	91.2	89.9	87.3	88.9	88.1	88.6
61	120	644.0	90	93.5	94.2	94.1	94.2	93.5	94.2	94.1	93.2	92.3	91.9	90.0	88.0	88.9	88.1	88.4
62	120	589.0	90	93.4	94.2	94.2	94.2	93.4	94.2	94.2	93.3	92.2	91.8	90.0	88.1	89.0	88.1	88.4
63	120	534.0	90	93.1	94.4	94.4	94.4	93.1	94.4	94.4	93.2	92.2	91.8	90.0	88.1	89.0	88.1	88.5
64	120	479.0	90	92.5	94.3	94.1	94.3	92.5	94.3	94.1	93.6	92.1	91.6	89.8	87.9	89.0	88.0	88.8
65	120	410.0	90	92.2	94.3	94.2	94.3	92.2	94.3	94.2	93.4	92.0	91.7	89.8	88.0	89.0	88.0	88.8
66	120	355.0	90	92.2	94.0	94.0	94.0	92.2	94.0	93.9	93.1	91.8	91.6	89.7	87.9	88.8	87.6	88.7
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	93.1	94.2	94.0	94.2	93.1	94.2	94.0	93.4	92.8	91.2	88.9	88.0	89.5	88.0	88.9
69	97	534.0	210	93.1	94.2	93.9	94.2	93.1	94.2	93.4	92.8	91.0	91.2	88.6	88.0	89.6	87.7	88.7
70	97	479.0	210	93.1	94.2	93.9	94.2	93.1	94.2	93.6	92.8	91.4	91.4	88.6	88.3	89.6	87.4	88.7
71	97	410.0	210	93.3	94.3	93.8	94.3	93.3	94.3	93.7	92.7	91.8	91.4	88.8	88.2	89.6	87.3	88.8
72	97	355.0	210	93.6	94.5	93.9	94.5	93.6	94.5	94.0	93.0	92.2	91.4	89.2	88.3	89.9	87.6	88.8
73	0	0.0	0	93.1	93.8	94.1	93.8	93.1	93.8	94.1	93.1	91.7	91.6	89.9	88.3	89.2	88.3	88.5
74	0	0.0	0	92.9	94.3	91.6	94.3	91.6	94.3	91.6	91.6	91.6	91.9	88.5	88.2	88.3	89.6	89.1
75	0	0.0	0	92.0	92.5	91.9	92.5	91.9	92.4	92.4	90.5	88.4	89.9	86.5	86.8	91.1	89.3	88.4
76	0	896.9	0	91.9	92.2	91.8	92.2	91.8	92.2	92.2	91.3	89.7	89.8	88.1	87.8	90.5	89.3	88.4
77	0	896.9	0	91.3	91.7	91.2	91.7	91.2	91.7	92.2	90.8	89.0	89.1	87.9	37.2	89.6	88.7	88.5
78	0	896.9	0	92.4	92.8	92.3	92.8	92.3	92.8	93.4	91.9	90.3	90.2	88.9	87.9	90.0	88.9	88.9
79	0	430.6	270	93.0	94.0	94.0	94.0	93.0	94.0	94.0	93.2	92.3	91.7	90.4	88.7	89.5	88.8	88.9
80	0	430.6	210	93.0	93.7	93.6	93.7	93.0	93.6	93.4	92.5	91.4	90.8	89.5	88.1	89.1	88.3	88.5
81	0	430.6	90	91.2	91.3	91.2	91.3	91.2	91.2	91.2	90.4	89.0	88.8	88.0	87.4	89.2	88.9	88.5
82	0	430.6	30	92.2	92.5	92.5	92.5	92.2	92.5	92.5	91.6	90.5	90.1	89.1	88.2	89.5	89.1	88.4
83	0	630.6	270	92.5	93.4	93.6	93.4	92.5	93.6	93.5	92.7	91.8	91.3	90.3	88.8	89.3	89.6	88.4
84	0	630.6	210	92.5	93.1	93.1	93.1	92.5	93.1	93.1	92.2	91.1	90.7	89.5	88.3	89.2	88.5	88.4
85	0	630.6	30	91.7	92.2	92.2	92.2	91.7	92.2	92.2	91.2	90.2	90.0	89.0	88.0	89.7	89.1	88.5
86	0	630.6	90	90.9	91.1	91.2	91.2	90.9	91.1	91.2	90.3	89.1	88.9	88.1	87.4	89.4	89.0	88.5
87	0	830.6	210	92.6	93.2	93.2	93.2	92.6	93.2	93.2	92.3	91.2	90.8	89.7	88.6	89.4	88.9	88.8
88	0	830.6	270	92.6	93.5	93.6	93.5	92.6	93.6	93.6	92.8	91.9	91.5	90.3	89.0	89.6	89.0	86.9
89	0	830.6	30	91.5	92.1	92.3	92.3	91.5	92.1	92.3	91.4	90.4	90.2	89.3	88.2	89.8	89.3	88.9
90	0	830.6	90	90.7	91.1	91.2	91.2	90.7	91.1	91.2	90.3	89.2	89.0	88.2	87.4	89.2	88.9	88.2
91	0	0.0	0	92.8	93.3	93.7	93.3	92.8	93.3	93.7	90.9	90.6	90.6	87.7	88.9	89.5	90.3	88.0
92	0	0.0	0	92.8	93.3	93.7	93.3	92.8	93.3	93.7	90.9	90.6	90.6	87.7	88.9	89.5	90.3	88.0

DATUM 17. 3.79

VERSUCH NR.	13	14	15	16	17	18	19	20	21	22	23	24
DURCHSATZ (KG/S)	0.0749	0.0671	0.0604	0.0541	0.0488	0.0442	0.0393	0.0350	0.0315	0.0281	0.0255	0.0231
EL. ENERGIE (KW)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
REYNOLDSZAHL*E-04	3.322	2.987	2.696	2.424	2.185	1.987	1.786	1.592	1.435	1.280	1.164	1.058
DRUCKVERLUST (1.E+01 N/M**2)												
GES.X= 895.6(MM)	4158.	3376.	2758.	2193.	1776.	1464.	1091.	845.	679.	523.	412.	326.
BIS X= 102.0(MM)	954.	774.	627.	511.	423.	352.	270.	220.	181.	144.	121.	100.
BIS X= 236.1(MM)	1162.	939.	766.	625.	507.	429.	336.	271.	226.	186.	154.	126.
BIS X= 502.0(MM)	2537.	2055.	1677.	1350.	1103.	918.	704.	562.	459.	370.	305.	250.
BIS X= 670.0(MM)	3146.	2523.	2055.	1662.	1357.	1114.	862.	688.	561.	448.	363.	296.
BIS X= 736.1(MM)	3640.	2924.	2380.	1922.	1565.	1285.	999.	798.	652.	522.	424.	347.
BIS X= 866.0(MM)	3856.	3106.	2532.	2048.	1673.	1374.	1057.	847.	692.	559.	453.	372.
EINTR.DRUCK (BAR)	11.95	11.94	11.93	11.92	11.92	11.92	11.96	11.97	11.98	11.98	11.99	11.99
EINTR.TEMP. GRADC	86.5	84.4	83.7	81.2	81.7	79.8	75.1	74.6	73.2	72.4	71.6	69.8

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD) GRAD C

1	83	644.0	270	86.6	85.2	84.1	82.3	81.7	81.1	75.6	75.0	73.9	73.9	72.9	72.4
2	83	589.0	270	86.7	85.3	84.1	82.3	81.7	81.1	75.6	75.0	74.0	73.9	72.8	72.4
3	83	534.0	270	86.6	85.3	84.0	82.2	81.6	81.1	75.7	75.0	74.1	73.9	72.9	72.3
4	83	479.0	270	86.5	85.3	83.9	82.1	81.6	81.1	75.6	75.0	74.2	73.9	72.8	72.3
5	83	410.0	270	86.3	85.2	83.5	81.9	81.4	80.8	75.4	74.8	74.0	73.7	72.6	72.2
6	83	355.0	270	86.2	85.2	83.4	81.8	81.3	80.8	75.4	74.8	74.0	73.6	72.5	72.1
7	91	644.0	270	86.5	85.6	84.0	82.5	82.2	81.3	75.8	75.4	74.6	74.1	73.2	72.7
8	91	589.0	270	86.4	85.5	83.8	82.5	82.0	81.3	75.9	75.4	74.6	74.1	73.3	72.6
9	91	534.0	270	86.2	85.5	83.7	82.4	81.9	81.4	75.8	75.5	74.7	74.1	73.3	72.7
10	91	479.0	270	85.7	85.1	83.1	81.9	81.5	81.0	75.3	75.0	74.2	73.6	72.7	72.1
11	91	410.0	270	85.3	85.0	82.8	81.6	81.2	81.0	75.3	75.0	74.1	73.4	72.6	72.0
12	91	355.0	270	85.4	85.0	82.8	81.6	81.2	81.0	75.3	75.1	74.2	73.5	72.6	72.0
13	7	644.0	30	86.3	84.6	83.2	81.7	80.8	80.9	75.7	75.1	74.1	73.6	72.6	72.1
14	7	589.0	30	86.2	84.4	83.1	81.6	80.7	80.8	75.7	75.1	74.0	73.5	72.4	72.0
15	7	534.0	30	86.0	84.2	82.9	81.5	80.4	80.7	75.6	75.0	73.9	73.3	72.3	71.8
16	7	479.0	30	85.9	84.3	82.9	81.5	80.2	80.6	75.8	75.2	74.1	73.2	72.3	71.7
17	7	410.0	30	86.0	84.4	83.0	81.2	80.0	80.4	75.8	75.1	74.0	73.1	72.2	71.5
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	86.0	85.1	83.5	81.7	80.7	80.6	75.8	75.2	74.2	73.4	72.4	71.7
20	22	589.0	90	85.9	84.8	83.4	81.5	80.4	80.3	75.4	74.8	73.8	72.9	71.9	71.1
21	22	534.0	90	86.0	84.8	83.3	81.4	80.4	80.2	75.4	74.7	73.7	72.8	71.8	70.9
22	22	479.0	90	86.2	85.0	83.5	81.7	80.5	80.2	75.6	74.7	73.8	72.8	71.9	70.9
23	22	410.0	90	86.1	84.9	83.5	81.8	80.6	80.1	75.6	74.5	73.7	72.7	71.9	70.8
24	22	355.0	90	86.1	85.0	83.5	82.0	80.6	80.2	75.7	74.4	73.8	72.7	72.0	70.9
25	78	644.0	150	85.8	85.2	83.6	82.1	80.9	80.5	75.7	74.9	74.3	73.4	72.5	71.6
26	78	589.0	150	85.7	85.1	83.6	82.2	80.9	80.4	75.7	74.8	74.2	73.2	72.5	71.5
27	78	534.0	150	85.7	85.1	83.6	82.3	80.9	80.3	75.9	74.7	74.2	73.2	72.6	71.5
28	78	479.0	150	85.7	85.0	83.8	82.6	80.8	80.1	76.1	74.5	74.2	73.1	72.6	71.3
29	78	410.0	150	85.7	85.0	83.7	82.5	80.6	80.0	76.0	74.3	74.2	73.0	72.6	71.2
30	78	355.0	150	85.7	84.8	83.4	82.4	80.4	80.2	75.8	73.9	73.8	72.7	72.2	70.8
31	110	644.0	30	86.9	85.3	84.2	83.3	81.6	80.8	76.1	75.1	74.3	73.7	73.1	72.3
32	110	589.0	30	87.0	85.3	84.2	83.3	81.6	80.7	76.1	75.0	74.3	73.6	73.1	72.2
33	110	534.0	30	86.9	85.3	84.2	83.4	81.6	80.6	76.1	75.0	74.2	73.5	73.1	72.1
34	110	479.0	30	86.9	85.1	84.1	83.3	81.5	80.3	75.9	74.8	74.0	73.3	72.9	71.9
35	110	410.0	30	86.8	85.1	84.2	83.5	81.6	80.3	76.0	74.7	73.9	73.3	72.9	71.8
36	110	355.0	30	86.6	85.1	84.1	83.4	81.5	80.1	75.9	74.7	73.8	73.2	72.8	71.6
37	42	644.0	150	86.4	85.2	84.0	83.3	81.1	80.2	75.8	74.6	73.7	72.9	72.5	71.0
38	42	589.0	150	86.5	85.4	84.0	83.3	81.3	79.9	76.0	74.8	73.9	73.0	72.6	71.1
39	42	534.0	150	85.1	84.3	82.9	82.4	80.9	79.8	75.3	74.2	73.5	72.7	72.2	70.9
40	42	479.0	150	86.1	85.2	83.6	82.9	81.3	79.8	75.7	74.4	73.5	72.4	72.2	70.3
41	42	410.0	150	86.2	85.0	83.8	83.0	81.4	79.9	75.8	74.5	73.6	72.6	72.3	70.4
42	42	355.0	150	86.4	84.7	83.9	83.0	81.4	79.8	75.9	74.4	73.6	72.5	72.4	70.3

43	62	644.0	30	85.5	85.2	83.8	83.0	81.3	80.2	75.7	74.4	73.7	72.8	72.5	70.7
44	62	589.0	30	85.4	85.2	83.9	83.1	81.4	79.9	75.8	74.4	73.8	72.8	72.6	70.7
45	62	534.0	30	85.5	85.2	83.9	83.1	81.4	80.0	75.8	74.5	73.9	72.9	72.7	70.9
46	62	479.0	30	85.0	85.1	83.9	82.8	81.6	80.0	75.7	74.2	73.7	72.7	72.7	70.5
47	62	410.0	30	85.1	85.3	84.1	82.7	81.7	80.1	75.7	74.1	73.8	72.8	72.7	70.5
48	62	355.0	30	85.1	85.5	84.2	82.6	81.9	80.3	75.7	74.1	73.8	72.9	72.9	70.5
49	23	644.0	150	85.3	85.5	84.0	82.9	81.8	80.6	75.9	74.8	74.5	73.6	73.4	72.0
50	23	589.0	150	85.2	85.5	83.9	82.8	81.9	80.5	75.6	74.5	74.1	73.3	73.1	71.6
51	23	534.0	150	85.2	85.4	83.6	82.7	82.0	80.5	75.5	74.3	73.9	73.2	73.0	71.5
52	23	479.0	150	85.1	85.4	83.4	82.6	82.2	80.5	75.4	74.1	73.7	73.2	72.9	71.1
53	23	410.0	150	84.9	85.4	83.2	82.6	82.1	80.4	75.4	74.0	73.8	73.2	72.9	71.1
54	23	355.0	150	84.7	85.5	83.0	82.7	82.1	80.3	75.3	74.0	73.8	73.3	72.9	71.0
55	114	644.0	330	85.8	85.9	84.2	82.7	81.5	80.6	75.9	74.8	74.2	73.4	73.2	71.7
56	114	589.0	330	85.8	86.0	84.0	82.6	81.4	80.6	75.8	74.8	74.2	73.3	73.2	71.6
57	114	534.0	330	85.5	85.9	83.4	82.3	81.3	80.5	75.5	74.6	73.9	73.0	73.0	71.3
58	114	479.0	330	85.6	86.2	83.0	82.4	81.4	80.6	75.4	74.6	74.0	73.0	72.9	71.1
59	114	410.0	330	85.7	86.2	82.9	82.5	81.3	80.8	75.5	74.7	74.0	72.9	72.9	71.1
60	114	355.0	330	85.5	86.3	82.6	82.3	81.1	80.5	75.1	74.2	73.5	72.3	72.4	70.6
61	120	644.0	90	85.8	86.2	83.8	83.1	81.7	80.8	75.6	74.8	74.1	73.3	73.1	71.4
62	120	589.0	90	85.9	86.4	83.6	83.1	81.7	80.7	75.6	74.8	74.1	73.2	73.1	71.3
63	120	534.0	90	85.9	86.4	83.4	83.0	81.6	80.6	75.5	74.6	73.8	73.0	73.0	71.1
64	120	479.0	90	86.2	86.7	83.3	83.1	81.6	80.6	75.3	74.7	73.7	72.9	73.0	71.0
65	120	410.0	90	86.4	86.8	83.4	83.1	81.6	80.5	75.3	74.9	73.6	72.8	73.0	71.0
66	120	355.0	90	86.4	86.8	83.4	82.9	81.4	80.3	75.0	74.8	73.4	72.5	72.9	70.7
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	86.1	86.6	83.5	82.9	81.7	80.3	75.4	74.9	73.9	73.3	73.2	71.4
69	97	534.0	210	86.0	86.6	83.5	82.6	81.6	80.1	75.2	74.8	73.6	73.1	73.1	71.2
70	97	479.0	210	85.8	86.6	83.5	82.4	81.6	80.2	74.9	74.5	73.2	72.7	72.7	70.7
71	97	410.0	210	85.6	86.7	83.7	82.3	81.6	80.2	74.9	74.5	73.2	72.7	72.6	70.7
72	97	355.0	210	85.7	86.7	84.0	82.3	81.7	80.2	74.9	74.5	73.3	72.8	72.7	70.6
73	0	0.0	0	86.0	86.3	84.2	82.2	81.6	80.1	74.7	74.0	72.8	72.0	71.5	69.6
74	0	0.0	0	87.6	83.0	83.8	80.9	82.3	80.2	75.5	75.2	73.3	72.3	72.0	69.8
75	0	0.0	0	85.9	83.8	83.1	80.6	81.2	79.2	75.2	74.5	73.5	72.8	71.3	70.0
76	0	896.9	0	86.6	85.8	84.0	82.8	82.3	80.7	76.4	75.6	75.0	74.4	73.8	72.9
77	0	896.9	0	86.0	84.6	83.1	81.9	81.4	80.1	75.7	75.1	74.2	73.7	73.3	72.4
78	0	896.9	0	86.7	85.4	83.7	82.6	82.0	80.7	76.3	75.6	74.7	74.1	73.7	72.8
79	0	430.6	270	87.4	86.8	85.5	84.5	83.4	82.6	77.1	76.9	76.1	75.6	75.2	74.6
80	0	430.6	210	86.6	86.4	84.8	84.0	82.9	82.1	76.5	76.3	75.5	75.1	74.7	74.0
81	0	430.6	90	86.9	86.1	84.8	84.0	83.2	82.3	77.0	76.5	75.9	75.5	74.9	74.5
82	0	430.6	30	87.2	86.2	84.8	84.0	83.1	82.3	77.0	76.5	75.9	75.4	74.8	74.5
83	0	630.6	270	87.3	86.6	85.2	84.4	83.5	82.6	77.1	76.7	76.1	75.7	75.2	74.8
84	0	630.6	210	87.1	86.6	85.2	84.4	83.5	82.6	77.2	76.8	76.2	75.9	75.3	74.9
85	0	630.6	30	87.4	86.4	85.0	84.2	83.4	82.7	77.3	76.8	76.2	75.9	75.3	75.0
86	0	630.6	90	87.1	86.3	85.1	84.3	83.4	82.7	77.4	77.0	76.4	76.0	75.4	75.1
87	0	830.6	210	87.5	87.0	85.7	85.1	84.1	83.3	78.1	77.6	77.1	76.8	76.2	75.9
88	0	830.6	270	87.8	87.2	85.8	85.1	84.2	83.4	78.0	77.7	77.1	76.7	76.3	75.9
89	0	830.6	30	87.8	87.0	85.7	85.0	84.2	83.5	78.1	77.8	77.2	76.9	76.4	76.1
90	0	830.6	90	87.1	86.4	85.1	84.4	83.6	83.0	77.5	77.2	76.6	76.3	75.8	75.5
91	0	0.0	0	87.4	84.4	83.3	82.8	81.0	79.6	76.1	74.9	73.3	73.2	70.6	70.9
92	0	0.0	0	87.4	84.4	83.3	82.8	81.0	79.6	76.1	74.9	73.3	73.2	70.6	70.9

DATUM 15. 5.79

VERSUCH NR.	1	2	3	4	5	6	7	8	9
DURCHSATZ (KG/S)	0.0154	0.0146	0.0129	0.0114	0.0101	0.0091	0.0082	0.0074	0.0067
EL. ENERGIE (KW)	21.2	19.9	17.6	16.1	14.9	14.1	13.3	12.6	12.2
WAERMEENERGIE (KW)	21.4	20.0	17.5	15.7	14.3	13.3	12.5	11.8	11.1
WAERMEBILANZ (O/O)	0.6	0.4	-0.8	-2.5	-3.9	-5.2	-5.9	-6.5	-8.8
REYNOLDSZAHL *E-04	0.489	0.463	0.410	0.360	0.320	0.286	0.256	0.229	0.205
DRUCKVERLUST (1.E+01 N/M**2)									
GES.X= 895.6(MM)	3876.	3501.	2834.	2330.	1949.	1662.	1401.	1203.	1030.
BIS X= 102.0(MM)	683.	617.	503.	401.	335.	281.	236.	199.	167.
BIS X= 236.1(MM)	844.	773.	626.	518.	439.	364.	308.	251.	214.
BIS X= 502.0(MM)	1925.	1749.	1407.	1160.	975.	822.	696.	586.	496.
BIS X= 670.0(MM)	2444.	2218.	1795.	1494.	1241.	1050.	906.	765.	659.
BIS X= 736.1(MM)	3013.	2729.	2210.	1836.	1529.	1298.	1117.	948.	826.
BIS X= 866.0(MM)	3341.	3035.	2455.	2053.	1722.	1471.	1276.	1085.	938.
EINTR.-DRUCK (BAR)	6.87	6.87	6.87	6.87	6.88	6.88	6.89	6.90	6.91
EINTR.-TEMP. GRADC	98.8	99.4	100.4	99.8	101.0	101.3	99.7	99.6	100.0

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD) GRAD C

1	83	644.0	270	608.2	601.4	593.2	594.5	597.3	599.6	601.9	608.4	613.7
2	83	589.0	270	550.2	544.1	536.7	538.7	542.5	545.2	548.9	557.5	565.0
3	83	534.0	270	474.1	468.1	461.0	463.1	466.9	471.2	477.4	488.9	500.4
4	83	479.0	270	375.0	372.5	371.7	379.9	391.2	405.4	422.4	435.5	444.6
5	83	410.0	270	468.0	461.9	454.2	453.4	453.5	453.9	451.5	451.4	450.4
6	83	355.0	270	387.6	382.3	375.0	373.8	373.7	374.6	373.1	374.3	374.5
7	91	644.0	270	622.3	615.3	606.8	608.9	609.8	612.3	613.4	617.8	619.5
8	91	589.0	270	571.2	564.5	556.4	558.9	560.0	562.3	564.3	568.9	572.0
9	91	534.0	270	505.5	498.9	490.3	492.8	494.7	497.4	500.2	506.4	514.4
10	91	479.0	270	386.5	383.7	381.3	388.8	398.4	414.7	437.9	453.2	462.8
11	91	410.0	270	491.9	486.1	475.0	474.3	472.3	471.4	468.5	467.1	464.2
12	91	355.0	270	418.5	413.2	403.2	402.7	400.9	400.4	398.2	397.1	394.5
13	7	644.0	30	620.4	619.5	612.5	615.7	615.7	617.0	616.0	619.7	621.9
14	7	589.0	30	565.4	561.9	551.2	554.4	555.1	557.4	557.8	562.2	565.7
15	7	534.0	30	494.0	488.6	476.0	477.4	477.6	479.9	481.0	486.0	491.3
16	7	479.0	30	354.9	351.8	344.2	347.6	352.6	363.0	380.3	400.6	416.2
17	7	410.0	30	457.5	457.4	453.7	459.5	460.4	462.2	458.9	457.5	454.6
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	629.4	629.1	619.8	624.2	621.8	623.6	623.1	626.3	628.3
20	22	589.0	90	570.8	567.1	555.4	559.6	559.1	562.3	563.6	568.2	571.8
21	22	534.0	90	501.3	495.2	481.4	483.7	483.0	486.9	489.4	495.2	502.0
22	22	479.0	90	354.4	351.7	345.7	351.2	358.5	375.0	400.8	427.8	443.7
23	22	410.0	90	444.5	446.4	447.7	456.9	457.8	460.1	458.1	457.1	453.2
24	22	355.0	90	384.8	382.7	376.9	380.3	379.7	381.9	381.7	381.7	379.3
25	78	644.0	150	611.2	610.1	601.9	608.9	607.9	612.3	612.7	616.7	618.4
26	78	589.0	150	557.5	553.5	542.8	549.3	549.2	554.6	556.6	561.5	564.3
27	78	534.0	150	493.3	487.5	474.9	479.5	479.5	484.8	488.2	494.2	499.7
28	78	479.0	150	357.5	353.8	347.0	355.0	361.8	381.6	408.5	429.8	443.1
29	78	410.0	150	440.8	441.7	441.7	454.7	456.2	460.0	458.9	457.8	454.0
30	78	355.0	150	387.1	384.6	378.8	384.9	384.8	388.0	387.8	387.2	384.5
31	110	644.0	30	625.4	617.9	600.5	602.5	601.1	606.4	607.1	610.8	614.1
32	110	589.0	30	576.9	569.4	553.1	554.9	553.5	558.1	559.2	563.8	568.8
33	110	534.0	30	504.5	497.8	483.8	485.3	484.8	490.9	493.8	500.6	509.5
34	110	479.0	30	395.1	392.7	386.0	391.6	398.5	411.2	423.3	439.3	453.2
35	110	410.0	30	489.8	483.6	468.7	468.4	464.7	466.7	464.4	462.5	461.2
36	110	355.0	30	417.8	412.4	399.8	398.7	395.6	397.2	395.4	393.7	392.5
37	42	644.0	150	624.2	622.3	612.0	612.0	613.1	617.0	617.7	618.5	621.4
38	42	589.0	150	571.2	566.6	553.6	557.7	554.9	560.0	561.8	564.0	568.1
39	42	534.0	150	377.5	380.5	380.1	385.8	383.4	385.6	385.8	383.4	384.2
40	42	479.0	150	362.7	360.6	354.9	360.4	367.2	384.7	406.1	426.6	443.3

41	42	410.0	150	449.7	451.7	450.9	461.1	461.1	464.5	463.3	459.2	455.6
42	42	355.0	150	393.9	391.8	384.4	387.2	386.4	388.7	388.6	386.2	383.9
43	62	644.0	30	578.3	573.1	560.4	564.3	559.8	564.4	567.6	569.2	574.4
44	62	589.0	30	509.2	502.5	488.5	490.5	486.5	490.4	495.0	499.6	507.9
45	62	534.0	30	636.4	632.9	622.4	627.5	621.3	624.8	626.8	627.0	631.1
46	62	479.0	30	366.3	362.0	356.9	363.7	369.5	387.8	408.7	427.7	443.8
47	62	410.0	30	457.2	456.8	456.9	466.4	464.1	466.7	464.9	460.6	458.3
48	62	355.0	30	399.2	394.9	390.0	393.3	390.0	392.0	390.9	387.9	386.8
49	23	644.0	150	606.8	600.9	593.2	599.7	596.6	602.4	607.1	608.9	615.1
50	23	589.0	150	548.3	541.6	533.9	539.4	537.5	543.8	549.6	553.3	561.3
51	23	534.0	150	479.2	471.8	463.9	467.9	466.4	471.9	477.2	482.5	492.4
52	23	479.0	150	358.8	354.6	353.2	360.1	364.9	377.2	394.0	411.7	431.0
53	23	410.0	150	456.9	452.5	452.0	460.1	457.8	460.7	460.9	458.1	457.2
54	23	355.0	150	387.0	382.2	379.3	383.2	380.5	382.6	382.4	381.0	381.0
55	114	644.0	330	599.5	595.5	591.3	599.5	597.8	603.6	607.3	609.1	615.1
56	114	589.0	330	548.6	543.7	538.1	544.8	544.1	550.4	554.7	557.2	564.3
57	114	534.0	330	479.2	473.2	465.3	468.6	468.1	473.5	478.6	483.0	492.4
58	114	479.0	330	355.3	351.5	346.6	351.1	357.1	371.0	389.8	410.8	434.8
59	114	410.0	330	450.4	446.9	442.9	448.7	447.8	450.9	451.2	450.1	450.9
60	114	355.0	330	385.2	381.1	374.6	376.2	374.5	376.8	377.2	377.1	378.3
61	120	644.0	90	600.4	596.7	593.0	601.4	599.7	604.6	607.5	608.7	614.6
62	120	589.0	90	547.2	542.5	536.7	544.4	543.4	548.5	551.5	553.7	560.6
63	120	534.0	90	480.2	474.8	467.2	472.0	471.5	476.1	479.3	483.9	493.6
64	120	479.0	90	372.0	370.2	369.0	377.6	385.0	398.4	412.2	424.8	440.0
65	120	410.0	90	446.0	442.8	438.5	444.1	442.2	445.0	445.5	444.9	446.5
66	120	355.0	90	376.4	372.3	366.7	368.7	366.5	367.7	367.3	367.6	369.2
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	550.0	547.0	542.6	547.9	545.5	549.6	554.0	558.9	567.8
69	97	534.0	210	485.3	480.9	474.4	477.6	475.7	479.4	483.3	489.8	500.9
70	97	479.0	210	351.7	348.7	345.4	349.9	353.3	363.4	377.3	394.4	414.9
71	97	410.0	210	441.9	441.6	444.2	452.8	451.8	454.1	453.7	453.6	455.6
72	97	355.0	210	381.9	379.3	377.0	380.8	378.3	379.7	378.9	379.4	381.2
73	0	0.0	0	98.1	99.5	102.1	102.8	104.9	102.7	100.7	99.6	100.4
74	0	0.0	0	95.3	95.1	94.0	91.7	94.1	97.0	93.8	93.8	96.6
75	0	0.0	0	102.8	103.7	105.1	104.9	104.1	104.1	104.5	105.2	103.0
76	0	896.9	0	370.4	367.4	366.2	373.7	378.6	389.8	400.9	414.5	428.0
77	0	896.9	0	357.6	356.5	353.5	357.1	367.4	374.7	381.8	396.6	409.9
78	0	896.9	0	368.8	366.4	363.5	367.7	374.8	383.9	394.6	406.9	422.1
79	0	430.6	270	138.4	139.6	142.9	145.6	149.0	151.5	155.0	160.4	166.5
80	0	430.6	210	138.3	139.6	143.3	146.3	149.8	152.6	156.3	162.0	167.7
81	0	430.6	90	143.1	144.4	147.6	150.1	153.6	156.3	160.7	166.4	172.3
82	0	430.6	30	141.7	143.0	145.9	147.7	151.1	153.8	157.9	163.8	169.8
83	0	630.6	270	239.1	240.3	244.7	250.2	257.9	265.6	275.5	287.6	301.2
84	0	630.6	210	234.8	236.3	241.5	247.7	255.5	263.4	273.4	285.3	298.8
85	0	630.6	30	242.0	243.3	247.8	253.7	262.1	270.3	281.4	293.7	307.7
86	0	630.6	90	243.5	244.7	249.3	255.5	263.5	271.3	282.1	294.3	308.0
87	0	830.6	210	320.2	321.2	325.7	331.8	340.1	348.7	359.4	371.6	384.4
88	0	830.6	270	322.5	323.6	328.1	334.2	342.7	351.0	361.2	373.4	386.0
89	0	830.6	30	327.0	328.1	332.0	337.9	346.5	354.6	365.0	376.8	388.9
90	0	830.6	90	325.4	326.5	331.0	337.3	345.6	353.8	364.7	376.2	388.1
91	0	0.0	0	93.5	94.2	95.7	93.2	93.4	94.2	94.9	94.4	95.5
92	0	0.0	0	93.5	94.2	95.7	93.2	93.4	94.2	94.9	94.4	95.5



DATUM 15. 5.79

VERSUCH NR.	10	11	12	13	14	15	16	17	1
DURCHSATZ (KG/S)	0.0059	0.0051	0.0045	0.0039	0.0034	0.0029	0.0023	0.0016	0.0016
EL. ENERGIE (KW)	11.1	10.0	9.5	8.5	8.0	7.4	6.6	4.6	3.9
WAERMEENERGIE (KW)	10.2	9.2	8.5	7.7	7.1	6.4	5.4	3.7	3.4
WAERMEBILANZ (O/O)	-8.9	-8.5	-10.8	-9.7	-11.2	-13.5	-18.6	-20.5	-10.7
REYNOLDSZAHL * E-04	0.180	0.157	0.134	0.115	0.098	0.083	0.068	0.045	0.047
DRUCKVERLUST (1.E+01 N/MM**2)									
GES.X= 895.6 (MM)	848.	679.	550.	439.	354.	0.	0.	0.	0.
BIS X= 102.0 (MM)	137.	107.	89.	68.	53.	0.	0.	0.	0.
BIS X= 236.1 (MM)	176.	146.	113.	94.	71.	0.	0.	0.	0.
BIS X= 502.0 (MM)	410.	334.	271.	224.	178.	0.	0.	0.	0.
BIS X= 670.0 (MM)	546.	454.	375.	294.	243.	0.	0.	0.	0.
BIS X= 736.1 (MM)	696.	579.	485.	387.	321.	0.	0.	0.	0.
BIS X= 866.0 (MM)	787.	657.	551.	440.	371.	0.	0.	0.	0.
EINTR.DRUCK (BAR)	6.91	6.91	6.91	6.91	6.92	6.93	6.93	6.91	6.97
EINTR.TEMP. GRADC	98.6	94.3	94.3	95.0	94.8	93.0	91.5	88.2	96.6

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD) GRAD C

1	83	644.0	270	611.7	607.9	615.5	611.0	617.8	619.0	611.6	595.0	736.0
2	83	589.0	270	564.5	560.7	568.0	563.5	568.9	568.9	559.9	541.5	683.2
3	83	534.0	270	505.0	504.5	513.4	509.2	513.6	512.3	503.0	484.6	622.1
4	83	479.0	270	446.7	442.7	447.8	442.6	445.7	444.4	434.6	415.4	540.4
5	83	410.0	270	444.9	436.0	437.0	428.5	430.0	424.6	408.0	379.2	499.2
6	83	355.0	270	372.9	367.2	368.9	362.5	364.6	359.8	343.9	318.2	421.6
7	91	644.0	270	618.5	618.8	627.7	621.1	625.3	624.9	613.9	595.7	742.2
8	91	589.0	270	575.0	576.9	586.5	580.4	583.6	581.6	567.9	545.2	688.7
9	91	534.0	270	522.1	524.9	535.2	531.2	535.6	534.3	520.4	494.7	630.1
10	91	479.0	270	465.1	459.4	464.6	459.3	463.4	462.9	450.2	427.4	555.9
11	91	410.0	270	456.7	444.1	443.9	433.9	435.0	431.0	413.6	381.9	502.5
12	91	355.0	270	388.6	378.1	378.2	370.4	372.5	369.3	353.3	325.0	429.7
13	7	644.0	30	620.4	613.1	624.4	619.2	626.9	630.3	623.1	614.5	623.3
14	7	589.0	30	566.4	561.5	573.6	568.5	574.2	576.2	567.7	556.0	567.8
15	7	534.0	30	496.6	498.2	513.9	510.4	516.4	517.9	509.3	495.4	502.2
16	7	479.0	30	428.1	428.2	440.0	434.9	439.2	440.0	431.7	419.5	418.3
17	7	410.0	30	446.7	431.5	431.7	420.1	419.2	413.8	396.1	366.8	362.3
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	627.0	618.1	631.5	625.3	632.3	634.8	627.1	617.1	622.8
20	22	589.0	90	573.1	568.2	582.3	575.5	580.1	579.9	569.1	554.6	564.1
21	22	534.0	90	509.0	509.7	526.8	521.8	527.9	526.1	513.3	493.3	497.8
22	22	479.0	90	449.9	443.7	453.3	446.6	451.3	450.6	439.1	419.9	415.7
23	22	410.0	90	444.7	428.4	427.6	414.1	411.0	404.2	384.7	351.9	343.5
24	22	355.0	90	372.9	359.6	359.5	349.5	348.8	344.6	327.1	293.3	284.2
25	78	644.0	150	618.1	609.8	622.3	615.7	623.2	627.9	619.4	606.7	630.1
26	78	589.0	150	567.1	561.5	574.1	567.5	572.6	575.7	565.1	549.5	573.6
27	78	534.0	150	506.2	505.7	520.7	515.5	519.9	522.6	511.5	493.0	510.9
28	78	479.0	150	449.4	443.1	451.8	445.2	447.7	449.6	438.5	420.4	428.7
29	78	410.0	150	446.4	430.8	431.4	420.1	416.4	411.6	393.0	363.1	366.8
30	78	355.0	150	378.4	365.2	367.3	359.9	357.8	353.7	336.3	305.7	299.3
31	110	644.0	30	616.4	614.3	624.9	618.3	622.9	627.7	615.4	601.3	433.5
32	110	589.0	30	572.7	571.9	583.9	577.8	581.5	583.9	569.1	550.2	373.5
33	110	534.0	30	516.5	518.1	531.7	527.0	531.4	534.5	519.2	496.8	293.5
34	110	479.0	30	460.0	455.4	462.9	456.4	459.9	462.8	448.7	430.1	233.4
35	110	410.0	30	455.8	441.8	444.3	435.0	435.1	434.7	415.9	385.5	175.2
36	110	355.0	30	388.0	375.8	378.7	371.4	372.9	373.3	356.2	327.1	135.2
37	42	644.0	150	621.8	611.0	624.7	618.3	624.1	631.7	621.2	617.1	569.7
38	42	589.0	150	571.5	564.0	578.5	572.4	575.6	579.7	566.3	557.9	519.3
39	42	534.0	150	387.1	383.2	394.9	391.8	392.9	393.6	381.8	371.8	348.0
40	42	479.0	150	453.2	447.1	457.7	452.7	456.0	459.5	444.4	430.1	400.7

41	42	410.0	150	447.4	429.8	429.8	417.4	414.4	410.4	388.1	359.3	343.1
42	42	355.0	150	377.3	362.8	362.7	353.2	353.2	351.5	330.8	299.4	288.2
43	62	644.0	30	575.9	568.5	584.4	577.8	582.2	585.8	571.1	559.1	306.9
44	62	589.0	30	514.6	514.1	533.8	530.3	534.7	535.7	517.8	499.1	241.3
45	62	534.0	30	629.8	619.0	633.8	627.2	635.2	641.8	630.2	622.5	357.3
46	62	479.0	30	450.7	446.2	458.6	454.8	459.8	461.8	446.2	428.3	190.6
47	62	410.0	30	449.4	432.2	432.5	419.6	416.8	411.5	389.1	358.1	141.5
48	62	355.0	30	379.7	365.3	366.1	355.9	354.8	351.9	332.1	299.8	115.9
49	23	644.0	150	613.4	602.3	613.8	606.5	616.3	623.9	613.0	603.9	639.8
50	23	589.0	150	561.7	551.6	563.1	555.3	563.0	568.2	556.9	545.7	602.6
51	23	534.0	150	496.8	491.2	506.2	500.1	507.3	511.3	500.0	487.2	560.3
52	23	479.0	150	442.8	438.2	447.9	441.9	447.0	448.3	435.3	420.3	496.4
53	23	410.0	150	450.2	436.7	440.4	430.1	430.5	424.6	403.7	375.4	474.6
54	23	355.0	150	376.1	365.9	370.1	364.2	366.7	361.6	343.2	317.2	412.5
55	114	644.0	330	614.1	604.9	617.8	610.3	620.1	625.8	613.9	604.1	667.7
56	114	589.0	330	565.7	558.4	571.7	563.8	572.1	575.7	563.0	549.9	624.7
57	114	534.0	330	498.0	496.6	513.4	507.1	514.5	517.9	505.8	492.6	574.3
58	114	479.0	330	446.5	440.5	448.8	441.6	447.8	450.3	438.0	424.8	509.7
59	114	410.0	330	445.3	431.7	435.6	423.5	424.0	419.5	399.4	375.0	474.4
60	114	355.0	330	374.8	364.1	368.0	359.4	361.9	358.4	339.5	315.9	411.0
61	120	644.0	90	611.7	603.0	619.2	611.9	621.3	627.0	614.7	604.6	588.7
62	120	589.0	90	559.8	553.5	571.7	564.2	571.9	575.2	561.3	549.0	543.0
63	120	534.0	90	498.9	498.2	519.1	512.2	518.8	520.7	505.4	491.6	482.1
64	120	479.0	90	448.9	443.5	455.7	447.2	452.4	453.1	438.1	423.7	408.2
65	120	410.0	90	439.2	423.2	428.2	415.9	417.5	413.6	393.3	369.5	361.6
66	120	355.0	90	363.8	351.0	355.8	346.9	349.9	346.4	327.9	304.2	295.4
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	566.8	556.8	576.7	568.2	576.1	578.8	563.9	550.9	312.0
69	97	534.0	210	503.8	498.7	520.0	514.6	523.4	526.8	511.9	495.4	251.2
70	97	479.0	210	427.1	425.1	441.0	436.6	446.6	451.4	439.3	425.9	196.0
71	97	410.0	210	446.9	430.1	434.5	420.9	422.2	418.7	399.3	374.0	154.0
72	97	355.0	210	374.3	360.6	365.2	355.9	358.4	355.2	337.9	312.0	125.8
73	0	0.0	0	101.3	97.5	95.0	95.4	96.2	94.3	91.3	87.5	96.7
74	0	0.0	0	94.8	92.2	92.6	94.2	92.0	92.1	90.1	87.9	96.3
75	0	0.0	0	99.6	93.1	95.4	95.4	96.3	92.5	92.9	89.2	96.8
76	0	896.9	0	437.0	442.2	467.4	479.1	501.0	519.8	529.0	530.7	506.7
77	0	896.9	0	419.5	428.5	453.8	471.9	499.3	520.0	532.1	546.2	522.4
78	0	896.9	0	432.2	438.2	462.6	477.2	501.7	518.4	529.7	531.2	497.6
79	0	430.6	270	171.6	179.7	187.9	197.9	213.8	229.0	239.3	254.5	294.0
80	0	430.6	210	173.0	180.5	188.8	198.7	214.5	229.8	240.3	255.9	300.4
81	0	430.6	90	177.5	185.3	193.4	203.4	219.3	234.9	245.2	259.5	335.7
82	0	430.6	30	175.5	183.8	192.1	202.5	218.8	235.0	245.2	258.9	312.1
83	0	630.6	270	314.4	336.9	355.0	371.5	393.4	413.8	426.0	442.3	497.6
84	0	630.6	210	311.2	332.0	349.2	365.6	387.8	408.4	421.2	438.4	500.1
85	0	630.6	30	321.0	343.3	359.5	375.2	396.9	417.1	428.4	444.1	521.9
86	0	630.6	90	320.9	342.0	358.1	373.2	394.3	414.2	426.1	441.9	548.6
87	0	830.6	210	394.6	410.8	422.7	434.4	449.5	463.4	471.6	481.4	503.7
88	0	830.6	270	396.1	412.1	424.1	435.8	451.0	464.6	473.1	483.3	499.4
89	0	830.6	30	398.8	414.6	426.2	437.6	452.5	466.2	474.1	484.5	528.0
90	0	830.6	90	397.8	413.5	425.4	436.8	451.9	465.4	473.5	483.8	539.5
91	0	0.0	0	97.9	95.4	92.3	91.1	95.3	90.5	91.1	85.6	92.2
92	0	0.0	0	97.9	95.4	92.3	91.1	95.3	90.5	91.1	85.6	92.2

DATUM 6. 6.79

VERSUCH NR.	1	2	3	4	5	6	7	8	9	10	11
DURCHSATZ (KG/S)	0.0184	0.0168	0.0155	0.0141	0.0125	0.0113	0.0101	0.0091	0.0081	0.0073	0.0066
EL. ENERGIE (KW)	12.6	11.2	10.3	10.1	8.8	8.0	7.5	7.2	7.0	6.6	6.0
WAERMEENERGIE (KW)	16.6	14.9	13.8	13.2	11.3	10.4	9.3	8.5	8.0	7.2	6.5
WAERMEBILANZ (O/O)	32.1	33.1	33.3	30.0	28.8	28.9	23.8	18.1	14.0	8.6	7.1
REYNOLDSZAHL *E-04	0.625	0.572	0.531	0.479	0.428	0.387	0.345	0.310	0.277	0.248	0.227
DRUCKVERLUST (1.E+01 N/M**2)											
GES. X= 895.6 (MM)	4521.	3879.	3364.	2864.	2358.	1966.	1603.	1344.	1120.	946.	794.
BIS X= 102.0 (MM)	927.	798.	699.	594.	489.	410.	335.	279.	234.	194.	164.
BIS X= 236.1 (MM)	1133.	993.	869.	738.	614.	519.	422.	363.	299.	255.	213.
BIS X= 502.0 (MM)	2468.	2132.	1860.	1579.	1298.	1089.	890.	757.	629.	532.	448.
BIS X= 670.0 (MM)	3058.	2609.	2273.	1927.	1593.	1332.	1086.	932.	776.	666.	558.
BIS X= 736.1 (MM)	3679.	3140.	2738.	2329.	1922.	1605.	1313.	1122.	944.	812.	687.
BIS X= 866.0 (MM)	3993.	3400.	2962.	2513.	2084.	1750.	1430.	1231.	1024.	878.	737.
EINTR.-DRUCK (BAR)	6.62	6.57	6.54	6.50	6.46	6.46	6.54	6.51	6.47	6.44	6.52
EINTR.-TEMP. GRADC	94.5	94.8	91.5	91.7	92.0	89.4	90.5	89.2	87.0	87.2	86.3

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD)GRAD C

1	83	644.0	270	625.2	622.4	615.9	617.9	615.1	612.8	621.2	628.4	642.6	644.7	635.3
2	83	589.0	270	578.1	572.5	563.3	562.5	558.0	556.7	566.0	573.5	587.3	590.8	582.8
3	83	534.0	270	492.7	488.0	479.2	479.1	476.5	477.3	488.7	498.4	514.2	521.9	517.7
4	83	479.0	270	379.3	379.3	376.0	381.1	384.3	388.5	403.2	419.2	438.1	450.3	447.1
5	83	410.0	270	468.3	465.2	457.2	456.8	453.3	451.5	457.7	460.2	467.5	467.4	453.9
6	83	355.0	270	384.1	381.0	373.3	372.9	369.5	367.4	372.5	374.1	380.2	381.5	370.6
7	91	644.0	270	662.0	655.3	642.3	638.4	629.9	625.9	633.4	636.8	651.0	655.9	643.8
8	91	589.0	270	603.1	596.7	584.7	581.7	574.3	571.4	579.8	583.0	598.8	606.1	595.3
9	91	534.0	270	528.3	522.2	511.3	508.9	502.5	500.2	509.3	513.9	532.9	544.1	536.7
10	91	479.0	270	406.1	404.8	398.6	400.6	399.9	402.3	416.0	426.8	454.8	475.3	470.4
11	91	410.0	270	491.7	490.1	481.8	482.1	476.4	472.9	476.9	472.5	481.5	481.8	467.0
12	91	355.0	270	417.5	414.6	406.5	406.8	402.2	398.8	402.1	397.0	404.7	405.6	392.4
13	7	644.0	30	591.3	590.6	583.9	589.0	587.1	587.6	598.1	595.4	615.3	623.2	609.4
14	7	589.0	30	549.3	548.2	541.3	545.9	543.0	541.9	550.0	545.2	563.4	571.9	559.9
15	7	534.0	30	492.4	487.8	478.1	479.6	474.6	472.3	479.1	473.8	492.2	502.9	494.1
16	7	479.0	30	353.1	348.0	340.7	342.6	340.0	340.8	350.7	354.0	379.9	404.1	406.7
17	7	410.0	30	443.9	444.2	439.2	448.4	448.5	450.5	460.4	455.8	471.8	476.0	459.4
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	584.3	585.0	577.4	584.5	582.1	583.1	596.0	592.1	616.0	626.8	611.1
20	22	589.0	90	547.9	547.0	539.0	544.9	540.9	539.8	549.1	542.9	564.8	576.4	562.2
21	22	534.0	90	498.3	491.7	480.7	481.9	474.8	471.9	479.1	473.1	494.3	507.6	496.4
22	22	479.0	90	348.9	342.9	335.0	337.4	334.7	336.8	349.5	356.0	389.0	417.6	420.0
23	22	410.0	90	433.0	433.7	429.9	441.6	444.5	449.0	461.5	456.4	473.3	478.9	461.4
24	22	355.0	90	381.1	378.5	372.5	379.4	377.3	377.2	384.1	377.9	391.2	397.0	383.4
25	78	644.0	150	596.7	595.1	587.0	596.5	591.8	592.5	604.5	596.6	620.5	633.4	617.9
26	78	589.0	150	555.2	552.2	543.9	552.4	545.8	544.2	554.3	546.4	569.2	583.0	569.9
27	78	534.0	150	501.6	494.5	484.9	489.4	480.9	478.0	486.6	480.1	502.2	517.9	508.8
28	78	479.0	150	361.7	355.2	347.6	352.2	347.5	348.5	362.2	369.1	406.7	445.5	432.2
29	78	410.0	150	433.2	431.4	427.6	441.7	444.3	444.3	456.9	451.3	467.5	474.3	458.7
30	78	355.0	150	381.6	377.8	372.2	381.6	376.8	376.4	384.4	378.6	391.1	397.4	385.1
31	110	644.0	30	125.8	126.9	125.7	128.7	129.8	130.9	134.9	137.6	143.7	150.4	151.7
32	110	589.0	30	121.1	122.0	120.5	123.2	123.7	124.1	127.1	128.6	132.5	137.6	138.2
33	110	534.0	30	114.8	115.4	113.7	115.6	115.3	115.1	116.7	117.3	118.9	122.1	122.5
34	110	479.0	30	106.6	107.0	105.2	106.5	105.8	105.2	105.7	105.5	105.2	106.9	107.0
35	110	410.0	30	100.8	101.3	99.4	100.8	100.1	99.1	99.0	98.3	97.3	98.2	97.7
36	110	355.0	30	98.4	98.9	96.9	97.9	97.0	95.8	95.4	94.5	93.0	93.4	92.9
37	42	644.0	150	131.7	132.9	131.1	135.3	135.4	136.5	141.3	143.9	153.7	165.4	167.7
38	42	589.0	150	127.0	128.0	126.1	129.9	129.7	130.9	134.8	136.3	143.0	151.7	152.8
39	42	534.0	150	116.0	118.5	116.6	119.7	119.2	119.5	121.7	121.9	125.1	130.6	130.9
40	42	479.0	150	102.9	103.5	101.5	103.2	102.1	101.4	101.6	101.2	101.0	102.5	102.1

41	42	410.0	150	137.2	137.4	135.9	140.1	139.6	140.1	143.7	144.4	149.5	155.0	154.5
42	42	355.0	150	96.0	96.4	94.5	95.6	94.5	93.6	93.1	92.4	90.9	91.2	90.3
43	62	644.0	30	155.3	155.3	153.4	159.1	158.1	159.7	165.4	167.3	176.6	185.7	185.5
44	62	589.0	30	98.3	98.9	97.1	98.3	97.5	96.7	96.8	96.6	96.0	97.1	96.3
45	62	534.0	30	168.7	168.6	166.4	173.5	172.1	174.1	181.6	185.0	198.5	210.9	211.4
46	62	479.0	30	114.5	114.7	113.0	115.6	114.7	114.1	115.3	114.8	115.5	117.9	117.1
47	62	410.0	30	102.1	102.5	101.0	103.2	102.6	102.1	103.3	103.1	103.1	104.5	103.4
48	62	359.0	30	97.1	97.4	96.0	97.6	97.1	96.4	97.2	96.7	95.4	96.1	95.3
49	23	644.0	150	573.9	560.8	551.6	573.0	551.9	553.6	563.9	560.9	584.0	593.1	580.3
50	23	589.0	150	528.0	516.3	509.5	530.9	511.1	512.9	521.5	518.8	540.9	551.4	540.2
51	23	534.0	150	468.0	456.8	450.7	469.2	451.5	452.3	459.0	457.1	478.6	491.4	483.8
52	23	479.0	150	353.8	343.8	338.8	352.2	340.2	342.5	351.4	356.6	385.1	405.6	407.7
53	23	410.0	150	460.0	449.1	445.3	467.7	450.6	451.5	457.8	453.5	470.2	473.9	459.4
54	23	355.0	150	390.5	380.4	376.9	394.3	379.1	378.5	381.6	377.4	390.0	392.3	380.7
55	114	644.0	330	100.4	101.4	100.0	101.9	101.7	101.4	101.9	102.1	102.4	104.7	105.7
56	114	589.0	330	99.1	100.0	98.5	100.1	99.9	99.3	99.6	99.4	99.1	100.5	101.0
57	114	534.0	330	97.5	98.3	96.7	98.2	97.9	97.0	96.9	96.5	95.5	96.2	96.3
58	114	479.0	330	96.0	96.4	94.9	96.1	95.9	94.5	94.1	93.2	91.9	91.6	91.3
59	114	410.0	330	96.0	96.5	94.9	96.1	95.9	94.6	94.1	93.1	91.9	91.4	90.9
60	114	355.0	330	95.5	96.1	94.3	95.4	95.4	94.0	93.3	92.0	90.7	89.9	89.3
61	120	644.0	90	100.6	101.5	100.5	102.6	103.0	102.9	104.2	104.6	105.3	107.7	108.5
62	120	589.0	90	98.5	99.4	98.2	100.1	100.3	99.9	101.0	101.1	101.0	102.6	102.9
63	120	534.0	90	96.5	97.3	95.9	97.6	97.8	97.2	97.8	97.6	96.9	97.6	97.6
64	120	479.0	90	95.6	96.3	94.8	96.3	96.4	95.6	95.9	95.3	94.4	94.5	94.0
65	120	410.0	90	95.3	96.0	94.6	96.0	96.1	95.3	95.6	95.0	94.1	93.9	93.3
66	120	355.0	90	94.7	95.3	93.8	95.1	95.1	94.1	94.2	93.2	91.9	91.6	90.7
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	130.3	130.1	128.9	133.8	132.9	134.0	137.6	140.2	144.6	148.7	148.6
69	97	534.0	210	120.4	120.3	118.8	122.7	121.8	122.3	124.8	126.3	128.4	131.2	130.9
70	97	479.0	210	106.2	106.4	105.1	107.4	107.0	106.8	108.3	109.2	109.9	111.6	111.2
71	97	410.0	210	99.6	100.1	98.9	100.9	100.8	100.4	101.6	102.2	102.4	103.7	103.1
72	97	355.0	210	95.8	96.3	94.9	96.7	96.6	96.0	96.7	96.8	96.1	96.5	95.9
73	0	0.0	0	93.3	94.0	91.8	93.1	92.6	91.7	91.3	91.6	90.4	89.8	89.8
74	0	0.0	0	96.3	97.4	91.7	90.3	91.3	85.6	89.4	86.5	83.1	84.3	82.4
75	0	0.0	0	93.9	93.1	91.0	91.7	92.1	90.8	90.9	89.5	87.6	87.6	86.6
76	0	896.9	0	252.7	252.0	249.5	257.5	252.6	251.3	252.7	253.1	255.8	255.9	252.3
77	0	896.9	0	238.1	235.1	232.0	240.9	234.8	236.3	236.7	238.2	243.9	245.2	244.6
78	0	896.9	0	314.9	311.0	306.6	317.0	308.9	310.8	314.8	317.6	325.2	328.0	324.7
79	0	430.6	270	102.6	104.0	103.1	105.2	106.1	106.3	107.9	108.9	108.9	111.2	112.8
80	0	430.6	210	115.0	115.9	114.8	117.4	118.0	118.7	121.3	123.7	125.6	129.4	131.7
81	0	430.6	90	130.6	131.0	129.6	132.1	132.7	133.1	136.2	139.3	142.3	147.3	150.5
82	0	430.6	30	122.0	122.6	121.3	123.5	123.9	124.0	126.4	128.6	130.4	134.7	137.4
83	0	630.6	270	123.6	126.2	126.2	129.8	133.0	135.6	140.2	145.4	148.8	155.5	161.4
84	0	630.6	210	166.6	167.6	166.6	170.8	173.2	175.9	182.0	189.3	195.8	204.6	210.6
85	0	630.6	30	187.4	187.5	186.0	190.2	192.2	194.8	201.7	210.2	218.5	228.8	235.6
86	0	630.6	90	220.5	219.9	218.1	223.1	224.8	227.6	235.3	245.2	255.7	268.2	275.3
87	0	830.6	210	208.0	208.9	208.0	212.2	215.0	217.5	223.5	229.8	234.2	241.1	245.5
88	0	830.6	270	147.0	150.9	151.7	156.4	161.1	164.7	170.3	176.1	179.9	187.1	193.2
89	0	830.6	30	236.5	236.4	234.5	238.3	241.2	243.9	250.4	257.3	262.4	270.1	275.3
90	0	830.6	90	285.6	283.9	281.5	285.9	287.0	288.6	295.0	302.5	308.5	315.6	319.2
91	0	0.0	0	90.2	92.1	89.3	89.0	88.3	85.7	85.8	84.5	83.0	84.6	81.9
92	0	0.0	0	90.2	92.1	89.3	89.0	88.3	85.7	85.8	84.5	83.0	84.6	81.9

DATUM 6. 6.79

VERSUCH NR.	12	13	14	15	16	17	18	19	20	21
DURCHSATZ (KG/S)	0.0058	0.0052	0.0046	0.0040	0.0036	0.0032	0.0028	0.0025	0.0022	0.0020
EL. ENERGIE (KW)	5.9	5.4	5.0	4.7	4.4	4.0	3.8	3.6	3.3	3.1
WAERMEENERGIE (KW)	6.0	5.4	4.9	4.6	4.3	3.9	3.4	3.2	2.8	2.7
WAERMEILANZ (O/O)	1.6	-0.2	-1.2	-2.7	-2.6	-2.7	-9.7	-10.2	-15.6	-14.3
REYNOLDSZAHL*E-04	0.197	0.175	0.154	0.134	0.120	0.106	0.092	0.082	0.072	0.065
DRUCKVERLUST (1.E+01 N/M**2)										
GES.X= 895.6(MM)	642.	523.	424.	338.	277.	221.	169.	0.	0.	0.
BIS X= 102.0(MM)	132.	110.	89.	72.	56.	45.	35.	0.	0.	0.
BIS X= 236.1(MM)	176.	141.	119.	96.	89.	66.	56.	0.	0.	0.
BIS X= 502.0(MM)	367.	303.	255.	210.	185.	152.	128.	0.	0.	0.
BIS X= 670.0(MM)	462.	382.	316.	265.	228.	192.	158.	0.	0.	0.
BIS X= 736.1(MM)	572.	474.	397.	334.	287.	245.	201.	0.	0.	0.
BIS X= 866.0(MM)	615.	518.	430.	363.	315.	265.	222.	0.	0.	0.
EINTR.-DRUCK (BAR)	6.48	6.46	6.43	6.39	6.42	6.38	6.34	6.30	6.28	6.25
EINTR.-TEMP. GRADC	85.4	84.0	83.8	80.7	80.8	80.2	80.9	80.8	79.7	75.1

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD) GRAD C

1	83	644.0	270	650.6	646.3	637.8	638.1	648.6	652.6	648.8	660.0	656.8	659.0
2	83	589.0	270	598.4	595.5	586.7	585.4	593.3	594.3	587.4	594.8	589.8	590.0
3	83	534.0	270	537.5	539.2	532.6	531.3	538.0	538.9	532.1	538.7	533.3	532.8
4	83	479.0	270	463.8	464.0	457.8	456.9	463.7	465.0	458.9	464.5	459.6	458.2
5	83	410.0	270	460.0	455.2	445.9	440.9	445.2	445.7	434.8	435.9	426.8	421.8
6	83	355.0	270	378.2	377.0	370.5	366.5	370.7	372.4	362.8	363.5	356.0	351.2
7	91	644.0	270	660.1	659.1	649.1	646.1	653.0	654.2	646.7	654.3	649.5	648.8
8	91	589.0	270	614.4	616.2	607.7	604.9	610.0	609.5	599.9	605.4	599.4	598.0
9	91	534.0	270	559.7	565.2	559.3	558.9	564.4	565.2	554.8	558.6	551.1	547.6
10	91	479.0	270	488.3	488.4	481.3	480.7	486.2	489.0	481.0	486.0	480.4	477.8
11	91	410.0	270	473.1	466.5	455.1	449.9	452.0	453.7	442.9	444.4	435.4	429.5
12	91	355.0	270	397.7	391.9	382.0	377.2	379.4	382.2	372.9	374.2	367.0	361.7
13	7	644.0	30	624.3	620.7	611.7	612.5	618.3	622.5	613.7	621.8	617.8	615.9
14	7	589.0	30	577.0	576.2	568.9	570.1	575.7	579.2	569.6	576.9	573.3	571.6
15	7	534.0	30	515.9	520.5	517.6	521.5	528.1	531.9	521.8	528.4	524.4	521.8
16	7	479.0	30	441.5	450.0	447.5	448.1	452.5	455.8	446.9	453.0	450.1	448.1
17	7	410.0	30	464.2	453.8	440.0	432.9	431.9	430.9	417.7	418.8	410.6	403.6
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	627.9	624.2	615.2	617.2	624.1	630.5	623.6	637.4	636.3	636.6
20	22	589.0	90	580.8	579.0	571.7	573.9	579.2	583.7	575.1	587.7	586.7	586.9
21	22	534.0	90	519.2	522.6	521.1	527.1	533.3	537.0	526.9	536.9	534.0	532.6
22	22	479.0	90	454.4	464.6	464.8	466.7	469.7	471.2	460.2	468.1	464.6	461.6
23	22	410.0	90	465.5	453.8	440.3	432.8	429.6	425.6	409.6	412.0	403.0	395.1
24	22	355.0	90	387.5	378.2	367.4	362.2	360.6	359.5	347.1	349.6	341.3	333.2
25	78	644.0	150	634.7	628.9	620.2	622.3	628.1	633.3	623.6	639.5	638.0	637.5
26	78	589.0	150	589.3	585.6	577.3	579.1	582.7	586.5	574.9	589.6	587.9	587.6
27	78	534.0	150	533.3	535.7	530.7	534.3	537.3	540.3	527.2	540.1	537.0	535.9
28	78	479.0	150	476.8	473.9	466.2	466.5	467.6	469.7	456.5	468.1	464.9	463.2
29	78	410.0	150	462.6	452.4	441.6	437.8	434.9	432.5	415.7	422.3	414.0	408.8
30	78	355.0	150	388.1	379.8	371.5	369.9	369.0	367.7	353.5	359.0	350.8	345.1
31	110	644.0	30	159.8	164.5	168.6	177.2	189.6	201.4	214.9	230.5	243.8	256.3
32	110	589.0	30	144.3	147.8	150.9	157.6	166.8	175.5	185.1	197.7	208.7	219.2
33	110	534.0	30	126.5	128.8	131.1	136.4	143.0	148.7	154.8	164.0	172.6	180.7
34	110	479.0	30	108.7	109.6	111.1	115.2	120.1	124.0	129.0	135.9	142.6	148.7
35	110	410.0	30	97.9	97.5	97.4	98.5	100.1	100.9	102.8	106.4	110.2	114.1
36	110	355.0	30	92.2	91.3	90.5	90.7	91.2	90.7	91.6	93.3	95.1	96.4
37	42	644.0	150	180.5	185.5	189.2	201.1	213.8	226.0	232.0	248.9	258.8	267.7
38	42	589.0	150	162.2	165.2	167.4	176.3	186.6	196.7	201.6	216.5	225.9	234.3
39	42	534.0	150	136.0	137.1	137.6	143.5	150.5	157.6	162.0	174.0	182.2	189.1
40	42	479.0	150	104.1	105.2	105.7	109.8	114.1	117.2	120.0	127.7	133.9	138.4

41	42	410.0	150	160.9	162.1	162.4	167.9	174.4	183.1	189.7	206.0	216.6	224.8
42	42	355.0	150	89.9	88.9	87.0	87.4	87.6	86.2	85.8	87.0	87.8	86.9
43	62	644.0	30	197.1	201.4	204.2	214.5	225.1	239.0	246.5	266.9	278.3	287.3
44	62	589.0	30	96.8	96.1	94.6	95.8	96.7	96.1	96.1	98.8	101.0	101.6
45	62	534.0	30	227.1	233.8	238.9	253.6	267.8	284.0	291.2	313.9	325.8	335.3
46	62	479.0	30	120.2	121.4	121.3	126.9	131.5	136.3	140.2	150.4	157.7	162.8
47	62	410.0	30	104.3	103.7	102.0	103.5	104.7	104.6	104.9	109.1	112.3	113.4
48	62	355.0	30	95.1	94.2	92.1	92.4	92.4	90.9	90.2	91.8	93.0	92.1
49	23	644.0	150	586.9	580.0	573.3	577.9	575.0	576.4	561.1	566.8	562.8	559.0
50	23	589.0	150	548.0	542.3	537.3	543.9	542.0	544.1	528.8	533.8	529.1	524.4
51	23	534.0	150	494.8	492.2	489.8	501.1	501.7	506.4	492.5	498.0	493.9	489.5
52	23	479.0	150	432.8	444.3	447.5	456.9	453.4	455.1	440.3	443.6	438.2	432.7
53	23	410.0	150	459.9	450.7	443.9	448.9	444.0	444.3	428.4	429.3	421.6	414.2
54	23	355.0	150	381.2	375.6	372.4	379.7	377.1	379.1	366.5	368.1	362.7	356.6
55	114	644.0	330	108.5	110.1	111.6	115.9	121.3	126.5	134.1	142.7	151.0	159.2
56	114	589.0	330	102.6	103.4	104.1	106.7	109.9	113.3	119.0	125.9	132.7	139.0
57	114	534.0	330	97.0	97.1	97.0	98.4	99.9	101.4	104.8	109.4	114.1	118.3
58	114	479.0	330	91.2	90.7	90.5	91.5	92.4	93.1	95.3	98.2	101.2	103.2
59	114	410.0	330	90.3	89.5	88.6	88.8	88.5	88.4	89.7	91.7	93.6	94.4
60	114	355.0	330	88.6	87.7	86.7	86.7	85.9	85.4	86.2	87.7	89.2	89.0
61	120	644.0	90	111.5	113.8	115.7	121.0	127.2	132.6	139.5	148.2	156.8	165.1
62	120	589.0	90	104.7	105.9	106.6	109.9	113.5	116.5	121.4	127.8	134.7	141.0
63	120	534.0	90	98.2	98.5	98.4	99.9	101.3	102.0	104.4	108.1	112.4	115.7
64	120	479.0	90	93.7	93.4	92.5	93.1	93.5	93.4	94.9	97.3	100.1	101.3
65	120	410.0	90	92.7	92.1	91.0	91.1	91.0	90.5	91.6	93.3	95.4	95.8
66	120	355.0	90	89.8	89.0	87.7	87.3	86.8	85.8	86.4	87.4	88.8	88.3
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	153.9	157.1	159.7	166.5	172.2	179.2	185.6	197.4	207.3	215.3
69	97	534.0	210	134.3	136.6	138.6	144.7	148.9	153.4	157.4	165.5	172.8	178.5
70	97	479.0	210	111.5	112.0	112.4	115.6	118.7	121.4	124.4	130.5	136.7	140.9
71	97	410.0	210	102.9	102.6	101.7	102.3	102.5	102.4	102.9	105.4	108.6	110.4
72	97	355.0	210	95.0	94.4	93.3	93.2	93.3	92.9	93.1	94.0	95.6	95.4
73	0	0.0	0	87.7	87.3	87.0	82.7	82.9	81.9	82.4	81.4	80.9	75.6
74	0	0.0	0	82.2	83.1	81.6	79.1	80.0	79.9	79.6	79.8	79.5	73.8
75	0	0.0	0	86.4	81.5	82.9	80.4	79.4	78.7	80.5	81.2	78.8	75.8
76	0	896.9	0	259.0	262.4	270.3	277.8	288.2	292.6	297.0	310.6	311.3	322.5
77	0	896.9	0	253.0	254.1	260.3	272.3	280.9	287.4	289.2	302.0	303.6	318.1
78	0	896.9	0	334.8	339.2	344.3	354.1	358.6	359.8	367.2	377.3	370.2	370.4
79	0	430.6	270	115.2	117.7	120.6	125.2	132.0	136.3	141.8	146.2	150.1	155.0
80	0	430.6	210	136.0	140.0	144.8	152.9	162.1	168.3	174.3	179.9	183.9	188.8
81	0	430.6	90	157.5	163.2	169.2	179.5	192.1	200.3	209.2	217.1	222.4	229.0
82	0	430.6	30	143.2	147.9	152.9	161.5	172.2	179.3	187.2	194.1	198.9	204.8
83	0	630.6	270	170.3	178.3	185.3	195.8	209.4	217.8	228.3	236.7	244.2	253.5
84	0	630.6	210	222.6	231.9	239.8	251.2	265.4	273.3	282.5	290.8	297.3	305.9
85	0	630.6	30	250.6	261.6	270.6	284.2	300.3	308.6	318.0	327.2	333.5	342.0
86	0	630.6	90	293.4	306.0	315.3	329.7	345.7	353.4	361.8	371.0	376.4	384.2
87	0	830.6	210	254.0	261.2	267.2	275.6	287.9	295.2	303.7	310.6	315.3	321.2
88	0	830.6	270	202.5	210.6	217.9	227.9	241.1	250.1	260.8	268.6	275.3	283.5
89	0	830.6	30	286.0	294.3	300.6	309.6	322.2	328.3	335.5	341.2	344.5	348.8
90	0	830.6	90	329.3	336.2	341.0	348.5	359.9	364.0	369.3	374.1	375.9	378.5
91	0	0.0	0	81.1	82.0	80.2	81.0	78.0	78.3	78.0	75.4	77.3	77.2
92	0	0.0	0	81.1	82.0	80.2	81.0	78.0	78.3	78.0	75.4	77.3	77.2

DATUM 31. 7.79

VERSUCH NR.	1	2	3	4	5	6	7	8	9	10	11	12	13	15	16	17
DURCHSATZ (KG/S)	0.1533	0.1393	0.1259	0.1127	0.1015	0.0909	0.0817	0.0740	0.0681	0.0620	0.0555	0.0501	0.0447	0.0360	0.0326	0.0295
EL. ENERGIE (KW)	96.2	89.3	82.1	72.9	67.5	60.6	54.3	50.7	45.1	41.6	38.1	34.3	31.0	25.8	23.2	21.1
WAERMEENERGIE(KW)	132.3	124.2	113.7	101.0	93.4	83.6	74.7	69.1	60.8	56.2	51.0	45.7	40.6	34.0	30.4	27.4
WAERMEBILANZ(O/O)	37.6	39.1	38.5	38.6	38.4	37.9	37.7	36.4	34.9	35.2	33.7	33.1	31.0	31.8	31.2	29.6
REYNOLDSZAHL*E-04	5.161	4.674	4.210	3.779	3.409	3.043	2.736	2.470	2.289	2.077	1.855	1.674	1.498	1.196	1.085	0.983
DRUCKVERLUST (L.E+01 N/M**2)																
GES.X= 895.6(MM)	49278.	41397.	34211.	27704.	22649.	18412.	15048.	12553.	10832.	9063.	7392.	6095.	4918.	3283.	2693.	2219.
BIS X= 102.0(MM)	9287.	7818.	6459.	5256.	4303.	3506.	2881.	2412.	2092.	1763.	1446.	1198.	978.	660.	549.	459.
BIS X= 236.1(MM)	11068.	9334.	7756.	6303.	5193.	4209.	3490.	2912.	2537.	2131.	1756.	1467.	1201.	813.	675.	567.
BIS X= 502.0(MM)	27043.	22743.	18800.	15245.	12489.	10091.	8289.	6887.	5942.	4983.	4044.	3340.	2727.	1825.	1503.	1254.
BIS X= 670.0(MM)	35031.	29447.	24311.	19629.	16071.	12993.	10640.	8787.	7597.	6344.	5163.	4238.	3418.	2281.	1881.	1563.
BIS X= 736.1(MM)	41956.	35243.	29111.	23491.	19241.	15557.	12732.	10507.	9078.	7581.	6179.	5075.	4089.	2735.	2252.	1873.
BIS X= 866.0(MM)	44431.	37403.	30917.	25014.	20524.	16589.	13599.	11260.	9719.	8131.	6628.	5450.	4415.	2957.	2431.	2036.
EINTR.DRUCK (BAR)	34.73	34.70	34.61	34.53	34.48	34.40	34.36	34.36	34.25	34.26	34.26	34.23	34.18	34.17	34.16	34.12
EINTR.TEMP. GRADC	106.6	106.3	107.4	106.4	102.8	104.8	105.7	105.9	104.9	106.1	105.7	106.3	106.0	108.4	107.4	107.4

TE R AX RAD T  
NR NR. POS POS  
(MM) (GRD)GRAD C

1	83	644.0	270	624.3	629.1	632.9	622.3	632.9	630.1	625.0	634.6	610.8	614.2	621.6	618.6	618.5	639.3	635.0	637.3
2	83	589.0	270	571.9	577.8	581.0	573.0	583.8	583.0	579.0	589.2	568.7	573.0	581.7	580.6	582.4	606.0	602.8	604.2
3	83	534.0	270	511.9	516.4	518.2	510.4	518.3	517.6	513.5	521.9	504.1	507.6	514.1	513.8	514.0	531.6	526.6	524.7
4	83	479.0	270	439.0	441.4	441.2	432.4	436.7	434.3	429.0	433.3	417.5	418.7	420.9	418.7	415.2	421.3	414.6	410.6
5	83	410.0	270	476.0	479.7	481.0	472.7	479.9	479.5	474.9	483.0	465.7	470.4	475.9	476.2	476.1	493.9	489.8	489.9
6	83	355.0	270	414.8	417.0	417.1	408.7	413.4	412.8	408.4	414.2	400.1	403.4	407.2	407.8	407.3	421.0	416.4	414.7
7	91	644.0	270	641.5	650.6	655.6	647.4	662.1	662.8	657.0	669.0	644.5	650.0	657.5	655.3	654.9	679.1	676.6	681.7
8	91	589.0	270	589.5	597.1	600.6	592.2	604.7	605.0	599.9	611.7	590.2	596.3	603.9	603.3	603.9	627.1	624.5	627.8
9	91	534.0	270	537.9	543.6	545.9	538.2	547.6	548.0	542.9	553.1	533.6	538.7	546.7	545.5	546.2	567.1	563.7	564.9
10	91	479.0	270	474.9	477.3	477.2	467.5	471.9	467.9	460.3	464.1	446.3	446.2	448.0	442.5	438.0	441.8	434.9	430.9
11	91	410.0	270	481.7	484.8	486.2	477.8	484.8	484.1	479.5	487.8	470.6	475.1	482.2	480.9	482.0	500.2	497.2	498.4
12	91	355.0	270	433.9	436.0	435.3	426.7	431.2	429.9	425.1	431.6	416.3	419.8	425.2	424.3	425.2	440.6	437.3	437.8
13	7	644.0	30	610.4	615.9	619.6	607.9	616.1	614.8	607.7	617.5	591.5	594.1	598.6	595.1	592.4	609.0	601.8	603.2
14	7	589.0	30	555.3	559.5	561.9	549.8	556.2	553.6	548.1	557.2	534.1	537.8	542.2	540.9	540.6	559.4	553.2	555.9
15	7	534.0	30	509.4	512.4	513.4	502.6	506.2	503.6	498.3	507.5	486.3	490.6	495.3	494.7	495.4	513.8	509.0	511.2
16	7	479.0	30	429.1	431.3	430.3	420.0	419.0	415.6	409.3	414.5	396.9	398.2	399.2	396.3	393.7	398.8	391.4	389.1
17	7	410.0	30	448.0	451.2	451.0	441.2	444.2	441.2	436.8	445.3	427.2	431.4	436.1	435.6	437.3	454.4	449.8	451.8
18	7	355.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	22	644.0	90	569.8	574.9	579.0	569.5	578.5	577.2	572.1	583.7	560.9	566.3	572.6	571.3	571.7	592.7	587.3	590.4
20	22	589.0	90	533.5	538.7	541.5	532.9	539.6	538.9	534.1	544.6	523.5	528.7	535.0	533.8	534.2	553.0	548.1	551.0
21	22	534.0	90	505.2	509.2	510.6	501.3	504.8	503.0	498.7	507.7	488.3	493.1	495.3	498.4	499.7	519.1	516.1	518.7
22	22	479.0	90	437.3	440.0	440.0	430.4	429.9	425.7	419.4	423.6	406.2	406.8	407.8	403.5	399.0	402.6	395.0	390.9
23	22	410.0	90	439.6	441.8	443.6	434.9	437.2	435.3	431.4	439.7	422.4	427.0	432.6	431.8	432.2	448.7	444.4	445.2
24	22	355.0	90	399.2	400.4	401.1	392.7	392.4	391.2	387.7	393.9	379.2	382.7	387.8	387.9	387.7	402.7	399.1	399.0
25	78	644.0	150	614.2	619.6	623.3	610.5	618.1	614.2	606.1	615.1	590.7	594.9	601.6	598.7	597.8	616.4	609.6	609.6
26	78	589.0	150	576.3	581.1	584.2	571.4	579.0	575.4	568.8	576.3	554.2	558.7	564.7	562.3	560.6	578.0	571.3	570.9
27	78	534.0	150	530.4	533.0	535.8	524.4	530.4	526.7	521.2	527.3	507.9	512.3	518.0	516.0	514.6	532.7	527.1	527.4
28	78	479.0	150	456.4	456.5	457.2	446.9	448.7	445.1	438.2	440.1	422.8	423.2	424.6	420.4	415.3	420.0	411.7	406.7
29	78	410.0	150	451.2	453.1	455.1	445.4	449.8	448.7	443.4	449.3	432.3	435.9	441.6	440.7	439.5	456.0	451.2	451.5
30	78	355.0	150	416.2	417.2	417.7	407.8	410.3	408.7	403.5	407.9	393.2	395.0	400.0	399.0	397.3	410.7	406.2	406.1
31	110	644.0	30	113.5	114.8	115.5	116.1	114.9	117.2	118.8	120.8	119.4	120.8	122.8	124.7	125.7	130.6	131.2	132.3
32	110	589.0	30	113.4	115.3	116.1	116.1	115.0	117.2	118.9	120.4	118.9	120.0	121.9	123.6	124.2	128.3	128.4	129.3
33	110	534.0	30	111.7	113.8	114.3	114.3	112.8	115.0	116.3	117.7	116.2	117.2	118.7	120.3	120.6	123.7	123.6	124.0
34	110	479.0	30	108.6	111.0	111.5	111.1	109.2	111.3	112.2	113.0	112.0	112.7	113.6	115.0	117.0	116.9	116.8	
35	110	410.0	30	104.5	106.4	107.1	106.2	104.1	106.3	107.3	107.8	106.8	107.3	108.3	109.3	109.4	110.8	110.9	110.4
36	110	355.0	30	104.1	105.6	106.2	105.3	103.1	105.1	106.2	106.6	105.4	106.0	107.0	107.9	107.7	108.9	108.7	108.4
37	42	644.0	150	129.2	131.9	132.9	131.5	129.2	131.8	133.1	134.5	131.6	132.6	134.8	135.5	135.6	140.0	140.3	141.3
38	42	589.0	150	127.0	130.0	130.3	128.9	126.5	128.6	129.8	131.3	128.3	128.9	131.1	131.6	131.3	135.4	135.6	136.4
39	42	534.0	150	116.8	119.4	119.2	118.5	115.7	117.9	118.9	120.4	118.2	118.7	121.1	121.7	121.4	125.2	125.5	126.2
40	42	479.0	150	107.7	109.7	109.6	109.0	106.1	108.0	109.0	110.1	108.2	109.0	110.7	111.5	111.1	113.2	113.2	113.6

41	42	410.0	150	137.2	138.2	140.1	139.3	138.8	141.1	141.5	143.5	140.2	141.7	143.7	144.9	145.2	150.3	150.0	150.0
42	42	355.0	150	105.3	106.6	106.0	105.6	102.3	103.5	105.0	105.7	104.1	105.5	106.3	107.0	106.7	107.8	107.8	107.7
43	62	644.0	30	156.4	158.1	160.0	158.5	158.9	160.7	160.3	162.5	158.3	159.7	162.2	162.9	163.0	168.8	168.4	168.5
44	62	589.0	30	105.8	106.9	106.6	105.9	103.4	104.6	105.8	106.8	105.4	106.5	107.6	108.3	107.7	109.3	109.0	109.1
45	62	534.0	30	170.1	171.4	173.3	171.6	171.9	173.5	172.5	175.1	169.8	171.1	173.8	174.2	174.4	181.0	180.6	180.9
46	62	479.0	30	121.3	121.8	123.0	123.0	121.3	123.4	123.8	125.0	122.8	123.8	125.6	126.6	126.5	129.8	129.5	128.9
47	62	410.0	30	109.3	110.6	111.4	111.2	109.6	111.6	112.3	113.2	111.3	112.0	113.5	114.6	114.4	117.0	116.8	116.2
48	62	355.0	30	106.1	108.0	108.0	108.0	106.0	108.1	108.7	109.4	107.6	108.4	109.6	110.4	110.1	112.3	112.0	111.4
49	23	644.0	150	564.9	570.7	575.5	567.1	578.2	578.3	572.7	583.9	561.8	566.1	574.9	572.7	572.8	596.5	592.8	595.7
50	23	589.0	150	519.0	522.3	527.2	519.4	529.5	530.2	526.1	536.5	516.7	520.9	529.8	528.1	528.8	551.2	547.1	549.2
51	23	534.0	150	475.9	479.2	481.0	472.8	480.1	479.8	476.3	484.6	467.2	471.1	478.7	477.3	478.7	498.4	494.4	495.3
52	23	479.0	150	420.5	422.0	422.3	413.9	416.7	414.8	409.6	414.0	398.0	399.0	401.8	398.0	395.4	402.1	395.2	391.7
53	23	410.0	150	452.3	456.3	457.3	449.1	455.3	454.7	451.2	460.8	443.3	447.9	455.9	454.7	456.9	477.0	473.9	475.3
54	23	355.0	150	414.8	417.1	417.1	408.6	411.8	410.0	406.0	412.4	396.5	399.8	405.4	403.6	404.7	419.4	415.4	415.0
55	114	644.0	330	107.6	108.2	108.3	108.0	105.4	106.7	108.2	109.4	107.6	108.4	109.5	110.2	109.5	111.6	111.0	110.5
56	114	589.0	330	106.5	107.3	107.2	106.8	104.1	105.7	106.8	108.0	106.3	107.1	108.3	109.0	108.2	110.2	109.5	109.1
57	114	534.0	330	105.5	106.0	106.2	105.5	103.0	104.6	105.8	107.0	105.3	106.2	107.4	108.0	107.1	109.1	108.6	108.0
58	114	479.0	330	105.5	105.6	106.1	104.9	102.4	104.3	105.3	106.3	104.8	105.8	106.9	107.5	106.5	108.3	107.8	107.2
59	114	410.0	330	104.9	105.0	105.9	104.7	101.8	103.8	105.0	106.1	104.6	105.5	106.5	107.2	106.2	107.8	107.5	106.8
60	114	355.0	330	105.1	104.9	105.9	104.8	101.9	103.9	105.2	106.3	105.0	105.5	106.4	107.3	106.3	107.6	107.3	106.4
61	120	644.0	90	104.8	105.6	106.5	105.8	104.4	107.0	108.6	109.7	108.1	109.0	110.4	111.3	111.4	113.6	113.2	112.7
62	120	589.0	90	104.5	105.8	106.1	105.4	103.9	106.2	107.9	109.1	107.4	108.3	109.7	110.4	110.3	112.3	111.7	111.1
63	120	534.0	90	104.2	105.4	105.6	105.0	103.3	105.5	107.2	108.4	106.7	107.3	108.8	109.4	109.2	110.7	110.1	109.5
64	120	479.0	90	104.1	105.2	105.6	105.0	103.3	105.3	107.2	108.2	106.6	107.0	108.6	109.1	108.9	110.2	109.5	108.9
65	120	410.0	90	103.8	104.9	105.6	105.0	103.3	105.2	107.0	108.0	106.9	107.2	108.7	109.1	108.8	110.1	109.3	108.7
66	120	355.0	90	104.0	104.5	105.2	104.6	102.4	104.7	106.5	107.7	106.3	106.6	108.0	108.7	108.2	109.4	108.6	108.0
67	97	644.0	210	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68	97	589.0	210	133.3	135.5	136.7	136.5	135.9	138.4	138.8	140.5	137.9	139.0	141.0	141.1	141.2	146.3	145.2	145.2
69	97	534.0	210	126.1	128.1	129.7	129.6	128.4	130.9	131.6	133.0	130.9	131.9	133.3	133.7	133.1	137.0	135.7	135.3
70	97	479.0	210	112.1	113.7	114.8	114.8	113.6	116.0	117.1	118.2	116.9	118.1	119.2	120.0	119.4	122.4	121.4	120.7
71	97	410.0	210	105.8	107.4	108.5	108.3	107.1	109.3	110.1	110.8	110.0	111.0	111.9	112.9	112.4	114.8	114.0	113.3
72	97	355.0	210	104.4	105.6	107.2	106.6	105.4	107.3	108.3	108.9	108.0	108.8	109.5	110.3	109.7	111.8	110.9	110.2
73	0	0.0	0	107.8	106.2	107.7	107.1	105.6	107.7	108.8	108.1	107.3	108.0	108.1	108.9	108.4	110.5	109.1	109.1
74	0	0.0	0	105.1	104.1	106.4	105.1	99.0	101.5	101.5	103.2	102.2	104.9	103.9	103.3	104.0	106.4	105.6	105.8
75	0	0.0	0	107.1	108.5	108.2	106.9	103.7	105.1	106.9	106.5	105.3	105.5	105.2	106.8	105.6	108.4	107.5	107.2
76	0	896.9	0	257.1	262.1	263.9	261.7	262.1	264.7	264.2	267.0	259.4	265.3	266.6	267.7	268.2	277.9	275.9	273.9
77	0	896.9	0	236.4	241.4	247.1	246.2	244.1	246.4	248.9	252.2	245.0	244.7	248.4	247.3	243.6	252.2	248.7	249.1
78	0	896.9	0	324.5	330.0	332.5	328.3	333.1	334.5	331.7	337.2	325.8	331.1	332.4	330.8	330.0	340.3	335.8	335.1
79	0	430.6	270	105.0	106.4	107.3	107.0	105.4	108.1	109.6	110.6	108.8	109.7	111.2	112.4	112.5	115.2	114.9	114.8
80	0	430.6	210	123.1	124.7	125.5	125.1	125.1	127.9	128.6	129.2	126.3	127.1	129.0	129.6	129.6	132.7	131.9	131.3
81	0	430.6	90	142.9	143.9	144.7	144.1	143.4	145.2	145.6	146.3	143.9	145.0	146.6	147.2	147.0	150.3	149.9	149.1
82	0	430.6	30	134.2	135.0	135.6	134.5	133.0	134.0	134.3	135.6	133.1	133.8	134.8	135.8	135.5	138.5	137.8	137.3
83	0	630.6	270	108.8	110.4	111.7	111.9	111.1	114.3	116.4	118.1	116.9	118.6	120.8	122.4	123.5	128.8	129.4	130.4
84	0	630.6	210	172.8	175.0	176.1	174.7	175.7	177.8	177.9	180.0	175.4	177.0	179.5	179.8	180.2	185.5	184.5	183.9
85	0	630.6	30	202.3	204.1	205.4	202.8	202.5	203.0	202.7	204.9	199.4	200.2	202.2	202.4	202.0	206.8	205.4	204.7
86	0	630.6	90	239.6	242.4	244.8	242.8	244.5	245.9	245.2	247.5	241.0	242.4	245.2	244.8	244.3	249.7	247.8	246.2
87	0	830.6	210	206.1	208.6	210.6	208.7	210.6	213.2	213.4	215.9	210.9	213.0	216.4	216.6	217.2	224.2	223.6	223.5
88	0	830.6	270	113.8	116.3	117.9	118.3	117.5	121.6	124.2	126.6	125.4	127.7	131.3	134.1	136.2	144.2	146.0	148.0
89	0	830.6	30	246.9	249.3	251.0	248.4	248.7	249.4	248.9	251.4	244.5	245.4	248.0	248.5	249.0	256.8	255.6	255.1
90	0	830.6	90	324.8	328.1	331.0	326.8	329.7	329.8	327.3	330.0	319.0	319.6	322.3	320.0	318.2	323.0	319.4	316.6
91	0	0.0	0	106.6	105.8	106.3	105.5	100.1	100.3	101.2	103.9	102.1	103.4	102.8	104.3	103.3	105.3	105.3	105.0
92	0	0.0	0	106.6	105.8	106.1	105.3	100.9	100.5	101.2	103.5	102.3	103.2	103.1	104.6	103.4	105.0	105.1	106.1



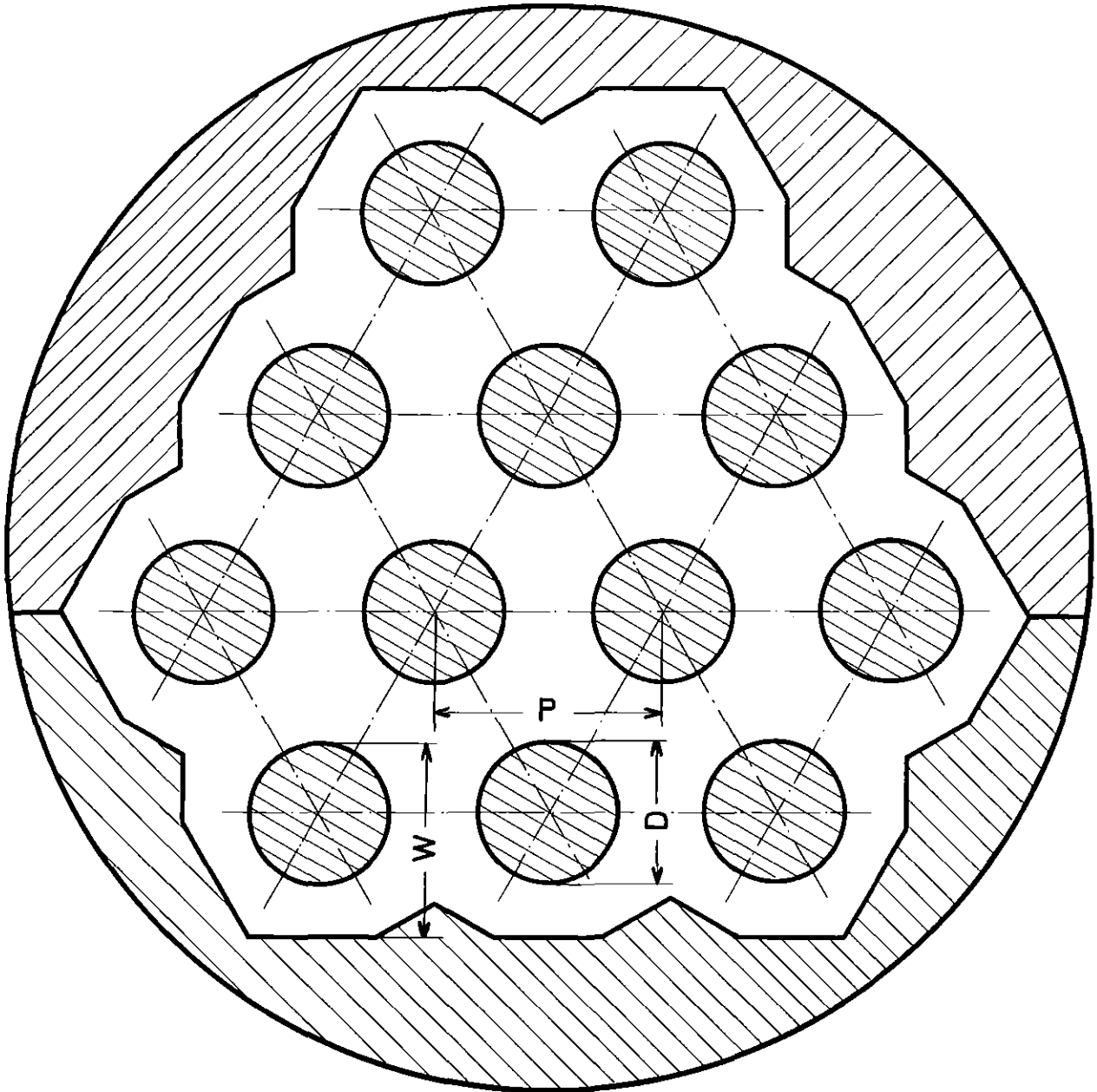


Fig. 1: Cross section (schematic diagramm)

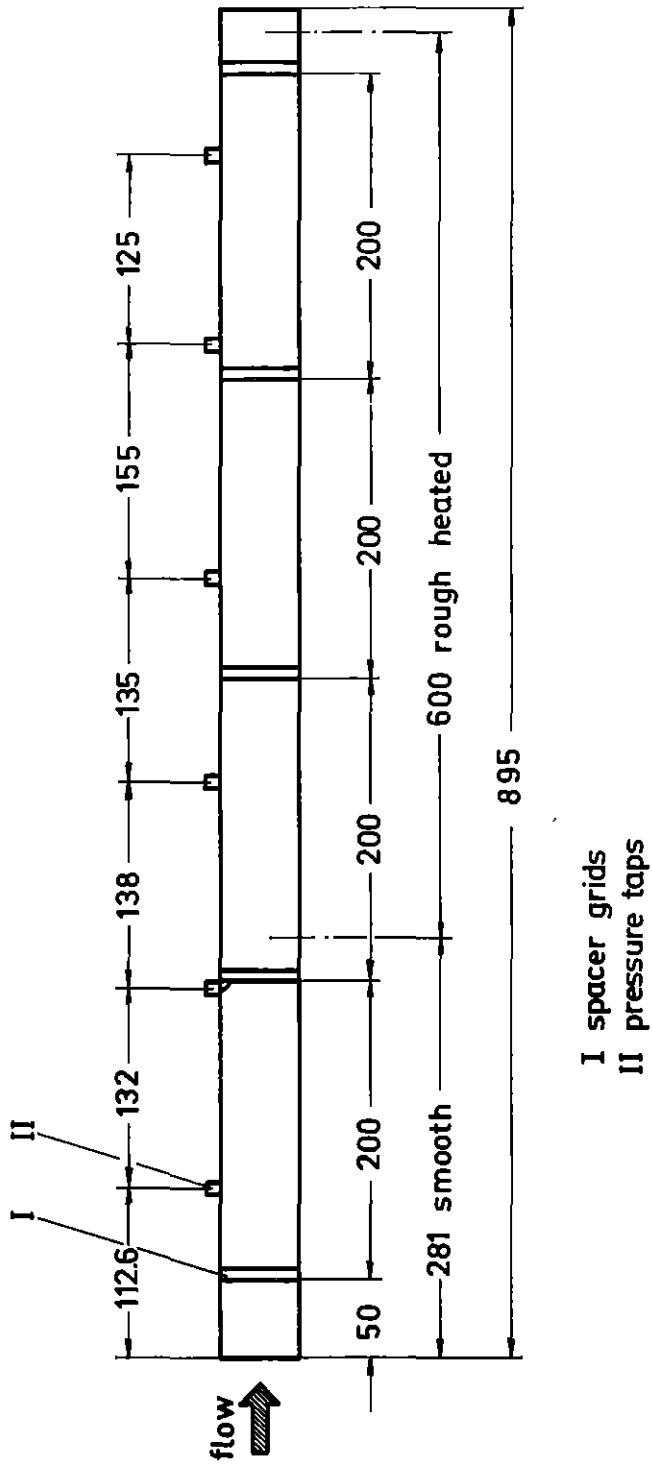


Fig.2: Axial subdivision (CE1)

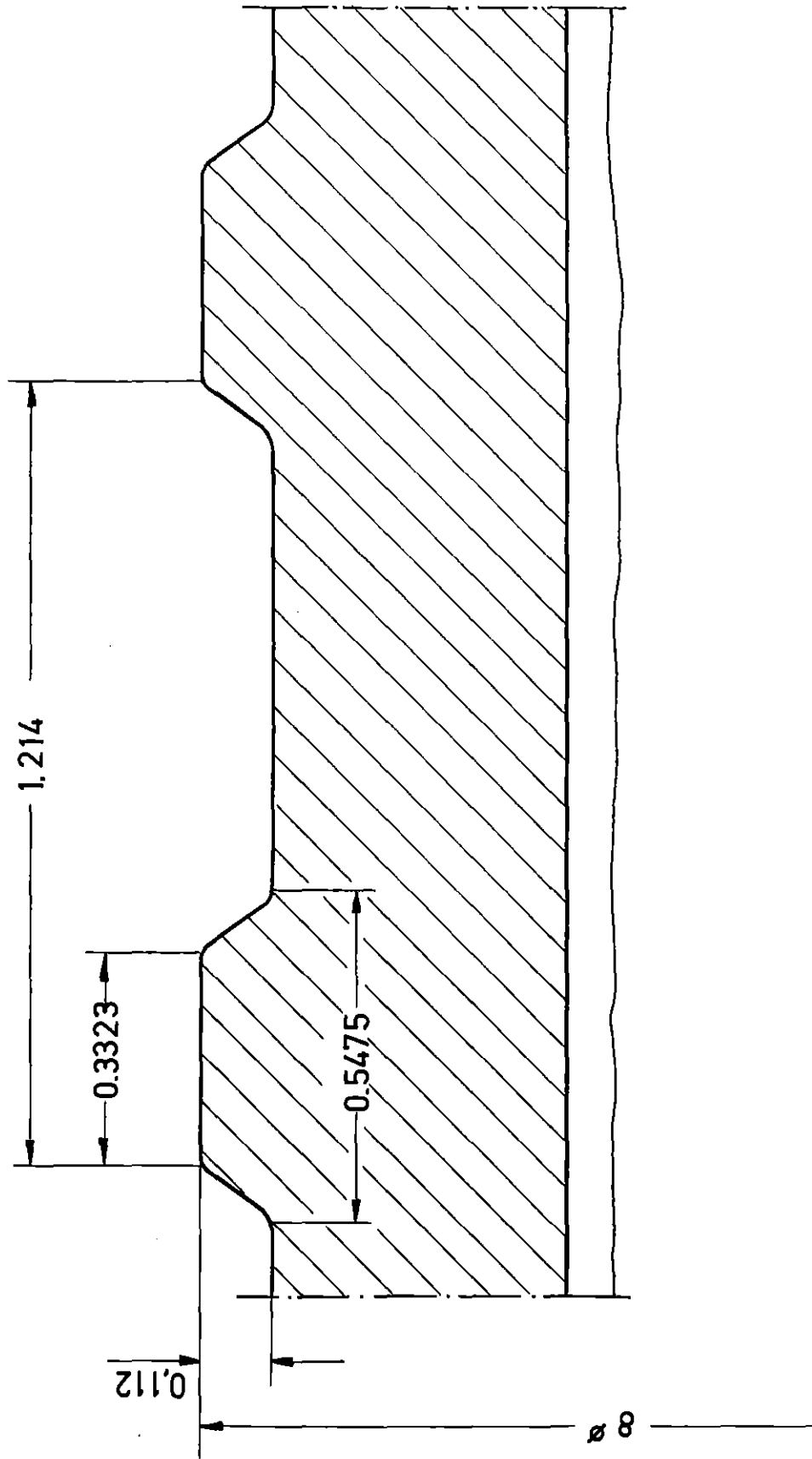


Fig.3: Roughness geometry

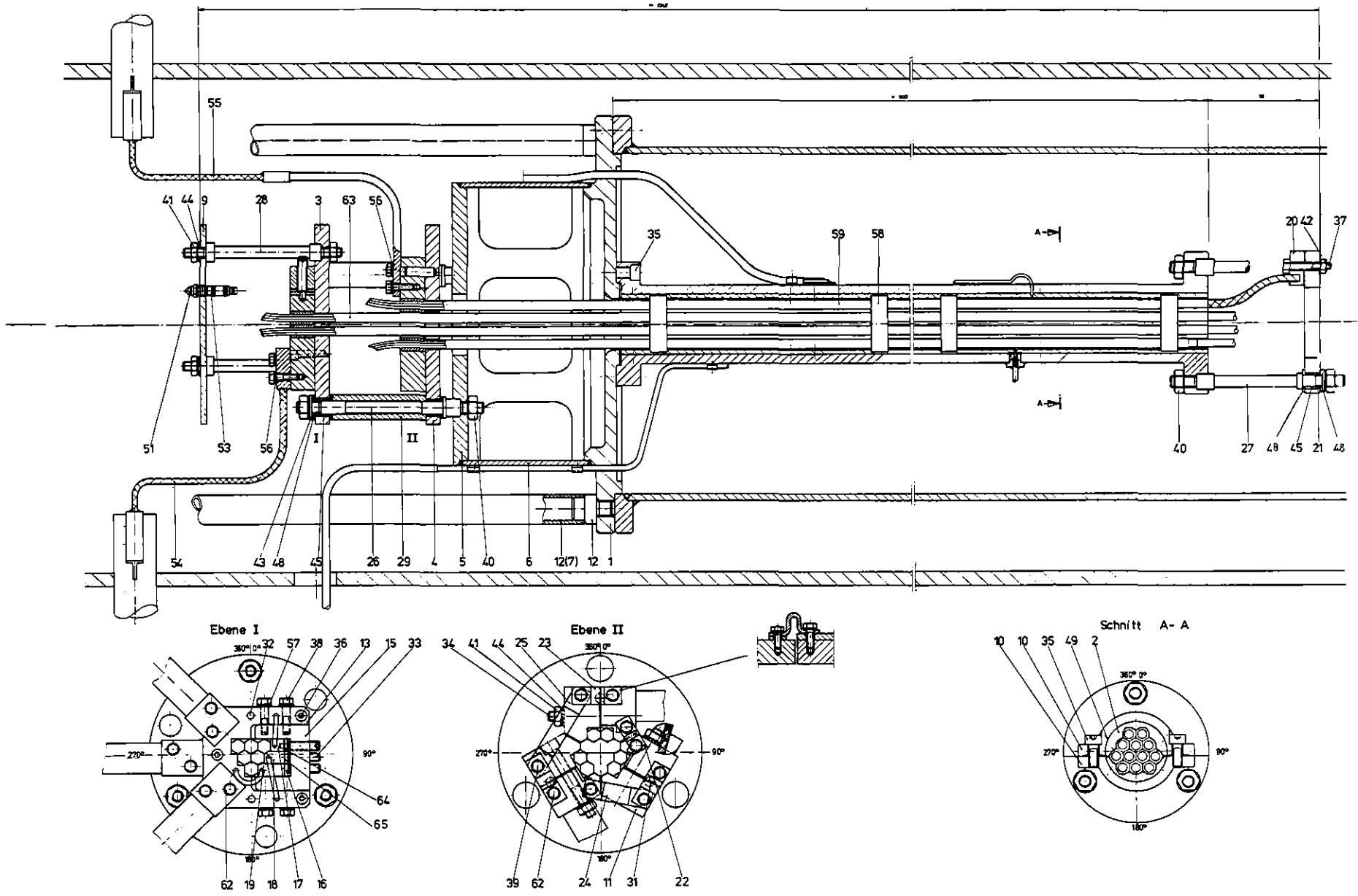


Fig. 4: Design of inlet and electrical connections

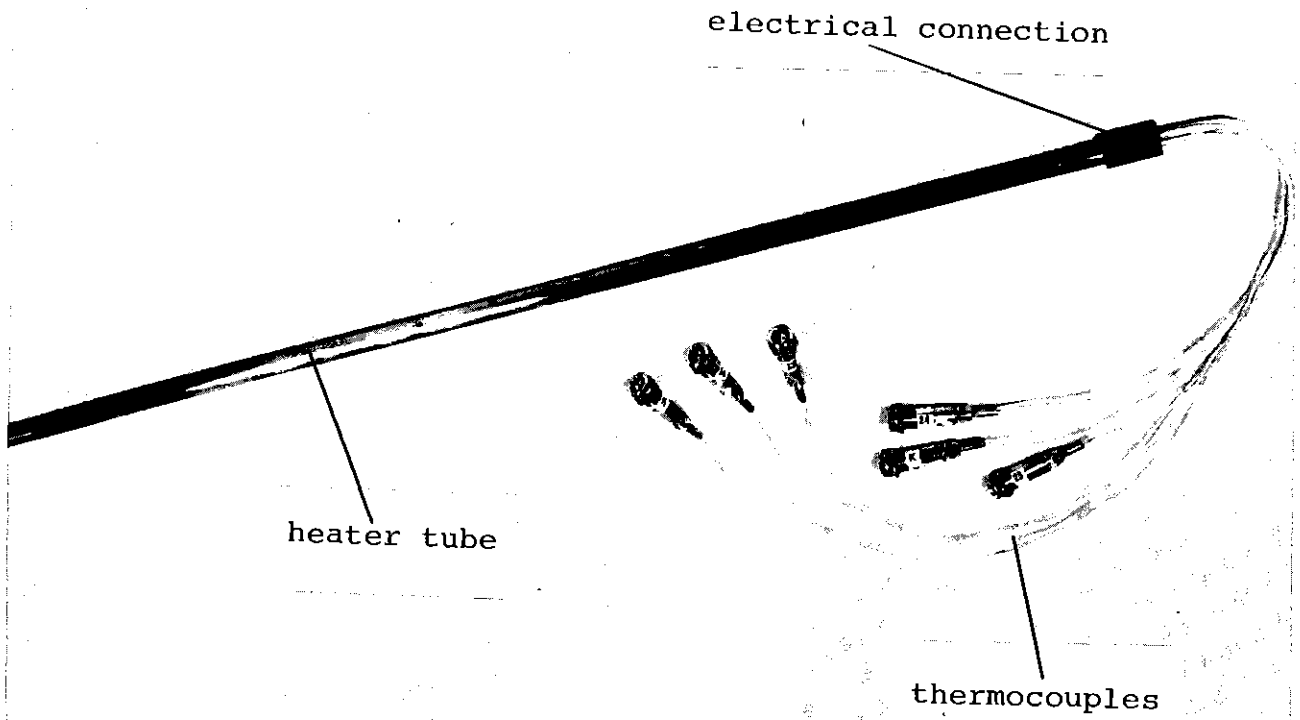


Fig.6: Heater tube with thermocouples

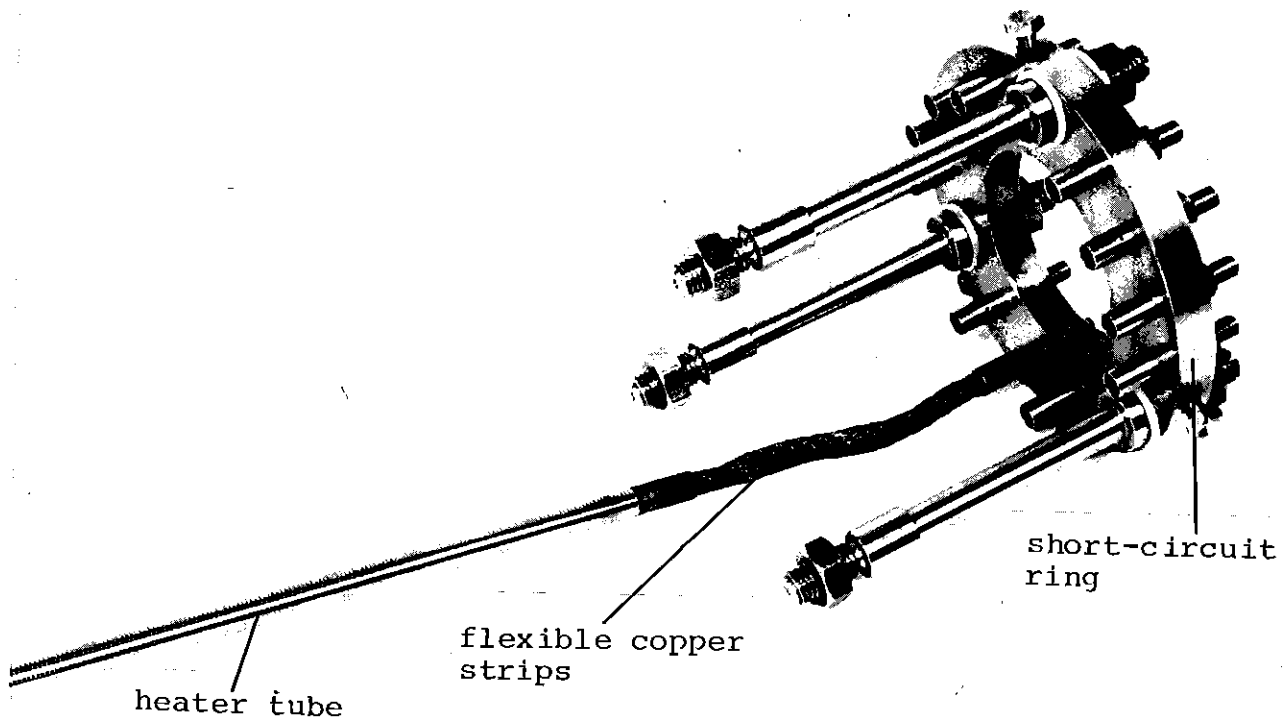


Fig.5: Short-circuit ring



Fig. 7: Profile of wrapper tube (CE1)

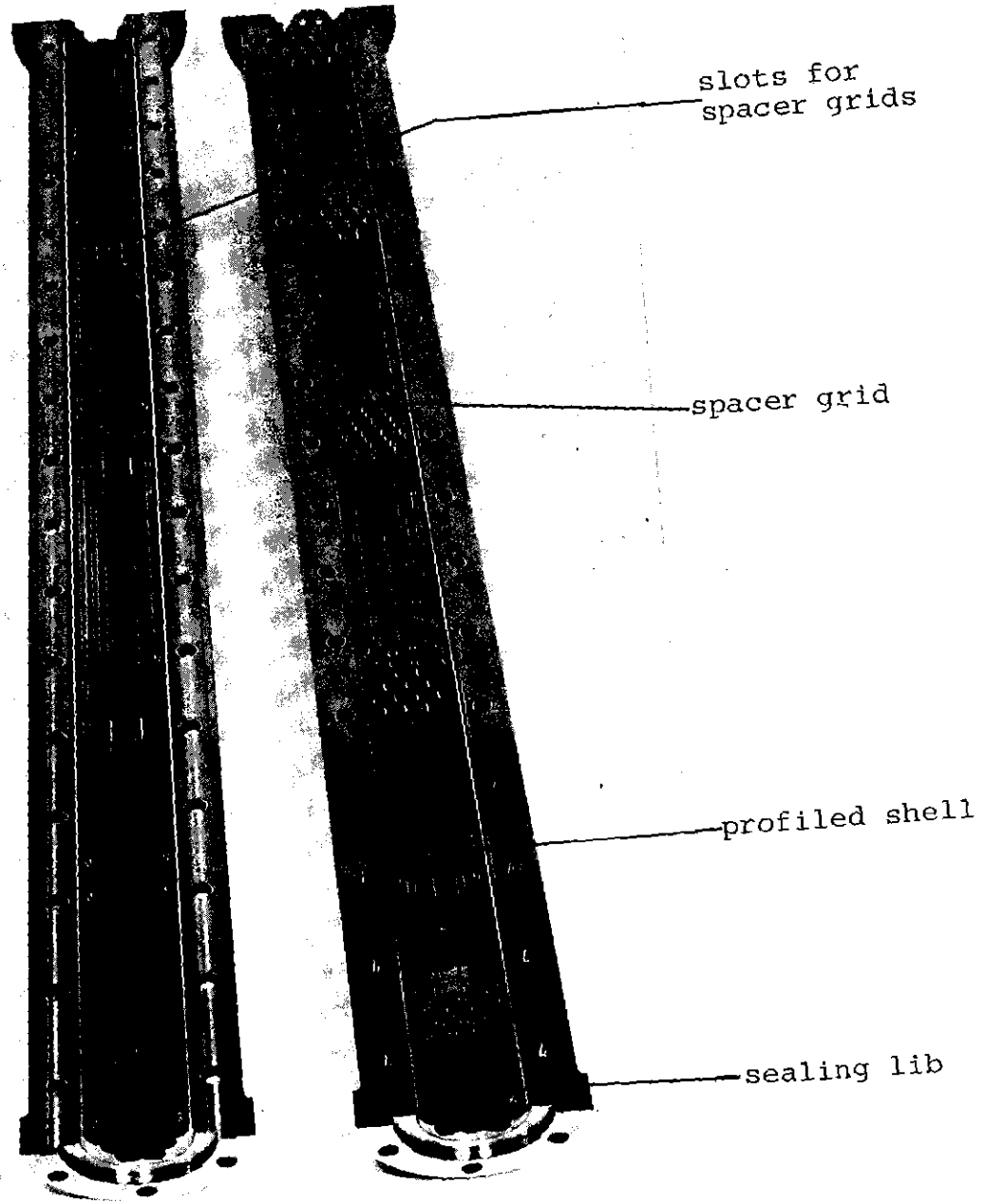


Fig.8: Wrapper tube with spacer grids (CE1)

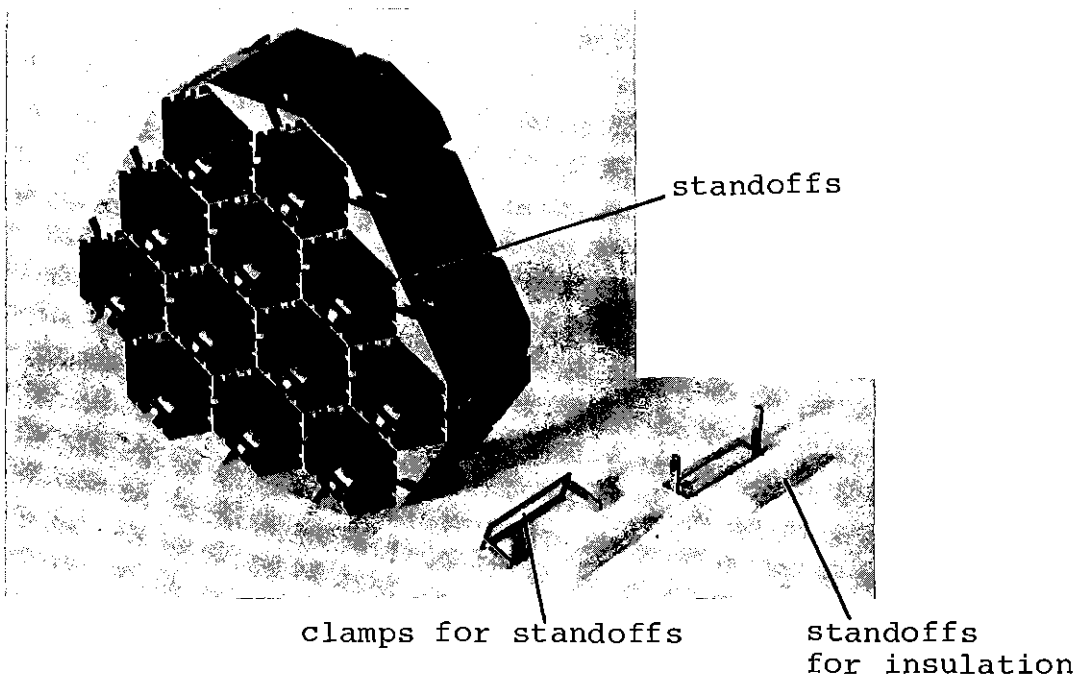


Fig.9: Spacer grid (CE1)



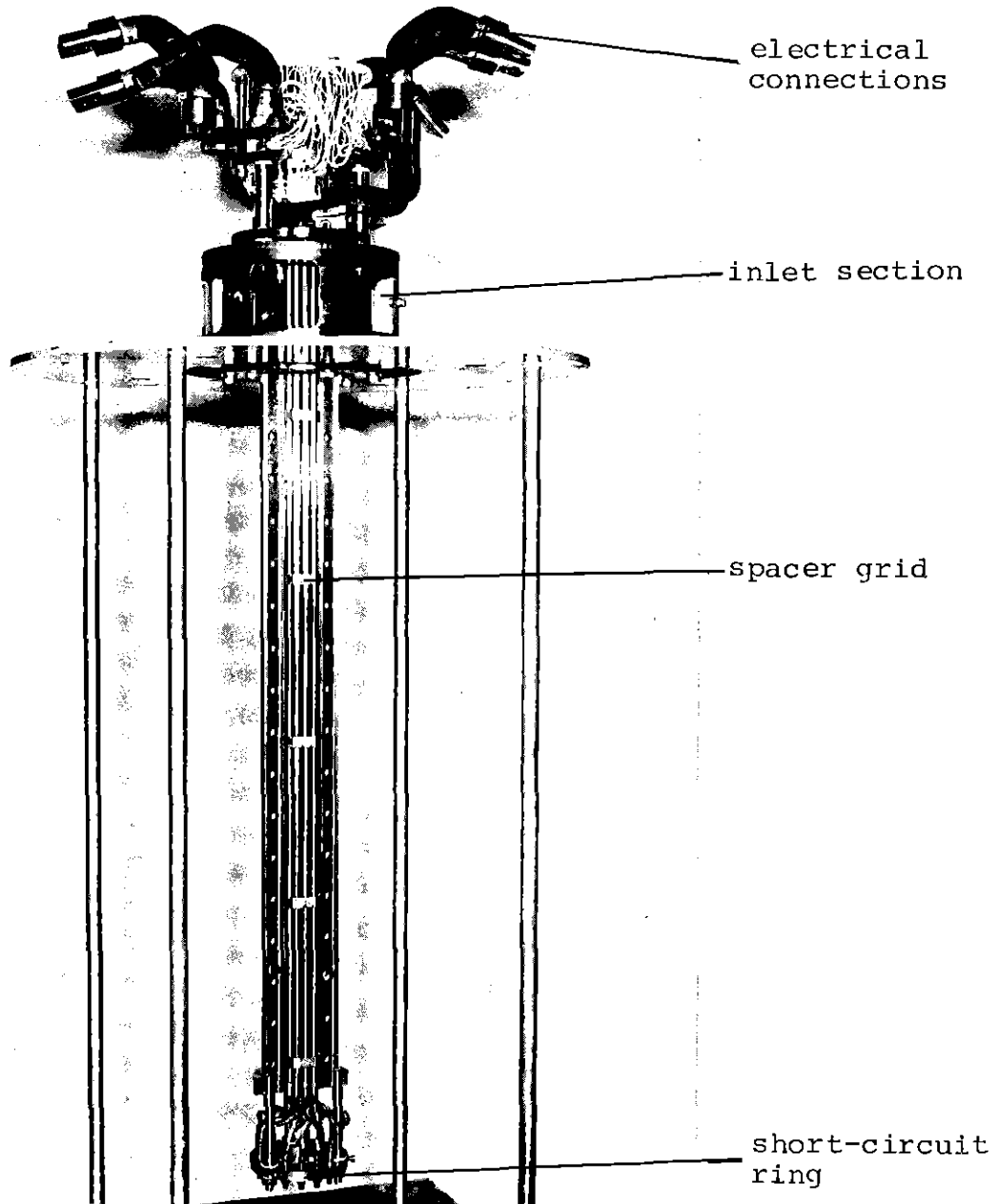


Fig.10: Full view of test section with heater tubes

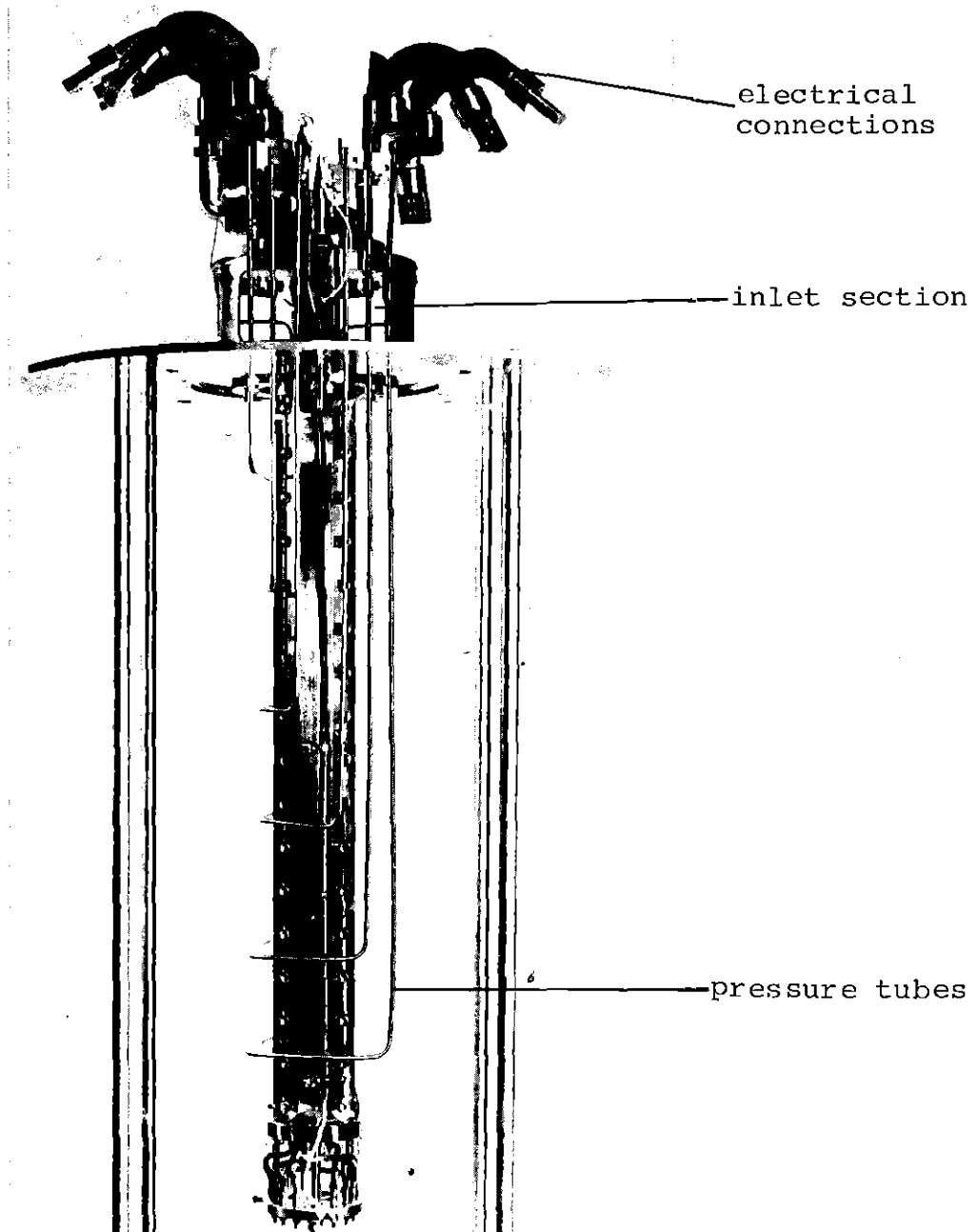
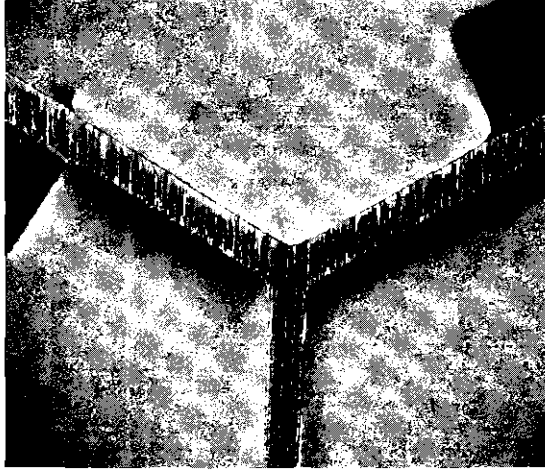
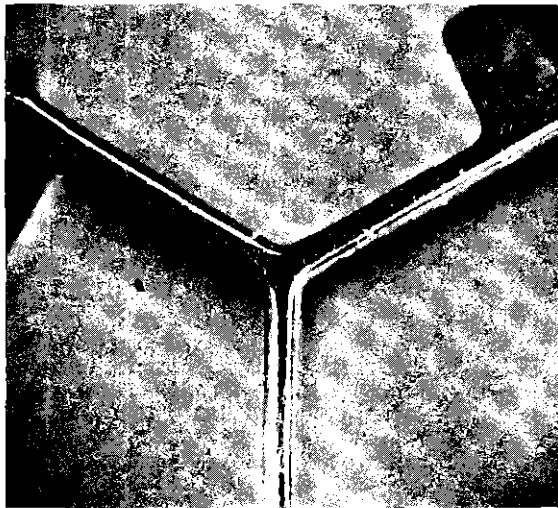


Fig.11: Full view of test section and instrumentation



(a) before rounding of leading edges



(b) after rounding of leading edges

Fig.12: Detail of spacer grid (CE3)

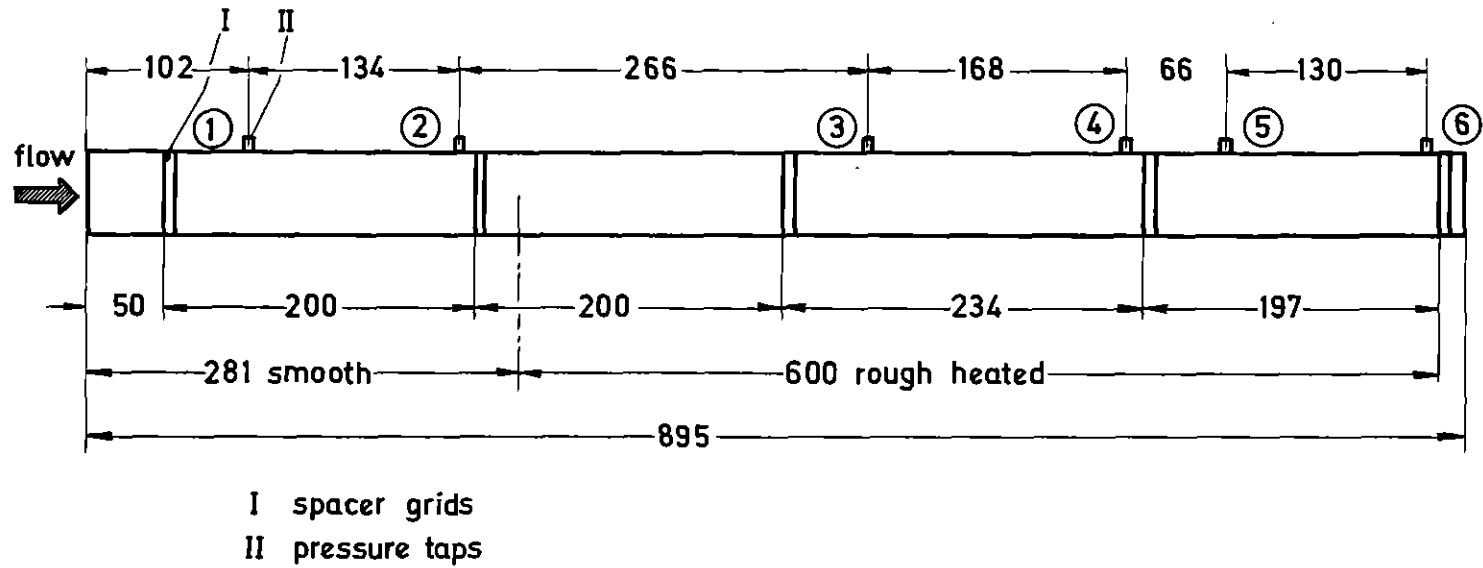


Fig.13: Axial subdivision (CE3)

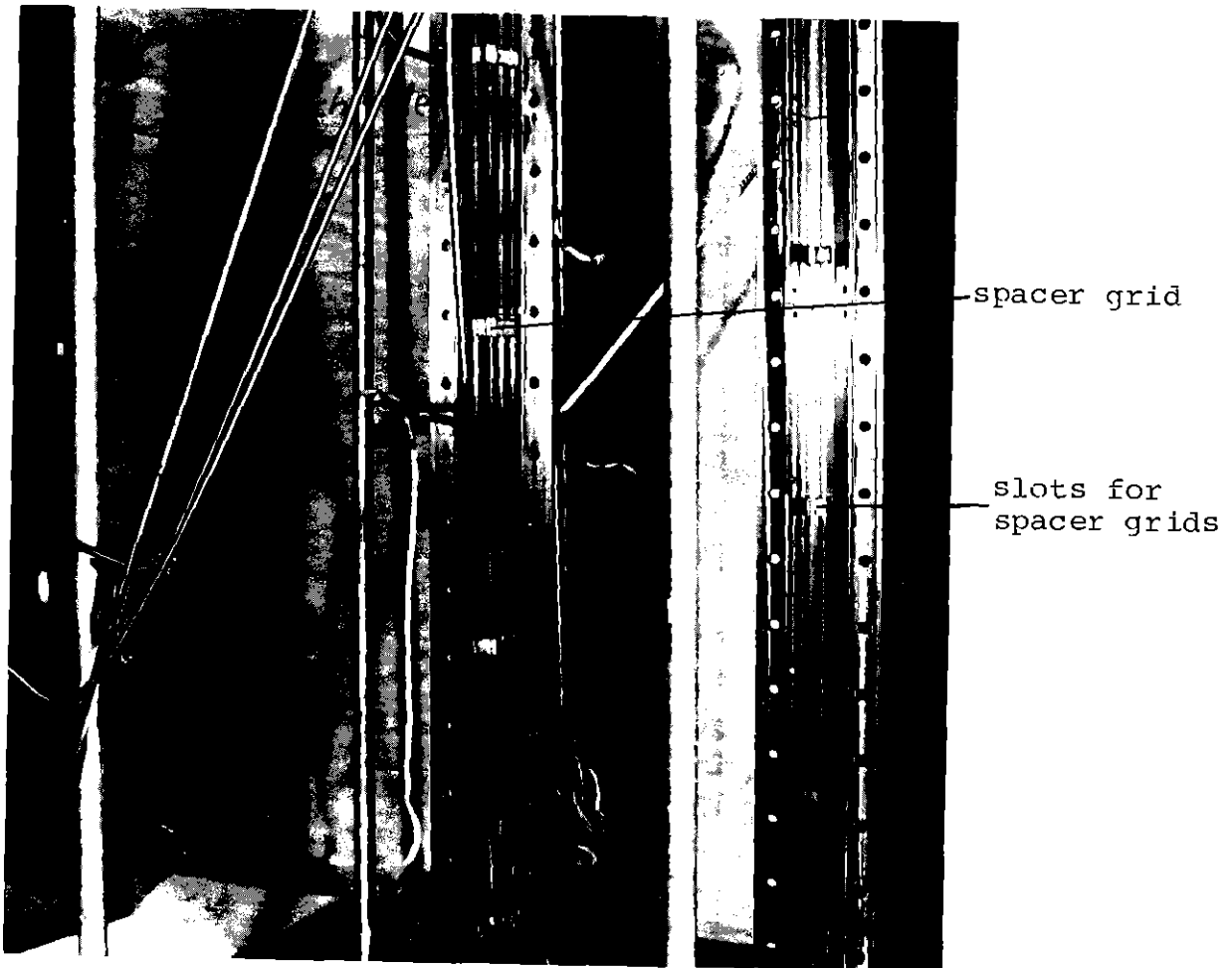


Fig.14: Test section CE3 after operation

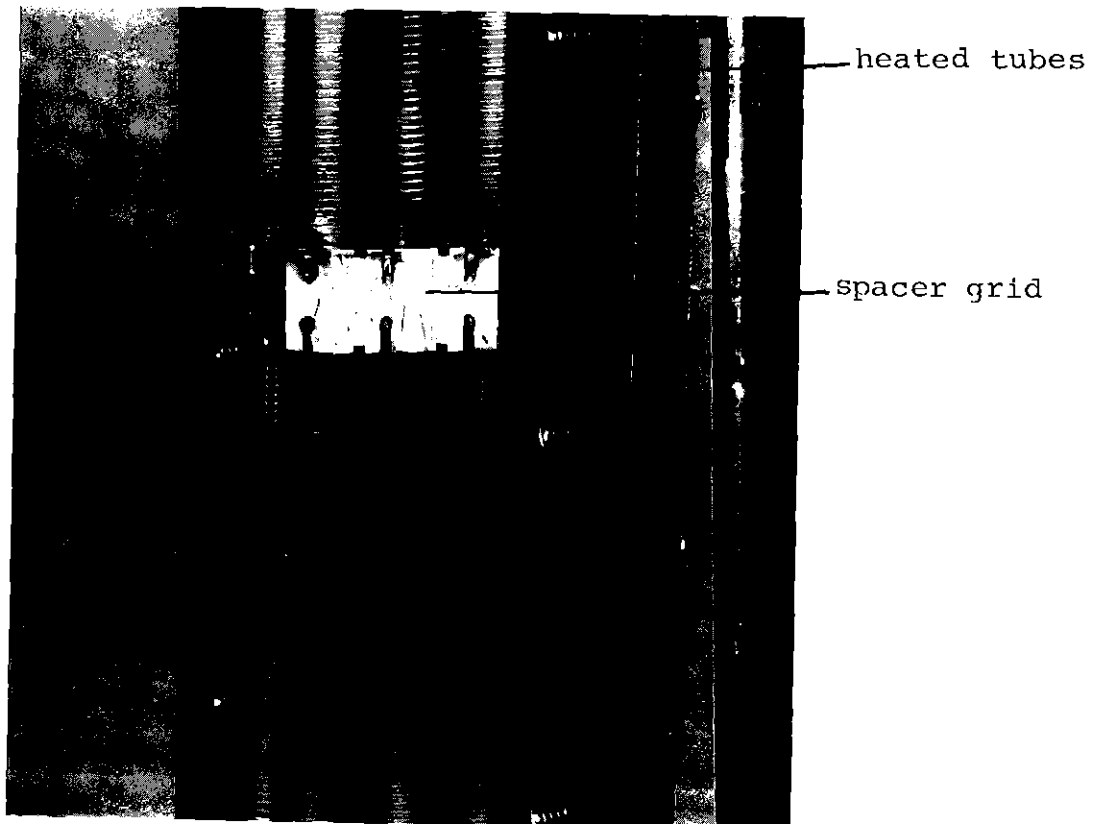


Fig.15: Test section CE3 after operation (detail)

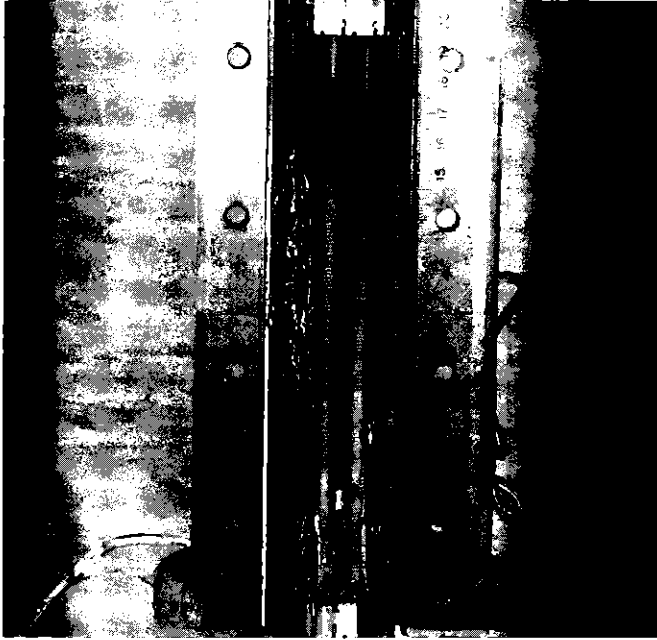


Fig.16: Melt-down of test section CE3 short circuit

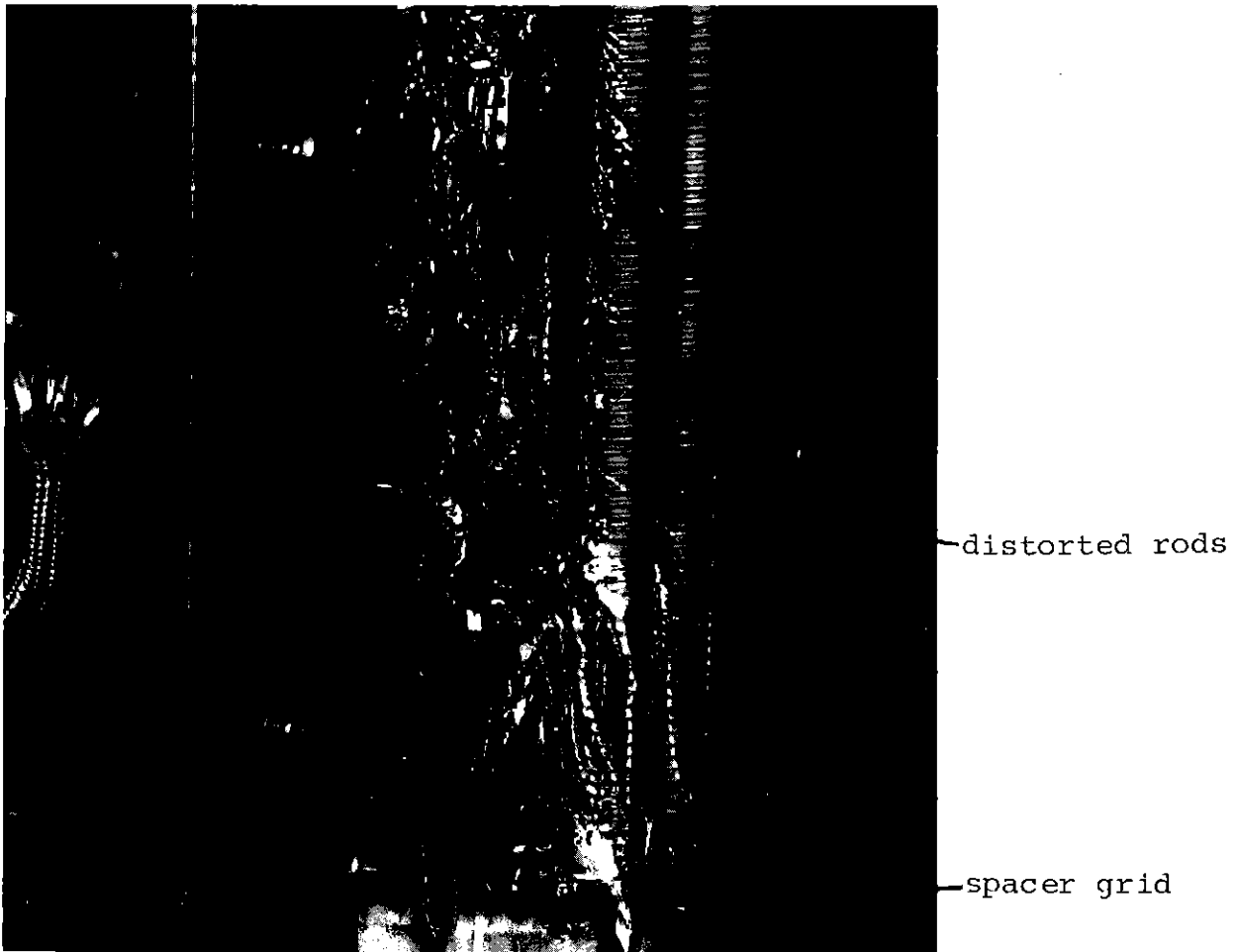
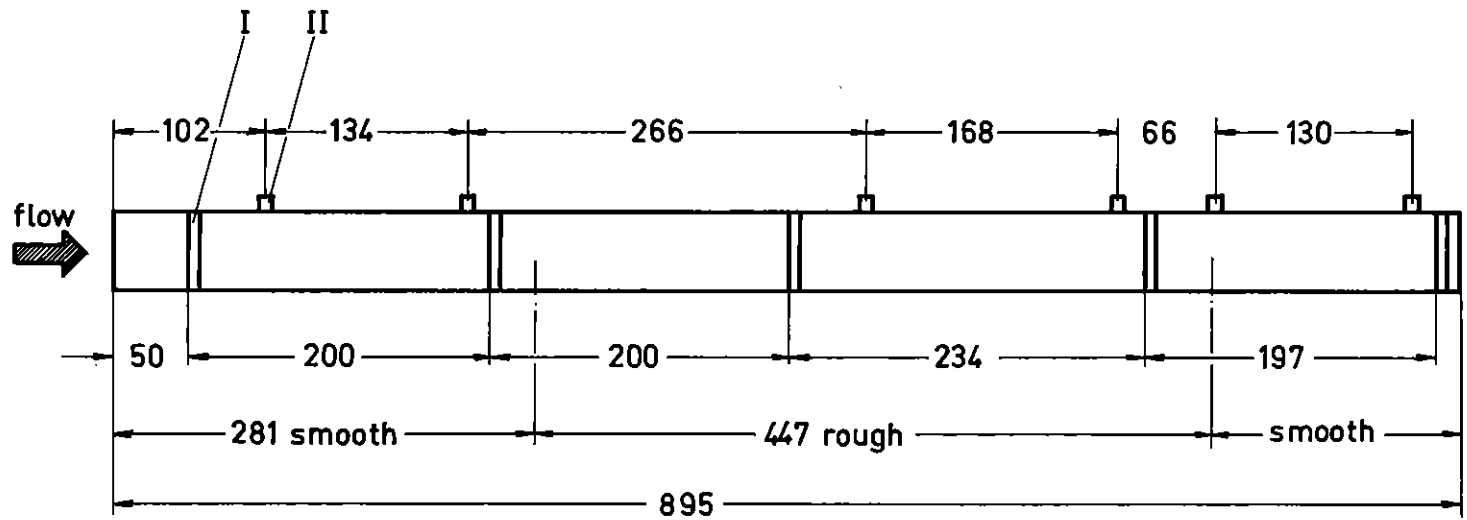


Fig.17: Detail of damaged test section



I spacer grids  
 II pressure taps

Fig.18: Axial subdivision (CE4)

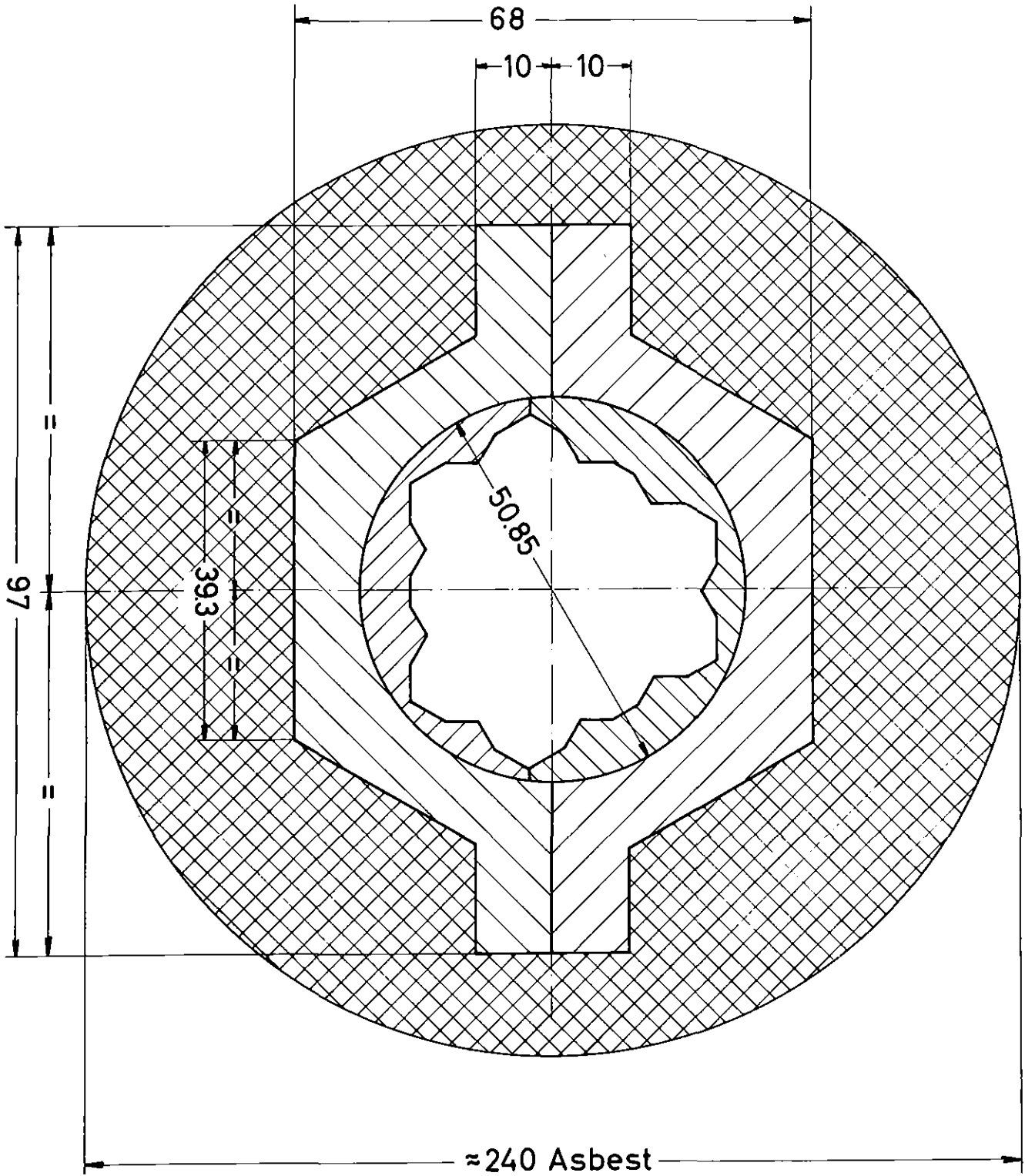


Fig.19: Cross section of test section with insulation





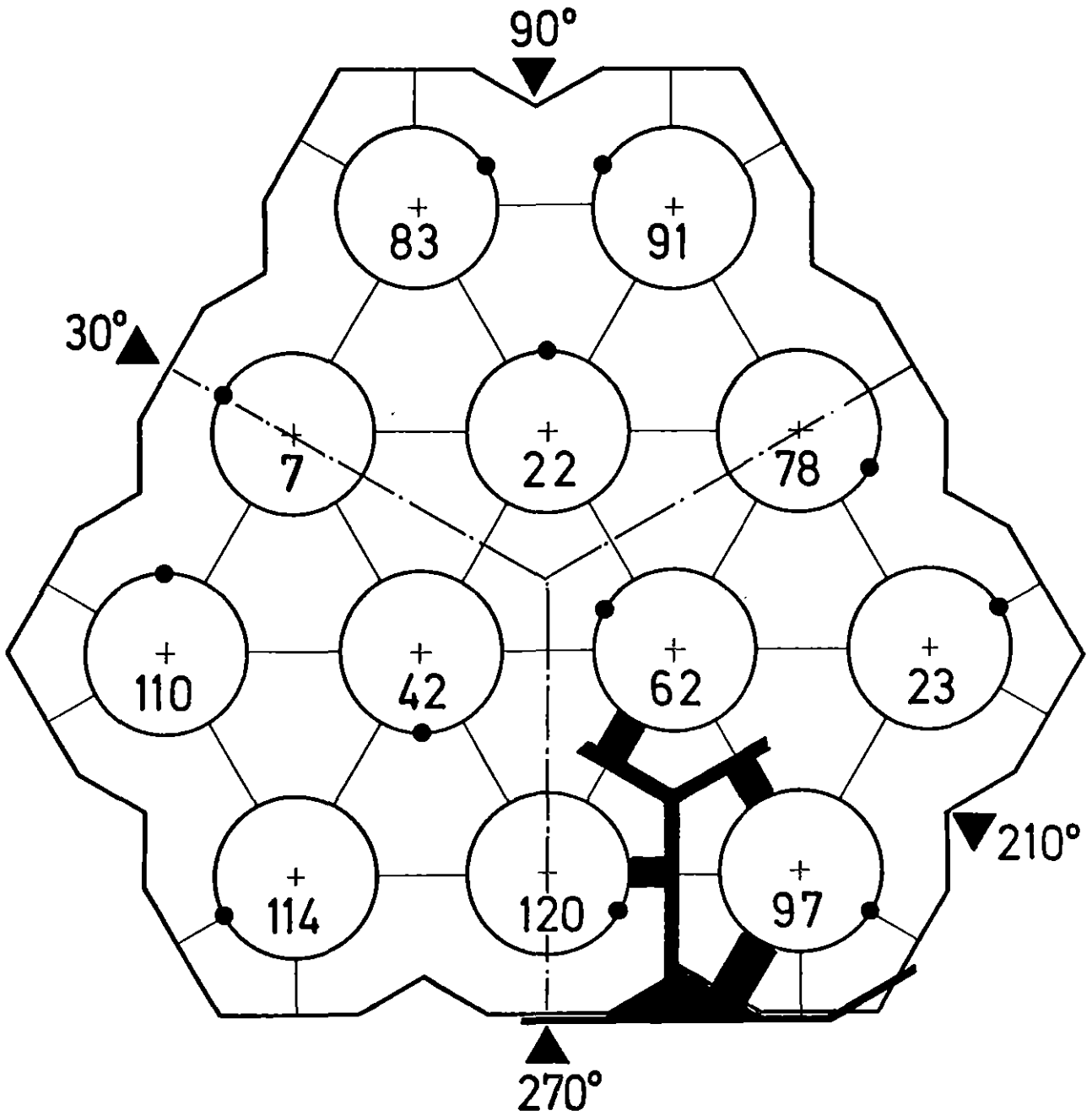


Fig.21: Instrumentation of CE3

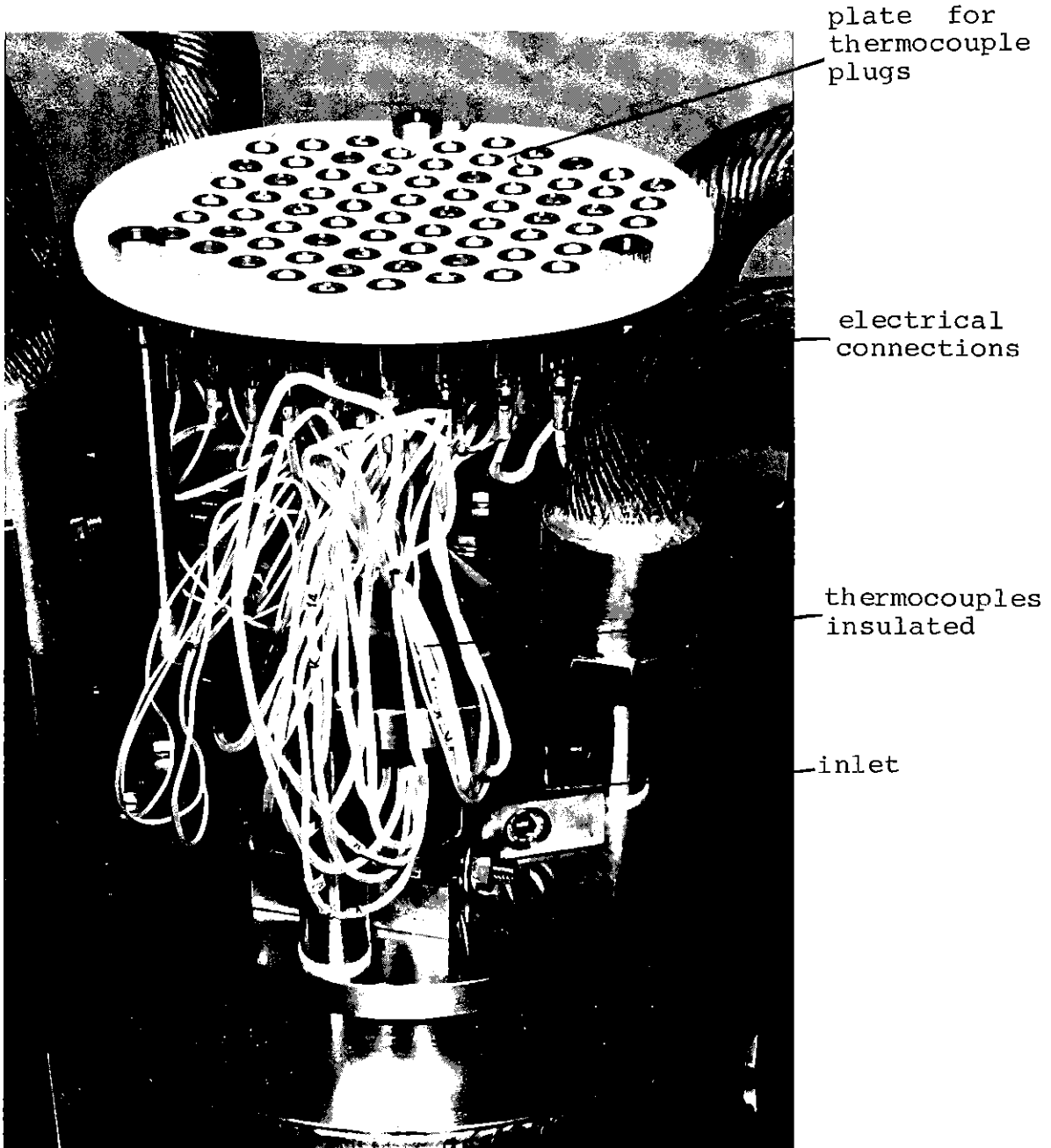


Fig.22: Photograph of instrumentation at inlet

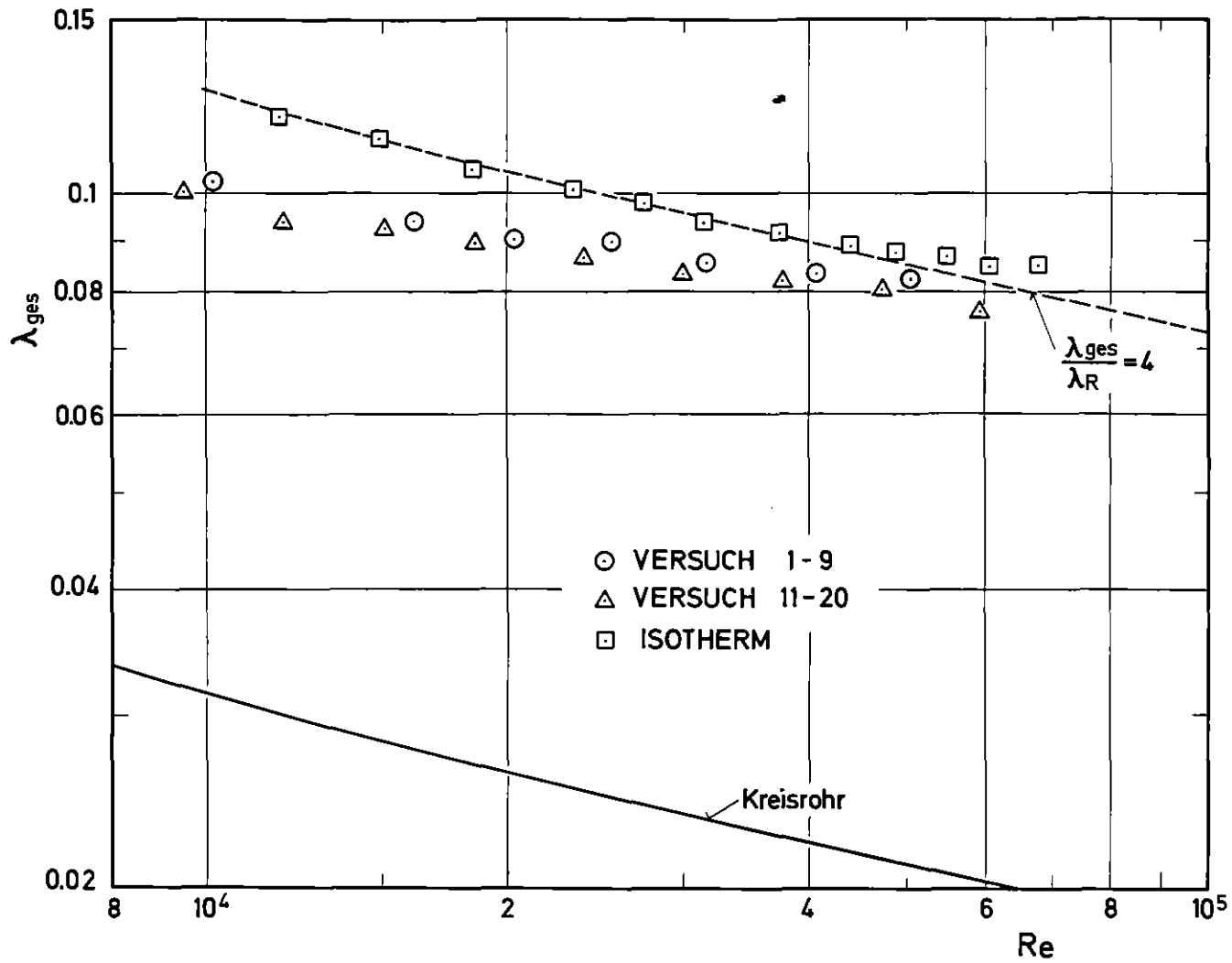


Fig.23: Friction factor versus Reynolds number (CE2)

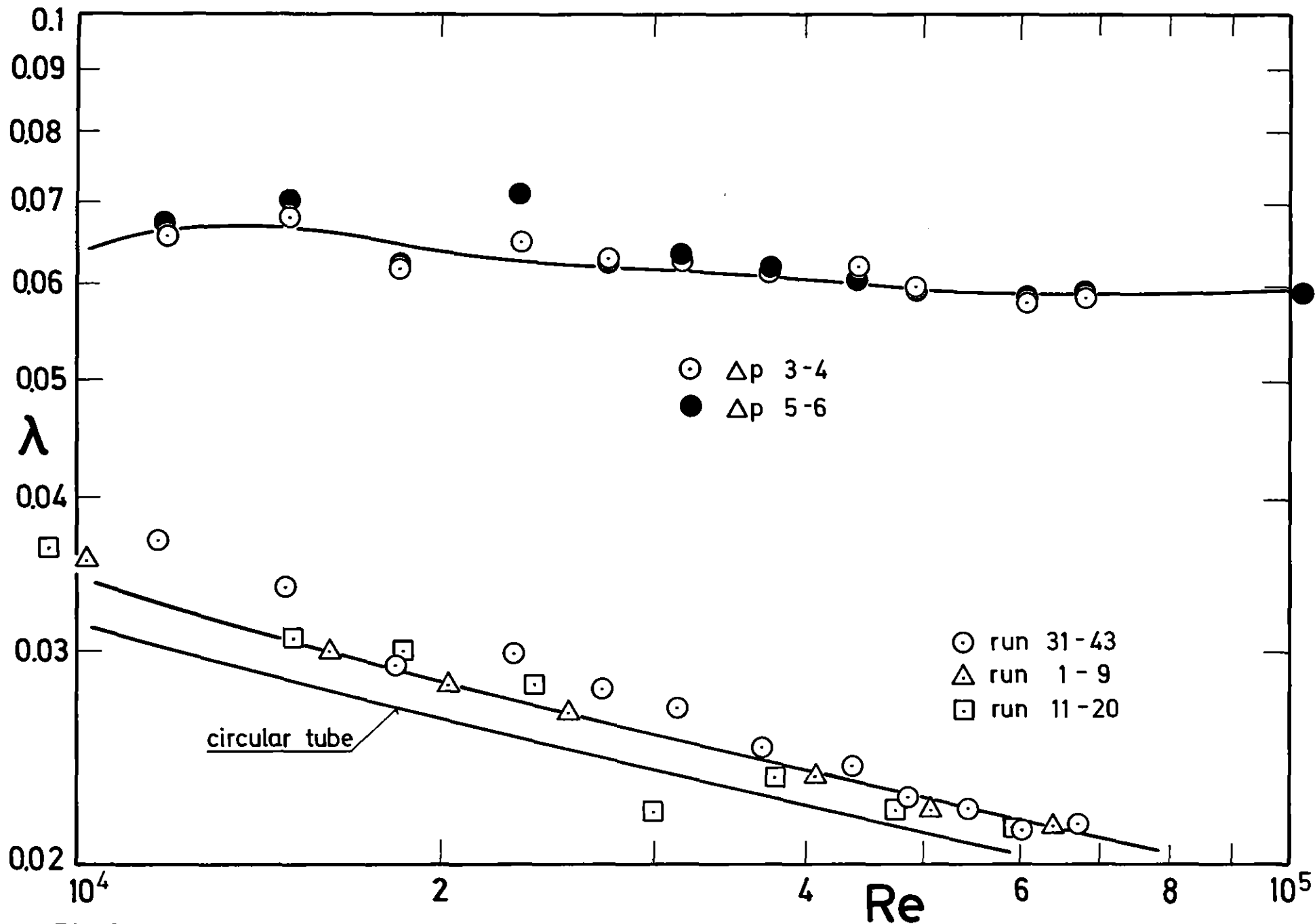


Fig.24: Friction factor versus Reynolds number (CE3) (isothermal)

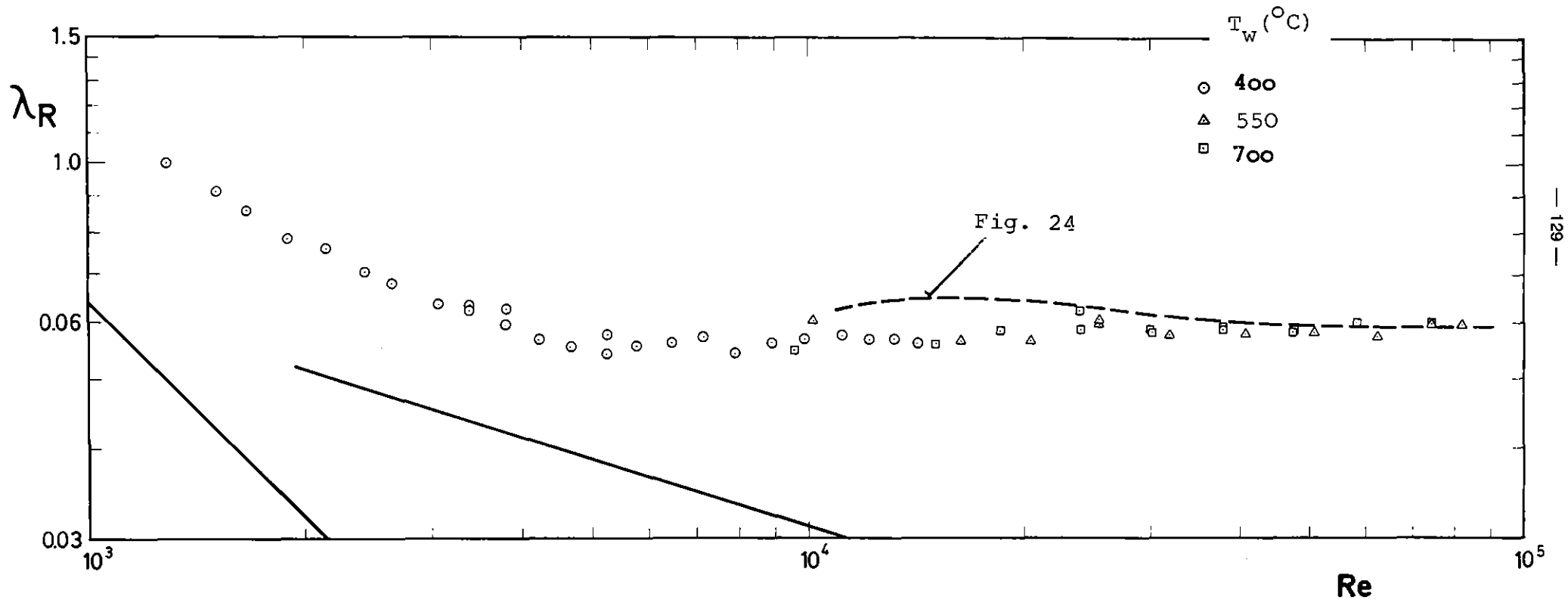


Fig.25: Friction factor versus Reynolds number (CE3)

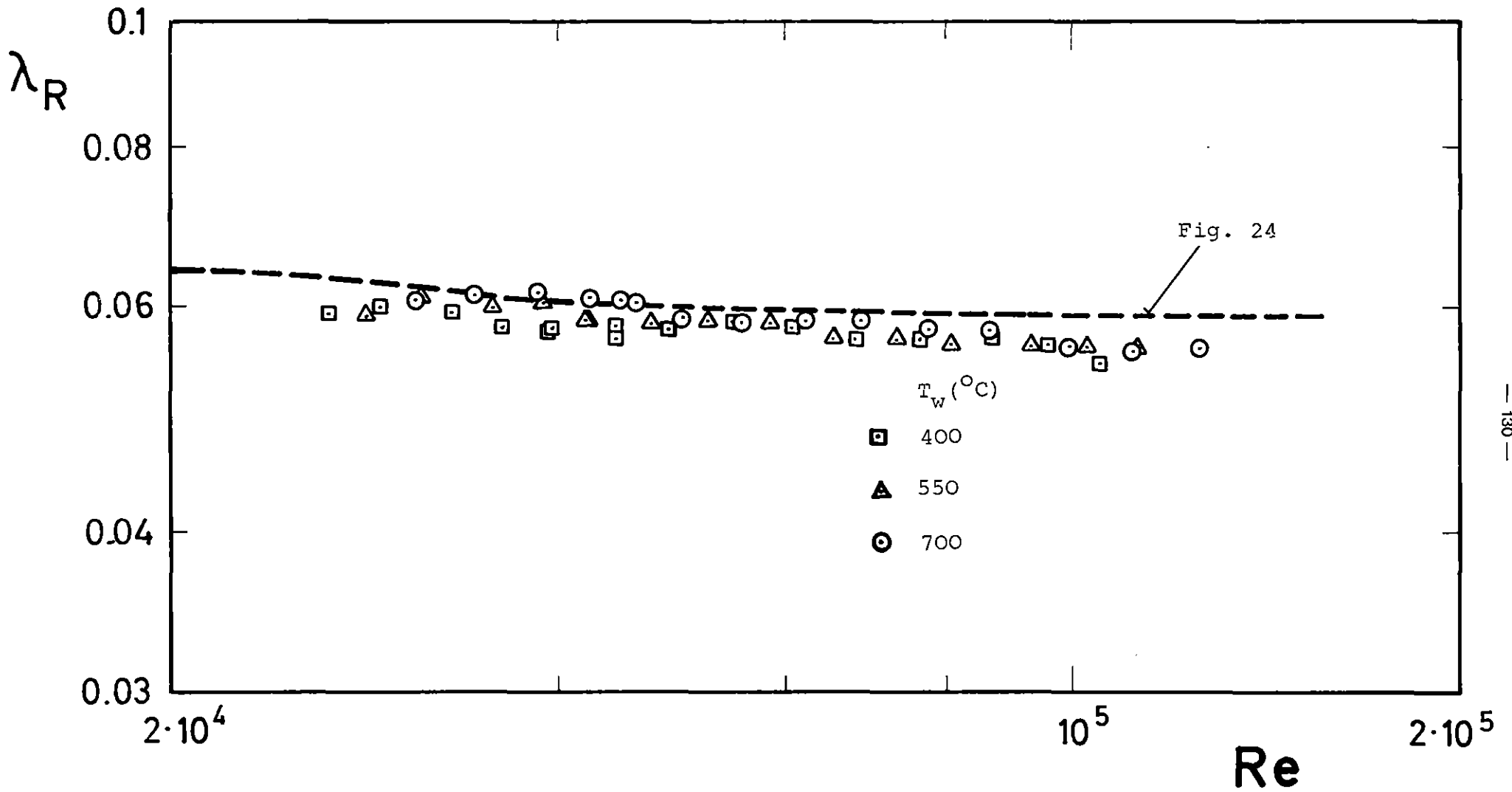


Fig.26: Friction factor versus Reynolds number (CE3) (nitrogen runs)

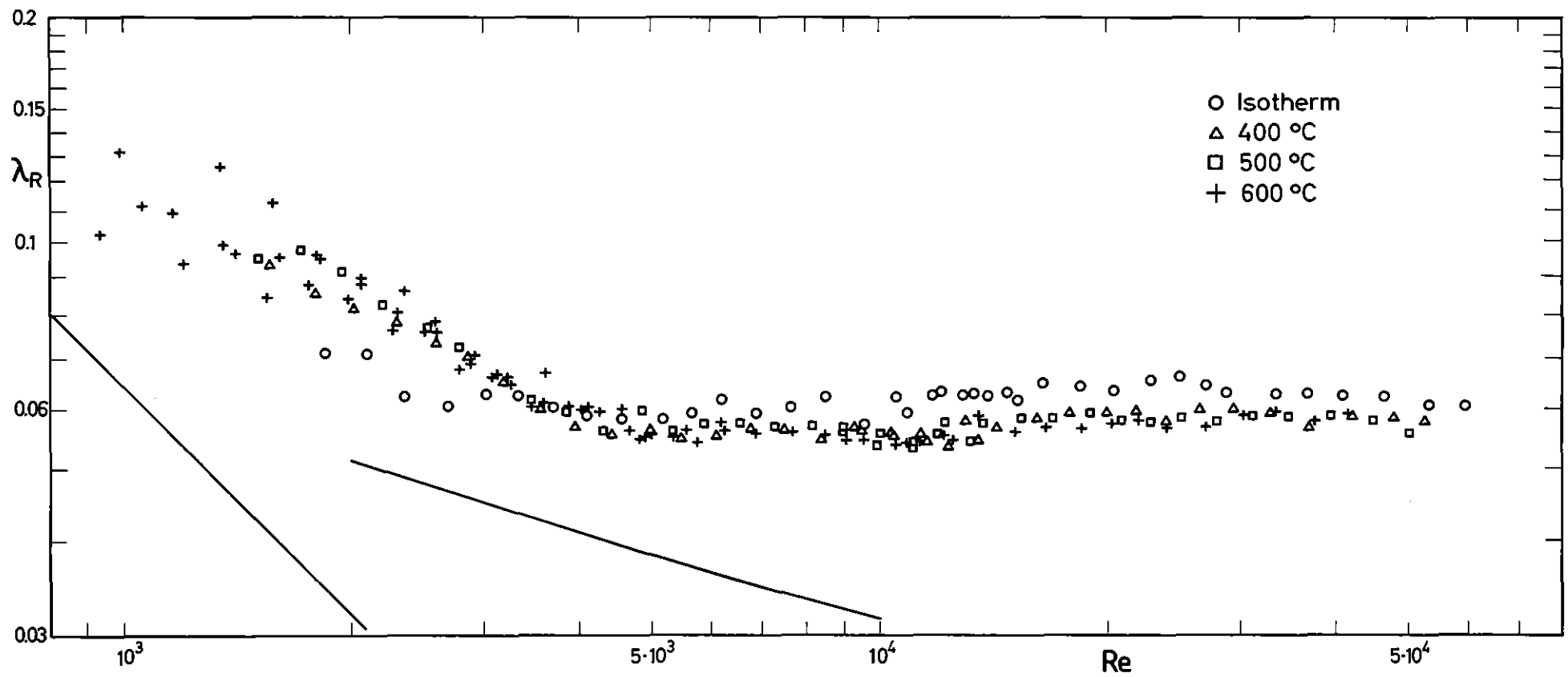


Fig.27: Friction factor versus Reynolds number (CE4) (helium runs)



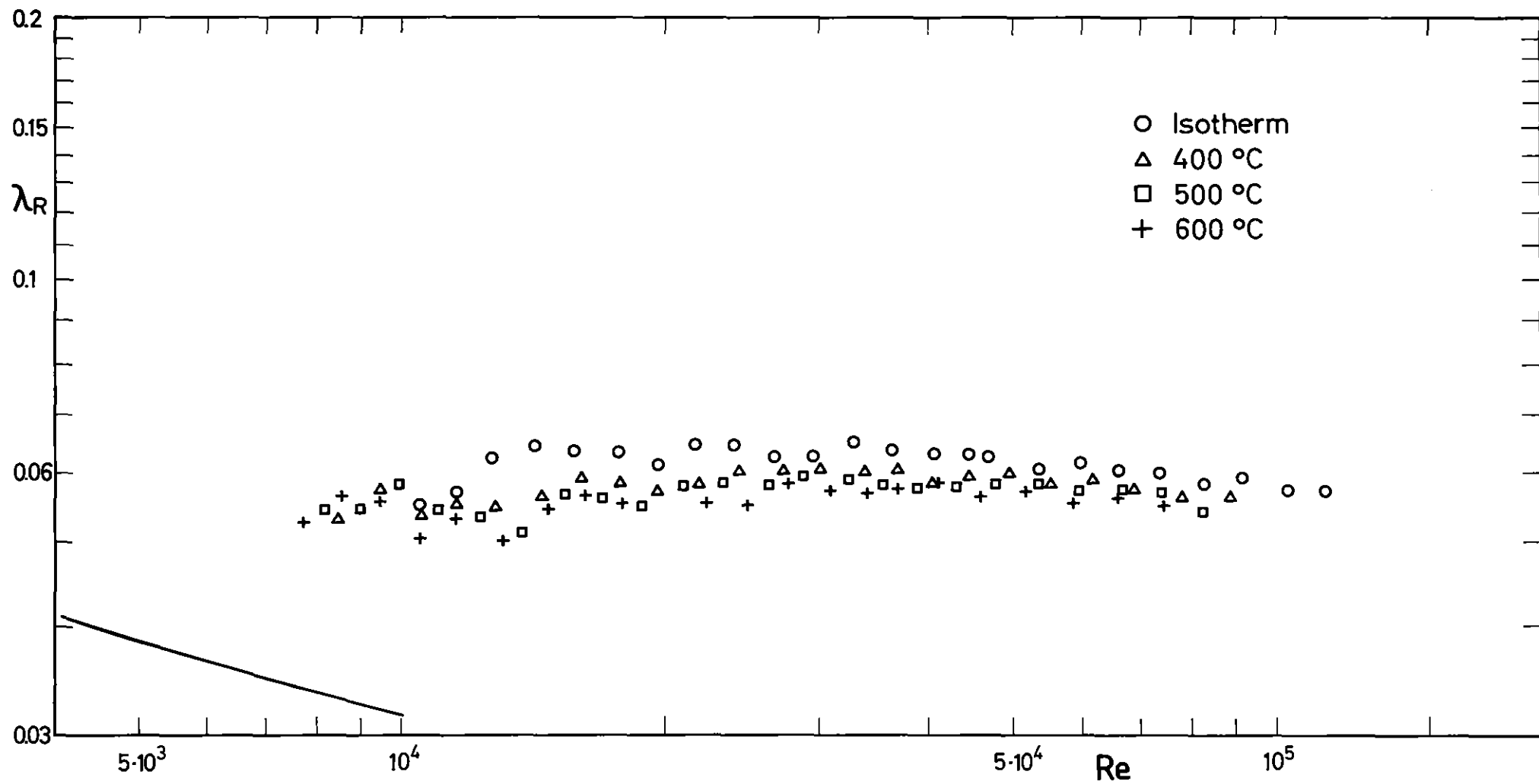


Fig.28: Friction factor versus Reynolds number (CE4) (nitrogen runs)

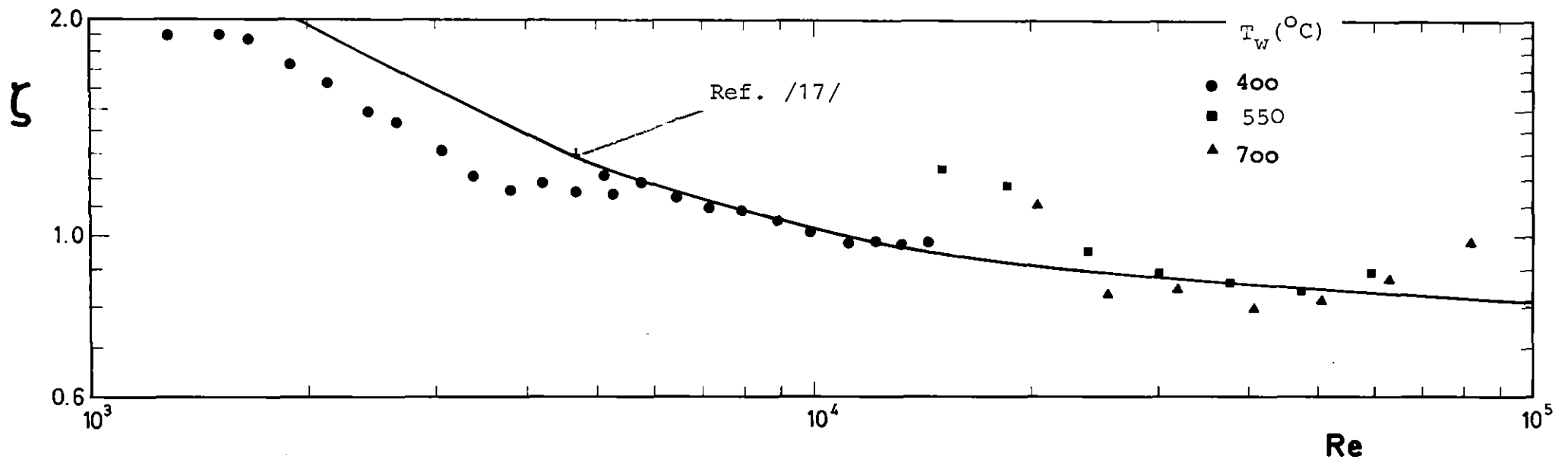


Fig.29: Drag coefficients of spacer grid in the rough part (helium runs)

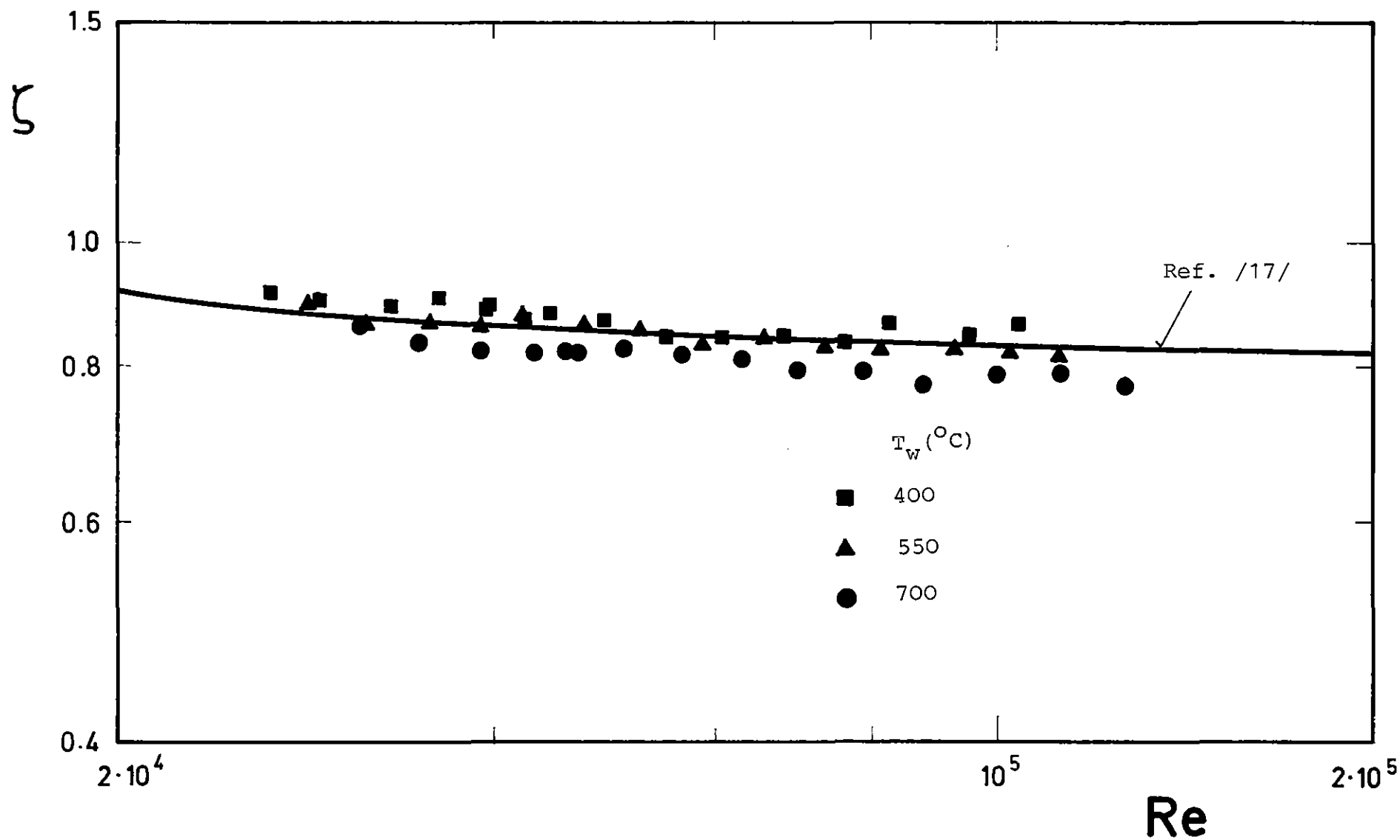


Fig.30: Drag coefficients of spacer grid in the rough part (nitrogen runs)