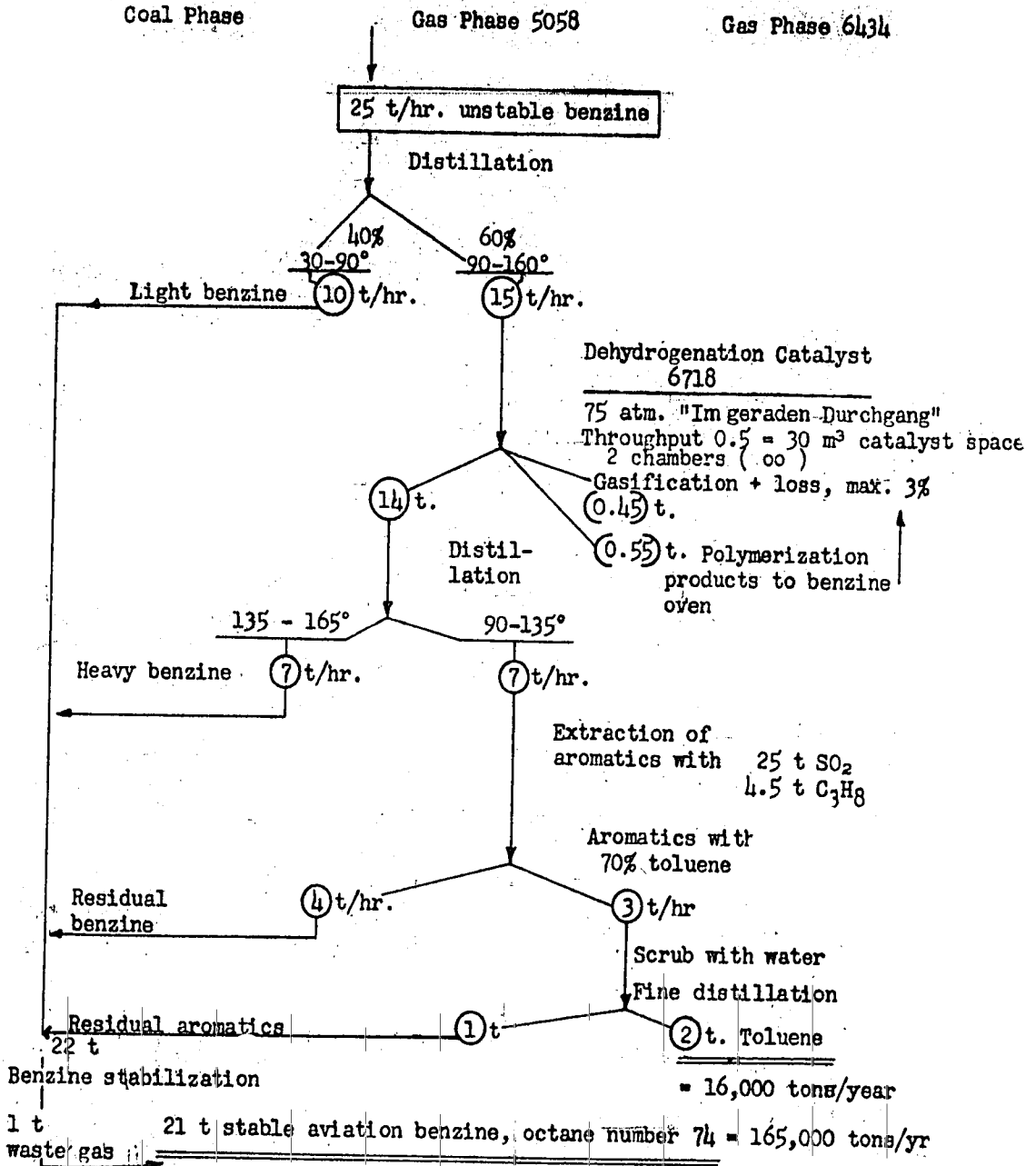


Heating Up of 7019 Chambers, with Special Reference to Refining Furnaces

A 6-page report, dated May 12, 1941, on the 7019 chambers at Scholven, Stettin, and Nordstern. These chambers vary since they were built from different 6034 chambers. Various alterations are recommended for increasing their efficiency. The following table summarizes the operating conditions at the three plants:

	Scholven		Stettin		Nordstern	
	Ch. 6	Ch. 10	Ch. 5	Ch. -	Ch. 5	Ch. 6
	4-10-40	5-10-41	3-1-41	-	4-1-41	-
Ovens per chamber	2	2	3	3	2	3
Throughput t/hr	16	16	24	24	16	24
Regenerators per chamber	2	3	3	3	2	3
Charge t/hr		i l l e g i b l e				
Temp. of refining furnace ° C	360	278	278 (cold gas)		350	
K value of regeneration in operation:						
K I cal/m ² /°C/h	460		600		800	
K II	150		240		400	
K III			240			
Initial temp. of preheaters in cycle operation ° C	380		453		403	
Final temp. - preheaters	473		491		487	
Preheater arrangement with max. coils	13	10	16	16	16	16
Preheater - No. of coils	13	10	12	12	14	13
Material of coils	N 10, N 8 V	N 8 V	N 8 V	N 8 V	N 10, N 8 V	N 8 V
Blast capacity m ³ /hr	60,000	40,000	60,000	60,000	80,000	80,000
Blast operation "	45,000		45,000		75,000	
Max. blast temp. ° C	450	450	450	500	500	500
"Walgas" velocity m/sec.	15.4		15.5		22.0	
K value of coils cal/m ² /°C/h	10.5		13.4		9.0	

Flow Diagram of Benzine Dehydrogenation, Catalyst 6718

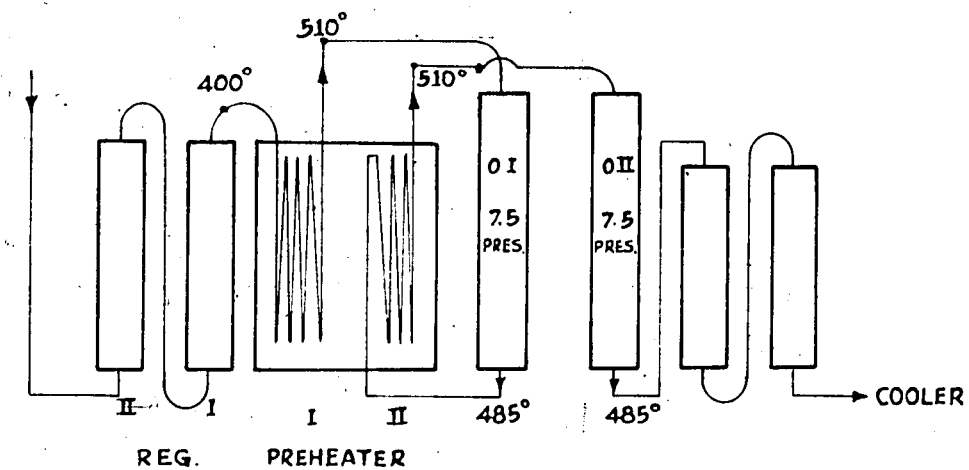


Buer-Scholven, Nov. 25, 1939.

Bag 2246 Target No. 30/4.09 - Scholven
Item 4 (E)

Dehydrogenation by Catalyst 6718

(According to status in respect of discussion at Ludwigshafen, November 22, 1939)



Benzine Dehydrogenation. Catalyst 6718

Operating conditions:

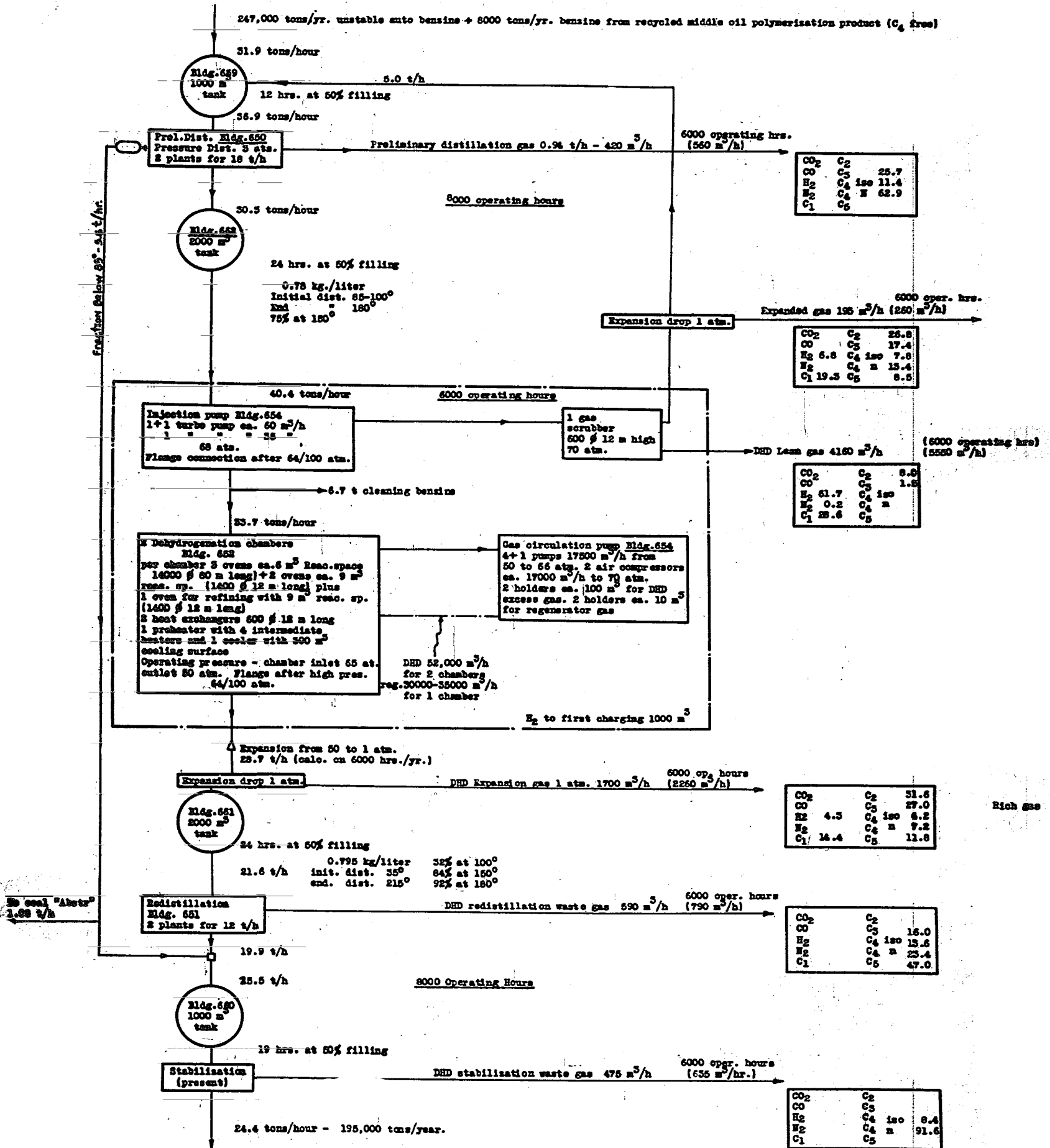
Benzine to be treated: 15 tons benzine fraction 90-165°.
 Catalyst charge: 0.5 kg/liter catalyst.
 Required catalyst space: 30 m³ = 2 stages, each stage 15 m³
 Temperature 510° final heating -- permissible temperature decrease
 to 485° - about 26 mv.
 Total pressure: 75 atm. at 50 atm. H₂.
 Amount of gas per stage: 75 t oil + 15,000 m³ recycle gas.
 Possibility provided for to increase gas from 1 : 3.
 Heat requirement for dehydrogenation: 80 cal./kg. oil.

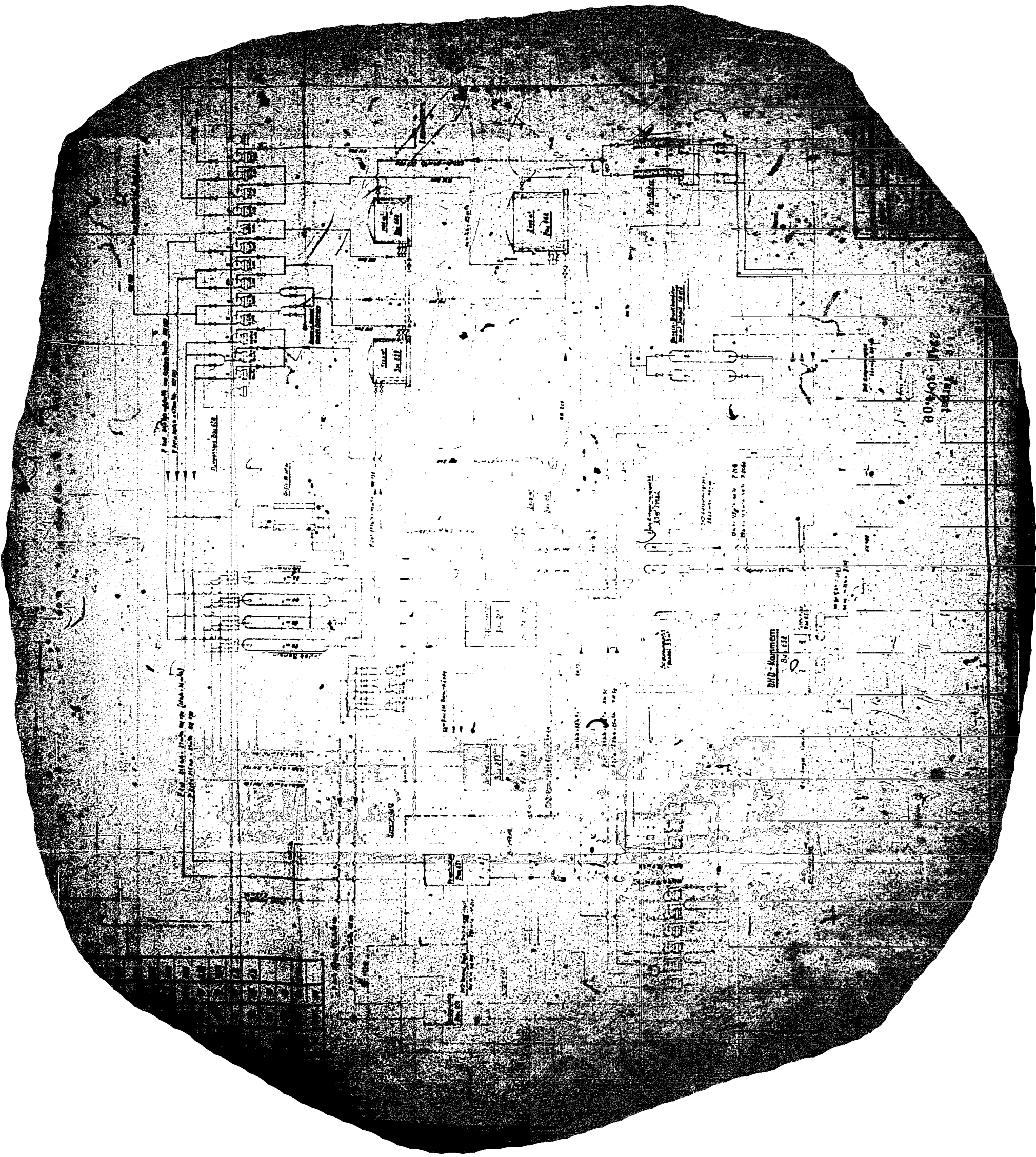
Distillation:

Heat requirement for preheating - about 3,000,000 cal. = 600 m³ gas
 at 5000 cal.

- 1) It is to be determined whether the following fractions can be recovered in the present benzine column:
 - a) Fraction distilling over up to 90° - approx. 10 t/hr. = 20%
 - b) From 90-160° (eventually 165°) - " 15 t/hr. = 30%
 - c) Over 160° - " 25 t/hr. = 50%
- 2) This/catch-pot product 90-165° (approx. 15 t/hr. must again be distilled into:
 - a) Fraction 90-135° or 80-135° - approx. 9 t/hr. = 60%
 - b) Fraction 135-165° - " 6 t/hr. = 40%
- 3) The toluene and fraction rich in aromatics, 90-135° (2a) is then extracted with SO₂/C₃H₈ (gives about 2 t toluene).

Scholven DED Plant for Producing 240,000 Tons Per Year Auto Bessine





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210 - Kammern
20/1/01

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