

FIIM STUDY GROUP

REPORT

T. O. M. REEL NO. 88

Prepared by

SOCONY VACUUM OIL COMPANY

SOCONY-VACUUM LABORATORIES
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Paulsboro, N. J.

Review of Microfilm Reel #88
U. S. Government Technical Oil Mission

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Introduction

Technical Oil Mission microfilm reel #88 is made up for the most part of drawings and test data of equipment used in the hydrogenation of coal. Very little can be accomplished by abstracting these data or preparing a subject index for it. Therefore, drawings are presented, by title only, in the order in which they appear in the reel. References to reels that contain a more thorough description of this process are given.

Technical Oil Mission Reel #88

Part I Bag #2734 Target #30/4.11

Ruhröl GmbH, Bottrop - Welheim

Description Of Individual Items (#1-83)

1-75

75 frames

various dates

Drawings of Pressure Vessels

These items are made up of drawings of reactors for the pressure hydrogenation of coal. They were collected and ordered by L. L. Hirst. The drawing numbers in the following list correspond to the card index of Ruhröl GmbH. The last number indicates size of sheet.

The reactors appear to be of the "Wickel" type; that is, thin-walled and reinforced by multiple steel-tape windings.

Items belonging to this same Bag and Target can be found in T.O.M. Reel #10 (10A). They may furnish more detailed information on the drawings listed here. A report on T.O.M. Reel #10 has been prepared by the Koppers Company. A copy of this report can be found in T.O.M. Reel #143.

<u>Item</u>	<u>Drawing #</u>	<u>Title of Drawing</u>
1	1208-1	Assembly-plan of Gas-Phase Reactor (1000 \emptyset x 15m)
2	FW 1178-1	High-temperature Separator *)
3	FW 1424-1	Horizontal Reactor (Cont. vol. 3.9m ³)
4	FW 1998-1	" " " " 7.2m ³)
5	FW 2351-2	Regenerator (600 \emptyset x 18m)
6	FW 1411-4	High-pressure Tubes (assembly)
7	FW 1739-2	*)...
8	FW 1738-2	Ceramic-lined Reactor
9	FW 1524-1	Masonry Work for Reactors
10	FW 1725-2	" " " "
11	FW 1740-2	*)...
12	FW 1741-2	Upper-Hopper (funnel?) for 1000 \emptyset x 18m Reactor
13	FW 1742-2	Upper Insulating Ring and Gasket for same Reactor
14	FW 1495-1	High-temperature Separator (assembly)
15	FW 1434-1	" " " "
16	FW 1241-1	Upper Stuffing-box*)
17	FW 1243-1	Lower " " *)
18	FW 1003-1	*)...
19	FW 2365-2	Detail of Wickel-type Reactor (wound tape body)
20	FW 1872-1	Detail of Reactor

*)... drawings or headings are illegible or missing.

<u>Item</u>	<u>Drawing #</u>	<u>Title of Drawing</u>
21	FW 1871-1	Detail of Reactor
22	FW 3269-1	" " "
23	FW 1575-1	" " "
24	FW 1510-1	" " "
25	FW 1336-1	High-temperature Separator
26	FW 1741-1	Lower Hopper (funnel?) of 1000 ϕ x 18m Reactor
27	FW 1239a-1	Coal-paste Injection Pump
28	FW 1599-1	Flush-oil Pump (750 atm)
29	FW 1495-1	*)... --- Missing ---
30	FW 1702-1	*)...
31	FW 1298-8	Flange (top-cover of 1000 ϕ x 18m Reactor)
32	FW 1299-8	Detail of same
33	FW 1708-1	Stuffing-box
34	FW 2633-1	Detail of Wickel-type Reactor (wound tape body)
35	FW 1770-4	Detail of Reactor
36	FW 1782-4	" " "
37	FW 1769-4	Upper hopper (Funnel?)
38	FW 2671-1	Masonry Work for Preheater
39	FW 2672-1	" " " "
40	FW 2670-1	" " " "
41	FW 2952-1	Assembly-plan of 1000 ϕ x 16m Reactor
42	FW 2953b-1	" " " " " "
43	FW 1329-1	Main Bearing (150 ϕ x 220) of Compressor (350-stroke)
44	FW 1332-1	Main Bearing (280 ϕ x 450) of Compressor (700-stroke)
45	FW 1331-1	Main Bearing (280 ϕ x 550) of Compressor (750-stroke)
46	FW 1330-1	Framework of 700-stroke Compressor
47	FW 1438-8	*)... ---Missing---
48	FW 1481-8	Plug for Cold Gas Inlet of 1000 ϕ x 18m Reactor
49	FW 1482-8	Insulating Thimbles for Top of 1000 ϕ x 18m Reactor
50	FW 1402-8	Coupling Assembly Detail
51	FW 1499-4	Reactor Detail
52	FW 1501-4	" "
53	FW 1584-4	*)...
54	FW 1643-2	Detail of Coal-paste Injection Pump (valves)
55	FW 1644-2	" " " " " "
56	FW 1646-2	" " " " " "
57	FW 1645-2	" " " " " "
58	FW 1736-4	Detail of Reactor
59	FW 1737-4	Lower Insulating Ring and Gasket for Reactor
60	FW 1738-4	*)...
61	FW 1739-4	*)...
62	FW 1740-4	*)...
63	FW 1935-2	High-pressure Circulation Pump

*)... drawings or headings are illegible or missing.

<u>Item</u>	<u>Drawing #</u>	<u>Title of Drawing</u>
64	FW 1946-2	High-temperature Separator
65	FW 1937-2	*)...
66	FW 2133-2	Detail of Reactor Wall (bores)
67	FW 2134-2	Bottom Plate of 1000 \emptyset x 18m Reactor
68	FW 2135-2	Top Plate of 1000 \emptyset x 18m Reactor
69	FW 2136-2	Upper Insulating Ring for 1000 \emptyset x 18m Reactor
70	FW 2137-2	Upper Hopper (funnel?) for 1000 \emptyset x 18m Reactor
71	FW 2138-1	Masonry Work for 1000 \emptyset x 18m Reactor
72	FW 2139-2	Angular Piece (inlet?) of 1000 \emptyset x 18m Reactor
73	FW 2344-2	Top Plate of 1000 \emptyset x 18m Reactor
74	FW 2345-2	Bottom Plate of 1000 \emptyset x 18m Reactor
75	FW 2353-2	Bottom Plate of Regenerator

*)... drawings or headings are illegible or missing.

76-83 8 units 1937-1942

Acceptance Tests for Pressure Vessels

These items are copies of 8 notebooks with results of high-pressure tests to which reactors were submitted before being definitely accepted. Blueprints of the vessels tested and certificates of acceptance are included.

These notebooks are classified by the following numbers:

<u>Item</u>	<u>Classification</u>
76	M.912/1
77	M.912/2
78	M.7/1009/4
79	M.1018/26
80	M.7/1018/26
81	M.7/1018/32
82	M.7/1018/79
83	M.7/1018/86

Part II Bag #2746 Target #30/4.08

Gelsenberg - Benzin A. G.

Item 1

1 frame

Drawing of a High-Pressure Joint

Part III Bag #2747 Target #30/4.08

Gelsenberg - Benzin A. G.

Description of Individual Items (#1-28)

1-28

28 frames

1939-1943

Flowsheets Pertaining to the Operation
of Coal Hydrogenation Installations

These items are a series of flowsheets and curves pertaining to the pressure hydrogenation of coal. No explanations are given of these diagrams in this reel. They are listed below with only the titles found on the individual sheets to describe them.

However, some information pertaining to the meaning of the graphs in items #14 and #17-21 can be found in the "Report on microfilm reel #4" prepared by H. Schindler of the Pure Oil Company. A copy of this report can be found in T.O.M. Reel #143, item #3, pages 71-75.

<u>Item #</u>	<u>Description of Drawings</u>
1	Flow-sheet (Electric Preheater and Reactors)
2	Production Curves
3	" "
4	Influence of Catalyst Addition on HP and Residue Work-up (curve)
5	Influence of Catalyst Addition on HP and Residue Work-up (curve)
6	Schedule for Gas Analyses
7	" " " "
8	Telephone Directory of Personnel
9	" " " "
10	Schedule for Gas Analyses
11	" " " "
12	Operating Schedule of Coal-chambers (1939-1940)
13	Schedule for Use of Catalyst 5058 (1939-1943)
14	Curves (graphs): "Relation between High-pressure Operation of the Hydrogenation Unit and the Operation of the Sludge Centrifuges". July-Aug. 1943
15	Production Curves with Catalyst 5058 (1939-1943)
16	" " " " " " "
17	Curves (graphs): "Relation between High-pressure Operation of the Hydrogenation Unit and the Operation of the Sludge Centrifuges". May-June 1943
18	Curves (graphs): "Relation between High-pressure Operation of the Hydrogenation Unit and the Operation of the Sludge Centrifuges". March-April 1943
19	Curves (graphs): "Relation between High-pressure Operation of the Hydrogenation Unit and the Operation of the Sludge Centrifuges". Nov.-Dec. 1943
20	Curves (graphs): "Relation between High-pressure Operation of the Hydrogenation Unit and the Operation of the Sludge Centrifuges". Sept.-Oct. 1942
21	Curves (graphs): "Relation between High-pressure Operation of the Hydrogenation Unit and the Operation of the Sludge Centrifuges". May-Aug. 1942
22	Diagrammatic Story of Use of Catalyst 5058 (Oct. 1939-Nov. 1940)
23	Coal Chamber with 4 Reactors
24	Flowsheet of Koppers Isobutane Installation in Pölitz
25	Flowsheet of the Linde Gasoline-separation Unit in Pölitz (7500m ³ /yy)
26	Diagram of Gas-expansion Network
27	Dwg. #1058-1 Assembly Plan of Hydrogenation Reactors 1000 Ø x 18m
28	Dwg. #1226-1 Flowsheet of Hydrogenation Installation

Subject continued on Reel #89.