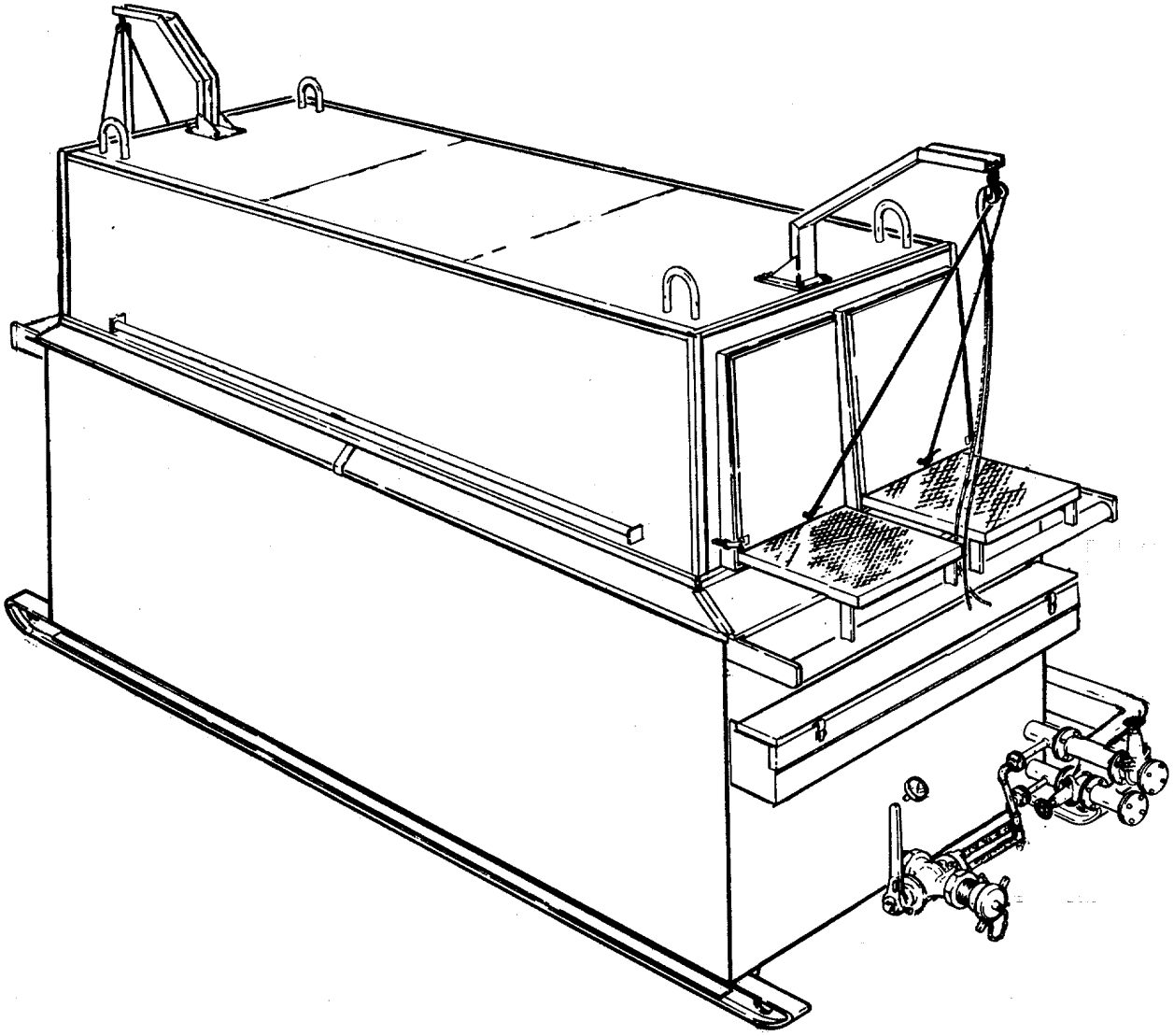
TECHNICAL MANUAL

OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS INFORMATION AND SUPPLEMENTAL OPERATING MAINTENANCE AND REPAIR PARTS INSTRUCTIONS)

MELTER, ASPHALT
SKID MOUNTED
HOT OIL CIRCULATING, 750 GPH
CHAUSSE MODEL STMD-3000
(NSN 3895-01-102-3564)

HEADQUARTERS, DEPARTMENT OF THE ARMY

DECEMBER 1982



PART I

OPERATION AND MAINTENANCE MANUAL WITH REPAIR PARTS LIST

Section I. INTRODUCTION

1-1. Description

a. This manual provides instructions of operation and service and lists repair parts for the Chausse Model STMD-3000, asphalt de-drumming melter, manufactured by Chausse Manufacturing Co., Inc. The unit consists of a dual de-drumming tunnel and a 3000 gallon capacity, heated storage tank. The tunnel is constructed to handle a maximum of twelve, 55 gallon drum at one time, with a melting rate of 750 gallons per hour of 85-100 penetration asphalt cement. The melted asphalt cement can be maintained in the storage tank at pouring temperature (235° F.), and transferred to bulk storage tanks or distributors by means of a separately supplied asphalt pump. Figure 1-1, identifies major components and features of the melter in its basic operating configuration.

b. The tunnel and storage tank are equipped with heat dissipating coiled piping, interconnected with removable external piping and valves to permit control of heat transfer medium. A separately supplied heat supply must provide 1,000,000 BTU per hour to the melter. Circulating hot oil is recommended as the most efficient heat transfer medium. When oil is not available, hot water or steam can be substituted, but only when proper safety devices are installed in the heat transfer piping system.

1-2. Tabulated Data

Mode	STMD-3000
De-drumming Rate	750 GPH
Tunnel Capacity	12-55 Gal. Drums
Storage Tank Capacity	3000 Gal.
Heat Requirement	1,000,000 BTU/Hr.
Heat Transfer Piping	2 inch.
Asphalt Piping	3 inch.
Shipping Dimensions:	
Height	73 inch.
Width	79 inch.
Length	209 inch.
Weight (Clean)	10,500 pounds
Operating Dimensions:	
Height (overall)	145.75 inch.
Width	91 inch.
Length	227 inch.
Height (Drum loading platforms)	75 inch.
Weight (Clean)	10,500 pounds

1-3. Safety Precautions

a. When lifting unit in shipping configuration, do not use lifting eyes of tunnel. Attach lifting sling to eyes in ends of skid rails and guide sling cables over the stand-off guard at front and rear of unit.

b. Do not operate unit without protective, insulated clothing, particularly gloves. Severe burns may result from grabbing or leaning on piping or unit.

c. Do not operate unit in the rain. Operation of melter during rain may cause the asphalt to boil and catch fire. After a rain or during humid conditions, open the tunnel doors and dry the unit before operating. Keep the heat transfer piping system full to minimize condensation.

d. Keep an accurate record of the amount of asphalt that is de-drummed. Do not overfill the storage tank, maximum capacity is 3000 gallon.

e. Allow unit to cool to ambient temperature before starting cleaning operations or dismantling of unit.

f. When using kerosene or diesel fuel as a cleaning solvent, no open flame should be within 50 feet of the melter. Flash point of kerosene is 100-160° F., providing the potential of explosion of vapors.

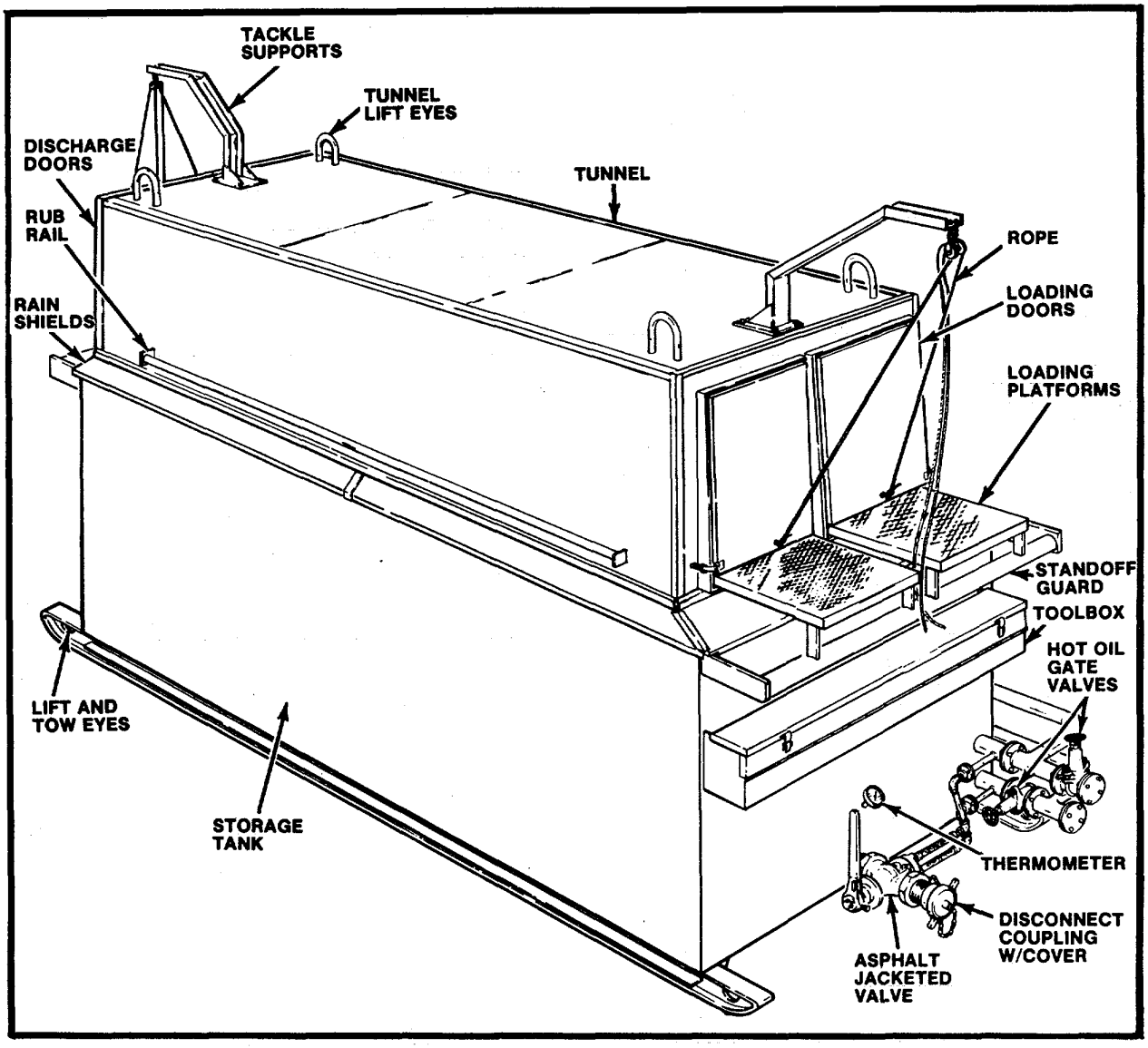


Figure 1-1. Asphalt Melter, Model STMD-3000, right front, three-quarter view.

Section II. INSTALLATION

2-1. General

The asphalt meter unit may be installed as a single unit where job requirements call for 750 gallons or less, of asphalt cement per hour. Where job requirements in excess of 750 gallons per hour exist, two units may be interconnected in parallel, with piping provided with each unit.

2-2. Site Preparation

a. The asphalt melter must be installed on a solid, level and well drained base or concrete pad. The minimum area required for installation of the asphalt melter is 10 x 20 feet.

b. Site planning must also provide for positioning of the asphalt melter(s), the heat plant and the asphalt pumping unit so that sufficient additional space is available at the front and rear of the melter (s) for loading and unloading of drums.

c. When installing two or more units in parallel, the site must provide for spacing of the asphalt melters, four feet apart (measured between outside walls of storage tanks) to align and install interconnect piping.

2-3. Unpacking

a. The asphalt melter is shipped as a self-contained unit, requiring unpacking and set-up before operation can begin.

b. A suitable lifting device, of sufficient capacity, must be available for unloading, unpacking and set-up of the asphalt melter. Remove all tiedown cables or strapping and all blocking used to secure the unit to the carrier.

CAUTION

Do not attach lifting sling to lift eyes on top of tunnel or to the stand-off guards at front and rear of unit. Attach lifting sling to eyes in the front and rear of the skid rails, guiding the sling cables over the stand-off guards at each end of unit.

c. Attach a suitable lifting sling to the eyes of skid rails, with cables guided over the top of the stand-off guards at front and rear of the unit. Lift the unit from the carrier bed and position unit on worksite.

NOTE

The asphalt melter may be moved short distances on its skid rails by attaching towing chains to the eyes in the front or rear skid rails.

d. Remove the four holddown bars, securing the tunnel support beams to the storage tank (Figure 2-1). Lift out the two tunnel support beams.

e. Attach a four-point sling to the lifting eyes on top of the tunnel and lift the tunnel out of the storage tank with a suitable lifting device. Place the tunnel on wood blocks, positioned to support the tunnel support rails.

f. Re-install the tunnel support beams in the storage tank, securing with the holddown bars.

g. Open the tunnel doors and remove the items listed in table 2-1 from inside the tunnel. Leave the loading platforms folded inside the tunnel and close the tunnel doors.

NOTE

If any items, listed in table 2-1, are not found inside the tunnel, check the bottom of the storage tank and the toolbox. Report missing items to supervisor.

h. Open the toolbox and remove the items listed in table 2-2. Report missing or damaged parts to supervisor.

Table 2-1. Loose Items Shipped Inside Tunnel

Part No	Description	Qty..	Fig. Index No.
3000-9	Flex-hose, asphalt (assembled with following four items)	1	6-2-3
245SS	Hose end, disconnect, 3 inch	2	6-2-1
673-3IN-GAL	Coupling; pipe, 3 NPT	1	6-2-2
179433	Tee, pipe, 3 NPT	1	6-2-4
WWP471	Plug, pipe, 3 NPT, square head	1	6-2-5
3000-11	Connector pipe -	1	6-3-1
3000-12	Shield, front rain	1	6-4-6
3000-13	Shield, LH forward side rain	1	6-4-7
3000-14	Shield, RH forward side rain	1	6-4-8
3000-15	Shield, LH rear side rain	1	6-4-9
3000-16	Shield, RH rear side rain	1	6-4-10
3000-17	Shield, rear rain	1	6-4-11
3000-18	Support, tackle (with swivel eye, eyebolt and nuts	2	6-4-17
3000-30	Chute, discharge	1	6-4-41

Table 2-2. Loose Items Shipped In Toolbox

PART NO.	DESCRIPTION	QTY	FIG./INDEX NO.
3000-4	Offset, inlet tee	1	6-1-12
3000-5	Inlet Elbow, tunnel	1	6-1-13
3000-6	Gasket, 2 inch pipe ring	12	6-1-16
			6-2-8
488-1/2-2	Valve Assembly, gate, 2 inch	3	6-1-17
3000-7	Offset, outlet tee	1	6-1-18
3000-8	Outlet Elbow, tunnel	1	6-1-19
T304SS-2	Union, pipe, stainless steel	2	6-1-22
3000-10	Reducer Tee	2	6-2-7
MS90725-164	Screw, hex head cap, 5/8 NC x 2 inch long	24	61-14
MS90725-166	Screw, hex head cap, 5/8 NC x 2-1 /2 inch long	20	6-1-20
			62-10
MS51967-20	Nut, plain hex, 5/8 NC	48	6-1-15
			6-1-21
			62-11
MS51884-19ZH	Plug, pipe, 2-1/2 NPT, square head	2	6-2-1
MS51953-195	Nipple, pipe, 3 NPT short	1	6-3-5
TC571	R6pe, 5/16 dia. x 20 feet long	4	64-12

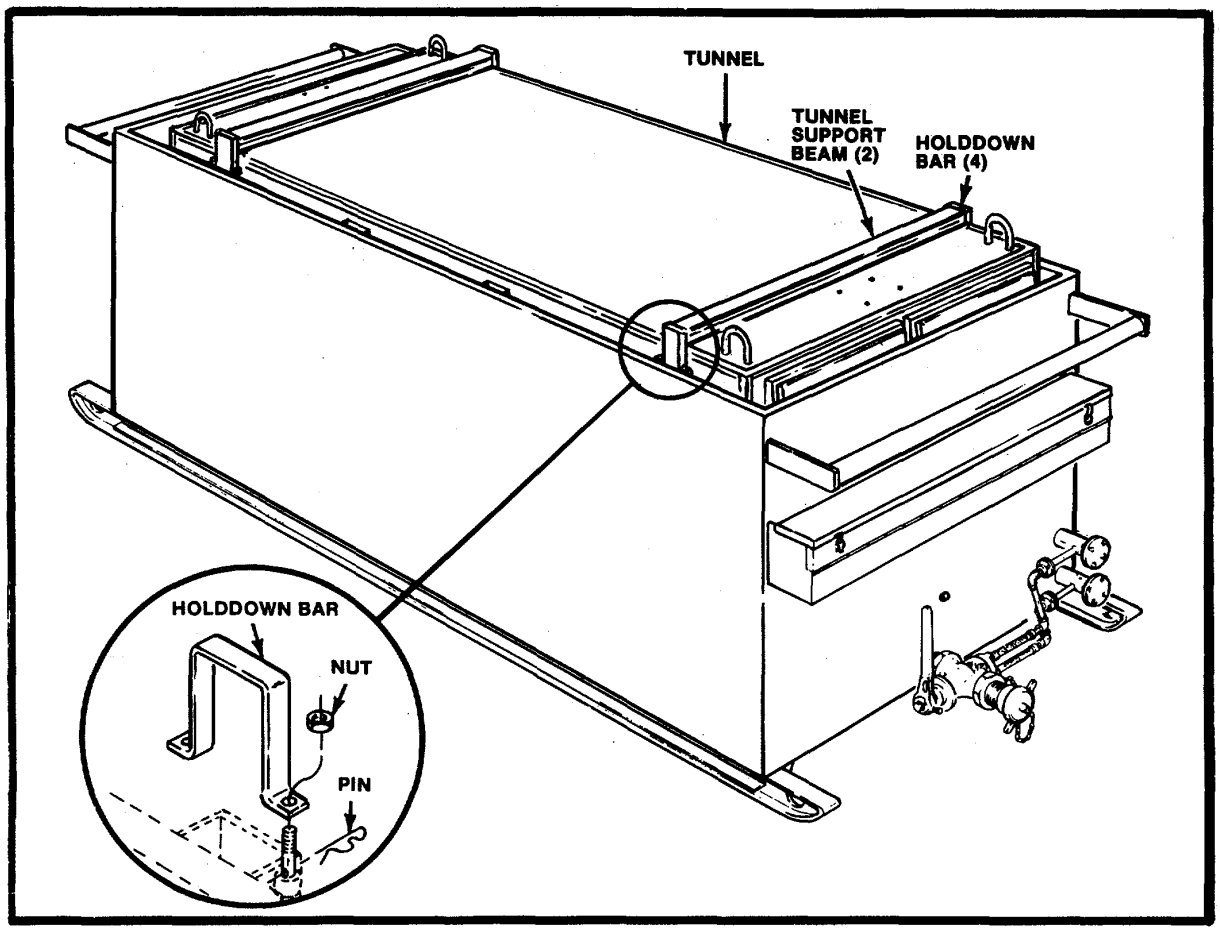


Figure 2-1. Asphalt Melter in shipping configuration.

2-4. Installation

a. Position the tackle supports on the front and rear top of the tunnel, securing each with the four hexagon head capscrews and flat washers provided (see Figure 2-2).

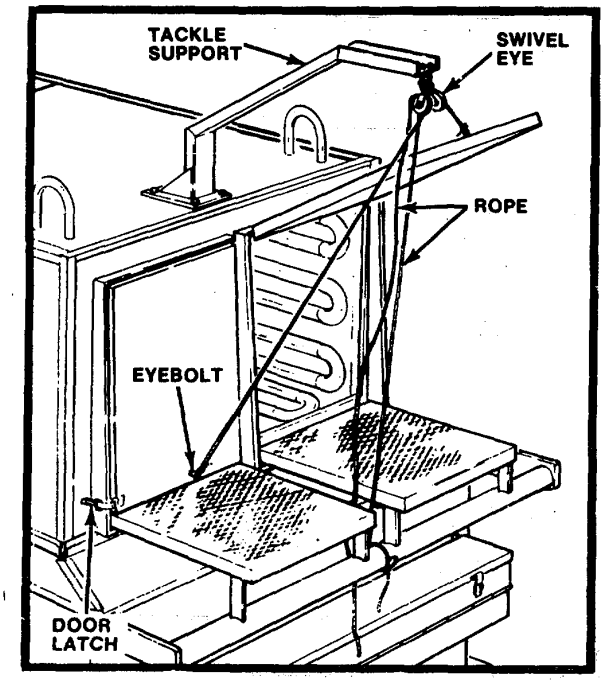


Figure 2-2. Installing tackle supports.

b. Thread a rope through each pulley wheel of the swivel eyes and tie one end of each to eyebolt on tunnel doors.

c. With a suitable hoist and a four-point sling attached to lifting eyes of tunnel, lift the tunnel into position over the storage tank. Align the tunnel so that the support rails (channels) on bottom of tunnel are directly over the tunnel support beams and lower the tunnel onto the beams. Center the tunnel between the sides of the storage tank.

d. Install the six-piece rain shield around base of tunnel as shown in figure 2-3. The rear rain shield must be installed first, then the side rain shields, working from the rear forward, with the front rain shield installed last.

e. Open the front doors of tunnel and fold out the loading platforms. Support legs of platforms must rest on the front stand-off guard.

f. Install the rear discharge chute (41, Figure 6-4) by hooking over the support angle welded to tunnel, just below the discharge door frames. The outer edge of the discharge chute will rest on the rear standoff guard.

g. Install thermometer (1, Figure 6-4) by threading into opening in front wall of storage tank.

h. Install heat transfer piping and asphalt jacketed valve as shown in figure 6-1. Insure that gaskets at each flanged coupling are not damaged or folded in such a way that would hinder sealing the joints.

NOTE

Install flange joint hexagon head capscrews and nuts finger tight, until all connections have been made then tighten all hardware securely.

i. For operation as a single unit installation, install connecting heat transfer piping and asphalt discharge hose as shown in figure 6-2.

j. For installations of multiple units make interconnections of heat transfer piping and asphalt hoses as shown in figure 6-3.

k. Inspect all connections to insure that they are tight and that the storage tank drain cap, in rear of storage tank, is installed.

l. Connect the heat transfer piping to the heat source at the 2-/2 inch reducer coupling on the ends of connector pipes (7, Figure 6-2). Insure that the flow of heat transfer oil is as indicated on figure 3-1.

m. Connect the asphalt discharge hose to supplied pumping unit for transfer of melted asphalt to working distributor or bulk storage tank.