CANCELLED

8/28
7/12/84

NATIONAL STANDARDS COMMISSION

NATIONAL MEASUREMENT (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

CERTIFICATE OF APPROVAL No 8/28

This is to certify that an approval has been granted by the Commission that the pattern and variants of the

Zero Vacuum Farm Milk Tank

submitted by Frigrite Refrigeration
27 Grange Road
Cheltenham Victoria 3192

are suitable for use for trade.

Conditions of Approval

This approval is subject to review on or after 30/4/85.

Instruments purporting to comply with this approval shall be marked NSC No 8/28.

This approval may be withdrawn if instruments are constructed and used other than in accordance with the drawings and specifications lodged with the Commission.

The Commission reserves the right to examine any instrument purporting to comply with this approval.

Signed

G. Harvey

Acting Executive Director

Descriptive Advice

Pattern: approved 23/5/73 - re-approved 14/5/80

. A refrigerated farm milk tank of 4500 L capacity.

Variants: approved 23/5/73 - re-approved 14/5/80

1. In other capacities, with up to 12 legs.
2. With a level indicator mounted outside the casing.

   Note: Approval of this variant is limited to 8 existing instruments.
3. With a level indicator mounted inside the casing.

...../2

Variant: approved 14/5/80

4. Of 7500 L capacity, with 8 legs (model ZV 750(61)).

Note: This variant was previously numbered 1(a).

Technical Schedule No 8/28 describes the pattern and variants 1 to 4; variant 4 (model ZV 750(61)) being listed in the table on page 2.

Variant: approved 26/8/81

5. With footplates bolted to the floor.

Note: This variant was previously numbered 4.

Technical Schedule No 8/28 Variation No 1 describes variant 5.

Variant: approved 16/6/82

6. Of 7500 L capacity, with 8 legs (model ZV 2000(77)).

Technical Schedule No 8/28 Variation No 2 describes variant 6.

Variant: approved 12/11/84

7. With combination leg/footplates.

Technical Schedule No 8/28 Variation No 3 describes variant 7.

Filing Advice

Certificate of Approval No 8/28 dated 25/6/82 is superseded by this Certificate and may be destroyed.

All references to "variant 4" in Technical Schedule No 8/28 Variation No 1 dated 4/9/81 (including Figure 9) should be altered to read "variant 5".

The documentation for this approval now comprises:

Certificate of Approval No 8/28 dated 7/12/84
Technical Schedule No 8/28 dated 16/5/80
Technical Schedule No 8/28 Variation No 1 dated 4/9/81
Technical Schedule No 8/28 Variation No 2 dated 25/6/82
Technical Schedule No 8/28 Variation No 3 dated 7/12/84
Figures 1 to 8 dated 31/5/73
Figure 9 dated 4/9/81
Figures 10 and 11 dated 7/12/84.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 8/28

Pattern: Zero Vacuum Farm Milk Tank

Submittor: Frigrite Refrigeration,
27 Grange Road,
Cheltenham, Victoria, 3192.

Description of Pattern:

The pattern (Figures 1, 2 and 3) is a refrigerated farm milk tank having a capacity of 4500 litres and known as the Zero Vacuum Farm Milk Tank, Model ZV 450.

It consists of a nearly horizontal reinforced stainless steel cylinder, having a wall thickness of not less than 2,77 mm, and sheathed in an outer casing of stainless steel 1,12 mm minimum thickness. The space between is filled with insulating material.

The internal diameter of the tank is 1320 mm ± 25 mm and the maximum length 3600 mm. The tank slopes toward the 50 mm outlet pipe, which is fitted with an external 50 mm full-way valve.

The refrigerated lower portion of the tank is of dimple plate, to which six legs with adjustable feet are attached. Each foot is supported on a floor plate (Figure 4), to which it is secured by a sealed pin. The approximate loading on each floor plate is 1000 kg when the total load is uniformly distributed on all feet.

On the top of the tank (Figure 2) are fitted agitator motors, temperature-measuring equipment, milk-entry holes and one manhole incorporating the dipstick socket (Figure 5).

The tank is level when the four level marks at approximately half capacity (Figure 1), one at each corner of the outer cylindrical shell, are in the same horizontal plane as the level mark on the rear of the dipstick.

Variants:

1. In other capacities, namely:

Model	Maximum capacity	Internal diameter	Maximum length	Minimum thickness cylinder ends		Number of legs	Approximate load on each support
	litres	mm ± 25	mm	mm	mm		kg
ZV 150	1500	975	2200	1,98	1,98	4	540
ZV 185	1850	975	2700	1,98	1,98	4	650
ZV 225	2250	975	3200	1,98	1,98	6	530
ZV 230	2300	1320	1900	2,77	2,36	4	830
ZV 300	3000	1320	2500	2,77	2,36	4	1070
ZV 375	3750	1320	3000	2,77	2,36	6	870
*ZV 450	4500	1320	3600	2,77	2,36	6	1000
ZV 565	5650	1320	4400	2,77	2,36	8	960
ZV 750	7500	1320	5900	2,77	2,36	12	820
ZV 750(61)	7500	1450	5030	2,77	2,36	8	1230

* The pattern.

2. Those variants listed under variant 1 having four legs, but with no floor plates.

   A level indicator, which is transparent in the direction of its longitudinal axis, is attached to the inner shell; the level marks on the indicator are in the same horizontal plane as those on the outer casing (Figures 6 and 8).

3. As in variant 2, but with the body of the level indicator between the tank and outer casing, and having the transparent ends of the indicator protruding through the ends of the outer casing (Figures 7 and 8).

General Notes:

1. Stability of Footings

   Designers should note that, if a tank is subjected to a change in slope of the order of 1 in 1000, a change in reading on the dipstick of up to the permitted tolerance, that is, one graduation, will occur. Foundations should be designed to prevent a change in slope of more than 1 in 4000.

2. Adjustable legs

In order to make it possible to determine when weight is taken by an adjustable leg, it shall be a firm fit, yet free to turn by hand when unloaded.

Test Procedures:

1. Rigidity

The rigidity of the tank structure shall be such that, with the empty tank uniformly supported on its four outside legs, the feet of the other legs being clear of the floor, there shall be not more than 0,3-mm deflection at any of the unloaded legs when:

(a) a tank with six legs is loaded to approximately 2/3 capacity;

(b) a tank with eight legs is loaded to approximately ½ capacity;

(c) a tank with twelve legs is loaded to approximately 1/3 capacity;

2. Maximum Permissible Error

The maximum error allowed for all scale marks on a dipstick is ± 1 scale interval.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 8/28

VARIATION No 1

Pattern: Zero Vacuum Farm Milk Tank

Submittor: Frigrite Refrigeration,
27 Grange Road,
Cheltenham, Victoria, 3192.

1. Description of Variant

1.1 Variant 4

With footplates bolted to the concrete floor instead of imbedded in it (Figure 9).

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TECHNICAL SCHEDULE No 8/28

VARIATION No 2

Pattern: Zero Vacuum Farm Milk Tank

Submittor: Frigrite Refrigeration,
27 Grange Road,
Cheltenham, Victoria, 3192.

1. Description of Variant

1.1 Variant 6

Model ZV 2000(77) of 7500 L capacity, which is similar to the pattern and variants as described in Technical Schedule No 8/28 dated 16/5/80.

The following should be added to the table on page 2:

Model	Maximum Capacity	Internal Diameter	Overall Length	Minimum thickness of cylinder ends.		No. of legs	Approx. load on each support leg
	Litres	mm ± 25	mm ± 50	mm	mm		kg
ZV 2000 (77)	7500	1829	4369	2.77	2.36	8	1400

25/6/82

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TECHNICAL SCHEDULE No 8/28

VARIATION No 3

Pattern: Zero Vacuum Farm Milk Tank

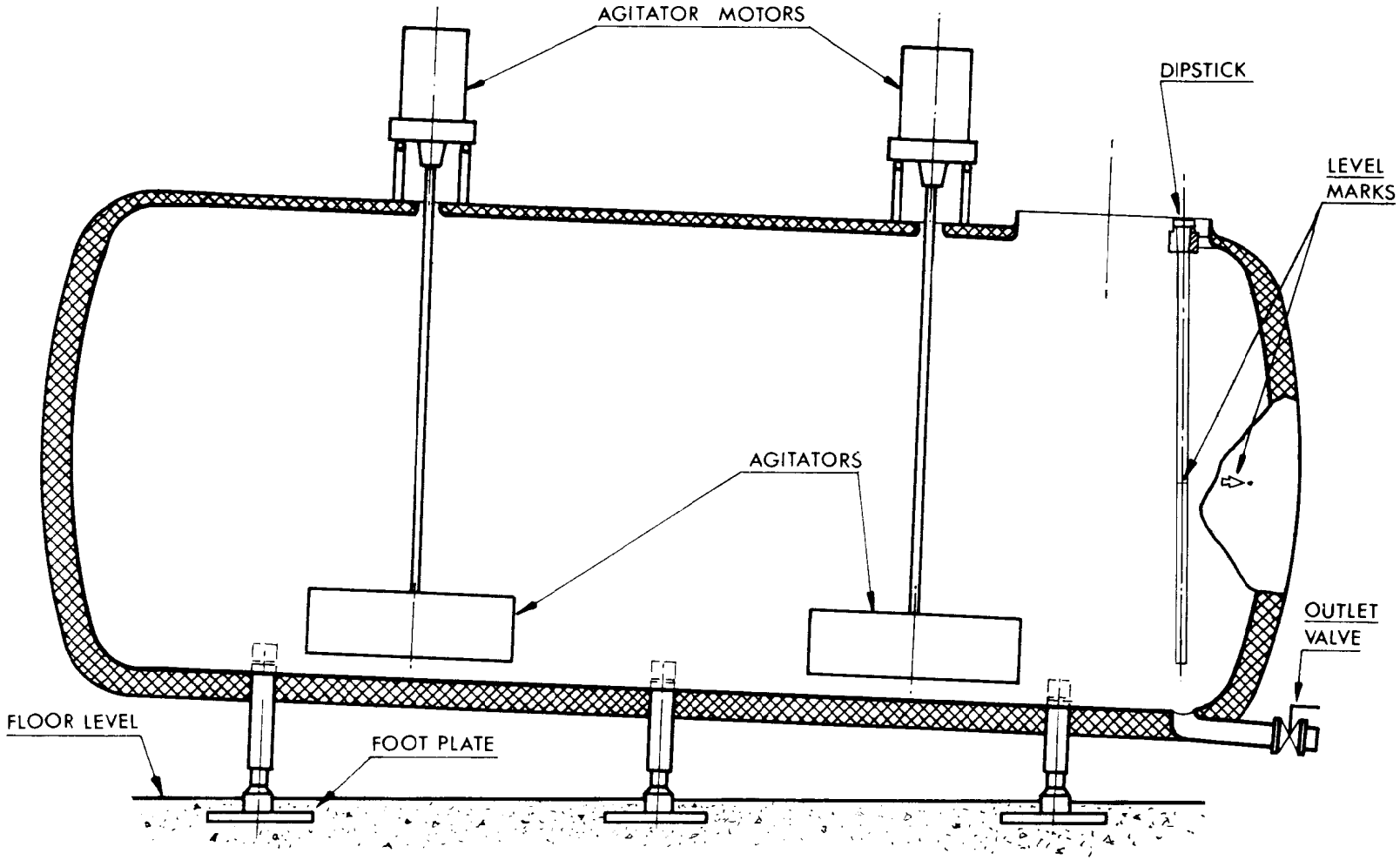
Submittor: Frigrite Refrigeration
27 Grange Road
Cheltenham Victoria 3192

1. Description of Variant 7

The pattern and variants fitted with combination leg/footplates as shown in Figures 10 and 11.

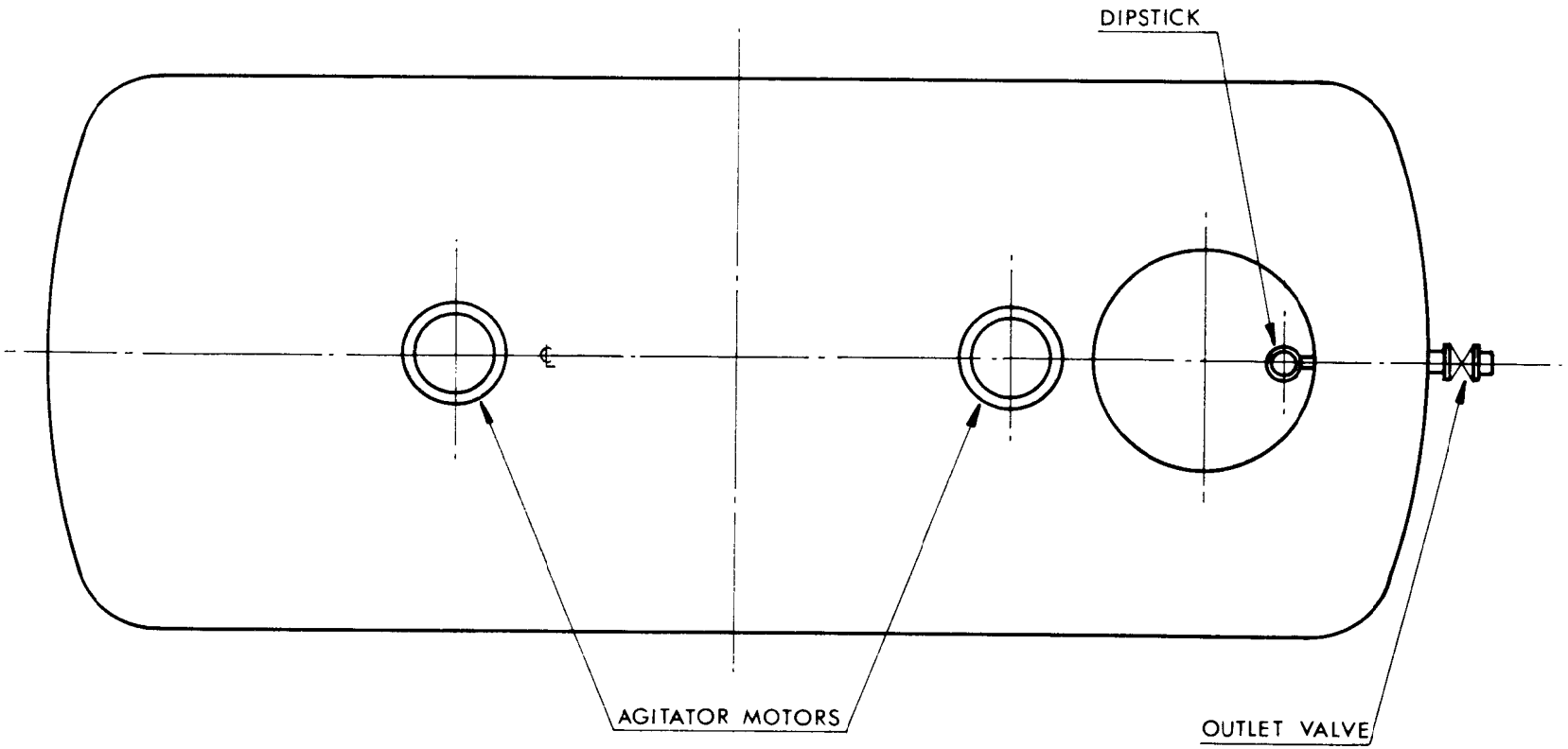
The legs are turned until the tank is level and then the integral footplates are bolted to the floor.

FIGURE 8/28 - 1



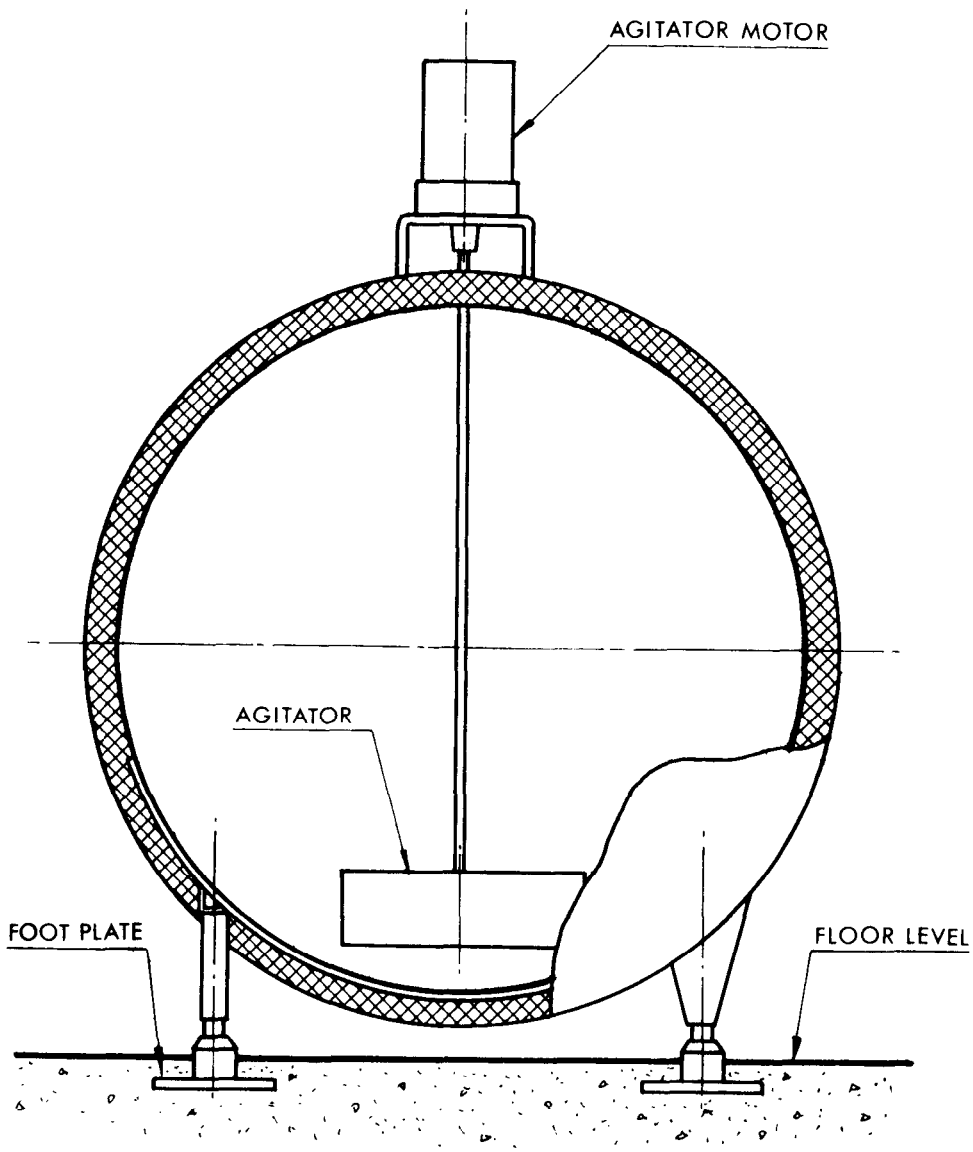
Cross-sectional Elevation — Side View

FIGURE 8/28 - 2



Plan View

FIGURE 8/28 - 3



Cross-sectional Elevation — End View

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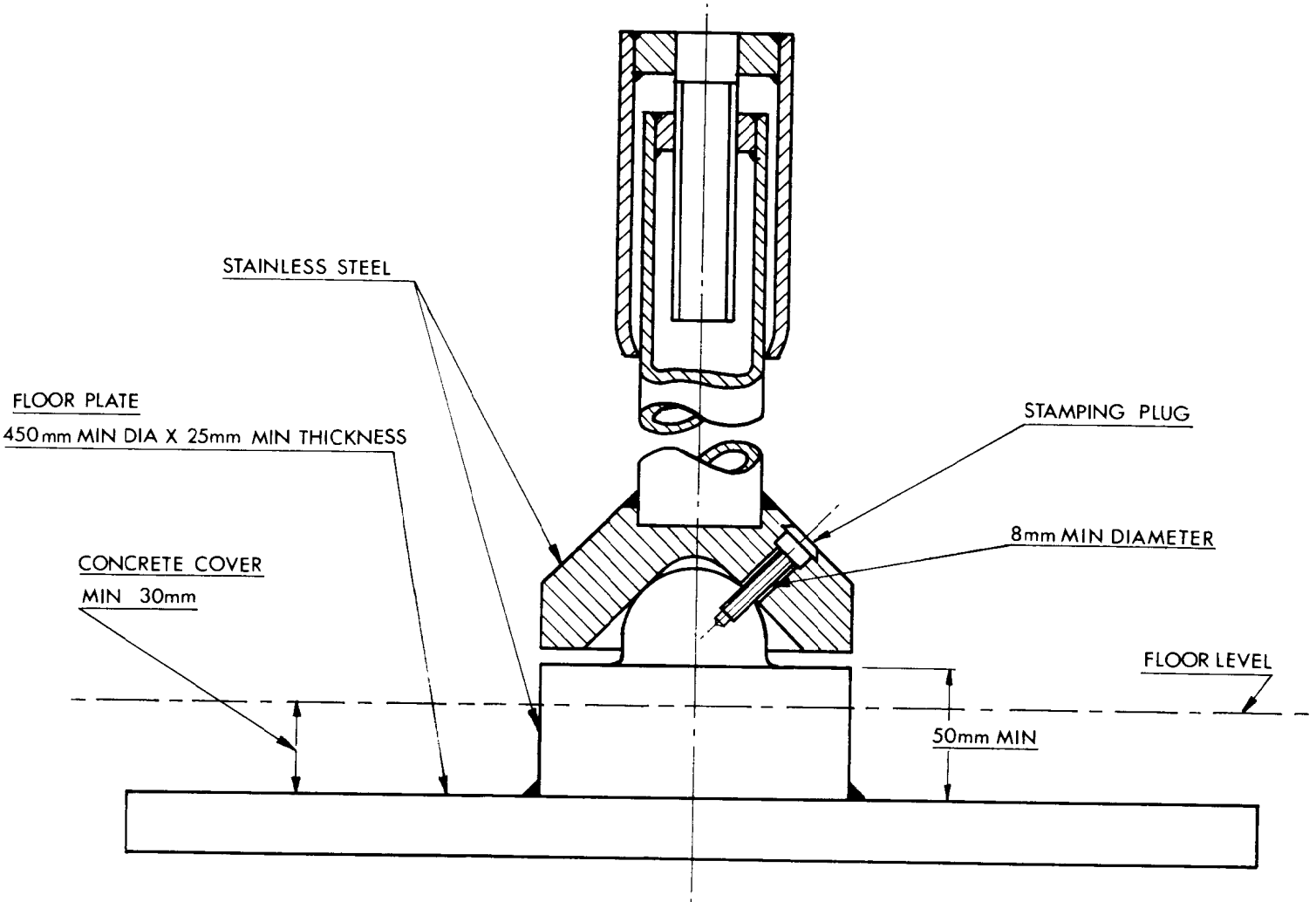
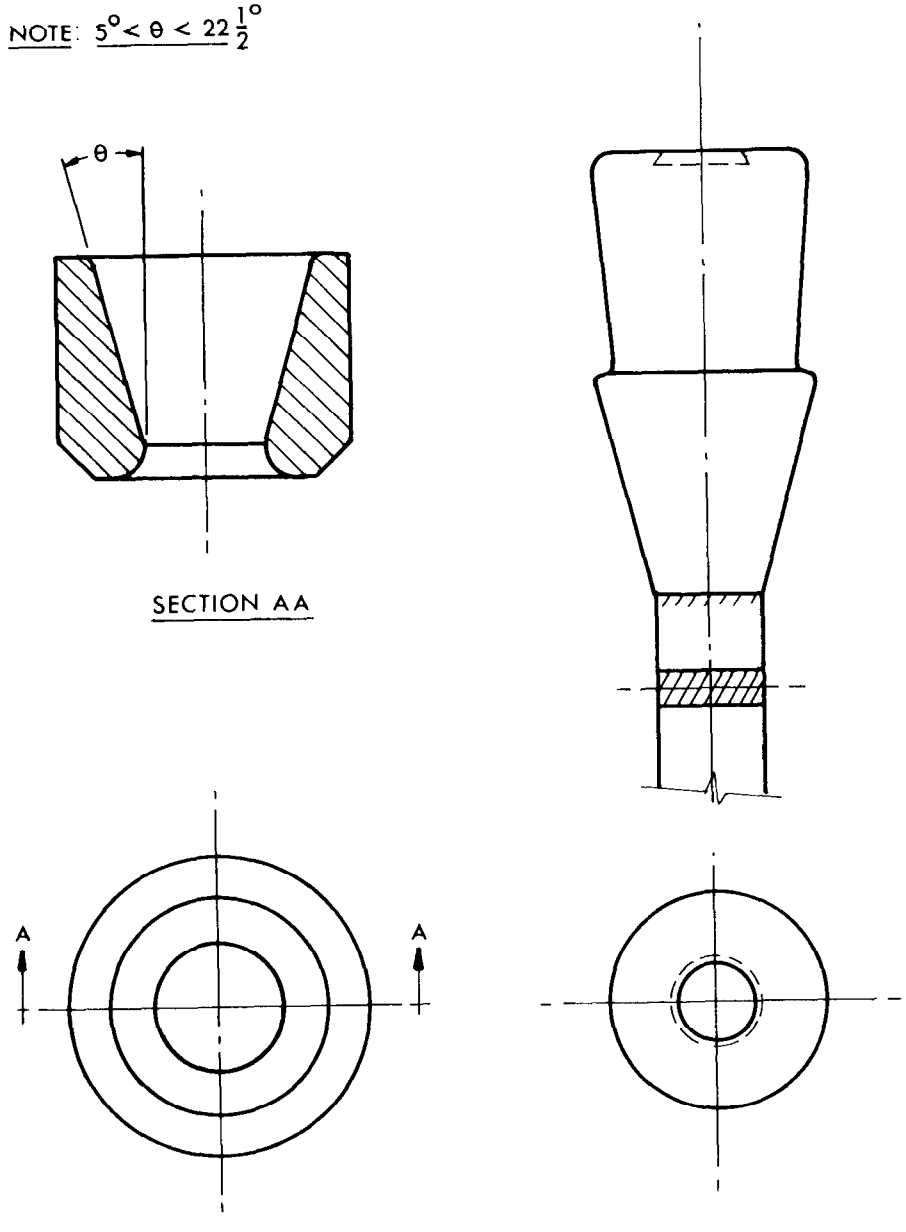
FIGURE 8/28 - 4

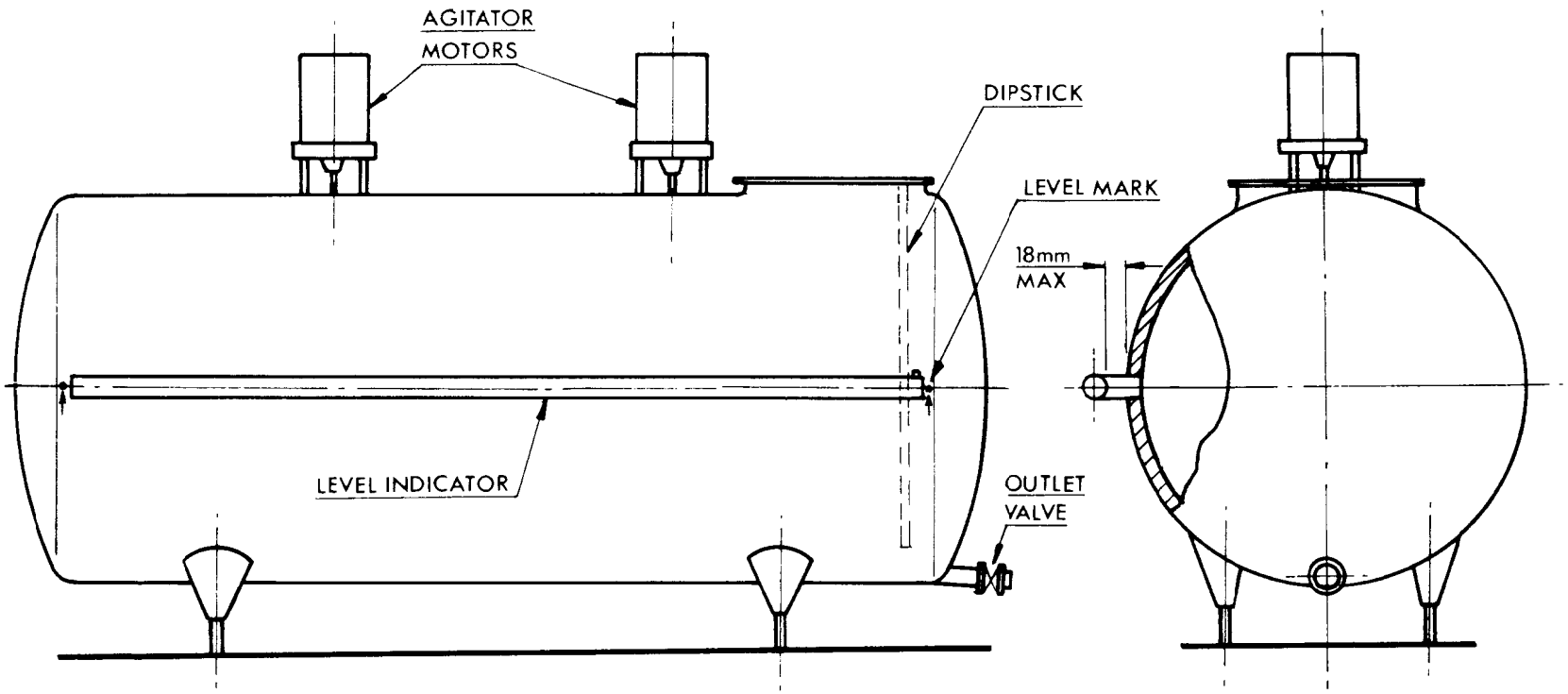


Detail of Adjustable Leg, Sealed to Floor Plate



Dipstick Boss and Socket

FIGURE 8/28 - 6



Free-standing Variant with External Level Indicator

FIGURE 8/28 - 7

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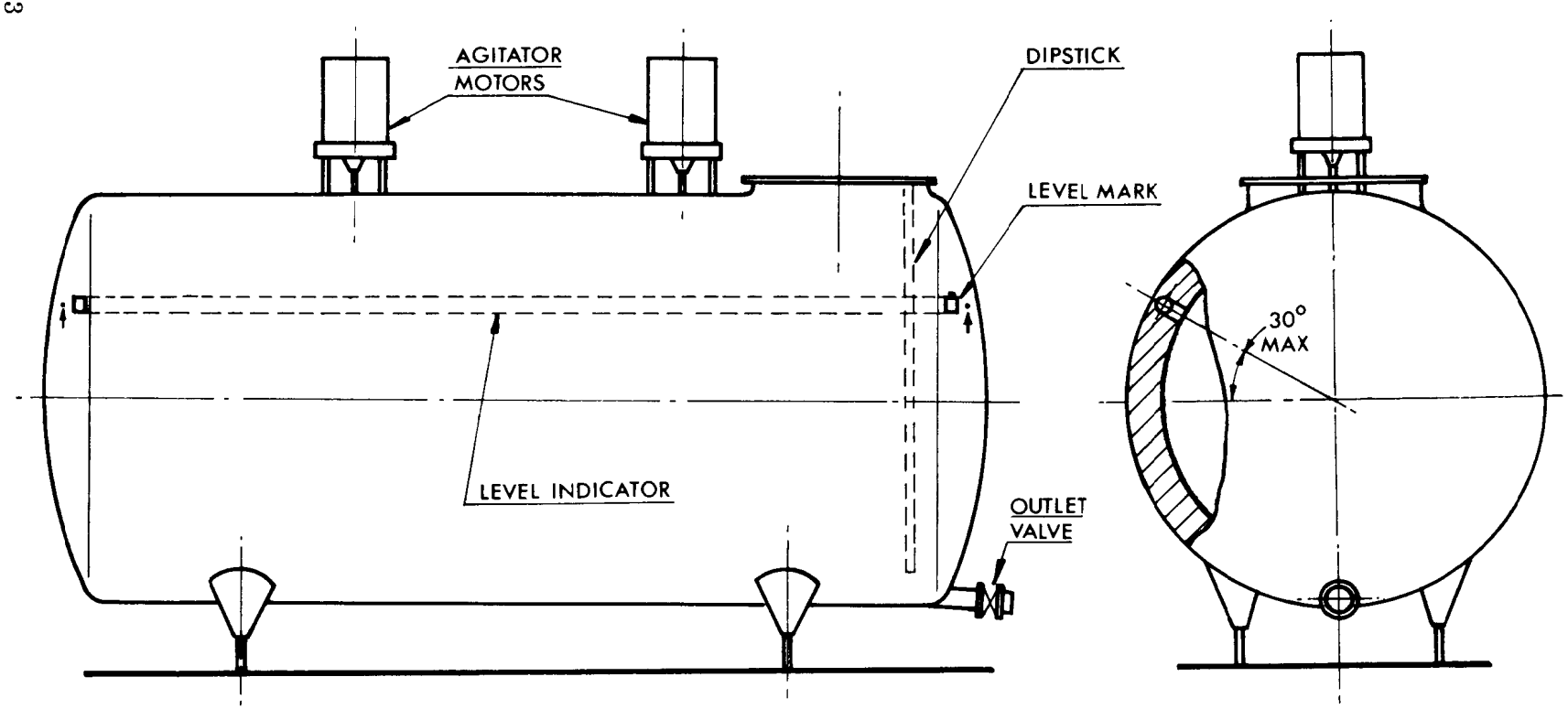
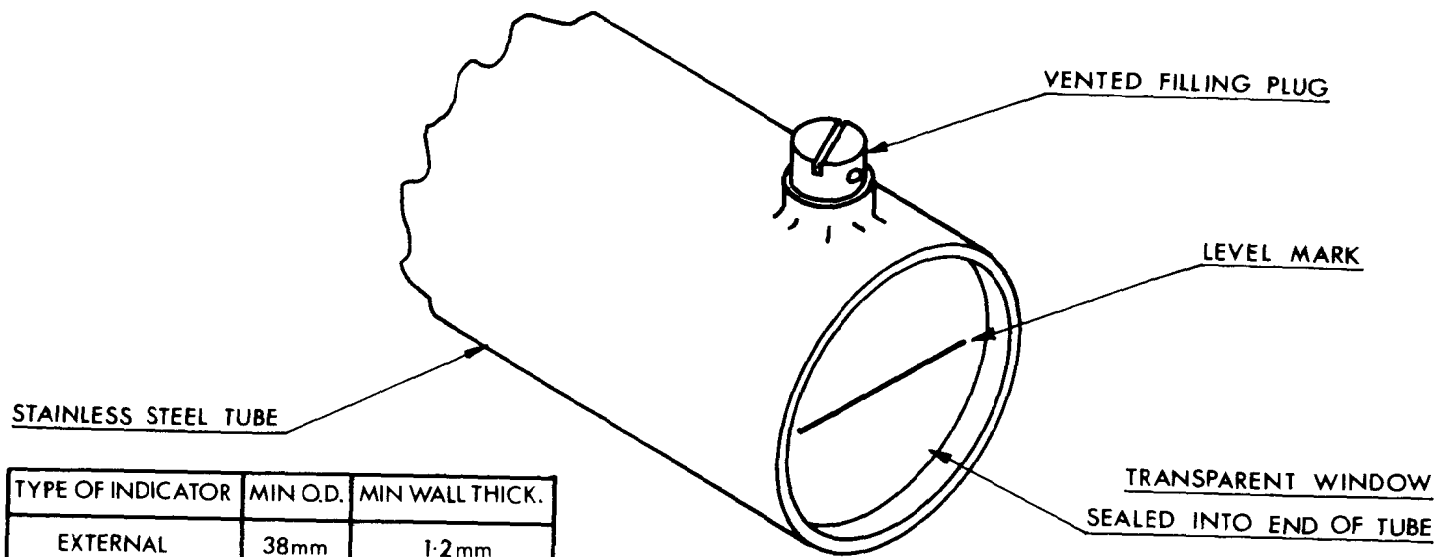


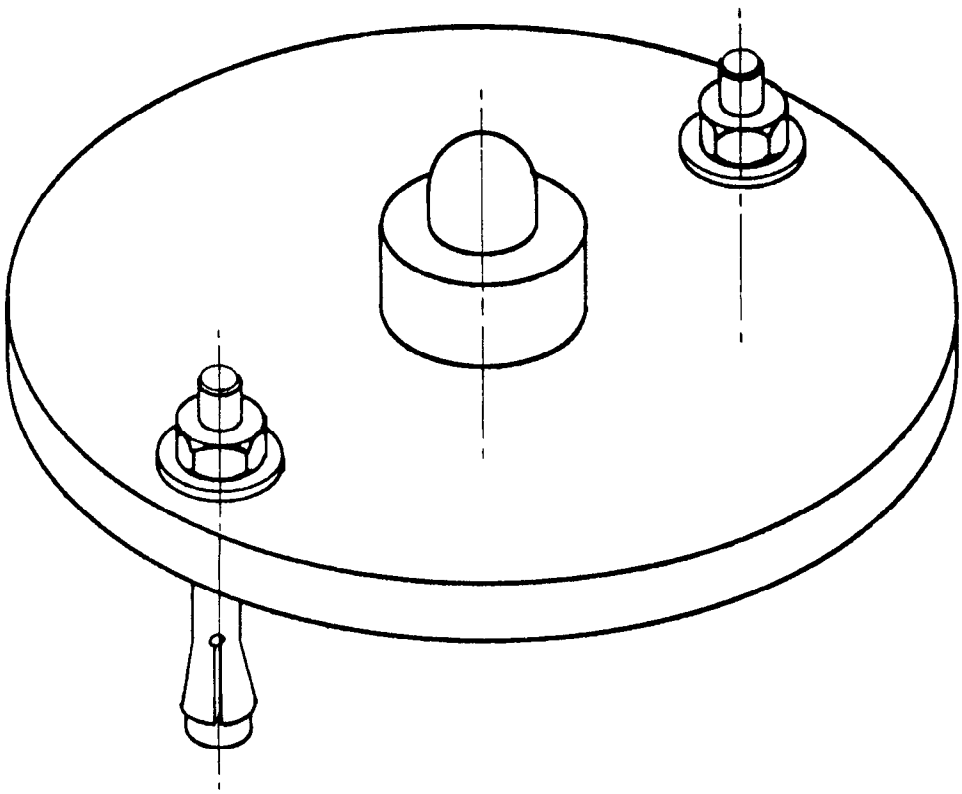
Free-standing Variant with Internal Level Indicator

FIGURE 8/28 - 8



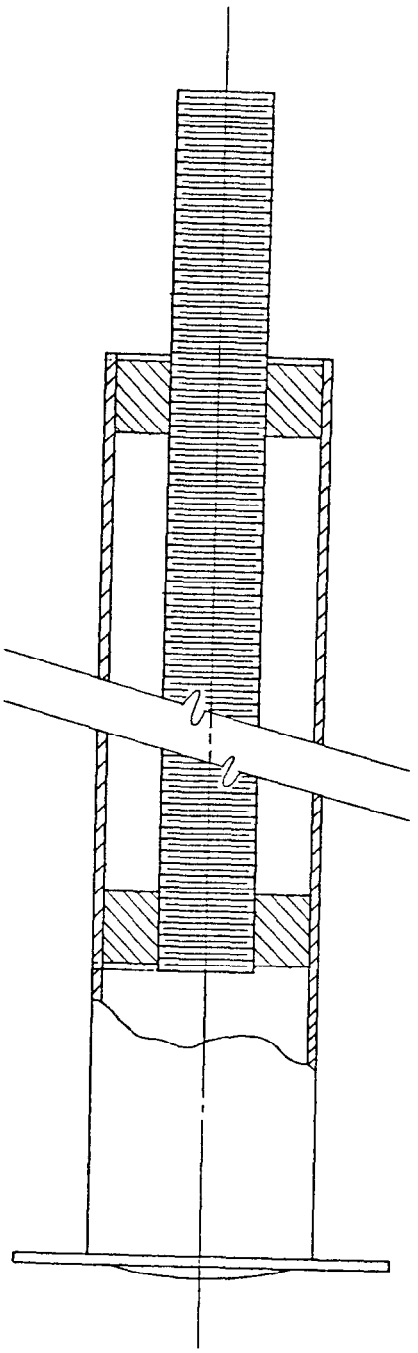
TYPE OF INDICATOR	MIN O.D.	MIN WALL THICK.
EXTERNAL	38mm	1·2mm
INTERNAL	25mm	1·2mm

Detail of End of Level Indicator



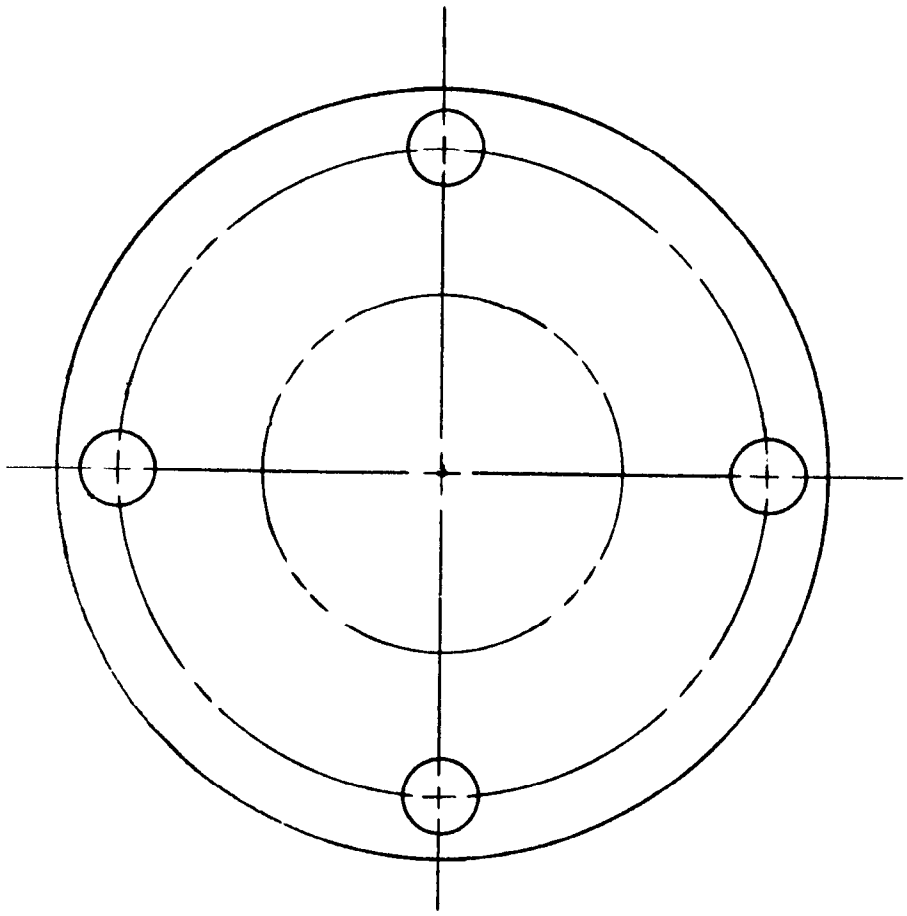
Above-floor Footplate (Variant 4)

FIGURE 8/28 - 10



Combination Leg/footplate

FIGURE 8/28 - 11



Footplate