

# Manhole Form Hire

## Equipment assembly and handling guide

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## In-situ manhole casting forms

When ordering, consider all deliveries as “next day”. To guarantee items are available on site early, order for the previous day. We welcome your own pick up and return.

Do not hit with steel hammers.

Use wood or similar to baffle impact.

Apply form release oil before each  
pour.

Clean after use.

Dismantle and stack in safe  
place for collection.

Penalties apply for damage, missing  
bolts, not cleaned or not split for  
collection.

# Assembly & Dismantling Guidelines

It is recommended that a minimum two people undertake the process

It is recommended that all assembly and dismantling is conducted on flat ground.

Relevant PPE is site specific.

You will need lifting chains and lifting apparatus, 2 x 21mm socket spanners (or similar) and screwdriver (or similar).

## Important information before commencing.

Each drum has a unique identification and should **not be mixed** up with other similar forms.

Eg. 150015NC 1-6

1500 =  $\emptyset$ , 15 = 1.5 mt height, N represents an Inner (T = outer), C = Set C in alphabetical sequence, 1-6 = no. of panels.

**Chains must be 1.6 times the drum diameter to ensure a 60 degree angle**, or less, between chains.

Lugs are designed and certified to withstand 10 tonne. To determine weight of drums the table below displays the approximate weight.

As a general rule, the maximum weight of any panel will not exceed 120 kg each.

| <u>Dimensions and approximate weights</u> |      |      |      |      |      |      |      |      |      |
|---|------|------|------|------|------|------|------|------|------|
| Inner $\emptyset$                         | 900  | 1050 | 1200 | 1350 | 1500 | 1800 | 2100 | 2400 | 3000 |
| Weight (kg)                               | 250  | 300  | 395  | 370  | 400  | 485  | 550  | 615  | 745  |
| Outer $\emptyset$                         | 1200 | 1350 | 1500 | 1650 | 1800 | 2250 | 2400 | 3000 | 3600 |
| Weight (kg)                               | 325  | 360  | 390  | 430  | 475  | 560  | 605  | 735  | 900  |

## Form Assembly instruction

All panels are numbered starting at 1 and must be arranged so that each panel is positioned in numerical order (1 is next to 2, 2 is next to 3, and so on).



It is recommended they be placed in a circle lying flat on the ground to avoid falling over in wind or uneven ground.

Stand any 2 panels up and place a bolt in top vertical bolt hole and match to corresponding bolt hole in next panel. **Use a screwdriver or similar (refer photo next page) to align bolt holes.** Hand tighten nut.



Repeat process with all other sections to complete form work.

Once the form is assembled with all top bolts holding sections together continue to insert bolts in all other holes and hand tighten to complete the assembly.

**Tighten all bolts** once form is positioned.

#### Form lifting instructions

Chains must be used to lift forms and should be securely attached to the lifting lugs located on the top of the completed form. If the number of lugs exceeds the number of chains, every second lug should be used.

#### Fixing in place

It is recommended forms be anchored to the base with M12 expanding bolts via hole provided in bottom ring.

Alternatively, outer forms may be fixed via braces fitted under rim of rings into embankment or shoring.

### Stacking of Forms.

Place bottom drum into position ensuring all bolts are hand tight.

Lift another drum of the same diameter on top ensuring like numbered panels line up vertically.

Use extra bolts to fasten forms together in bolt holes located on the top and bottom joining rings. Screwdriver or similar may be used to manoeuvre forms so that bolt holes line up.

**Lastly**, tighten all bolts.

### Dismantling Inner Forms.

Remove bolts from only one drum at a time. Remove all bolts except top bolts.

Attach chain to lug of panel next to any key. Remove key by breaking concrete bond by inserting trowel or similar between concrete and key and levering. A hammer blow may be used however **you must baffle the impact with wood or similar**. Tension may be placed on chain in an inwards direction, not more than 45 degrees ensuring a minimum of free swing.

Next, remove remaining bolt from panel secured by chain. Repeat process above.

Continue until all panels are removed.

Immediately remove any excess concrete, stack all panels out of harm's way.

### Dismantling Outer Forms.

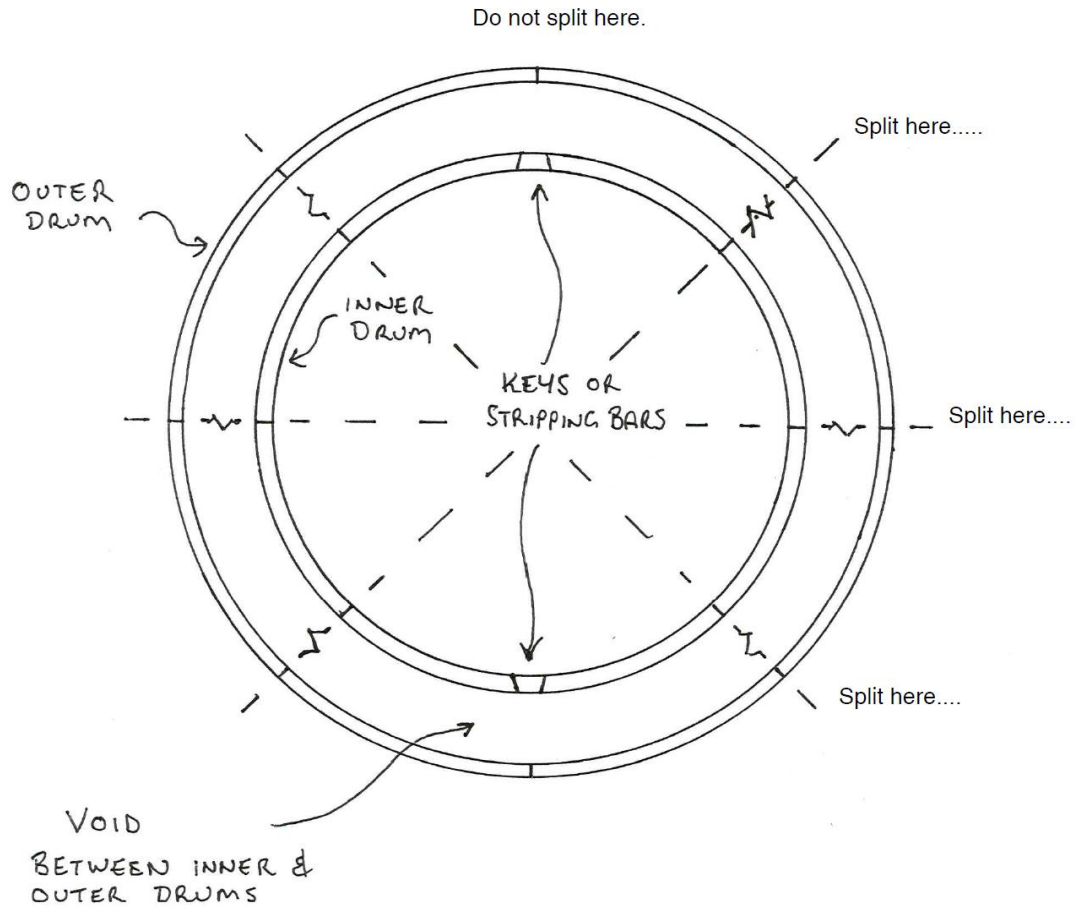
Same as inner forms however, there are no keys.

Outer forms fall away from wall so that chain tension should be in the outer direction.

***Forms must be returned in the same condition you got them  
as cleaning and repair charges apply.***

## Fitting extension panels to elongate.

When splitting drums to elongate, care must be taken to halve in the correct place. Inner drums have 2 keys or stripper bars. They are designed with angled sides so that they can collapse inwards and provide room for the other panels to be removed. Extension panels must be bolted to "square" edges, not angled so **do not split drum at keys**. Always assemble forms in numerical order. Refer to diagram and photo.



## Pit box assembly



Loosen Z nuts so that clamping plate is removed far enough from corner to allow the placement of panels.

Hand tighten all 3 Z nuts.

Repeat for the other corners. This is best done standing inside the box.



With the box loosely assembled, tighten Z nuts with hammer, ensuring all the while that the rebate on the shutter aligns with the steel corner.



Using the braces supplied put in position and wind out until they are firm against the inside of the pit.



External corners have locating pins that align with their respective shutters.

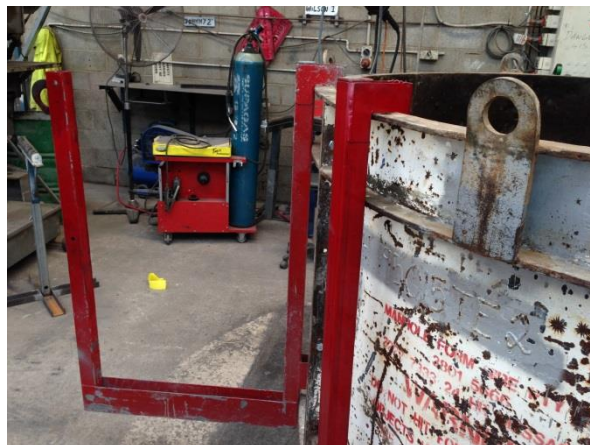
We recommend external shutters be propped into the surrounding earth to prevent bowing.



# Scaffold assembly guidelines



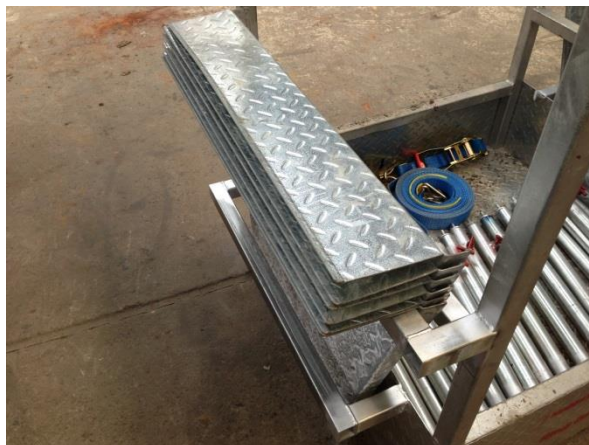
Your scaffold will come in a stillage looking like this. Typically there are 2 sections of scaffold to each section of outer drum. ie; 12 brackets, 12 floor plates, 24 balustrade rails and 1 tensioning strap.  
(Larger diameter drums may include 3 sections per panel).



To commence assembly, place the 2 red brackets close as possible to the best point of access.



Insert the U shaped door frame into the outer uprights of the 2 red brackets.



Take one of the floor plates from its cradle, located on the outside of the stillage.



Locate the plate in between the 2 red brackets, narrow end first, lowering the kick board end and adjusting the location of the red brackets as required so that the folded edges of the floor plate sit loosely against the joists. **The structure is safe to take your weight now.**



The rest of the hanging brackets and floor plates may be added, one at a time, ensuring all the while the brackets are hanging vertically and each plate has minimal play. If the last plate to be fitted is too loose, or tight, the hanging brackets can be adjusted one way or another by a slap with your hand or take a firm grip on any bracket and give it a shake sideways.



Secure one end of the tensioning strap to a lug at either side of the entry. Thread the strap through each and every eyelet and secure to the lug the other side of the entry. Tension until the upright brackets have no loose play. **The tension strap is not a physical restraint**, its sole purpose is to prevent movement whilst balustrade parts are fitted.



Loosen locking nut so that length of telescopic rail can be adjusted. Insert pins of rail into pre-drilled holes.



Extend telescopic rail to maximum length and tighten nut. Repeat for every rail, one top rail and one middle rail.



The assembly is complete. It can be lifted into place by securing appropriate rigging to **lifting lugs** located on each outer form panel.

When dismantling, take the time to repack into stillage as shown in the first illustration.

**Don't forget to remove all concrete before packing away.**