

## Introduction

Complete Tapping Service (CTS) is an innovative support service for Water Authorities & Contractors in the reticulation industry. CTS offers live tapping of pressure and non-pressure pipelines for Industrial and Commercial purposes, including water, fire and sewer mains, eliminating costly interruptions to supply and water wastage.

## Pipe Materials, Sizes and Types

Any rigid or semi rigid material of any diameter can be tapped, including, MSCL, DICL, CICL, UPVC, PE, HOBAS, FRC, RC, VC, OPVC. Concrete, Copper, Earthenware, Cast Iron, Ecopur, Ducpur, and others. Flanged offtakes range from DN80mm (3") to DN600mm (24") on pipe sizes DN80mm (3") to DN2000mm (78"). BSP offtakes range from DN20mm (3/4") to DN65mm (2 1/2") on pipes sizes DN40mm (1 1/2") to DN2000mm (78").

## Benefits

- Eliminates cut-ins.
- Maintains pipeline integrity.
- no disruption of supply to consumers.
- Eliminates potential backflow and contamination.
- No loss of fire protection.
- No drainage required.
- No water loss.
- Immediate connection - no after hours shutdowns.
- no discolouration of water supply or re-chlorination required.



Melbourne Water TUP - Greenvale Reservoir



Standard TUP



Delrin Tophats - top view

## Flanged / BSP Offtakes

CTS offers five (5) options for drilling:

- 316S/S Flanged Offtake to AS 4181.
- 316S/S BSP Offtake to AS 4181.
- 4N/Philmac BSP Offtake.
- MSCL Flanged Offtake and Compensation Plate if required.
- Rilsan coated MSCL 'Gripper' Flanged Clamp to AS4181.

## Approved Technology

CTS has adopted international under pressure tapping technology, which has been used extensively throughout the world. CTS Australia is an approved provider for tapping services to the following water authorities:

- Sydney Water
- SA Water
- Hunter Water Corporation
- Water Corporation of WA
- Yarra Valley Water
- South East Water
- City West Water
- Barwon water

## WSAA Code of Practice for Under Pressure Tapping

CTS completes all UPT's in accordance with the Water Services Association of Australia (WSAA) Code of Practice. Compatible cutters (to suit pipe material) hole size ration and approved materials, methods and specialised drilling equipment all complying with this code.

This proven performance record coupled with CTS Australia's ISO 9000 approvals and documented quality systems provide the Australian and New Zealand reticulation industry with this innovative 21st century technology.

## The Package

The CTS package includes the supply of approved components, as listed below:

- Flanged offtakes to principles requirements.
- Approved high quality flanged resilient seated valves.
- EPDM gaskets.
- 316S/S insulated nuts, bolts and washers.
- Pressure testing of connection prior to drilling.
- Blocking as necessary to support the valve and clamp assembly.
- Can be tailored to suit local requirements



## CTS Requirements

To perform the tapping, CTS requires the main to be excavated and exposed as detailed in the explanation below. If existing services or obstructions impinge on the excavation requirements, please contact us as we may be able to make alternative connections around the obstructions.

## Pressure Testing

Prior to drilling, and after fitting the clamp and valve to the principal main, the complete assembly is pressure tested to trial the components to ensure a leak free connection.

- Other services may be in the excavation area provided they are not on the same elevation as the pipe to be tapped.
- These are the minimum requirements and if obstructions prevent an excavation of this size please contact us as we may be able to work around them.

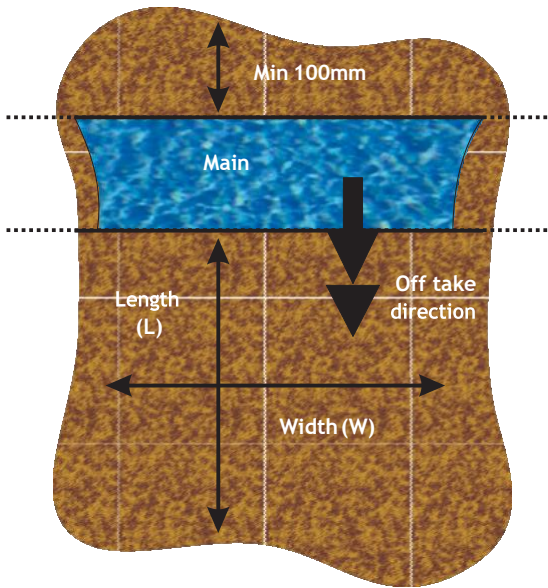
## Excavation Requirements

Notes on Trench Dimensions:

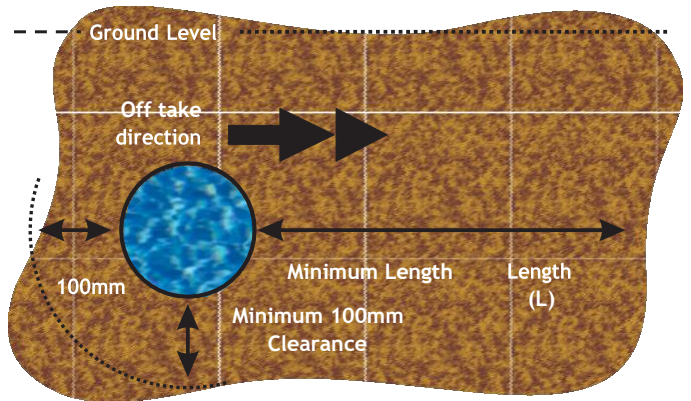
- The excavation must give 100mm clearance below bottom of the pipe.
- All statutory requirements regarding trenching and confined space need to be complied with.

### EXCAVATION SIZES

Tapping Size (mm)	Length (L) (mm)	Width (W) (mm)
80-150	1200	800
200-225	1500	800
250-300	2000	1500
375-600	3000	2000



Plan View of Excavated Trench



Elevation of Excavated Trench

				Nominated Diameter																							
MATERIAL	DESIGNATION	STANDARD	50	65	80	100	125	150	75	200	225	250	300	350	375	400	450	500	525	600	675	750	900	1000	1100	1200	
DICL	DICL	Class K9 or K12	AS2280-1995		96	122		177		232	259	286	345		426	507	560	667		826							
HOBAS	HOBAS (GPR)		AS4130-1995			122		177		232	259	286	345		426	435	507	560	587	667	747	826	924	1026		1229	
CICL	CICL	Class B	AS1742-2-1983			122		177		232	259	286	334		413	492	545		650								
CICL	Class C		AS2544-1975		96	122	149	177	203	232	259	286	345		426	507		560	667								
AC	AC	Class AB	AS1711-1975		96	122		177		232	259	286	334		413	492		572	650								
	AC	Class CD	AS1711-1975		96	122		177		232	259	286	345		426	507		587	667	747	826						
UPVC	UPVC	CIOD (blue)	AS147701996			122		177		232	259	286	345		426	507		560	667								
	UPVC	Metric (white)	AS1477-1996	60	75	89	114	140	160	200	225	250	280	315	355	400	450	500	560	630							
STEEL	STEEL	MSCL	AS1579-1993			114		168		219		273	324	355		406	457	508	610		762	960	1016		1290		
	GALVGWI	AS1074-1989	60	76	89	114	140	168																			
PE	PE	Class 12 or 15	AS1150-1988	50	63	75	90/100	125/140	160	180	200	225	250/28	315	355		400	450	500	560	630	710	(800)	900	1000	1200	
RC	RC	Class 2-12	AS4058-1992					197			279		362		445		533		616	699	787	870	946	1290	105/11	1270/1345	
CU	CU		AS3688-1994	51	64	76	102	127	152		203	279															
ISO	DICL	INTERNATIONAL	DIS2531E-1996	66	77/8	98	118	144	170		222		274	326	378		429	480	532		635	735	842	945	1048	1152	11255

Note: For convenience some pipe sizes are matched to nominal diameter.

Caution: Steel and reinforced concrete have many intermediate sizes that have not been included here.

Handy Tip: To get accurate average diameter divide circumference by 3.142 (π) e.g. If circumference is 383mm then the outside diameter= 121.9mm (i.e. 383mm ÷ 3.142)

## Advantages to the Water Authority, Plumber, Consultant & Contractor

- We are an ISO 9001 Accredited Company.
- We have adopted the Industry Code Of Practice for Under Pressure Tappings.
- Easy to organise. Phone call and fax.
- Prompt service the UPT can usually be organised within 48 hours.
- We will work with Water Authorities, Plumbers and Contractors, especially in awkward and out of hour situations.
- The supply to the consumer is not affected.
- There is no affect to Commerce, Industrial area's or other area's that cannot have the supply withdrawn.
- The integrity of the main is maintained. By Tapping Under Pressure only the size of the hole is removed from the pipe whereas by inserting a Tee a section of the main is removed and replaced with a Tee and two flexible joints that can move. and cause the main to fail. The Stainless Steel flanged offtake can act like a repair clamp if the main fails at that point.
- We provide at no additional cost, if required, a written report on the visual condition of the main and the coupon removed from the main. We can return this coupon to the Water Authority for material testing if requested.
- The dirty water complaints associated with recharging water mains are alleviated.
- We have a data base on all completed jobs.
- Valves that have not been operated in years may fail causing additional repair costs.
- Eliminates civil claims from people or businesses who have belongings or equipment damaged and say they did not receive shut down notifications. This will also reflect in Insurance premiums the Water Authority is levied.

No need to re-chlorinate mains over 200mm diameter.

- No need for staff to notify people of intending shut downs.
- No consequential main damage at a later date from shutting down the main, with the older mains the reduction in pressure causes stresses and future bursts.
- Water Authority staff can be engaged in other duties.
- The Water Authority does not have to carry stock as CTS provide it all, thus reducing the amount and cost of stock carried.
- No chance of foreign particles entering the water main and causing damage to water main fittings and consumer appliances.
- Maximum loss of 8 litres of water lost through UPT compared to vast amounts of water lost through draining, recharging and chlorinating the Water Mains with old techniques.



TUP Hydrant Installation at Casterto



ISO 9001



Health & Safety  
AS/NZS 4801



ISO 14001

AN AVR GROUP CO.

For further information and orders, please contact:

Victoria - Head Office  
105 Atlantic Drive  
Keysborough, VIC  
3173  
p: (03) 9769 0218  
f: (03) 9769 0219

New South Wales  
p: (02) 4988 6299  
f: (02) 4988 6263

Queensland  
p: 0418 197 545  
FNQ  
p: 0428 559 989

South Australia  
p: (08) 8558 3808  
f: (08) 8558 3896

Tasmania  
p: (03) 6394 4663  
m: 0418 921 938

Western Australia  
p: (08) 9244 4622  
f: (08) 9204 4666

Expect... 