MValve The Water Drain Revolution!

CASE STUDY

Simulation scenario

Facility Management Company (FMC) to provide air condition (AC) service for a 20 floor building, comprising of lobby, and four standard 2 bedroom apartment units per floor (total 80 flats).

The actual business model

The FMC signs a service agreement with the building owner to provide AC maintenance service on daily, Quarterly or every 4 months basis.

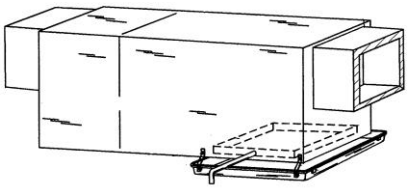
The job description consist of:

1. Provide periodic maintenance and cleaning service to all existing AC units (The Cycle)
2. Respond to any AC emergency (as water leak, cooling performance, filter cleaning,…)

The ultimate objective is to minimize the annoying, damaging, and recurrent high risk Air Condition water leak problem (Overflow).

The AC units calculation

- ✓ Total 20 floors x 4 flats = 80 flats to service in each period
- ✓ 80 units x 2 AC per units = 160 AC units
- ✓ Lobby 2 units, each floor 1 unit
- ✓ Total number of units to service: 160 + 2+ 20 = 182 AC units
- ✓ Technician capability to service and clean is average 3x apartments per day = 6 AC units
- ✓ Total number of days to complete a cycle 182 units / 6 = 30 working days



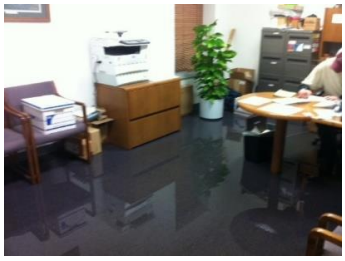
The actual process and U-trap Service Cost Implications

FMC will execute a periodic AC maintenance service once every quarter or 4 months cycles, mainly to flush the drain pipe and U-trap, the main cause of the drain pipe blockage.

- ✓ The FMC secretary will call all tenants - on daily basis - to secure an AC service date and time. This task takes her entire day work
- ✓ The AC technical team consists of 1 technician *(and possibly, 1 helper/driver)*
- ✓ Transportation from office (or residence) to building and return on daily basis requires a car/pickup and driver, manpower and lots of material to carry
- ✓ The material directly related to the AC service:
    - Ladder, Water pipe/hose, Gas cylinder (not recommended due to environment hazards), Insulation foam (normal or adhesive), Cleaning material, Gloves, Lubrication oil, Glue (for PVC piping), Chemicals for drip tray cleaning, Regular tools, …etc

The expected time to service each AC unit is 1 hour calculated from the moment the apartment or office door is opened by the tenant until the technician leaves. In spite of all efforts, technician cannot verify nor confirm if the drain pipe was cleaned 100%, 75% or less.

Therefore, the water leakage risk remains and no possibility to know the real status inside the drain pipe!



MValve, the Smart Solution

MValve is a very new, simple and smart 25 cm full transparent PVC pipe with built-in one way air valve allowing water to drain freely and blocking bad smell from coming back into the premises! It replaces the very old U-trap used to drain water in air condition systems. After installation, technicians can simply check the proper operation at all times - visually - without the need to "guess" the U-trap dirt and fungus accumulation status inside. Bacteria forming in the U-trap and considerably affecting the Indoor Air Quality (IAQ), are technically minimized.

- ✓ 25 cm in length, standard 25 mm Outer Diameter
- ✓ Full transparent PVC material allowing visual check anytime
- ✓ Rust proof, water proof, stain proof
- ✓ Only two straight connecting pipes needed, no gluing
- ✓ Can be placed anywhere on the drain pipe *(recommended at 1/3 of pipe length)*
- ✓ Lowest height in false ceiling space
- ✓ No sweating, No foam insulation
- ✓ No more frequent water leakage
- ✓ No more bad smell
- ✓ Minimal Bacteria forming
- ✓ Less frequent technician service visits
- ✓ No mechanical parts - Virtually maintenance free
- ✓ Very happy clients!
- ✓ Installation time for existing AC units: 10 minutes
- ✓ One (1) visit every six (6) months is recommended to – visually – verify the status of the drain pipe condition and decide whether a service is required
- ✓ Technician can come by car, taxi, metro or other
- ✓ No need to carry any material or tools during inspection visit
- ✓ **"Clean on Demand"** when found considerably dirty and risking obstruction
- ✓ Cleaning method: normal water flushing. No chemicals required

MValve Service Cost Implications

- ✓ The FMC secretary will call all tenants and secure an AC service date and time – once every six months. The assigned period to complete each cycle is one month
- ✓ The AC technical team consist of 1 technician only
- ✓ Transportation from office (or residence) to building and return on daily basis (car and driver, taxi/metro) – no material to carry
- ✓ If service is needed, then cleaning will be done for the specific AC unit only "Clean on Demand"
- ✓ Need of material directly related to the specific AC unit needing service
    - Ladder
    - *(Gas cylinder) (not recommended due environment hazards)*
    - *(Cleaning material)*

- ✓ *If service is required, gas cylinder could be used to flush the entire drain pipe*

PS Please read MValve Presentation and MValve / U-trap Service Cost Comparison

Executive Summary

Based on this true to life simulation, **MValve** offers so many advantages and huge gaining (several folds comparing to U-trap) immediately after installation, on new or existing Air Condition units.

A single technician can do a visual check visit once every six months and will only "Clean on Demand" the unit needing cleaning. The same technician can now service several buildings (on average 4 to 5 buildings) during his same normal working hours - without affecting AC performance.
In addition, clients will be extremely happy and will recommend this new approach to their networks.

FMC savings (material, manpower, transportation,…) and gain (income and brand image) start instantly from **MValve** installation date, needing much less manpower, material and disruption of life (residence or business).

MValve drives your service business from total blindness to full vision with highest profitability!

MVALVE / U-TRAP SERVICE COST COMPARISON 2019

Assumptions

Building design		20 floors
Flat type standard for all		2 Bedrooms
Flats per floor		4
Number of AC units in each flat		2
Total number of AC units in flats		160
Total number of AC units in floor corridors (1 unit in each floor)		20
Number of AC units in Lobby		2
Total number of AC units to Service		182
AC units periodic cleaning cycle	Quarterly	3 months
Number of AC cleaning cycles per year	Cycles	4
Number of AC Technician assigned to building		1
Average time required to clean each AC unit		1 hour
Average number of AC units cleaned per day		6
MValve Visual Check frequency cycle	Per Year	2
Mvalve Visual Check maximum period to complete each cycle	Weeks	2
MValve possible replacement cycle - without cleaning	Years	**3**
Mvalve cleaning time		**10 minutes**
MValve replacement time		**10 minutes**
One Month is calculated as	Days	26
One Year is calculated as	Working Days	310

Salary of staff includes all expenses, visa, insurance, deposit, ticket, gratuity,...
Company assests as cars, material,... include all amortising costs
Consumables amortisation period is calculated as 1 year

Cost of Device			**U-trap with cleaning bolt**			**MValve**
AED				**35**		**100**
Job or Task Description	Year	Monthly	Frequency	**Daily Cost**	Frequency	**Daily Cost**
Direct Cost						**"Clean on Demand"**
Receptionist Bi-lingual to call all clients	60,000	5,000				
Cylce to call clients U-trap			Daily	192.31		
Cylce to call clients MValve		One month each calling cycle (total 2 months)			Twice a year	32.26
U-trap Technician assigned for building	72,000	6,000	Daily	230.77		
Helper/driver	12,000	1,000	Daily	38.46		
MValve Technician - Visual Check Service		One visit / 6 months (max. 2 weeks to complete)			Twice a year	19.35
Helper/driver		One visit / 6 months (max. 2 weeks to complete)			Not Applicable	-
Transportation (public transport or company car)						
Average driving cost U-trap	18,000	1,500	Daily	50.00		
Average driving cost MValve		One visit / 6 months (2 weeks transport service)			Twice a year	4.84
Material						
Ladder	150	13	Daily	0.48	Twice a year	0.04
Water pipe	100	8	Daily	0.32	Not Applicable	-
Gas cylinder (8 units cleaned / day)	54,000	4,500	Daily	150.00	Not Applicable	-
Drip Tray cleaning product	9,000	750	Daily	25.00	Twice a year	2.42
Cleaning material	3,600	300	Daily	10.00		0.97
Gloves	600	50	Daily	1.92		0.27
Lubrication oil	360	30	Daily	1.15	Not Applicable	-
Glue	240	20	Daily	0.77	Not Applicable	-
Insulation foam pipe	120	10	Daily	0.38	Not Applicable	-
Regular tools	240	20	Daily	0.77		
Investment Cost						
U-trap with cleaning bolt			10 years	0.01		
MValve replacement without cleaning		-	3 years	-		0.09
	U-trap Cost per Year					
Total Cost	**230,410**	19,201		**702**		**60.25**

MValve saves	**11.66**	**times more than U-trap in daily service cost !**
U-trap cleaning cost for each AC unit		**117**
MValve cleaning cost for each AC unit (Clean on Demand)		**0.50**
MValve Total Cost per Year		**18,676**
MValve Savings per Year (profit difference)		**211,734**