

Job Demands Analysis

Meter Maintenance Technician

Purpose

The purpose of the meter maintenance technician is to build, install, maintain and repair city parking meters.

Essential Duties

The Meter maintenance technician has 3 essential duties:	% of shift or # hrs
Duty #1: Driving	50%
Duty #2: Maintenance and Repair	45%
Duty #3: Building and Installation	5%

Description of Non-essential Tasks

The meter maintenance technician may be required to perform other work tasks on an occasional basis. Examples of the tasks that may be performed are:

- Answering questions from the public
- Keeping vans clean

Summary of Demands

	Sedentary	Light	Medium	Heavy	Very Heavy	Comments
Physical (strength)					✓	Based on strength requirements
Physical (endurance)				✓		Stand/walk 34%-66% of shift
Cognitive			✓			Based on driving requirements

Shift Structure

All meter maintenance technicians work a 9 day fortnight. Shifts are 7.75hrs long with an unpaid ½ hr lunch and two paid 10 minute coffee breaks that can be taken at any time.

Frequency Rating Definitions

The frequency rating definitions used in the Summary Table are from the Dictionary of Occupational Titles (DOT, 1991, 4th edition) published by the US Department of Labor. A similar classification is used for each Essential Duty, but the percentages are changed to reflect % of Duty rather than % of shift.

	Time per Day	Percentage of Shift
Never	0 minutes	0 %
Rare	0 - 5 minutes	0-1 %
Infrequent	6 - 25 minutes	2-5 %
Occasional	26 minutes – 2.5 hours	6-33 %
Frequent	2.6 - 5.25 hours	34-66 %
Constant	5.26 - 8 hours	67-100 %

STRENGTH	
Strength Category	Weight Handled
1. Limited	Up to 5 kg.
2. Light	5 kg. to 10 kg.
3. Medium	10 kg. to 20 kg.
4. Heavy	>20 kg

Job Demands Analysis – Meter Maintenance Technician - Summary Table

a. Physical Demands		Frequency During Shift					Weight		Comments		
		Never	Rare	Infrequent	Occasional	Frequent	Constant	Usual (kg)		Max (kg)	
Strength	Lifting – Floor to Knuckle		x					<1	39	D2,3 - tools, bolts, meter heads, pipes	
	Lifting – Knuckle to Waist			x				5	39	D2,3 - tool tub, meter heads, tools, mechanisms	
	Lifting – Over Shoulder		x					31	31	D3 - meter heads on top shelves	
	Carrying – with Handles		x					5	41	D2,D3 - tool tub, crate of hoods	
	Carrying – without Handles			x				5	39	D2,D3 - meter head, pipe, tools	
	Pushing – Upper Extremity			x				<5	15	D2,D3 - van drawers/doors, wrench to tighten/remove head	
	Pushing – Hips/Legs assist		x					20	40	D2,D3 - wrench if bolt tight, cart of heads in shop, open vice	
	Pulling – Upper Extremity			x				<5	15	D2,D3 - van drawers/doors, wrench to tighten/remove head	
	Pulling – Hip/Leg Assist		x					20	40	D2,D3 - wrench if bolts tight, cart of heads in shop, close vice	
Mobility	Reach - Shoulder or Above		x							D1,2,3 - rear view mirror, access tools on top of drawer unit, top shelves in shop	
	Reach - Below Shoulder			x						D1,2,3 - adjust seat, tools in low drawers, bolts at bottom of pipe	
	Handling						x			D1,2,3 - tools, steering wheel, eqpt, bar code wand	
	Fine finger movements			x						D2 - clearing meter jams, small screws to change domes	
	Neck - Static Flexion				x					D2,3 - looking down at meters	
	Neck – Static Neutral				x					D1, 2 - driving or passenger, walking between meters	
	Neck – Static Extension	x									
	Neck – Static Rotation	x									
	Throwing	x									
	Sitting					x					D1 - driving
	Standing					x					D2,3
	Walking					x					D2,3
	Running/Jumping	x									
	Climbing		x								D3 - ladder to access top shelves
	Bending/Stooping				x						D2,3- tightening meter post, bending over head to do repairs
	Crouching			x							D2,3 - coring, tightening meter post
	Kneeling			x							D2,3 - coring, tightening meter post
	Crawling	x									
	Twisting			x							D1,2,3
	Balancing	x									
Travelling					x					D1 - driving between jobs	

Job Demands Analysis – Meter Maintenance Technician - Summary Table (cont.)

a. Physical Demands (continued)		Frequency During Shift						Comments
		N	R	I	O	F	C	
Sensory / Perception	Hear/Conversations					x		D1,2,3 - co-worker, public
	Hear/Other Sounds						x	D1,2,3 - horns, alarms, sirens
	Vision/Far						x	D1,2,3
	Vision/Near						x	D1,2,3
	Vision/Colour					x		D1 - only for driver (not passenger)
	Vision/Depth						x	D1,2,3
	Perception/Spatial					x		D1,2,3 - mirrors when driving, orienting mechs and batteries, etc .
	Perception/Form					x		D1 - viewing obstacles in low light or bad weather when driving
	Feeling				x			D2 - meter repairs, painting, scraping decals
	Speech					x		D1,2,3 - co-worker, public
Work Environment	Inside Work					x		D1,2,3 - in vehicle and inside shop
	Outside Work					x		D2,D3 - outside repairs or installation
	Slippery		x					D1,D2,D3 - outside in snowy/icy weather
	Congested worksite			x	x			D1,D2,D3 - varies depending on if working downtown or time of day (rush hour)
	Chemical Irritants		x					D2, D3 - products used to clean/paint meters
	Confined Space Entry	x						
	Vapour Fumes					x		D2,3 - vehicle exhaust, spray paint
	Noise						x	D1,D2,D3 - vehicle noise and street noise
	Proximity to moving objects					x		D1,2,3 - vehicles, pedestrians
	Hazardous Machines					x		D1 - other vehicles
Electrical hazard		x					D3 - portable generator for coring	
Sharp/Hazardous Tools			x				D3 - coring drill, grinders, saw	
Radiant/Thermal Energy		x					D3 - drill bits	
Hot/Cold		x					D2,3 - weather dependent	
Humid		x					D2,3 - weather dependent	
Environmental Dust		x					D2,3 - if working near a construction site	
Organic Substances		x					D2,3 - if substance on the meter	
Medical Waste	x							
Blood Products	x							
Lighting Issues – Direct		x					D1,2 -glare on a sunny day	
Lighting Issues – Indirect		x					D2,3 -dim light on winter mornings	
Vibration – Whole Body					x		D1	
Vibration – Hand/Arm		x					D3 - using grinders, drills, saw	

Job Demands Analysis – meter maintenance technician - Summary Table

(continued)

b. Cognitive and Psychosocial Demands	Frequency During Shift			Comments
	Never / Rare	Infrequent / Occasional	Frequent / Constant	
Degree of Supervision	x			D1,2,3
Time Pressure		x		D1,2,3
Attention to Detail		x		D1,2,3
Memory Requirements		x		D1 - remember route for driving
Interact with co-workers			x	D1,2,3
Interact with public	x			
Work Alone	x			
Reading	x			D1,D2,D3 - street signs, Work order list, bar code list
Writing	x			Log book
Irregular Hours	x			
Operating Equipment			x	D1 - van, for driver only, D3 - drills, grinders

Physical Environment

The work takes place inside city vans and trucks, inside the meter maintenance shop at the National Yard and outside on city sidewalks.

Staffing Levels

The meter maintenance technician usually works as part of a two man crew, but depending on staffing levels he/she may occasionally work alone building meters in the shop or performing certain maintenance tasks out on city sidewalks such as hooding or painting meters.

Tools and Equipment Used

The meter maintenance technician primarily uses screwdrivers, rubber mallets, sledge hammers, keys, nuts and bolts, drills, grinders and saws.

Other Equipment

Each meter maintenance technician must wear a reflective safety vest when on the job.

Data Collection

Mandy Gallant, an ergonomic consultant from ErgoRisk Management Group conducted the JDA assessment on 29 September, 2008. Data was collected using a tape measure, industrial scale, Chatillon push/pull force gauge, digital camera and through observation and discussion with selected employees and the superintendent.

Contact for the on-site assessment

Roy Langley was the contact for the on-site assessment.

Description of Essential Duties

This section describes the work tasks that comprise the 3 essential duties of the job. Tables 1 - 3 (located at the end of this report) provide the physical, cognitive and psychosocial demands for performing each of the essential duties.

Essential Duty 1: Driving

The meter maintenance technicians drive a city van to and from their routes (Fig. 1), except if coring work needs to be done then they take a larger truck (Fig. 2). Driving duties are typically performed by the senior technician. On average 50% of the shift is spent driving between jobs. Prior to leaving the yard each morning the meter maintenance technician does a quick walk around of the vehicle. On Saturdays the vehicle is typically gassed up for the week and may also be washed in a vehicle wash (not done manually by the meter maintenance technician).



Fig. 1: City van used by meter maintenance technicians.



Fig. 2: Alternate truck used for coring work.

Essential Duty 2: Meter Maintenance and Repair

Meter maintenance and repair covers a wide variety of duties and can take place in the shop at the National Yard or out on city sidewalks. There are 8500 meters in the City of Vancouver that are maintained and repaired by the city's meter maintenance technicians. There are several set programs that meter maintenance technicians participate in, as well as responding to complaints regarding meters.

Meters run on batteries with a typical lifespan of 11 months. There is a rotating schedule whereby batteries are replaced before the lifespan ends (Fig. 3). The lifespan of the plastic domes is 7 years and those are replaced on a set schedule as well, or sooner if damaged. Domes are held in place by 4 screws which must be removed by the meter maintenance technician. If the screws are rusted or stuck or stripped, the technician may need to hammer them out (Fig. 4)



Fig. 3: Replacing meter batteries.



Fig. 4: Hammering stripped screws to replace a dome.

Other maintenance duties include touch up painting meters with spray paint if a meter has been vandalized or is badly scratched. This may occur in the shop if a meter has been removed from service or out in the field (Fig. 5). Meter maintenance technicians may also strip and replace decals from a meter if the decals have become illegible or are out of date (Fig. 6). Replacement decals are kept in a drawer unit in the back of the van or a drawer unit in the shop. Other small parts are kept in the van drawers too (Fig. 7).



Fig. 5: worker demonstrating touch up painting.



Fig. 6: Scraping illegible or out of date decals from a meter before reapplying.



Fig. 7: Drawer unit in back of van.

Meters may be temporarily placed out of service for a certain period of time if there is film work, road work or other events going on. Meter maintenance technicians hood the meters with removable metal signage outlining the changes in parking details. The hoods are installed with a long bolt and nut (Fig. 8). Decals may also be applied to the hoods before installation. Hoods are carried in the back of the truck and are transported from the shop to the trucks in milk crates. A full crate of hoods is very heavy (~ 41kg) and is typically a 2 man lift (Fig. 9).



Fig. 8: Installing meter hoods, decal applied on bottom of hood.



Fig. 9: Two man carry of heavy container of hoods.

When complaints are received about jammed, non-functioning or damaged meters, the meter maintenance technicians go to the site to assess the situation and if possible perform an on-site repair. If a meter is jammed the technician will use tools to try to clear the obstruction. If the issue is with respect to accuracy the technician may remove the meter mechanism and test it on the spot (Fig. 10). If the meter is not functioning correctly the meter maintenance technician will replace it with a spare mechanism that he carries in the van. Meter mechanisms undergo re-calibrating or significant repair back in the shop (Fig. 11).



Fig. 10: Assessing meter mechanism for possible replacement.



Fig. 11: Recalibrating and repairing mechanisms in the shop.

Another repair may be to fix a wobbly meter. This is a bigger job and the meter maintenance technician must open the meter, remove the coin canister and using a socket wrench he must undo the main bolt holding the head to the meter (Fig. 12). This may require significant force if the bolt is tight. The meter head is then removed and placed on the ground (Fig. 13). Workers may replace the bolts at the base of the pipe or hammer in metal wedges to stabilize the pipe (Fig. 14). The meter head is then replaced and secured back into position. This is a heavy and sometimes awkward job. If a meter is badly damaged or worn, or has been hit by a vehicle the entire meter and post may need to be replaced. The damaged meter is brought back to the shop for repair or refurbishment. This may include painting, replacement of dome, decals, mechanism, etc.



Fig. 12: Using wrench to loosen main bolt prior to removing meter head.



Fig. 13: Removing meter head to tighten post.



Fig. 14: Inserting wedges and replacing bolts to tighten a meter post.

Essential Duty 3: Meter Building and Installation

New meters are built in the shop prior to installation on city sidewalks. New meter heads arrive in boxes on a pallet (Fig. 15) and are removed and installed on a corner post on the bench for assembly (Fig. 16). Building a meter involves installing the mechanism and the appropriate lock, depending on the city block where the meter will be installed. As well, the appropriate decals are installed on the meter (Fig. 17) and it is tested prior to installation. Single meter heads may be carried manually across the

shop (Fig. 18) and if a group of meters needs to be moved a cart is used (Fig. 19). New and out of service meters are all stored on a bank of shelves on the far wall of the shop, as shown in the background of Figure 15 below.



Fig. 15: Manually removing new meter heads from boxes on the pallet.



Fig. 16: Inserting new meter head into post on bench for assembly.



Fig. 17: Getting the appropriate decals for a new meter.



Fig. 18: Carrying new meter head in the shop.



Fig. 19: Pushing cart of meter heads in the shop.



Fig. 20: Carrying the coring drill out to the truck.

Meter installation may occur weekly. A crew will take the large truck out and perhaps install 6 meters in a morning. Each new installation takes approximately ½ hr. The crew installs a generator and the coring drill on the truck before leaving the yard (Fig. 20). Once on site the coring drill is used to drill the post hole (Fig. 21). Meter maintenance technicians then manually clear the hole and install the post (Fig. 22), plastic post cover and finally the meter head (Fig. 23).



Fig. 21: Coring drill in use.



Fig. 22: Carrying a post out of the van for installation.



Fig. 23: Greasing the head before installation.

Essential Duty 1: Meter Maintenance Technician - Driving

a. Physical Demands		Frequency During Duty					Weight		Comments
		Never	Rare	Infrequent	Occasional	Frequent	Constant	Usual (kg)	
Strength	Lifting – Floor to Knuckle	x							
	Lifting – Knuckle to Waist	x							
	Lifting – Over Shoulder	x							
	Carrying – with Handles	x							
	Carrying – without Handles	x							
	Pushing – Upper Extremity	x							
	Pushing – Hips/Legs assist	x							
	Pulling – Upper Extremity	x							
	Pulling – Hip/Leg Assist	x							
Mobility	Reach - Shoulder or Above		x						Adjust rear view mirror
	Reach - Below Shoulder		x						Adjust seat controls
	Handling						x		Steering wheel and other controls
	Fine finger movements	x							
	Neck – Static Flexion	x							
	Neck – Static Neutral					x			Looking at road ahead
	Neck – Static Extension	x							
	Neck – Static Rotation	x							
	Throwing	x							
	Sitting						x		In vehicle seat
	Standing	x							
	Walking	x							
	Running/Jumping	x							
	Climbing	x							
	Bending/Stooping	x							
	Crouching	x							
	Kneeling	x							
	Crawling	x							
Twisting			x					Shoulder check, parallel parking, getting in/out of vehicle	
Balancing	x								
Travelling						x			

Frequency Rating Definition for % of Duty

The definitions for frequency ratings are contained at the end of the Table (page 17).

Essential Duty 1: meter maintenance technician - Driving

a. Physical Demands (continued)		Frequency During Duty						Comments
		N	R	I	O	F	C	
Sensory / Perception	Hear/Conversations					x		Conversations with co-worker
	Hear/Other Sounds						x	Traffic noise, sirens, etc
	Vision/Far						x	
	Vision/Near						x	
	Vision/Colour						x	
	Vision/Depth						x	
	Perception/Spatial				x			Checking mirrors
	Perception/Form		x					Road obstacles under poor visibility conditions
	Feeling	x						
	Speech					x		Conversations with co-worker
Work Environment	Inside Work						x	In cab of vehicle
	Outside Work		x					Walk around inspection in the morning
	Slippery		x					Depends on road conditions and weather
	Congested worksite				x			Depends on traffic conditions and time of day.
	Chemical Irritants	x						
	Confined Space Entry	x						
	Vapour Fumes		x					Exhaust fumes if windows down when driving
	Noise						x	Traffic noise
	Proximity to moving objects						x	Other vehicles
	Hazardous Machines	x						
	Electrical hazard	x						
	Sharp/Hazardous Tools	x						
	Radiant/Thermal Energy	x						
	Hot/Cold	x						
	Humid	x						
	Environmental Dust		x					If windows down and driving past construction site.
	Organic Substances	x						
	Medical Waste	x						
	Blood Products	x						
	Lighting Issues – Direct		x					Dark mornings in winter, poor weather
Lighting Issues – Indirect	x							
Vibration – Whole Body						x		
Vibration – Hand/Arm	x							

Essential Duty 1: meter maintenance technician - Driving

b. Cognitive and Psychosocial Demands	Frequency During Duty			Comments
	Never / Rare	Infrequent / Occasional	Frequent / Constant	
Degree of Supervision	X			
Time Pressure		X		
Attention to Detail		X		
Memory Requirements		X		Remembering driving directions, meter codes
Interact with co-workers			X	
Interact with public	X			
Work Alone			X	
Reading		X		Work order list, meter codes, street signs, parking signs, etc
Writing	X			Log book
Irregular Hours	X			
Operating Equipment			X	Van

Frequency Rating Definitions for % of Duty

The frequency rating definitions are from the Dictionary of Occupational Titles (DOT, 1991, 4th edition) published by the US Department of Labor.

	Percentage of Duty
Never	0 %
Rare	0-1 %
Infrequent	2-5 %
Occasional	6-33 %
Frequent	34-66 %
Constant	67-100 %

STRENGTH	
Strength Category	Weight Handled
5. Limited	Up to 5 kg.
6. Light	5 kg. to 10 kg.
7. Medium	10 kg. to 20 kg.
8. Heavy	>20 kg

Essential Duty 2 – Meter Maintenance Technician – Repair and Maintenance

a. Physical Demands		Frequency During Duty					Weight		Comments	
		Never	Rare	Infrequent	Occasional	Frequent	Constant	Usual (kg)		Max (kg)
Strength	Lifting – Floor to Knuckle			x				<1	39	Tools, meter heads, posts
	Lifting – Knuckle to Waist			x				5	39	Tool tub, meter heads, tools, mechanisms
	Lifting – Over Shoulder		x					31	31	Heads on high shelves in shop
	Carrying – with Handles		x					5	41	Tool tubs, crate of hoods
	Carrying – without Handles				x			5	39	Meter heads, tools, hoods, etc
	Pushing – Upper Extremity			x				<5	15	Van doors/drawers, wrench
	Pushing – Hips/Legs assist		x					20	40	Wrench on tight bolts
	Pulling – Upper Extremity			x				<5	15	Van doors/drawers, wrench
	Pulling – Hip/Leg Assist		x					20	40	Wrench on tight bolts
Mobility	Reach - Shoulder or Above		x					Access items on top of drawer unit or top shelves in shop		
	Reach - Below Shoulder			x				Items in low drawers, tools, bolts at bottom of post		
	Handling						x	Tools and equipment		
	Fine finger movements				x			Un-jamming meters, screwing bolts on hoods		
	Neck - Static Flexion					x		Looking down at meters and mechs, etc		
	Neck – Static Neutral				x					
	Neck – Static Extension	x								
	Neck – Static Rotation	x								
	Throwing	x								
	Sitting	x								
	Standing					x				
	Walking					x				
	Running/Jumping	x								
	Climbing		x					Ladder to access top shelves in shop		
	Bending/Stooping				x			Bending over meters		
	Crouching			x				Work at base of meter or getting items in back of van		
	Kneeling			x				Work at base of meter		
	Crawling	x								
Twisting				x						
Balancing	x									
Travelling	x									

Frequency Rating Definition for % of Duty

The definitions for frequency ratings are contained at the end of the Table (page 20).

Essential Duty 2 – Meter Maintenance Technician – Repair and Maintenance

a. Physical Demands (continued)		Frequency During Duty						Comments
		N	R	I	O	F	C	
Sensory / Perception	Hear/Conversations					x		Co-worker, public
	Hear/Other Sounds						x	Horns, sirens, alarms
	Vision/Far						x	Awareness of surroundings
	Vision/Near						x	
	Vision/Colour	x						
	Vision/Depth						x	
	Perception/Spatial				x			Orienting batteries and mechanisms
	Perception/Form	x						
	Feeling				x			When removing decals or painting
	Speech						x	With co-worker
Work Environment	Inside Work			x				Work done in the shop
	Outside Work						x	Work done on city sidewalks
	Slippery		x					Snowy/icy weather
	Congested worksite				x	x		varies depending on if working downtown or time of day (rush hour)
	Chemical Irritants		x					Cleansers, spray paint
	Confined Space Entry	x						
	Vapour Fumes						x	Vehicle exhaust
	Noise						x	Vehicle and street noise
	Proximity to moving objects				x			Pedestrians and vehicles
	Hazardous Machines				x			Vehicles
	Electrical hazard	x						
	Sharp/Hazardous Tools			x				Hammers, grinder, drill
	Radiant/Thermal Energy		x					Drill bit can heat up
	Hot/Cold		x					Weather dependent
	Humid		x					Weather dependent
	Environmental Dust		x					If working near a construction site
	Organic Substances		x					If on meter
	Medical Waste	x						
	Blood Products	x						
	Lighting Issues – Direct		x					Glare on meters a sunny day
Lighting Issues – Indirect		x					Dim light on winter mornings	
Vibration – Whole Body	x							
Vibration – Hand/Arm		x					Using grinder or drill	

Essential Duty 2 – Meter Maintenance Technician – Repair and Maintenance

b. Cognitive and Psychosocial Demands	Frequency During Duty			Comments
	Never / Rare	Infrequent / Occasional	Frequent / Constant	
Degree of Supervision	x			
Time Pressure		x		
Attention to Detail		x		Investigating why meters don't work, etc, applying correct decals
Memory Requirements	x			
Interact with co-workers			x	
Interact with public	x			
Work Alone	x			
Reading	x			Work order list, meter codes
Writing	x			Log book
Irregular Hours	x			
Operating Equipment	x			Drill, grinder

Frequency Rating Definitions for % of Duty

The frequency rating definitions are from the Dictionary of Occupational Titles (DOT, 1991, 4th edition) published by the US Department of Labor.

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Never	0 %
Rare	0-1 %
Infrequent	2-5 %
Occasional	6-33 %
Frequent	34-66 %
Constant	67-100 %

STRENGTH	
Strength Category	Weight Handled
9. Limited	Up to 5 kg.
10. Light	5 kg. to 10 kg.
11. Medium	10 kg. to 20 kg.
12. Heavy	>20 kg

Essential Duty 3 – Meter Maintenance Technician – Building and Installation

a. Physical Demands		Frequency During Duty					Weight		Comments		
		Never	Rare	Infrequent	Occasional	Frequent	Constant	Usual (kg)		Max (kg)	
Strength	Lifting – Floor to Knuckle			x				31	31	Meter heads from ground level	
	Lifting – Knuckle to Waist				x			10	31	Coring drill, heads, posts, tools, locks, mechanisms	
	Lifting – Over Shoulder		x					31	31	Meter heads on top shelves	
	Carrying – with Handles				x			15	35	Tool tub, generator	
	Carrying – without Handles					x		15	31	Meter heads, posts, coring drill	
	Pushing – Upper Extremity				x			5	15	Wrench, vice	
	Pushing – Hips/Legs assist				x			15	40	Cart in shop, tighten bolts with wrench, push in truck vice	
	Pulling – Upper Extremity				x			5	15	Wrench, vice	
	Pulling – Hip/Leg Assist				x			20	40	Cart in shop, tighten bolts with wrench, pull out truck vice	
Mobility	Reach - Shoulder or Above			x						Accessing top shelves in shop	
	Reach - Below Shoulder				x					Working on base of post, accessing low shelves or drawers in shop.	
	Handling						x			Tools, meter heads, locks, keys, posts, drill	
	Fine finger movements				x					Installing nuts and bolts securing post in place	
	Neck - Static Flexion					x				Looking down at work	
	Neck – Static Neutral					x					
	Neck – Static Extension	x									
	Neck – Static Rotation	x									
	Throwing	x									
	Sitting		x								
	Standing					x					At bench in shop or to install head on post
	Walking				x						Across shop, from truck to installation site
	Running/Jumping	x									
	Climbing		x								Ladder to access top shelves in shop
	Bending/Stooping				x						
	Crouching			x							Working on base of post
	Kneeling				x						Working on base of post
	Crawling	x									
	Twisting				x						
	Balancing	x									
Travelling	x										

Frequency Rating Definition for % of Duty

The definitions for frequency ratings are contained at the end of the Table (page 22).

Essential Duty 3 – Meter Maintenance Technician – Building and Installation

a. Physical Demands (continued)		Frequency During Duty						Comments
		N	R	I	O	F	C	
Sensory / Perception	Hear/Conversations					x		Co-worker, public
	Hear/Other Sounds						x	Horns, sirens, alarms
	Vision/Far						x	Awareness of surroundings
	Vision/Near						x	
	Vision/Colour	x						
	Vision/Depth						x	
	Perception/Spatial				x			Installing locks and mechanism and other parts
	Perception/Form	x						
	Feeling			x				Ends of bolts when installing post
	Speech						x	
Work Environment	Inside Work			x				Work done in the shop
	Outside Work						x	Work done on city sidewalks
	Slippery		x					Snowy/icy weather
	Congested worksite				x	x		varies depending on if working downtown or time of day (rush hour)
	Chemical Irritants		x					Cleansers, spray paint
	Confined Space Entry	x						
	Vapour Fumes					x		Vehicle exhaust
	Noise					x		Vehicle and street noise
	Proximity to moving objects				x			Pedestrians and vehicles
	Hazardous Machines				x			Vehicles
	Electrical hazard		x					Using generator
	Sharp/Hazardous Tools			x				Hammers, grinder, drill
	Radiant/Thermal Energy		x					Drill bit can heat up
	Hot/Cold		x					Weather dependent
	Humid		x					Weather dependent
	Environmental Dust		x					If working near a construction site
	Organic Substances		x					If on meter
	Medical Waste	x						
	Blood Products	x						
	Lighting Issues – Direct		x					Glare on meters a sunny day
Lighting Issues – Indirect		x					Dim light on winter mornings	
Vibration – Whole Body	x							
Vibration – Hand/Arm		x					Using grinder or drill	

Essential Duty 3 – Meter Maintenance Technician – Building and Installation

b. Cognitive and Psychosocial Demands	Frequency During Duty			Comments
	Never / Rare	Infrequent / Occasional	Frequent / Constant	
Degree of Supervision	x			
Time Pressure		x		
Attention to Detail		x		Choosing correct locks and decals
Memory Requirements	x			
Interact with co-workers			x	
Interact with public	x			
Work Alone	x			
Reading	x			
Writing	x			
Irregular Hours	x			
Operating Equipment		x		Coring drill

Frequency Rating Definitions for % of Duty

The frequency rating definitions are from the Dictionary of Occupational Titles (DOT, 1991, 4th edition) published by the US Department of Labor.

	Percentage of Duty
Never	0 %
Rare	0-1 %
Infrequent	2-5 %
Occasional	6-33 %
Frequent	34-66 %
Constant	67-100 %

STRENGTH	
Strength Category	Weight Handled
13. Limited	Up to 5 kg.
14. Light	5 kg. to 10 kg.
15. Medium	10 kg. to 20 kg.
16. Heavy	>20 kg