Magnaflux-Zyglo Modular FPI Inspection System

This FPI system was removed from working service in 2008 and consists of the following items:

1. 1-4040 Penetrant Application Station with Optional Power Immersion Grille
2. 4-4040 Rest Station Drain Grilles
3. 1-4040 Table-Top Rinse Station (115V, 1PH, 4A)
4. 1-4040 Dryer Station (480V, 3PH, 16A)
5. 1-5472 Inspection Station (115V, 1PH, 10A) note- this will require new curtains
6. 1-Swirl Cloud Developer Station

Model 4040 480V Dryer Station

Penetrant Station with Power Immersion Grille

Rinse Station

ZYGLO®
FLUORESCENT PENETRANT INSPECTION SYSTEM

The ZYGLO Fluorescent Penetrant Inspection System is a simple, reliable and economical non-destructive test method for disclosure of surface discontinuities in all metal and many non-metallic parts. Installation utilizes modular components which accommodate work flow and space requirements. Particular attention is given to the efficient, low cost disposition of waste water.

MAJOR BENEFITS

- RELIABLE IDENTIFICATION OF SURFACE DISCONTINUITIES
- LOW COST, MODULAR SYSTEM
- LONG SERVICE LIFE
- MINIMAL MAINTENANCE
- FLEXIBLE — CONFORMS TO WORK FLOW AND AVAILABLE FLOOR SPACE
- COMPATIBLE WITH ALL F.P.I. MATERIALS

Zyglo inspection equipment is designed to facilitate what is, essentially, a five step process:

1. Application of penetrant to part being tested with time allowed for penetration into any discontinuities.
2. Removal of excess penetrant from surface of part.
3. Drying of part.
4. Application of developer to make entrapped penetrant easier to see.
5. Inspection of the part under a black light for surface discontinuities.

In each of the above steps there are options relating to the material being tested, method used, part size, part handling and waste disposition. Before processing, parts must be cleaned to remove all foreign matter.

ZYGLO®
FLUORESCENT PENETRANT INSPECTION SYSTEM

PENETRANT STATION
EMULSIFIER STATION
(LIPOPHILIC METHOD)
WET DEVELOPER STATION

IMMERSION TANK

Penetrant Spray Station (not shown) also available.
Contact Magnaflux for information on features and options.

Immersion is the process normally used to apply Penetrant, Emulsifier and Wet Developer to parts surfaces. Depending on part size, a tank from one of the four modular size systems is used for the immersion process.

The use of a Power Immersion Grille *(see page 14)* to lower and raise large parts or baskets of parts in and out of the tank will slightly affect part clearance. *(See chart below.)*

FEATURES
- Heavy gauge stainless steel tank
- Structural steel framework
- Bottom supported tank
- Protective hinged tank cover

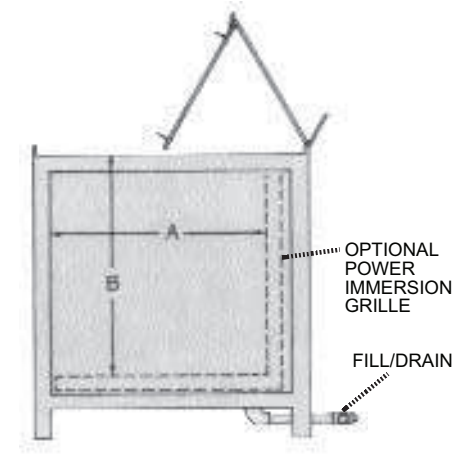
BENEFITS
- Rapid and complete coverage of parts with complex shapes
- Easier coverage of parts processed in bulk
- Easy handling of large or heavy parts using optional power immersion grille
- Fast, easy installation (floor mount or bolt-together)

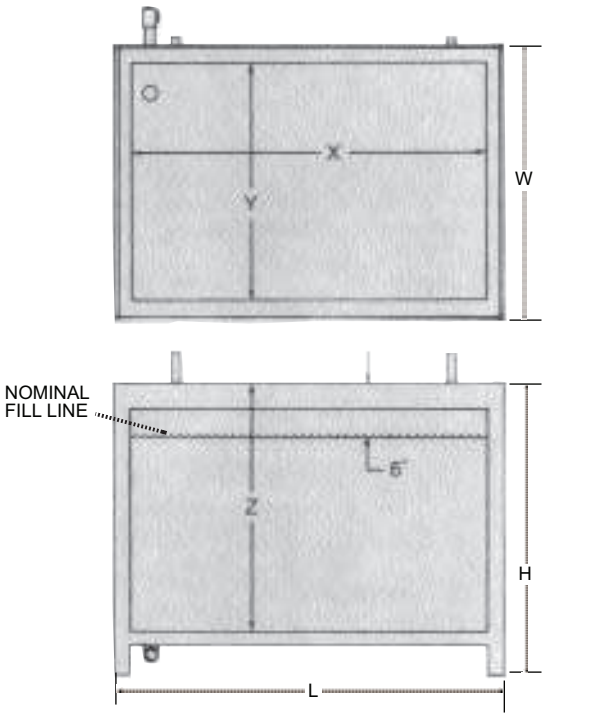
ACCESSORIES
- Half roller grille
- Power immersion grille
- Timers

MECHANICAL REQUIREMENTS

PLUMBING
- Drain and fill connection, rear of tank

SPECIFICATIONS





Dimensions are in inches and are nominal

STANDARD SIZE MODULAR SYSTEM	OUTSIDE DIMENSIONS			INSIDE DIMENSIONS			INSIDE DIMENSIONS WITH POWER IMMERSION GRILLE			GALLONS PER INCH (HEIGHT)	NOMINAL FILL (GALLONS)
	L	W	H	X	Y	Z	X	A	B		
2436	36	24	36	33	21	26	*Available Upon Request*			3.0	60
4040	40	40	42-1/2	36	36	36	36	32-1/2	31-1/2	5.6	170
3448	48	34	36	43-1/4	29-1/4	30-3/4	43-1/4	25-3/4	25-1/4	5.5	140
3472	72	34	36	67-1/4	29-1/4	30-3/4	67-1/4	25-3/4	25-1/4	8.5	220
5472	72	54	36	67-1/4	29-1/4	30-3/4	67-1/4	45-3/4	25-1/4	14.3	370

Customized sizes are available upon request

ZYGLO®
FLUORESCENT PENETRANT INSPECTION SYSTEM

MAGNAFLUX®

REST STATION
DRAIN STATION
ROLLER GRILLES

Roller grilles support parts during "rest" or "drain" cycles and facilitate the movement of heavy or basketed parts. The stations provide a support area equal to the basic tank size.

Roller grille units can be bolted to adjacent components, or optional support legs may be used. 90° grille units accommodate the turning or reversal of the work flow.

Half-tank roller grilles fit on the modular tanks and provide for direct drainage of material within the tanks. These may be used instead of drain stations in some applications to save space and cost. (Note: Not available for 2436 or 4040 Models)

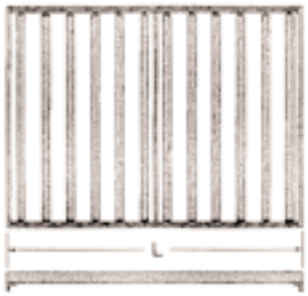
Drain stations have stainless steel trays to facilitate recovery of Penetrant, Emulsifier, Rinse Water and Wet Developer.

FEATURES

- Corrosion resistant rollers - nominal 2" OD on 4" Centers
- Synthetic bearings
- Interchangeable rollers are easily installed or removed
  - Note: Model 2436 includes a corrosion resistant rack instead of rollers
- Stainless steel drain pan

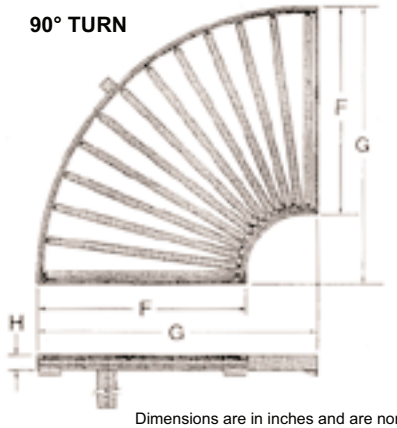
SPECIFICATIONS ROLLER GRILLE REST STATION

STRAIGHT



ROLLER GRILLE REST STATION

90° TURN



Dimensions are in inches and are nominal

STANDARD SIZE MODULAR SYSTEM	STRAIGHT SECTION			90° SECTION		
	L	W	H	F	G	H
2436*	36	24	36	36	36	36
4040	40	40	2-1/2	40	50	2-1/2
3448	48	34	3	34	44	3
3472	72	34	3	34	44	3
5472	72	54	3	54	72	3

*Not as shown. Slightly different configuration.
No rollers for 2436 Rest Station

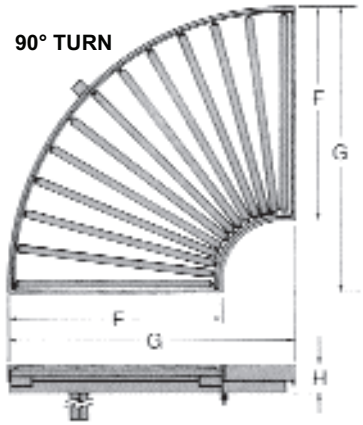
Customized sizes are available upon request

SPECIFICATIONS ROLLER GRILLE DRAIN STATION

STRAIGHT

ROLLER GRILLE DRAIN STATION

90° TURN



Dimensions are in inches and are nominal

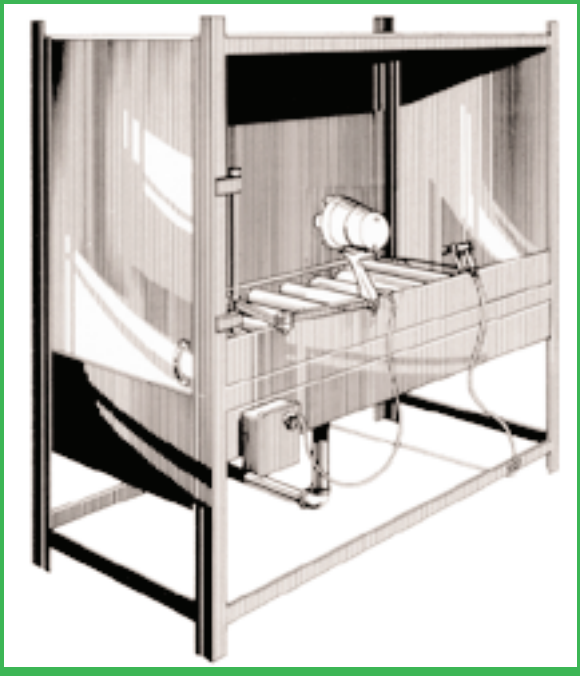
STANDARD SIZE MODULAR SYSTEM	STRAIGHT SECTION			90° SECTION		
	L	W	H	F	G	H
2436*	36	24	36	36	36	36
4040	40	40	8	40	50	7
3448	48	34	8	34	44	7
3472	72	34	8	34	44	7
5472	72	54	9	54	72	7-1/4

*Not as shown. Slightly different configuration.
No rollers for 2436 Drain

ZYGLO®
FLUORESCENT PENETRANT INSPECTION SYSTEM

MAGNAFLUX®

TABLE TOP RINSE STATION (OPTIONAL)



Used in place of the conventional rinse tank, the Table Top Rinse unit permits easy, manual access to hard-to-rinse parts and to parts with entrapment areas that must be turned and emptied after rinsing. Working at waist height reduces fatigue. A roller grille provides an ideal work platform. The Table Top unit includes a hose and spray nozzle and a portable black light for surface inspection. The Hydrowash power spray is a popular option. The Table Top unit includes a hose and spray nozzle and a portable black light for surface inspection. The Hydrowash power spray is a popular option. The Table Top unit is enclosed at three sides and at the top.

A split top unit, with curtained entry and exit, is available in the largest system to accommodate overhead conveyor installations.

FEATURES
- Stainless steel drain pan
- Structural steel frame
- Hand hose
- Hand held black light

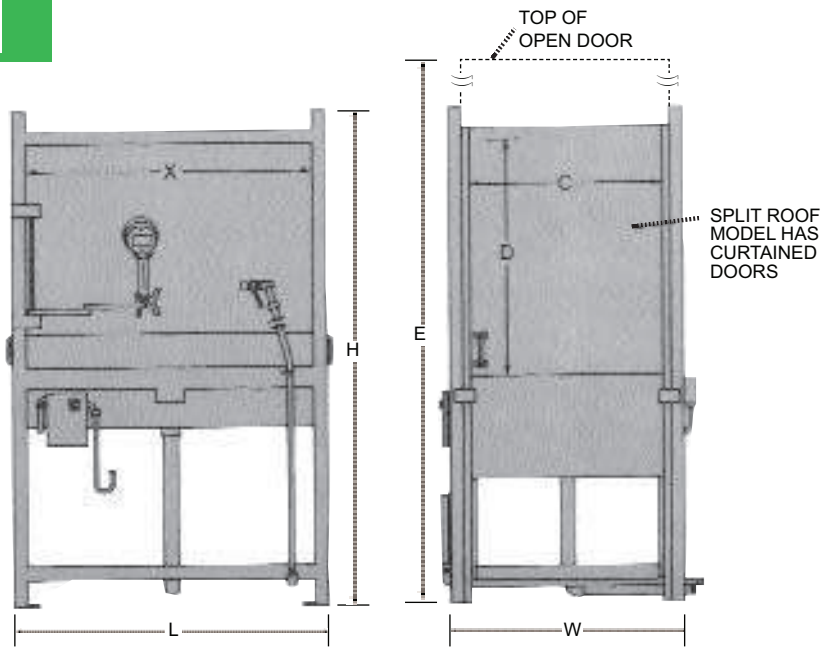
BENEFITS
- Easy access to hard-to-rinse parts and parts with entrapment areas
- Operator comfort

ACCESSORIES
- Hydrowash spray gun
- Remover Injector Kit (Spray System)

MECHANICAL REQUIREMENTS

PLUMBING
- Water inlet connection, rear of tank
- Drain connection, rear of tank

ELECTRICAL
115V, 60HZ, 1PH., 4 Amps
(for black light)



Dimensions are in inches and are nominal

STANDARD SIZE MODULAR SYSTEM	OUTSIDE DIMENSIONS				INSIDE DIMENSIONS		
	L	W	H	E	X	C	D
2436	*Available upon request*						
4040	40	42	82-1/2	113	36	34-1/2	33-1/2
3448	48	36	75	105-1/2	44	29	33-1/2
3472	72	36	75	105-1/2	68	29	33-1/2
5472	72	56	85	105-1/2	68	49-1/2	43-1/2
SPLIT ROOF	72	54	85	—	68	50	44-3/8

Customized sizes are available upon request

ZYGLO®
FLUORESCENT PENETRANT INSPECTION SYSTEM

DRYER STATION

All parts must be thoroughly dried during processing. If Dry Developer is used, parts are dried prior to the application of the developer. If Wet Developer is used, they are dried after the application of the developer.

MAGNAFLUX dryers provide uniform heating and air circulation throughout the drying chamber, with air intake to regulate humidity for optimum drying. Proper air circulation aids in drying and eliminates hot spots which can degrade penetrant performance.

Easy access and a large interior, along with a roller grille, accommodate high volume throughout.

An easily read and calibrated digital thermostat maintains desired temperature levels.

A dryer with solid top and balanced end doors provides virtually airtight heating. An optional dryer with a split top and flame resistant curtain doors accommodates overhead monorail conveyor systems.

FEATURES

- Structural steel framework
- Heavy gauge steel panels
- Insulated interior panels with heat reflective surfaces
- Easily removable fans and heater elements
- Adjustable, calibrated digital thermostat (N/A - on 2436)
- Air circulation fans
- Wire mesh beneath roller grille

BENEFIT

- A controlled, consistent drying cycle
- Energy efficient

SPECIFICATIONS

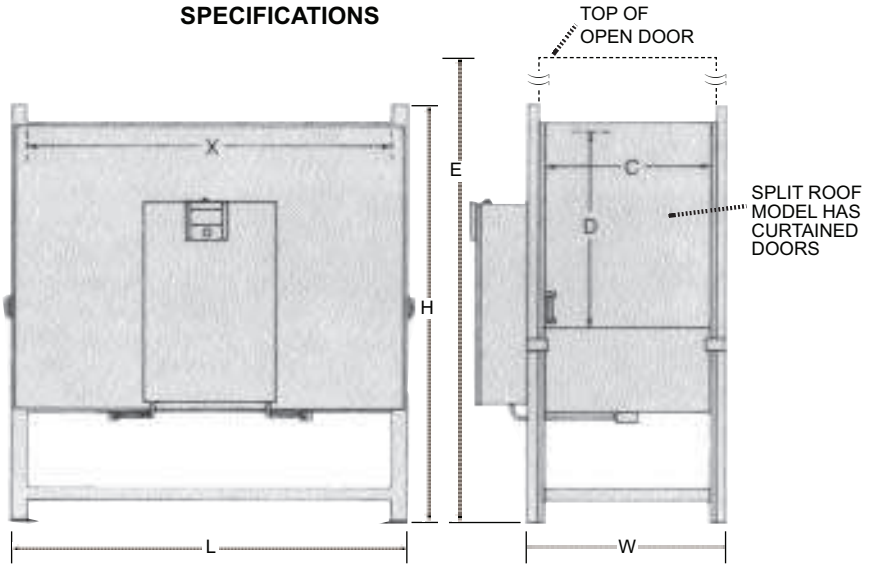
MECHANICAL REQUIREMENTS

ELECTRICAL

AMPERAGE DRAW VARIES BY MODEL AND VOLTAGE SPECIFIED

MODEL	AMPERAGE	
	AT 230V	AT 460V
2436	32	16
4040	32	16
3448	32	16
3472	32	16
5472	48	24

Other voltages can be accommodated.
Check with your MAGNAFLUX representative.



Dimensions are in inches and are nominal

STANDARD SIZE MODULAR SYSTEM	OUTSIDE DIMENSIONS				INSIDE DIMENSIONS		
	L	W	H	E	X	C	D
2436*	36	24	36	—	33	21	26
4040	40	42	82-1/2	113	36	34-1/2	33-1/2
3448	72	36	75	105-1/2	68	29	33-1/2
3472	72	36	75	105-1/2	68	29	33-1/2
5472	72	56	85	125-1/2	68	49	43-1/2
Split Roof	72	54	85	—	68	50	44-3/8

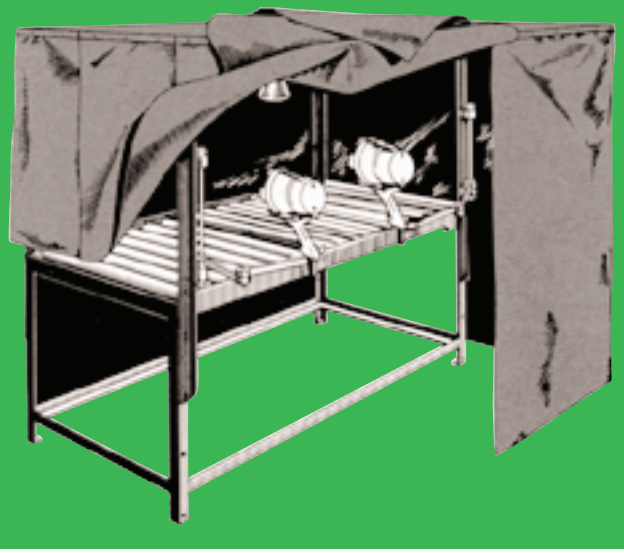
Top Loading, with corrosions resistant rack instead of rollers

Customized sizes are available upon request

ZYGLO®
FLUORESCENT PENETRANT INSPECTION SYSTEM

MAGNAFLUX®

INSPECTION STATION



Sturdy inspection booths provide the darkened area and the black lights for thorough Fluorescent Penetrant Inspection. Ample room is provided for part handling, and roller grilles facilitate the movement of heavy or basketed parts. A solid worktop may be specified in place of the roller grille.

Flame resistant curtains extend below table height, assuring a properly darkened environment. An overhead fan provides ventilation.

A split roof model is available in the largest system to accommodate overhead monorail conveyor systems.

FEATURES

- Structural steel framework
- Roller grille (solid worktop available as option)
  - Note: Model 2436 available with solid worktop only
- Ventilating fan
- White light
- Black lights
- Flame resistant curtain
- Operator switch panel
- Full length curtains (4" above floor) enclose work area

BENEFITS

- Large enough to accommodate two or more inspectors
- Provides ideal environment for thorough part inspection
- Easy part entry/exit
- Comfortable work environment
- Unobstructed work area
- Meets ambient light restriction specification

ACCESSORIES

Solid worktop

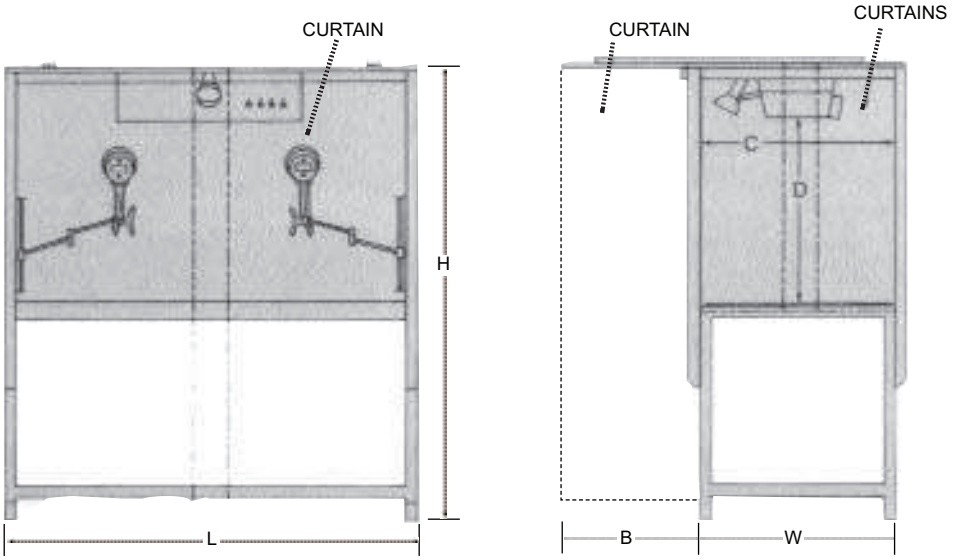
MECHANICAL REQUIREMENTS

ELECTRICAL

115V, 60HZ, 1PH., 10 Amps

Other voltages can be accommodated. Check with your MAGNAFLUX representative.

SPECIFICATIONS



Dimensions are in inches and are nominal

STANDARD SIZE MODULAR SYSTEM	OUTSIDE DIMENSIONS				INSIDE DIMENSIONS	
	L	W	H	B	C	D
2436	36	36	83	24	36	36-3/4
4040	40	40	88-3/4	30	40	36-3/4
3448	72	34	88-3/4	30	34	31-1/4
3472	72	34	88-3/4	30	34	31-3/4
5472	72	54	88-3/4	36	54	43-1/4
SPLIT ROOF	72	54	88-3/4	36	54	43-1/4

Customized sizes are available upon request

ZYGLO®
FLUORESCENT PENETRANT INSPECTION SYSTEM

Customized sizes are available upon request

DRY DEVELOPER STATIONS

The developer acts to pull the penetrant remaining in a cavity to the surface where it is readily visible under black light. Wet or Dry Developers may be used. Wet Developer (suspended or dissolved in water) is applied by immersion of the part. *(See Wet Developer station)*

DYNAMIC CLOUD STATION

The air in this flat bottom chamber is pre-dried and circulated at low velocity to sustain a continuous powder cloud in which the parts are placed. Powder application and evacuation cycle times are adjustable. This method involves a sealed, fully enclosed dry powder container to minimize waste due to "caking". An optional Dust Collector is available to trap the airborne particles that are evacuated from the chamber prior to removal of parts.

FEATURES
- Structural steel framework
- Roller grille
- Enclosed chamber with vertically rising doors
- Air connection with regulator and gauge
- Filtered air inlet
- Dust collection duct

BENEFITS
- Even distribution of developer on parts surfaces
- Minimal developer caking
- Most efficient use of powder

ACCESSORIES
- Dust collector
- Air line dryer (highly recommended)

SWIRL CLOUD STATION

The Swirl Cloud station is an air tight chamber with an air manifold and hand valve. A burst of shop air disperses Dry Developer, gently settling it onto the surface of the part. Solid end doors provide entry and exit. A Dust Collector, which requires no external ducting, is available as an option for particle evacuation.

FEATURES
- Heavy Gauge stainless steel tank
- Structural steel framework
- *Roller Grille

BENEFITS
- Even distribution of developer on part surfaces

*2436 Top Loading has floor grating

ACCESSORIES
- Dust collector

Included with 2436

DEVELOPER DIP STATION

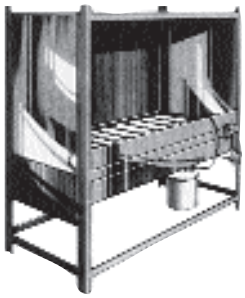
The tank for the dipping process has baffled duct work for dust collector hookup.

FEATURES
- Heavy gauge stainless steel tank
- Structural steel framework
- Baffled duct work

BENEFIT
- Low cost application

ACCESSORIES
- Dust collector
- Half Grille

TABLE TOP DEVELOPER STATION



Used in place of the Developer Dip station, the Table Top Developer unit permits easy, manual application of Dry Developer.

A split roof model is available to accommodate overhead monorail conveyor systems.

FEATURES
- Roller grille top
- Developer applicator hose

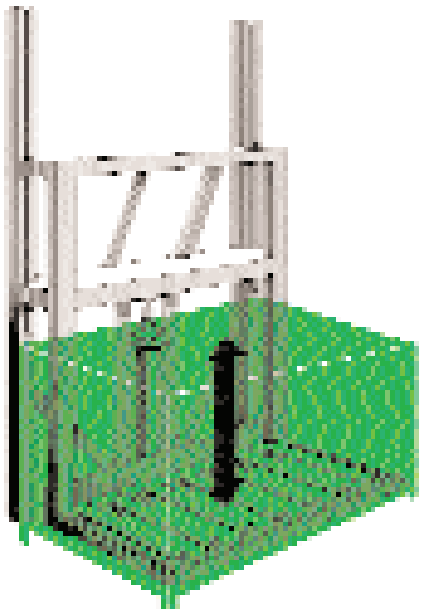
BENEFITS
- Easy access to assure that unusually shaped parts and parts with entrapment areas are properly covered.
- Operator comfort

ACCESSORIES
- Dust collector

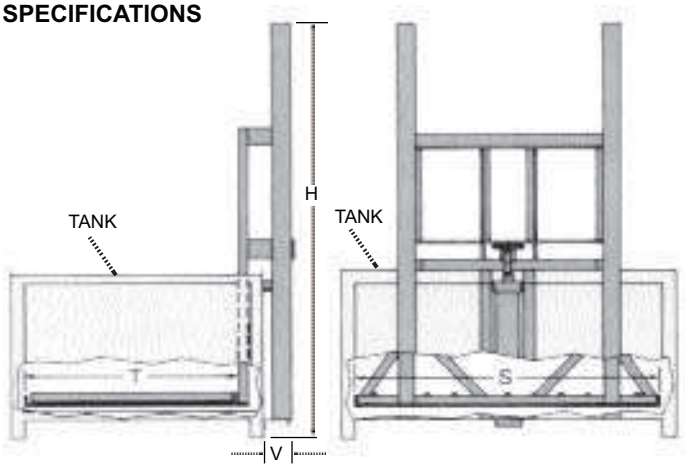
ACCESSORIES

POWER IMMERSION GRILLE

Air powered Immersion Grilles facilitate the lowering and raising of large parts or large baskets of parts in and out of the various processing tanks. The Immersion Grille, with its durable, corrosion resistant rollers, raises and lowers permitting rapid part drainage. Some part capacity in the tank is sacrificed.



SPECIFICATIONS



Dimensions are in inches and are nominal

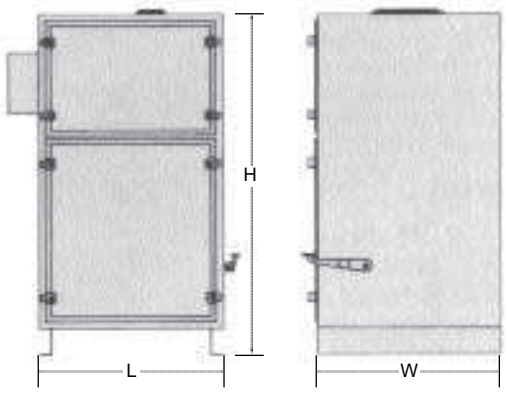
STANDARD SIZE MODULAR SYSTEM	OUTSIDE DIMENSIONS		LIFT PLATFORM DIMENSIONS	
	H	V	S	T
2436	Available Upon Request			
4040	107	8	35	32
3448	96	6	41	25-1/4
3472	96	6	65	25-1/4
5472	96	6	65	45-1/4

Customized sizes are available upon request

DUST COLLECTORS

Airborne particles are evacuated from Dry Developer stations prior to the removal of parts. This steel cabinet has "positive seal" doors and requires minimal floor space.

SPECIFICATIONS



Dimensions are in inches and are nominal

Size	L	W	H	Electrical
1 HP	22-1/8	41-1/8	22-1/2	115V, 60HZ, 1PH
3 HP	28-1/8	28-1/4	52-1/8	230 or 460
10 HP	64	43-1/2	109	230 or 460