

# VM2050S,2150,2150SV GLOBE VALVE GRINDING & LAPPING MACHINE

**04** | 2014  
VM 2050-2150

## Powerful, rigid, high performance machine with easy setup and handling.

### Quick and Easy Setup

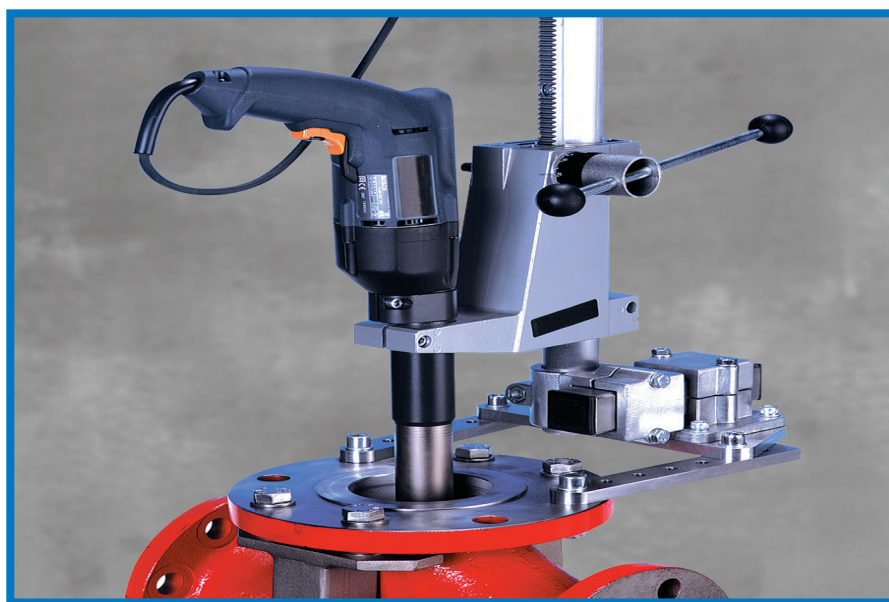
- Quickly change between electric and pneumatic by simply loosening a single clamping bolt.
- The adhesive on the media discs is specifically formulated to provide a firm hold while in use, but are easy to remove after use.

### Rigid

- Thicker Planet Wheels and webbed design provides increased rigidity, allowing consistent flatness regardless of grinding pressure.

### Versatile

- Using an odd number of Planet Arms ensures constant contact between all five arms and the seat, which allows you to grind perfectly flat seats.
- Planet Arm bearings are sealed, preloaded and preset to be within .000079 inches (.002mm) of each other on a flat plane.
- When changing the grinding head, the bearings don't need to be adjusted.
- All grinders come with a complete set of diameters and grit of abrasives; 800-1200 pieces included.



# SPECIFICATIONS

		US	Metric
<b>Operating Ranges:</b>			
Working range diameter	Minimum	0.38 inches	10 mm
	Maximum (VM2050S)	2 inches	50 mm
	Maximum (VM2150)	6 inches	150 mm
Submerging Depth	Maximum	12 inches	300 mm
	Maximum (VM2150)	20 inches	500 mm
Power	Electric	0.75 Hp	0.55 kW
	Pneumatic	0.5 Hp	0.40 kW
Variable spindle speed	Electric	100 - 550 rpm	100 - 550 rpm
	Pneumatic	100 - 640 rpm	100 - 640 rpm
Spindle Torque	Permanent	5.3 ft-lbs	7.2 N•m
	Max	29.5 ft-lbs	40.0 N•m
<b>Weight</b>			
VM2050S			
Basic machine without tooling		9 lbs.	4 kg
Machine Case		31 lbs	14kg
VM2150S, VM2150SV			
Basic machine without tooling		9 lbs	4 kg
Machine Case		27 lbs	12 kg
Accessory Case		35 lbs	16 kg
VM2150			
Basic machine without tooling		9 lbs	4 kg
Machine Case (electric)		40 lbs.	18 kg
Machine Case (pneumatic)		55 lbs	25 kg
Accessory Case		37 lbs	17 kg

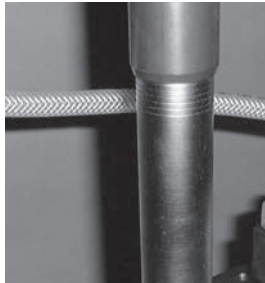
All dimensions should be considered reference. Contact your Climax Representative for precision dimensions. Specifications are subject to change without notice. There are no systems or components on this machine that are capable of producing hazardous EMC, UV or other radiation hazards. The machine does not use lasers nor does it create hazardous materials such as gasses or dust.

## VM2050S, VM2150 Overview



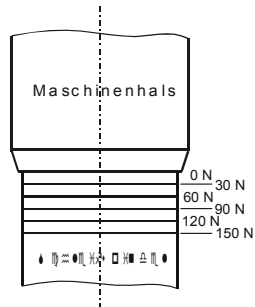
Machine to be used in "handheld operation" or mounted to the valve body.

Available with electric or pneumatic motor.

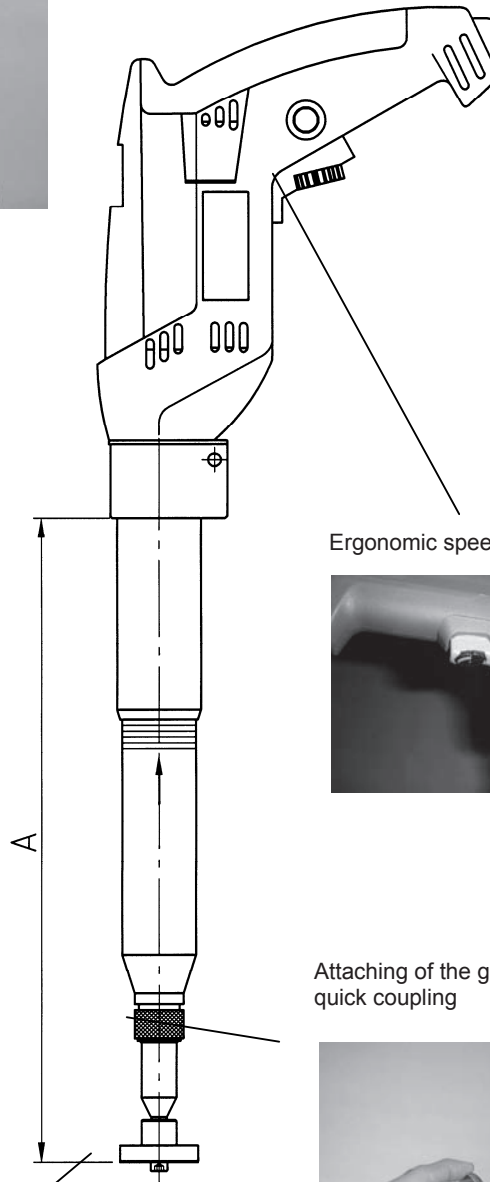


Good view at Scale for grinding pressure.

The grinding pressure may be changed **during** the operation.



Grinding spindle with self aligning coupling






Ergonomic speed adjustment



Attaching of the grinding tools by quick coupling






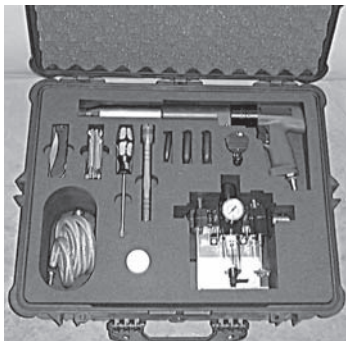
# TOOL CONFIGURATIONS

Model VM2050S (Seat Diameter Range 0.4 - 2.0"(10 - 50 mm))		
P/N	Description	
	<b>Globe Valve Grinder VM2050S</b> Nominal working diameter 0.4"-2.0" (10 mm – 50 mm) Submerging depth 12" (300 mm). Included Components:: <ul style="list-style-type: none"> <li>10 piece solid grinding disk set: 0.8"(20 mm), 1.0" (25 mm), 1.2"(30 mm), 1.4" (35 mm), 1.6" (40 mm), 1.8"(45 mm), 2.0"(50 mm), 2.2"(55 mm), 2.4"(60 mm), 2.6"(65 mm) diameters.</li> <li>5 piece guiding discs set: 0.7"(19 mm), 0.9"(24 mm), 1.2"(31 mm), 1.5"(39 mm) and 1.9"(48 mm) diameters.</li> <li>Integrated grinding pressure detection with a scale.</li> <li>Start up set of abrasives grain 100 and 500.</li> <li>1 set of tooling.</li> <li>Carrying case with foam inlet for the machine and the accessories.</li> </ul>	
	210-00S-S02	VM2050S with electric motor 230 V / 50 Hz
	210-00S-S03	VM2050S with pneumatic motor
	210-00S-S05	VM2050S with electric motor 115V / 60 Hz
<div>   </div>		
<div> <div>VM2050S with electric motor</div> <div>                     VM2050S with pneumatic motor                      (standard scope of supply does not include maintenance unit)                 </div> </div>		



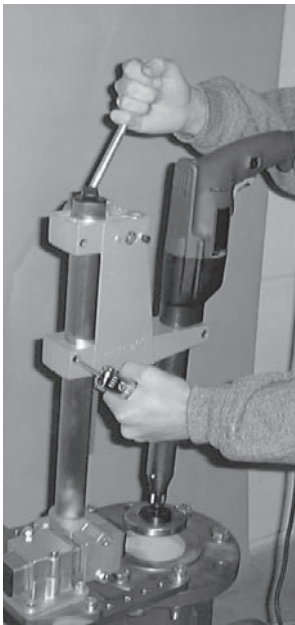
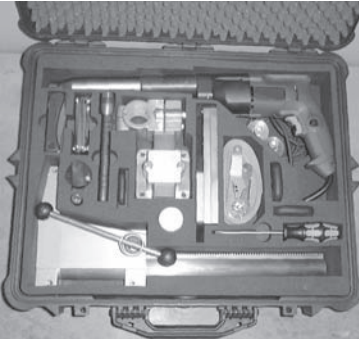

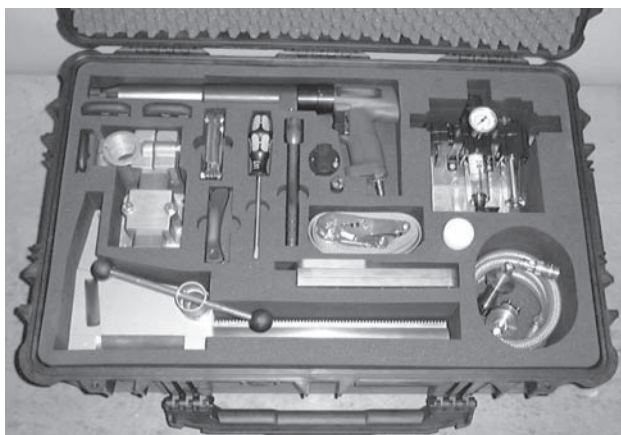
# TOOL CONFIGURATIONS

## **Model VM2150S (Seat Diameter Range 0.4 - 6.0 (10 - 150 mm))**

	P/N	Description
		<p><b>Globe Valve Grinder VM2150S</b>                      Nominal working diameter 0.4"-6" (10 mm-150 mm)                      Submerging depth 12"(300 mm).                      Included Components:</p> <ul style="list-style-type: none"> <li>• 21 piece solid grinding disk set: 0.8"(20 mm), 1.0" (25 mm), 1.2"(30 mm), 1.4" (35 mm), 1.6" (40 mm), 1.8"(45 mm), 2.0"(50 mm), 2.2"(55 mm), 2.4"(60 mm), 2.6"(65 mm), 2.9"(73 mm), 3.1"(80 mm), 3.3"(85 mm), 3.5"(90 mm), 3.7"(95 mm), 3.9"(100 mm), 4.1"(105 mm), 4.3"(110 mm), 4.7"(120 mm), 5.5"(140 mm), 6.5"(165 mm) diameters.</li> <li>• 8 piece guiding discs set: 0.7"(19 mm), 0.9"(24 mm), 1.2"(31 mm), 1.5"(39 mm) and 1.9"(48 mm), 2.5"(63 mm), 3.1"(78 mm), 3.9"(98 mm) diameters.</li> <li>• 4 pieces of guiding rollers.</li> <li>• One pieces of ball joint coupling size 10 and 15 each.</li> <li>• Integrated grinding pressure detection with a scale.</li> <li>• Start up set of abrasives grain 100 and 500.</li> <li>• 1 set of tooling.</li> <li>• Carrying case with foam inlet for the machine and the accessories.</li> </ul> <p><b>220-00S-S12 VM2150S with electric motor 230 V / 50 Hz</b></p> <p><b>220-00S-S13 VM2150S with pneumatic motor</b></p> <p><b>220-00S-S15 VM2150S with electric motor 115V / 60 Hz</b></p>
		
		<p><b>VM2150S with pneumatic motor</b>                      (standard scope of supply does not include maintenance unit)</p>

# TOOL CONFIGURATIONS

## **Model VM2150 (Seat Diameter Range 0.4 - 6.0" (10 - 150 mm))**

P/N	Description
	<b>Globe Valve Grinding and Lapping Machine VM2150</b> Nominal working dia DN10 to DN150 (DN3/8" to DN6"). Submerging depth 300 mm (12"). Included Components: <ul style="list-style-type: none"> <li>21 piece solid grinding disk set: 0.8"(20 mm), 1.0" (25 mm), 1.2"(30 mm), 1.4" (35 mm), 1.6" (40 mm), 1.8"(45 mm), 2.0"(50 mm), 2.2"(55 mm), 2.4"(60 mm), 2.6"(65 mm), 2.9"(73 mm), 3.1"(80 mm), 3.3"(85 mm), 3.5"(90 mm), 3.7"(95 mm), 3.9"(100 mm), 4.1"(105 mm), 4.3"(110 mm), 4.7"(120 mm), 5.5"(140 mm), 6.5"(165 mm) diameters.</li> <li>16 piece solid lapping disk set: (2 pieces each up to 3.1"(80 mm)diameter): 1.0" (25 mm), 1.2"(30 mm), 1.4" (35 mm), 1.8"(45 mm), 2.2"(55 mm), 2.6"(65 mm), 3.1"(80 mm), 3.9"(100 mm) and 4.7"(120 mm),</li> <li>8 piece guiding discs set: 0.7"(19 mm), 0.9"(24 mm), 1.2"(31 mm), 1.5"(39 mm) and 1.9"(48 mm), 2.5"(63 mm), 3.1"(78 mm), 3.9"(98 mm) diameters.</li> <li>4 pieces of guiding rollers.</li> <li>One pieces of ball joint coupling size 10 and 15 each.</li> <li>Integrated grinding pressure detection with a scale.</li> <li>Mounting column with mounting plate for valves with and without flange.</li> <li>Start up set of abrasives grain 100 and 500.</li> <li>2 tubes of lapping paste 10µm and 30 µm each.</li> <li>1 set of tooling.</li> <li>Carrying case with foam inlet for the machine &amp; accessories.</li> </ul>
	<b>220-00S-S02 VM2150 with electric motor 230 V / 50 Hz</b>
	<b>220-00S-S03 VM2150 with pneumatic motor</b>
	<b>220-00S-S05 VM2150 with electric motor 115V / 60 Hz</b>
	
<b>VM2150 with electric motor</b>	<b>VM2150 accessory case</b>
	<b>VM2150 with pneumatic motor (standard scope of supply does not include maintenance unit)</b>

# TOOL CONFIGURATIONS

## **Model VM2150SV for Safety Valves (Range 0.4 - 6.0" (10 - 150 mm))**



P/N

Description

**Globe Valve Grinding and Lapping Machine especially equipped for Safety Valves VM2150SV**

Nominal working diameters: 0.4"-6.0" (10 mm-150 mm)

Submerging depth 12" (300 mm).

Scope of supply:

- 21 piece solid grinding disk set: 0.8" (20 mm), 1.0" (25 mm), 1.2" (30 mm), 1.4" (35 mm), 1.6" (40 mm), 1.8" (45 mm), 2.0" (50 mm), 2.2" (55 mm), 2.4" (60 mm), 2.6" (65 mm), 2.9" (73 mm), 3.1" (80 mm), 3.3" (85 mm), 3.5" (90 mm), 3.7" (95 mm), 3.9" (100 mm), 4.1" (105 mm), 4.3" (110 mm), 4.7" (120 mm), 5.5" (140 mm), 6.5" (165 mm) diameters.
- 8 piece guiding discs set: 0.7" (19 mm), 0.9" (24 mm), 1.2" (31 mm), 1.5" (39 mm) and 1.9" (48 mm), 2.5" (63 mm), 3.1" (78 mm), 3.9" (98 mm) diameters.
- 4 pieces of guiding rollers.
- One pieces of ball joint coupling size 10 and 15 each.
- Integrated grinding pressure detection with a scale.
- Start up set of abrasives grain 500 and 1000.
- 1 set of tooling.
- Carrying case with foam inlet for the machine and the accessories.

**220-00S-S22 VM2150SV with electric motor 230 V / 50 Hz**

**220-00S-S23 VM2150SV with pneumatic motor**

**220-00S-S25 VM2150SV with electric motor 115V / 60 Hz**



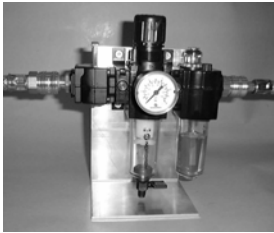

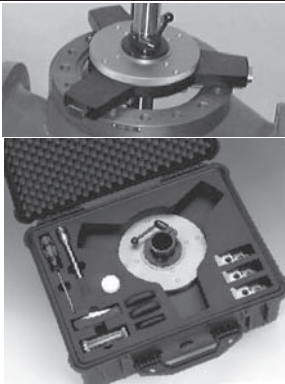

**VM2150SV  
with electric motor**



**VM2150SV  
accessory  
case**




**VM2150SV with  
pneumatic motor  
(standard scope of  
supply does not  
include maintenance  
unit)**

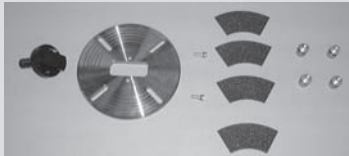
Accessories		
	P/N	Description
	<b>240-13K-001</b>	<b>Maintenance unit for pneumatic motor</b> Required for machines with pneumatic motor. The maintenance unit is <b>not</b> included in the standard scope of supply with pneumatic driven machines. Includes: <ul style="list-style-type: none"> <li>• filter</li> <li>• oiler</li> <li>• pressure gauge</li> <li>• speed controller</li> </ul>
		<b>Extension of submerging depth</b> <ul style="list-style-type: none"> <li>• Adapter to extend the grinding spindle.</li> <li>• Adapted to the spindle by quick coupling.</li> <li>• Tools are adapted to the extension also by quick coupling.</li> </ul>
	<b>220-35S-N01</b>	<b>Extension of submerging depth by 4"(100 mm).</b>
	<b>220-34S-N01</b>	<b>Extension of submerging depth by 6"(150 mm).</b>
	<b>220-33S-N01</b>	<b>Extension of submerging depth by 8"(200 mm).</b>
	<b>300-11S-N01</b>	<b>3 jaw centering chuck</b> <ul style="list-style-type: none"> <li>• For 3.1" to 17"(80 mm-430 mm) diameters.</li> <li>• Guiding tube</li> <li>• Spindle extension 18"(450 mm) long.</li> <li>• Delivery in a carrying case with foam inlet</li> </ul>
		<b>Grinding adapter</b> For using the tooling of the VM2000 on stationary drill presses. The grinding pressure is made by an application of springs. The scale for the grinding pressure is divided into two ranges: One for high rate of removal of material and the other for high precision surfaces.
	<b>185-00S-S22</b>	<b>Grinding adapter MT2</b> For using on stationary drill presses with morse taper #2.
	<b>185-00S-S23</b>	<b>Grinding adapter MT3</b> For using on stationary drill presses with morse taper #3.

CLIMAX is committed to product improvement. The machine you receive may vary slightly from what is shown.



<b>Solid Grinding and Lapping Discs</b> <b>Seat Diameter Range: 0.4"-2.6" (10 mm-65 mm)</b> <b>(Ball joint coupling 0.4" (10 mm))</b>					
Valve Seat Nominal Dia.	Dia. of Grinding- resp. Lapping disc	Dia. of Guiding disc	Grinding Disc Part No.	Lapping Disc Part No.	Guiding Disc Part No.
0.4" (10 mm)	0.8" (20 mm) 1.0" (25 mm)	0.3" (9 mm) (Screw head)	130-11T-001 130-11T-002	130-12T-002	
0.8" 20	1.2" (30 mm)	0.7" (19 mm)	130-11T-003	130-12T-003	130-13T-001
1.0" (25 mm)	1.4" (35 mm) 1.6" (40 mm)	0.9" (24 mm)	130-11T-004 130-11T-005	130-12T-004	130-13T-002
1.3" (32 mm)	1.8" (45 mm) 2.0" (50 mm)	1.2" (31 mm)	130-11T-006 130-11T-007	130-12T-006	130-13T-003
1.6" (40 mm)	2.2" (55 mm)	1.5" (39 mm)	130-11T-008	130-12T-008	130-13T-004
2.0" (50 mm)	2.4" (60 mm) 2.6" (65 mm)	1.9" (48 mm)	130-11T-009 130-11T-010	130-12T-010	130-13T-005
2.6" (65 mm)	2.9" (73 mm) 3.1" (80 mm) 3.3" (85 mm)	2.5" (63 mm)	130-11T-011 130-11T-012 130-11T-013	130-12T-012	130-13T-006

<b>Solid Grinding and Lapping Discs</b> <b>Seat Range 3.1"-3.9" (80 mm-100 mm)</b> <b>(Ball joint coupling 0.6" (15 mm))</b>					
Valve Seat Nominal Dia.	Dia. of Grinding- resp. Lapping disc	Dia. of Guiding disc	Grinding Disc Part No.	Lapping Disc Part No.	Guiding Disc Part No.
3.1" (80 mm)	3.5" (90 mm) 3.9" (100 mm) 4.1" (105 mm)	3.1" (78 mm)	130-31T-001 130-31T-002 130-31T-003	130-32T-002	130-33T-001
3.9" (100 mm)	4.3" (110 mm) 4.7" (120 mm)	3.9" (98 mm)	130-31T-004 130-31T-005	130-32T-005	130-33T-002

<b>Solid Grinding Discs</b> <b>with adjustable bearings</b> <b>Seat Range 3.1"-5.9" (80 mm-150 mm)</b> <b>(Ball joint coupling 0.6" (15 mm))</b>					
Valve Seat Nominal Dia.	Dia of Grinding- resp. Lapping disc		Grinding disc Part No.		
3.1" (80 mm)	3.7" (95 mm)		130-41T-001		
3.9" (100 mm)	4.5" (115 mm)		130-41T-002		
4.9" (125 mm)	5.5" (140 mm)		130-41T-003		
5.9" (150 mm)	6.5" (165 mm)		130-41T-004		
<b>Guide (1 Piece)</b> (4 Pieces are required)			130-42S-N01		

# CLIMAX TRAINING AND SUPPORT

CLIMAX has been teaching the fundamentals and fine points of portable machine tool operation for practically as long as we've been inventing and building the tools.

We offer several training facilities across the United States - the Global Learning Center, situated in our corporate headquarters near Portland, Oregon and Houston, Texas Training Facility. All facilities offer training for machine tool operators on safety and machine setup and operation. Trainees also receive technical tips and tools to improve operational efficiencies, with the vast majority of every program devoted to hands-on activities and skill development.

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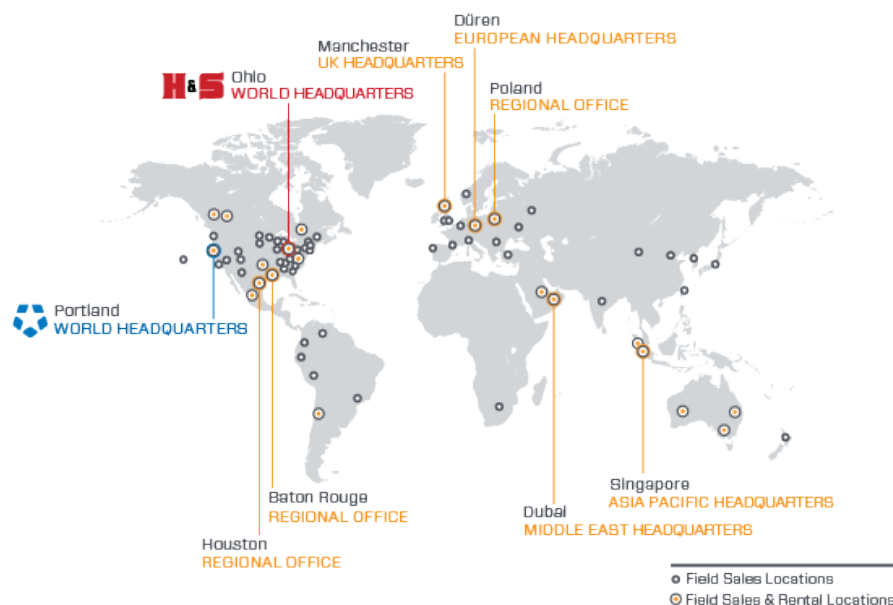
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