

HARDING
AUTOPARK SYSTEMS



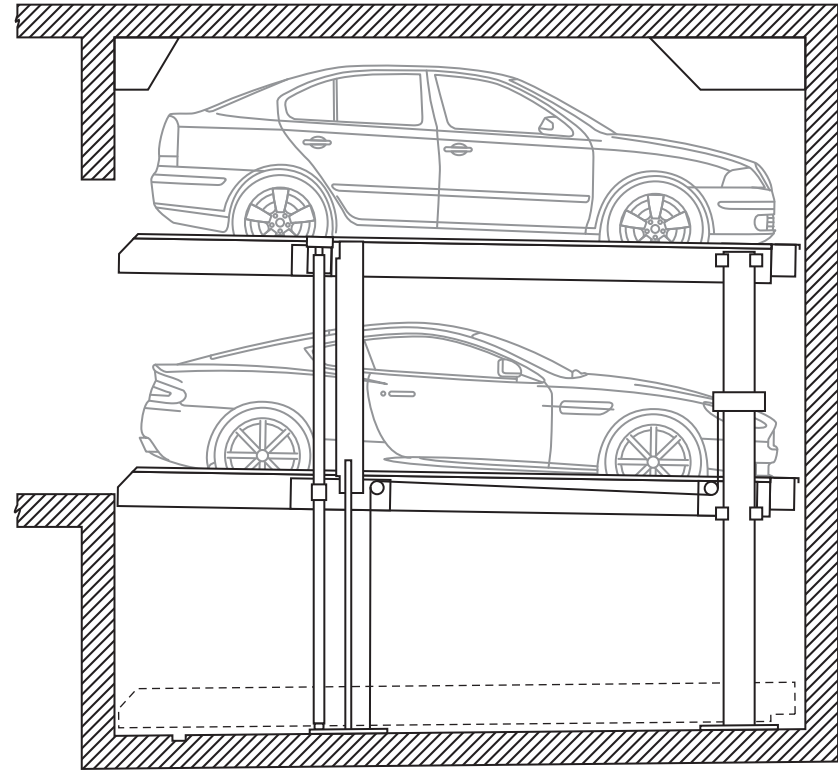
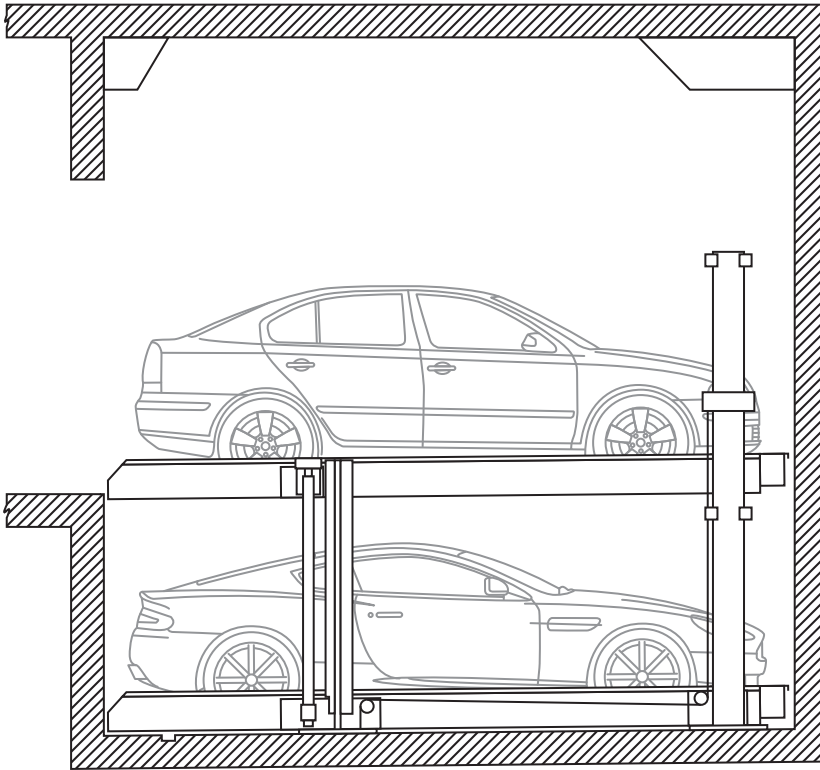
SPEC SHEET

**WÖHR
PARKLIFT™
450**

Independent Subterranean
Parking Systems

PARKLIFT 450

FIG.
1



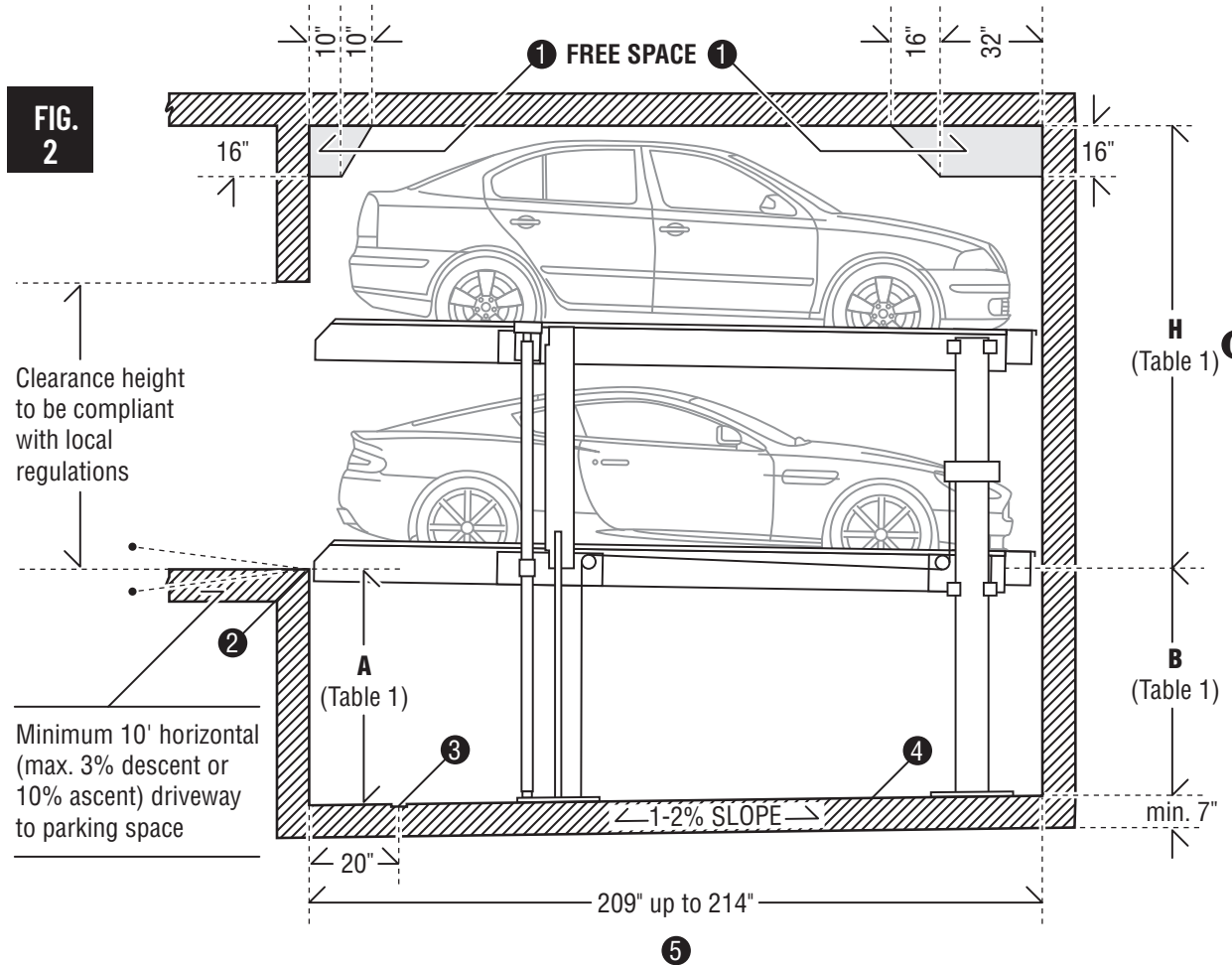
- Single units: 2 cars
Double units: 4 cars

- Platform load options:
 - max. 4,400 lbs., load per wheel 1,100 lbs.
 - max. 5,720 lbs., load per wheel 1,430 lbs.

PARKLIFT 450

Height and Length Dimensions (underground car park)

- 1 Free spaces for any connections performed by the customer:
 - please ask Harding Steel for the dimension sheets
- 2 Recommended drainage channels:
 - 3" x 2" lateral drainage channel at the front of the pit
 - in case of installation of a sump pump, it is necessary to comply with the drainage pit dimensions specified by the pump manufacturer
- 3 A pit length of 213" is recommended. This will allow for increased safety clearances and distances in the event of future changes in vehicle length.
- 4 With an increase in headroom available, correspondingly taller cars will be able to park on the upper platform.



Dimensions

- all dimensions specified are the minimum, finished dimensions
- tolerances must be taken into consideration

PARKLIFT 450

TYPE	H (MINIMUM)		A (+1' / -0)		B (+1' / -0)		UPPER LEVEL VEHICLE HEIGHT (MINIMUM)		LOWER LEVEL VEHICLE HEIGHT		DISTANCE BETWEEN PLATFORMS	
	FT	INCHES	FT	INCHES	FT	INCHES	FT	INCHES	FT	INCHES	FT	INCHES
450-170	10	6	5	6-15/16	5	4-15/16	4	11-1/16	4	11-1/16	5	1
450-175	10	7-15/16	5	8-7/8	5	6-15/16	4	11-1/16	5	1	5	3
	10	9-15/16	5	8-7/8	5	6-15/16	5	1	5	1	5	3
450-180	10	9-15/16	5	10-7/8	5	8-7/8	4	11-1/16	5	3	5	4-15/16
	11	1-7/8	5	10-7/8	5	8-7/8	5	3	5	3	5	4-15/16
450-185	10	11-7/8	6	13/16	5	10-7/8	4	11-1/16	5	4-15/16	5	6-15/16
	11	5-13/16	6	13/16	5	10-7/8	5	4-15/16	5	4-15/16	5	6-15/16
450-190	11	1-7/8	6	2-13/16	6	13/16	4	11-1/16	5	6-15/16	5	8-7/8
	11	9-3/4	6	2-13/16	6	13/16	5	6-15/16	5	6-15/16	5	8-7/8
450-195	11	3-13/16	6	4-3/4	6	2-13/16	4	11-1/16	5	8-7/8	5	10-7/8
	12	1-11/16	6	4-3/4	6	2-13/16	5	8-7/8	5	8-7/8	5	10-7/8
450-200	11	5-13/16	6	6-3/4	6	4-3/4	4	11-1/16	5	10-7/8	6	13/16
	12	5-5/8	6	6-3/4	6	4-3/4	5	10-7/8	5	10-7/8	6	13/16

H = Height from top of pit to underside of ceiling

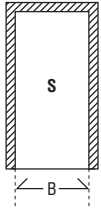
A = Pit depth at the front of the pit

B = Pit depth at the back of the pit

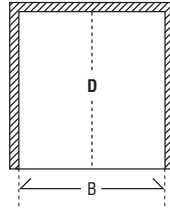
PARKLIFT 450

WIDTH DIMENSIONS (UNDERGROUND CAR PARK)

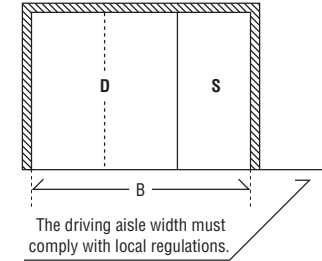
Single Unit
(2 CARS)



Double Unit
(4 CARS)



Combined Unit
(6 CARS)



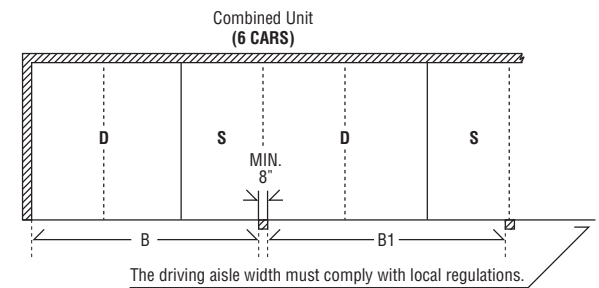
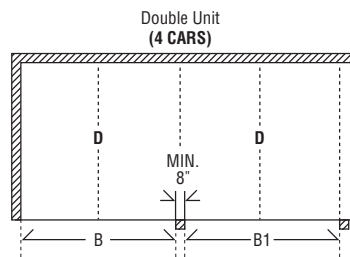
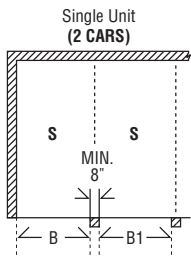
SPACE REQUIREMENTS B	CLEAR PLATFORM WIDTH
8' 6-1/2"	7' 6-1/2"
8' 10"	7' 10/1/2"
9' 2"	8' 2-1/2"
9' 6"	8' 6-1/2"
9' 10"	8' 10"

SPACE REQUIREMENTS B	CLEAR PLATFORM WIDTH
16'	15' 1"
16' 9"	15' 9"
17' 4-1/2"	16' 5"
18' 1/2"	17' 1"
18' 8-1/2"	17' 8-1/2"

SPACE REQUIREMENTS B	CLEAR PLATFORM WIDTH
24' 7-1/2"	15' + 7' 6-1/2"
25' 7"	15' 9" + 7' 10-1/2"
26' 7"	16' 5" + 8' 2-1/2"
27' 7"	17' 1" + 8' 6-1/2"
28' 6-1/2"	17' 8-1/2" + 8' 10"

PARKLIFT 450

WIDTH DIMENSIONS (UNDERGROUND CAR PARK)



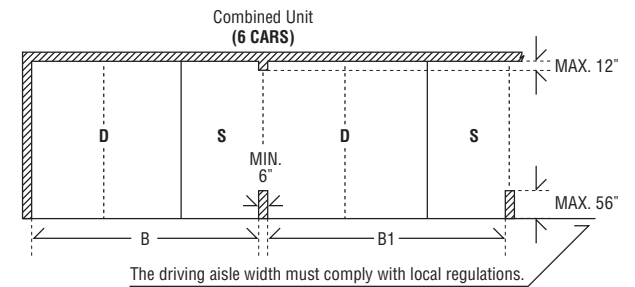
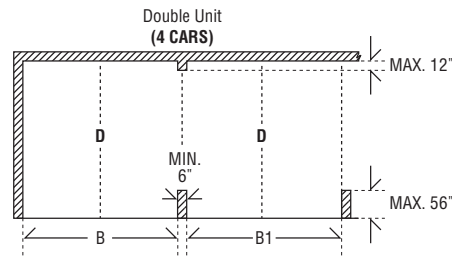
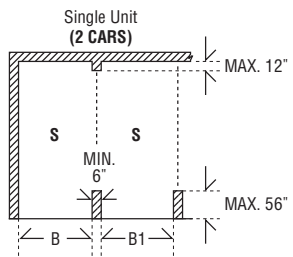
SPACE REQUIREMENTS		CLEAR PLATFORM WIDTH
B	B1	
8' 2-1/2"	7' 10-1/2"	7' 6-1/2"
8' 6-1/2"	8' 2-1/2"	7' 10-1/2"
8' 10"	8' 6-1/2"	8' 2-1/2"
9' 2"	8' 10"	8' 6-1/2"
9' 6"	9' 2"	8' 10"

SPACE REQUIREMENTS		CLEAR PLATFORM WIDTH
B	B1	
15' 9"	15' 5"	15' 1"
16' 5"	16' 1"	15' 9"
17' 3/4"	16' 9"	16' 5"
17' 8-1/2"	17' 5"	17' 3/4"
18' 1/2"	18' 1/2"	17' 8-1/2"

SPACE REQUIREMENTS		CLEAR PLATFORM WIDTH
B	B1	
24' 3-1/2"	23' 11-1/2"	15' 1" + 7' 8-1/2"
25' 3"	24' 11"	15' 9" + 7' 10-1/2"
26' 3"	25' 11"	16' 5" + 8' 2-1/2"
27' 3"	26' 11"	17' 3/4" + 8' 6-1/2"
28' 2-1/2"	27' 10-1/2"	17' 8-1/2" + 8' 10"

PARKLIFT 450

WIDTH DIMENSIONS (UNDERGROUND CAR PARK)



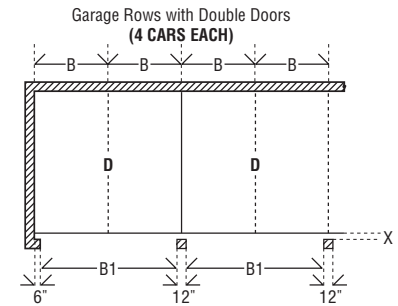
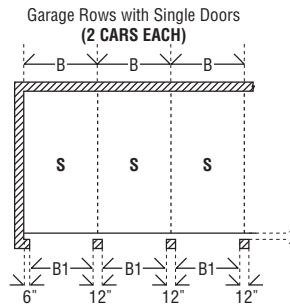
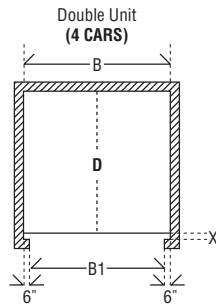
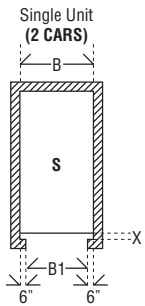
SPACE REQUIREMENTS		CLEAR PLATFORM WIDTH
B	B1	
8' 4-1/2"	8' 1/2"	7' 6-1/2"
8' 8-1/2"	8' 4-1/2"	7' 10-1/2"
9'	8' 8-1/2"	8' 2-1/2"
9' 4-1/2"	9'	8' 6-1/2"
9' 8"	9' 4-1/2"	8' 10"

SPACE REQUIREMENTS		CLEAR PLATFORM WIDTH
B	B1	
15' 11"	15' 7"	15' 1"
16' 7"	16' 3"	15' 9"
17' 2-1/2"	16' 11"	16' 5"
17' 6-1/2"	17' 6-1/2"	17' 1"
18' 10"	18' 6-1/2"	7' 6-1/2"

SPACE REQUIREMENTS		CLEAR PLATFORM WIDTH
B	B1	
24' 5-1/2"	24' 1-1/2"	15' 1" + 7' 6-1/2"
25' 5"	25' 1"	15' 9" + 7' 10-1/2"
26' 5"	26' 1"	16' 5" + 8' 2-1/2"
27' 5"	27' 1"	17' 1" + 8' 6-1/2"
28' 4-1/2"	28' 1/2"	17' 8-1/2" + 8' 10"

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WIDTH DIMENSIONS (UNDERGROUND CAR PARK)



SPACE REQUIREMENTS		CLEAR PLATFORM WIDTH
B	B1*	
8' 6-1/2"	7' 6-1/2"	7' 6-1/2"
8' 10-1/2"	7' 10-1/2"	7' 10-1/2"
9' 2-1/2"	8' 2-1/2"	8' 2-1/2"
9' 6"	8' 6-1/2"	8' 6-1/2"
9' 10"	8' 10-1/2"	8' 10-1/2"

SPACE REQUIREMENTS		CLEAR PLATFORM WIDTH
B	B1*	
16' 1"	15' 1"	15' 1"
16' 9"	15' 9"	15' 9"
17' 4-1/2"	16' 5"	16' 5"
18' 1/2"	17' 3/4"	17' 3/4"
18' 8-1/2"	17' 8-1/2"	17' 8-1/2"

X = 4" - 6' for roller shutters

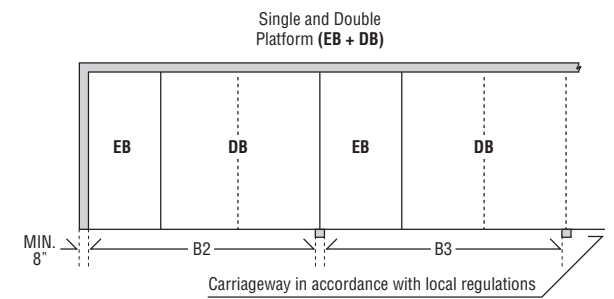
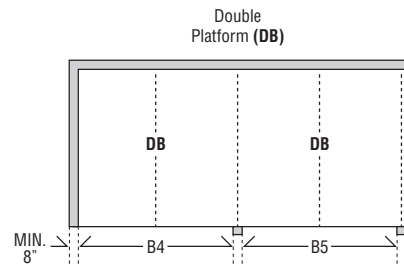
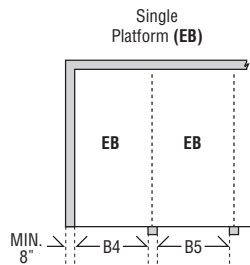
Dimension X to be defined by customer with the door supplied

*B1 = drive-in passenger width

PARKLIFT 450

WIDTH FOR BASEMENT GARAGE (CONTINUED)

COLUMNS OUTSIDE PIT



USABLE PLATFORM WIDTH	B4	B5
7' 7" (230cm)*	8' 3"	7' 11"
7' 11" (240cm)	8' 6"	8' 2"
8' 3" (250cm)	8' 10"	8' 6"
8' 6" (260cm)	9' 2"	8' 10"
8' 10" (270cm)	9' 6"	9' 2"

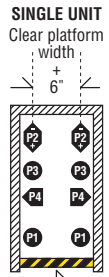
USABLE PLATFORM WIDTH	B4	B5
15' 1"*	15' 9"	15' 5"
15' 5"	16' 1"	15' 9"
15' 9"	16' 5"	16' 1"
16' 1"	16' 9"	16' 5"
16' 5"	17' 1"	16' 9"

USABLE PLATFORM WIDTH	B4	B5
7' 7" + 15' 1"*	24' 3"	23' 11"
7' 11" + 15' 5"	24' 11"	24' 7"
8' 3" + 15' 9"	25' 7"	25' 3"
8' 6" + 16' 1"	26' 3"	25' 11"
8' 10" + 16' 5"	26' 11"	26' 7"

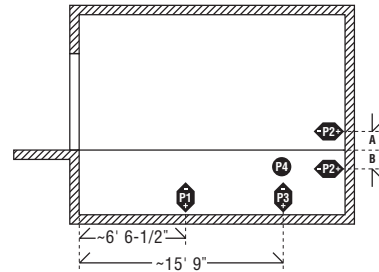
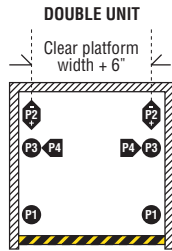
*Standard width (parking space width 7' 7")

PARKLIFT 450

STATIC CALCULATIONS AND CONSTRUCTION WORKS REQUIREMENTS



Safety marking compliant to ISO 3864



P1	+ 45 kN* - 15 kN
P2	+ 4kN - 4kN
P3	+ 17 kN
P4	+ 3kN

P1	+ 80 kN* - 30 kN
P2	+ 4kN - 4kN
P3	+ 30 kN
P4	+ 3kN

*Specified load bearing data includes the vehicle weight

STANDARD TYPE	A	B
Parklift 450-170	-	0"
Parklift 450-175	-	2"
Parklift 450-185	-	6"
Parklift 450-180	-	4"
Parklift 450-190	-	8"
Parklift 450-195	-	10"
Parklift 450-200	-	12"

PREMIUM TYPE	A	B
Parklift 450-205	8"	-
Parklift 450-210	6"	-
Parklift 450-215	4"	-
Parklift 450-220	2"	-
Parklift 450-225	0"	0
Parklift 450-230	2"	5
Parklift 450-235	4"	10
Parklift 450-240	6"	15

Fixing of the system frames to the floor slab:

- using adhesive anchor bolts
- hole depth to 4-6"
- concrete thickness of at least 7"

Concrete quality grade:

- compliant to the static requirements of the construction

Walls:

- front drive-in wall and rear wall in concrete
- perfectly flat wall surfaces
- without protruding sections such as border edgings, pipes and tubes, etc.

Frame bearing points:

- the specified lengths are expressed as mean value

NOTES AND DIRECTIONS

SCOPE OF APPLICATION

- suitable for residential buildings, office buildings and business premises, hotels
- only for long-term users that have been instructed on how to use the system
- for frequently changing users (e.g. for office, hotel and business premises or similar):
 - only parking on top platform
 - performance of technical system adjustments is necessary
 - consultation with WÖHR is mandatory

NOISE PROTECTION

Basis is the German DIN 4109 "Noise protection in buildings".

With the following conditions required 30 dB (A) in rooms can be provided:

- noise protection package from our accessory
- insulation figure of the construction of min. $R'w = 57\text{dB}$
- walls which are bordering the parking systems must be done as single wall
- solid ceiling above the parking systems

At differing constructional conditions additional sound absorbing measures are to be provided by the customer.

The best results are reached by separated sole plates from the construction.

Increased noise protection:

If increased noise protection must be provided planning has to be confirmed on a project basis by WÖHR.

DRAINAGE

RECOMMENDED DRAINAGE CHANNELS:

- along the front end sections of the pit
- connecting to a floor drain or drainage pit
- with manual emptying out of the drainage pit
- alternatively installation of a pump or drainage channel into the sewerage system, to be performed by the customer

SIDEWAYS SLOPE DRAINAGE:

- only into a gutter
- not possible in the remaining pit section

Lengthways slope drainage:

- provided according to specified construction dimensions

ENVIRONMENTAL SAFETY:

- coating of the pit flooring is recommended
- installation of an oil and/or petrol separator unit between the drainage connection and the main sewerage system is recommended

LIGHTING

- sufficient lighting of the driving aisle and of the parking places must be performed by the customer

TEMPERATURE

- system operating range: 14° F - 104° F (with unloaded platforms lowering speed is reduced if less than +5° C)
- humidity: 50% @ 104° F
- in the event of changes to system conditions please consult with Harding Steel.

PARKLIFT 450

GENERAL INTENDED USE

- These systems are designed to be operated by residents, owners, and employees trained how to operate the system safely. These systems are designed to allow independent access to all vehicles.
- The public is not permitted to park on this equipment without the services of a valet or full time attendant

OPERATION PROTOCOL

- The Parklift 450 systems can only be operated with a key to energize the system. Simple up/down controls are then used to lift or lower the platforms.
- Optional changes to this basic operation could include the addition of safety gates. In the projects where gates are utilized, the gates must be in the closed (down) position in order to operate the lift.

KEYS AND SPACE COORDINATION

- Each space will come with 2 keys for the operator station. Key management is the responsibility of building maintenance and management
- Space coordination will be based on vehicle type and dimension. Spaces must be assigned according to these parameters.

SPRINKLERS

- Sprinkler heads should be mounted at each level of travel indicated by machine type. These sprinklers should also be able to cover all spaces depending on specified machinery.
- Sprinklers should be mounted to the back walls of the parking area

VENTILATION

- Additional ventilation may be required above an beyond standard parking facility code requirements. Please check with local authorities to verify ventilation requirements.

SERVICE

- Service should only be performed by a Harding Steel authorized service provider in your area. Please contact Harding Steel for the contact information of the provider nearest you.
- This equipment should be maintained at least twice per year to continue optimal operation

INSPECTIONS

- Third party inspections and evaluations may be required for final approval of all products offered by Harding Steel. Payment for these services are the responsibility of the owner. Harding Steel coordinate these projects.

SCOPE OF WORK

HARDING STEEL PROVIDES:

- Material
- Controls and wiring
- Installation Labor and Equipment
- Hydraulic Power Units
- Interconnections between lifts and power units
- Safety gates if required (additional charge)
- Shop Drawings
- Design Assistance
- Seismic/Structural calculations and certifications
- Approval assistance (documentation)
- Site inspections and trade coordination
- 1 year of service and support (no charge)

CUSTOMER PROVIDES:

- Required quantity of 208V 3 phase 40 amp service terminated to standard shut off boxes
- Pit completed to manufacturer specifications
- Garage/Pit lighting
- Safety gates/barriers as required to secure the machines during operation
- Ventilation as required by local authorities
- Sprinklers in accordance with local authorities
- All Pit drainage and sump systems

PARKLIFT 450

FEATURES

- Available in two, three, and four bay custom configured systems
- Uniquely configured to each individual garage

GENERAL SPECS

Structure	Steel
Platforms	Galvanized Steel
Drive System	Hydraulic
Locks	Electronic Safety Locks
Limit Switches	UL Approved Honeywell
Hoses and Valves	Parker/Airline Fluid Control
Power	208V 3 Phase 40 Amp
Motor HP	7hp or 10hp
Infrared Safety Lights	Standard
Manual Lowering	Standard
Manual Lifting (emergency)	Hand Pump
Safety Gates	Optional (as needed)
Min. Ceiling Requirement	10' 6"
Max Vehicle Weight	5,720 lbs.
Warranty	1 year full warranty
Service	1 year included
Extended Warranty	Available from Harding Steel

WARRANTY

Harding Steel has a standard 1 year full parts and labor warranty, 2 years (nonelectrical) parts only, 5 years of structural warranty coverage.

SAFETY

- Key-operated control switch for security and safety
- Hydraulic velocity fuses on all cylinders
- Automatic shut-off if operator releases the key-switch
- Structure certified for seismic and wind loads
- Integrated anti-fall safety system
- Manually operated lock releases
- All platforms configured with wheel stops and centering guides