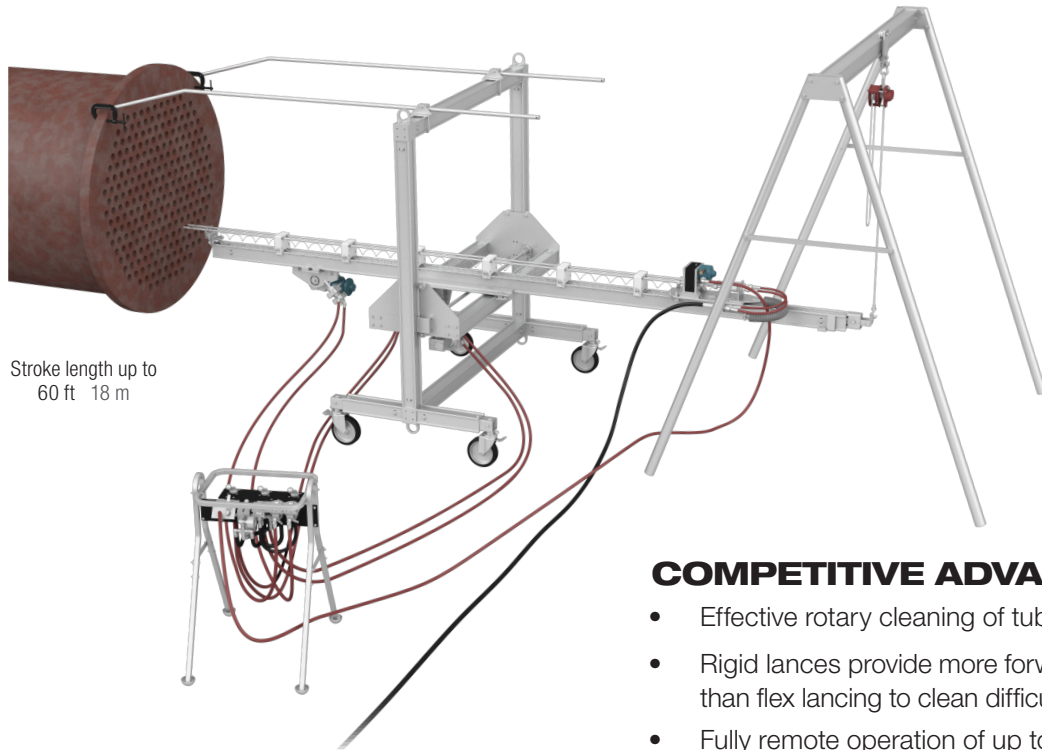


RIGID LANCE MACHINE

Automated Rigid Tube Lancing

Since its release in the 1980s, the Rigid Lance Machine (BRLM-500) has become the industry standard for both horizontal and vertical rigid lance cleaning of heat exchangers and similar tube bundles.



COMPETITIVE ADVANTAGES

- Effective rotary cleaning of tube IDs
- Rigid lances provide more forward-hitting power than flex lancing to clean difficult deposits
- Fully remote operation of up to 3 rotary lances simultaneously

FEATURES	BENEFITS
<ul style="list-style-type: none"> • Adjustable feed rate for lance travel 	<ul style="list-style-type: none"> • Both directions of the lance can be regulated for speed to deliver appropriate cleaning
<ul style="list-style-type: none"> • Adjustable lance stops 	<ul style="list-style-type: none"> • Forward stop to ensure complete tube coverage, optional retract stop to protect lances and operator
<ul style="list-style-type: none"> • Control box 	<ul style="list-style-type: none"> • Control all movements of the complete package from up to 25 ft/8 m away
<ul style="list-style-type: none"> • Air or hydraulic drive 	<ul style="list-style-type: none"> • Power source flexibility
<ul style="list-style-type: none"> • Expandable operating window 	<ul style="list-style-type: none"> • Versatility for cleaning a variety of exchanger sizes
<ul style="list-style-type: none"> • Steering control and tilt function 	<ul style="list-style-type: none"> • Positioner offers easy mobility and can be tilted to match the tube pitch angle of a bundle face

RIGID LANCE MACHINE OVERVIEW

CONSIDERATIONS

- What is the length and diameter of the tube IDs?
- What is the diameter of the heat exchanger/tube bundle?
- How many lances will be used?
- What is the operating pressure and flow?
- Is the power source air or hydraulic
- Is the exchanger horizontal or vertical? Is there sufficient space to accommodate the machine?

OTHER INFORMATION

- The lancing machine will sit directly in front of and in line with the bundle and will be longer than the tubes being cleaned. Please make sure to allow appropriate clearance at the face of the bundle.
- Standard fittings supplied by StoneAge may require adapters for metric threads.
- StoneAge does not typically sell lances or lance tips (nozzles).

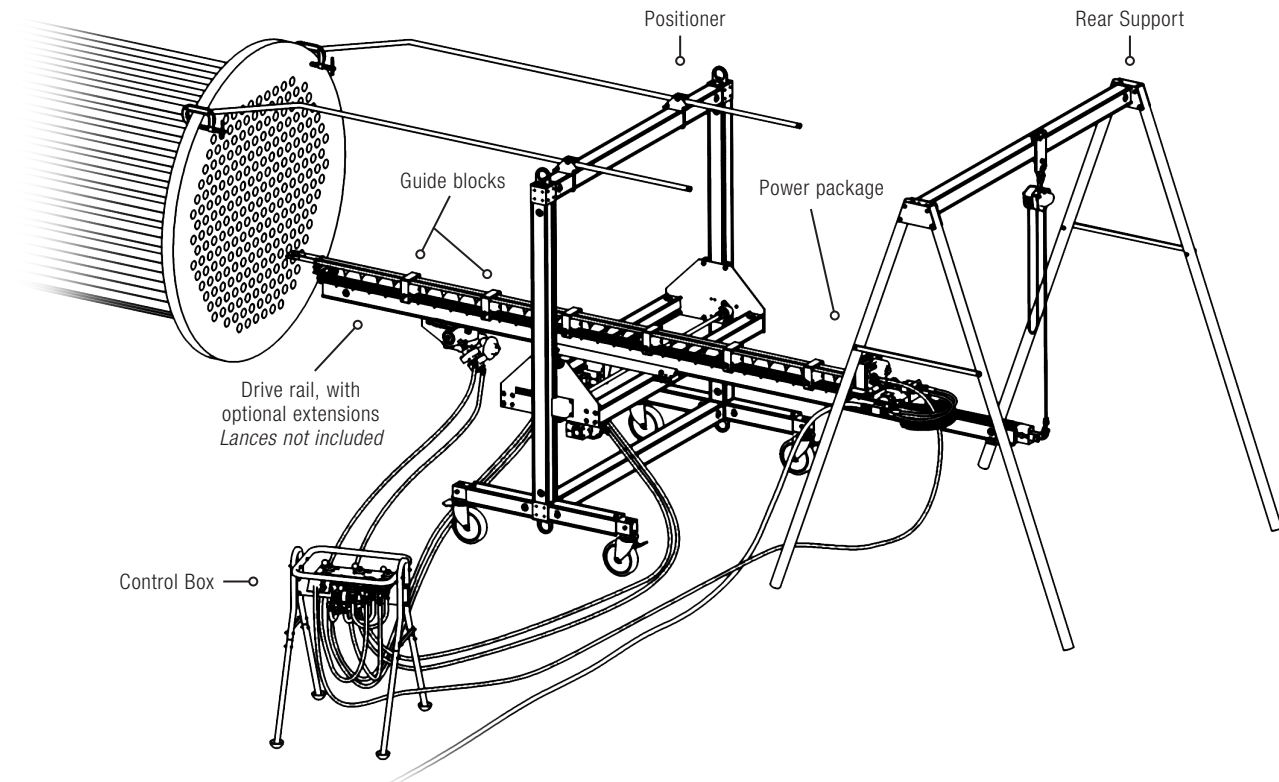
TOOL SPECIFICATIONS

	BRLM-500 (15K)	BRLM-500 (22K)	BRLM-500 (40K)
Pressure Range	2–15k psi 140–1000 bar	15–22k psi 1000–1500 bar	22–40k psi 1500–2800 bar
Flow Range	Up to 50 gpm Up to 189 l/min	Up to 50 gpm Up to 189 l/min	Up to 20 gpm Up to 76 l/min
Flow Coefficient	2.3 Cv	2.0 Cv	0.3 Cv (UHS) 0.5 Cv (UH)
Inlet Connection	1/2 NPT (P8)	3/4 MP (MP12)	9/16 HP (H9)
Lance Connection	1/8, 1/4 NPT	3/8, 9/16 LH	3/8, 9/16 LH
Stroke Length	Up to 60 ft Up to 18m	Up to 60 ft Up to 18m	Up to 60 ft Up to 18m
Weight Complete	1200–1500 lb 544–680 kg	1200–1500 lb 544–680 kg	1200–1500 lb 544–680 kg
Maximum Water Temperature	160 °F 70 °C	160 °F 70 °C	160 °F 70 °C

Visit our website for tool resources including operation and maintenance videos:

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RIGID LANCE MACHINE CONFIGURATION



A complete Rigid Lance Machine configuration requires the following components:

1. Appropriate length of drive rail
2. Rotary package to drive up to 3 lances
3. Lance positioner and appropriate support options
4. Guide blocks
5. Control box

The following items may also be required:

- Drive rail extensions
- Lances and lance tips – not supplied
- Rear support for rail 25 feet and longer
- Mid support for rail 45 feet and longer

RIGID LANCE MACHINE CONFIGURATION

ORDERING STANDARD PACKAGE

StoneAge offers preconfigured Rigid Lance Machine base packages that can be ordered in a single Part ID. Standard packages are preconfigured for the most common rail length of 25 feet/762 cm, and include:

- 1 x Box Rail & Drive - 15'
- 1 x Rotary Package (Non-rotary options available)
- 1 x Drive Guideblock Kit, Single 5/8"
- 1 x Rail Extension Assembly, 10'
- 1 x 10' Ext. Guideblock Kit, Single, 5/8"
- 1 x Lance Positioner
- 1 x Rear Support
- 1 x Wheel Kit with Jack Stand
- 1 x Control Box

The following table shows the configuration of each standard package:

RAIL LENGTH	ROTARY PACKAGE	MAXIMUM PRESSURE	PACKAGE PART ID	
			AIR	HYDRAULIC
25 ft 762 cm	Single Rotary	15k psi 1035 bar	BRLM 310-NPT-PKG	BRLM 310H-NPT-PKG
		22k psi 1500 bar	BRLM 320-MP-PKG	BRLM 320H-MP-PKG
		40k psi 2800 bar	BRLM 330-HP-PKG	BRLM 330H-HP-PKG
	Dual Rotary	15k psi 1035 bar	BRLM 341-NPT-PKG	BRLM 341H-NPT-PKG
		22k psi 1500 bar	BRLM 351-MP-PKG	BRLM 351H-MP-PKG
		40k psi 2800 bar	BRLM 361-HP-PKG	BRLM 361H-HP-PKG
	Triple Rotary	15k psi 1035 bar	BRLM 343-NPT-PKG	BRLM 343H-NPT-PKG
		22k psi 1500 bar	BRLM 353-MP-PKG	BRLM 353H-MP-PKG
		40k psi 2800 bar	BRLM 363-HP-PKG	BRLM 363H-HP-PKG
	Non-Rotary	15k psi 1035 bar	BRLM 370-PKG	N/A
		22k psi 1500 bar	BRLM 380-PKG	N/A

When ordering a Rigid Lance Machine package, you should specify:

1. Package Part ID

FOR EXAMPLE: 25 foot dual rotary air drive for up to 22k psi

QTY	PART ID	DESCRIPTION
1	BRLM 351-MP-PKG	Dual Rotary Lancing Machine, Air, 25' 22k psi/1500 bar Package

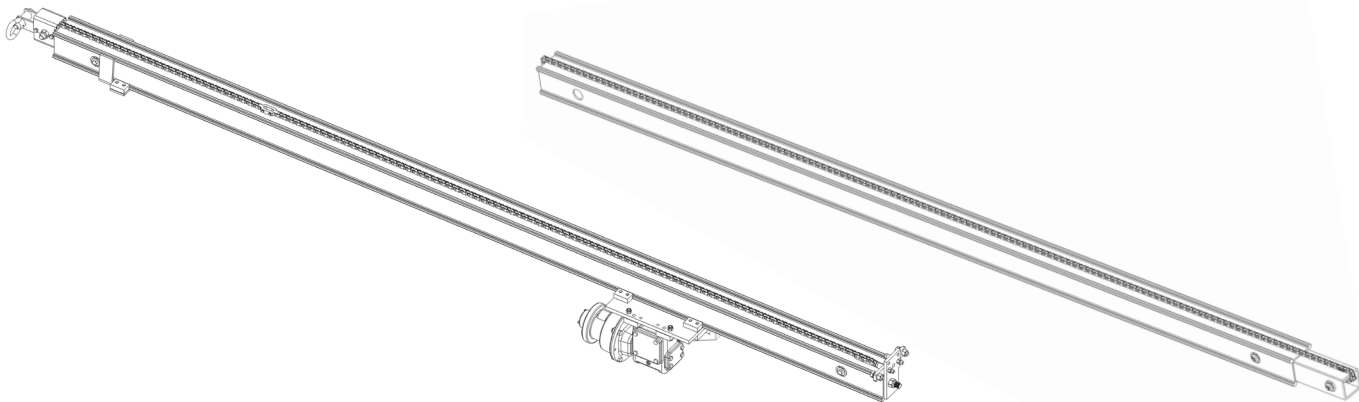
ORDERING BY LINE ITEM

A complete Rigid Lance Machine can be configured by following the steps outlined below. Contact StoneAge Customer Service for questions about specific lengths or applications.

STEP 1

DRIVE RAIL

The Rigid Lance Machine comes with a standard rail that delivers 12 ft (3.7 m) of stroke. Extension rails are available for longer stroke lengths and can be used in conjunction up to 60 ft (18 m).



DRIVE RAIL

Required assembly includes:

- Rail
- Chain
- Drive motor
- Front and rear idler assemblies
- Mounting hardware

EXTENSION

Optional rail extensions include:

- Rail
- Chain,
- Master link
- Splice tubes

RAIL TYPE	RAIL LENGTH	STROKE LENGTH	WEIGHT	PART ID
Drive Rail	15 ft 4.6 m	12 ft 3.7 m	122 lb 55 kg	BRLM 500-15
Extension <i>(Optional)</i>	5 ft 1.5 m	4.8 ft 1.4 m	26 lb 12 kg	BRLM 580-05
	10 ft 3.1 m	9.5 ft 2.9 m	45 lb 20 kg	BRLM 580-10
	15 ft 4.6 m	14 ft 4.3 m	65 lb 29 kg	BRLM 580-15

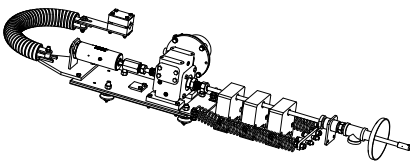
*Custom lengths available

RIGID LANCE MACHINE CONFIGURATION

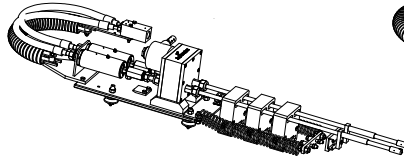
STEP 2 ROTARY PACKAGE

Select a rotary package for the appropriate number of lances and operating pressure. The dual rotary package is most popular because both the dual and triple rotary packages can be operated with a single lance.

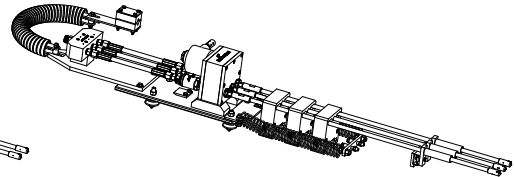
PLEASE NOTE: Lances and lance tips not included.



SINGLE ROTARY



DUAL ROTARY



TRIPLE ROTARY

PACKAGE	MAXIMUM PRESSURE	INLET CONNECTION	LANCE CONNECTION*	ROTATION SPEED**	PACKAGE PART ID	
					AIR	HYDRAULIC
1 - Single Rotary	15k psi 1000 bar	1/2 NPT	1/8 NPT, 1/4 NPT	120–600 rpm	BRLM 310-P8	BRLM 310-P8-H
	22k psi 1500 bar	3/4 MP	3/8, 9/16 LH	120–600 rpm	BRLM 320-MP12	BRLM 320H
	40k psi 2800 bar	9/16 HP	3/8, 9/16 LH	120–600 rpm	BRLM 330	BRLM 330H
2 - Dual Rotary	15k psi 1000 bar	1/2 NPT	1/8 NPT, 1/4 NPT	105–525 rpm	BRLM 341	BRLM 341H
	22k psi 1500 bar	3/4 MP	3/8, 9/16 LH	105–525 rpm	BRLM 351	BRLM 351H
	40k psi 2800 bar	9/16 HP	3/8, 9/16 LH	105–525 rpm	BRLM 361	BRLM 361H
3 - Triple Rotary	15k psi 1000 bar	1/2 NPT	1/8 NPT, 1/4 NPT	125–620 rpm	BRLM 343-CS	BRLM 343H-CS
	22k psi 1500 bar	3/4 MP	3/8, 9/16 LH	125–620 rpm	BRLM 353-CS	BRLM 353H-CS
	40k psi 2800 bar	9/16 HP	3/8, 9/16 LH	125–620 rpm	BRLM 363-CS	BRLM 363H-CS

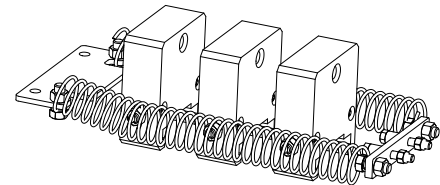
*NPT is RH thread. For pressures above 20k psi (MP or HP), a gland and collar is used and the lance will need LH thread.

**Actual speed will vary with operating conditions.

STEP 3 GUIDE BLOCKS

Guide blocks support and align the rigid lance(s) along the length of the rail and are specific to single, dual and triple power packages. Blocks should be attached every 8th coil.

Guide blocks are available in kits that include the blocks, coil springs and required mounting hardware. A separate guide block kit needs to be ordered for the drive rail and each extension. The appropriate guide block kit is based on the length of rail or extension and the number and size of lances. *See full component diagram at end of this section.*



GUIDE BLOCK KIT

POWER PACKAGE	RAIL OR EXTENSION	MAXIMUM DIAMETER OF LANCE/COUPLING	GUIDE BLOCK KIT
Single Rotary	15 ft Drive Rail	9/16 in. 14 mm	BRLM 636-15D-S10
		5/8 in. 16 mm	BRLM 636-15D-S12
		3/4 in. 19 mm	BRLM 636-15D-S15
	5 ft Extension	9/16 in. 14 mm	BRLM 636-05-S10
		5/8 in. 16 mm	BRLM 636-05-S12
		3/4 in. 19 mm	BRLM 636-05-S15
	10 ft Extension	9/16 in. 14 mm	BRLM 636-10-S10
		5/8 in. 16 mm	BRLM 636-10-S12
		3/4 in. 19 mm	BRLM 636-10-S15
	15 ft Extension	9/16 in. 14 mm	BRLM 636-15-S10
		5/8 in. 16 mm	BRLM 636-15-S12
		3/4 in. 19 mm	BRLM 636-15-S15
	25 ft OAL Drive with Extension*	9/16 in. 14 mm	BRLM 636-25D-S10
Dual Rotary	15 ft Drive Rail	9/16 in. 14 mm	BRLM 636-15D-D10
	5 ft Extension	9/16 in. 14 mm	BRLM 636-05-D10
	10 ft Extension	9/16 in. 14 mm	BRLM 636-10-D10
	15 ft Extension	9/16 in. 14 mm	BRLM 636-15-D10
	25 ft OAL Drive with Extension*	9/16 in. 14 mm	BRLM 636-25D-D10
Triple Rotary	15 ft Drive Rail	9/16 in. 14 mm	BRLM 636-15D-T10
	5 ft Extension	9/16 in. 14 mm	BRLM 636-05-T10
	10 ft Extension	9/16 in. 14 mm	BRLM 636-10-T10
	15 ft Extension	9/16 in. 14 mm	BRLM 636-15-T10
	25 ft OAL Drive with Extension*	9/16 in. 14 mm	BRLM 636-25D-T10

*15 ft drive rail with 10 ft extension

RIGID LANCE MACHINE CONFIGURATION

STEP 4 POSITIONER AND SUPPORT OPTIONS

The lance positioner comes with a standard operating window sized 52 x 56 inches (1321 x 1422 mm).

Custom sizes are available.

DESCRIPTION	WEIGHT	PART ID
Lance Positioner	310 lb 140 kg	LP-300-78 (Air) LP-300H-78 (Hydraulic)

WHEEL KIT

We offer three wheel kit options on the positioner to allow for easy transport and placement. The jack option stabilizes the positioner and also helps align it with tube bundles that may not be square. Built-in extensions give a wider footprint and better stabilization.

WHEEL TYPE	WEIGHT	PART ID
Swivel Wheel	20 lb 9 kg	LP 335-WE
Jack Stand	24 lb 11 kg	LP 335-JE
Swivel Wheel with Jack Stand	35 lb 16 kg	LP 335-WJE

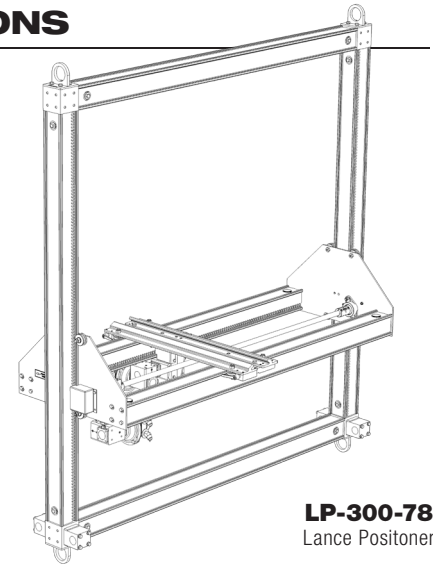
SUPPORT OPTIONS

Rear support is required if extensions are added to the standard 15-foot rail.

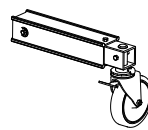
Additional mid-length support is recommended for rails 45 feet and longer.

DESCRIPTION	PART ID
Rear Support	LP 320
Mid Support	LP 320 and BRLM 060

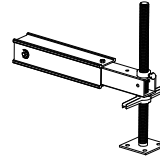
For vertical applications, scaffolding will be required to hold the positioner in the correct orientation.



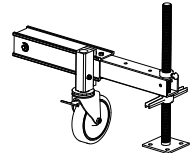
LP-300-78
Lance Positioner



LP 335-WE
Swivel Wheel



LP 335-JE
Jack Stand



LP 335-WJE
Swivel Wheel
with Jack Stand



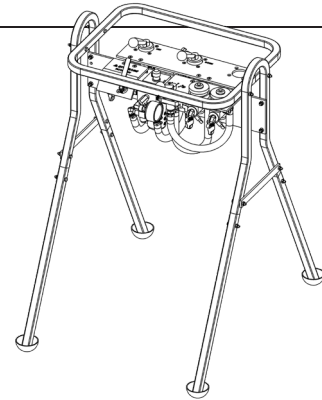
LP 320
Rear Support

STEP 5 CONTROL BOX

The control box facilitates remote operation of all functions of the Rigid Lance Machine. Air and hydraulic control box options are available.

POWER	POWER SUPPLY	WEIGHT	PART ID
Pneumatic	180 cfm @ 80 psi 300m ³ /hr @ 5.5 bar	60 lb 27 kg	CB-LP*
Hydraulic	6.5 gpm @ 1750 psi 25 l/min @ 120 bar	75 lb 34 kg	CB-LP-HV**

*Air hoses included **Hoses not supplied



STEP 6 MAINTENANCE RESOURCES

ROTARY PACKAGE	SERVICE KIT*	OVERHAUL KIT	TOOL KIT	LUBRICANT	MANUAL	AIR MOTOR SERVICE KIT
BRLM 310-P8	SG 600	SG 610	SG 612	GP 048	PL 500	
BRLM 320-MP12	SG 600	SG 610	SG 612	GP 048	PL 518	
BRLM 330	UH 600	UH 610	UH 612	GP 048	PL 523	
BRLM 341	SL 600-P	SL 610-P	SL 612	GP 048	PL 525	
BRLM 351	SL 600-K	SL 610-K	SL 612	GP 048	PL 525	
BRLM 361	UH 600	UH 610	UH 612	GP 048	PL 253	
BRLM 343-CS	SL 600-P	SL 610-P	SL 612	GP 048	PL 525	
BRLM 353-CS	SL 600-K	SL 610 -K	SL 612	GP 048	PL 525	
BRLM 363-CS	UHS 600	UHS 610	UHS 612	GP 048	PL 580	

*One kit per swivel included with rotary package. Kits are appropriate for both air and hydraulic packages.

Kit components and tool maintenance/assembly videos are available on our website:

WWW.STONEAGETOOLS.COM

For questions or help with a specific application, configuration or tool repairs, please contact StoneAge Customer Service.

RIGID LANCE MACHINE CONFIGURATION

When ordering a Rigid Lance Machine, you should specify:

1. Part IDs of rails (drive and extensions, if applicable)
2. Part ID of rotary package
3. Part ID and number of guide block kits
4. Part IDs of positioner, optional supports and wheel kit
5. Part ID of control box

FOR EXAMPLE:

Dual rotary lance system, 21.5 ft stroke (25 ft OAL), twin lance for 20k psi, air operated, with positioner, wheels, jacks, control box

QTY	PART ID	DESCRIPTION
1	BRLM 500-15	Box Rail & Drive Pkg - 15 ft
1	BRLM 351	Dual Rotary Pkg, 22k psi
1	BRLM 636-15D-D10	15' Drive Guideblock Kit, Dual 5/8"
1	BRLM 580-10	Rail Ext Assy, 10 ft
1	BRLM 636-10-D10	10' Ext Guideblock Kit, Dual 5/8"
1	LP-300-78	Lance Positioner w/Dice Corners
1	LP-320	Rear Support, Heavy Duty
1	LP 335-WJE	Wheel Assy Kit, Set (4)
1	CB-LP	Control Box, Dual Reg, Four Function