



## Hydraulic Equipment

## Portable Hydraulic Die Setter & Drilling & Tapping Equipment



Lamina Hydraulics has moved into the new millenium with upgraded, user friendly electronic technology. These products are more efficient, quieter and easy to use.

Drilling Equipment – Product offering includes: Heavy-duty, portable hydraulic power unit and a choice of six drill heads which work interchangeably with the power unit.

Die Setting Equipment – Product offering includes: Heavy-duty, portable hydraulic Die Setter with retractable hose reels, a choice of hydraulic cylinders, and a set of cribbing rings and pads. Available with four or six cylinders.

Die Separating Equipment – Product offering includes: Heavy-duty, portable hydraulic Die Separator with retractable hose reels, a choice of hydraulic cylinders and a set of cribbing rings and pads.

## Table of Contents

General Information.....	2-3
Power Unit.....	4
Drill Heads	
A10048SH, #1 Stub .....	5
A10048SH Accessories, Drills, Taps, Adaptors ..	5
A10048H, #1 Morse .....	5
B10065H, #3 Morse .....	6
B10065P, #3 Morse.....	6
B15075P, #4 Morse.....	7
H15010P, #5 Morse .....	7
Die Setter, Four Cylinder Model .....	8
Die Setter, Six Cylinder Model.....	9
Die Separator .....	10
Die Setter accessories.....	11
Rental & Service Information.....	12

## Industries Served:

- Metal Stamping
- Nuclear Power
- Ship Building
- Mining
- Construction
- Oil Pipelines
- Oil Rigging
- Bridge Building

**For over 45 years, Lamina is the name in portable hydraulic drilling equipment.**

The **Lamina Portable Heavy-Duty Drill** is versatile enough to go almost anywhere, providing continuous heavy duty drilling and tapping, even in the most cramped quarters. The compact drill delivers remarkable power in openings as narrow as 9-1/4". Furthermore, the drill's magnetic base attaches to the drilling surface at almost any angle, including vertically and horizontally.

**The Experienced Edge.** Lamina has long been recognized as a leader in portable hydraulic drill technology. For over 45 years, Lamina has provided a cross-section of American industry with a durable, high-power portable drill. Our team of engineers have combined power and portability in a single drill, allowing it to effectively function in a broad spectrum of applications.

Lamina takes pride in its superior quality. Before any Lamina Drill is shipped, it is tested by drilling a hole at its maximum capacity.

Now with the addition of electronics the unit exceeds former expectations and offers more power and efficiency, automatic hose reels, more safety features and lower noise level.

The **Portable Heavy-Duty Electronic/Hydraulic Die Setter** is an important addition to the Lamina Hydraulic Equipment line. This unit has truly proved itself since it was first offered in 1998.

Owners of the Lamina Die Setter are pleased with its low maintenance, dependability and high load capabilities. The electronics help maintain precise levels when raising and lowering the most-off center weight distribution.

The Six Cylinder Die Setter was designed and developed for oversized dies that require extra lift at the center to keep the die level during separation.

For those applications where precision is not an issue and where the need is only to separate dies, a **Portable Heavy-Duty Hydraulic Die Separator** is available which includes all the features of the Portable Heavy-Duty Die Setter without the electronics.

Lamina Hydraulic Equipment features rugged steel construction. It is built to last... and take rough handling. With the lifting bales these units are portable enough to be placed almost anywhere they are needed.

## Hydraulic Power Unit

Compact cart is easily moved right to the job site. It is 44.5 inches long x 24.5 inches wide x 54.5 inches high, mounted on casters, equipped with 15 feet of hydraulic pressure hoses and quick disconnect fittings. Electrical controls conform to National Electrical Manufacturers Association (N.E.M.A.) standards, complete with start and stop controls, and a remote pendant speed control. The main electrical panel includes a 12V 60 amp, deep cycle battery with rectifier charger operating from voltage listed in table below. Complete with oil, hoses and connectors. Remote speed control is standard. There are three new power unit configurations that are available: one with a 110V outlet (110-Volt AC - Single Phase - 15 Amp), one that has a compact cart without a hose reel or shelf (shown below), and another that is suited for outdoor use in cold climates. Please specify the following suffixes when ordering these optional power units: "OUTLET," "COMPACT" OR "OUTDOOR."

- New Control console complete with:
  - Battery Voltage Gage
  - Oil Pressure Gage
  - Power Indicator Light
  - Electronic Oil Level Display
  - Hour Meter
  - Emergency Stop Button
- 15 feet of hydraulic hoses on Power Unit
- 7-1/2 feet of hydraulic hoses on Drill head
- 30 feet of electrical cable to cart
- 30 feet of control cable to pendant box
- 6 feet of cable on drill head to pendant box
- Maximum flow rate of 12 gallons per minute (GPM)
- Standard Operating Pressure of 1550–1600 pounds per square inch (PSI)
- Oil required: Mobil® DTE-10 Excel 32 (15 gallons) (ISO 32)
- Back-up Battery Gel Cell 60 amp Deep Cycle – F.A.A. approved
- Foot Brake
- Lifting Bale



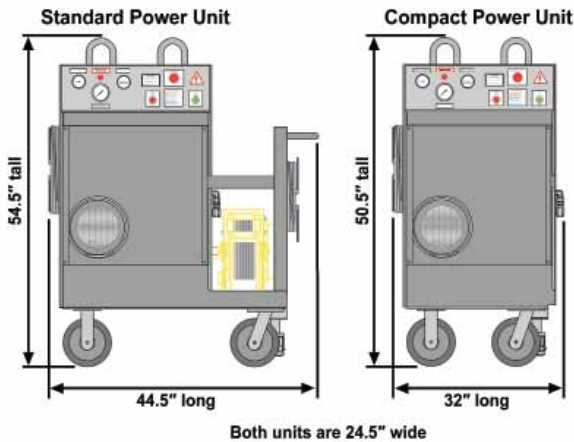
Our standard remote speed regulator can change speeds (GPM) remotely and conveniently by merely pushing the increase or decrease button on the pendant control.

There is no loss of magnetic force if service power fails; 12-volt battery automatically supplies current for magnet. Automatic battery charger maintains top level charge in battery (audio alert when not charging).

Oil is always radiator-cooled before returning to tank.

By-pass valve prevents tap breakage when unusual load conditions are present, and permits bottoming tap within recommended range of each head.

In addition, by using a simple shunt device, the unit may be used in any number of applications requiring a hydraulic power unit. To order this shunt device, please specify part number ASSY-21. This shunt device is required for drills ordered without a magnetic base (-NMB).

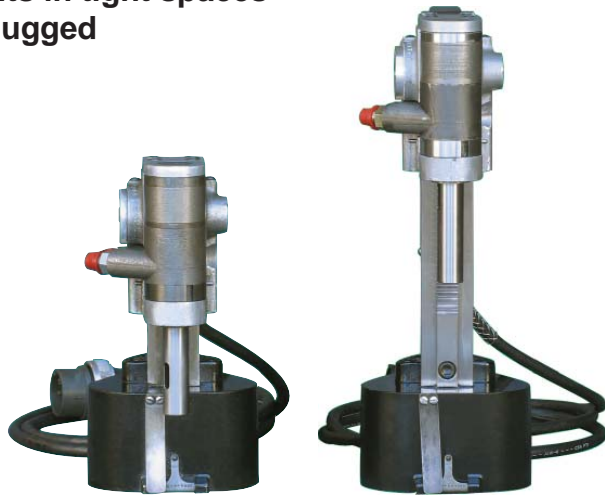


PART NUMBER	THREE PHASE VOLTAGE	Hz	SHIPPING WEIGHTS Pounds		CRATE DIMENSIONS (inches)
			with oil	without oil	
HPU220	220	60	1050	950	59 H x 38 W x 66 L
HPU440	440	60	1050	950	59 H x 38 W x 66 L
HPU600	600	60	1050	950	59 H x 38 W x 66 L
HPUCE380*	380	50	1130	1030	59 H x 38 W x 66 L

\* For export, meets with CE standards

## Drill Heads A10048SH & A10048H

- Compact – smaller head available in two column lengths
- Drills up to 13/16 inch (20.64mm) in solid steel without pilot hole
- Drills up as well as down, even horizontally
- Fits in tight spaces
- Rugged



A10048SH  
#1 Stub Taper

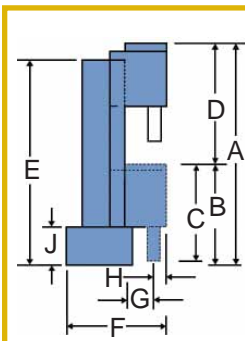
A10048H  
#1 Morse Taper

- Drill Capacity–AISI 1020 Steel 13/16 Inch Diameter
- Tap Capacity–AISI 1020 Steel 3/4–10 threads per inch
- Motor Horsepower 5.21 Hp
- Maximum Torque 525 inch pounds
- Variable R.P.M. to 625 RPM
- Feed Method Hand
- Tool Shank A10048SH #1 Stub Taper
- Tool Shank A10048H #1 Morse Taper
- Magnet Capacity (Pull Force) 1200 pounds force
- Magnet Size 4-7/8 inches
- Weight A10048SH 22 pounds
- Shipping Weight A10048SH 28 pounds
- Crate Dimensions A10048SH:
  - Height 9-1/4 inches
  - Width 9-1/4 inches
  - Length 10-3/4 inches
- Weight A10048H 26 pounds
- Shipping Weight A10048H 33 pounds
- Crate Dimensions A10048H:
  - Height 9-1/4 inches
  - Width 9-1/4 inches
  - Length 15 inches
- Old Serial Number Prefix CH

Drilling or tapping cannot begin until the magnet is turned on.

Step drilling of slightly larger diameter holes is possible.

**Note:** “G” dimension is from the center of the spindle to the front of the column.







	A10048SH	A10048H
A	10-5/8	15-1/2
B	7-1/2	7-1/2
C	7-1/8	7-1/8
Stroke D	3-1/8	8
Height E	9-1/4	13-3/4
Depth F	7	7
G	1.036	1.036
H	1	1
J	2.900	2.900
Width	4-7/8	4-7/8

Drill heads can be fixtured for special applications.

Drill heads can be ordered without magnetic bases. Please specify “-NMB” suffix.

**Note:** All dimensions are in inches.

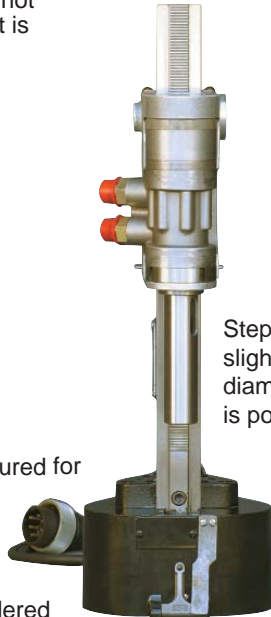
Drills, Taps & Adaptors for Lamina Drill Head A10048SH									
Drills & Taps	INCH				METRIC				Adaptors
	Drill Number*	Flute Dia.	Flute Length	Overall Length	Drill Number	Flute Dia.	Flute Length	Overall Length	
 Lamina Drills #1 Stub Taper Exclusive to Lamina	HDD312	.260	1.15	3.12	MD-6.75	6.75	50.80	95.25	 HLDR0000-0075 EXTENSION #1 Stub to #1 Stub
	HDD375	.316	1.62	3.12	MD-8.5	8.5	57.15	95.25	
	HDD500	.432	1.56	3.12	MD-10.2	10.2	66.55	107.95	
	HDD625	.541	2.00	3.56	MD-14.0	14.0	73.15	114.30	
	HDD750	.666	2.38	3.94	MD-17.5	17.5	73.15	114.30	
 Lamina Taps #1 Stub Taper Exclusive to Lamina	Tap Number*	Thread Dia.	Threads per Inch	Thread Length	Tap Number	Thread Dia.	Thread Pitch	Thread Length	 HLDR0000-0076 ADAPTER #3 Morse to #1 Stub
	HDT312	5/16	18	1.38	T-M8	8	1.25	35.05	
	HDT375	3/8	16	1.62	T-M10	10	1.50	41.15	
	HDT500	1/2	13	1.62	T-M12	12	1.75	41.30	
	HDT625	5/8	11	1.88	T-M16	16	2.0	47.75	
HDT750	3/4	10	1.88	T-M20	20	2.5	47.75		

\*Note: The HDD312 drill creates a pilot hole for the HDT312 tap. The other drills and taps have a similar relationship.

Safety devices should be used when drilling horizontally or overhead.

## Drill Head B10065H

Drilling or tapping cannot begin until the magnet is turned on.



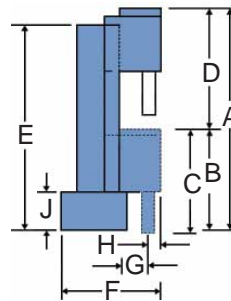
Step drilling of slightly larger diameter holes is possible.

Drill heads can be fixtured for special applications.

Drill heads can be ordered without magnetic bases. Please specify "-NMB" suffix.

**Note:** "G" dimension is from the center of the spindle to the front of the column.

**Note:** All dimensions are in inches.



A	21-1/2
B	10-1/16
C	11
Stroke D	11-7/16
Height E	20-3/4
Depth F	9
G	1.78
H	1-3/8
J	3-1/2
Width	6-1/2

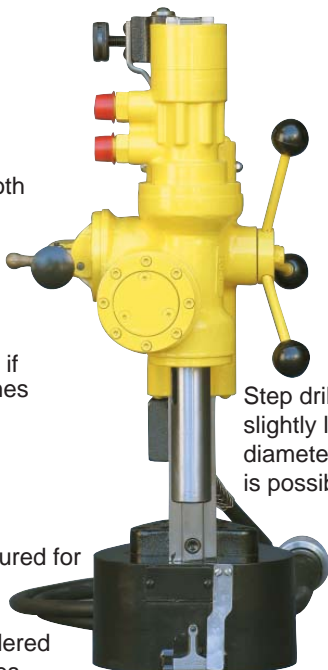
- Drill Capacity– AISI 1020 Steel 1 inch diameter (25.4mm)
- Tap Capacity– AISI 1020 Steel 1 inch–8 threads per inch
- Motor Horsepower 6.64 Hp
- Maximum Torque 1000 inch pounds
- Variable R.P.M. to 420 RPM
- Feed Method Hand
- Tool Shank #3 Morse Taper
- Magnet Capacity (Pull Force) 2300 pounds force
- Magnet Size 6-1/2 inches
- Weight 44 pounds
- Shipping Weight 68 pounds
- Crate Dimensions
  - Height 12 inches
  - Width 11 inches
  - Length 22-1/2 inches
- Old Serial Number Prefix B

## Drill Head B10065P

Drilling or tapping cannot begin until the magnet is turned on.

Automatic power feed heads can be used both in manual and power feed operations.

Automatic power-feed heads have limit switches that prevent operation of drill head if magnetic base becomes dislodged.



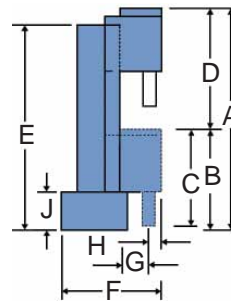
Step drilling of slightly larger diameter holes is possible.

Drill heads can be fixtured for special applications.

Drill heads can be ordered without magnetic bases. Please specify "-NMB" suffix.

**Note:** "G" dimension is from the center of the spindle to the front of the column.

**Note:** All dimensions are in inches.



A	26-1/4
B	15-3/8
C	15
Stroke D	10-7/8
Height E	21
Depth F	10-3/4
G	1-1/2
H	2 -1/4
J	3-1/2
Width	9-3/8

- Drill Capacity– AISI 1020 Steel 1 inch diameter (25.4mm)
- Tap Capacity– AISI 1020 Steel 1 inch–8 threads per inch
- Motor Horsepower 6.64 Hp
- Maximum Torque 1000 inch pounds
- Variable R.P.M. to 420 RPM
- Feed Method Power (.005 inches per revolution)
- Optional Power Feed .0025 inches per revolution
- Tool Shank #3 Morse Taper
- Magnet Capacity (Pull Force) 2300 pounds force
- Magnet Size 6-1/2 inches
- Weight 54 pounds
- Shipping Weight 75 pounds
- Crate Dimensions:
  - Height 12 inches
  - Width 11 inches
  - Length 22-1/2 inches
- Old Serial Number Prefix CB

## Drill Head B15075P

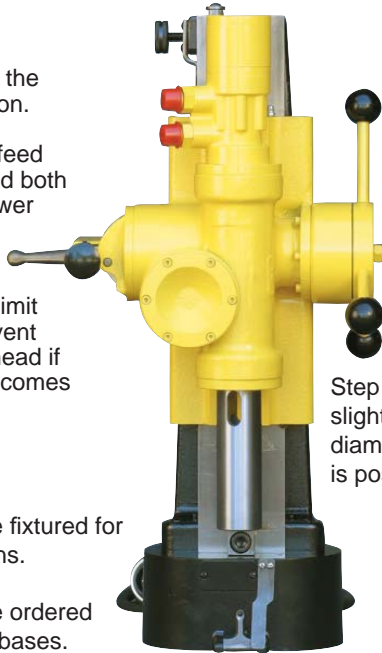
Drilling or tapping cannot begin until the magnet is turned on.

Automatic power feed heads can be used both in manual and power feed operations.

Automatic power-feed heads have limit switches that prevent operation of drill head if magnetic base becomes dislodged.

Drill heads can be fixtured for special applications.

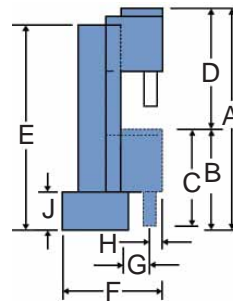
Drill heads can be ordered without magnetic bases. Please specify "-NMB" suffix.



Step drilling of slightly larger diameter holes is possible.

**Note:** "G" dimension is from the center of the spindle to the front of the column.

**Note:** All dimensions are in inches.



A	30-1/2
B	19-3/8
C	18-3/4
Stroke D	11-1/8
Height E	24
Depth F	17
G	2.250
H	2-1/8
J	3-1/2
Width	14

- Drill Capacity—AISI 1020 Steel 1-1/2 inch diameter (38.1mm)
- Tap Capacity—AISI 1020 Steel 1-1/4 inch—7 threads per inch
- Motor Horsepower 6.66 Hp
- Maximum Torque 1400 inch pounds
- Variable R.P.M. to 300 RPM
- Feed Method Power (.0075 inches per revolution)
- Optional Power Feed .0037 inches per revolution
- Tool Shank #4 Morse Taper
- Magnet Capacity (Pull Force) 3200 pounds force
- Magnet Size 7-1/2 inches
- Weight 108 pounds
- Shipping Weight 140 pounds
- Crate Dimensions:
  - Height 14-3/4 inches
  - Width 14-3/4 inches
  - Length 25-1/2 inches
- Old Serial Number Prefix E

## Drill Head H15010P

Drilling or tapping cannot begin until the magnet is turned on.

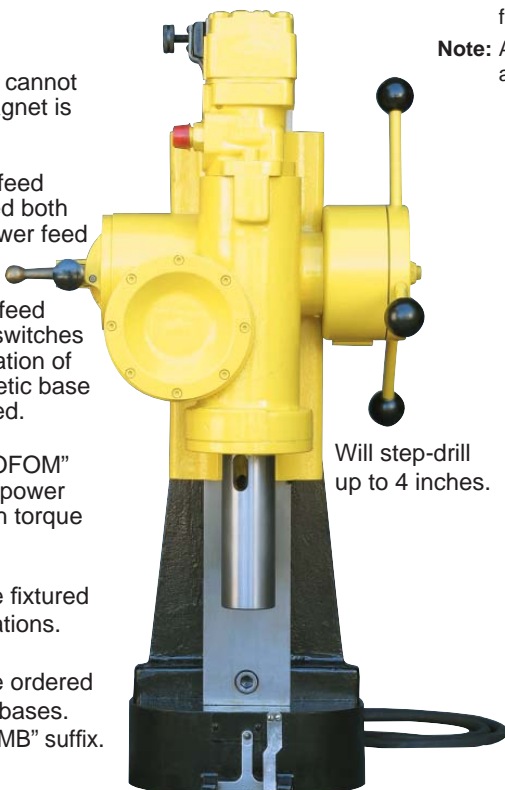
Automatic power feed heads can be used both in manual and power feed operations.

Automatic power-feed heads have limit switches that prevent operation of drill head if magnetic base becomes dislodged.

Please specify "-OFOM" suffix for optional power feed, optional high torque motor.

Drill heads can be fixtured for special applications.

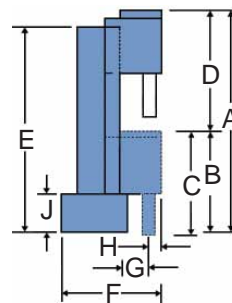
Drill heads can be ordered without magnetic bases. Please specify "-NMB" suffix.



Will step-drill up to 4 inches.

**Note:** "G" dimension is from the center of the spindle to the front of the column.

**Note:** All dimensions are in inches.



A	41-3/4
B	23-9/16
C	25
Stroke D	18-3/16
Height E	33-3/8
Depth F	21
G	2.536
H	2-3/4
J	3-5/8
Width	17-5/8

- Drill Capacity—AISI 1020 Steel 2 inches (50.8mm) (Standard) (2-1/4" optional)
- Tap Capacity—AISI 1020 Steel 2 inch—6 threads per inch (Standard) (2-3/8" – 8 optional)
- Motor Horsepower 8.30 std./9.48 opt.
- Maximum Torque 4164 in-lbs (std) / 5486 in-lbs (opt)
- Variable R.P.M. to 140 RPM (std) / 108 RPM (opt)
- Feed Method Power (.010 inch per revolution)
- Optional Power Feed .005 inch per revolution
- Tool Shank #5 Morse Taper
- Magnet Capacity (Pull Force) 6000 pounds force
- Magnet size 10 inches
- Weight 255 pounds
- Shipping weight 315 pounds
- Crate Dimensions:
  - Height 24 inches
  - Width 17 inches
  - Length 36 inches
- Old Serial Number Prefix D

Safety devices should be used when drilling horizontally or overhead.

## The Go Anywhere, Do-It-All Die Setting Solution

One compact, low-profile, wheeled cabinet contains everything you need for all the punch spotting, die setting, and die separation jobs in your shop.

### Electronic Die Setter – 4 Cylinders



**Each unit has two modes of operation:**

1. Unify Mode – Cylinders will extend until they all contact the die, then they will lift uniformly.
  2. Parallel Mode – Cylinders will all extend at the same rate. To initiate this mode, cylinders must be fully extended or retracted.
- Heavy-duty hydraulic power handles the heaviest dies with state-of-the-art electronic PLC control for precision and accuracy.
  - Handy self-retracting hose reels and control pendant keep every jobsite neat, and protect hoses and cables from damage.
  - Three different cylinder sizes are available, along with strong, lightweight cribbing blocks to extend their strokes to handle your biggest jobs.
  - Completely portable with large casters and built-in lifting bales, the Lamina Electronic Die Setter is the Go-Anywhere, Do-It-All Die Setting Solution you've been looking for.
  - If you use a tryout press for spotting punches and trim steels, you can free up that tryout press and use our Lamina Electronic Die Setter instead.

Oil required: Mobil® DTE-10 Excel 32 (15 gallons) (ISO 32)

**Shipping Wt.:** 1375 pounds (with oil)  
1275 pounds (without oil)

**Voltage:** 220V 3 Phase 60 Hz  
440V 3 Phase 60 Hz  
600V 3 Phase 60 Hz  
380V 3 Phase 50 Hz  
*(380V built to CE standards)*

Dimensions:	UNIT	CRATE
Width (inches)	25	30
Height (inches)	53	56
Length (inches)	50	65

**Package Includes:**

- Die Setter Unit
- Electronic Controls
- 4 cylinders
- 25 feet of hose on each of 4 retractable hose reels
- Pendant control
- 30 feet of electrical cable to cart
- A lower ring, an upper ring and two pads for each cylinder

### Standard Safety Features

- **Low voltage, three-button pendant for two hand control**
- **Quick Disconnect Fittings**
- **Palm Emergency Stop**
- **Cylinder Safety Lock Cartridge Valves**
- **Cart Foot Brake**
- **Lifting Bales**

LIFTING CAPACITY		
Lifting Mode	Minimum	Maximum
Unify-4 cylinder	2.6 Tons	30 Tons
Parallel-4 cylinder	0 Tons	30 Tons



**Saves time and money!**

**Most economical die setting solution available!**

**WARNING – Always use safety blocks when reaching inside of dies.**

ELECTRONIC DIE SETTER OPTIONS				
Die Setter – 4 Cylinder	220V Power Source	380V Power Source	440V Power Source	600V Power Source
With 4 inch Cylinders/Cribbing Blocks	EDS40TKIT4-220	EDS40TKIT4-380	EDS40TKIT4-440	EDS40TKIT4-600
With 6 inch Cylinders/Cribbing Blocks	EDS40TKIT6-220	EDS40TKIT6-380	EDS40TKIT6-440	EDS40TKIT6-600
With 9 inch Cylinders/Cribbing Blocks	EDS40TKIT9-220	EDS40TKIT9-380	EDS40TKIT9-440	EDS40TKIT9-600



## For Larger, Heavier Dies

For oversized dies that require extra lift at the center to keep the die level during separation. Ideal for dies with six safety pad areas.

## Electronic Die Setter – 6 Cylinders



### Each unit has two modes of operation:

1. Unify Mode – Cylinders will extend until they all contact the die, then they will lift uniformly.
2. Parallel Mode – Cylinders will all extend at the same rate. To initiate this mode, cylinders must be fully extended or retracted.

- Heavy-duty hydraulic power handles the heaviest dies with state-of-the-art electronic PLC control for precision and accuracy.
- Handy self-retracting hose reels and control pendant keep every jobsite neat, and protect hoses and cables from damage.
- Three different cylinder sizes are available, along with strong, lightweight cribbing blocks to extend their strokes to handle your biggest jobs.
- Completely portable with large casters and built-in lifting bales, the Lamina Electronic Die Setter is the Go-Anywhere, Do-It-All Die Setting Solution you've been looking for.
- If you use a tryout press for spotting punches and trim steels, you can free up that tryout press and use our Lamina Electronic Die Setter instead.

Oil required: Mobil® DTE-10 Excel 32 (15 gallons)  
(ISO 32)

**Shipping Wt.:** 1750 pounds (with oil)  
1650 pounds (without oil)

**Voltage:** 220V 3 Phase 60 Hz  
440V 3 Phase 60 Hz  
600V 3 Phase 60 Hz  
380V 3 Phase 50 Hz  
(380V built to CE standards)

Dimensions:	UNIT	CRATE
Width (inches)	25	30
Height (inches)	53	56
Length (inches)	50	65

### Package Includes:

- Die Setter Unit
- Electronic Controls
- 6 cylinders
- 25 feet of hose on each of 6 retractable hose reels
- Pendant control
- 30 feet of electrical cable to cart
- A lower ring, an upper ring and two pads for each cylinder

## Standard Safety Features

- **Low voltage, three-button pendant for two hand control**
- **Quick Disconnect Fittings**
- **Palm Emergency Stop**
- **Cylinder Safety Lock Cartridge Valves**
- **Cart Foot Brake**
- **Lifting Bales**

LIFTING CAPACITY		
Lifting Mode	Minimum	Maximum
Unify-6 cylinder	3.9 Tons	45 Tons
Parallel-6 cylinder	0 Tons	45 Tons
Unify-4 cylinder	2.6 Tons	30 Tons
Parallel-4 cylinder	0 Tons	30 Tons



**Saves time and money!**

**Most economical die setting solution available!**

**WARNING – Always use safety blocks when reaching inside of dies.**

### ELECTRONIC DIE SETTER OPTIONS

Die Setter – 6 Cylinder	220V Power Source	380V Power Source	440V Power Source	600V Power Source
With 4 inch Cylinders/Cribbing Blocks	EDS60TKIT4-220	EDS60TKIT4-380	EDS60TKIT4-440	EDS60TKIT4-600
With 6 inch Cylinders/Cribbing Blocks	EDS60TKIT6-220	EDS60TKIT6-380	EDS60TKIT6-440	EDS60TKIT6-600
With 9 inch Cylinders/Cribbing Blocks	EDS60TKIT9-220	EDS60TKIT9-380	EDS60TKIT9-440	EDS60TKIT9-600

Introducing a new Die Separator with optional lifting power... An effective solution to your die separating problems.



**Shipping Wt.:** 1375 pounds (with oil)  
1275 pounds (without oil)

**Voltage:** 220V 3 Phase 60 Hz  
440V 3 Phase 60 Hz  
600V 3 Phase 60 Hz  
380V 3 Phase 50 Hz  
(380V built to CE standards)

**Dimensions:**

	UNIT	CRATE
Width (inches)	25	30
Height (inches)	53	56
Length (inches)	50	65

**Package Includes:**

- Die Separator Unit
- Mechanical Controls
- 4 cylinders
- 25 feet of hose on each of 4 retractable hose reels
- Pendant control
- 30 feet of electrical cable to cart
- A lower ring, an upper ring and two pads for each cylinder

**Your choice of 15 ton (30,000 pounds) or 30 ton (60,000 pounds) maximum capacity!**

**Each unit has two modes of operation:**

1. Unify Mode – Cylinders will extend until they all contact the die, then they will lift uniformly.
2. Parallel Mode – Cylinders will all extend at the same rate. To initiate this mode, cylinders must be fully extended or retracted.

- Low voltage, three-button pendant for two hand control
- Controls on console
- Standard Lamina safety features
- Self-retracting hose reels and control pendant
- Three cylinder sizes with cribbing blocks
- Easy-to-roll casters and built-in lifting bales

Oil required: Mobil® DTE-10 Excel 32 (15 gallons) (ISO 32)

LIFTING CAPACITY–15 Ton Model		
Lifting Mode	Minimum	Maximum
Unify–4 cylinder	2.6 Tons	15 Tons
Parallel–4 cylinder	0 Tons	15 Tons
LIFTING CAPACITY–30 Ton Model		
Lifting Mode	Minimum	Maximum
Unify–4 cylinder	2.6 Tons	30 Tons
Parallel–4 cylinder	0 Tons	30 Tons



DIE SEPARATOR OPTIONS				
Die Separator 15 ton Capacity	220V Power Source	380V Power Source	440V Power Source	600V Power Source
With 4 inch Cylinders/Cribbing Blocks	LDS20TKIT4-220	LDS20TKIT4-380	LDS20TKIT4-440	LDS20TKIT4-600
With 6 inch Cylinders/Cribbing Blocks	LDS20TKIT6-220	LDS20TKIT6-380	LDS20TKIT6-440	LDS20TKIT6-600
With 9 inch Cylinders/Cribbing Blocks	LDS20TKIT9-220	LDS20TKIT9-380	LDS20TKIT9-440	LDS20TKIT9-600
Die Separator 30 ton Capacity	220V Power Source	380V Power Source	440V Power Source	600V Power Source
With 4 inch Cylinders/Cribbing Blocks	LDS40TKIT4-220	LDS40TKIT4-380	LDS40TKIT4-440	LDS40TKIT4-600
With 6 inch Cylinders/Cribbing Blocks	LDS40TKIT6-220	LDS40TKIT6-380	LDS40TKIT6-440	LDS40TKIT6-600
With 9 inch Cylinders/Cribbing Blocks	LDS40TKIT9-220	LDS40TKIT9-380	LDS40TKIT9-440	LDS40TKIT9-600

**WARNING – Always use safety blocks when reaching inside of dies.**

## Hydraulic Cylinders



These versatile cylinders come in three stock sizes, 4 inch, 6 inch and 9 inch (closed). They cover a stroke range of 1-1/2 to 6-1/4 inches to serve a large variety of applications. Each cylinder features a convenient carrying handle for ease of set-up and storage. Lamina cylinders incorporate pilot operated safety valves with double hoses and hose guards. Call today to discuss your specific application needs.

PART NUMBER	Capacity per Cylinder (pounds)	Total Capacity per 4 Cylinders (pounds)	Total Capacity per 6 Cylinders (pounds)	Closed Shut Height (inches)	Stroke (inches)	Outside Diameter (inches)	Shipping Weight (pounds)
ASSY-40T-4	15,000	60,000	90,000	3-7/8	1-1/2	4-3/4	18
ASSY-40T-6	15,000	60,000	90,000	5-7/8	3-1/4	4-3/4	24
ASSY-40T-9	15,000	60,000	90,000	8-7/8	6-1/4	4-3/4	32
ASSY-40T-4-LDS*	15,000	60,000	N/A	3-7/8	1-1/2	4-3/4	18
ASSY-40T-6-LDS*	15,000	60,000	N/A	5-7/8	3-1/4	4-3/4	24
ASSY-40T-9-LDS*	15,000	60,000	N/A	8-7/8	6-1/4	4-3/4	32
DS210	Universal kit for above Lamina Hydraulic Cylinders						
DS211	Spanner Wrench for removing cylinder caps to access internal seals						
*Exclusively for Lamina Die Separator (LDS model)							

## Cribbing Rings & Pads

For stable load support use Lamina Cribbing Rings and Pads to safely increase the lift height of your Lamina Hydraulic Cylinders. Lamina recommends always using Hydraulic Cylinders with Cribbing Rings and Pads in conjunction with safety blocks when operating the Lamina Die Setter. These cribbing devices can be used with most 4-3/4 inch diameter cylinders with cylinder rods up to 2 inches in diameter.



**EDS108** Includes four lower rings and 1 "T" handle  
Height: 1-1/2 inches



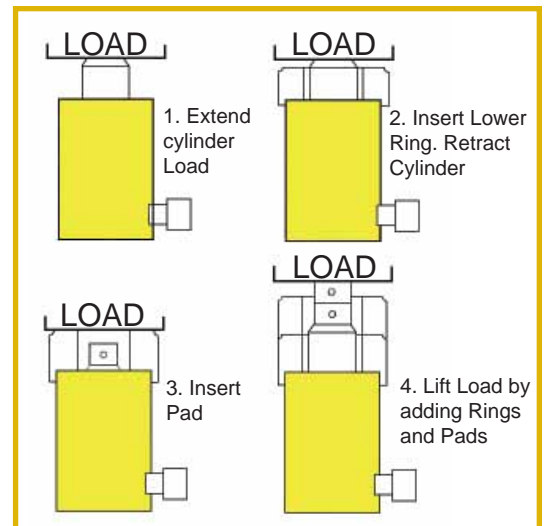
**EDS109** Includes four upper rings  
Height: 1-1/8 inches



**EDS110** Includes four pads  
Height: 1-1/8 inches

1. Extend the cylinder and insert the bottom supporting ring using the "T" handle.
2. Retract the cylinder and insert a pad, again, using the "T" handle.
3. Extend the cylinder again, with the pad increasing the cylinder lift height.
4. Repeat the above process until the desired die separation is attended.

Not more than one Lower Ring, two Upper Rings and three Pads should be used with any one hydraulic cylinder.





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