



HYDROBAR

HYDRODYNAMIC MANUAL LOAD BAR FEED SYSTEMS TO SUIT ALL TYPES
OF TURNING MACHINES FROM .039" (1mm) to 4³/₄" (120mm) DIAMETER



SPEED • RANGE • RELIABILITY



Technology and Precision — LNS Hydrobar Systems

For flexibility and precision in manual load bar feed systems, nothing compares to the technologically-advanced Hydrobar systems from LNS. Available in a broad range of sizes and capacities, Hydrobar systems enhance the productivity in **all types of turning equipment** from manual lathes to CNC turning centers to Swiss-type CNC automatics.

Hydrobar systems come from one of the most innovative, well-respected names in the industry, LNS S. A. Located in Orvin, Switzerland, LNS pioneered high-performance bar feeding equipment based on its own unique hydrodynamic principle. And with U.S.-based LNS America, you're assured of the best products, sales and service available in the world today. No matter what your needs may be, LNS Hydrobar provides unmatched speed, range and reliability in a manual bar feed system.

Proven Performance — There are well over 30,000 Hydrobar systems in use worldwide, in plants large and small... many with multiple installations... and they're installed on more than 300 different types of turning machines. Hydrobar systems are offered by most original equipment manufacturers and are the industry standard in bar feed equipment.

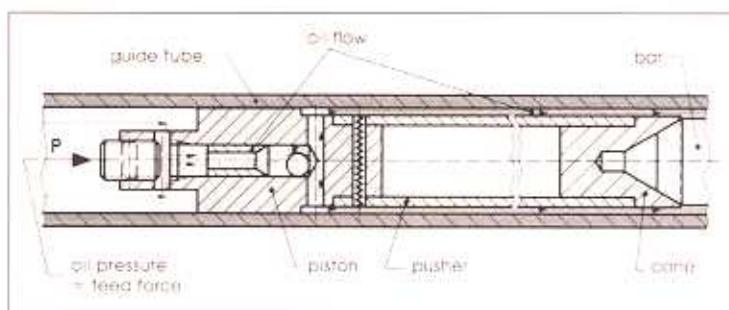
Quick Setup and Changeovers — The multitube "Super" design enables one person to change guide tubes in less than a minute. Four easy steps complete bar stock changeover without oil spillage or employing any loose parts.

Unmanned Operation — Continuous, unmanned operation is possible for extended time periods. Several parts can be machined automatically from a single bar, permitting one operator to attend more than one machine. A sensor alerts the operator when the end of the bar is reached.



Peak Productivity With Our Patented Feed System

All Hydrobar manual load systems feature a **patented feed system**: a single oil supply that provides bar feeding and hydrodynamic support to the revolving bar. Hydraulic oil pressure is directed behind the piston and pusher assembly to feed bar stock into the lathe spindle. The patented adjustable valve in the piston evenly distributes oil between the guide tube ID and bar stock OD. As oil flows from the piston end forward, air is forced out the front of the bar feed and the bar is completely enveloped in oil. These unique features allow bar stock to rotate at unusually high speeds and ensure peak productivity. And since each guide tube has its own piston and metering device, oil flow is automatically adjusted when indexed to a new position.



◀ **Patented Feed Piston/Pusher Assembly**

High Performance: The Hydrodynamic Effect



If the spindle speed is zero, the hydrodynamic support is zero and the bar rests on the feed tube.



The revolving bar produces increased oil pressure and the bar is lifted from the bottom of the feed tube.



With increasing speed, the hydrodynamic force increases and the bar revolves centrally, ensuring a smooth feed.

Hydrobar operates on a hydrodynamic principle which supports the rotating bar stock in an oil bath. As the bar stock rotates inside the guide tube, the oil surrounds the outside diameter of the bar stock and hydrodynamic forces cause the bar stock to rotate toward the center of the guide tube. The faster the rotation, the stronger the centering force.

By maintaining ideal clearance between bar stock OD and guide tube ID, maximum rotational speeds can be attained. Hydrobar's multitube design permits selection of the appropriate guide tube for operating efficiency and optimum RPM.

LNS — Setting The Standard

Super Hydrobar HYS-HS

With 16 separate standard models from which to choose (and any custom configuration), Hydrobar offers the CNC lathe user an ideal match for one of the over 300 brands of lathes. No matter which model fits your needs, Hydrobar offers reliable, consistent performance and flexibility unmatched by other manual load bar feed systems.

Increased Productivity — A

Hydrobar system increases workpiece production through inherent operational features and by enhancing turning machine capability. In addition, your Hydrobar system provides indirect manufacturing efficiencies to increase productivity as well as profitability.

- Permits machining speeds to equal those of precut stock
- Eliminates cut off saw operations and associated material handling
- Reduces workpiece in-process time
- Feeds bar stock automatically, eliminating manual workpiece loading
- Frees machine operator to perform other productive tasks

Operating Efficiencies — The patented multitube design allows the selection of a guide tube with the most efficient clearance between tube ID and bar stock size. This allows the bar to rotate at optimum speeds.

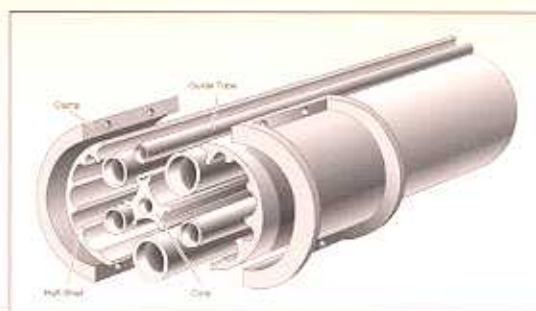


Maximum Efficiency With Our Patented Modular Design

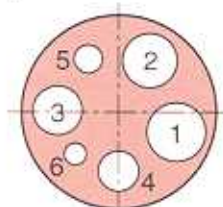
The **patented modular design** is a radial arrangement of guide tubes on a common pitch circle. To provide maximum rigidity and straightness, guide tubes are clamped securely between the patented aluminum core and the half-shells. Each guide tube is complete with piston and pusher assembly. The modular design offers economical solutions to guide tube repair or replacement.

The modular, multitube design permits the proper selection of tube to bar stock, allowing efficient rotation at optimum speeds.

A wide range of sizes of guide tubes can accommodate this design for either the three-tube models or six-tube models. And any size tube can be chosen to ensure efficient production. And range size capabilities can be enhanced with reduction tubes.

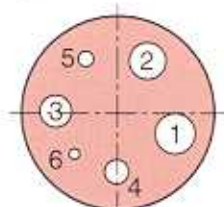


Example on HYS 6.68 HS*



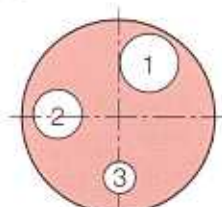
Tube 1:	70mm	to	8mm
Tube 2:	62mm	to	8mm
Tube 3:	55mm	to	8mm
Tube 4:	48mm	to	8mm
Tube 5:	40mm	to	8mm
Tube 6:	32mm	to	8mm

Example on HYS 6.45 HS*



Tube 1:	48mm	to	8mm
Tube 2:	42mm	to	8mm
Tube 3:	36mm	to	8mm
Tube 4:	30mm	to	8mm
Tube 5:	24mm	to	8mm
Tube 6:	16mm	to	8mm

Example on HYS 3.26 HS*



Tube 1:	30mm	to	6mm
Tube 2:	24mm	to	6mm
Tube 3:	16mm	to	6mm

* Tube sizes can be matched to meet your exact requirements

Hydrobar Flexibility —

3-Tube and 6-Tube HS Models

Widely used for short lot runs, the Super Hydrobar HYS-HS provides the ultimate in flexibility for a variety of production turning requirements. The three-piece, aluminum profile barrel assembly can contain either three or six steel guide tubes in the diameters that **suit your production needs.**

Simple in design and easy to operate, Hydrodynamic support provides vibration-free operation, permitting:

- Superior cutting capacity
- High-precision finishing at high operating speeds
- Closer workpiece tolerances
- Longer tool life and longer life of the lathe spindle

Each Super Hydrobar HYS-HS comes equipped with the following features:

- Rear support with indexing device and pivot
- Indexing ring and pin allow simple selection of required tube for bar size, allowing fast setups
- Large capacity hydraulic unit with noiseless, screw type pump and easy-to-clean oil recuperation filter
- Single hydraulic supply line for fast changeover. Oil is fed from the rear of the guide tube and has leak-proof quick disconnect.
- Instantaneous end-of-bar signal through an electromechanical system
- All models are equipped with compact recuperator for minimum clearance
- Sliding recuperator allowing up to 6" of travel for recessed spindle, preventing oil contamination
- Swing out for front or rear load
- Three-tube and six-tube models come with a limited two-year warranty



Small Six-Tube HYS-HS Model

Designed for bar stock sizes up to 1-3/4".

	Bar Capacity
HYS 6.26 HS-4.8*	1/16" to 1"
HYS 6.27 HS-4.8*	1/16" to 1-1/16"
HYS 6.32 HS-4.8*	1/16" to 1-1/4"
HYS 6.35 HS-4.8	1/4" to 1-3/8"
HYS 6.38 HS-4.8	1/4" to 1-1/2"
HYS 6.42 HS-5.2	1/4" to 1-5/8"
HYS 6.45 HS-5.2	1/4" to 1-3/4"

* Also for Swiss-type applications

Large Six-Tube HYS-HS Model

Accommodates larger bar stock diameters to 2-5/8".

Model	Bar Capacity (Round)
HYS 6.52 HS-5.2	1/2" to 2"
HYS 6.60 HS-5.2	3/4" to 2-3/8"
HYS 6.65 HS-5.2	3/4" to 2-1/2"
HYS 6.68 HS-5.2	3/4" to 2-5/8"

Solutions For Your Swiss-Type CNC Automatic

Three- and Six-Tube HYS-HS Model

Ideally suited for up to 1" capacity.

Bar Capacity	Model	(Round)
HYS 3.10 HS-4.8	1/16"	to 3/8"
HYS 3.12 HS-4.8	1/16"	to 1/2"
HYS 3.16 HS-4.8	1/16"	to 5/8"
HYS 3.20 HS-4.8	1/16"	to 13/16"
HYS 3.26 HS-4.8	1/4"	to 1"
HYS 6.26 HS-4.8	1/16"	to 1"
HYS 6.32 HS-4.8	1/16"	to 1-1/4"

- Designed for ideal headstock synchronization.
- All three- and six-tube HS models and THB designed for Swiss machines are equipped with a 23° z-axis retract system with a safety switch and a kill switch to prevent spindle on sliding headstock lathes from accidentally backing into bar feed, precluding costly down-time and equipment repairs.
 - allows for machining different length workpieces
 - retract permits the bar feed to reach the recessed spindle
- The smaller sized recuperator allows for positioning behind the recessed machine spindle.
 - for 3-tube models, from centerline of spindle to bottom of recuperator, size requirements can be as small as 2-3/8".
 - for 6-tube models, from centerline of spindle to bottom of recuperator, size requirements can be as small as 3-1/16".

Hydrobar THB

For a low cost alternative to gravity-fed bar feeds or when your changeovers are infrequent, LNS offers the Hydrobar THB. The hydrodynamic principle permits the machine tool to be used to its maximum capability, allowing high production rates.

Standard models handle any bar stock configuration from .039" (1mm) to 4" (100mm). When a change in bar stock is required, a reduction tube is inserted in the guide tube to accommodate the new bar size.

Model	Bar Capacity (Round)
THB 7-LC	1mm to 7mm
THB 10-LC	1mm to 3/8"
THB 12-LC	1/16" to 1/2"
THB 16-LC	1/16" to 5/8"
THB 20-LC	1/8" to 13/16"
THB 32-LC	1/4" to 1-1/4"
THB 42-LC	1/2" to 1-5/8"
THB 100-3.7	1-1/8" to 4"

Super Hydrobar HYS — Superior Performance for Large Diameter Bars.

For large diameter bars (up to 4-3/4") and short runs requiring frequent bar stock size changes, there is the Super Hydrobar. Ruggedly designed, the Super Hydrobar has a steel outside tube and either six or seven guide tubes. Simply by rotating the barrel assembly on its axis, one person can change bar stock ranges in less than a minute.

Super Hydrobar HYS to 3-1/2"

Model	Capacity	No. of Tubes
HYS 7.76-5.2	1-1/4" to 3"	7
HYS 6.90-5.4	1-5/8" to 3-1/2"	6

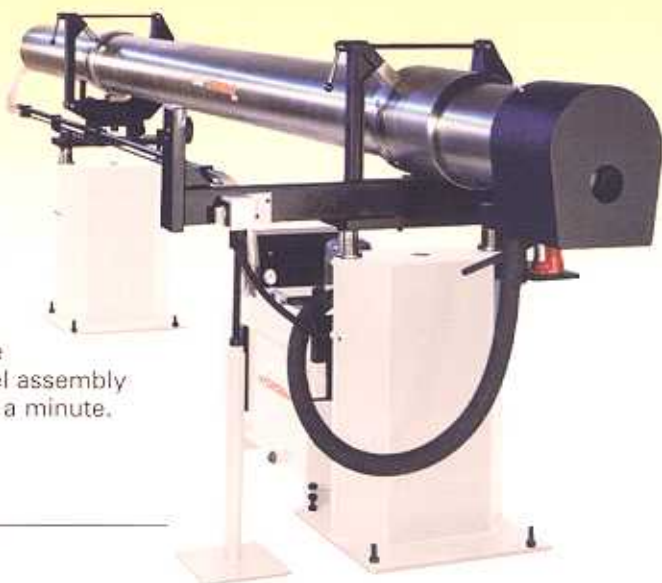
Super Hydrobar HYS to 4-3/4"

Big bar stock capacity and quick bar size changing is easy with the Super Hydrobar 7.100, 7.114 and 6.120.

- Air assisted anti-friction rollers elevate barrel tube assembly to index freely to desired guide tube size
- Bar feed has a 30" travel z-axis retract activated by rack and pinion device, giving free access to the spindle for liner change or maintenance
- Extra large 45-gallon hydraulic unit with larger motor pump and hydraulic pressure and flow control

Model	Bar Capacity (Round)	No. of Tubes
HYS 7.100-5.6	2" to 4"	7
HYS 7.114-5.6	2-1/4" to 4-1/2"	7
HYS 6.120-5.6	2-3/4" to 4-3/4"	6

Optional quick change reduction tubes available for these models.



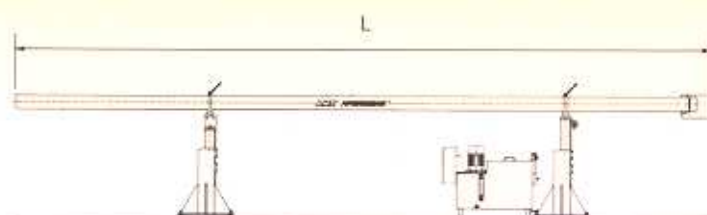
Unmatched Service and Technical Support

With all LNS systems, you'll benefit from the most knowledgeable service and technical support team in the business. Our comprehensive sales and service support includes:

- Assistance in selecting the right system to meet your production requirements
- Application assistance
- Complete installation and training
- Worldwide full service and technical support
- Complete inventory of replacement parts
- The most extensive warranty in the industry



Type HYS-HS and HYS*	4.4	4.8	5.2	5.4	5.6
L	5000	5400	5600	6000	6200



Type THB*	4.4	4.8	5.2	5.4	5.6
L	4600	5000	5400	5600	5800

* Please consult LNS for detailed floor plans.

Hydrobar — Incredibly Efficient. Totally Reliable.

LNS has set the industry standard in bar feed systems. LNS Hydrobar advantages include:

- ability to safely handle a **complete range** of bar stock sizes
- high speed operation
- quiet, vibration-free performance
- reliable, unattended operation
- superior surface finish
- longer tool life, resulting in lower running costs

Technical Data

Bar Stock Preparation:

- For optimum results and safety purposes, proper bar stock preparation is important.
- Bar stock must have a 60 degree included chamfer and should be straight within .020"/3 ft. non-accumulative.

Hydraulic Unit:

- 45 gallon capacity (ISO 100 oil required)
- easy to clean, large capacity oil filter
- oil sight gauge
- oil pressure gauge
- silent screw-type pump
- thrust pressure regulator
- feed flow regulator

Electrical Specifications:

- Hydrobar HYS-HS and THB 230 VAC, 5.2 AMP or 460 VAC, 2.3 AMP, 3 phase, 60 Hz
- Hydrobar HYS 7.100 and 7.114 230 VAC, 5.9 AMP or 460 VAC, 3.4 AMP, 3 phase, 60 Hz
- 24 VDC or 110 VAC for the controls.
- Optional: 8" or 23" travel z-axis retraction system.



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