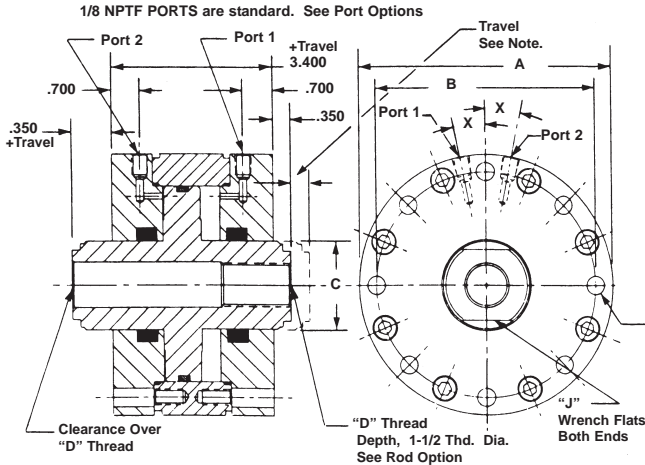


SHORT STROKE HYDRAULIC CYLINDERS, HI-ENERGY® SERIES 1500-LS-SP-FM

Double Acting-Double Ended Pistons With Thru Thd.-Side Ported-Either Face Mounted



SPECIFICATIONS:

- SERVICE, HYDRAULIC OIL
- M.O.P., 1500 PSI
- TEMPERATURE, -40 TO 200 deg. F
- MATERIALS:
- BODY, STAINLESS STEEL.
- GUIDE COVERS, BEARING BRONZE
- PISTONS, STAINLESS STEEL
- FASTENERS, ALLOY STEEL, I.S.H.C.S.
- ROD SEALS, LIP STYLE
- PISTON HEAD SEAL, "O" RING

NOTES:

Dimensions are nominal in U.S. Customary units. Metric cylinders are dimensionally equivalent except for conversion in mounting details where threads, fasteners, clearance holes & counter-bores are to metric standards. See inside rear cover for a table of metric fastener conversion. There is no added cost for this metric modification. Angular relationship between PORTS 1 & 2 may be adjusted in increments of "G" degrees by removing cover bolts from one side, indexing the cover to a new location and re-torque to values shown in column "H".

BASIC PART NUMBER	O.D. A	BOLT CIRCLE B	ROD DIA. C	ROD THD. D	THD. E	NO. F	DEG. G	TORQUE (IN. LB.) H	W.F. J	DEG. X	PISTON DIA. (IN.)	NET. PISTON AREA (SQ. IN.)
S-2377 - () - LS	3.000	2.375	0.875	1/2-20	1/4-28	4	90	75	0.688	22-1/2	1.750	1.804
S-2378 - () - LS	4.000	3.188	1.250	5/8-18	5/16-24	5	72	145	1.000	18	2.500	3.681
S-2379 - () - LS	5.000	4.188	1.500	3/4-16	3/8-24	6	60	265	1.250	15	3.500	7.854
S-2380 - () - LS	6.000	5.188	2.000	1-14	3/8-24	8	45	265	1.625	11-1/4	4.500	12.762

Nom. Force (lbs) = Pressure (psi) times Area (sq. in)

International Port Options:

- U.S.A. - S.A.E. - 4 (7/16-20 Thd.) Straight thread with "O" ring sealing. Add suffix -SAE to the BASIC PART NUMBER.
- BRITISH 1/8 - 28 BSPT port. Tapered thread sealing. Add suffix -BSPT to the BASIC PART NUMBER.
- BRITISH 1/8-28 BSPP port. Straight thread with "O" ring sealing. Add suffix -BSPP to the BASIC PART NUMBER.
- METRIC M10 X 1 port per ISO 6149 Straight thread with captive "O" ring sealing. Add suffix -M10 to the BASIC PART NUMBER.

OPTIONAL PORTS ARE FURNISHED AT NO ADDED COST.

Mounting Options:

- Clearance holes for thru bolts of the size shown as "E" in the table. Add suffix -CL to the BASIC PART NUMBER.
- Clearance holes with counter-bores in the cover which incorporates "PORT # 1" for internal socket head cap screws of size shown as "E" in the table. Add suffix -CB1 to the BASIC PART NUMBER.
- Clearance holes with counter-bores in the cover which incorporates "PORT # 2" for internal socket head cap screws of size shown as "E" in the table. Add suffix -CB2 to the BASIC PART NUMBER.

OPTIONAL MOUNTING IS SUPPLIED AT NO ADDED COST

Rod End Options:

- Rod end with external thread extending from cover with port #1. Piston is solid. Add suffix -ETW to the BASIC PART NUMBER. Add 8% to the BASE PRICE. Please consult the Factory for other piston configurations.

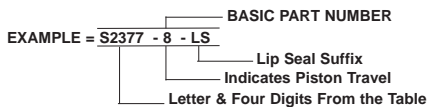
Wiper Option:

- Rod wipers are optional and are incorporated on both ends of a double ended cylinder. Add suffix -W to a BASIC PART NUMBER. Add 4% to the BASE PRICE.

Ordering Information:

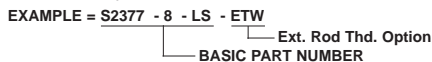
HOW TO ORDER BASIC CYLINDERS

A BASIC PART NUMBER consists of the letter "S" and four digits followed by a dash number to indicate piston travel in increments of 1/10 (0.100) inch followed by the suffix -LS. Travel to -40 (4.000) is standard.



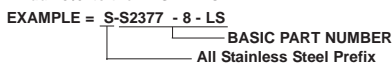
HOW TO ORDER CYLINDERS WITH OPTIONS:

Add options to the BASIC PART NUMBER as suffixes in any order.



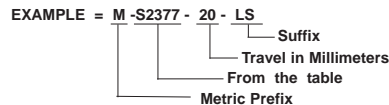
HOW TO ORDER ALL STAINLESS STEEL CYLINDERS:

Add another letter "S" as a prefix to a BASIC PART NO. Add 20% to the BASE PRICE.



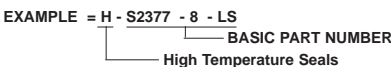
HOW TO ORDER METRIC CYLINDERS.

A BASIC PART NUMBER FOR METRIC CYLINDERS, consists of the letter "M" and a four digit number from the table with a prefix "M" followed by a dash number to indicate travel in millimeters and the suffix LS. Please see inside rear cover for metric thread and travel conversions. There is no added cost.



HOW TO ORDER CYLINDERS WITH SEALS FOR TEMPERATURES TO 275 deg. F

Add the letter "H" as a prefix to a BASIC PART NO. Add 10% to the BASE PRICE



HOW TO ORDER SERVICE KITS.

Specify the complete part number followed by the suffix "SK"

