

IMPORTANT SAFETY INFORMATION

1. To avoid injury, exercise caution by reading these instructions before servicing or operating the system.
2. These instructions must be passed on to the end user where they should be read before using this product. Failure to do so can result in injury.



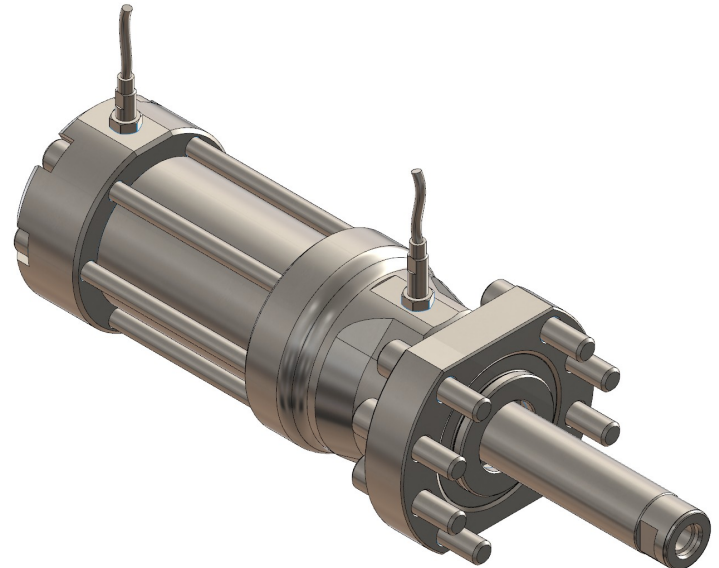
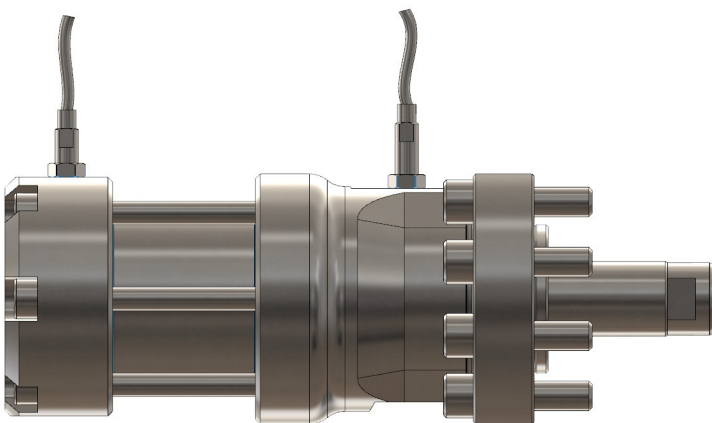
**Failure to comply can result in injury:
STORED ENERGY HAZARD**

1. This product maintains hydraulic pressure during normal operation in both full back (retracted) and full forward (extended) position of the cylinder assembly's piston. Use caution when operating and servicing the system. Proper protective equipment, including eye protection, must be worn.
2. Hydraulic service to the cylinder assembly must not exceed 3625 PSI hydraulic pressure.



Failure to comply can result in improper equipment operation or damage:

1. The DME Hydraulic Locking Core Pull Cylinder (HLCP) assembly includes two inductive proximity sensors at low power. The proximity sensors require power to deliver a signal. It is the responsibility of the customer to provide proper electrical service for sensor operation.
2. The proximity sensors require proper adjustment while installing into the cylinder assembly, as each sensor must be installed to a different depth. Please follow the provided sensor installation instructions properly, or else the cylinder may not operate properly, or, the sensors will fail to detect the proper position of the piston.
3. The proximity sensors are available in two types: NPN (standard) or PNP (optional). If PNP type is required, this must be specified at system order. Electrical wire-up schematics are provided for both types in this document. Please follow the proper wire-up for the proximity sensor.
4. If the proximity sensors are not used, it is always important to monitor the position of the sliding core. External limit switches may be used if the machine cannot deliver power to the sensors, or where the service temperature of the proximity sensors is expected to be exceeded, or in cases where an elevated level of magnetism or electrical current is expected to be in close proximity to the sensors. For proper system function, it is important that full forward (extended) position as well as the full reverse (retracted) position of the piston (or sliding core) be monitored.
5. If using the proximity sensors provided with this device, do not exceed the maximum service temperature of 176°F (80° C).
6. When using external limit switches in the mold instead of the proximity sensors supplied with this product, the maximum service temperature of this device is 356°F (180° C).
7. A minimum of 870 PSI holding pressure (hydraulic service) is required at all times. If the 870 PSI holding pressure is not maintained while the piston is in full forward (extended position), the piston may not remain locked in forward position within the cylinder assembly.
8. The Mold Designer and/or Mold Maker is required to select the proper size of cylinder assembly in order to counter load that will act on the sliding core due to plastic injection pressure within the mold cavity. Improperly selected cylinder assembly size can result in molded part flash or damage to the mold during operation.
9. When selecting the appropriate size of cylinder assembly, take care to account for the necessary preload when the sliding core needs to shut off on an opposing core face inside the mold. Load capacity of the cylinder assembly is reduced when preload of the sliding core is required. The recommended preloads for each cylinder assembly size are provided in this document, as well as load capacities for both with and without preload.
10. The piston rod is not to be used as the sliding core itself. Do not modify the piston rod in any way. The piston rod is intended to be attached to the sliding core in the mold, and it is the responsibility of the mold designer and/or mold maker to select appropriate sliding core design for the intended application.

**DETAIL 1.0: HYDRAULIC LOCKING CORE PULL CYLINDER ASSEMBLY**

Note: Spacer disk not shown

MOLD DESIGN CONSIDERATIONS:

- This product is available in several sizes, and each size has a two available "standard" stroke lengths. If you require a stroke that is different than the available standard strokes, then a non-standard stroke design is required. When ordering this product, please specify the required stroke if the standard strokes available are not suitable for the intended application.
- This product maintains a sliding core in full back (retracted) or full forward (extended) positions. In order for the cylinder assembly to "lock", the piston must be full extended forward.
- This product includes a spacer disk. The spacer disk is placed between the front of the body flange and pocket installation. The mold maker must grind the spacer disk to ensure proper fit at the desired mold operation temperature. The adjustment of the spacer disk is important for when the sliding core

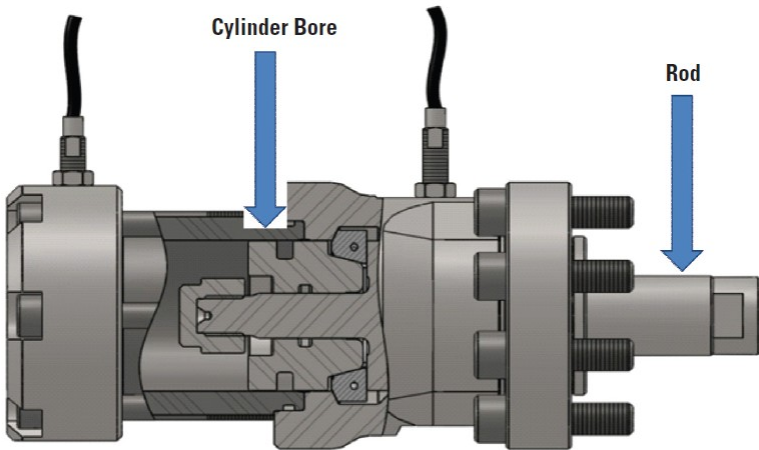
MOLD DESIGN CONSIDERATIONS (continued):

must “shut off” against an opposing core wall or face, so that plastic flashing is avoided. For proper “shut-off” as described above, recommended preload amounts are provided in this document. Adjust the spacers prior to final mold assembly. Ensure sufficient pocket clearance around the piston rod and spacer disk is present for smooth operation.

- Positional alignment of the cylinder assembly is achieved by aligning the forward collet of the cylinder body (protrudes forward of the mounting flange) into the mold plate via the outer diameter of the collet. The collet will protrude past the spacer disk. Rotational alignment of the overall assembly is achieved via the mounting screws, as rotational alignment is only used to position the proximity sensors and hydraulic fitting connections and/or hoses within the overall installation. The piston may freely rotate, therefore if rotational alignment of the sliding core is required, rotational alignment of the sliding core must be achieved via other means.
- The positional alignment of the mold’s sliding core is not to be maintained by the cylinder assembly’s piston. The sliding core must have it’s own provision for positional alignment within the mold plate.
- The suggested installation pocket details are based on the cylinder assembly being recessed into the side of the mold plate. It is possible to have the cylinders assembly mounted fully “proud” of the side of the mold plate, however, positional alignment of the cylinder assembly to the mold plate requires the forward collet (protruding forward of the mounting flange of the cylinder body) to be recessed partially into the side of the mold. Please adjust the overall installation as required to fit your application, while maintaining minimum clearances for the hydraulic fitting connections and/or hoses, as well as maintaining clearances for the proximity sensors. It is the responsibility of the mold designer and/or mold maker to select appropriate hydraulic fittings, as well as provide necessary pocket clearances (where required) for the hydraulic fittings. Clearance for hydraulic service may need to accommodate hoses or other features, in addition to the hydraulic fittings themselves. Standard hydraulic thread is NPTF type, but other types are available upon request.
- Please see Detail 3.4 for additional notes regarding necessary clearance needed to accommodate the proximity sensors.
- Mounting screws provided should not be modified (shortened). Ensure the tapped mounting holes are deep enough to ensure the screw heads can fully seat on the mounting flange after the screws are installed fully and torque is applied.

SEE NEXT PAGES FOR SUGGESTED POCKET MACHINING DETAILS

TABLE 1.0 — HLCP ASSEMBLY SIZES



DETAIL 1.1 - HYDRAULIC LOCKIN CORE PULL ASSEMBLY

ASSEMBLY No.	STROKE	ROD DIA.	CYLINDER BORE DIA.	NPTF TAP
HLCP060-1000	25.4 mm (1.00 in)	16 mm (0.63 in)	30 mm (1.18 in)	1/8
HLCP060-2000	50.8 mm (2.00 in)			
HLCP100-1250	31.8 mm (1.25 in)	20 mm (0.79 in)	36 mm (1.42 in)	1/8
HLCP100-2500	63.5 mm (2.50 in)			
HLCP150-1375	34.9 mm (1.375 in)	25 mm (0.98 in)	45 mm (1.77 in)	1/4
HLCP150-2750	69.9 mm (2.75 in)			
HLCP200-1750	44.5 mm (1.75 in)	32 mm (1.26 in)	56 mm (2.20 in)	1/4
HLCP200-3500	88.9 mm (3.50 in)			
HLCP300-2000	50.8 mm (2.00 in)	42 mm (1.65 in)	71 mm (2.80 in)	3/8
HLCP300-4000	101.6 mm (4.00 in)			
HLCP500-2500	63.5 mm (2.50 in)	50 mm (1.97 in)	84 mm (3.31 in)	3/8
HLCP500-5000	127.0 mm (5.00 in)			
HLCP750-3000	76.2 mm (3.00 in)	60 mm (2.36 in)	105 mm (4.13 in)	1/2
HLCP750-6000	152.4 mm (6.00 in)			

TABLE 1.1 — LOAD CAPACITIES FOR THE DME HYDRAULIC LOCKING CORE PULL CYLINDER ASSEMBLY

ASSEMBLY NUMBER	AT 160 BAR (2321 PSI) PRELOAD	Holding Force in kilo Newton [kN]		Holding Force in Pound Force [lbf]		Holding Force in Metric ton [ton]		Holding Force in UK (troy) ton [ton]		Holding Force in US (avdp) ton [ton]	
		Without Preload	With Preload	Without Preload	With Preload	Without Preload	With Preload	Without Preload	With Preload	Without Preload	With Preload
HLCP060-1000	0.15 mm (0.006 in)	60	35	13,488	7,868	6.12	3.57	5.46	3.19	6.74	3.93
HLCP060-2000	0.20 mm (0.008 in)										
HLCP100-1250	0.15 mm (0.006 in)	100	50	22,480	11,240	10.20	5.10	9.11	4.55	11.24	5.62
HLCP100-2500	0.20 mm (0.008 in)										
HLCP150-1375	0.10 mm (0.004 in)	150	65	33,720	14,612	15.30	6.63	13.65	5.91	16.86	7.31
HLCP150-2750	0.15 mm (0.006 in)										
HLCP200-1750	0.15 mm (0.006 in)	200	110	44,960	24,728	20.39	11.21	18.20	10.01	22.48	12.36
HLCP200-3500	0.20 mm (0.008 in)										
HLCP300-2000	0.15 mm (0.006 in)	300	160	67,440	35,968	30.59	16.31	27.31	14.57	33.72	17.98
HLCP300-4000	0.20 mm (0.008 in)										
HLCP500-2500	0.20 mm (0.008 in)	500	300	112,400	67,440	50.98	30.59	45.51	27.31	56.20	33.72
HLCP500-5000	0.30 mm (0.012 in)										
HLCP750-3000	0.20 mm (0.008 in)	750	400	168,600	89,920	76.48	40.79	68.27	36.41	84.30	44.96
HLCP750-6000	0.30 mm (0.012 in)										

MOLD DESIGN CONSIDERATIONS (continued):

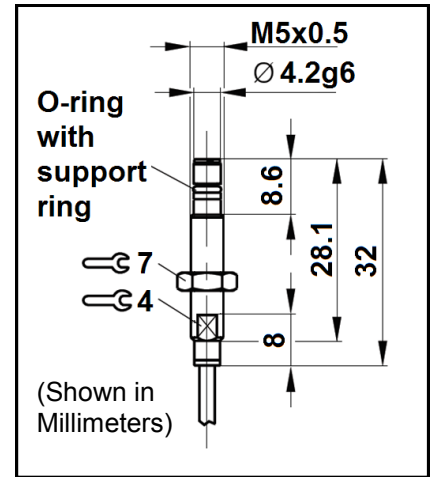
TABLE 1.3 — MASSES AND THREAD SIZES

<u>Assembly Number</u>	Mass		Thread Size in Piston Rod	Thread Tap Hole Depth to Drill Point
	kg	lb		
HLCP060-1000	1.8	3.97	5/16 - 24 UNF	20mm
HLCP060-2000	2.0	4.41		
HLCP100-1250	2.9	6.39	5/16 - 24 UNF	20mm
HLCP100-2500	3.2	7.05		
HLCP150-1375	5.0	11.02	3/8 - 24 UNF	28mm
HLCP150-2750	5.4	11.90		
HLCP200-1750	9.3	20.50	1/2 - 20 UNF	35mm
HLCP200-3500	10.5	23.15		
HLCP300-2000	20.1	44.31	5/8 - 18 UNF	40mm
HLCP300-4000	22.4	49.38		
HLCP500-2500	31.0	68.34	5/8 - 18 UNF	42mm
HLCP500-5000	33.0	72.75		
HLCP750-3000	55.5	122.36	3/4 - 16 UNF	50mm
HLCP750-6000	62.1	136.91		

PROXIMITY SWITCH ELECTRICAL DATA:

Switching Output:	BHS006Y = NPN (Standard), BHS006U = PNP (Special)	
Connection	2 m Cable (PUR)	
Utilization category	DC 13	
Ripple max. of Ue	10 %	
Rated operational voltage (Ue)	24 DC V mm	Operating frequency (f) 3000 Hz
Load current capacity (Ie)	100 mA	Voltage drop max. static 2.5 V
Hysteresis max (H)	15 %	No-load supply current damped 10 mA
Switching element function	NO	No-load supply current undamped 7 mA
Time delay before availability	25 ms	Off-state current max (Ir) 100 µA
Electrical type	DC	Supply voltage max. (Ub) 30 V
Load capacitance max	0.4 µF	Supply voltage min. (Ub) 10 V

DETAIL 2.0: PROXIMITY SENSOR DIMENSIONS

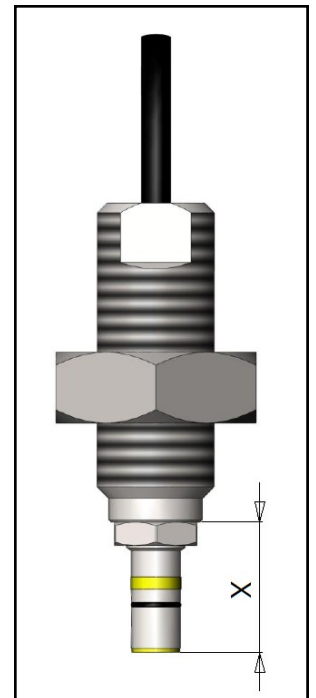


PROXIMITY SENSOR INSTALLATION INSTRUCTIONS:

TABLE 2.0:
DIMENSION "X"

	REAR (CAP END)		FRONT (FLANGE END)	
	[mm]	[inches]	[mm]	[inches]
HLCP150	11.1	0.44	11.1	0.44
HLCP200	18.8	0.74	11.1	0.44
HLCP300	11.1	0.44	14.4	0.57
HLCP500	14.5	0.57	18.5	0.73
HLCP750	13.5	0.53	15.0	0.59

DETAIL 2.1: PROXIMITY SENSOR BUSHING & X DIMENSION



NOTE: These sensors require power to produce a signal. This includes during installation/setup and during normal operation. Refer to power requirements (above). Customer is responsible to provide power service to operate sensors. If only dry contacts are present on the injection molding machine, see next page for suggested wire-up.

A) HLCP060 & HLCP100

Rear sensor in the CAP:

1. Make sure the CYLINDER ROD is in the fully extended position.
2. Install the SENSOR into the CAP and slowly advance until the signal is lost. Be careful not to overshoot the lost position.
3. Return the CYLINDER ROD to the fully retracted position.
4. If the signal is still lost, continue to advance the SENSOR until it produces the signal again.
Advance the SENSOR one additional quarter turn.
5. Tighten the 7mm nut on the SENSOR to a torque setting of 1.0 Nm (8.9 in. lbs) to secure the SENSOR to the CAP

B) HLCP060 & HLCP100

Front sensor in the BODY:

1. Make sure the CYLINDER ROD is in the fully retracted position.
2. Install the SENSOR into the BODY and advance until the signal is lost. Be careful not to overshoot the lost position.
3. Return the CYLINDER ROD to the fully extended position.
4. If the signal is still lost, continue to advance the SENSOR until it produces the signal again.
Advance the SENSOR one additional quarter turn.
5. Tighten the 7mm nut on the SENSOR to a torque setting of 1.0 Nm (8.9 in. lbs) to secure the SENSOR to the BODY.

C) HLCP150 - HLCP750

Rear sensor in the CAP:

1. Assemble the SENSOR into the CAP SENSOR BUSHING as shown in **DETAIL 2.1**. The X dimension is found in **TABLE 2.0**. Once the X dimension is set, use a torque setting of 1.0 Nm (8.9 in. lbs.) to secure the position of the SENSOR inside the CAP SENSOR BUSHING.
2. Make sure the CYLINDER ROD is in the fully extended position.
3. Install the SENSOR and CAP SENSOR BUSHING into the CAP and tighten until the signal is lost. Be careful not to overshoot the lost position.
4. Return the CYLINDER ROD to the fully retracted position.
5. Continue to tighten the CAP SENSOR BUSHING until it produces the signal again. Tighten the SENSOR BUSHING one additional quarter turn.
6. Tighten the nut on the CAP SENSOR BUSHING to a torque setting of 17.0 Nm (12.6 ft. lbs) to secure the CAP SENSOR BUSHING to the CAP.

D) HLCP150 - HLCP750

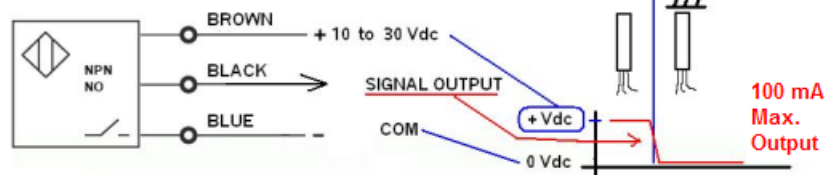
Front sensor in the BODY:

1. Assemble the SENSOR into the BODY SENSOR BUSHING as shown in **DETAIL 2.1**. The X Dimension is found in **TABLE 2.0**. Once the X dimension is set, use a torque setting of 1.0 Nm (8.9 in. lbs.) to secure the position of the SENSOR inside the CAP SENSOR BUSHING.
2. Make sure the CYLINDER ROD is in the fully retracted position.
3. Install the SENSOR and BODY SENSOR BUSHING into the BODY and advance it until the signal is lost. Be careful not to overshoot the lost position.
4. Return the CYLINDER ROD to the fully extended position.
5. Continue to advance the BODY SENSOR BUSHING until it produces the signal again. Advance the SENSOR BUSHING one additional quarter turn.
6. Tighten the nut on the BODY SENSOR BUSHING to a torque setting of 17.0 Nm (12.6 ft. lbs) to secure the BODY SENSOR BUSHING to the BODY.

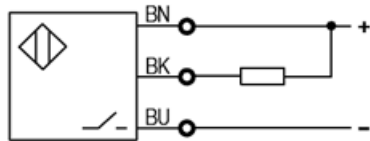
DETAIL 2.2: PROXIMITY SENSOR WIRE UP INSTRUCTIONS:

BHS006Y
 10-30 V DC
 $\leq 100 \text{ mA}$
 $S_n = 1.0 \text{ mm}$
 359 bar (5076 PSI -
 sensor only)

TYPICAL INJECTION MOLDING CONNECTIONS



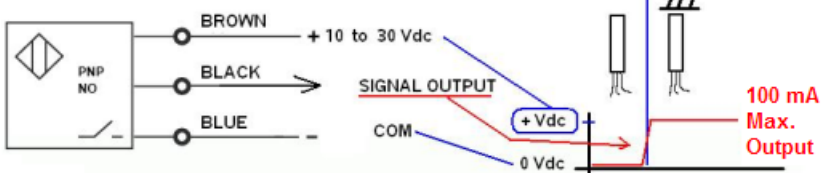
NPN, NO



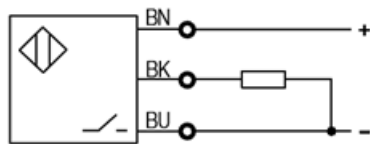
NPN, NO (normally open) proximity sensors are supplied standard with product. These sensors are inductive sensors and will require power to operate.

BHS006U
 10-30 V DC
 $\leq 100 \text{ mA}$
 $S_n = 1.0 \text{ mm}$
 359 bar (5076 PSI -
 sensor only)

TYPICAL INJECTION MOLDING CONNECTIONS



PNP, NO

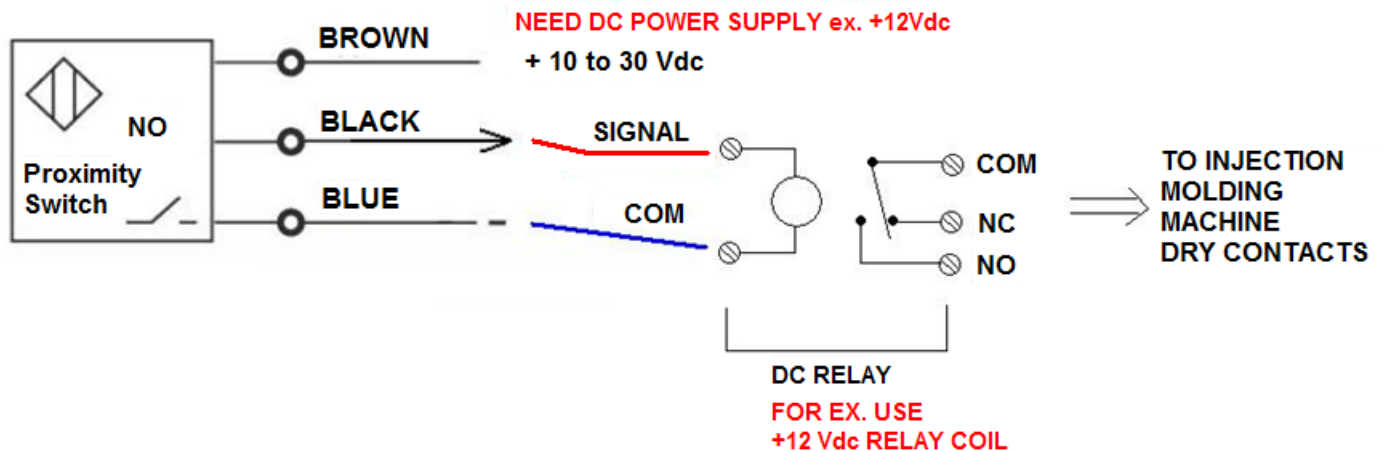


PNP, NO (normally open) proximity sensors are optional and must be requested at the time of the HLCP cylinder assembly order. As with the NPN sensors, the PNP sensors are inductive sensors and will require power to operate.

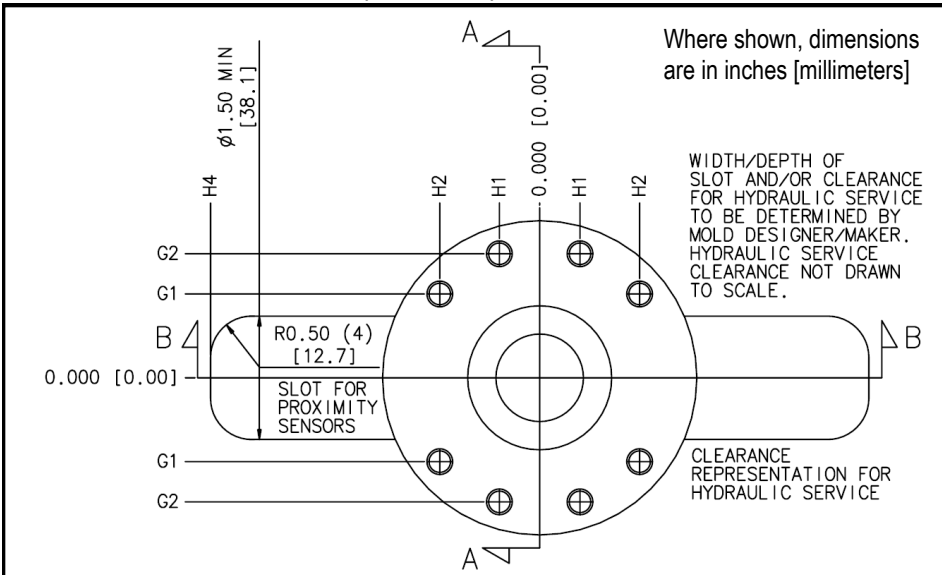
DETAIL 2.3: OPTIONAL WIRE-UP—WHEN INJECTION MOLDING MACHINE CANNOT SUPPLY POWER

- Not all injection molding machines are equipped to supply power to the proximity sensors. The proximity sensors are highly accurate, high-pressure, inductive sensors which have no moving parts. Inductive sensors require power to deliver a signal. If dry contacts are required, an external power supply and relay circuit will be required with the BHS006Y (NPN, NO) or BHS006U (PNP, NO) proximity sensors. A suggested electrical schematic is shown below. This suggested circuit can be used with either NPN or PNP proximity sensors. Voltages shown are suggested only. Please refer to the voltage range specified for the sensors on the previous page. The molder is required to provide the electrical service required to operate the sensors.

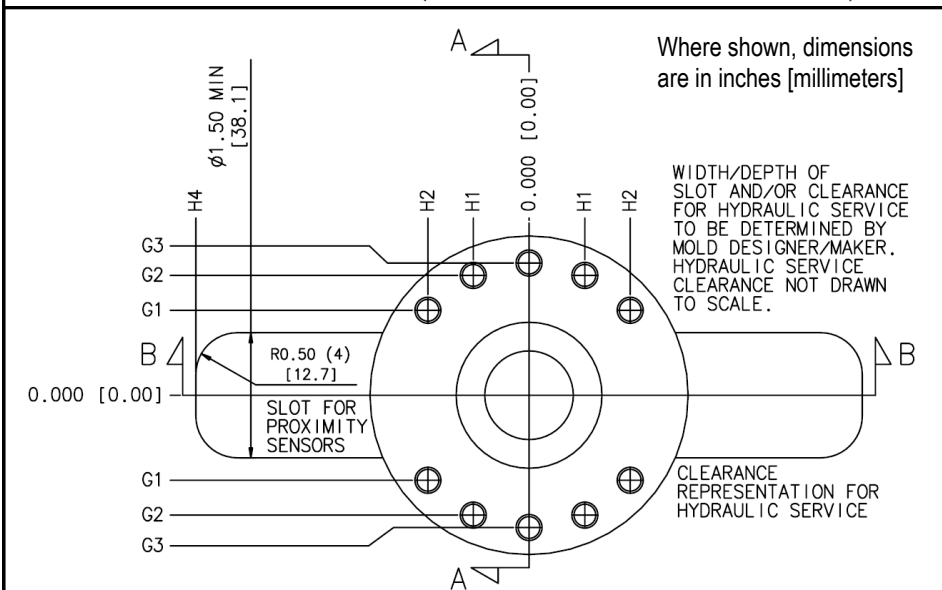
SUGGESTED ONLY:



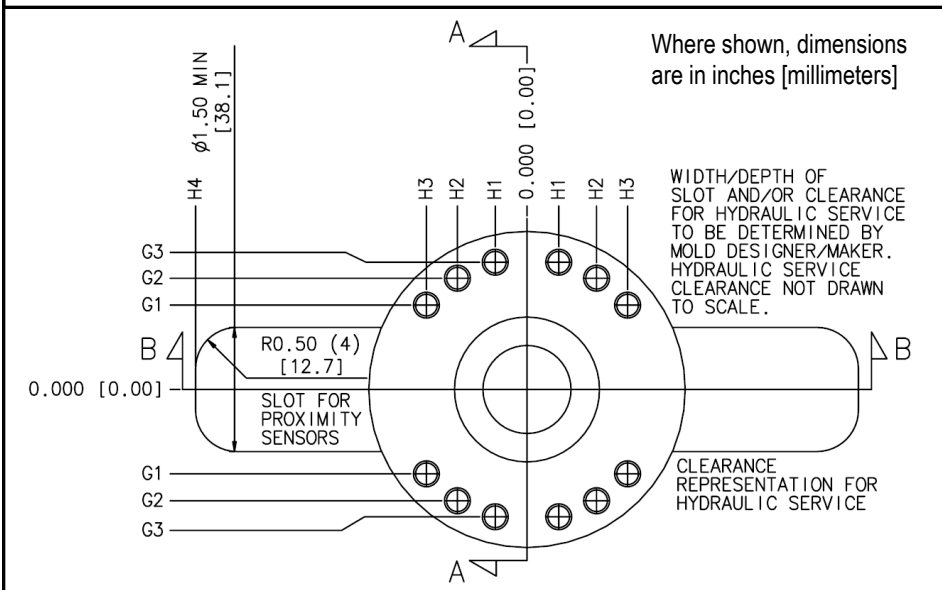
- When servicing the HLCP cylinder assembly, ensure that proper signals are received from both the front and rear mounted proximity sensors. Check the condition of the proximity sensor wires. If wires are found to be damaged, the sensors will need to be replaced. Follow the sensor installation information provided on the previous page.
- If you intend to use external limit switches in your mold, and do not intend to use the proximity sensors, threaded plugs (to replace the sensors and plug the threaded holes in the cylinder body and cylinder cap) are available upon request.



DETAIL 3.0: POCKET DETAIL — PLAN VIEW (HLCP060 AND HLCP100 SIZES ONLY)



DETAIL 3.1: POCKET DETAIL — PLAN VIEW (HLCP150 THROUGH HLCP500 SIZES)



DETAIL 3.2: POCKET DETAIL — PLAN VIEW (HLCP750 SIZE ONLY)

GENERAL OPERATING INSTRUCTIONS:

- Do not exceed hydraulic service pressure of 3625 PSI.
- Always have a minimum 870 PSI hold pressure available for normal operation of this device.
- Always monitor the position of the cylinder piston (i.e. fully retracted or fully extended).

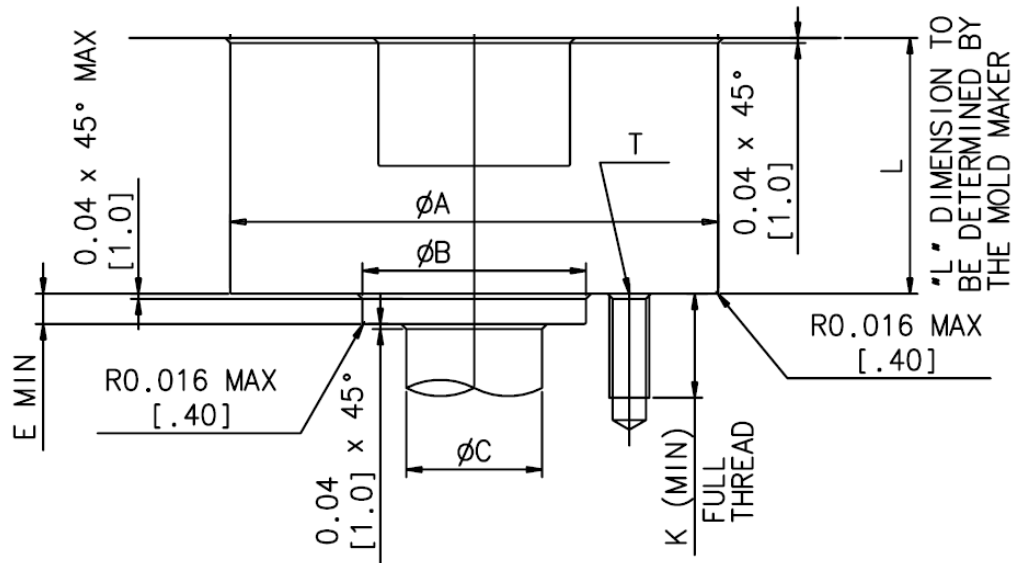
SERVICING INSTRUCTIONS:

- Take care to implement a preventative maintenance schedule for your mold and Hydraulic Locking Core Pull cylinder assembly. In most conditions, a regular review of the cylinder every 3 months is recommended. In some extreme cases a more frequent preventative maintenance schedule may be required. In the first 3 months of use, it is recommended that the cylinder assembly should be checked monthly to ensure proper alignment and function of the product.
- At every preventative maintenance schedule, ensure the cylinder assembly properly actuates as well as properly locks when in the full-forward (extended) position.
- Mounting screws are provided with each Hydraulic Locking Core Pull Cylinder assembly. Check mounting and assembly screws for damage prior to installation or assembly. If a mounting or assembly screw is required to be replaced, Grade 8 UNC Socket Head Cap Screws of appropriate length must be used. Please see the Bill of Materials (BOM) lists included in this document, for the quantity and size of mounting screws required.
- Standard O-rings are used with this device, and are listed in the Bill of Materials (BOM) lists provided. When changing or replacing O-rings, take care to inspect the O-ring for nicks, scraps or cuts. If an O-ring is found to be damaged prior to or after installation, remove and replace the damaged O-ring.
- It is recommended that the hydraulic service to the cylinder assembly have proper filtration employed, to ensure proper functioning as well as product life for the cylinder assembly. Any debris in the hydraulic service can prevent the locking mechanism from properly locking when the piston is in full forward (extended) position. During servicing, ensure that no debris is left inside the cylinder body, as well as in the hydraulic service lines and/or fittings.
- During servicing, check the condition of the proximity sensor wires, and check for signal. If the sensor wires are damaged or if signal has been lost for either sensor, the affected sensor or sensors will need to be replaced.
- The cylinder is internally self-lubricated via the hydraulic service oil. Lubrication of the sliding core may be necessary.

INSTALLATION INSTRUCTIONS:

- If preload is required on the piston rod and sliding core (when shutting off on an opposing core face or wall), ensure the spacer disk provided has been properly adjusted to ensure the recommended preload is achieved.
- Insert the modified (adjusted) spacer disk into the cylinder assembly installation pocket in the mold plate.
- Insert the cylinder assembly into the installation pocket, and fasten the cylinder assembly to the mold plate using the mounting screws provided. Take care to use recommended torque settings.
- If the sliding core must be attached to the piston rod after the cylinder assembly has been attached to the mold plate, please connect the sliding core to the piston rod at this time.
- Attach all hydraulic service hoses and fittings to the cylinder assembly. Attached service hoses to the hydraulic service system or equipment. Ensure 870 PSI minimum hold pressure is available at all times.
- If proximity sensors are included and used with this device, ensure the sensors are connected to the desired monitoring equipment and/or to the injection molding machine. If different limit switches are used in place of the product's proximity sensors, make sure that those limit switches are installed and connected to the desired monitoring equipment and/or to the injection molding machine. For either method, it is important to ensure that the proximity sensors or limit switches are functioning and monitored properly. Note: Power (electrical service) is required to operate the proximity sensors.
- For cylinder sizes larger than the HLCP060 and HLCP100 sizes, a cap sensor bushing (with nut) and body sensor bushing (with nut) are used to retain the proximity sensors to the cylinder assembly. Ensure sufficient pocket clearance is present.
- Details 3.0 through 3.2 show the suggested plan view pocket installation. The suggested installation varies by cylinder assembly size, as different sizes use different quantities of mounting screws. See chart on following pages for all suggested dimensions and mounting screw thread size.
- Recommended torque values for assembly and mounting screws are shown in the BOM (Bill of Materials) for each HLCP cylinder size and stroke.

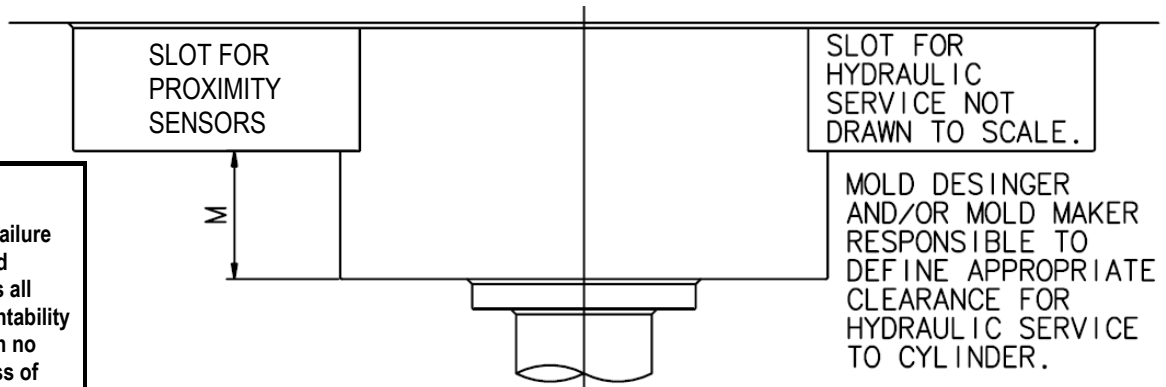
DETAIL 3.3: SUGGESTED POCKET DETAIL — SECTION VIEW A-A (ALL SIZES)



Important:

The suggested installation pocket details show two “slots” (please refer to Section B-B and the appropriate Plan View). The slot described for the proximity switch (signaling full forward position of the piston rod) is a minimum requirement but can be made larger if required. The slot shown for hydraulic service is only a representation, and the mold maker and/or mold designer is responsible to provide appropriate clearance for the actual hydraulic service (fittings, hoses, etc) that will be used with the intended mold and/or application.

DETAIL 3.4: SUGGESTED POCKET DETAIL — SECTION VIEW B-B (ALL SIZES)



NOTE:

IN DETAILS 3.3 — 3.4, WHERE SHOWN, DIMENSIONS ARE IN INCHES [MILLIMETERS]

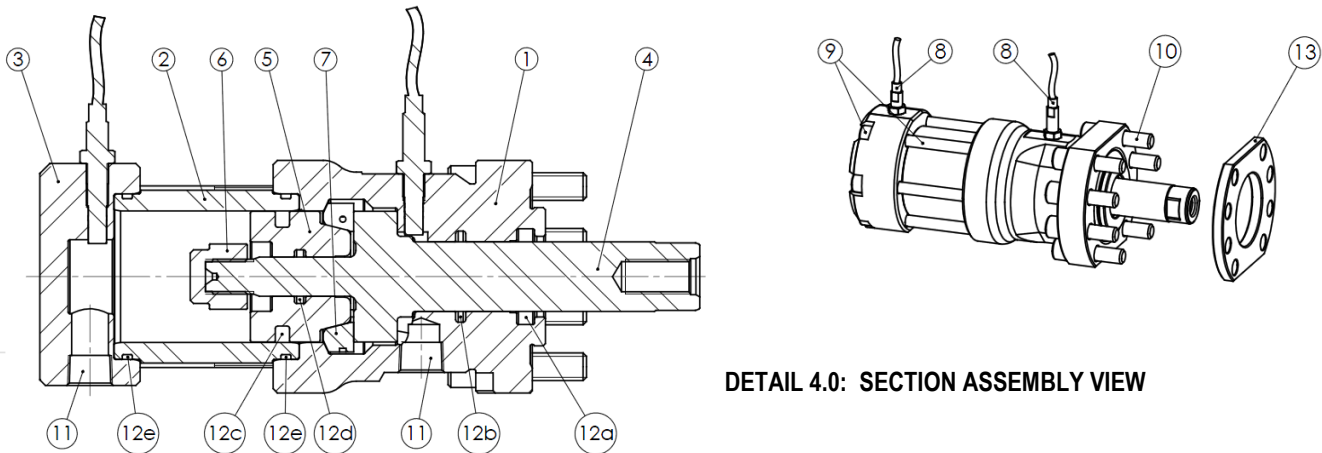
NOTICE:

DME shall not be liable for misuse or failure to follow the enclosed instructions and specifications. DME hereby disclaims all implied warranties, including merchantability and fitness for a particular purpose. In no event shall DME be responsible for loss of use, revenue or profit, or for incidental or consequential damages.

TABLE 3.0: INSTALLATION DIMENSION CHART — SUGGESTED POCKET DETAILS. FOR PISTON ROD THREAD SIZES, SEE PAGE 3.

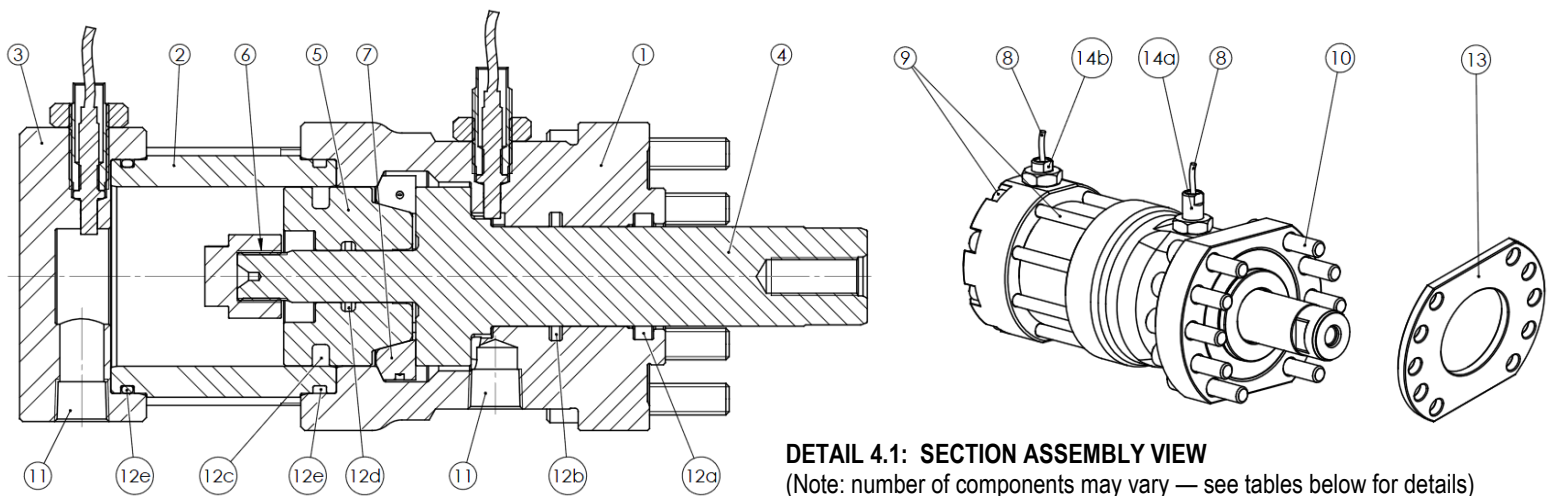
	[mm] [in]	ØA	ØB	ØC	E	H1	H2	H3	H4	G1	G2	G3	K	M	"T" Flange Mounting Screw Thread Size (and recommended torque)	
		MIN	SEE BELOW	+/- 0.03	MIN	+/- 0.03			MIN	+/- 0.03			MIN	MAX		
				+/- 0.001		+/- 0.001				+/- 0.001						
HLCP060 size	[mm] [in]	66.00 2.598	31.240 1.2299	+0.025/-0 +0.0010/-0	20.00 0.787	10.00 0.394	7.87 0.310	20.70 0.815		86.00 3.386	17.40 0.685	25.78 1.015		18.0 0.71	13.0 0.51	1/4-20 UNC Torque: 13 ft.lbs [17.5 Nm]
HLCP100 size	[mm] [in]	82.00 3.228	37.590 1.4799	+0.025/-0 +0.0010/-0	24.00 0.945	10.00 0.394	9.78 0.385	25.53 1.005		94.00 3.701	21.46 0.845	31.88 1.255		21.0 0.83	18.0 0.71	5/16-18 UNC Torque: 27 ft.lbs [36.4 Nm]
HLCP150 size	[mm] [in]	96.00 3.780	44.450 1.7500	+0.025/-0 +0.0010/-0	29.00 1.142	10.00 0.394	17.02 0.670	30.86 1.215		101.00 3.976	25.91 1.020	36.45 1.435	40.26 1.585	26.0 1.02	18.0 0.71	5/16-18 UNC Torque: 27 ft.lbs [36.4 Nm]
HLCP200 size	[mm] [in]	120.50 4.744	63.500 2.5000	+0.030/-0 +0.0012/-0	37.00 1.457	10.00 0.394	21.46 0.845	38.86 1.530		113.25 4.459	32.64 1.285	46.10 1.815	50.80 2.000	26.0 1.02	25.0 0.98	3/8-16 UNC Torque: 52 ft.lbs [70.2 Nm]
HLCP300 size	[mm] [in]	150.00 5.906	76.200 3.0000	+0.030/-0 +0.0012/-0	47.00 1.850	10.00 0.394	28.96 1.140	52.32 2.060		128.00 5.039	36.58 1.440	56.90 2.240	63.75 2.510	33.0 1.30	41.0 1.61	1/2-13 UNC Torque: 130 ft.lbs [175 Nm]
HLCP500 size	[mm] [in]	177.50 6.988	88.900 3.5000	+0.035/-0 +0.0014/-0	55.00 2.165	10.00 0.394	31.75 1.250	57.66 2.270		141.75 5.581	48.39 1.905	68.20 2.685	75.18 2.960	34.0 1.34	55.0 2.17	5/8-11 UNC Torque: 255 ft.lbs [344 Nm]
HLCP750 size	[mm] [in]	213.00 8.386	114.300 4.5000	+0.035/-0 +0.0014/-0	66.00 2.598	10.00 0.394	16.64 0.655	47.88 1.885	72.90 2.870	159.50 6.280	56.90 2.240	79.12 3.115	90.93 3.580	42.0 1.65	60.0 2.36	5/8-11 UNC Torque: 255 ft.lbs [344 Nm]

HYDRAULIC LOCKING CORE PULL CYLINDER ASSEMBLY — SECTION ASSEMBLY VIEWS



DETAIL 4.0: SECTION ASSEMBLY VIEW

Detail 4.0 applies to the HLCP060 and HLCP100 sizes only. Detail 4.1 applies to all other sizes.



DETAIL 4.1: SECTION ASSEMBLY VIEW

(Note: number of components may vary — see tables below for details)

HYDRAULIC LOCKING CORE PULL CYLINDER ASSEMBLY — BILL OF MATERIALS

TABLE 4.0: HLCP060-1000

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	HLCP060BODY	HLCP CYLINDER, BODY	1
2	HLCP0601000SL	HLCP CYLINDER, SLEEVE	1
3	HLCP060CAP	HLCP CYLINDER, CAP	1
4	HLCP0601000RD	HLCP CYLINDER, ROD	1
5	HLCP060PSTN	HLCP CYLINDER, PISTON	1
6	HLCP060PSTNBU	HLCP CYLINDER, PISTON BUSHING	1
7	HLCP060SEGM	HLCP CYLINDER, SEGMENT KIT	1
8	BHS006Y	BALLUF INDUCTIVE SENSOR M5X0,5 NPN	2
9	HLCP060ASCREW1	HLCP CYLINDER, ASSEMBLY SCREWS.	6
10	HLCP060MSCREW	HLCP CYLINDER, MOUNTING SCREWS. 1/4-20 UNC x 1.00 inches (Torque: 13 ft.lbs)	8
11	HLCP060OILCAP	HLCP CYLINDER, OIL CAPS	2
12	HLCP060-SEALS	HLCP CYLINDER, SEAL KIT	1
12a	WD2200160-Z201	EXCLUDER	1
12b	RSK000160-T46V	STEPSEAL	1
12c	PT0100300-T46V	GLYD RING	1
12d	S35P9X12.3X2.6	INNER PISTON O-RING	1
12e	OR1603510-VC009	SLEEVE O-RING	2
13	HLCP060SPACER	HLCP CYLINDER, SPACER PLATE	1
14a	NOT NEEDED IN THIS SIZE		
14b			

TABLE 4.1: HLCP060-2000

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	HLCP060BODY	HLCP CYLINDER, BODY	1
2	HLCP0602000SL	HLCP CYLINDER, SLEEVE	1
3	HLCP060CAP	HLCP CYLINDER, CAP	1
4	HLCP0602000RD	HLCP CYLINDER, ROD	1
5	HLCP060PSTN	HLCP CYLINDER, PISTON	1
6	HLCP060PSTNBU	HLCP CYLINDER, PISTON BUSHING	1
7	HLCP060SEGM	HLCP CYLINDER, SEGMENT KIT	1
8	BHS006Y	BALLUF INDUCTIVE SENSOR M5X0,5 NPN	2
9	HLCP060ASCREW2	HLCP CYLINDER, ASSEMBLY SCREWS.	6
10	HLCP060MSCREW	HLCP CYLINDER, MOUNTING SCREWS. 1/4-20 UNC x 1.00 inches (Torque: 13 ft.lbs)	8
11	HLCP060OILCAP	HLCP CYLINDER, OIL CAPS	2
12	HLCP060-SEALS	HLCP CYLINDER, SEAL KIT	1
12a	WD2200160-Z201	EXCLUDER	1
12b	RSK000160-T46V	STEPSEAL	1
12c	PT0100300-T46V	GLYD RING	1
12d	S35P9X12.3X2.6	INNER PISTON O-RING	1
12e	OR1603510-VC009	SLEEVE O-RING	2
13	HLCP060SPACER	HLCP CYLINDER, SPACER PLATE	1
14a	NOT NEEDED IN THIS SIZE		
14b			

TABLE 4.2: HLCP100-1250

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	HLCP100BODY	HLCP CYLINDER, BODY	1
2	HLCP1001250SL	HLCP CYLINDER, SLEEVE	1
3	HLCP100CAP	HLCP CYLINDER, CAP	1
4	HLCP1001250RD	HLCP CYLINDER, ROD	1
5	HLCP100PSTN	HLCP CYLINDER, PISTON	1
6	HLCP100PSTNBU	HLCP CYLINDER, PISTON BUSHING	1
7	HLCP100SEGM	HLCP CYLINDER, SEGMENT KIT	1
8	BHS006Y	BALLUF INDUCTIVE SENSOR M5X0,5 NPN	2
9	HLCP100ASCREW1	HLCP CYLINDER, ASSEMBLY SCREWS. M6x60 mm (Torque: 12.6 ft.lbs)	6
10	HLCP100MSCREW	HLCP CYLINDER, MOUNTING SCREWS. 5/16-18 UNC x 1.25 inches (Torque: 27 ft.lbs)	8
11	HLCP100OILCAP	HLCP CYLINDER, OIL CAPS	2
12	HLCP100-SEALS	HLCP CYLINDER, SEAL KIT	1
12a	WD2200200-Z201	EXCLUDER	1
12b	RSK100200-T46V	STEPSEAL	1
12c	PT0100360-T46V	GLYD RING	1
12d	S35P10X14.06X3.2	INNER PISTON O-RING	1
12e	OR2504200-VC009	SLEEVE O-RING	2
13	HLCP100SPACER	HLCP CYLINDER, SPACER PLATE	1
14a	NOT NEEDED IN THIS SIZE		
14b			

TABLE 4.3: HLCP100-2500

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	HLCP100BODY	HLCP CYLINDER, BODY	1
2	HLCP1002500SL	HLCP CYLINDER, SLEEVE	1
3	HLCP100CAP	HLCP CYLINDER, CAP	1
4	HLCP1002500RD	HLCP CYLINDER, ROD	1
5	HLCP100PSTN	HLCP CYLINDER, PISTON	1
6	HLCP100PSTNBU	HLCP CYLINDER, PISTON BUSHING	1
7	HLCP100SEGM	HLCP CYLINDER, SEGMENT KIT	1
8	BHS006Y	BALLUF INDUCTIVE SENSOR M5X0,5 NPN	2
9	HLCP100ASCREW2	HLCP CYLINDER, ASSEMBLY SCREWS. M6x90 mm (Torque: 12.6 ft.lbs)	6
10	HLCP100MSCREW	HLCP CYLINDER, MOUNTING SCREWS. 5/16-18 UNC x 1.25 inches (Torque: 27 ft.lbs)	8
11	HLCP100OILCAP	HLCP CYLINDER, OIL CAPS	2
12	HLCP100-SEALS	HLCP CYLINDER, SEAL KIT	1
12a	WD2200200-Z201	EXCLUDER	1
12b	RSK100200-T46V	STEPSEAL	1
12c	PT0100300-T46V	PT0100360-T46V	1
12d	S35P10X14.06X3.2	INNER PISTON O-RING	1
12e	OR2504200-VC009	SLEEVE O-RING	2
13	HLCP100SPACER	HLCP CYLINDER, SPACER PLATE	1
14a	NOT NEEDED IN THIS SIZE		
14b			

HYDRAULIC LOCKING CORE PULL CYLINDER ASSEMBLY — BILL OF MATERIALS

TABLE 4.4: HLCP150-1375

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	HLCP150BODY	HLCP CYLINDER, BODY	1
2	HLCP1501375SL	HLCP CYLINDER, SLEEVE	1
3	HLCP150CAP	HLCP CYLINDER, CAP	1
4	HLCP1501375RD	HLCP CYLINDER, ROD	1
5	HLCP150PSTN	HLCP CYLINDER, PISTON	1
6	HLCP150PSTNBU	HLCP CYLINDER, PISTON BUSHING	1
7	HLCP150SEGM	HLCP CYLINDER, SEGMENT KIT	1
8	BHS006Y	BALLUF INDUCTIVE SENSOR M5X0,5 NPN	2
9	HLCP150ASCREW1	HLCP CYLINDER, ASSEMBLY SCREWS. M6x80 mm (Torque: 12.6 ft.lbs)	8
10	HLCP150MSCREW	HLCP CYLINDER, MOUNTING SCREWS. 5/16-18 UNC x 1.50 inches (Torque: 27 ft.lbs)	10
11	HLCP150OILCAP	HLCP CYLINDER, OIL CAPS	2
12	HLCP150-SEALS	HLCP CYLINDER, SEAL KIT	1
12a	WE3100250-T46V	EXCLUDER	1
12b	RSK100250-T46V	STEPSEAL	1
12c	PT0200450-T46V	GLYD RING	1
12d	S35P13X17.5X3.6	INNER PISTON O-RING	1
12e	OR2505500-VC009	SLEEVE O-RING	2
13	HLCP150SPACER	HLCP CYLINDER, SPACER PLATE	1
14a	HLCP150BSEBU	BODY SENSOR BUSHING 27MM, WITH NUT	1
14b	HLCP150CSEBU	CAP SENSOR BUSHING 27MM, WITH NUT	1

TABLE 4.5: HLCP150-2750

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	HLCP150BODY	HLCP CYLINDER, BODY	1
2	HLCP1502750SL	HLCP CYLINDER, SLEEVE	1
3	HLCP150CAP	HLCP CYLINDER, CAP	1
4	HLCP1502750RD	HLCP CYLINDER, ROD	1
5	HLCP150PSTN	HLCP CYLINDER, PISTON	1
6	HLCP150PSTNBU	HLCP CYLINDER, PISTON BUSHING	1
7	HLCP150SEGM	HLCP CYLINDER, SEGMENT KIT	1
8	BHS006Y	BALLUF INDUCTIVE SENSOR M5X0,5 NPN	2
9	HLCP150ASCREW2	HLCP CYLINDER, ASSEMBLY SCREWS. M6x110 mm (Torque: 12.6 ft.lbs)	8
10	HLCP150MSCREW	HLCP CYLINDER, MOUNTING SCREWS. 5/16-18 UNC x 1.50 inches (Torque: 27 ft.lbs)	10
11	HLCP150OILCAP	HLCP CYLINDER, OIL CAPS	2
12	HLCP150-SEALS	HLCP CYLINDER, SEAL KIT	1
12a	WE3100250-T46V	EXCLUDER	1
12b	RSK100250-T46V	STEPSEAL	1
12c	PT0200450-T46V	PT0100360-T46V	1
12d	S35P13X17.5X3.6	INNER PISTON O-RING	1
12e	OR2505500-VC009	SLEEVE O-RING	2
13	HLCP150SPACER	HLCP CYLINDER, SPACER PLATE	1
14a	HLCP150BSEBU	BODY SENSOR BUSHING 27MM, WITH NUT	1
14b	HLCP150CSEBU	CAP SENSOR BUSHING 27MM, WITH NUT	1

TABLE 4.6: HLCP200-1750

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	HLCP200BODY	HLCP CYLINDER, BODY	1
2	HLCP2001750SL	HLCP CYLINDER, SLEEVE	1
3	HLCP200CAP	HLCP CYLINDER, CAP	1
4	HLCP2001750RD	HLCP CYLINDER, ROD	1
5	HLCP200PSTN	HLCP CYLINDER, PISTON	1
6	HLCP200PSTNBU	HLCP CYLINDER, PISTON BUSHING	1
7	HLCP200SEGM	HLCP CYLINDER, SEGMENT KIT	1
8	BHS006Y	BALLUF INDUCTIVE SENSOR M5X0,5 NPN	2
9	HLCP200ASCREW1	HLCP CYLINDER, ASSEMBLY SCREWS. M8x100 mm (Torque: 29.5 ft.lbs)	8
10	HLCP200MSCREW	HLCP CYLINDER, MOUNTING SCREWS. 3/8-16 UNC x 1.75 inches (Torque: 52 ft.lbs)	10
11	HLCP200OILCAP	HLCP CYLINDER, OIL CAPS	2
12	HLCP200-SEALS	HLCP CYLINDER, SEAL KIT	1
12a	WE3100320-T46V	EXCLUDER	1
12b	RSK100320-T46V	STEPSEAL	1
12c	PT0200560-T46V	GLYD RING	1
12d	S35P16X22.1X4.7	INNER PISTON O-RING	1
12e	OR3007000-VC009	SLEEVE O-RING	2
13	HLCP200SPACER	HLCP CYLINDER, SPACER PLATE	1
14a	HLCP200BSEBU	BODY SENSOR BUSHING 27MM, WITH NUT	1
14b	HLCP200CSEBU	CAP SENSOR BUSHING 27MM, WITH NUT	1

TABLE 4.7: HLCP200-3500

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	HLCP200BODY	HLCP CYLINDER, BODY	1
2	HLCP2003500SL	HLCP CYLINDER, SLEEVE	1
3	HLCP200CAP	HLCP CYLINDER, CAP	1
4	HLCP2003500RD	HLCP CYLINDER, ROD	1
5	HLCP200PSTN	HLCP CYLINDER, PISTON	1
6	HLCP200PSTNBU	HLCP CYLINDER, PISTON BUSHING	1
7	HLCP200SEGM	HLCP CYLINDER, SEGMENT KIT	1
8	BHS006Y	BALLUF INDUCTIVE SENSOR M5X0,5 NPN	2
9	HLCP200ASCREW2	HLCP CYLINDER, ASSEMBLY SCREWS. M8x140 mm (Torque: 29.5 ft.lbs)	8
10	HLCP200MSCREW	HLCP CYLINDER, MOUNTING SCREWS. 3/8-16 UNC x 1.75 inches (Torque: 52 ft.lbs)	10
11	HLCP200OILCAP	HLCP CYLINDER, OIL CAPS	2
12	HLCP200-SEALS	HLCP CYLINDER, SEAL KIT	1
12a	WE3100320-T46V	EXCLUDER	1
12b	RSK100320-T46V	STEPSEAL	1
12c	PT0200560-T46V	PT0100360-T46V	1
12d	S35P16X22.1X4.7	INNER PISTON O-RING	1
12e	OR3007000-VC009	SLEEVE O-RING	2
13	HLCP200SPACER	HLCP CYLINDER, SPACER PLATE	1
14a	HLCP200BSEBU	BODY SENSOR BUSHING 27MM, WITH NUT	1
14b	HLCP200CSEBU	CAP SENSOR BUSHING 27MM, WITH NUT	1

HYDRAULIC LOCKING CORE PULL CYLINDER ASSEMBLY — BILL OF MATERIALS

TABLE 4.8: HLCP300-2000

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	HLCP300BODY	HLCP CYLINDER, BODY	1
2	HLCP3002000SL	HLCP CYLINDER, SLEEVE	1
3	HLCP300CAP	HLCP CYLINDER, CAP	1
4	HLCP3002000RD	HLCP CYLINDER, ROD	1
5	HLCP300PSTN	HLCP CYLINDER, PISTON	1
6	HLCP300PSTNBU	HLCP CYLINDER, PISTON BUSHING	1
7	HLCP300SEGM	HLCP CYLINDER, SEGMENT KIT	1
8	BHS006Y	BALLUF INDUCTIVE SENSOR M5X0,5 NPN	2
9	HLCP300ASCREW1	HLCP CYLINDER, ASSEMBLY SCREWS. M10x110 mm (Torque: 58.3 ft.lbs)	8
10	HLCP300MSCREW	HLCP CYLINDER, MOUNTING SCREWS. 1/2-13 UNC x 2.25 inches (Torque: 130 ft.lbs)	10
11	HLCP300OILCAP	HLCP CYLINDER, OIL CAPS	2
12	HLCP300-SEALS	HLCP CYLINDER, SEAL KIT	1
12a	WE3100420-T46V	EXCLUDER	1
12b	RSK200420-T46V	STEPSEAL	1
12c	PT0200710-T46V	GLYD RING	1
12d	S35P20X26.85X5.4	INNER PISTON O-RING	1
12e	OR4009000-VC009	SLEEVE O-RING	2
13	HLCP300SPACER	HLCP CYLINDER, SPACER PLATE	1
14a	HLCP300BSEBU	BODY SENSOR BUSHING 27MM, WITH NUT	1
14b	HLCP300CSEBU	CAP SENSOR BUSHING 45MM, WITH NUT	1

TABLE 4.9: HLCP300-4000

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	HLCP300BODY	HLCP CYLINDER, BODY	1
2	HLCP3004000SL	HLCP CYLINDER, SLEEVE	1
3	HLCP300CAP	HLCP CYLINDER, CAP	1
4	HLCP3004000RD	HLCP CYLINDER, ROD	1
5	HLCP300PSTN	HLCP CYLINDER, PISTON	1
6	HLCP300PSTNBU	HLCP CYLINDER, PISTON BUSHING	1
7	HLCP300SEGM	HLCP CYLINDER, SEGMENT KIT	1
8	BHS006Y	BALLUF INDUCTIVE SENSOR M5X0,5 NPN	2
9	HLCP300ASCREW2	HLCP CYLINDER, ASSEMBLY SCREWS. M10x160 mm (Torque: 58.3 ft.lbs)	8
10	HLCP300MSCREW	HLCP CYLINDER, MOUNTING SCREWS. 1/2-13 UNC x 2.25 inches (Torque: 130 ft.lbs)	10
11	HLCP300OILCAP	HLCP CYLINDER, OIL CAPS	2
12	HLCP300-SEALS	HLCP CYLINDER, SEAL KIT	1
12a	WE3100420-T46V	EXCLUDER	1
12b	RSK200420-T46V	STEPSEAL	1
12c	PT0200710-T46V	PT0100360-T46V	1
12d	S35P20X26.85X5.4	INNER PISTON O-RING	1
12e	OR4009000-VC009	SLEEVE O-RING	2
13	HLCP300SPACER	HLCP CYLINDER, SPACER PLATE	1
14a	HLCP300BSEBU	BODY SENSOR BUSHING 27MM, WITH NUT	1
14b	HLCP300CSEBU	CAP SENSOR BUSHING 45MM, WITH NUT	1

TABLE 4.10: HLCP500-2500

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	HLCP500BODY	HLCP CYLINDER, BODY	1
2	HLCP5002500SL	HLCP CYLINDER, SLEEVE	1
3	HLCP500CAP	HLCP CYLINDER, CAP	1
4	HLCP5002500RD	HLCP CYLINDER, ROD	1
5	HLCP500PSTN	HLCP CYLINDER, PISTON	1
6	HLCP500PSTNBU	HLCP CYLINDER, PISTON BUSHING	1
7	HLCP500SEGM	HLCP CYLINDER, SEGMENT KIT	1
8	BHS006Y	BALLUF INDUCTIVE SENSOR M5X0,5 NPN	2
9	HLCP500ASCREW1	HLCP CYLINDER, ASSEMBLY SCREWS. M10x140 mm (Torque: 58.3 ft.lbs)	10
10	HLCP500MSCREW	HLCP CYLINDER, MOUNTING SCREWS. 5/8-11 UNC x 2.50 inches (Torque: 255 ft.lbs)	10
11	HLCP500OILCAP	HLCP CYLINDER, OIL CAPS	2
12	HLCP500-SEALS	HLCP CYLINDER, SEAL KIT	1
12a	WE3100500-T46V	EXCLUDER	1
12b	RSK200500-T46V	STEPSEAL	1
12c	PT0300840-T46V	GLYD RING	1
12d	S35P24X30.8X5.4	INNER PISTON O-RING	1
12e	OR4510600-VC009	SLEEVE O-RING	2
13	HLCP500SPACER	HLCP CYLINDER, SPACER PLATE	1
14a	HLCP500BSEBU	BODY SENSOR BUSHING 27MM, WITH NUT	1
14b	HLCP500CSEBU	CAP SENSOR BUSHING 45MM, WITH NUT	1

TABLE 4.11: HLCP500-5000

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	HLCP500BODY	HLCP CYLINDER, BODY	1
2	HLCP5005000SL	HLCP CYLINDER, SLEEVE	1
3	HLCP500CAP	HLCP CYLINDER, CAP	1
4	HLCP5005000RD	HLCP CYLINDER, ROD	1
5	HLCP500PSTN	HLCP CYLINDER, PISTON	1
6	HLCP500PSTNBU	HLCP CYLINDER, PISTON BUSHING	1
7	HLCP500SEGM	HLCP CYLINDER, SEGMENT KIT	1
8	BHS006Y	BALLUF INDUCTIVE SENSOR M5X0,5 NPN	2
9	HLCP500ASCREW2	HLCP CYLINDER, ASSEMBLY SCREWS. M10x200 mm (Torque: 58.3 ft.lbs)	10
10	HLCP500MSCREW	HLCP CYLINDER, MOUNTING SCREWS. 5/8-11 UNC x 2.50 inches (Torque: 255 ft.lbs)	10
11	HLCP500OILCAP	HLCP CYLINDER, OIL CAPS	2
12	HLCP500-SEALS	HLCP CYLINDER, SEAL KIT	1
12a	WE3100500-T46V	EXCLUDER	1
12b	RSK200500-T46V	STEPSEAL	1
12c	PT0300840-T46V	PT0100360-T46V	1
12d	S35P24X30.8X5.4	INNER PISTON O-RING	1
12e	OR4510600-VC009	SLEEVE O-RING	2
13	HLCP500SPACER	HLCP CYLINDER, SPACER PLATE	1
14a	HLCP500BSEBU	BODY SENSOR BUSHING 27MM, WITH NUT	1
14b	HLCP500CSEBU	CAP SENSOR BUSHING 45MM, WITH NUT	1

HYDRAULIC LOCKING CORE PULL CYLINDER ASSEMBLY — BILL OF MATERIALS

TABLE 4.12: HLCP750-3000

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	HLCP750BODY	HLCP CYLINDER, BODY	1
2	HLCP7503000SL	HLCP CYLINDER, SLEEVE	1
3	HLCP750CAP	HLCP CYLINDER, CAP	1
4	HLCP7503000RD	HLCP CYLINDER, ROD	1
5	HLCP750PSTN	HLCP CYLINDER, PISTON	1
6	HLCP750PSTNBU	HLCP CYLINDER, PISTON BUSHING	1
7	HLCP750SEGM	HLCP CYLINDER, SEGMENT KIT	1
8	BHS006Y	BALLUF INDUCTIVE SENSOR M5X0,5 NPN	2
9	HLCP750ASCREW1	HLCP CYLINDER, ASSEMBLY SCREWS. M12x160 mm (Torque: 100.3 ft.lbs)	10
10	HLCP750MSCREW	HLCP CYLINDER, MOUNTING SCREWS. 5/8-11 UNC x 3.00 inches (Torque: 255 ft.lbs)	12
11	HLCP750OILCAP	HLCP CYLINDER, OIL CAPS	2
12	HLCP750-SEALS	HLCP CYLINDER, SEAL KIT	1
12a	WE3100600-T46V	EXCLUDER	1
12b	RSK200600-T46V	STEPSEAL	1
12c	PT0301050-T46V	GLYD RING	1
12d	RT0100300-T46V	INNER PISTON O-RING	1
12e	OR5013000-VC009	SLEEVE O-RING	2
13	HLCP750SPACER	HLCP CYLINDER, SPACER PLATE	1
14a	HLCP750BSEBU	BODY SENSOR BUSHING 45MM, WITH NUT	1
14b	HLCP750CSEBU	CAP SENSOR BUSHING 65MM, WITH NUT	1

TABLE 4.13: HLCP750-6000

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	HLCP750BODY	HLCP CYLINDER, BODY	1
2	HLCP7506000SL	HLCP CYLINDER, SLEEVE	1
3	HLCP750CAP	HLCP CYLINDER, CAP	1
4	HLCP7506000RD	HLCP CYLINDER, ROD	1
5	HLCP750PSTN	HLCP CYLINDER, PISTON	1
6	HLCP750PSTNBU	HLCP CYLINDER, PISTON BUSHING	1
7	HLCP750SEGM	HLCP CYLINDER, SEGMENT KIT	1
8	BHS006Y	BALLUF INDUCTIVE SENSOR M5X0,5 NPN	2
9	HLCP750ASCREW2	HLCP CYLINDER, ASSEMBLY SCREWS. M12x240 mm (Torque: 100.3 ft.lbs)	10
10	HLCP750MSCREW	HLCP CYLINDER, MOUNTING SCREWS. 5/8-11 UNC x 3.00 inches (Torque: 255 ft.lbs)	12
11	HLCP750OILCAP	HLCP CYLINDER, OIL CAPS	2
12	HLCP750-SEALS	HLCP CYLINDER, SEAL KIT	1
12a	WE3100600-T46V	EXCLUDER	1
12b	RSK200600-T46V	STEPSEAL	1
12c	PT0301050-T46V	PT0100360-T46V	1
12d	RT0100300-T46V	INNER PISTON O-RING	1
12e	OR5013000-VC009	SLEEVE O-RING	2
13	HLCP750SPACER	HLCP CYLINDER, SPACER PLATE	1
14a	HLCP750BSEBU	BODY SENSOR BUSHING 45MM, WITH NUT	1
14b	HLCP750CSEBU	CAP SENSOR BUSHING 65MM, WITH NUT	1

ORDERING INFORMATION:

- Before placing an order, make sure you have defined the necessary HLCP assembly size and stroke length.
- Contact DME Customer Service and specify the HLCP cylinder assembly number. If a special stroke length is required, please specify the required stroke to the DME Customer Service representative.
- Specify NPN or PNP type. **Remember:** the HLCP cylinder assembly is delivered standard with NPN sensors are installed. PNP is optional and if PNP is required, it must be specified at time of order. PNP type, Normally Open proximity sensor — part number = BHS009U
- If you intend to use external limit switches in your mold, and do not intend to use the proximity sensors, threaded plugs (to replace the sensors) are available upon request. The plugs replace the sensors. When using a sensor bushing, the plug is installed into the sensor bushing in the same manner as installing a sensor into a sensor bushing (see page 3 for detail). Install plug assemblies into cylinder until each assembly bottoms out in the threaded sensor holes in the cylinder assembly. Then apply suggested torque. Part numbers and suggested torque setting is given below for the threaded plugs:

	SIZE	060	100	150	200	300	500	750
PART No.		HLCP060PLUG	HLCP100PLUG	HLCP150PLUG	HLCP200PLUG	HLCP300PLUG	HLCP500PLUG	HLCP750PLUG
TORQUE	[Nm]	1.0 Nm	1.0 Nm	17.0 Nm	17.0 Nm	17.0 Nm	17.0 Nm	17.0 Nm
	[ft.lbs]	8.9 in.lbs	8.9 in.lbs	12.6 ft.lbs	12.6 ft.lbs	12.6 ft.lbs	12.6 ft.lbs	12.6 ft.lbs

- Remember that hydraulic fittings are not supplied by DME, and are to be supplied by the mold maker and/or mold maker. Threaded connections (for hydraulic fittings) on the HLCP cylinder assembly are NPTF, however other hydraulic fitting thread types can be supplied upon special request.
- It is recommended that spare parts be ordered along with the system assembly order. Suggested spare parts include the Seal Kit, Spacer Plate, Proximity Sensors (NPN or PNP types) and Sensor bushings (Body and Cap types).



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