

DURAPAC
ENGINEERED FOR RELIABILITY

Instruction Manual

Low Profile Hydraulic Hexagon Wrenches
Model – LPC Series
(Serial No. 2004XXXX & above)



Maximum Operating Pressure – 700* bar

*Some smaller sized cassettes have a lower pressure. Refer to the catalogue or tool engraving



This is a safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid injury or death

1.0 Product Information

DURAPAC – Torque Wrenches are engineered to meet Industrial Standards for Performance and Safety. The LPC Series low profile hydraulic hexagon torque wrenches are an essential tool for limited clearance applications.

The versatile LPC Series support an extensive range of interchangeable hexagon ratchet cassettes that deliver a torque range of 232 to 44,593 Newton Metres.

- All models are supplied with a calibration certificate of accuracy, traceable to international standards
- 360° swivel with screw couplings
- High strength titanium aluminium alloy body
- Accuracy within +/- 3%
- Wide range of metric and imperial interchangeable hexagon ratchet cassettes available
- Reducer inserts are available in metric and imperial sizes
- Laser engraved hexagon ratchet cassettes show model number, serial number and maximum capacity

Special skill, knowledge and training may be required for a specific task and the product may not be suitable for all jobs. The user must ultimately make the decision regarding suitability of the product for any given task and assume the responsibility of safety for all in the work area. Contact a Durapac representative if you are unsure of your torque wrenches' suitability for a particular application.

2.0 Receiving Instructions

It is recommended prior to use that an inspection be done by qualified personnel and that any missing or damaged parts, decals, warning/safety labels or signs are replaced with Durapac authorised replacement parts only. Any torque wrench that appears to be damaged in any way, is worn, leaking or operates abnormally should be removed from service immediately until such time as repairs can be made. Any torque wrench that has been or suspected to have been subject to a shock load should be removed from service immediately until inspected by a Durapac authorised service centre. Owners and operators of this equipment should be aware that the use and subsequent repair of this equipment may require specialised training and knowledge.

3.0 Safety

Save these instructions. For your safety, read and understand the information contained within. The owner and operator should understand this product and safe operating procedures before attempting to use this product. Instructions and safety information should be conveyed in the operator's native language before use of this product is authorised. Make certain that the operator thoroughly understands the inherent dangers associated with the use and misuse of the product. If any doubt exists as to the safe and proper use of this product as outlined in this factory authorised manual, remove from service immediately.

**DANGER:**

- To avoid personal injury keep hands and feet away from work area during operation
- **Do NOT** handle pressurised hoses. Escaping oil under pressure can penetrate the skin causing serious injury. If oil is injected under the skin, see a doctor immediately

**WARNING:**

- The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Install pressure gauges in the system to monitor operating pressure. It is your window to what is happening in the system
- Always wear appropriate *personal protective equipment (PPE)* when operating hydraulic equipment. The operator must take precaution against injury due to failure of the tool or work piece(s)
- **Do NOT** hold or stand directly in line with any hydraulic connections while pressurising
- **Do NOT** attempt to disconnect hydraulic connections under pressure. Release all line pressure before disconnecting hoses
- All personnel must be clear before lowering load or depressurising the system
- **Do NOT** attempt to lift a load weighing more than the capacity of the cylinder

**IMPORTANT:**

- If at any stage, the safety related decals become hard to read, these must be replaced
- Minimum age of the operator must be 18 years. The operator must have read and understood all instructions, safety issues, cautions and warnings before starting to operate the equipment. The operator is responsible for this activity towards other persons
- **Do NOT** lift hydraulic equipment by the hoses or couplers. Use the carrying handle or other means of safe transport
- Hydraulic equipment must only be serviced by a qualified hydraulic technician. For repair service, contact the Durapac authorised service centre in your area. To protect your warranty, use only high-quality hydraulic oil

**CAUTION:**

- **KEEP HYDRAULIC EQUIPMENT AWAY FROM FLAMES AND HEAT.** Hydraulic fluid can ignite and burn. Excessive heat will soften packings and seals, resulting in fluid leaks. Heat also weakens hose materials and packings. For optimum performance do not expose equipment to temperatures of 65°C (150°F) or higher. Protect all equipment from weld spatter
- No alteration should be made to this device

3.1 Torque Wrenches

- **Do** use a gauge or other load measuring instrument to verify load
- **Do NOT** exceed the rated capacity of the torque wrench or any equipment in the system. Burst hazard exists if connection pressure exceeds rated pressure

- **Do NOT** operate the system with bent or damaged couplers or damaged threads
- **Do NOT** subject the torque wrench and its components to shock loads
- Use only Durapac approved accessories and components
- **Do NOT** remove the shroud from the hydraulic torque wrench
- **Do NOT** adjust the hydraulic torque wrench safety relief valve located inside the swivel couplings
- The incorrect system connection may cause failure and injury. Before connection, make sure the swivel couplings have been cleaned. After application, return the dust caps to the swivel couplings
- Use only high-quality sockets that meet the relevant ISO, DIN or ASME Standards. **Do NOT** use the wrong sized sockets
- Torque wrenches should be stored where protected from the elements, abrasive dust, and damage. These devices may be stored in virtually any position
- **Never** pressurize uncoupled couplers. Use only hydraulic equipment in a coupled system

3.2 Hydraulic Hoses & Fluid Transmission Lines

- Avoid short runs of straight-line tubing. Straight line runs do not provide for expansion and contraction due to pressure and/or temperature changes
- Reduce stress in tube lines. Long tubing runs should be supported by brackets or clips. Before operating the power unit, connections should be tightened securely and leak-free. Over tightening can cause premature thread failure or high-pressure fittings to burst
- Should a hydraulic hose ever rupture, burst or need to be disconnected, immediately shut off the power unit and release all pressure. Never attempt to grasp a leaking pressurised hose with your hands. The force of escaping hydraulic fluid can inflict injury
- **Do NOT** subject the hose to potential hazard such as fire, sharp objects, extreme heat or cold or heavy impact
- **Do NOT** allow the hose to kink, twist, curl, crush, cut or bend so tightly that the fluid flow within the hose is blocked or reduced. Periodically inspect the hose for wear
- Hose material and coupler seals must be compatible with the hydraulic fluid used. Hoses also must not come in contact with corrosive materials such as battery acid, creosote-impregnated objects and wet paint. Never paint a coupler or hose

FAILURE TO HEED THESE WARNINGS MAY RESULT IN PERSONAL INJURY AS WELL AS PROPERTY DAMAGE.

4.0 Installation

⚠ IMPORTANT: Always secure threaded port connections with high grade, non-hardening pipe thread sealant. Teflon tape can be used if only one layer of tape is used and it is applied carefully, two threads back, to prevent the tape from being introduced into hydraulic system, which could cause jamming of precision-fit parts

4.1 Familiarise yourself with the specifications and illustrations in this owner's manual. Know your torque wrench, its limitations and how it operates before attempting to use. If in doubt, contact a Durapac representative.

4.2 Make hydraulic connections – Ensure the advance line of the power unit is connected to the “A” port of the tool and the retract line of the power unit is connected to the “B” port of the tool.

⚠ IMPORTANT: Fully hand-tighten all couplers. Loose coupler connections will block the flow of oil between the power unit and the cylinder

⚠ The tools are fitted with a safety pressure relief valve in the coupling swivel assembly which will bleed to atmosphere if the retract hose is not correctly connected, or if the hoses are not correctly installed

4.3 Remove air from the system – Position the torque wrench so that the piston rod is pointed down and the wrench is lower than the power unit. Advance and retract the cylinder several times, avoiding pressure build-up. Air removal is complete when the cylinder motion is smooth.

5.0 Operation

5.1 Connecting the Tool

The wrench and power unit are connected by a 700 bar operating pressure, twin-line hose assembly. Each end of the hose will have one male and one female connector to ensure proper interconnection between power unit and wrench.

5.1.1 Ensure the connectors are fully engaged and screwed snugly and completely together

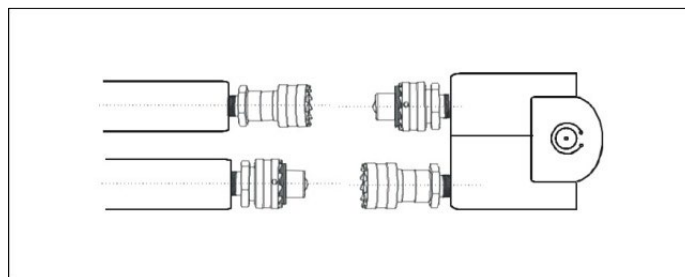


Figure 1 – Connecting the Tool

5.2 Connecting the Body with the Low-Profile Cassette

The low clearance ratcheting cassette is inserted and removed from the body as follows:

- 5.2.1 The hook formed by the cassettes drive plates is inserted around the fixed pin of the body and the cassette is swung down to rest along the base of the cylinder. At this point, the link pin holes of the body and cassette will align.
- 5.2.2 Insert the link pin to secure.

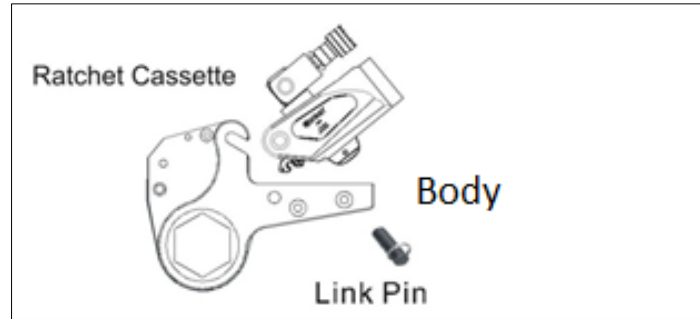


Figure 2 –Connecting the Body with the Low-Profile Cassette

5.3 Low Profile Wrench Positions

The position of the tool relative to the nut determines whether the action will tighten or loosen the nut. The power stroke of the piston assembly will always turn the ratchet hex toward the shroud.

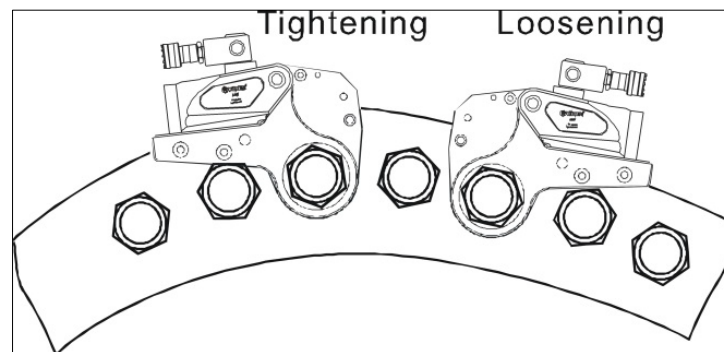


Figure 3 – Low Profile Wrench Positions

5.4 Setting the Torque

After determining the desired torque, refer to the torque conversion table contained in Section 8.0 to determine the pressure that is necessary to achieve that torque.

- 5.4.1 Connect the tool to the power supply and turn the power unit on.
- 5.4.2 Depress the advance remote-control button. The pressure will be shown on the gauge.
- 5.4.3 Adjust the pressure by first loosening the nut that locks the pressure adjustment handle and then rotate the handle clockwise to increase the pressure and counterclockwise to decrease the pressure. When decreasing pressure, always lower the pressure below the desired point and then bring the pressure gauge back up to the desired pressure.
- 5.4.4 When the desired pressure is reached, retighten the lock nut and cycle the tool again to confirm that the desired pressure setting has been obtained.

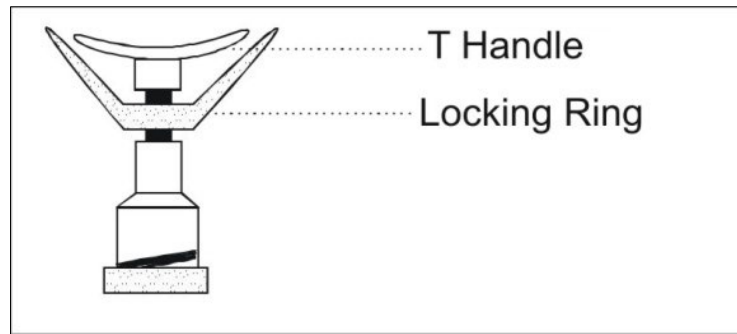


Figure 4 – Setting the Torque

5.5 Operating the Wrench

- 5.5.1 Place the ratchet cassette on the nut. Make certain it is the correct size for the nut and that the nut is fully engaged.
 - 5.5.2 Position the reaction surface against an adjacent nut, flange or solid system component. Make certain there is clearance for the hoses, swivel and inlets. Do not allow the tool to react against the hoses, swivels or inlets.
 - 5.5.3 After having turned the power unit on and pre-setting the pressure for the correct torque, depress the remote-control advance button to advance the piston assembly. If the notch in the piston rod did not engage the retract pin in the cassette, it will engage the pin automatically during the first advance stroke.
 - 5.5.4 When the low-profile cassette is connected to the housing and the wrench is started, the reaction surface of the wrench will move against the contact point and the nut will begin to turn. Once the piston reaches the end of its stroke, release the remote-control advance button to retract the piston.
 - 5.5.5 Continue this cycling operation of advance and retract until the nut is no longer turning and the power unit gauge reaches the preset pressure. The piston rod will retract when the advance button is released. Under normal conditions an audible “click” will be heard as the tool resets itself.
 - 5.5.6 Continue to cycle the tool until it stalls and the preset torque has been attained.
 - 5.5.7 Once the nut stops rotating, cycle the tool one last time to achieve torque.
- ⚠ CAUTION:** During the operation, if the tool locks onto the nut, press the advance button on remote and build pressure. Continue to press down on the advance remote button while pushing down on the reaction pawl. Release remote advance button while continuing to push down on the reaction pawl, then the tool will be released from the nut

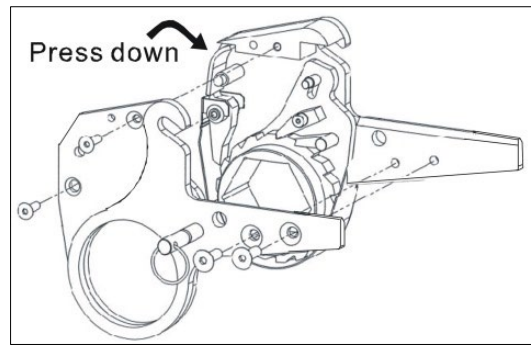


Figure 5 - Operating the Wrench

6.0 Maintenance



IMPORTANT:

- Use only good quality hydraulic fluid. **Do NOT** use brake fluid, transmission fluid, turbine oil, motor oil, alcohol, glycerine etc. Use of anything other than good quality hydraulic oil will void warranty and damage the power unit, hose, and application. We recommend Durapac Hydraulic Oil or equivalent
- Equipment must only be serviced by a qualified hydraulic technician. For repair service, contact your local Durapac authorised service centre
- Damage to hydraulic hoses may not be detected during visual inspections. For this reason, Durapac recommends that hydraulic hoses be replaced on a regular basis
- Tighten connections as needed. Use non-hardening pipe thread compound when servicing connections

Dirt, sand, etc. will quickly ruin any hydraulic system. Ensure that couplings are clean and free of foreign matter. After each use, clean couplings and attach dust caps.

Maintenance is required when wear or leakage is noticed. Periodically inspect all components to detect any problem that may require service and maintenance.

- 6.1 Check for loose connections and leaks.
- 6.2 Replace damaged parts immediately.
- 6.3 Do not exceed oil temperature above 60°C.
- 6.4 Keep all hydraulic components clean.
- 6.5 Use dust caps when wrench is disconnected from the hose. Keep entire wrench clean to prolong wrench life.
- 6.6 Wipe clean, thoroughly and store in clean, dry environment. Avoid temperature extremes.
- 6.7 Change hydraulic oil in your system as recommended in the power unit instruction sheet.
- 6.8 Use Molykote G-n Metal Assembly Paste to regrease the ratchet and drive components.

7.0 Troubleshooting

Problem	Cause	Solution
Piston will not advance or retract	Couplers not securely attached to the tool or power unit	<ul style="list-style-type: none"> • Check the coupler connections and make certain that they are connected
	Defective coupler	<ul style="list-style-type: none"> • Contact a Durapac authorised service centre for replacement
	Defective remote-control unit	<ul style="list-style-type: none"> • Replace button and/or control pendant
	Dirt in the direction-control valve of the power unit	<ul style="list-style-type: none"> • Disassemble the power unit and clean the direction-control valve
Piston will not retract	Hose connections reversed	<ul style="list-style-type: none"> • Make certain the advance on the power unit is connected to the advance on the tool and retract on the power unit is connected to the retract on the tool
	Retract hose not connected	<ul style="list-style-type: none"> • Connect the retract hose securely
	Retract pin and/or spring broken	<ul style="list-style-type: none"> • Replace the broken pin and/or spring
Cylinder will not build pressure	Leaking piston seal and/or end plug seal	<ul style="list-style-type: none"> • Replace any defective o-ring(s)
	Defective coupler	<ul style="list-style-type: none"> • Contact a Durapac authorised service centre for replacement
Power unit will not build pressure	Defective relief valve	<ul style="list-style-type: none"> • Inspect, adjust or replace the relief valve
	Electric power source is too low	<ul style="list-style-type: none"> • Make certain the amperage, voltage and any extension cord size complies with the power unit's manual requirements
	Defective gauge	<ul style="list-style-type: none"> • Replace the gauge
	Low oil level	<ul style="list-style-type: none"> • Check and fill the power unit reservoir
	Clogged filter	<ul style="list-style-type: none"> • Inspect, clean and/or replace the power unit filter
Nut returns with retract stroke	Ball plungers are not engaging the drive sleeves	<ul style="list-style-type: none"> • Thread the ball plungers to the correct depth in the housing

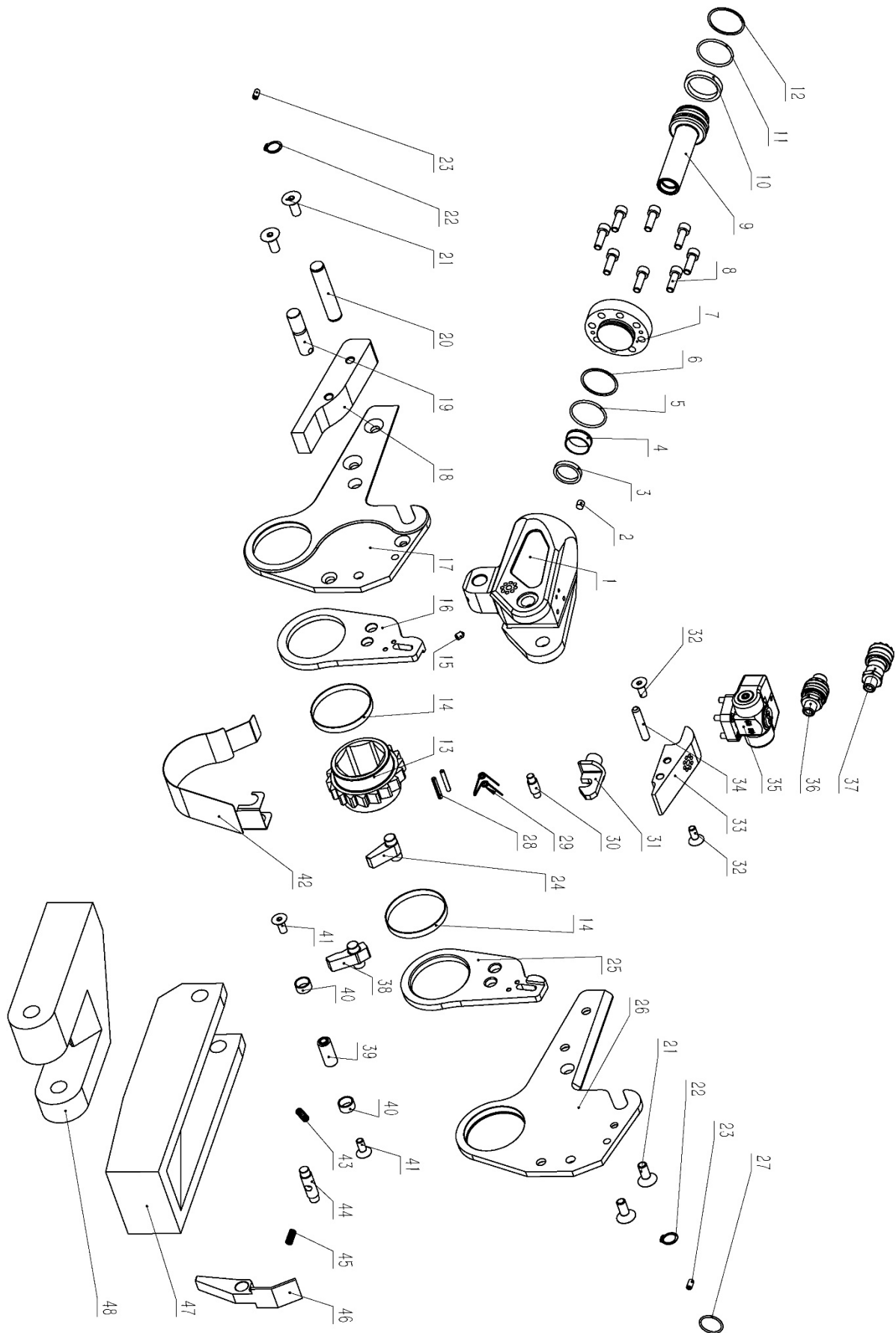
8.0 Torque Conversion Tables

LPC Series Hydraulic Torque Wrench Pressure Chart (Bar/Nm)									
Model	LPC2		LPC4		LPC8		LPC14	LPC30	
Hex. size (mm)	19-55	60	34-65	70-80	41-95	100-105	50-117	85-155	160-175
Bar	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm
70	232	241	585	647	1,094	1,177	1,852	4,188	4,459
80	265	275	669	739	1,250	1,345	2,117	4,786	5,096
90	299	310	752	832	1,407	1,513	2,381	5,385	5,733
100	332	344	836	924	1,563	1,682	2,646	5,983	6,370
110	365	379	920	1,017	1,719	1,850	2,910	6,581	7,007
120	398	413	1,003	1,109	1,876	2,018	3,175	7,180	7,644
130	432	448	1,087	1,202	2,032	2,186	3,440	7,778	8,281
140	465	482	1,171	1,294	2,188	2,354	3,704	8,376	8,918
150	498	517	1,255	1,387	2,344	2,523	3,969	8,975	9,555
160	531	551	1,338	1,479	2,501	2,691	4,233	9,573	10,192
170	565	586	1,422	1,572	2,657	2,859	4,498	10,171	10,829
180	598	620	1,506	1,664	2,813	3,027	4,762	10,769	11,467
190	631	655	1,589	1,757	2,970	3,195	5,027	11,368	12,104
200	665	689	1,673	1,849	3,126	3,364	5,292	11,966	12,741
210	698	724	1,757	1,942	3,282	3,532	5,556	12,564	13,378
220	731	758	1,840	2,034	3,439	3,700	5,821	13,163	14,015
230	764	793	1,924	2,127	3,595	3,868	6,085	13,761	14,652
240	798	827	2,008	2,219	3,751	4,037	6,350	14,359	15,289
250	831	862	2,092	2,312	3,907	4,205	6,615	14,958	15,926
260	864	896	2,175	2,404	4,064	4,373	6,879	15,556	16,563
270	897	931	2,259	2,497	4,220	4,541	7,144	16,154	17,200
280	931	965	2,343	2,589	4,376	4,709	7,408	16,753	17,837
290	964	1,000	2,426	2,682	4,533	4,878	7,673	17,351	18,474
300	997	1,034	2,510	2,774	4,689	5,046	7,938	17,949	19,111
310	1,030	1,069	2,594	2,867	4,845	5,214	8,202	18,548	19,748
320	1,064	1,103	2,677	2,959	5,002	5,382	8,467	19,146	20,385
330	1,097	1,138	2,761	3,052	5,158	5,550	8,731	19,744	21,022
340	1,130	1,172	2,845	3,144	5,314	5,719	8,996	20,343	21,659
350	1,164	1,207	2,929	3,237	5,470	5,887	9,260	20,941	22,296
360	1,197	1,241	3,012	3,329	5,627	6,055	9,525	21,539	22,933
370	1,230	1,276	3,096	3,422	5,783	6,223	9,790	22,138	23,570
380	1,263	1,310	3,180	3,514	5,939	6,391	10,054	22,736	24,207
390	1,297	1,345	3,263	3,607	6,096	6,560	10,319	23,334	24,845
400	1,330	1,379	3,347	3,699	6,252	6,728	10,583	23,932	25,482
410	1,363	1,414	3,431	3,792	6,408	6,896	10,848	24,531	26,119
420	1,396	1,448	3,514	3,884	6,565	7,064	11,113	25,129	26,756
430	1,430	1,483	3,598	3,977	6,721	7,232	11,377	25,727	27,393
440	1,463	1,517	3,682	4,069	6,877	7,401	11,642	26,326	28,030
450	1,496	1,552	3,766	4,162	7,033	7,569	11,906	26,924	28,667
460	1,530	1,586	3,849	4,254	7,190	7,737	12,171	27,522	29,304
470	1,563	1,621	3,933	4,347	7,346	7,905	12,435	28,121	29,941
480	1,596	1,655	4,017	4,439	7,502	8,073	12,700	28,719	30,578
490	1,629	1,690	4,100	4,532	7,659	8,242	12,965	29,317	31,215
500	1,663	1,724	4,184	4,624	7,815	8,410	13,229	29,916	31,852
510	1,696	1,759	4,268	4,717	7,971	8,578	13,494	30,514	32,489
520	1,729	1,793	4,351	4,809	8,128	8,746	13,758	31,112	33,126
530	1,762	1,828	4,435	4,902	8,284	8,914	14,023	31,711	33,763
540	1,796	1,862	4,519	4,994	8,440	9,083	14,288	32,309	34,400
550	1,829	1,897	4,603	5,087	8,596	9,251	14,552	32,907	35,037
560	1,862	1,931	4,686	5,179	8,753	9,419	14,817	33,506	35,674
570	1,895	1,966	4,770	5,272	8,909	9,587	15,081	34,104	36,311
580	1,929	2,000	4,854	5,364	9,065	9,756	15,346	34,702	36,948
590	1,962	2,035	4,937	5,457	9,222	9,924	15,611	35,301	37,585
600	1,995	2,069	5,021	5,549	9,378	10,092	15,875	35,899	38,223
610	2,029	2,104	5,105	5,642	9,534	10,260	16,140	36,497	38,860

620	2,062	2,138	5,188	5,734	9,691	10,428	16,404	37,095	39,497
630	2,095	2,173	5,272	5,827	9,847	10,597	16,669	37,694	40,134
640	2,128	2,207	5,356	5,919	10,003	10,765	16,933	38,292	40,771
650	2,162	2,242	5,440	6,012	10,159	10,933	17,198	38,890	41,408
660	2,195	2,276	5,523	6,104	10,316	11,101	17,463	39,489	42,045
670	2,228	2,311	5,607	6,197	10,472	11,269	17,727	40,087	42,682
680	2,261	2,345	5,691	6,289	10,628	11,438	17,992	40,685	43,319
690	2,295	2,380	5,774	6,382	10,785	11,606	18,256	41,284	43,956
700	2,328	2,414	5,858	6,474	10,941	11,774	18,521	41,882	44,593

LPC Series Hydraulic Torque Wrench Pressure Chart (PSI/Ft.lbs)									
Model	LPC2		LPC4		LPC8		LPC14	LPC30	
Hex. size (mm)	19-55	60	34-65	70-80	41-95	100-105	50-117	85-155	160-175
PSI	Ft.lbs	Ft.lbs	Ft.lbs	Ft.lbs	Ft.lbs	Ft.lbs	Ft.lbs	Ft.lbs	Ft.lbs
1,000	169	175	426	470	795	855	1,346	3,043	3,240
1,200	203	210	511	564	954	1,026	1,615	3,652	3,888
1,400	237	245	596	658	1,113	1,197	1,884	4,260	4,536
1,600	270	280	681	752	1,272	1,368	2,153	4,869	5,184
1,800	304	315	766	846	1,431	1,539	2,422	5,477	5,832
2,000	338	350	852	940	1,590	1,710	2,692	6,086	6,480
2,200	372	385	937	1,034	1,749	1,881	2,961	6,694	7,127
2,400	406	421	1,022	1,128	1,908	2,052	3,230	7,303	7,775
2,600	440	456	1,107	1,222	2,067	2,223	3,499	7,911	8,423
2,800	473	491	1,192	1,317	2,226	2,395	3,768	8,520	9,071
3,000	507	526	1,277	1,411	2,385	2,566	4,037	9,128	9,719
3,200	541	561	1,362	1,505	2,544	2,737	4,306	9,737	10,367
3,400	575	596	1,447	1,599	2,703	2,908	4,575	10,345	11,015
3,600	609	631	1,533	1,693	2,861	3,079	4,844	10,954	11,663
3,800	642	666	1,618	1,787	3,020	3,250	5,113	11,562	12,311
4,000	676	701	1,703	1,881	3,179	3,421	5,383	12,171	12,959
4,200	710	736	1,788	1,975	3,338	3,592	5,652	12,779	13,606
4,400	744	771	1,873	2,069	3,497	3,763	5,921	13,388	14,254
4,600	778	806	1,958	2,163	3,656	3,934	6,190	13,996	14,902
4,800	812	842	2,043	2,257	3,815	4,105	6,459	14,605	15,550
5,000	845	877	2,128	2,351	3,974	4,276	6,728	15,213	16,198
5,200	879	912	2,214	2,445	4,133	4,447	6,997	15,822	16,846
5,400	913	947	2,299	2,539	4,292	4,618	7,266	16,430	17,494
5,600	947	982	2,384	2,633	4,451	4,789	7,535	17,039	18,142
5,800	981	1,017	2,469	2,727	4,610	4,960	7,804	17,647	18,790
6,000	1,015	1,052	2,554	2,822	4,769	5,132	8,074	18,256	19,438
6,200	1,048	1,087	2,639	2,916	4,928	5,303	8,343	18,865	20,085
6,400	1,082	1,122	2,724	3,010	5,087	5,474	8,612	19,473	20,733
6,600	1,116	1,157	2,809	3,104	5,246	5,645	8,881	20,082	21,381
6,800	1,150	1,192	2,894	3,198	5,405	5,816	9,150	20,690	22,029
7,000	1,184	1,227	2,980	3,292	5,564	5,987	9,419	21,299	22,677
7,200	1,217	1,262	3,065	3,386	5,723	6,158	9,688	21,907	23,325
7,400	1,251	1,298	3,150	3,480	5,882	6,329	9,957	22,516	23,973
7,600	1,285	1,333	3,235	3,574	6,041	6,500	10,226	23,124	24,621
7,800	1,319	1,368	3,320	3,668	6,200	6,671	10,495	23,733	25,269
8,000	1,353	1,403	3,405	3,762	6,359	6,842	10,765	24,341	25,917
8,200	1,387	1,438	3,490	3,856	6,518	7,013	11,034	24,950	26,564
8,400	1,420	1,473	3,575	3,950	6,677	7,184	11,303	25,558	27,212
8,600	1,454	1,508	3,661	4,044	6,835	7,355	11,572	26,167	27,860
8,800	1,488	1,543	3,746	4,138	6,994	7,526	11,841	26,775	28,508
9,000	1,522	1,578	3,831	4,232	7,153	7,697	12,110	27,384	29,156
9,200	1,556	1,613	3,916	4,326	7,312	7,868	12,379	27,992	29,804
9,400	1,589	1,648	4,001	4,421	7,471	8,040	12,648	28,601	30,452
9,600	1,623	1,683	4,086	4,515	7,630	8,211	12,917	29,209	31,100
9,800	1,657	1,719	4,171	4,609	7,789	8,382	13,186	29,818	31,748
10,000	1,691	1,754	4,256	4,703	7,948	8,553	13,456	30,426	32,396

9.0 Parts Breakdown and Simple Lists (detailed lists on following pages)



9.1 LPC Parts List (basic)

Item	Description	Qty	Item	Description	Qty
1	Body	1	25	Right drive plate	1
2	Screw	1	26	Right side plate	1
3	U-ring	1	27	Ring	1
4	Copper sleeve for body	1	28	Roll pin	2
5	Retaining ring	1	29	Drive pin spring	1
6	O-ring	1	30	Drive pin	1
7	End cap	1	31	Rod end	1
8	Bolt	8	32	Bolt	4
9	Piston rod	1	33	Top spacer	1
10	U-ring	1	34	Roll pin	1
11	Retaining ring	1	35	Swivel	1
12	O-ring	1	36	Male coupling	1
13	Hex ratchet	1	37	Female coupling	1
14	Brass bushing	2	38	Primary drive pawl	1
15	Screw with spring	1	39	Rotor	1
16	Left drive plate	1	40	Roll pin for reaction pawl	1
17	Left side plate	1	41	Bolt	~
18	Reaction block extension	1	42	Shroud	1
19	Short link pin	1	43	Tension spring	1
20	Fixed upper pin	1	44	Spring spacer	1
21	Bolt	4	45	Tension spring	1
22	External circlips	2	46	Reaction pawl	1
23	Screw	~	47	Reaction arm	1
24	Secondary drive pawl	1	48	Reaction pad	~

Quantity ~ Notes:

- **Item 23** – (2) only used in LPC14 & LPC30
- **Item 41** – (2) only used in LPC4 & LPC8
- **Item 48** – (1) only used in LPC4, LPC8 & LPC14

9.2 LPC Parts List (detailed)

Please use the following link(s) from our website to view the detailed LPC Parts Lists.

[LPC Parts List \(all models\)](#)

[LPC2 Parts List](#)

[LPC4 Parts List](#)

[LPC8 Parts List](#)

[LPC14 Parts List](#)

[LPC30 Parts List](#)

9.3 LPC Seal Kits List

Model	Description	AE Part No.
LPC2	Seal kit	ZDB3611
	Swivel seal kit	ZDB3617
LPC4	Seal kit	ZDB3612
	Swivel seal kit	ZDB3618
LPC8	Seal kit	ZDB3613
	Swivel seal kit	ZDB3616
LPC14	Seal kit	ZDB3614
	Swivel seal kit	ZDB3616
LPC30	Seal kit	ZDB3615
	Swivel seal kit	ZDB3616