

INTRODUCTION

ZIRCONIA CERAMIC LINER

TSC's zirconia liners offer lifetime cost savings, significantly longer service, better performance and safer operation than those made of more commonly used alumina ceramic.

In addition, TSC's zirconia liner is a proprietary Zirconium-based matrix that has significantly improved mechanical characteristics.

Zirconia has three important property advantages compared to alumina.

- Zirconia exhibits better impact strength.
- Zirconia is harder than alumina.
- Zirconia can be honed to finer surface finishes than alumina. Finished to 4 RMS, the zirconia liners provide a surface finish that is three to four times finer than alumina.

All three of these property advantages translate to lower ownership costs. The improved wear directly extends the service life of the sleeve, while the improved impact strength reduces significantly the costs of replacing broken liners in the field. The surface finish improvements, meanwhile, have an indirect effect. The finer surface finish means less friction with the elastomer-and-metal pump pistons, which in turn extends piston life and reduces pump-cooling requirements.

- Reduced liner and piston wear.
- Increased impact characteristics.
- Lower thermal load on the liner wash system.
- Higher thermal ratings.
- HP design with shoulder-on-hull to prevent sleeve slippage.
- ID tolerances of $+.010"/-.000"$.
- Surface finish of 4-8 RMS.
- Hardness is HV 0.3 kg/mm – 1100/1200 (92-94 Rc).
- Improved performance for high temperature applications.
- Liner sizes are available from 4"-8" for all popular mud pumps.



FLUID END EXPENDABLES

HONGHUA

HHF-1600

7 x 12

	LINERS	ZIRCONIA LINERS	LINER GASKETS	PISTONS				PISTON RUBBERS
SIZE	TSC PART NUMBER	PART NUMBER	TSC PART NUMBER	URETHANE BONDED	RUBBER BONDED	N'DURALL BONDED	REPLACEABLE RUBBER	PART NUMBER
4"	TS-2145-40HP	TS-07499400	G-800 *	LLU-40-K15	LL-40-K15	HPW-40-K15	I-40-K15	TM-40-KR
4 1/2"	TS-2145-44HP	TS-07499450	G-800 *	LLU-44-B15	LL-44-B15	HPW-44-B15	I-44-B15	TM-44-BR
5"	TS-2145-50HP	TS-07499500	G-800 *	LLU-50-B15	LL-50-B15	HPW-50-B15	I-50-B15	TM-50-BR
5 1/2"	TS-2145-54HP	TS-07499550	G-800 *	LLU-54-B15	LL-54-B15	HPW-54-B15	I-54-B15	TM-54-BR
5 3/4"	TS-2145-56HP	TS-07499575	G-800 *	LLU-56-B15	LL-56-B15	HPW-56-B15	I-56-B15	TM-56-BR
6"	TS-2145-60HP	TS-07499600	G-800 *	LLU-60-B15	LL-60-B15	HPW-60-B15	I-60-B15	TM-60-BR
6 1/4"	TS-2145-62HP	TS-07499625	G-800 *	LLU-62-L15	LL-62-L15	HPW-62-L15	I-62-L15	TM-62-LR
6 1/2"	TS-2145-64HP	TS-07499650	G-800 *	LLU-64-L15	LL-64-L15	HPW-64-L15	I-64-L15	TM-64-LR
6 3/4"	TS-2145-66HP	TS-07499675	G-800 *	LLU-66-L15	LL-66-L15	HPW-66-L15	I-66-L15	TM-66-LR
7"	TS-2145-70HP	TS-07499700	G-800 *	LLU-70-L15	LL-70-L15	HPW-70-L15	I-70-L15	TM-70-LR
HONGHUA PART NUMBER		11-3161-0521~26	11-3161-0514				11-3161-0524-00	
VALVES, SEATS, SPRINGS					GASKETS			
	4 WEB DESIGN	FULL OPEN	HONGHUA PART NUMBER			TSC PART NUMBER	HONGHUA PART NUMBER	
VALVE	TS-7-EEF	TS-7-V1	11-3161-0511-01	VALVE COVER GASKET		G-741 *	11-3161-0512	
SEAT	TS-7-DDB1	TS-7-S1	11-3161-0511-06	CYLINDER HEAD GASKET		G-801 *	11-3161-0508	
SPRING	TS-5710-115	TS-5710-115L	11-3161-0510	WEAR PLATE GASKET		G-800 *	11-3161-0514	
INSERT (Urethane)	TS-7-WI	TS-7-FI	11-3161-0511-05					
PISTON ROD & EXTENSION ROD								
	ROD CLAMP		PISTON NUT	PISTON ROD		EXTENSION ROD		
TSC PART NUMBER	TMFB6-03-08		TM-NUT	TM-2145		TMF16-01-06		
HONGHUA PART NUMBER	11-3161-0522-00		11-3161-0532-00	11-3161-0518		11-3161-0412		
FLUID END MODULE								
	FLUID END MODULE STUDDER		MODULE SEAL SET			STUDS & NUTS SET		
TSC PART NUMBER	TS-6316-0357-00B		TMFB6-SEALKIT			TMBJ16-STUDSET		
HONGHUA PART NUMBER	11-3161-0501-00							

TSC does not warrant or represent that any of such information is accurate, or that any products listed are compatible with each other.

Any deviations from the OEM products should be verified as to compatibility.

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