



**SURFACE ROLLER LATCH™ QUICK DESCENT™  
HEAD ASSEMBLY AND OVERSHOT**

# SURFACE ROLLER LATCH™ QUICK DESCENT™ HEAD ASSEMBLY AND OVERSHOT

Our newest addition to the exploration drilling industry is the surface Roller Latch™ Quick Descent™ head assembly and overshot. Together, they are safer, more productive, and designed to last longer than any head and overshot system in use today.



# SURFACE ROLLER LATCH™ QUICK DESCENT™ HEAD ASSEMBLY AND OVERSHOT

Drillers regularly deal with a number of challenges when retrieving a core barrel, partial trips, stuck tubes, and spearhead failures. Tripping for a stuck inner tube is a costly process and, it increases the opportunity for injury. Boart Longyear created the original wireline technology used throughout the industry and we've focused our experience on reinventing core retrieval.

With innovative, patented technology, the surface Roller Latch™ Quick Descent™ head assembly and overshot is a simple, easy to use system that improves performance, productivity, and safety.

## SAFER

The new overshot applies our experience with Roller Latch head assemblies to create a design that eliminates spearheads and lifting dogs entirely. The spearhead is replaced by a socket in the head with an internal groove, where rollers securely latch and auto lock. The robust design eliminates the weak point of the spearhead pivot and creates space for the safety pin to engage the head and overshot through the entire cross-section, making safety independent of maintenance. When combined with the new push button pin, it produces the safest system on the market today.

## MORE PRODUCTIVE

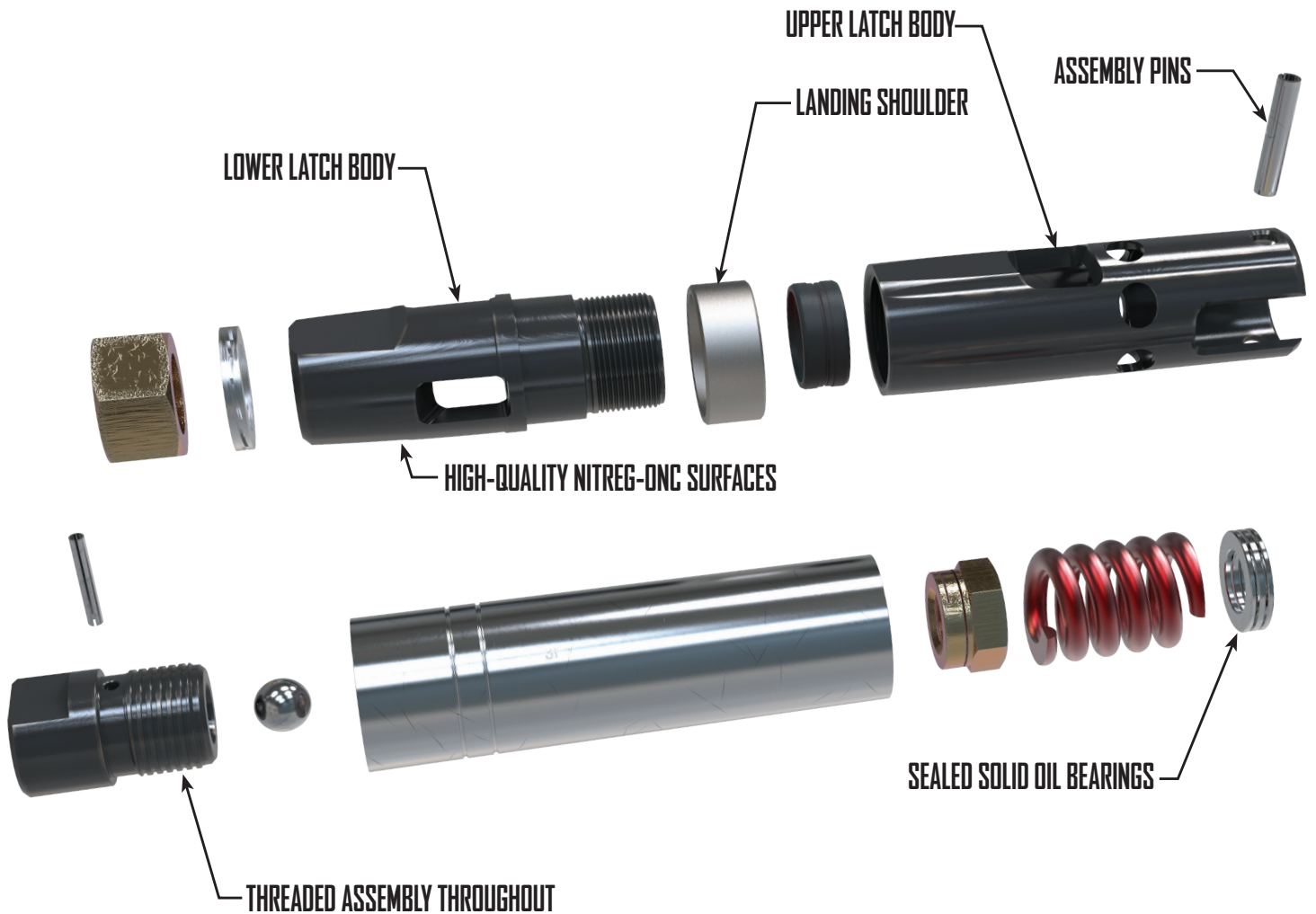
**On top of the dramatically improved safety, the surface Roller Latch overshot and head contain a number of new features that increase productivity on site:**

- Unique overshot shape reduces drag, resulting in 20% faster descent speeds than the Ezy-Lock Overshot and 60% faster in W-Wall. The surface Roller Latch head, with its latch detent, hollow spindle, and large porting, descends 34% faster than a Link Latch head. Combined, they can generate up to 20% more core in the box
- The Roller Latch on the head eliminates adapter couplings and stuck tubes due to blocky ground
- Ability to add or remove overshot chaser weights to optimize descent speed with varying hole conditions.
- Overshot jar staff elimination reduces length to 50" (chaser weight removed) or 31" inches shorter in H and P for easier inner tube handling
- Sealed symmetric bearings, which eliminate grease on the core and bearings while simplifying maintenance

## LASTS LONGER

The Roller Latch family of in-hole tools includes a surface treatment that provides excellent corrosion resistance and reduces wear on the overshot. The new overshoot will spin and pivot in the center making it more than twice as strong, preventing failures due to handling.

# HEAD ASSEMBLY OVERVIEW



## ROLLER LATCH TECHNOLOGY - STRONGER, MORE RELIABLE LATCHING ELIMINATES DRIVE KEYS AND TANGS

Before Roller Latch™ technology, mechanical elements commonly known as 'drive keys' or 'tang's were employed to drive the head assembly with the rod string in order to eliminate movement and wear between the latches and the locking coupling and between the landing shoulder and outer tube landing ring.

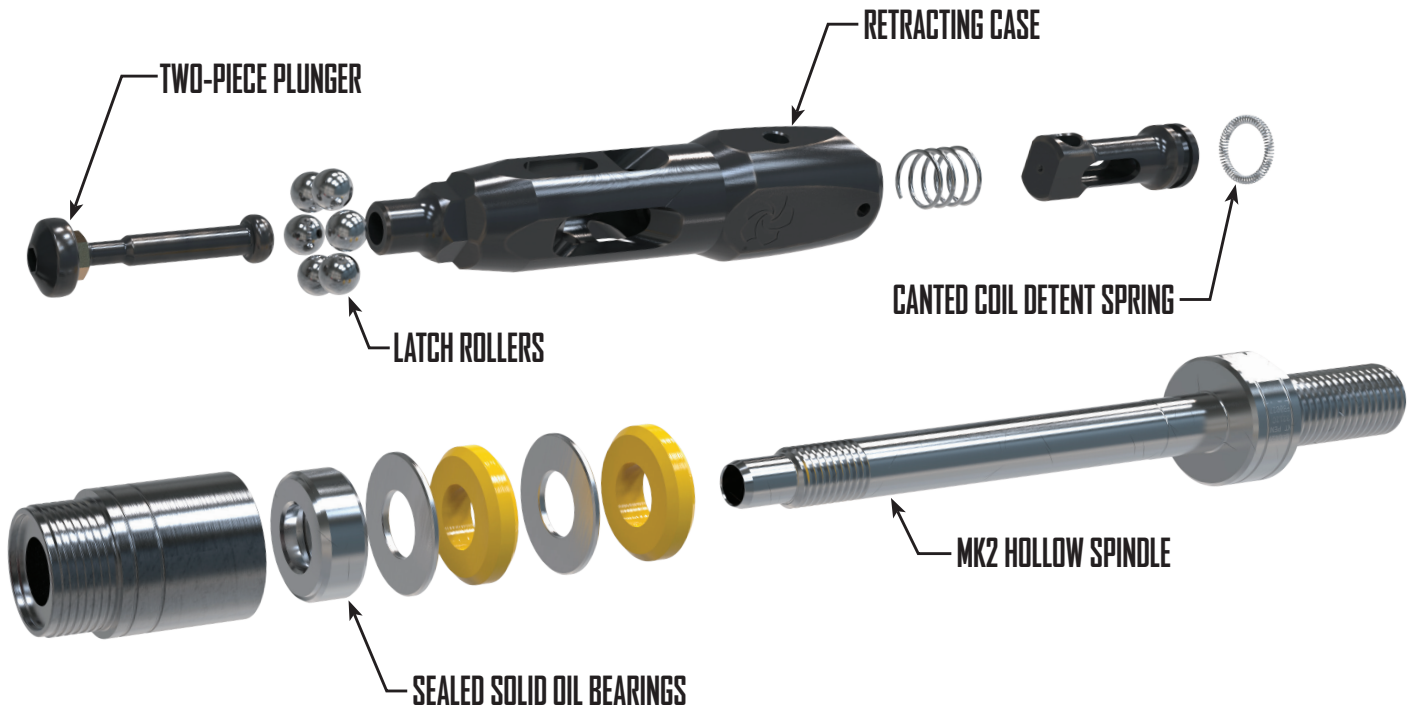
## SELF-LOCKING FEATURE

Roller Latch™ technology includes a self-locking feature where the latches are driven rotationally by the rod string.

This ensures the head assembly rotates with the rod string minimizing wear of rollers, landing shoulders, and outer tube landing rings.

Given rotational movement in either direction, each latch roller is pinched as it wedges in-between the faceted retracting case and curved inner surface of the drill rod.

# HEAD ASSEMBLY OVERVIEW



## FREE FLOW DESIGN WITH LATCH DETENT

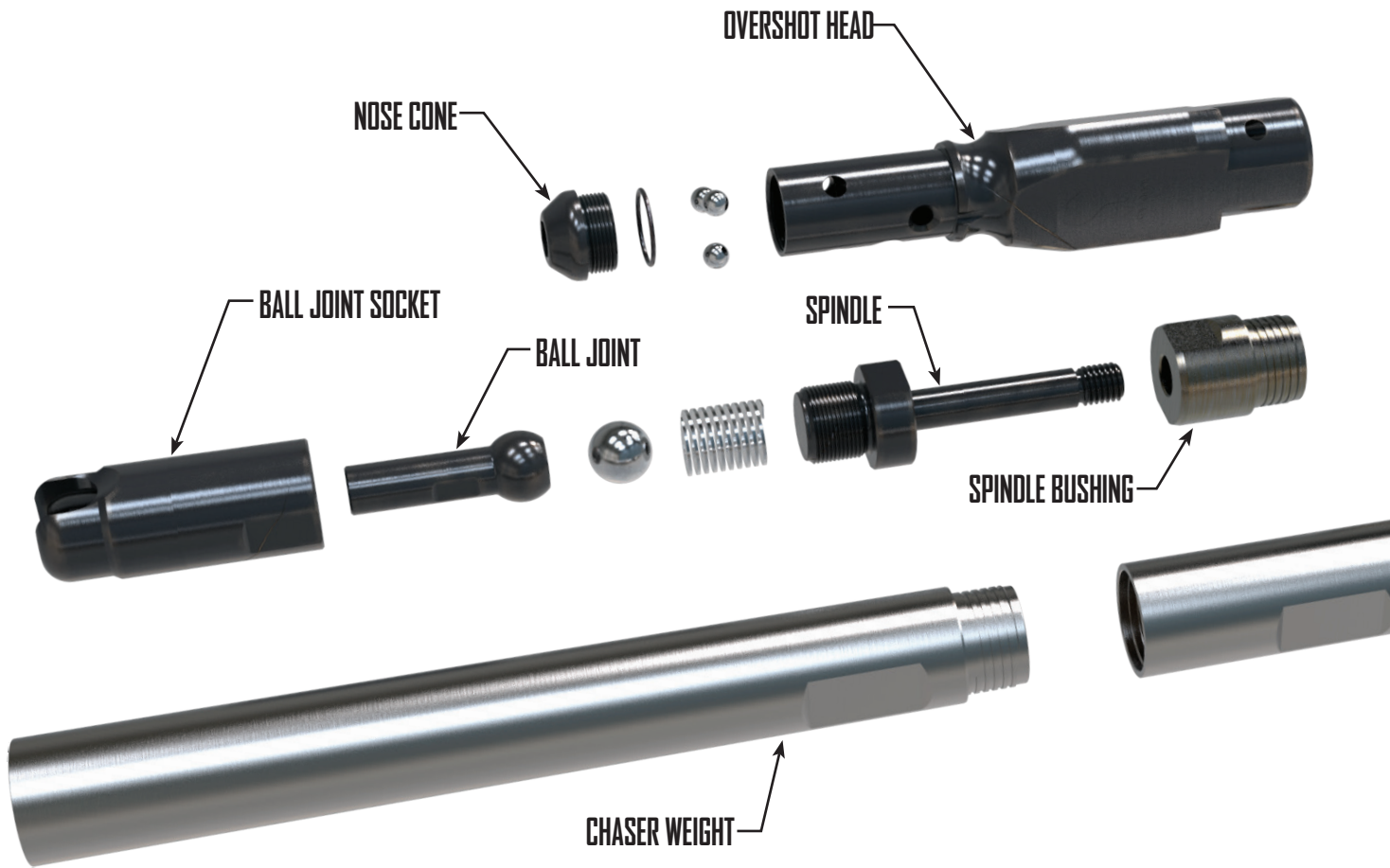
A canted coil spring – mounted on the extension – snaps into grooves in the retracting case interior.

The detent greatly increases speed by reducing latch drag and automatically re-engages when head is retracted; no driller intervention.

## MK2 HOLLOW SPINDLE

The hollow spindle allows for increased tripping speed while the check valve has been relocated to the inner tube cap, reducing pressure drag.

The relocated check valve also allows stretching the core break spring to check rod seals.



## SAFER ROLLER LATCH TECHNOLOGY

The new overshoot allows users to eliminate spearheads and lifting dogs entirely.

Lifting dogs experience wear on their latching surfaces with every use as do the spearpoints. Eventually, the surfaces wear and the connection fails. Our patented Roller Latch design reduces the chance of release due to wear by ensuring rolling engagement and locking.

Spearhead assemblies have a hinged joint which is subject to stress and eventual failure. The unique design of the Roller Latch socket and body eliminates latching errors and spearhead bending failures.

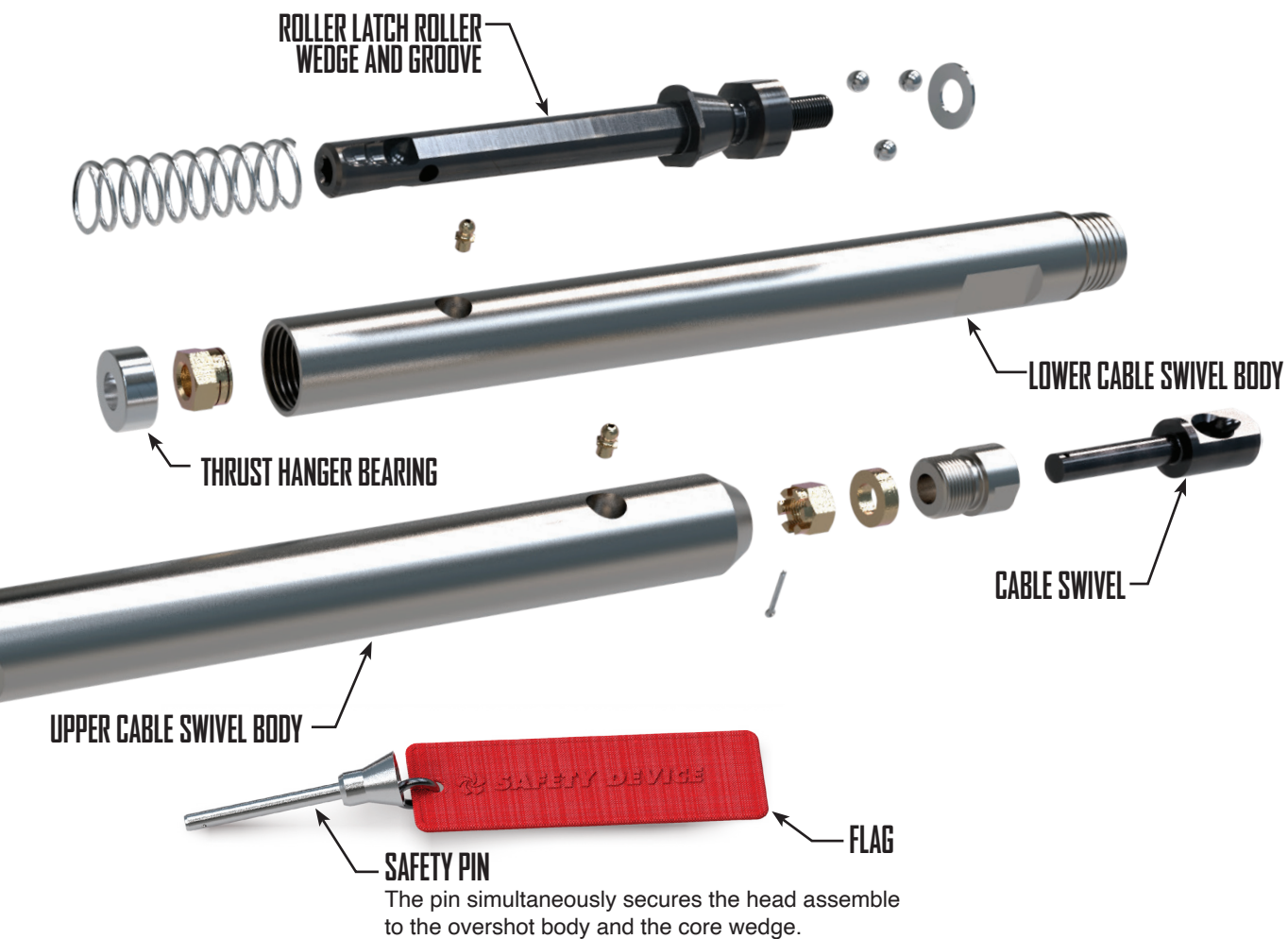
The Roller Latch overshoot introduces a secure two-handed release mechanism that prevents accidental release and improves worksite handling.

## SOCKET ADAPTER & SAFETY PIN

Designed to upgrade existing head assemblies, the spearhead is completely replaced by a socket in the head.

The safety pin provides a secondary safety device under all conditions and does not degrade with overshoot wear.

# OVERSHOT OVERVIEW



## ELIMINATION OF JAR STAFF

The Roller Latch Overshot features a brand-new release system with a heavier sleeve, allowing the jar staff to be eliminated. The sleeve is used for releasing the wireline when tubes are stuck or when lowering the inner tube assembly in a dry hole or at the water table.

Surface overshots are much longer than underground models due in large part to the jar staffs, which add both significant length and weight. Weight is important to making overshots descend quickly, but extra length is not necessarily desirable. When combined with a 6m inner tube, quite common on the surface, the length of the assembly becomes unwieldy, and often, rigs do not have the mast length sufficient for a 6m tube and overshot.

- NQ: 62", 8" shorter than Ezy-Lock. "Short" length would be 50" (chaser weight is 12")
- HQ: 64-1/8", 18" shorter than Ezy-Lock "Short" length would be 51" (chaser weight is 13-1/8)

## 360° DEGREE SWIVEL

The new Roller Latch pivot design uses past experience to improve the handling of inner tube assemblies. Once out of the rod, inner tube assemblies need to be moved to work areas and laid flat so that the overshot can be disconnected. Having a flexible joint is critical to completing this task safely and quickly.

- Ball joint built in for maximum (hemispherical) range of motion.
- The 180° pivot allows the same full range of motion as standard spearhead joints, plus the independent 360° swivel eliminates the possibility of "side-loading" the joint and increases the ease of handling
- Self-centering ball keeps the overshot straight while tripping

# HEAD ASSEMBLY TECHNICAL OVERVIEW



NQ HEAD ASSEMBLY		
Part No.	Description	Qty
5009350	HEAD ASM, NQ Q/D R/L MK2	
5009353	EXTENSION, NQ/NQTK R/L MK2 SPRING	1
24943	BALL, 3/4 S/S	1
5009831	SPINDLE, NQ/NQTK R/L MK2 HOLLOW	1
5008634	L/NUT, SLOTTED ESL 1"-8 UNC GR8	1
5009832	SPINDLE BUSHING, NQ/NQTK R/L MK2	1
5009344	SPRING, NQ/NQTK R/L DETENT	1
5005385	BUSHING, 35MM STD INDICATOR	1
29073	PIN, SPIROL 3/16" X 1-3/8"	1
5009964	BODY, NQ/NQTK R/L Q/D MK2 CHECK VALVE	1
5009962	BODY, NQ R/L Q/D MK2 LOWER LATCH	1
5009963	I/TUBE CAP, NQ R/L Q/D MK2	1
5009449	PISTON, NQ/NQTK/HQ R/L MK2 HEAD	1
5009351	CASE, NQ Q/D R/L MK2 RETRACTING	1
44574	NUT, HEX PLAIN 1-1/4-7 UNC G8 ZP	1
5009692	NUT, THIN HEX 7/16-20 UNF G8	1
24888	WASHER, NQ VALVE ADJUSTING	2
5010149	BEARING, SOLID-OIL NQ Q/D HANGER	1
3546431	SPRING, NQ/NQTK CORE BREAKING	1
3548105	WASHER, NORD-LOCK 1-1/4"	1
5009354	PISTON, NQ/NQTK/HQ R/L MK2	1
5010146	BEARING, SOLID-OIL NQ THRUST	1
5005218	ROLLER, NQ/NQTK 11/16" LATCH	6
306009	LANDING SHOULDER, NQ	1
5005380	PIN, SPIROL S/S 7/16" X 2-1/4" HCK	1
5009352	BODY, NQ Q/D R/L MK2 UPPER LATCH	1
5005381	SPRING, NQ R/L LATCH	1
44209	VALVE, NQ/NQTK HARD SHUT-OFF	1

NQTK HEAD ASSEMBLY		
Part No.	Description	Qty
5009355	HEAD ASM, NQTK Q/D R/L MK2	
44209	VALVE, NQ/NQTK HARD SHUT-OFF	1
5009964	BODY, NQ/NQTK R/L Q/D MK2 CHECK VALVE	1
5009354	PISTON, NQ/NQTK/HQ R/L MK2	1
306026	LANDING SHOULDER, NQTK	1
3548105	WASHER, NORD-LOCK 1-1/4"	1
5009831	SPINDLE, NQ/NQTK R/L MK2 HOLLOW	1
5008634	L/NUT, SLOTTED ESL 1"-8 UNC GR8	1
5009352	BODY, NQ Q/D R/L MK2 UPPER LATCH	1
3546431	SPRING, NQ/NQTK CORE BREAKING	1
5009832	SPINDLE BUSHING, NQ/NQTK R/L MK2	1
5009962	BODY, NQ R/L Q/D MK2 LOWER LATCH	1
5005218	ROLLER, NQ/NQTK 11/16" LATCH	6
29073	PIN, SPIROL 3/16" X 1-3/8"	1
5005380	PIN, SPIROL S/S 7/16" X 2-1/4" HCK	1
5009692	NUT, THIN HEX 7/16-20 UNF G8	1
5010146	BEARING, SOLID-OIL NQ THRUST	1
5010149	BEARING, SOLID-OIL NQ Q/D HANGER	1
24943	BALL, 3/4 S/S	1
24888	WASHER, NQ VALVE ADJUSTING	2
5009449	PISTON, NQ/NQTK/HQ R/L MK2 HEAD	1
5010051	I/TUBE CAP, NQTK R/L Q/D MK2	1
5005381	SPRING, NQ R/L LATCH	1
44574	NUT, HEX PLAIN 1-1/4-7 UNC G8 ZP	1
5009344	SPRING, NQ/NQTK R/L DETENT	1
5009353	EXTENSION, NQ/NQTK R/L MK2 SPRING	1
5009351	CASE, NQ Q/D R/L MK2 RETRACTING	1
5005385	BUSHING, 35MM STD INDICATOR	1

# HEAD ASSEMBLY TECHNICAL OVERVIEW



HQ HEAD ASSEMBLY		
Part No.	Description	Qty
5009360	HEAD ASM, HQ Q/D R/L MK2	
5009865	WASHER, HQ R/L VALVE ADJUSTING	2
5009694	BODY, HQ R/L UPPER LATCH	1
5009866	VALVE, HQ R/L SHUT-OFF	2
5009861	BUSHING, HQ R/L SPINDLE	1
5009860	I/TUBE CAP, HQ R/L	1
5009871	BALL, 1-1/4"	1
5009868	BEARING, SOLID-OIL HQ mk2 HANGER	1
5009692	NUT, THIN HEX 7/16-20 UNF G8	1
5009864	NUT, HQ R/L ADJUSTING	1
5005509	SPRING, HQ/PQ R/L LATCH	1
5006057	ROLLER, HQ/PQ 7/8" LATCH	6
5009361	CASE, HQ Q/D R/L MK2 RETRACTING	1
5009363	EXTENSION, HQ R/L MK2 UPPER LATCH BODY	1
5005385	BUSHING, 35MM STD INDICATOR	1
5009858	BODY, HQ R/L LOWER LATCH	1
5008015	PIN, SPIROL 1/4" X 2-1/4" LG SS	1
3546056	LANDING SHOULDER, HQ Q/D	1
5008909	PIN, SPIROL S/S 1/2" X 2-3/4" HCK	1
5009870	L/NUT, SLOTTED ESL 1-1/2"-6 UNC GR8	1
5009365	SPRING, HQ R/L DETENT	1
5009869	SPRING, HQ R/L CORE BREAKING	1
5009354	PISTON, NQ/NQTK/HQ R/L MK2	1
5009449	PISTON, NQ/NQTK/HQ R/L MK2 HEAD	1
5009867	BEARING, SOLID-OIL HQ mk2 THRUST	1
5009862	BODY, HQ R/L CHECK VALVE	1
5009859	SPINDLE, HQ R/L HOLLOW	1
5009863	WASHER, NORD-LOCK 1-3/4"	1

# OVERSHOT TECHNICAL OVERVIEW



NQ OVERSHOT ASSEMBLY		
Part No.	Description	Qty
5009660	O/SHOT, NQ R/L Q/D	
44209	BALL, 1-1/16 S/S	1
5009964	L/NUT, CASTLE 1/2-20 UNF G2	1
5009354	PIN, O/SHOT LOCKING PUSH-BUTTON	1
306026	GREASE NIPPLE, STR 1/4-28 NPTF	2
3548105	WASHER, 9/16 S/S BELLEVILLE	1
5009831	L/NUT, SLOTTED ESL 5/8"-11 UNC GR8	1
5008634	SPINDLE BUSHING, NQ R/L O/SHOT	1
5009352	BODY, NQ R/L CHASER WEIGHT	1
3546431	BODY, NQ R/L UPPER CABLE SWIVEL	1
5009832	BEARING, THRUST NEEDLE ROLLER	1
5009962	O-RING, SAE 22 ID: 1 CS: 0.07 BUNA-N 70	1
5005218	SPRING, NQ R/L O/SHOT LATCH	1
29073	BEARING, BQ/BQTK THRUST/HANGER	1
5005380	BALL, 3/8" SS	6
5009692	NOSECONE, BQ/NQ R/L O/SHOT	1
5010146	WEDGE, NQ R/L Q/D O/SHOT LIFTING	1
5010149	S/SCR, SH 3/8 UNF X 3/4 NYLOK	1
24943	SPINDLE, NQ R/L O/SHOT	1
24888	SOCKET, NQ R/L O/SHOT	1
5009449	COLLAR, CABLE SWIVEL	1
5010051	BOLT, CABLE SWIVEL EYE	1
5005381	BALL, NQ R/L O/SHOT THREADED	1
44574	SPRING, FLUID RETENTION LIGHT	1
5009344	FLAG, SAFETY DEVICE	1
5009353	BODY, NQ R/L LOWER CABLE SWIVEL	1
5009351	HEAD, NQ R/L Q/D O/SHOT	1
5005385	PIN, COTTER 3/32" X 3/4"	1

HQ OVERSHOT ASSEMBLY		
Part No.	Description	Qty
5009678	O/SHOT, HQ R/L Q/D	
5010420	PIN, O/SHOT LOCKING PUSH-BUTTON	1
5009970	SPINDLE, HQ R/L O/SHOT	1
5009971	SPINDLE BUSHING, HQ R/L O/SHOT	1
5008078	BALL, 7/16 SS	6
44615	PIN, COTTER 3/32" X 3/4"	1
5008634	L/NUT, SLOTTED ESL 1"-8 UNC GR8	1
104966	SPRING, FLUID RETENTION LIGHT	1
17447	GREASE NIPPLE, STR 1/4-28 NPTF	2
5010499	BALL, 1-1/2 S/S	1
3545073	S/SCR, SH 3/8 UNF X 3/4 NYLOK	1
5010155	BODY, HQ R/L LOWER CABLE SWIVEL	1
5008927	BEARING, NQ/NQTK Q/D HANGER	1
5009988	FLAG, SAFETY DEVICE	1
5009957	HEAD, HQ R/L Q/D O/SHOT	1
5009961	SPRING, HQ R/L O/SHOT LATCH	1
5009685	WASHER, 3/4 S/S BELLEVILLE	1
5009968	BALL, HQ R/L O/SHOT THREADED	1
5010329	O-RING, SAE 28 ID: 1-3/8 CS: 0.07 BUNA-N 70	1
5009959	NOSECONE HQ R/L O/SHOT	1
5009969	SOCKET, HQ R/L O/SHOT	1
25991	BOLT, CABLE SWIVEL EYE	1
25986	BEARING, THRUST NEEDLE ROLLER	1
5010156	BODY, HQ R/L CHASER WEIGHT	1
5010157	BODY, HQ R/L UPPER CABLE SWIVEL	1
5010340	SCREW, 1/4"-20 X 3/8" THREAD LOCKING SS	6
25990	COLLAR, CABLE SWIVEL	1
25985	L/NUT, CASTLE 1/2-20 UNF G2	1
5009958	WEDGE, HQ R/L Q/D O/SHOT LIFTING	1

# OVERSHOT ACCESSORIES



OVERSHOT CONVERSION KIT		
Part No.	Description	Qty
5010355	KIT, PQ R/L Q/D O/SHOT CONVERSION	
5010341	SCREW, 1/4"-20 X 3/4" SS	1
5010339	PQ FIN, R/L Q/D O/SHOT	1
5010342	SPLIT WASHER, 1/4" SCREW SIZE	1

DRY HOLE RELEASE SLEEVES	
5009334	SLEEVE, NQ RELEASE
5009621	SLEEVE, HQ RELEASE

CHASER WEIGHTS	
5010159	BODY, NQ R/L CHASER WEIGHT
5010156	BODY, HQ R/L CHASER WEIGHT

LINK LATCH HEAD ASSEMBLY ADAPTERS	
5008057	NQ/NQTK
5008058	HQ

ACCESSORY KITS	
<b>5010462</b>	<b>KIT, NQ R/L Q/D O/SHOT ACCESSORIES</b>
5009880	HOLDER, BQ/NQ/HQ O/SHOT
5009988	FLAG, SAFETY DEVICE
5010460	PTO OC, NQ/NQTK SPEARHEAD ADAPTER
5010420	PIN, O/SHOT LOCKING PUSH-BUTTON
5009334	SLEEVE, NQ RELEASE
<b>5010463</b>	<b>KIT, HQ/PQ R/L Q/D O/SHOT ACCESSORIES</b>
5009988	FLAG, SAFETY DEVICE
5010420	PIN, O/SHOT LOCKING PUSH-BUTTON
5009880	HOLDER, BQ/NQ/HQ O/SHOT
5010461	PTO OC, HQ/PQ SPEARHEAD ADAPTER
5009621	SLEEVE, HQ RELEASE

ROLLER LATCH LOCKING COUPLINGS			
FULL HOLE Q/D (SURF.)		STABILIZED Q/D (SURF.)	
5007897	NQ	5007905	NQ
5007896	NRQ	5007904	NRQ
5007899	HQ	5007907	HQ
5007898	HRQ	5007906	HRQ
N/A	PHD	5007799	PHD
5009067	BXQ	5008950	BXQ
5009071	NXQ	5008866	NXQ
5009075	HXQ	5008956	HXQ

**FOR MORE INFORMATION REGARDING  
THE ROLLER LATCH™ SYSTEM, PLEASE VISIT  
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