

**Safety Valves** Design for Superior Performance and Safety



# **Kelly Cock**

#### **Application and General Use**

Kelly Cocks are devices that allow for shutting the internal bore of the drill string keeping the mud column in the top drive or the Kelly when disconnecting from the drill string. It controls the flow of the mud during normal drilling operations and is operated from the rig floor. Standard configurations include two Kelly Cocks; an upper Kelly Valve and lower Kelly Valve.

#### **Product Description**

The Kelly Cock Valve is designed and manufactured as a one-piece and a two-piece Kelly Valve for free-passage and maximum circulation of the drilling fluid without pressure loss. Kelly Valves are supplied with either API or proprietary connections and manufactured according to the latest edition of the API 7-1 specification.

KC2S Kelly Valves are available in either standard or  $H_2S$  resistant versions and are supplied according to Class 1 construction.

#### Main Features

- simple construction for trouble-free operations and easy servicing
- > sealed lubrication packing

10,000 and 15,000 PSI working pressure (testing pressure 15,000 and 22,500 PSI respectively)

KC2S Kelly Valves are delivered with an operating wrench and disassembly tool

Other configurations available upon request, subject to engineering department approval.

#### **Hydraulic Testing**

Each Kelly Valve is hydraulically bench tested according to API spec 7-1 (latest edition) and delivered with its individual pressure test records.

The tests are carried out in two steps:

**SHELL TESTING** during which the valve is pressurized to the test pressure for 3 minutes, then depressurized and pressurized again for at least 10 minutes.

**> SEAT TESTING** during which the valve is pressurized from the pin end to its working pressure for at least 5 minutes.

During the pressure-holding period timing starts when pressure stabilization is achieved. No visually detectable leakage is permitted during the test time period and the pressure drop shall be no greater than maximum 1% of the pressure test value with a zero leak rate.

The KC2S product range is available in 9 different series allowing the following passage IDs:

SERIES	ID (IN)
201	1-1/4
202	1-3/4
203	2-1/8
204	2-1/4
205	2-7/16
206	2-13/16
207	3-1/16
208	3-1/4
209	4-1/4

#### **Valve Compatibility**

In case the Check Valve has to be dropped into the drill string, the compatibility of Check Valve OD and KC2S free passage is a critical factor. The table below shows the compatibility between KC2S Kelly Cocks and Drop-in Check Valves.

KELLY COC	RDCV				
KC2S	SERIES				
202	1-3/4 ID	901			
203	2-1/8 ID	902			
204	2-1/4 ID	903			
204/205	2-1/4 ID	904			
206	2-13/16 ID	905			
207	3-1/16 ID	906			
207	3-1/16 ID	907			
208	3-1/4 ID	908			

#### **One Piece Kelly Cock Valve**



Figure 1 – Kelly Cock Cutaway View



Figure 2 – Kelly Cock

**Exploded View** 

One Piece Kelly Cock								
TYPE OF KIT	DESCRIPTION	STANDARD VERSION	H2S TRIM VERSION					
Seal Kit	Includes all parts needed for replacement each time the Valve is disassembled; i.e. O-Ring Seals, Springs, Knob Plate and Snap Ring or Screw Set.	ltems 2, 6, 8, 9, 11, 13 & 14	ltems 6, 8, 9, 11, 13, 14 & 17					
Complete Repair Kit with Tooling	Includes all inside Valve components plus its Operating Wrench and Disassembling Tool.	Items 2 to 16	Items 3 to 14 &17					
Complete Repair Kit without Tooling	Includes all KC2S Inside Valve components.	Items 2 to 14	Items 3 to 17					

#### **One Piece Kelly Cock**

#### **Two Piece Kelly Cock Valve**



Figure 1 – Kelly Cock Cutaway View



Figure 2 – Kelly Cock Exploded View

#### **Two Piece Kelly Cock**

Two Piece Kelly Cock								
TYPE OF KIT	DESCRIPTION	STANDARD VERSION	H2S TRIM VERSION					
Seal Kit	Includes all parts needed for replacement each time the Valve is disassembled; i.e. O-Ring Seals, Springs, Knob Plate and Snap Ring or Screw Set.	ltems 2, 6, 8, 9, 11, 13, 14 & 18	ltems 6, 8, 9, 11, 13, 14,17 &18					
Complete Repair Kit with Tooling	Includes all internal parts plus Operating Wrench and Disassembling Tool.	Items 2 to 16 & 18	Items 3 to 14 &17-18					
Complete Repair Kit without Tooling	Includes all internal parts.	Items 2 to 14 & 18	Items 3 to 18					

#### **Spare Parts and References**

Standard Repair Kit									
ITEM SERIES									
	201	202	203	204	205	206	207	208	209
Seal kit for One Piece Kelly Cock	KCK201S021	KCK202S021	KCK203S021	KCK204S021	KCK205S021	KCK206S021	KCK207S021	KCK208S021	KCK209S021
Seal kit for Two Piece Kelly Cock	KCK201S106	KCK202S103	KCK203S106	KCK204S102	KCK205S104	KCK206S103	KCK207S136	KCK208S104	KCK209S100
Complete repair kit without tooling for One Piece Kelly Cock	KCK201S023	KCK202S025 Valve 0D < 4 1/4 KCK202S023 Valve 0D >= 4 1/4	KCK203S102   Valve 0D < 5 3/8   KCK203S023   Valve 0D >= 5 3/8	KCK204S100   Valve 0D < 6   KCK204S023   Valve 0D >= 6	KCK205S023	KCK206S023	KCK207S125 Valve 0D < 7 3/8 KCK207S023 Valve 0D >= 7 3/8	KCK208S023	KCK209S023
Complete repair kit without tooling for Two Piece Kelly Cock	KCK201S108	KCK202S111 Valve 0D < 4 1/4 KCK202S105 Valve 0D >= 4 1/4	KCK203S108 Valve 0D < 5 3/8 KCK203S110 Valve 0D >= 5 3/8	KCK204S103   Valve 0D < 6   KCK204S104   Valve 0D >= 6	KCK205S105	KCK206S105	KCK207S138 Valve 0D < 7 3/8 KCK207S140 Valve 0D >= 7 3/8	KCK208S105	KCK209S101
Complete repair kit with tooling for One Piece Kelly Cock	KCK201S022 Valve OD < 4 3/4	KCK202S024   Valve 0D < 4 1/4   KCK202S022   4 1/4 =< Valve 0D   < 6 1/4	KCK203S101   Valve 0D < 5 3/8   KCK203S022   5 3/8 =< Valve 0D   < 5 7/8	KCK204S101 Valve OD < 6	KCK205S022	KCK206S022	KCK207S124 Valve 0D < 7 3/8	KCK208S022	KCK209S022
	KCK201S109 Valve 0D >= 4 3/4	KCK202S112 Valve 0D >= 6 1/4	KCK203S100 Valve 0D >= 5 7/8	KCK204S022 Valve 0D >= 6			KCK207S022 Valve 0D >= 7 3/8		
Complete repair kit with tooling for Two Piece Kelly Cock	KCK201S107 Valve OD < 4 3/4	KCK202S113 Valve 0D < 4 1/4 KCK202S104 4 1/4 =< Valve 0D < 6 1/4	KCK203S107 Valve 0D < 5 3/8 KCK203S109 5 3/8 =< Valve 0D < 5 7/8	KCK204S105 Valve OD < 6	KCK205S106	KCK206S104	KCK207S137 Valve OD < 7 3/8	KCK208S106	KCK209S102
	KCK201S110 Valve OD >= 4 3/4	KCK202S114 Valve 0D >= 6 1/4	KCK203S110 Valve 0D >= 5 7/8	KCK204S106 Valve OD >= 6			KCK207S139 Valve 0D >= 7 3/8		
			H <sub>2</sub> S	STRIM Repai	r Kit				
ITEM				ł	SERIES				
	201	202	203	204	205	206	207	208	209
Seal kit for One Piece Kelly Cock	KCK201H021	KCK202H021	KCK203H021	KCK20	4H021	KCK206H024	KCK207H021	KCK208H024	Not created
Seal kit for Two Piece Kelly Cock	KCK201H101	KCK202H104	KCK203H105	KCK20	4H100	KCK206H103	KCK207H104	KCK208H100	Not created
Complete repair kit without tooling for One Piece Kelly Cock	KCK201H023	KCK202H109 Valve 0D < 4 1/4 KCK202H023	KCK203H109 Valve 0D < 5 3/8 KCK203H023	/ KCK204H023	KCK205H023	KCK206H026	KCK207H112 Valve 0D < 7 3/8 KCK207H023	KCK208H026	Not created
Complete repair kit without	KCK201H102	KCK202H108 Valve 0D < 4 1/4	Valve OD >= 5 3/8 KCK203H110 Valve OD < 5 3/8	vaive UD >= 6	KCK205H100	KCK206H104	KCK207H106 Valve 0D < 7 3/8	KCK208H101	Not created

tooling for one piece keily cock		KCK202H023 Valve 0D >= 4 1/4	KCK203H023 Valve 0D >= 5 3/8	KCK204H023 Valve 0D >= 6			KCK207H023 Valve 0D >= 7 3/8		
Complete repair kit without tooling for Two Piece Kelly Cock	KCK201H102	KCK202H108 Valve 0D < 4 1/4 KCK202H105 Valve 0D >= 4 1/4	KCK203H110 Valve 0D < 5 3/8 KCK203H106 Valve 0D >= 5 3/8	/ KCK204H101 Valve OD >= 6	KCK205H100	KCK206H104	KCK207H106 Valve 0D < 7 3/8 KCK207H109 Valve 0D >= 7 3/8	KCK208H101	Not created
Complete repair kit with tooling for One Piece Kelly Cock	KCK201H100 Valve 0D >= 4 3/4 KCK201H100 Valve 0D < 4 3/4	$\label{eq:constraint} \begin{array}{c} {\sf KCK202H111} \\ {\sf Valve \ 0D < 4 \ 1/4} \\ {\sf KCK202H022} \\ {\sf Valve \ 4 \ 1/4 = < 0D} \\ {\it < 6 \ 1/4} \\ {\sf KCK202H103} \\ {\sf Valve \ 0D > = 6 \ 1/4} \end{array}$	KCK203H111 Valve 0D < 5 3/8 KCK203H022 5 3/8 =< Valve 0D < 5 7/8 KCK203H104 Valve 0D >= 5 7/8	/ KCK204H022 Valve 0D >= 6	KCK205H022	KCK206H025	KCK207H113 Valve OD < 7 3/8 KCK207H109 Valve OD >= 7 3/8	KCK208H025	Not created
Complete repair kit with tooling for Two Piece Kelly Cock	KCK201H103 Valve OD >= 4 3/4 KCK201H104 Valve OD < 4 3/4	$\label{eq:constraint} \begin{array}{l} \mbox{KCK202H110} \\ \mbox{Valve OD} < 4 \ 1/4 \\ \mbox{KCK202H106} \\ \mbox{Valve 4 } 1/4 = < \mbox{OD} \\ > 6 \ 1/4 \\ \mbox{KCK202H107} \\ \mbox{Valve OD} > = 6 \ 1/4 \end{array}$	$\label{eq:constraint} \begin{array}{l} \mbox{KCK203H112} \\ \mbox{Valve OD} < 5 3/8 \\ \mbox{KCK203H107} \\ \mbox{Valve 5 } 3/8 = < \mbox{OD} \\ \mbox{>} 5 7/8 \\ \mbox{KCK203H108} \\ \mbox{Valve OD} > = 5 7/8 \\ \end{array}$	/ KCK204H102 Valve 0D >= 6	KCK205H101	KCK206H105	KCK207H105 Valve OD < 7 3/8 KCK207H108 Valve OD >= 7 3/8	KCK208H102	Not created

### **Operational Benefits**

COMMAND SMFI offers KC2S Kelly Valves with PTFE rings inserted in both upper and lower seats, which provide high sealing capability, even at low pressures. KC2S internal parts are made of high grade heat treated stainless steel. The design of the body limits plug rotation to 90° between open and closed positions. Two KC2S versions are offered to suit drilling environments:

> The standard version for normal drilling conditions with an inside surface treated to enhance mud corrosion resistance and maintenance operations.

➤ The H<sub>2</sub>S trim version which has been designed for H<sub>2</sub>S environments with internal parts made of corrosion resistant materials matching the NACE MR0175 standard (latest edition), fitted in a standard body.

# Inside BOP (I-BOP)

#### **Application and General Use**

Wells can at times experience unpredictable pressure differentials causing flow into the well bore that can potentially be catastrophic for the rig and rig personnel, if uncontrolled. Safety Valves are an essential component to maintaining the safety of the well and drilling operations. Safety Valves are configured in the drill string and used on the rig floor and down-hole to manage safe operations while controlling kicks and preventing back flow of the drilling mud during the drilling process.

#### **Product Description**

The Inside BOP Valve (BVR) is a heavy duty Check Valve connected to the drill string for use on the rig floor level to protect from kicks at surface. It can be left in the drill string as long as necessary to reestablish well control with over-balanced pressure.

I-BOP Valves are supplied with either API or with proprietary connections. All I-BOP Valves are manufactured to API 7-1 specification latest edition.

I-BOP Valves are available in both standard or  $H_2S$  resistant versions and supplied according to Class 1 construction.

#### Main Features

> OD sizes ranging from 3-3/8" to 9-1/2"

> ID sizes ranging from 1-1/2" to 2-13/16"

10,000 and 15,000 PSI working pressure (testing pressure 15,000 and 22,500 PSI respectively)

The I-BOP product range comes with 4 sizes corresponding to internal part dimensions as follows:

INTERNAL TRIM SERIES	VALVE SEAT ID (IN)
1	1-1/2
2	1-3/4
3	2-1/4
4	2-13/16

Other configurations available upon request, subject to engineering department approval.

### **Hydraulic Testing**

Each I-BOP Valve is hydraulically bench tested according to API spec 7-1 (latest edition) and delivered with its individual pressure record sheets.

The pressure test is carried out in two steps:

**SHELL TESTING** during which the valve is pressurized to the test pressure for 3 minutes, then depressurized and pressurized again for at least 10 minutes (see figures 1 & 2).

**SEAT TESTING** during which the valve is pressurized from the pin end to its working pressure for at least 5 minutes (see figures 1 & 2).

During the pressure-holding period, timing starts when pressure stabilization is achieved. No visually detectable leakage is permitted during the test time period and pressure drop shall be no greater than maximum 1% of the pressure test value with a zero leak rate.

#### **Operational Benefits**

I-BOP body and internal parts are made of high grade heat treated steel. The I-BOP Valve sealing is achieved through a PTFE ring inserted in the valve. Two I-BOP construction versions are available:

> The standard version which is suitable for normal drilling conditions. The standard body inner surface is surface treated to improve resistance against mud corrosion and maintenance operations.

The H<sub>2</sub>S trim version which has been designed for H<sub>2</sub>S environments. Internal parts are made of corrosion resistant materials matching NACE MR0175 standard (latest edition) and fitted in a standard body.

### Inside BOP





Figure 1 – Inside BOP Cutaway View

Figure 2 – Inside BOP Exploded View

## **Spare Parts and References**

ITEM		STANDARD VERS	ION	
	Trim 1	Trim 2	Trim 3	Trim 4
1 Valve Release Screw	BVP100S001	BVP200S001	BVP200S001	BVP400S001
5 Valve Head with Insert	BVP100S005	BVP200S005	BVP300S005	BVP400S005
6 Valve Seat	BVP100S006	BVP200S006	BVP300S006	BVP400S006
7 Valve Spring	BVP100S007	BVP200S007	BVP300S007	BVP400S007
9 Large O-Ring	J0IN044V01	J0IN053V01	JOINR41V01	JOINR50V01
10 Small 0-Ring	JOINR33V01	JOINR36V01	JOINR36V01	JOINR41V01
Seal Kit	BVK100S001	BVK200S001	BVK300S001	BVK400S001
Complete Repair Kit	BVK100S002	BVK200S002 BVK300S002		BVK400S002
ITEM		STANDARD VERS	ION	
	Trim 1	Trim 2	Trim 3	Trim 4
2 Plug				
3 Release Rod		Part numbers depend	on valve configuration	
4 Upper Valve Body		will be supply	upon request	
8 Lower Valve Body				

ITEM		H <sub>2</sub> S SERVICE VER	SION	
	Trim 1	Trim 2	Trim 3	Trim 4
1 Valve Release Screw	BVP100S001	BVP200S001	BVP200S001	BVP400S001
5 Valve Head with Insert	BVP100H005	BVP200H005	BVP300H005	BVP400H005
6 Valve Seat	BVP100H006	BVP200H006	BVP300H006	BVP400H006
7 Valve Spring	BVP100S007	BVP200S007	BVP300S007	BVP400S007
9 Large O-Ring	J0IN044V01	J0IN053V01	JOINR41V01	JOINR50V01
10 Small 0-Ring	JOINR33V01	JOINR36V01	JOINR36V01	JOINR41V01
Seal Kit	BVK100S001	BVK200S001	BVK300S001	BVK400S001
Complete Repair Kit	BVK100H002	BVK200H002	BVK300H002	BVK400H002
ITEM		H <sub>2</sub> S SERVICE VER	SION	
	Trim 1	Trim 2	Trim 3	Trim 4
2 Plug				

Part numbers depend on valve configuration will be supply upon request

4 Upper Valve Body 8 Lower Valve Body

3 Release Rod

# **Retrievable Drop in Check Valve (RDCV)**

#### **Product Description**

The Retrievable Drop-in Check Valve (RDCV) is used to control back flow from high pressure formations into the well and through the drill string back to the surface. It also allows for downward fluid circulation within the drill string. When the back flow is under control, the Drop-in Check Valve can be retrieved using a wire line.

If a kick or back flow starts while tripping out the pipes, it can be controlled with a drill pipe Safety Valve or Kelly Cock to close the flow thru the drill pipe before reconnecting the Kelly and for pumping the RDCV down to its landing sub.

By design, the Check Valve is equipped with a self-locking (under down hole pressure) feature.

#### **Main Features**

- Landing Sub OD ranging from 3-3/8 to 8-1/2"
- > Check Valve OD sizes ranging from 1-9/32" to 3-7/64"
- > Check Valve ID sizes ranging from 3/8" to 1-11/16"
- > 10,000 and 15,000 PSI working pressure (testing pressure 15,000 and 22,500 PSI respectively)

Other configurations available upon request, subject to engineering department approval.

SERIES	CHECK VALVE OD (IN)
901	1-9/32
902	1-25/32
903	2-5/32
904	2-15/64
905	2-15/32
906	2-27/32
907	3-3/64
908	3-7/64





Figure 1 – Landing Sub Cutaway View

Figure 2 – Landing Sub Exploded View

The RDCV product range has 8 Valve series corresponding to different Check Valve outside diameters (OD):



### **Hydraulic Testing**

Each RDCV is hydraulically bench tested according to API spec 7-1 (latest edition) and delivered with its individual pressure test records.

The tests are carried out in two steps:

**SHELL TESTING** during which the valve is pressurized to the test pressure for 3 minutes, then depressurized and pressurized again for at least 10 minutes.

> SEAT TESTING during which the valve is pressurized from the pin end to its working pressure for at least 5 minutes.

During the pressure-holding period, timing shall start when pressure stabilization is achieved. No visually detectable leakage is permitted during the test time period and the pressure drop shall be no greater than maximum 1% of the pressure test value with a zero leak rate.

### Valve Compatibility

In case the Check Valve has to be dropped into the drill string, the compatibility of Check Valve OD and KC2S free passage is a critical factor. The table to the right shows the compatibility between KC2S Kelly Cocks and Drop-in Check Valves:

RDCV	KELLY COCK REQUIRED						
SERIES	KC2S SERIES						
901	202	1-3/4 ID					
902	203	2-1/8 ID					
903	204	2-1/4 ID					
904	204/205	2-1/4 ID					
905	206	2-13/16 ID					
906	207	3-1/16 ID					
907	207	3-1/16 ID					
908	208	3-1/4 ID					

### **Operational Data**

Standard Version									
ITEM	SERIES								
	901	902	903	904	905	906	907	908	
Check Valve OD	1 9/32	1 25/32	2 5/32	2 15/64	2 15/32	2 27/32	3 3/64	3 7/64	
Requested Drill String ID	1 11/32	1 27/32	2 7/32	2 19/64	2 17/32	2 29/32	3 7/64	3 11/64	
Check Valve ID	3/8	5/8	3/4	7/8	1 1/8	1 3/8	1 9/16	1 11/16	
Check Valve weight (lbs/kg)	5.3 / 2.4	6.6 / 3.0	15.4 / 7.0	19.0 / 8.6	24.4 / 11.0	28.2 / 12.8	32.7 / 14.8	38.0 / 15.8	
Landing Sub Drift diameter	1 7/64	1 29/64	1 27/32	2 7/64	2 1/8	2 33/64	2 11/16	2 25/32	
Overshot weight (lbs/kg)	1.3 / 0.6	3.8 / 1.7	4.8 / 2.2	5.8 / 2.6	8.8 / 4.0	9.3 / 4.2	10.1 / 4.6	11.0 / 5.0	

#### **Spare Parts and References**

Standard Version												
ITEM				SERIES								
	901	902	903	904	905	906	907	908				
Overshot	RD0901S001	RD0902S001	RD0903S001	RD0904S001	RD0905S001	RD0906S001	RD0907S001	RD0908S001				
Check Valve	RDV901S001	RDV902S001	RDV903S001	RDV904S001	RDV905S001	RDV906S001	RDV907S001	RDV908S001				
Landing Sub Sleeve Kit includes items L2 to L5	RDS901S001	RDS902S001	RDS903S001	RDS904S001	RDS905S001	RDS906S001	RDS907S001	RDS908S001				
Seal Kit includes items V6x2, V7x2, V9	RDK901S001	RDK902S001	RDK903S001	RDK904S001	RDK905S001	RDK906S001	RDK907S001	RDK908S001				
			H <sub>2</sub> S Service	Version								
ПЕМ				SERIES								
	901	902	903	904	905	906	907	908				
Overshot	RD0901S001	RD0902S001	RD0903S001	RD0904S001	RD0905S001	RD0906S001	RD0907S001	RD0908S001				
Check Valve	RDV901H001	RDV902H001	RDV903H001	RDV904H001	RDV905H001	RDV906H001	RDV907H001	RDV908H001				
Landing Sub Sleeve Kit includes items L2,L3,L4,L6	RDS901T001	RDS902T001	RDS903T001	RDS904T001	RDS905T001	RDS906T001	RDS907T001	RDS908T001				
Seal Kit Includes items V6v2 V7v2 V0	RDK001H001	RDK002H001	RDK003H001	RDK00/H001	RDK005H001	RDK906H001	RDK007H001	RDK008H001				

### **Operational Benefits**

RDCVs body and internal parts are made of high grade heat treated steel. Sealing is achieved through a metal to metal contact between a ball and a seat.

Two RDCV versions exist to suit all drilling environments:

> The standard version which is suitable for normal drilling conditions.

➤ The H<sub>2</sub>S trim version which has been designed for H<sub>2</sub>S environments in which the internal parts are made of corrosion resistant materials matching the NACE MR0175 standard (latest edition), fitted in a standard steel landing sub.

Kelly Cock –	Series 2	01									
Connection	Body OD	Passage ID / Series	Service	Pressure	Sh to Sh Length	Reboring Connection	Construction	Approximate Weight [lbs]	Approximate Weight [kg]	Part Number	Repair kit without Tooling
NC 26	3–3/8	1-1/4 / 201	Standard	15	13	W/0	1 piece	26	12	KCA201S001	KCK201S023
NC31	4-1/4	1-1/4 / 201	Standard	15	13	W/0	1 piece	46	21	KCA201S113	KCK201S023
NC 26	3–3/8	1-1/4 / 201	H <sub>2</sub> S TRIM	10	13	W/0	1 piece	26	12	KCA201T001	KCK201H023
NC31	4-1/4	1_1/4 / 201	$H_2$ S TRIM	10	13	W/0	1 piece	46	21	KCA201T102	KCK201H023

#### Kelly Cock – Series 202

Connection	Body OD	Passage ID / Series	Service	Pressure	Sh to Sh Length	Reboring Connection	Construction	Approximate Weight [lbs]	Approximate Weight [kg]	Part Number	Repair kit without Tooling
NC31	4–1/4	1-3/4 / 202	Standard	15	13	W/0	1 piece	40	18	KCA202S002	KCK202S023
NC38	43/4	13/4 / 202	Standard	15	13	W/0	1 piece	51	23	KCA202S001	KCK202S023
NC38	5	13/4 / 202	Standard	15	13	W/0	1 piece	57	26	KCA202S131	KCK202S023
NC31	4-1/4	1-3/4 / 202	H <sub>2</sub> S TRIM	10	13	W/0	1 piece	40	18	KCA202T002	KCK202H023
NC38	4-3/4	13/4 / 202	H <sub>2</sub> S TRIM	10	13	W/0	1 piece	51	23	KCA202T001	KCK202H023
NC38	5	1-3/4 / 202	H <sub>2</sub> S TRIM	10	13	W/0	1 piece	57	26	KCA202T111	KCK202H023

#### Kelly Cock – Series 203

Connection	Body OD	Passage ID / Series	Service	Pressure	Sh to Sh Length	Reboring Connection	Construction	Approximate Weight [lbs]	Approximate Weight [kg]	Part Number	Repair kit without Tooling
NC38	5	2-1/8 / 203	Standard	15	15	W/0	1 piece	60	27	KCA203S127	KCK203S102
NC38	5–1/4	2-1/8 / 203	Standard	15	15	W/0	1 piece	68	31	KCA203S128	KCK203S102
NC38	5–3/8	2-1/8 / 203	Standard	15	15	W/0	1 piece	73	33	KCA203S001	KCK203S023
NC40	5–1/4	2–1/8 / 203	Standard	15	15	W/0	1 piece	68	31	KCA203S129	KCK203S102
NC38	5	2-1/8 / 203	H <sub>2</sub> S TRIM	10	15	W/0	1 piece	60	27	KCA203T106	KCK203H109
NC38	5–1/4	2-1/8 / 203	H <sub>2</sub> S TRIM	10	15	W/0	1 piece	68	31	KCA203T107	KCK203H109
NC38	5–3/8	2–1/8 / 203	H <sub>2</sub> S TRIM	10	15	W/0	1 piece	73	33	KCA203T001	KCK203H023
NC40	5–1/4	2–1/8 / 203	$H_2^{-}S$ TRIM	10	15	W/0	1 piece	68	31	KCA203T108	KCK203H109
Upper Kelly Cocks											
4 1/2 REG LH 4 1/2 REG LH	53/4 53/4	2–1/8 / 203 2–1/8 / 203	Standard HoS TRIM	15 10	15 15	W/0 W/0	1 piece 1 piece	86 86	39 39	KCA203S002 KCA203T002	KCK203S023 KCK203H023
	0 0/4	2 1/07 200	1120 11111	10	10	11/0	1 01000	00	00	110/12001002	INDIAZ ODITOZO

#### Kelly Cock – Series 204 Reboring Connection Approximate Approximate Weight [lbs] Weight [kg] Repair kit without Tooling Connection Body OD Passage ID / Series Service Pressure Sh to Sh Construction Part Number Length NC46 6–1/4 2-1/4 / 204 Standard 15 W/0 101 46 KCA204S103 KCK204S023 15 1 piece NC46 6–3/8 2-1/4 / 204 Standard 15 15 W/0 1 piece 106 48 KCA204S002 KCK204S023 NC50 6-3/8 2-1/4 / 204 Standard 15 15 W/0 1 piece 106 48 KCA204S001 KCK204S023 H<sub>2</sub>S TRIM H<sub>2</sub>S TRIM H<sub>2</sub>S TRIM 2-1/4 / 204 NC46 6–1/4 10 15 W/0 1 piece 101 46 KCA204T101 KCK204H023 NC46 6–3/8 2-1/4 / 204 10 15 W/0 1 piece 106 48 KCA204T002 KCK204H023 NC50 6-3/8 2-1/4 / 204 10 15 W/0 1 piece 106 48 KCA204T001 KCK204H023

Kelly Cock –	Series 2	05									
Connection	Body OD	Passage ID / Series	Service	Pressure	Sh to Sh Length	Reboring Connection	Construction	Approximate Weight [lbs]	Approximate Weight [kg]	Part Number	Repair kit without Tooling
NC46	6-5/8	2-7/16 / 205	Standard	15	16	W/0	1 piece	90	41	KCA205S002	KCK205S023
NC50	6-5/8	2-7/16 / 205	Standard	15	16	W/0	1 piece	101	46	KCA205S001	KCK205S023
NC46	6-5/8	2-7/16 / 205	H <sub>2</sub> S TRIM	10	16	W/0	1 piece	90	41	KCA205T002	KCK205H023
NC50	6–5/8	2-7/16 / 205	$H_2^{-}S$ TRIM	10	16	W/0	1 piece	101	46	KCA205T001	KCK205H023

## Kelly Cock – Series 206

Connection	Body OD	Passage ID / Series	Service	Pressure	Sh to Sh Length	Reboring Connection	Construction	Approximate Weight [lbs]	Approximate Weight [kg]	Part Number	Repair kit without Tooling
5 1/2 FH	7	2-13/16 / 206	Standard	15	16	W/0	1 piece	130	59	KCA206S123	KCK206S023
5 1/2 FH	7_1/4	2-13/16 / 206	Standard	15	16	W/0	1 piece	141	64	KCA206S003	KCK206S023
NC50	6–1/2	2-13/16 / 206	Standard	15	16	W/0	1 piece	106	48	KCA206S122	KCK206S023
NC50	6-5/8	2-13/16 / 206	Standard	15	16	W/0	1 piece	112	51	KCA206S001	KCK206S023
NC50	6–3/4	2-13/16 / 206	Standard	15	16	W/0	1 piece	117	53	KCA206S152	KCK206S023
NC50	7	2-13/16 / 206	Standard	15	16	W/0	1 piece	130	59	KCA206S101	KCK206S023
5 1/2 FH	7	2-13/16 / 206	H <sub>2</sub> S TRIM	10	16	W/0	1 piece	130	59	KCA206T122	KCK206H026
5 1/2 FH	7–1/4	2-13/16 / 206	H <sub>2</sub> S TRIM	10	16	W/0	1 piece	141	64	KCA206T003	KCK206H026
NC50	6–1/2	2-13/16 / 206	H <sub>2</sub> S TRIM	10	16	W/0	1 piece	06	48	KCA206T102	KCK206H026
NC50	6-5/8	2-13/16 / 206	H <sub>2</sub> S TRIM	10	16	W/0	1 piece	<b>1</b> 12	51	KCA206T001	KCK206H026
NC50	63/4	2-13/16 / 206	H <sub>2</sub> S TRIM	10	16	W/0	1 piece	117	53	KCA206T121	KCK206H026
NC50	7	2–13/16 / 206	H <sub>2</sub> S TRIM	10	16	W/0	1 piece	130	59	KCA206T123	KCK206H026
Upper Kelly Cocks											
6 5/8 BEG I H	7-3/4	2-13/16 / 206	Standard	15	16	W/0	1 piece	170	77	KCA206S002	KCK206S023
6 5/8 REG LH	7-3/4	2-13/16 / 206	H <sub>2</sub> S TRIM	10	16	W/0	1 piece	170	77	KCA206T002	KCK206H026

## Kelly Cock – Series 207

Connection	Body OD	Passage ID / Series	Service	Pressure	Sh to Sh Length	Reboring Connection	Construction	Approximate Weight [lbs]	Approximate Weight [kg]	Part Number	Repair kit without Tooling
5 1/2 FH	7–1/4	3-1/16 / 207	Standard	15	17	W/0	1 piece	137	62	KCA207S163	KCK207S023
5 1/2 FH	7–3/4	3-1/16 / 207	Standard	15	17	W/0	1 piece	165	75	KCA207S164	KCK207S023
6 5/8 FH	8	3–1/16 / 207	Standard	15	17	W/0	1 piece	183	83	KCA207S100	KCK207S023
6 5/8 FH	8–1/4	3-1/16 / 207	Standard	15	17	W/0	1 piece	198	90	KCA207S166	KCK207S023
6 5/8 FH	8–1/2	3-1/16 / 207	Standard	15	17	W/0	1 piece	214	97	KCA207S103	KCK207S023
6 5/8 REG	7–3/8	3-1/16 / 207	Standard	15	17	W/0	1 piece	143	65	KCA207S131	KCK207S023
6 5/8 REG	7-3/4	3-1/16 / 207	Standard	15	17	W/0	1 piece	165	75	KCA207S165	KCK207S023
6 5/8 REG	8	3-1/16 / 207	Standard	15	17	W/0	1 piece	183	83	KCA207S109	KCK207S023
5 1/2 FH	7–1/4	3–1/16 / 207	H <sub>2</sub> S TRIM	10	17	W/0	1 piece	137	62	KCA207T100	KCK207H023
5 1/2 FH	7-3/4	3-1/16 / 207	$H_{2}S$ TRIM	10	17	W/0	1 piece	165	75	KCA207T127	KCK207H023
6 5/8 FH	8	3–1/16 / 207	H5S TRIM	10	17	W/0	1 piece	179	81	KCA207T102	KCK207H023
6 5/8 FH	8–1/4	3-1/16 / 207	H <sub>2</sub> S TRIM	10	17	W/0	1 piece	198	90	KCA207T130	KCK207H023
6 5/8 FH	8–1/2	3-1/16 / 207	H <sub>2</sub> S TRIM	10	17	W/0	1 piece	214	97	KCA207T131	KCK207H023
6 5/8 REG	73/8	3-1/16 / 207	H <sub>2</sub> S TRIM	10	17	W/0	1 piece	143	65	KCA207T126	KCK207H023
6 5/8 REG	73/4	3-1/16 / 207	H <sub>2</sub> S TRIM	10	17	W/0	1 piece	165	75	KCA207T128	KCK207H023
6 5/8 REG	8	3-1/16 / 207	H <sub>2</sub> S TRIM	10	17	W/0	1 piece	179	81	KCA207T129	KCK207H023
Upper Kelly Cocks											
6 5/8 REG LH	7-3/4	3-1/16 / 207	Standard	15	16	W/0	1 piece	163	74	KCA207S002	KCK207S023
6 5/8 REG LH	7-3/4	3–1/16 / 207	H <sub>2</sub> S TRIM	10	16	W/0	1 piece	163	74	KCA207T002	KCK207H023

Kelly Cock – S	Series 2	08									
Connection	Body OD	Passage ID / Series	Service	Pressure	Sh to Sh Length	Reboring Connection	Construction	Approximate Weight [lbs]	Approximate Weight [kg]	Part Number	Repair kit without Tooling
6 5/8 FH	8	3-1/4 / 208	Standard	15	17	W/0	1 piece	181	82	KCA208S102	KCK208S023
6 5/8 FH	8–1/2	3-1/4 / 208	Standard	15	17	W/0	1 piece	212	96	KCA208S101	KCK208S023
6 5/8 FH	8	3-1/4 / 208	H <sub>2</sub> S TRIM	10	17	W/0	1 piece	181	82	KCA208T101	KCK208H026
6 5/8 FH	8–1/2	3-1/4 / 208	H <sub>2</sub> S TRIM	10	17	W/0	1 piece	212	96	KCA208T102	KCK208H026
Upper Kelly Cocks											
6 5/8 REG LH	7-3/4	3-1/4 / 208	Standard	15	16	W/0	1 piece	157	71	KCA208S001	KCK208S023
6 5/8 REG LH	7–3/4	3–1/4 / 208	H <sub>2</sub> S TRIM	10	16	W/0	1 piece	157	71	KCA208T001	KCK208H026

Kelly Cock – S	Series 2	09									
Connection	Body OD	Passage ID / Series	Service	Pressure	Sh to Sh Length	Reboring Connection	Construction	Approximate Weight [lbs]	Approximate Weight [kg]	Part Number	Repair kit without Tooling
8 5/8 REG	10	4–1/4 / 209	Standard	15	19	W/0	1 piece	313	142	KCA209S002	KCK209S023

I–BOP – Trim 1										
Connection	OD	Passage ID / Series	Service	Sh to Sh Length	Pressure	Reboring Connection	Approximate Weight [lbs]	Approximate Weight [kg]	Part Number	Seal Kit
NC26 NC26	3–3/8 3–3/8	1–1/2 / Trim 1 1–1/2 / Trim 1	Standard H <sub>2</sub> S Trim	32 32	15 10	/ W/0	66 66	30 30	BVA1N2S001 BVA1N2T001	BVK100S001 BVK100S001

I-BOP – Trim 2										
Connection	OD	Passage ID / Series	Service	Sh to Sh Length	Pressure	Reboring Connection	Approximate Weight [lbs]	Approximate Weight [kg]	Part Number	Seal Kit
NC31 NC31	4-1/4 4-1/4	1 <i>-</i> 3/4 / Trim 2 1 <i>-</i> 3/4 / Trim 2	Standard H <sub>2</sub> S Trim	34 34	15 10	W/0 W/0	108 108	49 49	BVA2N3S100 BVA2N3T100	BVK200S001 BVK200S001

I–BOP – Trim 3										
Connection	OD	Passage ID / Series	Service	Sh to Sh Length	Pressure	Reboring Connection	Approximate Weight [lbs]	Approximate Weight [kg]	Part Number	Seal Kit
NC38	4-3/4	2-1/4 / Trim 3	Standard	33	15	W/0	134	61	BVA3N5S001	BVK300S001
NC38	5	2-1/4 / Trim 3	Standard	33	15	W/0	157	71	BVA3N5S002	BVK300S001
NC38	5–1/4	2-1/4 / Trim 3	Standard	33	15	W/0	170	77	BVA3N5S113	BVK300S001
NC38	43/4	2–1/4 / Trim 3	H <sub>2</sub> S Trim	33	10	W/0	134	61	BVA3N5T001	BVK300S001
NC38	5	2-1/4 / Trim 3	H <sub>2</sub> S Trim	33	10	W/0	157	71	BVA3N5T002	BVK300S001
NC38	5–1/4	2–1/4 / Trim 3	H <sub>2</sub> S Trim	33	10	W/0	170	77	BVA3N5T104	BVK300S001

I–BOP – Trim 4										
Connection	OD	Passage ID / Series	Service	Sh to Sh Length	Pressure	Reboring Connection	Approximate Weight [lbs]	Approximate Weight [kg]	Part Number	Seal Kit
5 1/2 FH	7	2–13/16 / Trim 4	Standard	37	15	W/0	340	154	BVA4F4S001	BVK400S001
5 1/2 FH	7-1/4	2–13/16 / Trim 4	Standard	37	15	W/0	368	167	BVA4F4S111	BVK400S001
5 1/2 FH	7-1/2	2–13/16 / Trim 4	Standard	37	15	W/0	401	182	BVA4F4S101	BVK400S001
6 5/8 FH	8	2–13/16 / Trim 4	Standard	41	15	W/0	520	236	BVA4F5S001	BVK400S001
NC46	6–1/4	2–13/16 / Trim 4	Standard	36	15	W/0	240	109	BVA4N8S001	BVK400S001
NC46	6–3/8	2–13/16 / Trim 4	Standard	36	15	W/0	254	115	BVA4N8S100	BVK400S001
NC50	6–1/2	2–13/16 / Trim 4	Standard	36	15	W/0	269	122	BVA4N9S001	BVK400S001
NC50	6-5/8	2–13/16 / Trim 4	Standard	36	15	W/0	278	126	BVA4N9S123	BVK400S001
NC50	6–3/4	2–13/16 / Trim 4	Standard	36	15	W/0	282	128	BVA4N9S124	BVK400S001
5 1/2 FH	7	2–13/16 / Trim 4	H <sub>2</sub> S Trim	37	10	W/0	340	154	BVA4F4T001	BVK400S001
5 1/2 FH	7-1/4	2–13/16 / Trim 4	H <sub>2</sub> S Trim	37	10	W/0	368	167	BVA4F4T104	BVK400S001
5 1/2 FH	7–1/2	2–13/16 / Trim 4	H <sub>2</sub> S Trim	37	10	W/0	401	182	BVA4F4T105	BVK400S001
6 5/8 FH	8	2–13/16 / Trim 4	$H_2^{-}S$ Trim	41	10	W/0	520	236	BVA4F5T001	BVK400S001
NC46	6–1/4	2–13/16 / Trim 4	H <sub>2</sub> S Trim	36	10	W/0	240	109	BVA4N8T001	BVK400S001
NC46	6-3/8	2–13/16 / Trim 4	H <sub>2</sub> S Trim	36	10	W/0	254	115	BVA4N8T100	BVK400S001
NC50	6-1/2	2–13/16 / Trim 4	H <sub>2</sub> S Trim	36	10	W/0	269	122	BVA4N9T001	BVK400S001
NC50	6-5/8	2-13/16 / Trim 4	H <sub>2</sub> S Trim	36	10	W/0	278	126	BVA4N9T107	BVK400S001
NC50	63/4	2-13/16 / Trim 4	H <sup>-</sup> S Trim	36	10	W/0	282	128	BVA4N9T108	BVK400S001

RDCV – Series 901										
Connection	Landing Sub OD	Check Valve OD / ID / Series / Landing Sub ID	Service	Pressure	Sh to Sh Length	Reboring Connection	Construction	Approximate Weight [lbs]	Approximate Weight [kg]	Part Number
NC26	3–3/8	1_9/32 / 3/8 / 901 / 1_5/38	Standard	15	18	W/0	1 piece	42	19	RDA901S001
NC31	4–1/8	1-9/32 / 3/8 / 901 / 1-5/38	Standard	15	18	W/0	1 piece	64	29	RDA901S002
NC26	3–3/8	1–9/32 / 3/8 / 901 / 1–5/38	H <sub>2</sub> S Trim	10	18	W/0	1 piece	64	29	RDA901T001
NC31	4–1/8	1_9/32 / 3/8 / 901 / 1_5/38	$H_2^{-}S$ Trim	10	18	W/0	1 piece	64	29	RDA901T002

#### **RDCV – Series 902** Landing Sub Check Valve OD / ID / Series / Landing Sub ID Service OD Approximate Approximate Weight [lbs] Weight [kg] Connection Sh to Sh Reboring Construction Part Number Pressure Length Connection 4–1/8 19 W/0 62 28 NC31 1-25/32 / 5/8 / 902 / 1-29/64 Standard 15 1 piece RDA902S001 NC38 4--3/4 1-25/32 / 5/8 / 902 / 1-29/64 Standard 15 19 W/0 1 piece 88 40 RDA902S002 1-25/32 / 5/8 / 902 / 1-29/64 44 28 NC38 Standard 15 W/0 1 piece 97 RDA902S113 5 19 4–1/8 H<sub>2</sub>S Trim H<sub>2</sub>S Trim H<sub>2</sub>S Trim NC31 1-25/32 / 5/8 / 902 / 1-29/64 10 19 W/0 1 piece 62 RDA902T001 NC38 4--3/4 1-25/32 / 5/8 / 902 / 1-29/64 10 19 W/0 1 piece 88 40 RDA902T002 NC38 5 1-25/32 / 5/8 / 902 / 1-29/64 10 19 W/0 1 piece 97 44 RDA902T105

#### **RDCV – Series 903**

Connection	Landing Sub OD	Check Valve OD / ID / Series / Landing Sub ID	Service	Pressure	Sh to Sh Length	Reboring Connection	Construction	Approximate Weight [lbs]	Approximate Weight [kg]	Part Number
NC38	43/4	2-5/32 / 3/4 / 903 / 1-27/32	Standard	15	22	W/0	1 piece	93	42	RDA903S001
NC38	5	2-5/32 / 3/4 / 903 / 1-27/32	Standard	15	22	W/0	1 piece	104	47	RDA903S002
NC38	43/4	2-5/32 / 3/4 / 903 / 1-27/32	H <sub>2</sub> S Trim	10	22	W/0	1 piece	93	42	RDA903T001
NC38	5	2–5/32 / 3/4 / 903 / 1–27/32	H <sub>2</sub> S Trim	10	22	W/0	1 piece	104	47	RDA903T002

#### **RDCV – Series 904**

Connection	Landing Sub OD	Check Valve OD / ID / Series / Landing Sub ID	Service	Pressure	Sh to Sh Length	Reboring Connection	Construction	Approximate Weight [lbs]	Approximate Weight [kg]	Part Number
NC46	6	2-15/64 / 7/8 / 904 / 2-11/64	Standard	15	24	W/0	1 piece	170	77	RDA904S002
NC50	6-5/8	2–15/64 / 7/8 / 904 / 2–11/64	Standard	15	24	W/0	1 piece	212	96	RDA904S112
NC46	6	2-15/64 / 7/8 / 904 / 2-11/64	H <sub>2</sub> S Trim	10	24	W/0	1 piece	170	77	RDA904T002
NC50	6-5/8	2–15/64 / 7/8 / 904 / 2–11/64	H <sub>2</sub> S Trim	10	24	W/0	1 piece	212	96	RDA904T101

#### **RDCV – Series 905**

Connection	Landing Sub OD	Check Valve OD / ID / Series / Landing Sub ID	Service	Pressure	Sh to Sh Length	Reboring Connection	Construction	Approximate Weight [lbs]	Approximate Weight [kg]	Part Number
5 1/2 FH	7	2–15/32 / 2–17/32 / 905 / 2–1/8	Standard	15	24	W/0	1 piece	236	107	RDA905S127
NC46	6	2-15/32 / 2-17/32 / 905 / 2-1/8	Standard	15	24	W/0	1 piece	165	75	RDA905S001
NC50	6–1/2	2–15/32 / 2–17/32 / 905 / 2–1/8	Standard	15	24	W/0	1 piece	198	90	RDA905S002
NC50	6-5/8	2-15/32 / 2-17/32 / 905 / 2-1/8	Standard	15	24	W/0	1 piece	207	94	RDA905S103
5 1/2 FH	7	2-15/32 / 2-17/32 / 905 / 2-1/8	H <sub>2</sub> S Trim	10	24	W/0	1 piece	236	107	RDA905T108
NC46	6	2-15/32 / 2-17/32 / 905 / 2-1/8	H <sub>2</sub> S Trim	10	24	W/0	1 piece	165	75	RDA905T001
NC50	6–1/2	2-15/32 / 2-17/32 / 905 / 2-1/8	H <sub>2</sub> S Trim	10	24	W/0	1 piece	198	90	RDA905T002
NC50	6-5/8	2–15/32 / 2–17/32 / 905 / 2–1/8	H <sub>2</sub> S Trim	10	24	W/0	1 piece	207	94	RDA905T100

#### **RDCV – Series 906**

Connection	Landing Sub OD	Check Valve OD / ID / Series / Landing Sub ID	Service	Pressure	Sh to Sh Length	Reboring Connection	Construction	Approximate Weight [lbs]	Approximate Weight [kg]	Part Number
5-1/2 FH	7	2-27/32 / 1-3/8 / 906 / 2-33/64	Standard	15	25	W/0	1 piece	238	108	RDA906S104
5-1/2 FH	7–1/4	2-27/32 / 1-3/8 / 906 / 2-33/64	Standard	15	25	W/0	1 piece	258	117	RDA906S114
5-1/2 FH	7–1/2	2-27/32 / 1-3/8 / 906 / 2-33/64	Standard	15	25	W/0	1 piece	278	126	RDA906S122
5-1/2 FH	73/4	2-27/32 / 1-3/8 / 906 / 2-33/64	Standard	15	25	W/0	1 piece	300	136	RDA906S136
65/8 FH	8	2-27/32 / 1-3/8 / 906 / 2-33/64	Standard	15	25	W/0	1 piece	320	145	RDA906S100
6-5/8 REG	8	2–27/32 / 1–3/8 / 906 / 2–33/64	Standard	15	25	W/0	1 piece	320	145	RDA906S002
NC50	6–1/2	2–27/32 / 1–3/8 / 906 / 2–33/64	Standard	15	25	W/0	1 piece	198	90	RDA906S001
NC50	6-5/8	2–27/32 / 1–3/8 / 906 / 2–33/64	Standard	15	25	W/0	1 piece	212	96	RDA906S102
5-1/2 FH	7	2-27/32 / 1-3/8 / 906 / 2-33/64	H <sub>2</sub> S Trim	10	25	W/0	1 piece	238	108	RDA906T115
5-1/2 FH	7-1/4	2-27/32 / 1-3/8 / 906 / 2-33/64	H <sub>2</sub> S Trim	10	25	W/0	1 piece	258	117	RDA906T100
5-1/2 FH	7–1/2	2-27/32 / 1-3/8 / 906 / 2-33/64	H <sub>2</sub> S Trim	10	25	W/0	1 piece	278	126	RDA906T116
5-1/2 FH	73/4	2-27/32 / 1-3/8 / 906 / 2-33/64	H <sub>2</sub> S Trim	10	25	W/0	1 piece	300	136	RDA906T117
65/8 FH	8	2-27/32 / 1-3/8 / 906 / 2-33/64	H <sub>2</sub> S Trim	10	25	W/0	1 piece	320	145	RDA906T101
6-5/8 REG	8	2-27/32 / 1-3/8 / 906 / 2-33/64	H <sub>2</sub> S Trim	10	25	W/0	1 piece	320	145	RDA906T002
NC50	6–1/2	2–27/32 / 1–3/8 / 906 / 2–33/64	H <sub>2</sub> S Trim	10	25	W/0	1 piece	198	90	RDA906T001
NC50	6-5/8	2–27/32 / 1–3/8 / 906 / 2–33/64	H <sub>2</sub> S Trim	10	25	W/0	1 piece	212	96	RDA906T107

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