

## Rod Shoe

Type	Description	DOI (mm)	Waterways (mm)	Stock Code
HQ	Red Rod Shoe Bit	6	6 x 4	6442
HQ	Gold Rod Shoe Bit	6	6 x 4	145
HQ	Gold Rod Shoe Bit 77.5mm ID	6	6 x 4	145S
HQ	Silver Rod Shoe A5B with Reinforced OD Gauge	6	6 x 4	02-669
NQ	Gold Rod Shoe Bit	6	6 x 4	2039
NQ	Silver Rod Shoe Bit	6	6 x 4	8080

## Casing Shoe

Type	Description	DOI (mm)	Waterways (mm)	Stock Code
BW	Gold Casing Shoe Bit	6	6 x 3	2306
HW	Gold Casing Shoe Bit	6	10 x 5	146
HWT	Red Rod / Casing Reaming Shoe Bit A54	6	10 x 5	02-662
HWT	Red Rod / Casing Reaming Shoe Bit A54	9	10 x 5	02-662/9
HWT	Gold Casing Shoe Bit	6	10 x 5	02-650
HWT	Silver Rod Casing Shoe A5B	6	10 x 5	02-665
NW	Red Casing Shoe Bit R74	6	6 x 4	144R
NW	Gold Casing Shoe Bit	6	6 x 4	144
NW	Gold Casing Shoe Bit with 3 Strips Hard Facing	6	6 x 4	715
NW	Black Series 13 Casing Shoe Bit (C7B)	6	6 x 4	2176
PW	Red Casing Shoe Bit R74	6	12 x 5	148R
PW	Gold Casing Shoe Bit A74	6	10 x 5	02-675
PW	Gold Casing Shoe Bit	6	12 x 5	148
PWT	Red Rod / Casing Reaming Shoe A54	6	10 x 5	02-673
PWT	Yellow Rod / Casing Reaming Shoe A64	6	12 x 4	02-674
PWT	Gold Casing Shoe Bit	6	12 x 5	671

## Casing Advancer Shoe

Type	Description	DOI (mm)	Waterways (mm)	Stock Code
HW	Red Casing Advancer Shoe Bit R54 119mm OD	6	10 x 5	1824
HWT	Red Rod Casing Advancer Bit R54 119mm OD	6	10 x 5	1827/OS
NW	Red Casing Advancer Shoe Bit 94.9mm OD	6	6 x 4	02-4511

# Triple Tube Conventional Core Barrel



# Triple Tube Conventional Core Barrels

Asahi Triple Tube Core Barrels are designed to maximize core recovery in site investigation and core exploratory drilling programs.

With these Core Barrels it is possible to obtain near 100% volumetric core recovery in the most undisturbed condition possible using rotary core drilling equipment. They have been used for exploration of dam, bridge and building sites as well as the development of mineral resources.

Triple Tube Core Barrels are normally supplied with stainless steel split inner tubes. Clear plastic tubing is available in NMLC size.

The plastic tubing is used when retaining the core exactly as it is recovered from the hole is desired. The core is left in the tube and the ends are sealed.

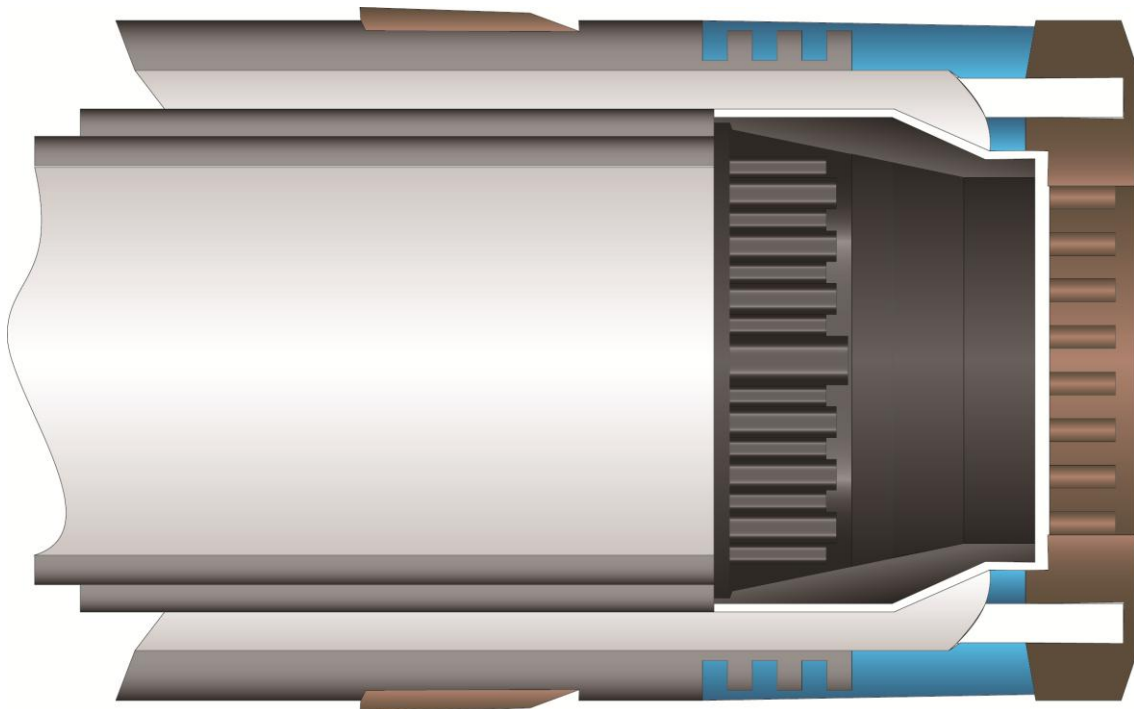
Visual examination is possible through the tubing on site or at the laboratory. The outer tubes are hard faced at each end to reduce wear and act as a stabilizer.

Size	Hole Diameter	Core Diameter	Length	Stock Code
NMLC	75.69mm	51.94mm	1.0m	3279I1MTR
NMLC	75.69mm	51.94mm	1.5m	3279I
NMLC	75.69mm	51.94mm	3.0m	3285I
HMLC	99.21mm	63.50mm	1.5m	3280I
HMLC	99.21mm	63.50mm	3.0m	3286I

Size	Description	Unit Weight (KG)	Stock Code
NMLC	NMLC Core Barrel Assy 1.5m	28.00	3279
NMLC	NMLC Core Barrel Assy 3m	45.90	3285
NMLC	NMLC Outer Tube 1.5m	12.50	3340
NMLC	NMLC Outer Tube 3m	24.00	3344
NMLC	NMLC Inner Tube 1.5m	3.50	3362
NMLC	NMLC Inner Tube 3m	7.00	3366
NMLC	NMLC Split 1.5m	3.00	3377
NMLC	NMLC Split 3m	6.00	3381
NMLC	NMLC Water End (6 & 7)	3.60	1352
NMLC	NNMLC Race Housing Assy (9 -16)	1.75	415
NMLC	NMLC Bov Assy (19-27)	1.25	406
NMLC	NMLC Adjusting Washer 1/8"		404
NMLC	NMLC Adjusting Washer 1/16"		405
NMLC	NMLC Locating Washer		402
NMLC	NMLC Core Lifter		419
NMLC	NMLC Core Lifter Case		424
NMLC	NMLC/HMLC Pump Coupling		421
NMLC	NMLC/HMLC Wrenches 5/16		420
NMLC	Grease Fitting		422
NMLC	NMLC/HMLC Allen Wrenches 1/8		429
NMLC	NMLC BOV Loader		411
NMLC	NMLC Spanner		403
HMLC	HMLC Core Barrel Assy 1.5m	52.85	3280
HMLC	HMLC Core Barrel Assy 3m	86.60	3286
HMLC	HMLC Outer Tube 1.5m	23.50	3341
HMLC	HMLC Outer Tube 3m	44.50	3345
HMLC	HMLC Inner Tube 1.5m	10.50	3363
HMLC	HMLC Inner Tube 3m	19.00	3367
HMLC	HMLC Split 1.5m	4.25	3378
HMLC	HMLC Split 3m	8.50	3382
HMLC	HMLC Water End (6 & 7)	7.00	464
HMLC	HMLC Race Housing Assy (9-16)	2.75	1354
HMLC	HMLC Bov Assy (19-27)	1.75	451
HMLC	HMLC Adjusting Washer 1/8"		449
HMLC	HMLC Adjusting Washer 1/16"		450
HMLC	HMLC Locating Washer		447
HMLC	HMLC Core Lifter		463
HMLC	HMLC Core Lifter Case		8117
HMLC	NMLC/HMLC Pump Coupling		421
HMLC	NMLC/HMLC Allen Wrenches 5/16		420
HMLC	Grease Fitting		422
HMLC	NMLC/HMLC Allen Wrenches 1/5		429
HMLC	HMLC BOV Loader		453
HMLC	HMLC Spanner		448

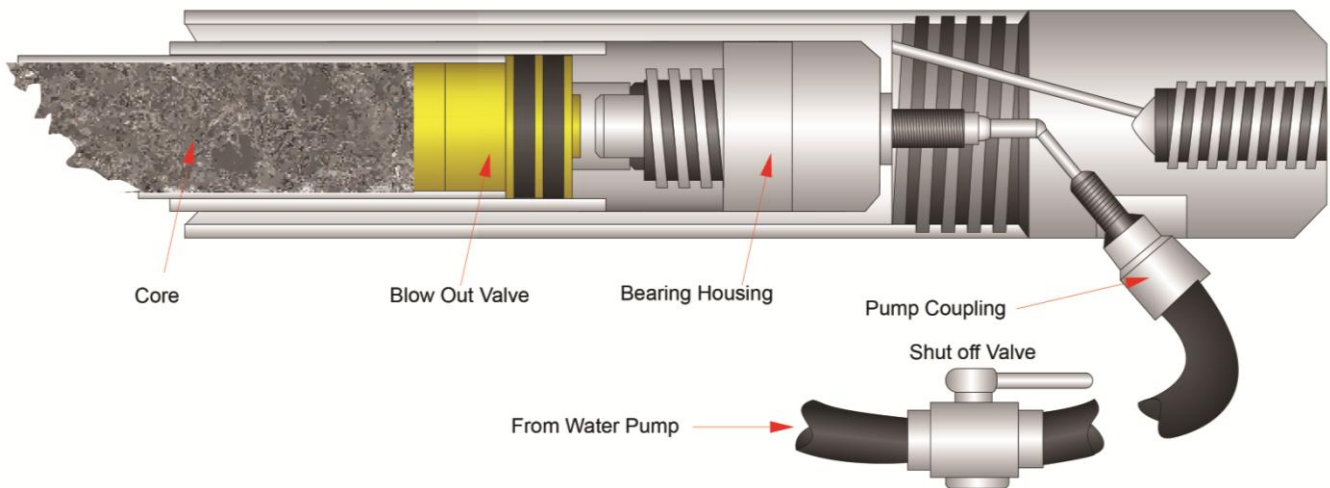
# Set Up Instructions

- Unscrew the water end from the outer tube.
- Withdraw the water end and the holding tube assembly from outer tube.
- Remove the set screw from the bearing housing and insert the grease nipple.
- Apply grease.
- Remove grease nipple and replace the set screw.
- Dismantle the rest of the barrel and reassemble ensuring that all the threads are tight.
- Loose threads can result in water leaking through the inner tube and washing the core.
- It is generally not necessary to disassemble the bearing housing unless the barrel has been stored for some time, in which case the bearings should be checked to ensure that they are fully greased.
- Check the distance between the core lifter adaptor case and the inner shoulder of the Bit.
- For medium to hard formations this clearance should be about 1.5m.
- For soft and friable formations this distance should be reduced to about 1.0m to prevent water from washing the core away.
- There should always be some clearance to prevent the core lifter adaptor case from rubbing on the Bit and allow cuttings to be washed from the inside gauge of the Bit.
- This clearance is adjusted with the spacer washers that are located between the bearing housing and the holding tube.



# Core Removal

- Remove Bit and reamer from outer tube.
- Remove the core lifter case, core lifter and locating washer from the holding tube using two C spanners.
- Remove the plug from the water end and insert the pump coupling; connect coupling to closed water pump shut off valve.
- Slowly open valve. Pressure will be applied to the top of the blow out valve, causing the valve and the split tube to be ejected from the holding tube.
- Clean barrel by tilting it with water end upward and rotate the holding tube, allowing water to wash through the barrel.
- Remove pump coupling from water end and replace the plug.



# Inner Tube Replacement

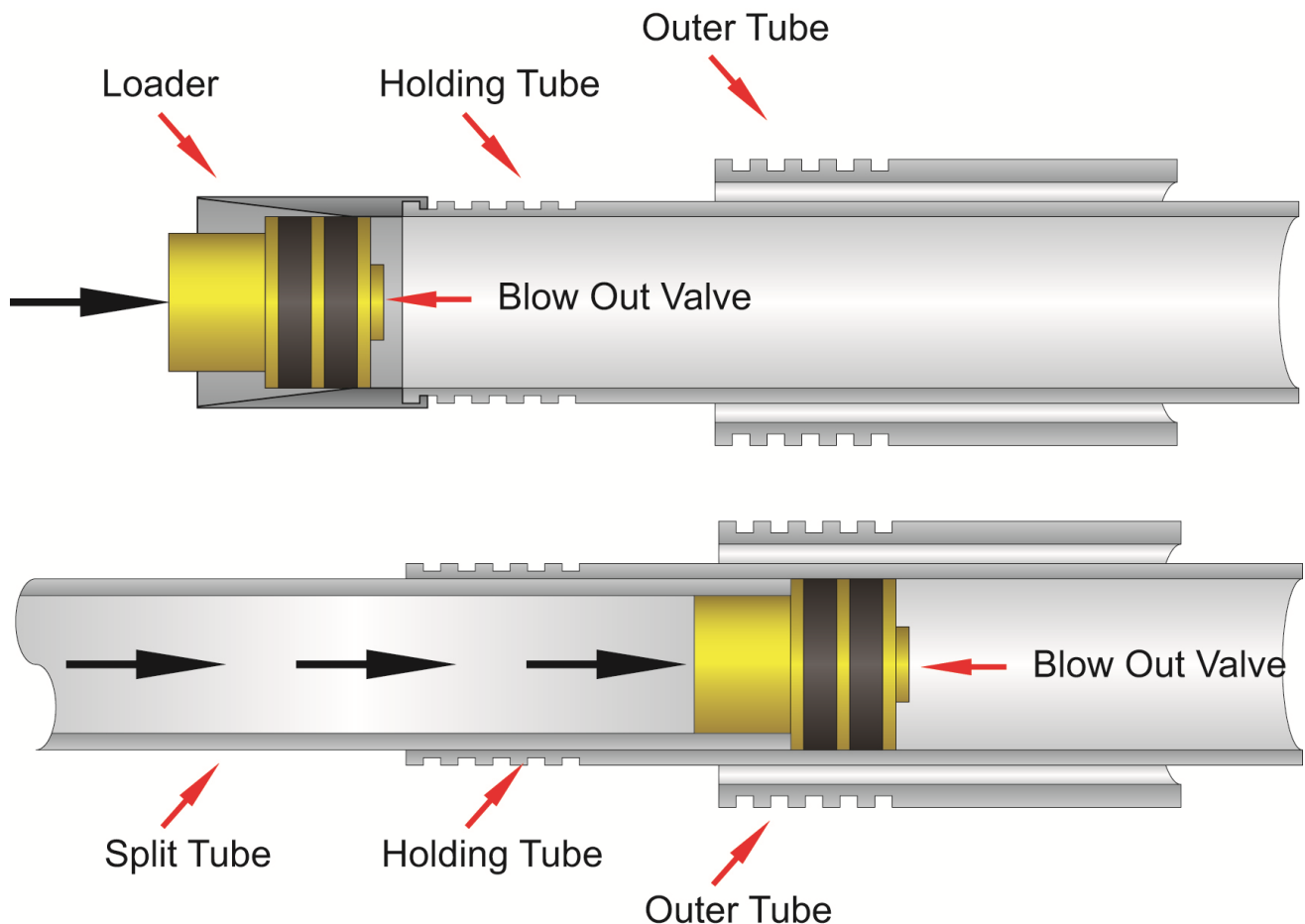
Place blow out valve loader over the holding tube and insert the blow out valve. Push the valve through the loader into the holding tube.

- Clean splits before inserting into holding tube.
- Remove loader and place the split tube over the end of the valve.
- Push the whole assembly into the holding tube until valve stops on its seating in the holding tube assembly.
- At this point the split inner tube should be flush with the end of the holding tube.
- When the inner tube is seated correctly replace the locating washer, core lifter adaptor case, core lifter, reamer and Bit.
- The core barrel is ready for another run.

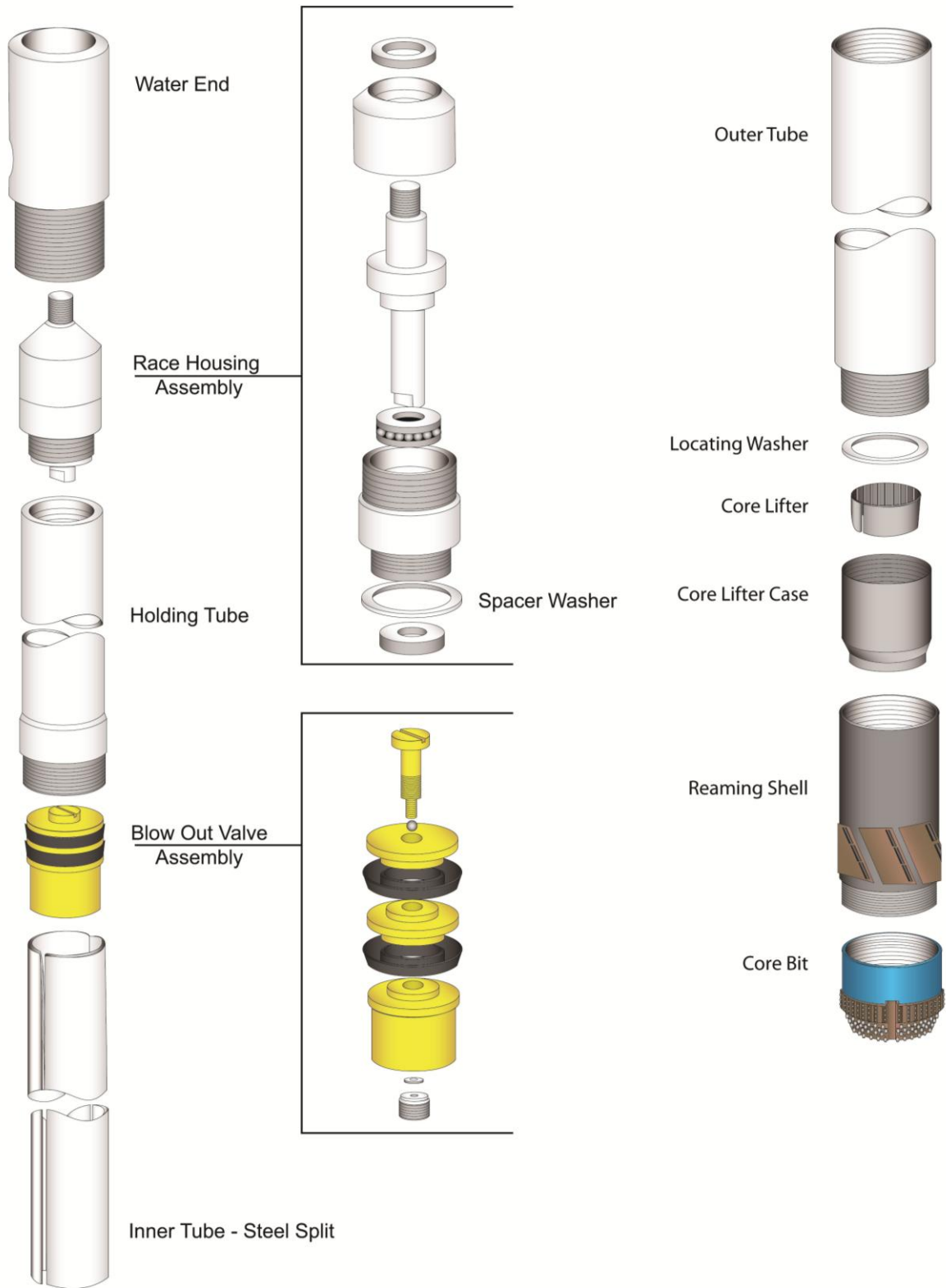
## Note:

The hole in the water end is designed to let air escape from the holding tube as the core enters the barrel. If it becomes blocked a core blockage will be indicated after drilling only a short distance and if drilling continues the pressure will prevent the core from entering the barrel.

In softer formations the core may wash away and there will be no apparent reason for lost core. Water will not leak through the hole if the seals are in good condition and the threads are tight.



# Conventional Core Barrel Breakdown





# Servicing Conventional Core Barrel

Visual inspection and any necessary repairs should be done at the drill site at least every 100 meters drilled, or every week. The Barrel should be taken to the workshop for servicing as often as possible.

The following procedure can be followed:

## General

- Dismantle the Barrel completely.
- Clean all parts (except seals) with diesel or another non-acidic cleaning fluid.
- Inspect all parts for damage.

## Water End

- Clean all waterways in the water end body.
- Check that the vent hole in the plug is clear.
- Screw it into the body.

## Race Housing Assembly

- Clean the spindle ensuring that the centre hole is not blocked.
- Check the oil seals and the bearings for wear.
- Reassemble, tightening all threads firmly.
- Apply the tools over the thick shoulder of the race clamp and the main part of the body.
- Clean the grease nipple then grease the bearings.
- Remove the grease nipple and insert the set screw.

## Blow Out Valve Assembly

- Check the U packing's, spring, ball valve and sieve for wear.
- Ensure that the ball seat is clean and none of the holes are blocked.
- Reassemble, taking care not to damage the packing's.
- Tighten all threads firmly.

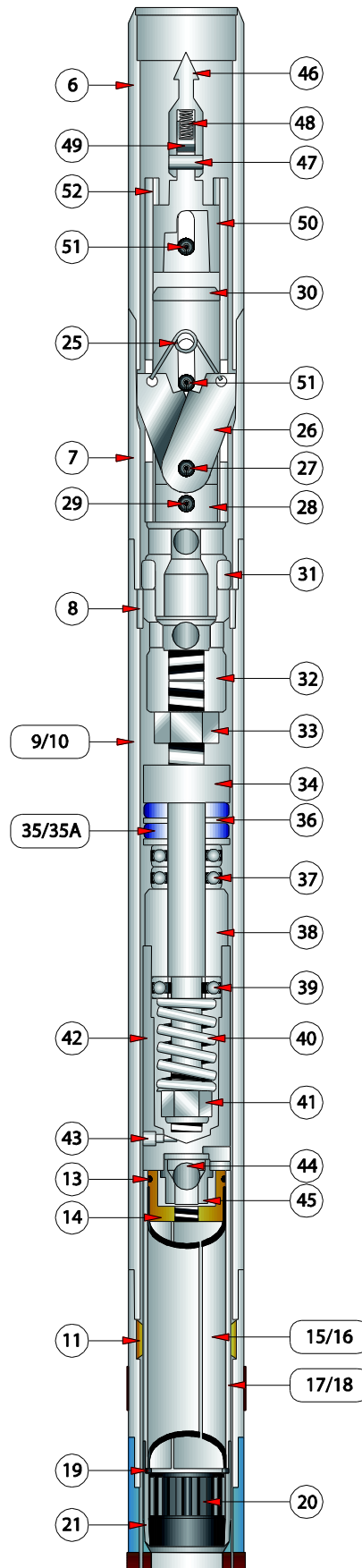
## Tubes

- If the holding or inner tubes are dented they will be difficult to assemble and cause core jamming before the barrel is full.
- Check that the split inner tube halves are circular when held together and that they will fit over the blow out valve body.
- When the blow out valve and inner tube are fitted together they should pass easily through the holding tube.
- The packing's should cause some resistance.
- If the packing's are removed the assembly should slide freely through the holding tube.

# Assembly

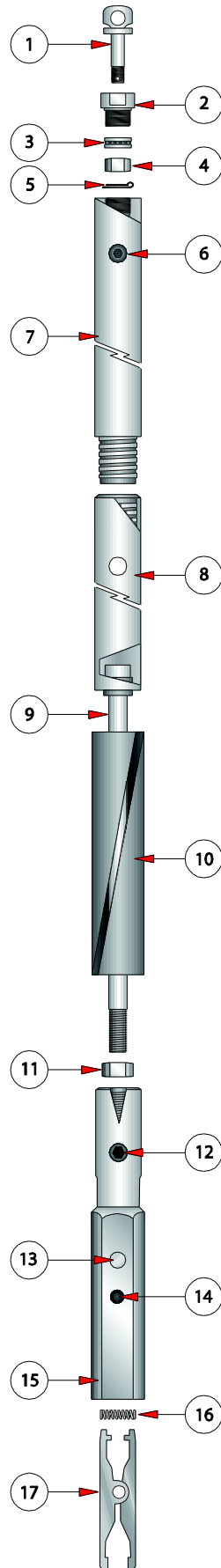
- Fit the holding tube to the bearing housing with the required spacer washers (as per the setting up instructions).
- Fit the spindle thread of the bearing housing to the water end.
- Grease the threads before assembly to assist in future disassembly.
- Insert the blow out valve and split inner tube into the holding tube.
- Test the blow out valve and bearing seals by removing the plug and coupling to a pump or compressor.
- Blow out the inner tube.
- The inner tube and splits should slowly slide out.
- If water (or air) blows out the end of the holding tube then the U packing's are worn or incorrectly fitted.
- If there is leakage through the bearing assembly then the oil seals must be replaced.
- Reload the blow out valve and inner tube.
- Slide the holding tube/water end assembly into the female threaded end of the outer tube and screw the water end into the outer tube.
- Insert the core lifter and locating washer into the core lifter adaptor case and screw to the holding tube.
- Screw a Bit and Reamer to the outer tube.
- Check the clearance between the Bit and core lifter adaptor case.
- Adjust the spacer washers if necessary.
- Fully tighten the water end, outer tube, Reamer and Bit and re-check the clearance.

# Wireline Core Barrel



Item No	Stock Code	Description	No. Req	Unit Weight (KG)
6-52	1402505	H W/L-3 Core Barrel Assy 5ft	.	75.90
6-52	1402510	H W/L-3 Core Barrel Assy 10ft	.	112.70
13-52	1412505	H W/L-3 Inner Tube Assy 5ft	.	34.50
13-52	1412510	H W/L-3 Inner Tube Assy 10ft	.	45.60
25-52	1220502	H W/L Head Assy	.	21.80
6	1221534	H W/L Locking Coupling	1	4.16
7	1221535	H W/L H W/L Adaptor Coupling	1	2.50
8	1221536	H W/L Landing Ring	1	0.30
9	1221545	H W/L Outer Tube 5ft	1	25.90
10	1221550	H W/L Outer Tube 10ft	1	51.40
11	1221539	H W/L Inner Tube Stabiliser	1	0.26
12	1221540	H W/L Thread Protector (Not Shown)	1	2.07
13	1421526	H W/L-3 O-Ring	1	0.01
14	1421527	H W/L-3 Piston	1	0.67
15	1421528	H W/L-3 Split Tube 5ft	1	3.40
16	1421529	H W/L-3 Split Tube 10ft	1	6.80
17	1421525	H W/L Inner Tube 5ft	1	7.10
18	1421530	H W/L Inner Tube 10ft	1	16.10
19	1421532	H W/L-3 Stop Ring	1	0.01
20	1421533	H W/L-3 Core Lifter	1	0.09
21	1421531	H W/L-3 Core Lifter Case	1	0.44
22	1421537	H W/L-3 Adaptor, Inner Tube (Not Shown)	1	1.60
23	1421338	H W/L-3 Piston Plug (Not Shown)	1	0.10
24	1221520	H W/L Inner Tube Wrench (Not Shown)	2	3.63
25	1221504	H W/L Latch Spring	1	0.01
26	1221505	H W/L Latch	2	0.27
27	1221403	H W/L Spring Pin 1/2" x 2"	1	0.03
28	1221507	H W/L Latch Support	1	0.18
29	1221508	H W/L Spring Pin 3/8" x 2"	1	0.02
30	12215191	H W/L Upper Latch Body	1	3.06
31	12215092	H W/L Landing Shoulder Ring	1	0.42
32	12215093	H W/L Lower Latch Body	1	1.70
33	1221510	H W/L Lock Nut	1	0.24
34	1221511	H W/L Spindle Assy	1	2.73
35	1221512S	H W/L Shut off Valve (Soft)	2	0.05
35A	1221512U	H W/L Shut off Valve (Hard)	2	0.05
36	1221513	H W/L Valve Adjusting Washer	2	0.13
37	1221514	H W/L Ball Thrust Bearing (Encapsulated)	3	0.23
38	1221515	H W/L Spindle Bearing	1	1.69
39	1221414	H W/L Hanger Ball Thrust Bearing	1	0.17
40	1221516	H W/L Compression Spring	1	0.43
41	1221517	H W/L Set Lock Nut	1	0.12
42	1221519	H W/L Inner Tube Cap	1	2.34
43	1221420	H W/L Grease Fitting	1	0.01
44	1221421	7/8" Stainless Steel Ball	1	0.05
45	1221423	H W/L Check Valve Body	1	0.21
46	1222301	H W/L Spearhead Point	1	0.19
47	1222305	H W/L Spiral Pin 7/16" x 1"	1	0.01
48	1222302	H W/L Compression Spring	1	0.01
49	1222303	H W/L Detent Plunger	1	0.02
50	1222504	H W/L Spearhead Base	1	1.14
51	1221503	H W/L Spring Pin 1/2" x 2-3/4"	2	0.04
52	1222506	H W/L Latch Retracting Case	1	2.52

# Wireline Over Shot



# Wireline Over Shot

Item No	Part No	Description	No. Req	Unit Weight (KG)
1-17	1232500	H W/L Over Shot Assy		16.40
1-5	1231221	N-H W/L Cable Swivel Assy		0.26
1	1231202	N-H W/L Eye Bolt	1	0.11
2	1231203	N-H W/L Cable Swivel Collar	1	0.11
3	1231204	N-H W/L Needle Thrust Bearing	1	0.01
4	1231205	N-H W/L Net	1	0.02
5	1231206	Cotter Pin 3/32" x 1"	1	0.01
6	1221220	Grease Fitting	1	0.01
7	1232407	N-H W/L Cable Swivel body	1	7.23
8	1232421	N-H W/L Jar Tube Weldment	1	2.83
9	1232412	N-H W/L Jar Staff	1	0.66
10	1231411	N-H W/L Locking Sleeve	1	1.27
11	1231408	N-H W/L Locking Nut	1	0.02
12	1232314	N-H W/L Machine Screw	1	0.01
13	1231517	H W/L Over Shot Head	1	0.06
14	1231418	Spring Pin 1/4" x 2"	1	0.01
15	1232515	H W/L Over Shot Head	1	2.70
16	1231316	N-H W/L Lifting Dog Spring	1	0.01
17	1231419	N-H W/L Lifting Dog	2	0.25

# Wireline Drill Rods



Wireline Drill Rods when used in conjunction with W/L Core Barrels allow the core to be retrieved through the Rods without removing the core barrel from the hole.

These Rods are manufactured from SAE grade 1541 and are stress relieved annealed all the way through, at both ends for 10”.

All N, H and HWT W/L Rods as shown are compatible with “Q series” Rods.

Size	Length	Weight	Stock Code
N W/L	1.0m	7.8 kg	30-36-404
N W/L	1.5m	11.7 kg	30-36-405
N W/L	3.0m	23.4kg	30-36-410
H W/L	1.5m	17.2 kg	30-36-505I
H W/L	3.0m	34.4 kg	30-36-510I
HWT W/L	1.5m	25.2 kg	20-17-505I
HWT W/L	3.0m	50.5 kg	20-17-510I

# CHD76 Drill Rods



The Asahi CHD76 Drill Rod is manufactured using high quality “tool Joint” pin and box threads. It is friction welded to a “mid” body cold drawn tube stock.

The CHD76 threads give these Rods unprecedented strength in both tensile and torque, coupled with the security of friction welded joints these Rods surpass any other Rod on the market for directional drilling.

These Rods are able to be supplied in 1.5m or 3m pipe lengths and they are also pre-machined to suit internal survey equipment as standard supply.

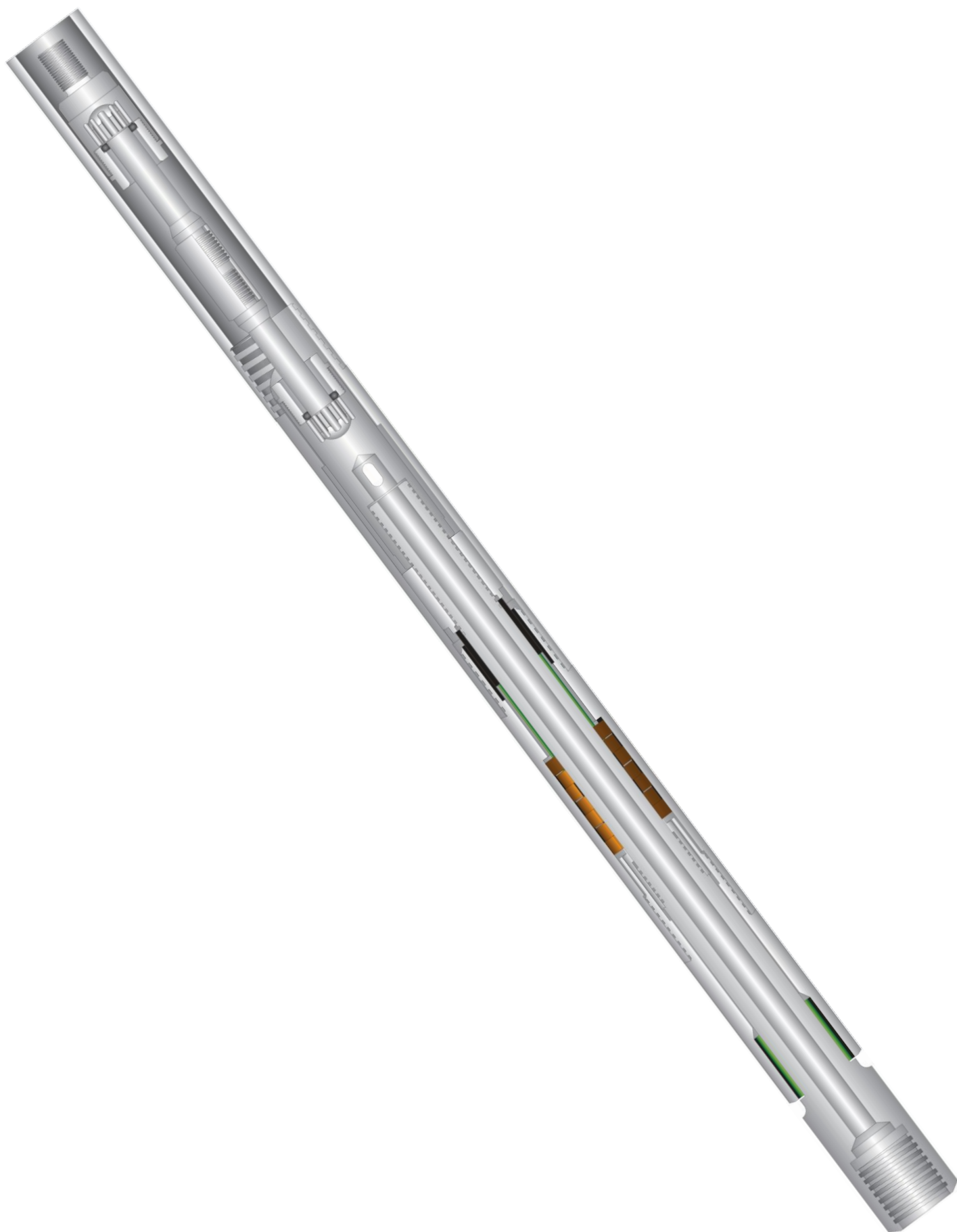
Specifications:

Maximum Torque                      6550 Nm  
Maximum Tensile Force              545.5 Kn

Size	Length	Weight	Min per Bundle
N – CHD76	1.5m	14.5 kg	19 Rods
N – CHD76	3.0m	25.0 kg	19 Rods



# Down Hole Motors



# Down Hole Motors

Asahi supplies Down Hole Motors that are commonly used for directional drilling in coal and hard rock mining as well as civil construction. They are also used as an alternative to conventional deflection style drilling where wedges are used.

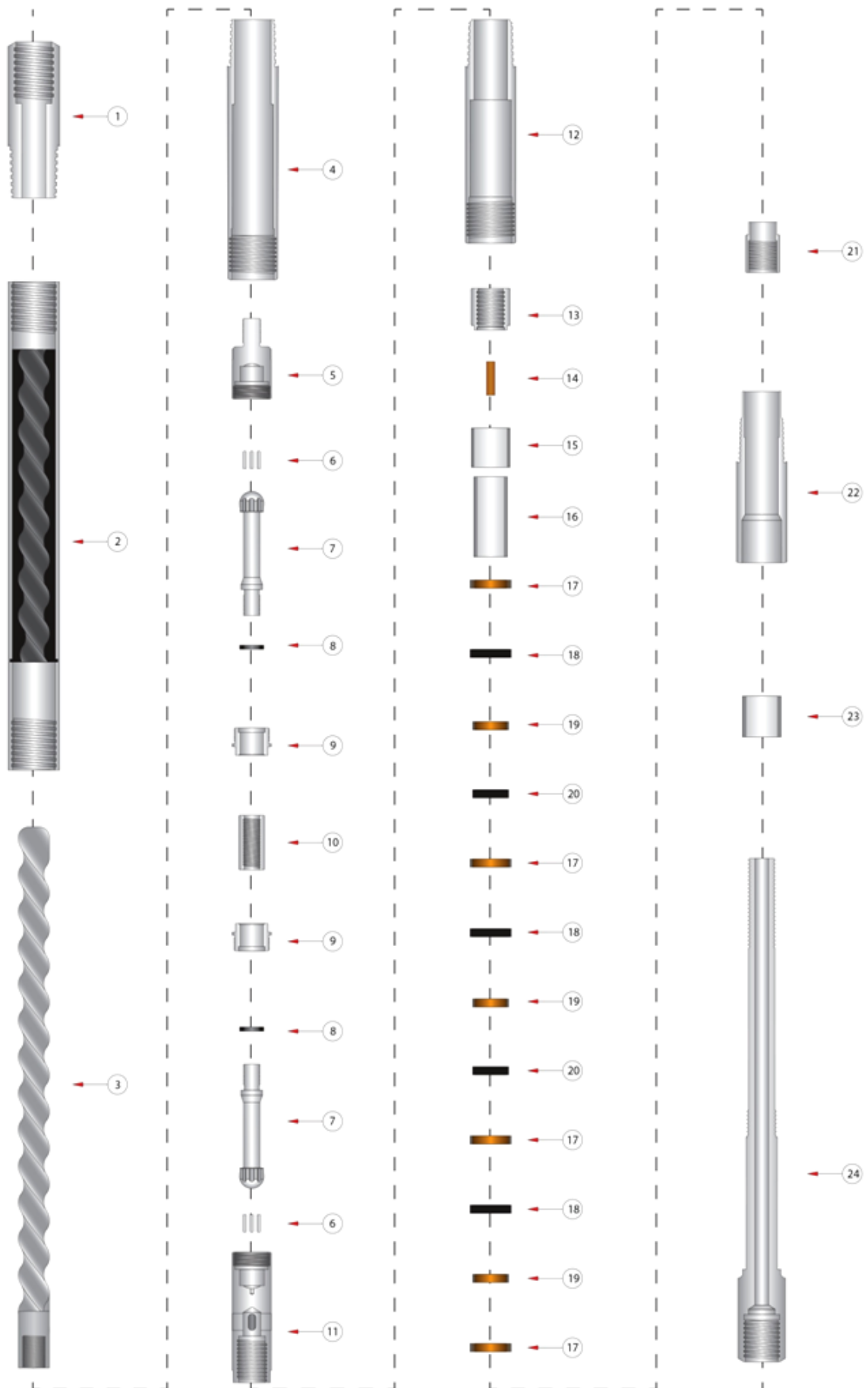
The Down Hole Motor is driven via fluid pumped into the motor, which then turns it into a mechanical rotary motion through the form of a rotor. This rotary motion is then applied to a Drill Bit (either PCD, Impregnated Diamond) and attached to the end of the motor to cut into the formation being drilled.

The direction of the motor can be determined by a “bent sub”. These subs can be fitted to the DHM to adjust the “angle” of the motor and how fast it can turn within the hole.

Asahi stock bent sub’s in standard angle’s, 1 degree, 1 ½ degree and 1 ¼ degree.

Tool Sizes	2 3/8	2 7/8 BeCu	2 7/8 Steel
Diameter (inches)	2.375	2.875	2.875
Lobes	(5-6)	(4-5)	(5-6)
Stages	2.5	3	4
Length (ft)	9	9.5	11
Weight (lbs)	140	160	180
Top Connection	BW	NW	NW
Bit Connection	BW	NW	NW
Make up Torque (ft/lbs)	600	1200	1200
Bit Sizes (inches)	2 7/8 – 3 1/2	3 1/4 - 4	3 1/4 - 4
Max Weight on Bit	3500	6000	6000
Max Bit Pressure Drop (psi)	200	200	200
Minimum Flow Rate (gpm)	25	30	40
Maximum Flow Rate (gpm)	50	70	80
Recommended Flow Rate (gpm)	42	60	70
Bit Speed (rpm)	200 - 375	160 - 375	250 – 450
Pressure Drop at Max Torque (psi)	400	400	495
Max Operating Torque (ft/lbs)	130	190	225
Maximum Overpull (lbs)	12500	20000	20000

# Down Hole Motor



# Down Hole Motor

Item No.	Stock Code	Description	No. Req
1	DHM01	Top Sub	1
2	DHM02	Stator	1
3	DHM03	Rotor	1
4	DHM05	Bent Sub	1
5	DHM06	U Joint Connector	1
6	DHM07	U Joint Pins	?
7	DHM08	U Joint Shaft	2
8	DHM09	U Joint O Ring	2
9	DHM10	U Joint Shaft Retainer Nut	2
10	DHM11	U Joint Connector Tube	1
11	DHM12	U Joint Bonnet	1
12	DHM13	Upper Bearing Housing with Bush	1
13	DHM15	Upper Retaining Nut	1
14	DHM14	Key For Drive Shaft	1
15	DHM16	Upper Radial Bearing	1
16	DHM17	Thrust Spacer Sleeve	1
17	DHM22	Outer Thrust Bearing	4
18	DHM20	Outer Thrust Sleeve	3
19	DHM21	Inner Thrust Bearing	3
20	DHM23	Inner Thrust Sleeve	2
21	DHM24	Lower Retaining Nut	1
22	DHM25	Lower Bearing Housing without Bush	1
23	DHM27	Lower Radial Bearing	1
24	DHM26	Drive Shaft with Bearing	1
5-11	DHM29	U Joint Assembly Completer	
12-24	DHM30	Drive Shaft Assembly	
21-22	DHM25ASSY	Lower Housing Complete with Bush	
23-24	DHM26ASSY	Complete Assembly	

# Water Swivels

NATA Certified 2500psi/170bar Safe Working Pressure



Asahi Diamond manufactures two configurations of Swivels:

- A top entry used within the coal industry with a 3/4" BSP male thread.
- A side entry to suit the exploration industry with up to a 1 1/4" NPT female.

The front pin comes in standard thread sizing, and spindles are made out of stainless steel with a large bore to allow a more efficient water flow.

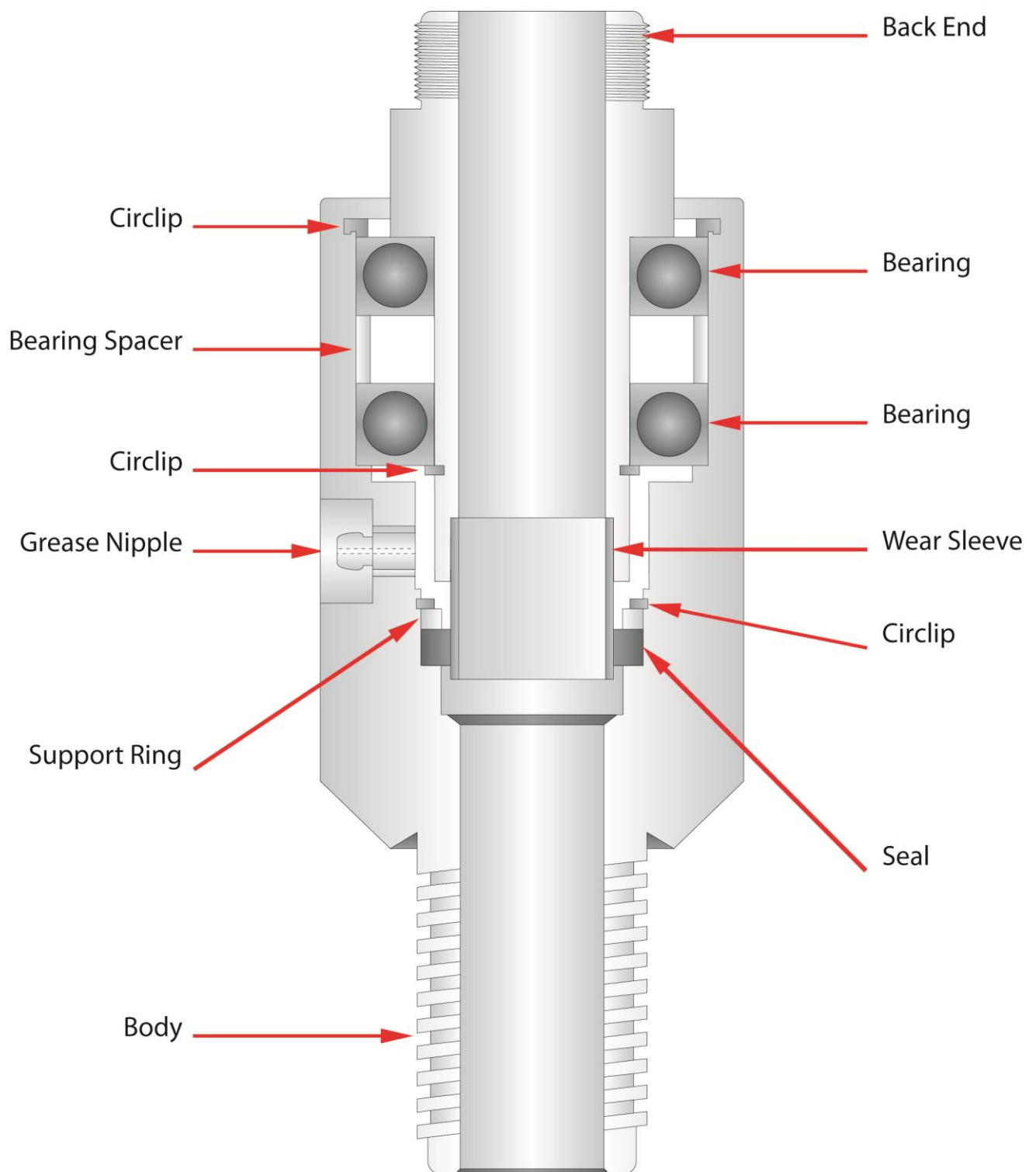
Asahi stock a complete range of spare parts to suit all Swivels and can also supply a repair kit including tools for quick on site dismantling/assembly.

During repairs and servicing these features keep downtime to a minimum.

Description	Connection	Stock Code
Top Entry Water Swivel	42mm Pin	3842/42MM
Top Entry Water Swivel	AW Pin	3842/AW
Top Entry Water Swivel	AQ Pin	3842/AQ
Top Entry Water Swivel	AWJ Pin	3842/AWJ
Top Entry Water Swivel	BQ Pin	3842/BQ
Top Entry Water Swivel	CHD Pin	3842/CHD
Top Entry Water Swivel	NQ Pin	3842/NQ
Top Entry Water Swivel	NW Pin	3842/NW
Compact Plus Water Swivel	AW Rod Box	70-11-100

# Water Swivels

NATA Certified 2500psi/170bar Safe Working Pressure



# Compact Plus Water Swivels



Specifications:

Rotating Capacity

10,000 lbs / 4,540 kg

Static Capacity

20,000 lbs / 9,000 kg

Description	Weight (KG)	Stock Code
Compact Plus W/S Assy AW Box (includes all items below excluding 7011150)	7.60	7011100
Compact Plus W/S Cap	1.98	7011110
Compact W/S O-Ring	0.01	7010113
Compact W/S Spring Washer	0.01	7010112
Compact W/S V Pack Set	0.07	7010114
Compact Plus W/S Wear Sleeve	0.03	7011115
Compact W/S Packing Cage	0.35	7010117
Compact W/S Ball Bearing	0.30	7010118
Compact Plus W/S Upper Body	1.79	7011112
Compact W/S O-Ring	0.01	7010111
Compact Plus W/S Spindle AW Box	0.87	7011121
Compact Plus W/S Thrust Bearing	0.30	7011120
Compact Plus W/S Lower Body	1.86	7011113
Grease Fitting	0.01	1221220
Compact W/S Felt Seal	0.01	7010120
Compact Plus W/S Repair Kit	0.96	7011150

# Universal Water Swivels



Specifications:

Rotating Capacity

11,000 lbs / 5,000 kg

Static Capacity

25,000 lbs / 11,400 kg

Description	Weight (KG)	Stock Code
Universal W/S Assy BW Box (includes all items below excluding 7015150)	13.50	7015100
Universal W/S Hoisting Cap	5.55	7015115
Universal W/S Compression Spring	0.04	7015114
Universal W/S V Packing Set	0.02	7015117
Universal W/S O-Ring	0.01	7015113
Universal W/S Packing Housing	1.18	7015118
Universal W/S Nut Spindle	0.25	7015119
Universal W/S Locking Washer	0.01	7015120
Universal W/S Spacer	0.01	7015121
Universal W/S Retaining Ring	0.03	7015112
Universal W/S Ball Bearing	0.66	7015111
Universal W/S Spindle Ext	0.35	7015116
Universal W/S Spindle BW Box	1.79	7015123
Universal S/W Thrust Bearing	0.59	7015124
Universal W/S Body	3.00	7015122
Grease Fitting	0.01	1221220
Universal W/S Repair Kit	1.67	7015150



## Core Bit Sizes

Size Type	Core Dia (mm)	Hole Dia (mm)
BMLC	35.2	60.0
NMLC	52.0	75.0
HMLC	63.5	99.2
3C	76.2	111.1
4C	101.6	139.7
8C	202.7	260.3
TT46	35.3	46.3
TT56	45.2	56.3
T76	61.7	76.3
T101	83.7	101.3
AQ	27.0	48.0
BQ	36.5	60.0
NQ	47.6	75.7
HQ	63.5	96.0
PQ	85.0	122.6
BQ3/TT	33.5	60.0
NQ3/TT	45.0	75.7
HQ3/TT	61.1	96.0
PQ3	83.0	122.6
NQ2	50.5	75.7

## Casing Shoe

Size Type	Core Dia (mm)	Hole Dia (mm)
NW	76.0	91.8
HW	99.7	117.5
PW	123.8	143.5
SW	146.7	172.5

## Flush Joint Casing

Size Type	O.D. (mm)	I.D. (mm)	TPI	Kg/3mtr
EW	46.0	38.1	4	13
AW	57.1	48.4	4	18
BW	73.0	60.3	4	31
NW	88.9	76.2	4	39
HW	114.3	101.6	4	51
PW	139.7	127.0	3	69
SW	168.2	152.4	3	88