MUTT Motorcycles

TECHNICAL MANUAL - MUTT MOTORCYCLES 250CC

250 EU5 M1 (MONOSHOCK VARIANTS) - V1.0/E2 08/22

CONTENTS

250cc BIKE MODELS

BIKE MODEL	MODEL ID	DATE FROM
Razorback 250-V1-Gloss Red	PM052GR	01/06/2021

BIKE MODEL	MODEL ID	DATE FROM
Razorback 250-V1-Matt Black	PM052MB	01/06/2021

BIKE MODEL	MODEL ID	DATE FROM
Razorback 250-V1-Silver	PM052SV	01/06/2021

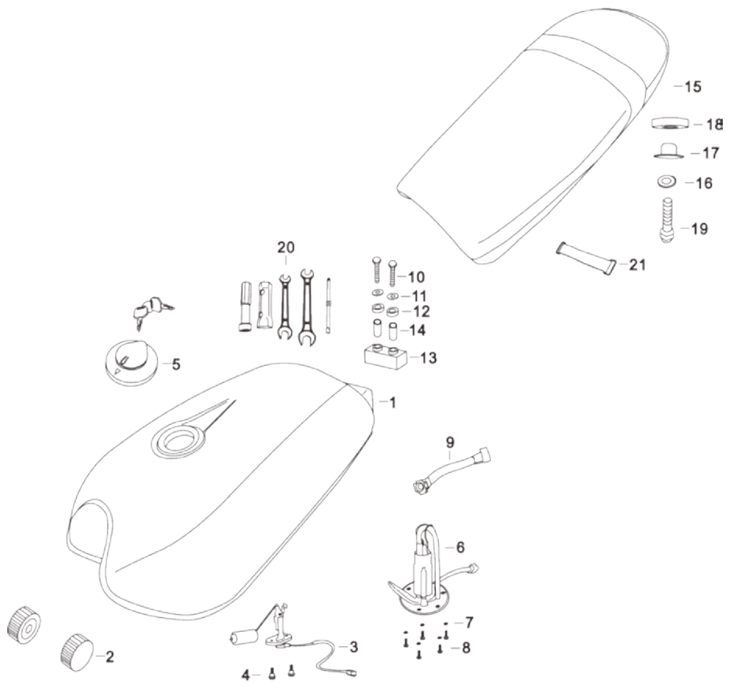
BIKE MODELS - PARTS GROUP IDENTIFICATION

		F01	F02	F03	F04	F05	F06	F07	F08	F10	F11	F12	F13	F14	F15
BIKE MODEL ID	**BIKE MODEL ID NO.**	TANK & SEAT	REAR FENDER & SIDE PANELS	ELECTRICS	ENGINE	HANDLEBARS	SWINGARM & REAR SHOCKS	FRONT FENDER & FRONT FORK	EXHAUST	FRAME	SPEEDOMETER & HEADLIGHT	WHEELS - FRONT	WHEELS - REAR	BRAKES	CABLES, MIRRORS, TOOLS
Razorback 250-V1-Gloss Red	PM052GR	F01A	F02A	F03A	F04A	F05A	F06A/F06B	F07A	F08A	F10A/F10B	F11A	F12B	F13B	F14A	F15A
Razorback 250-V1-Matt Black	PM052MB	F01A	F02A	F03A	F04A	F05A	F06A/F06B	F07A	F08A	F10A/F10B	F11A	F12A	F13A	F14A	F15A
Razorback 250-V1-Silver	PM052SV	F01A	F02A	F03A	F04A	F05A	F06A/F06B	F07A	F08A	F10A/F10B	F11A	F12B	F13B	F14A	F15A

250EU5M1-F01A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
F01A	F01	TANK & SEAT

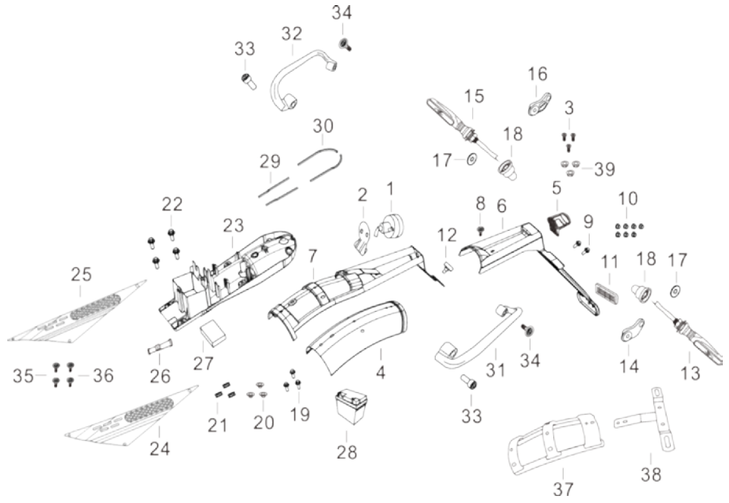


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-1282	1241400520000	TANK - MONOSHOCK - MATT BLACK - EU5	C194	TANK		Matt Black	1
1	MPT-1283	1241400620000	TANK - MONOSHOCK - GLOSS RED - EU5	C194	TANK		Gloss Red	1
1	MPT-1284	1241400720000	TANK - MONOSHOCK - SILVER - EU5	C194	TANK		Silver	1
2	MPT-0381	1260300010000	RUBBER - FUEL TANK - FRONT	C144	RUBBER		No Colour	2
3	MPT-1065	1180400149100	FUEL SENSOR	C159	SENSOR		No Colour	1
4	MPT-0962	7643106016170	HEX SHOULDER BOLT - FLANGED - M6×20	C012	BOLT	M6×20(⌀8×4.8)	No Colour	2
5	MPT-1061	1181400169000	LOCK SET	C110	LOCK SET		No Colour	1
6	MPT-1285	1114500012000	FUEL PUMP - MONOSHOCK - 350KPA	C086	FUEL PUMP		No Colour	1
7	MPT-0029	1040300142000	SEALING WASHER - FUEL PUMP	C156	SEALING WASHER	M6	No Colour	5
8	MPT-0820	7012805020154	BOLT - M5×20	C012	BOLT	M5×20	No Colour	5
9	MPT-1069	1114111023000	HIGH PRESSURE FUEL HOSE - 120MM	C098	HIGH PRESSURE FUEL HOSE	120mm	No Colour	1
10	MPT-0815	7012406040268	HEX BOLT - M6×40 - TANK	C012	BOLT	M6×40	No Colour	2
11	MPT-0922	7052706222038	WASHER - 6×22×2 - TANK	C206	WASHER	6×22×2	No Colour	2
12	MPT-0425	1261700020000	RUBBER RING - TANK	C149	RUBBER RING		No Colour	2
13	MPT-0426	1261700050000	T-RUBBER - TANK	C191	T-RUBBER	19mm	No Colour	1
14	MPT-0398	1260300450000	BUSHING	C023	BUSHING	⌀8×⌀10×25	No Colour	2
15	MPT-1044	1211400040000	SEAT - FLAT BLACK	C157	SEAT		Black	1
16	MPT-0915	7050108161648	WASHER - FLAT - 8×16×1.6	C206	WASHER	8×16×1.6	No Colour	1
17	MPT-0379	1260200200000	FLANGED WASHER	C206	WASHER	M8	No Colour	1
18	MPT-1070	1260300300000	RUBBER RING	C149	RUBBER RING		No Colour	1
19	MPT-1071	7013008035169	BOLT - M8×35	C012	BOLT	M8×35	No Colour	1
20	MPT-0033	1040300370000	TOOL KIT	C200	TOOL KIT		No Colour	1
21	MPT-1072	1261800081000	TOOLS STRAP	C213	STRAP	L=70mm	No Colour	1

250EU5M1-F02A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
F02A	F02	REAR FENDER & SIDE PANELS

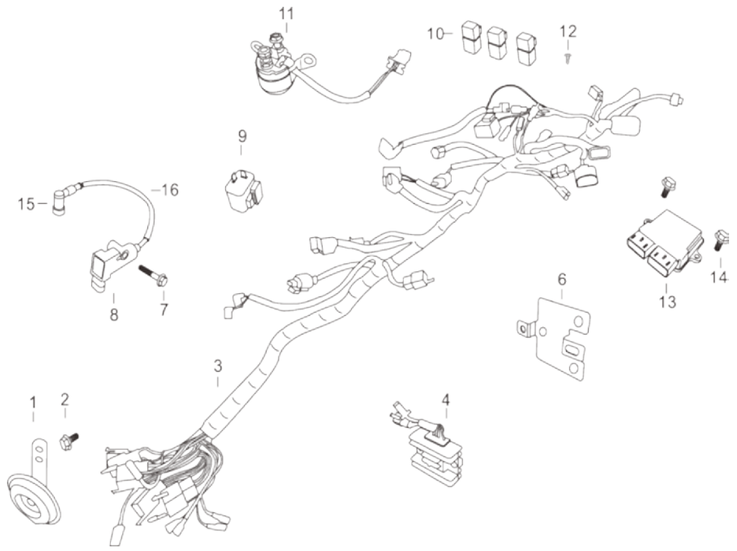


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-1053	1171400091000	TAIL LIGHT - BLACK	C193	TAIL LIGHT		Black	1
2	MPT-1013	1041400590000	BRACKET - REAR LIGHT	C015	BRACKET		No Colour	1
3	MPT-1073	7021805016153	SCREW - M5×16	C152	SCREW	M5×16	No Colour	3
4	MPT-1018	1041400622000	FENDER - REAR - BLACK	C135	REAR FENDER		Black	1
4	MPT-1019	1041400620000	FENDER - REAR - BRUSHED	C135	REAR FENDER		Brushed Aluminium	1
5	MPT-1054	1171801006000	LICENCE PLATE LIGHT	C212	LIGHT		No Colour	1
6	MPT-1074	1041400723000	TAIL COVER	C054	COVER		No Colour	1
7	MPT-1012	1041400722000	BRACKET - FENDER - REAR - LONG	C015	BRACKET		No Colour	1
8	MPT-0949	7513706012260	LARGE HEXAGONAL FLAT HEAD SCREW - M6×12	C152	SCREW	M6×12	No Colour	1
9	MPT-0856	7013006016179	HEX BOLT - FLANGED - M6×16	C012	BOLT	M6×16	No Colour	2
10	MPT-0905	7032606000248	HEX NUT - FLANGED - M6	C118	NUT	M6	No Colour	7
11	MPT-1055	1261400942000	REFLECTOR - REAR	C137	REFLECTOR		No Colour	1
12	MPT-0428	1263200090000	ROUND RUBBER PAD	C148	RUBBER PAD		No Colour	1
13	MPT-1051	1171400042000	INDICATOR - REAR - LH	C102	INDICATOR		Black	1
14	MPT-1002	1041000223000	BRACKET - INDICATOR - REAR - LH	C015	BRACKET		No Colour	1
15	MPT-1052	1171400043000	INDICATOR - REAR - RH	C102	INDICATOR		Black	1
16	MPT-1003	1041000224000	BRACKET - INDICATOR - REAR - RH	C015	BRACKET		No Colour	1
18	MPT-0422	1261400141000	RUBBER SLEEVE - INDICATORS	C151	RUBBER SLEEVE		No Colour	2
19	MPT-0860	7013006025169	HEX BOLT - FLANGED - M6×25	C012	BOLT	M6×25	No Colour	3
20	MPT-0382	1260300060000	BATTERY BUSH BRACE - SMALL	C022	BUSH BRACE	SMALL	No Colour	3
21	MPT-0384	1260300070000	RUBBER GROMMET - BATTERY	C146	RUBBER GROMMET		No Colour	3
22	MPT-0855	7013006012268	HEX BOLT - FLANGED - M6×12	C012	BOLT	M6×12	No Colour	4
23	MPT-1035	1220300144000	FENDER - FRONT - PLASTIC	C082	FRONT FENDER		No Colour	1
24	MPT-1041	1251400061000	SIDE PANEL - BLACK - LH	C161	SIDE PANEL		Matt Black	1
24	MPT-1043	1251400060000	SIDE PANEL - SILVER - RH	C161	SIDE PANEL		Silver	1
25	MPT-1040	1251400051000	SIDE PANEL - BLACK - RH	C161	SIDE PANEL		Matt Black	1
25	MPT-1042	1251400050000	SIDE PANEL - SILVER - LH	C161	SIDE PANEL		Silver	1
26	MPT-1075	1261800082000	BATTERY STRAP	C213	STRAP	120mm	No Colour	1
27	MPT-1076	1690400220000	SPONGE PAD - BATTERY	C214	SPONGE PAD	70×50×10	No Colour	1
28	MPT-1303	1150000047000	BATTERY - 4AH	C009	BATTERY		No Colour	1
29	MPT-1077	1260300130100	FAIRING STRIP - 200MM	C215	FAIRING STRIP	200mm	No Colour	2
30	MPT-1078	1260300430000	FAIRING STRIP - 250MM	C215	FAIRING STRIP	250mm	No Colour	2
31	MPT-1020	1041400127100	GRABRAIL - SIDE - LH	C007	GRABRAIL		Black	1
32	MPT-1021	1041400127200	GRABRAIL - SIDE - RH	C007	GRABRAIL		Black	1
33	MPT-0890	7024908025268	HEX SOCKET HEAD SCREW - M8×25	C152	SCREW	M8×25	No Colour	2
34	MPT-0891	7024908035268	HEX SOCKET HEAD SCREW - M8×35	C152	SCREW	M8×35	No Colour	2
35	MPT-0949	7513706012260	LARGE HEXAGONAL FLAT HEAD SCREW - M6×12	C152	SCREW	M6×12	No Colour	2
36	MPT-1079	7513706012160	SCREW - M6×12	C152	SCREW	M6×12	No Colour	2
37	MPT-1080	1041400722100	BRACKET - FENDER - REAR - BLACK	C015	BRACKET		Black	1
38	MPT-1011	1041400721000	BRACKET - LICENCE PLATE	C015	BRACKET		No Colour	1
39	MPT-1081	7032605000138	NUT - M5	C118	NUT	M5	No Colour	3

250EU5M1-F03A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
F03A	F03	ELECTRICS

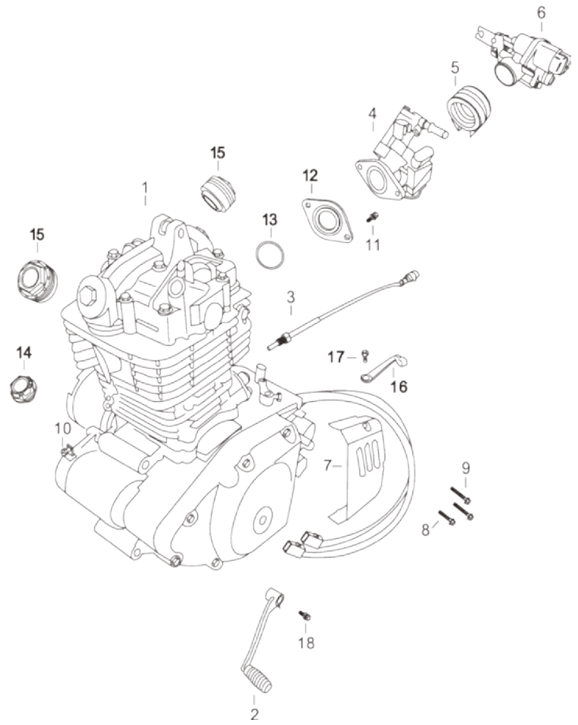


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0306	1181000060100	HORN	C099	HORN		No Colour	1
2	MPT-0855	7013006012268	HEX BOLT - FLANGED - M6×12	C012	BOLT	M6×12	No Colour	1
3	MPT-1304	1180400953000	WIRING LOOM	C209	WIRING LOOM		No Colour	1
4	MPT-1057	1181400041000	REGULATOR/RECTIFIER	C138	REGULATOR/RECTIFIER		No Colour	1
5	MPT-0806	7011006020168	CROSS RECESSED HEX BOLT - M6×12	C012	BOLT	M6×12	No Colour	2
6	MPT-1010	1030100570000	BRACKET - REGULATOR	C015	BRACKET		No Colour	1
7	MPT-0862	7013006035268	HEX BOLT - FLANGED - M6×35	C012	BOLT	M6×35	No Colour	1
8	MPT-0296	1180300018100	IGNITION COIL - WITHOUT CABLE	C101	IGNITOR		No Colour	1
9	MPT-0310	1181400060000	INDICATOR RELAY - LED - 12V	C139	RELAY		No Colour	1
10	MPT-0307	1181400001000	FUEL PUMP RELAY	C139	RELAY		No Colour	3
11	MPT-1056	1183200030000	STARTER RELAY	C181	STARTER RELAY		No Colour	1
12	MPT-1082	7070039010008	SCREW - ST3.9×10	C152	SCREW	ST3.9×10	No Colour	2
13	MPT-1255	1114200040000	ECU - 250	C070	ECU		No Colour	1
14	MPT-1083	7013006012168	BOLT - M6×12	C012	BOLT	M6×12	No Colour	2
15	MPT-0470	1650400002000	SPARK PLUG CAP - NGK	C168	SPARK PLUG		No Colour	1
16	MPT-0297	1180300018300	IGNITION COIL CABLE	C101	IGNITOR		No Colour	1

250EU5M1-F04A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
F04A	F04	ENGINE

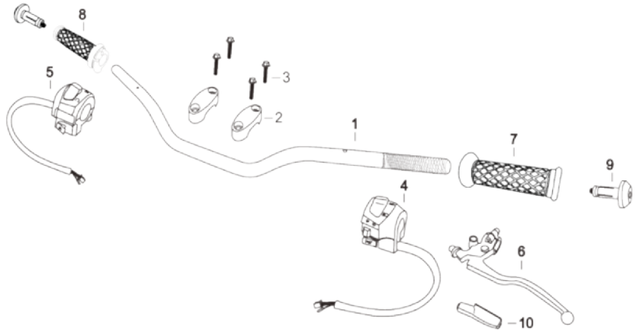


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-1305	6101130212205	ENGINE - GS125 - BLACK	C072	ENGINE		No Colour	1
2	MPT-1066	25600QMN2000	GEAR LEVER - BLACK	C109	LEVER		Black	1
3	MPT-0181	1114111002000	CYLINDER WALL TEMPERATURE SENSOR	C159	SENSOR		No Colour	1
4	MPT-1306	6202040013200	FUEL INJECTOR ASSEMBLY	C085	FUEL INJECTOR ASSEMBLY		No Colour	1
5	MPT-0591	6260030067000	RUBBER HOOP (WITH CLAMPS)	C147	RUBBER HOOP		No Colour	1
6	MPT-0188	1114111006200	THROTTLE BODY	C197	THROTTLE		No Colour	1
7	MPT-0488	6250001004002	SPROCKET COVER	C178	SPROCKET COVER		No Colour	1
8	MPT-0822	7012805025154	BOLT - M5×25	C012	BOLT	M5×25	No Colour	1
9	MPT-0826	7012805035154	BOLT - M5×35	C012	BOLT	M5×35	No Colour	2
10	MPT-0803	7011005010158	CROSS RECESSED HEX BOLT - M5×10	C012	BOLT	M5×10	No Colour	1
11	MPT-0858	7013006020268	HEX BOLT - FLANGED - M6×20	C012	BOLT	M6×20	No Colour	1
12	MPT-0584	6260030061000	SPACER - FUEL INJECTION - PLASTIC	C166	SPACER		No Colour	1
13	MPT-0585	6260030061001	O-RING - FUEL INJECTION - BLACK RUBBER	C119	O-RING		Black	1
14	MPT-0492	6260010020001	OIL FILLER CAP - CNC - BLACK	C121	OIL FILLER CAP		Black	1
15	MPT-0765	6261025080000	ENGINE VALVE COVER - CNC - BLACK	C204	VALVE COVER		Black	2
16	MPT-0630	6260050090000	CLUTCH ARM	C046	CLUTCH ARM		No Colour	1
17	MPT-0946	7512406010164	SCREW - M6×16	C152	SCREW	M6×16	Chrome	1
18	MPT-0812	7012406020268	BOLT - M6×20	C012	BOLT	M6×25	No Colour	1

250EU5M1-F05A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
F05A	F05	HANDLEBARS

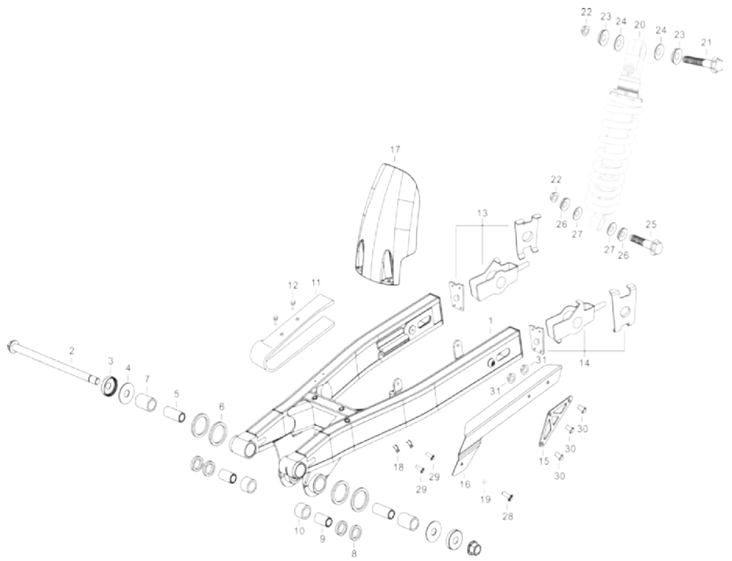


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0239	1130100080200	HANDLEBAR - MUTT - BLACK	C095	HANDLEBAR	730mm,⌀22mm	Matt Black	1
2	MPT-0976	1100400054100	HANDLEBAR MOUNT - TOP - BLACK	C117	MOUNT		Black	2
2	MPT-0978	1100400055100	HANDLEBAR MOUNT - SILVER - TOP	C117	MOUNT		Silver	2
3	MPT-0841	7012808035168	HEX BOLT - FLANGED - BLUE WHITE ZINC	C012	BOLT	M5×35	No Colour	4
4	MPT-0300	1180300123000	SWITCHGEAR - LH	C219	SWITCHGEAR		No Colour	1
5	MPT-0301	1180300233000	SWITCHGEAR - RH	C219	SWITCHGEAR		No Colour	1
6	MPT-0295	1180200115100	CLUTCH LEVER ASSEMBLY	C109	LEVER		Black	1
7	MPT-0415	1261400033000	GRIP - LEFT BAR - BLACK	C092	GRIP		Black	1
8	MPT-0418	1261400045000	GRIP - RIGHT BAR - BLACK	C092	GRIP		Black	1
9	MPT-0245	1139900016000	HANDLEBAR END - MUTT-R - BLACK	C096	HANDLEBAR END		Black	2
10	MPT-0377	1260200010000	CLUTCH CABLE SHEATH	C048	CLUTCH CABLE SHEATH		No Colour	1
11	MPT-0295	1180200115100	CLUTCH LEVER ASSEMBLY	C109	LEVER		Black	1
12	MPT-0377	1260200010000	CLUTCH CABLE SHEATH	C048	CLUTCH CABLE SHEATH		No Colour	1

250EU5M1-F06A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
F06A	F06	SWINGARM & REAR SHOCKS

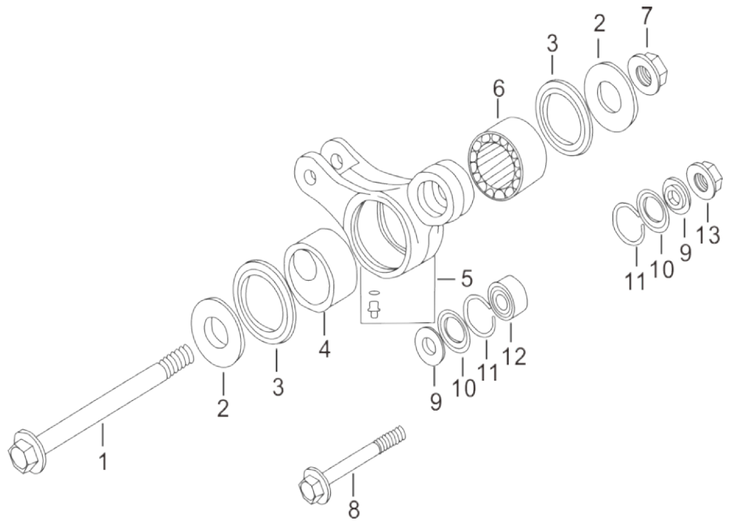


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-1307	61100QNA2010	SWINGARM - REAR - COMPLETE	C187	SWINGARM		Black	1
2	MPT-1308	61211QNA2000	SWINGARM SHAFT PIVOT	C188	SWINGARM SHAFT	ø14×M14×1.5(23)×230	No Colour	1
3	MPT-1084	1041400140130	REAR FORK RETAINER	C216	RETAINER		No Colour	2
4	MPT-1085	1041400140140	THRUST RING	C142	RING		No Colour	2
5	MPT-1309	61251QNA2000	INNER BUSHING	C023	BUSHING		No Colour	2
6	MPT-1087	1041400140150	OIL SEAL	C124	OIL SEAL		No Colour	4
7	MPT-1088	1041400140110	SWINGARM - NEEDLE ROLLER BEARINGS	C011	BEARING		No Colour	2
8	MPT-1089	1041400140160	OIL SEAL	C124	OIL SEAL		No Colour	4
9	MPT-1090	1041400140170	INNER BUSHING	C023	BUSHING		No Colour	2
10	MPT-1091	1041400140180	SWINGARM - NEEDLE ROLLER BEARINGS	C011	BEARING		No Colour	2
11	MPT-0989	1260300292001	CHAIN SLIDER	C039	CHAIN SLIDER		No Colour	1
12	MPT-0856	7013006016179	HEX BOLT - FLANGED - M6×16	C012	BOLT	M6×16	No Colour	2
13	MPT-0990	1041400700000	CHAIN ADJUSTER - RH	C037	CHAIN ADJUSTER		No Colour	1
14	MPT-0991	1041400600000	CHAIN ADJUSTER - LH	C037	CHAIN ADJUSTER		No Colour	1
15	MPT-1310	1041400074520	BRACKET - CHAIN GUARD - REAR - BLACK	C015	BRACKET		Black	1
15	MPT-1311	1041400074530	BRACKET - CHAIN GUARD - REAR - BRUSHED	C015	BRACKET		Brushed Aluminium	1
16	MPT-0993	1041400074610	CHAIN GUARD - BLACK	C038	CHAIN GUARD		Black	1
16	MPT-0995	1041400074600	CHAIN GUARD - BRUSHED	C038	CHAIN GUARD		Brushed Aluminium	1
17	MPT-0996	1040300121000	FENDER - REAR - SMALL (PLASTIC)	C074	FENDER		No Colour	1
18	MPT-1092	1041400074700	REAR BRAKE CABLE CLAMP	C041	CLAMP		No Colour	2
19	MPT-1093	7050108161639	WASHER - ø12×ø6×1.5	C206	WASHER	ø12×ø6×1.5	No Colour	2
20	MPT-0999	1100300053200	SHOCK - REAR - 345MM - BLACK	C136	REAR SHOCK	345mm	Black	1
21	MPT-1094	7012810060268	BOLT - M10×60×1.25	C012	BOLT	M10×60×1.25	No Colour	1
22	MPT-1095	7034210000248	NUT - M10×1.25	C118	NUT	M10×1.25	No Colour	2
23	MPT-1096	1100300053201	BEARING BUSHING - T	C023	BUSHING		No Colour	2
24	MPT-1097	1100300053203	RUBBER BUSHING	C023	BUSHING		No Colour	2
25	MPT-1127	7013010050168	BOLT - M10×50×1.25	C012	BOLT	M10×50×1.25	No Colour	1
26	MPT-1098	1100300053202	BEARING BUSHING - T - LOWER	C023	BUSHING		No Colour	2
27	MPT-1099	1100300053205	INNER BUSHING	C023	BUSHING		No Colour	2
28	MPT-1100	7513706008260	SCREW - M6×8	C152	SCREW	M6×8	No Colour	1
29	MPT-1101	7021805012158	SCREW - M5×12	C152	SCREW	M5×12	No Colour	2
30	MPT-0949	7513706012260	LARGE HEXAGONAL FLAT HEAD SCREW - M6×12	C152	SCREW	M6×12	No Colour	3
31	MPT-0905	7032606000248	HEX NUT - FLANGED - M6	C118	NUT	M6	No Colour	2

250EU5M1-F06B

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
F06B	F06	SWINGARM & REAR SHOCKS

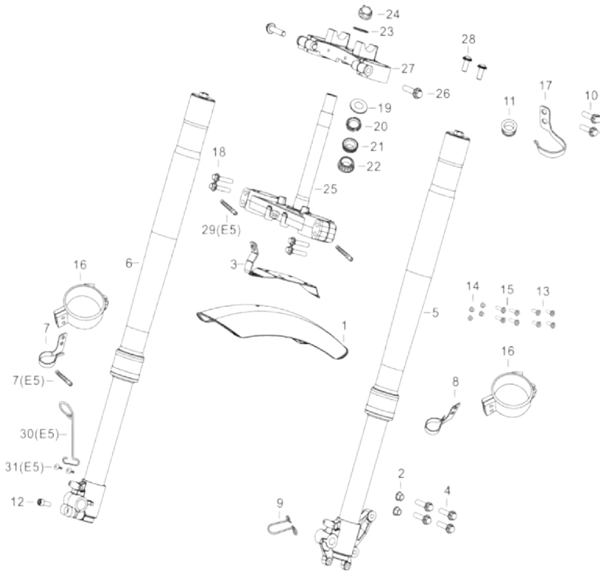


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-1102	1083700190400	SWINGARM SPINDLE - REAR	C173	SPINDLE		No Colour	1
2	MPT-1103	7050314382539	WASHER - 14×38×2.5	C206	WASHER	14×38×2.5	No Colour	2
3	MPT-1104	6260030029300	OIL SEAL	C124	OIL SEAL		No Colour	2
4	MPT-1105	6260030029200	BUSHING	C023	BUSHING	ø14×ø38×36	No Colour	1
5	MPT-1106	1083700190000	ROCKER ARM - SHOCK - REAR	C217	ROCKER ARM		No Colour	1
6	MPT-1107	1083700190300	NEEDLE ROLLER BEARINGS	C011	BEARING		No Colour	1
7	MPT-1108	7034214000248	NUT - M14×1.5	C118	NUT	M14×1.5	No Colour	1
8	MPT-1109	7013012060268	BOLT - M12×60×1.25	C012	BOLT	M12×60×1.25	No Colour	1
9	MPT-1110	1083700190500	BEARING BUSHING - T	C023	BUSHING		No Colour	2
10	MPT-1111	1083700190510	BEARING BUSHING DUST WASHER	C206	WASHER		No Colour	2
11	MPT-1112	1083700190520	ELASTIC COLLAR	C050	COLLAR		No Colour	2
12	MPT-1113	1083700190530	KNUCKLE BEARINGS	C011	BEARING		No Colour	1
13	MPT-1114	7034212000248	NUT - M12×1.25	C118	NUT	M12×1.25	No Colour	1

250EU5M1-F07A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
F07A	F07	FRONT FENDER & FRONT FORK

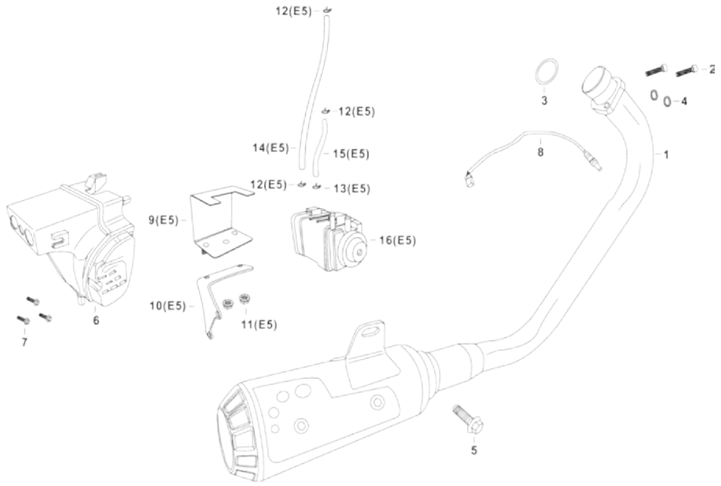


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-1312	1041400613000	FRONT FENDER - BLACK	C074	FENDER		Black	1
1	MPT-1313	1041400614000	FRONT FENDER - BRUSHED	C074	FENDER		Brushed Aluminium	1
2	MPT-0905	7032606000248	HEX NUT - FLANGED - M6	C118	NUT	M6	No Colour	2
3	MPT-1006	1041400580000	BRACKET - FENDER - FRONT	C015	BRACKET		No Colour	1
4	MPT-0856	7013006016179	HEX BOLT - FLANGED - M6×16	C012	BOLT	M6×16	No Colour	4
5	MPT-0983	1101400012300	FRONT FORK - WITH CNC BLACK CAP - LH - BLACK	C083	FRONT FORK	820mm	Black	1
5	MPT-0985	1101400012400	FRONT FORK - WITH CNC BLACK CAP - LH - GOLD	C083	FRONT FORK	820mm	Gold	1
5	MPT-1115	1101400012500	FRONT FORK - WITH CNC SILVER CAP - LH - BLACK	C077	FORK	820mm	Black	1
6	MPT-0984	1101400022300	FRONT FORK - WITH CNC BLACK CAP - RH - BLACK	C083	FRONT FORK	820mm	Black	1
6	MPT-0986	1101400022400	FRONT FORK - WITH CNC BLACK CAP - RH - GOLD	C083	FRONT FORK	820mm	Gold	1
6	MPT-1116	1101400022500	FRONT FORK - WITH CNC SILVER CAP - RH - BLACK	C077	FORK	820mm	Black	1
7	MPT-0397	1260300410000	CLAMP	C041	CLAMP	⌀6×11×53	No Colour	1
8	MPT-1118	1030100500000	BRAKE HOSE CLAMP	C041	CLAMP		No Colour	1
9	MPT-1119	1030100580000	BRAKE HOSE CLAMP - LOWER LH	C041	CLAMP		No Colour	1
10	MPT-1120	7012806012169	BOLT - M6×12	C012	BOLT	M6×12	No Colour	2
11	MPT-1121	1030100502000	FUEL HOSE SLEEVE	C165	SLEEVE		No Colour	1
12	MPT-0888	7024908020267	HEX SOCKET HEAD SCREW - M8×20	C012	BOLT	M8×20	No Colour	1
13	MPT-1122	7022005008161	SCREW - M5×8	C152	SCREW	M5×8	No Colour	4
14	MPT-1123	7032605000161	NUT - M5	C118	NUT	M5	No Colour	4
15	MPT-1124	7022005025161	SCREW - M5×25	C152	SCREW	M5×25	No Colour	4
16	MPT-1125	1030100503000	BRACKET SLEEVE (ABS)	C165	SLEEVE		No Colour	2
17	MPT-1126	1030100501000	BRAKE HOSE CLAMP - LH	C041	CLAMP		No Colour	1
18	MPT-1142	7013008045168	BOLT - M8×45	C012	BOLT	M8×45	No Colour	4
19	MPT-0118	1051400090000	HEADSTOCK DUST SEAL	C069	DUST SEAL		No Colour	1
20	MPT-0117	1051400060000	HEADSTOCK COLLAR	C050	COLLAR		No Colour	1
21	MPT-0119	1051400130000	HEADSTOCK TOP BEARING	C011	BEARING		No Colour	1
22	MPT-0120	1051400140000	HEADSTOCK LOWER BEARING	C011	BEARING		No Colour	1
23	MPT-0916	7050122361034	WASHER - FLAT - 22.5×36×1.0	C206	WASHER	22.5×36×1.0	No Colour	1
24	MPT-0980	1050100052100	HEADSTEM CAP NUT - CNC - BLACK - M22×1.25	C034	CAP NUT	M22×1.25	Black	1
24	MPT-0982	1050100052200	HEADSTEM CAP NUT - CNC - BRUSH - M22×1.25	C034	CAP NUT	M22×1.25	Silver	1
25	MPT-0979	1100400053000	YOKE - BOTTOM - BLACK	C210	YOKE		Black	1
25	MPT-0981	1100400057000	YOKE - BOTTOM - SILVER	C210	YOKE		SIlver	1
26	MPT-1127	7013010050168	BOLT - M10×50×1.25	C012	BOLT	M10×50×1.25	No Colour	2
27	MPT-0975	1100400054000	YOKE - TOP - BLACK	C210	YOKE		Black	1
27	MPT-0977	1100400056000	YOKE - TOP - SILVER	C210	YOKE		Silver	1
28	MPT-0949	7513706012260	LARGE HEXAGONAL FLAT HEAD SCREW - M6×12	C152	SCREW	M6×12	No Colour	2
29	MPT-0396	1260300330000	CLAMP	C041	CLAMP	⌀8.5×17×75	No Colour	1
30	MPT-1264	1030100491000	SPEEDOMETER CABLE LIMIT CLAMP	C041	CLAMP		No Colour	1
31	MPT-1288	7021805012159	SCREW - M5×12	C152	SCREW	M5×12	No Colour	2

250EU5M1-F08A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
F08A	F08	EXHAUST

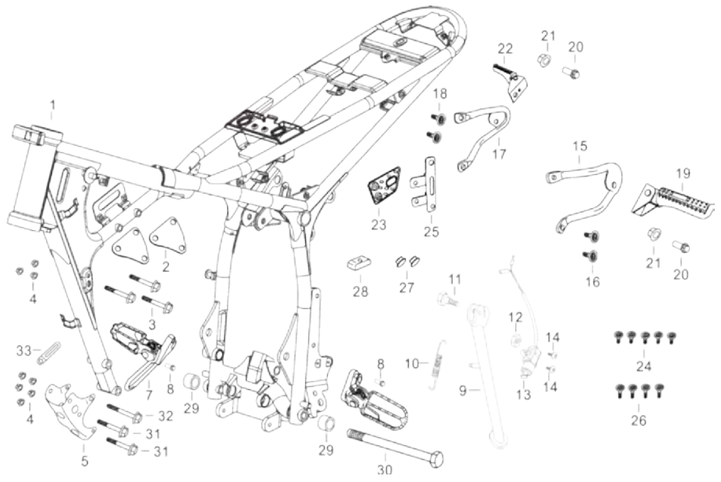


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-1314	1121400062000	EXHAUST - 250 - BLACK - EU5	C073	EXHAUST		Black	1
1	MPT-1315	1121400077000	EXHAUST - 250 - BRUSHED - EU5	C073	EXHAUST		Brushed Aluminium	1
2	MPT-0891	7024908035268	HEX SOCKET HEAD SCREW - M8×35	C152	SCREW	M8×35	No Colour	2
3	MPT-0464	1593400015000	EXHAUST GASKET	C088	GASKET		No Colour	1
4	MPT-0914	7050008104235	WASHER - ELASTIC - 8×10.1×4.2	C071	ELASTIC WASHER	8×10.1×4.2	No Colour	2
5	MPT-0852	7012810055268	HEX EYEBOLT - FLANGED - M10×55×1.25 - BRAKE PEDAL	C012	BOLT	M10×55×1.25	No Colour	1
6	MPT-1316	1221400024002	AIR CLEANER ASSEMBLY	C004	AIR CLEANER ASSEMBLY		No Colour	1
7	MPT-0855	7013006012268	HEX BOLT - FLANGED - M6×12	C012	BOLT	M6×12	No Colour	3
8	MPT-0180	1114111001000	OXYGEN SENSOR	C159	SENSOR		No Colour	1
9	MPT-1317	1041701170000	BRACKET - CARBON CANISTER	C015	BRACKET		No Colour	1
10	MPT-1318	1211400019300	CARBON CANISTER COVER	C054	COVER		No Colour	1
11	MPT-1294	6301075000004	HEX NUT - FLANGED - M6	C118	NUT	M6	No Colour	2
12	MPT-0406	1260300981000	CLAMP - FUEL HOSE	C041	CLAMP	⌀8.0×1	No Colour	4
14	MPT-0401	1260300840000	FUEL HOSE - CARBON CANISTER	C084	FUEL HOSE	⌀4.7×⌀8.5×380	No Colour	1
15	MPT-1319	1261400012000	FUEL HOSE - CARBON CANISTER	C084	FUEL HOSE	⌀4.7×⌀8.5×550	No Colour	1
16	MPT-1320	1260300993000	CARBON CANISTER	C035	CARBON CANISTER		No Colour	1
17	MPT-1321	1260300061000	BUSHING	C023	BUSHING	⌀19.5×⌀9×8.8mm	No Colour	4
18	MPT-0385	1260300071000	WASHER - 8×10.1×4.2	C206	WASHER	8×10.1×4.2	No Colour	4
19	MPT-1138	7513706016260	SCREW - M6×16	C152	SCREW	M6×16	No Colour	4
20	MPT-1148	1040700070000	BRAKE PEDAL SPACER/BUSH	C167	SPACER/BUSH	34mm	No Colour	1

250EU5M1-F10A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
F10A	F10	FRAME

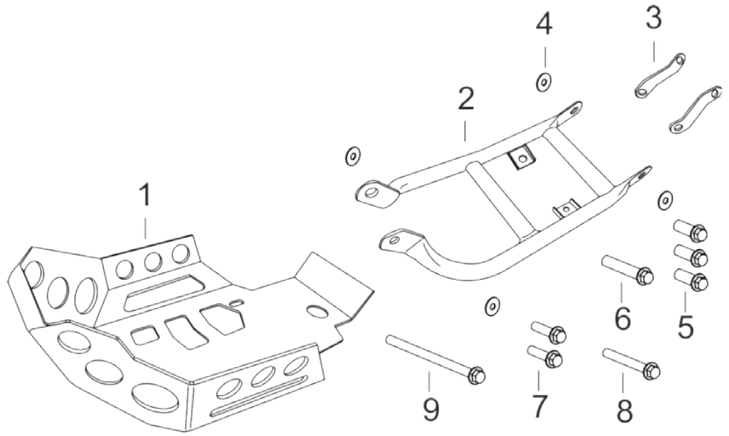


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-1322	1031400200000	FRAME	C080	FRAME		No Colour	1
2	MPT-1323	1030300053000	ENGINE BRACKET - UPPER	C015	BRACKET		No Colour	2
3	MPT-0869	7013008050168	HEX BOLT - FLANGED - M8×50	C012	BOLT	M8×50	No Colour	3
4	MPT-0907	7033608000148	SELF-LOCKING HEX NUT - FLANGED - M8	C158	SELF-LOCKING NUT	M8	No Colour	8
5	MPT-0009	1030100023000	ENGINE BRACKET - LOWER	C015	BRACKET		No Colour	1
6	MPT-1022	1041400071101	FOOTPEG - FRONT- LH	C076	FOOTPEG		Black	1
7	MPT-1324	1041400071103	FOOTPEG - FRONT- RH	C076	FOOTPEG		No Colour	1
8	MPT-0877	7013012035269	HEX BOLT - FLANGED - M12×35×1.25	C012	BOLT	M12×35×1.25	No Colour	2
9	MPT-0971	1041400060001	SIDE STAND - 310MM	C162	SIDE STAND	310mm	Black	1
10	MPT-0972	1290300111000	SIDE STAND SPRING	C176	SPRING		No Colour	1
11	MPT-0960	7640310035167	SIDE STAND BOLT - M10×35×1.5	C012	BOLT	M10×35×1.5	No Colour	1
12	MPT-0898	7031910000147	HEX NUT - M10×1.5	C118	NUT	M10×1.5	No Colour	1
13	MPT-0314	1183700220000	SIDE STAND SWITCH	C189	SWITCH		No Colour	1
14	MPT-0880	7021805014157	SCREW - M5×14	C152	SCREW	M5×14	No Colour	2
15	MPT-1016	1041400074400	BRACKET - FOOTPEG - REAR - LH	C015	BRACKET		No Colour	1
16	MPT-1133	7012808216168	BOLT - M8×16	C012	BOLT	M8×16	No Colour	2
17	MPT-1017	1041400074300	BRACKET - FOOTPEG - REAR - RH	C015	BRACKET		No Colour	1
18	MPT-1134	7012808220168	BOLT - M8×16	C012	BOLT	M8×16	No Colour	2
19	MPT-1024	1041400074200	FOOTPEG - REAR - LH	C076	FOOTPEG		Black	1
20	MPT-1135	7012810020268	BOLT - M10×20×1.25	C012	BOLT	M10×20×1.25	No Colour	2
21	MPT-1136	7034310000248	NUT - M10×1.25	C118	NUT	M10×1.25	No Colour	2
22	MPT-1025	1041400084200	FOOTPEG - REAR - RH	C076	FOOTPEG		Black	1
23	MPT-1014	1250809000503	MASTER CYLINDER HEAL GUARD - REAR - BLACK	C115	MASTER CYLINDER REAR COVER		Black	1
23	MPT-1137	1250809000403	MASTER CYLINDER HEAL GUARD - REAR - BRUSHED	C093	GUARD		Brushed Aluminium	1
24	MPT-0949	7513706012260	LARGE HEXAGONAL FLAT HEAD SCREW - M6×12	C152	SCREW	M6×12	No Colour	3
25	MPT-1138	7513706016260	SCREW - M6×16	C152	SCREW	M6×16	No Colour	4
26	MPT-1325	1261400011000	CHAIN RUBBER	C144	RUBBER		No Colour	1
27	MPT-1140	1031400102000	BUFFER SLEEVE	C165	SLEEVE		No Colour	2
28	MPT-1326	01504Q081381	BOLT - M8×120	C012	BOLT		No Colour	1
29	MPT-0871	7013008070168	HEX BOLT - FLANGED - M8×70	C012	BOLT	M8×70	No Colour	3
30	MPT-1327	7013008075168	BOLT - M8×80	C012	BOLT		No Colour	1
31	MPT-0396	1260300330000	CLAMP	C041	CLAMP	⌀8.5×17×75	No Colour	1

250EU5M1-F10B

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
F10B	F10	FRAME

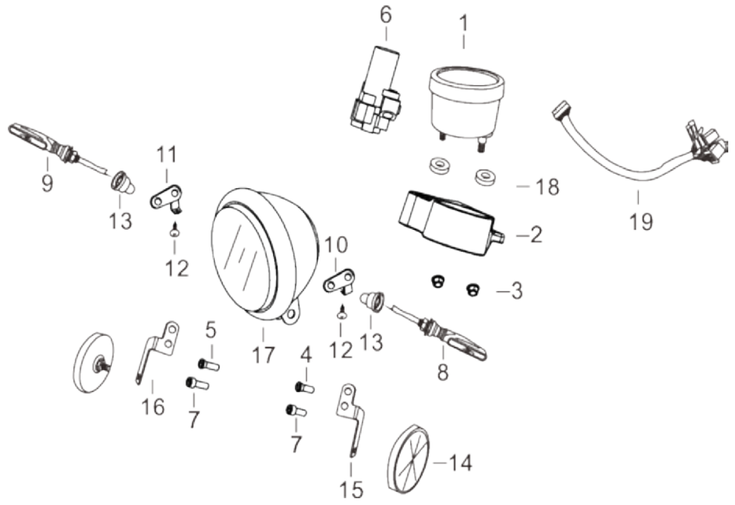


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0359	1250809000500	SUMP GUARD - 250 - BLACK	C186	SUMP GUARD		Black	1
1	MPT-0360	1250809000600	SUMP GUARD - 250 - BRUSHED	C186	SUMP GUARD		Brushed Aluminium	1
2	MPT-0026	1040101500000	BRACKET - SUMP GUARD - MAIN	C015	BRACKET		Black	1
3	MPT-1328	1030100045100	BRACKET - SUMP GUARD - REAR	C015	BRACKET		No Colour	2
4	MPT-1135	7012810020268	BOLT - M10×20×1.25	C012	BOLT	M10×20×1.25	No Colour	3
5	MPT-0852	7012810055268	HEX EYEBOLT - FLANGED - M10×55×1.25 - BRAKE PEDAL	C012	BOLT	M10×55×1.25	No Colour	1
6	MPT-0843	7012808036168	HEX BOLT - FLANGED - M8×20	C012	BOLT	M8×20	No Colour	4
7	MPT-1136	7034310000248	NUT - M10×1.25	C118	NUT	M10×1.25	No Colour	4

250EU5M1-F11A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
F11A	F11	SPEEDOMETER & HEADLIGHT

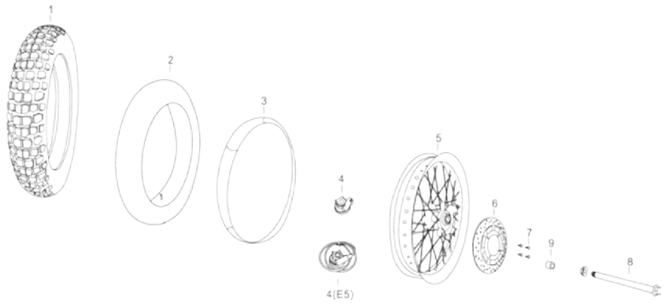


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-1251	1161400016700	SPEEDOMETER - DIGITAL - BLACK	C172	SPEEDOMETER		Black	1
2	MPT-1009	1100400054200	SPEEDOMETER SURROUND - BLACK	C171	SPEEDO SURROUND		Black	1
2	MPT-1128	1100400054300	SPEEDOMETER SURROUND - SILVER	C171	SPEEDO SURROUND		Silver	1
3	MPT-0905	7032606000248	HEX NUT - FLANGED - M6	C118	NUT	M6	No Colour	2
4	MPT-1130	7513706016160	SCREW - M6×16	C152	SCREW	M6×16	No Colour	1
5	MPT-1131	7513706020160	SCREW - M6×20	C152	SCREW	M6×20	No Colour	1
6	MPT-1061	1181400169000	LOCK SET	C110	LOCK SET		No Colour	1
7	MPT-0887	7024906016260	HEX SOCKET HEAD SCREW - M6×16	C012	BOLT	M6×16	No Colour	2
8	MPT-1049	1171400032000	INDICATOR - FRONT - LH	C102	INDICATOR		Black	1
9	MPT-1050	1171400033000	INDICATOR - FRONT - RH	C102	INDICATOR		Black	1
10	MPT-1000	1030100520000	BRACKET - INDICATOR - FRONT - LH	C015	BRACKET		No Colour	1
11	MPT-1001	1030100510000	BRACKET - INDICATOR - FRONT - RH	C015	BRACKET		No Colour	1
12	MPT-1132	7021805008158	BOLT - M5×8	C012	BOLT	M5×8	No Colour	2
13	MPT-0422	1261400141000	RUBBER SLEEVE - INDICATORS	C151	RUBBER SLEEVE		No Colour	2
14	MPT-0424	1261400943000	REFLECTOR - FRONT	C137	REFLECTOR		No Colour	2
15	MPT-1005	1030100540000	BRACEKT - REFLECTOR - FRONT - LH	C015	BRACKET		No Colour	1
16	MPT-1004	1030100530000	BRACKET - REFLECTOR - FRONT - RH	C015	BRACKET		No Colour	1
17	MPT-1048	1171000054000	HEADLIGHT - MATT BLACK	C097	HEADLIGHT		Black	1
18	MPT-1070	1260300300000	RUBBER RING	C149	RUBBER RING		No Colour	2
19	MPT-1263	1161400016704	WIRE - SPEEDOMETER	C208	WIRE		No Colour	1

250EU5M1-F12A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
F12A	F12	WHEELS - FRONT

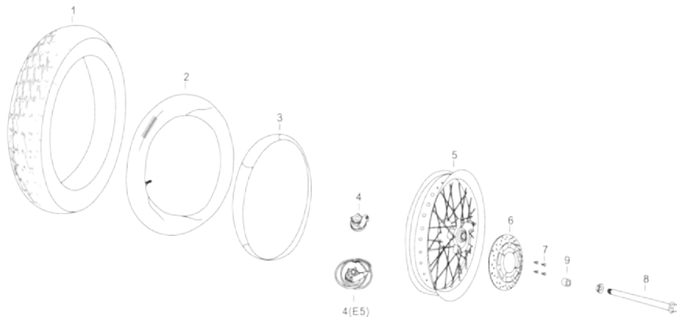


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0153	1090100215000	TYRE - 120/90×18 65P	C202	TYRE	120/90×18	No Colour	1
2	MPT-0154	1090100216000	INNER TUBE - 120/90×18	C103	INNER TUBE	120/90×18	No Colour	1
3	MPT-1146	1090100999200	RIM TAPE	C141	RIM TAPE		No Colour	1
4	MPT-1270	1081400058000	SPEEDOMETER DRIVE - DIGITAL	C170	SPEEDO DRIVE		No Colour	1
5	MPT-0132	1081400014910	WHEEL - FRONT - ALL BLACK - STAINLESS SPOKES - ALUMINUM RIM	C207	WHEEL	2.5×18 INCH	Black	1
6	MPT-1331	1141400029310	BRAKE DISC - FRONT - ABS	C062	DISC		No Colour	1
7	MPT-0845	7012808041168	STEP BOLT - M8×20 - DISC	C183	STEP BOLT	M8×20	No Colour	4
8	MPT-1026	1081400060906	WHEEL SPINDLE - FRONT	C173	SPINDLE		No Colour	1
9	MPT-1027	1081400070910	SPACER - FRONT WHEEL	C023	BUSHING		No Colour	1
10	MPT-1329	1141400058100	ABS RING - FRONT	C002	ABS RING		No Colour	1
11	MPT-1330	1081400070940	BUSHING	C023	BUSHING		No Colour	4
12	MPT-0882	7022005012200	PHILLIPS PAN HEAD SCREW - M5×110	C152	SCREW	M5×110	No Colour	4
	MPT-1357	1551400008700	WHEEL BEARING SEAL - FRONT - LH/RH	C153	SEAL	ø22×ø35×5	No Colour	1

250EU5M1-F12B

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
F12B	F12	WHEELS - FRONT

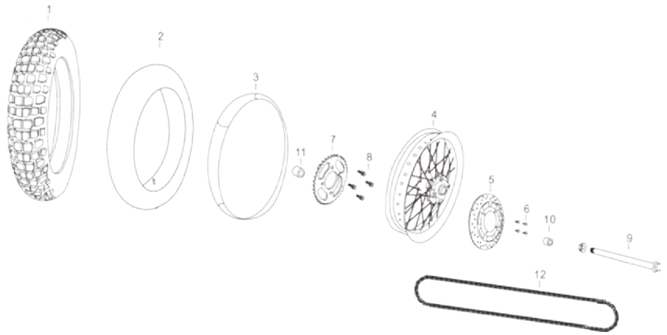


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-1143	1090200041000	TYRE - 110/90-18	C202	TYRE	110/90-18	No Colour	1
2	MPT-1144	1090100789200	INNER TUBE - TIMSUN 110/90-18	C103	INNER TUBE	110/90-18	No Colour	1
3	MPT-1146	1090100999200	RIM TAPE	C141	RIM TAPE		No Colour	1
4	MPT-1270	1081400058000	SPEEDOMETER DRIVE - DIGITAL	C170	SPEEDO DRIVE		No Colour	1
5	MPT-0132	1081400014910	WHEEL - FRONT - ALL BLACK - STAINLESS SPOKES - ALUMINUM RIM	C207	WHEEL	2.5×18 INCH	Black	1
6	MPT-1331	1141400029310	BRAKE DISC - FRONT - ABS	C062	DISC		No Colour	1
7	MPT-0845	7012808041168	STEP BOLT - M8×20 - DISC	C183	STEP BOLT	M8×20	No Colour	4
8	MPT-1026	1081400060906	WHEEL SPINDLE - FRONT	C173	SPINDLE		No Colour	1
9	MPT-1027	1081400070910	SPACER - FRONT WHEEL	C023	BUSHING		No Colour	1
10	MPT-1329	1141400058100	ABS RING - FRONT	C002	ABS RING		No Colour	1
11	MPT-1330	1081400070940	BUSHING	C023	BUSHING		No Colour	4
12	MPT-0882	7022005012200	PHILLIPS PAN HEAD SCREW - M5×110	C152	SCREW	M5×110	No Colour	4
	MPT-1357	1551400008700	WHEEL BEARING SEAL - FRONT - LH/RH	C153	SEAL	ø22×ø35×5	No Colour	1

250EU5M1-F13A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
F13A	F13	WHEELS - REAR

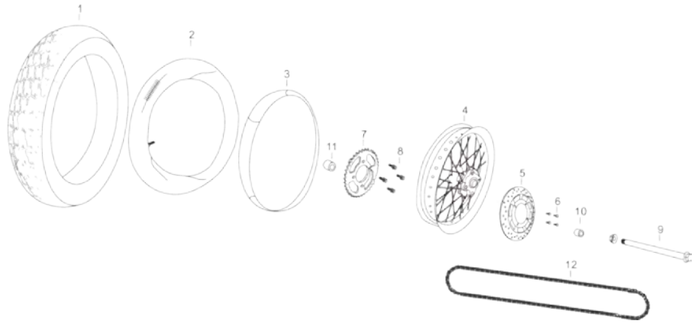


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0153	1090100215000	TYRE - 120/90×18 65P	C202	TYRE	120/90×18	No Colour	1
2	MPT-0154	1090100216000	INNER TUBE - 120/90×18	C103	INNER TUBE	120/90×18	No Colour	1
3	MPT-1146	1090100999200	RIM TAPE	C141	RIM TAPE		No Colour	1
4	MPT-0135	1081400029100	WHEEL - REAR - ALL BLACK - STAINLESS SPOKES - ALUMINUM RIM	C207	WHEEL	2.5×18 INCH	Black	1
5	MPT-1335	1141400029210	BRAKE DISC - REAR - ABS	C062	DISC		No Colour	1
6	MPT-0848	7012808225167	NUT - HEX FLAT HEAD STEP BOLT - M8×25 - DISC	C183	STEP BOLT	M8×25	No Colour	4
7	MPT-0122	1070100075000	SPROCKET - REAR - 43T	C177	SPROCKET	43T	No Colour	1
8	MPT-0932	7112210030268	BOLT WITH WASHER - M10×30×1.25 - SPROCKET REAR	C013	BOLT WITH WASHER	M10×30×1.25	No Colour	4
9	MPT-1332	1081400060926	WHEEL SPINDLE - REAR	C173	SPINDLE	M14(ø15)×1.5(25)×287	No Colour	1
10	MPT-1030	1081400070920	SPACER - REAR WHEEL - LH	C023	BUSHING		No Colour	1
11	MPT-1031	1081400070930	SPACER - REAR WHEEL - RH	C023	BUSHING	ø27×ø15×10.5	No Colour	1
12	MPT-1333	1070200093000	CHAIN - 520HO-112L	C036	CHAIN		No Colour	1
13	MPT-1330	1081400070940	BUSHING	C023	BUSHING		No Colour	4
14	MPT-0882	7022005012200	PHILLIPS PAN HEAD SCREW - M5×110	C152	SCREW	M5×110	No Colour	4
15	MPT-1334	1141400048100	ABS RING - REAR	C002	ABS RING		No Colour	1
	MPT-1172	1551400008500	WHEEL BEARING SEAL - REAR - RH	C153	SEAL	ø27×ø47×7	No Colour	1
	MPT-1173	1551400008600	WHEEL BEARING SEAL - REAR - LH	C153	SEAL	ø28×ø42×7	No Colour	1

250EU5M1-F13B

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
F13B	F13	WHEELS - REAR

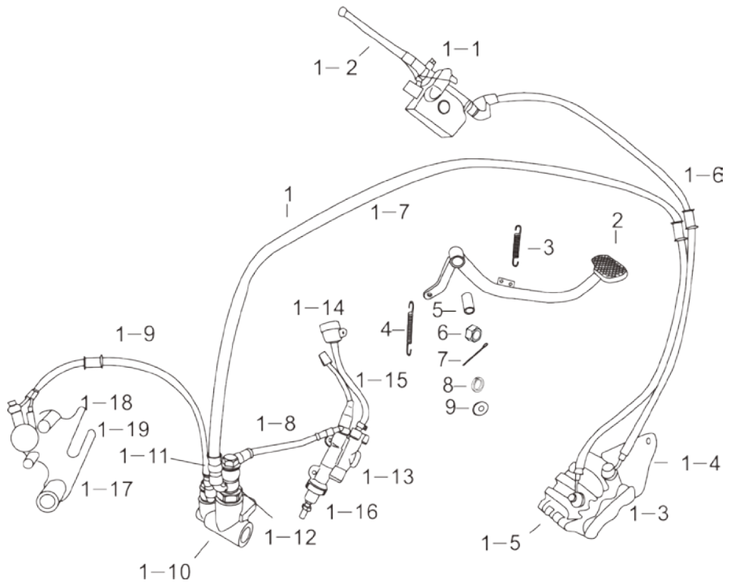


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-1145	1090120721000	TYRE - 130/80-18 65P	C202	TYRE	130/80-18	No Colour	1
2	MPT-0156	1090100218000	INNER TUBE - 130/80×18	C103	INNER TUBE	130/80×18	No Colour	1
3	MPT-1146	1090100999200	RIM TAPE	C141	RIM TAPE		No Colour	1
4	MPT-0135	1081400029100	WHEEL - REAR - ALL BLACK - STAINLESS SPOKES - ALUMINUM RIM	C207	WHEEL	2.5×18 INCH	Black	1
5	MPT-1335	1141400029210	BRAKE DISC - REAR - ABS	C062	DISC		No Colour	1
6	MPT-0848	7012808225167	NUT - HEX FLAT HEAD STEP BOLT - M8×25 - DISC	C183	STEP BOLT	M8×25	No Colour	4
7	MPT-0122	1070100075000	SPROCKET - REAR - 43T	C177	SPROCKET	43T	No Colour	1
8	MPT-0932	7112210030268	BOLT WITH WASHER - M10×30×1.25 - SPROCKET REAR	C013	BOLT WITH WASHER	M10×30×1.25	No Colour	4
9	MPT-1332	1081400060926	WHEEL SPINDLE - REAR	C173	SPINDLE	M14(ø15)×1.5(25)×287	No Colour	1
10	MPT-1030	1081400070920	SPACER - REAR WHEEL - LH	C023	BUSHING		No Colour	1
11	MPT-1031	1081400070930	SPACER - REAR WHEEL - RH	C023	BUSHING	ø27×ø15×10.5	No Colour	1
12	MPT-1333	1070200093000	CHAIN - 520HO-112L	C036	CHAIN		No Colour	1
13	MPT-1330	1081400070940	BUSHING	C023	BUSHING		No Colour	4
14	MPT-0882	7022005012200	PHILLIPS PAN HEAD SCREW - M5×110	C152	SCREW	M5×110	No Colour	4
15	MPT-1334	1141400048100	ABS RING - REAR	C002	ABS RING		No Colour	1
	MPT-1172	1551400008500	WHEEL BEARING SEAL - REAR - RH	C153	SEAL	ø27×ø47×7	No Colour	1
	MPT-1173	1551400008600	WHEEL BEARING SEAL - REAR - LH	C153	SEAL	ø28×ø42×7	No Colour	1

250EU5M1-F14A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
F14A	F14	BRAKES

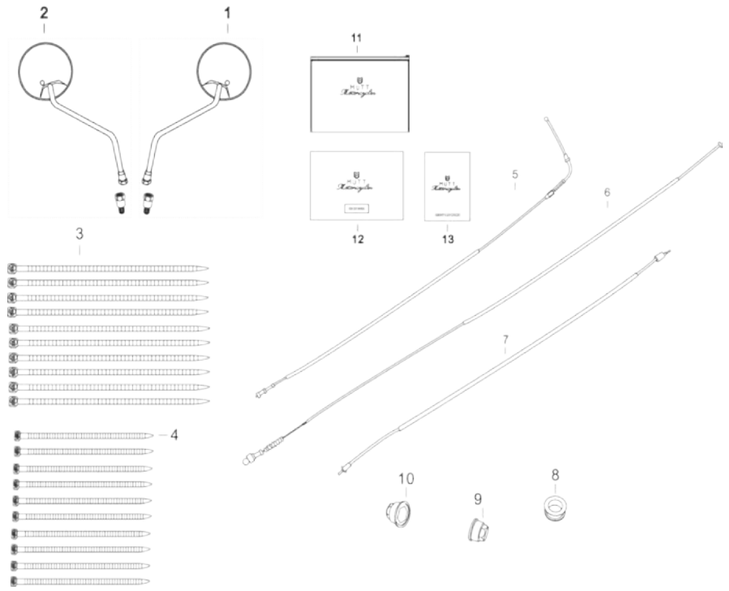


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1-1	MPT-1336	1141400038750	MASTER CYLINDER ASSEMBLY - FRONT - ⌀12.7MM	C113	MASTER CYLINDER ASSEM-	⌀12.7mm	No Colour	1
1-2	MPT-1337	1141400038730	BRAKE CALIPER - FRONT - WITH BRACKET	C030	CALIPER		No Colour	1
1-3	MPT-1354	1141400038734	BRAKE PADS - FRONT - PAIR	C017	BRAKE PADS		No Colour	1
1-4	MPT-1338	1141400016800	BRAKE HOSE A - WITH SHEATH	C016	BRAKE HOSE		No Colour	1
1-5	MPT-1339	1141400016900	BRAKE HOSE B - WITH SHEATH	C016	BRAKE HOSE		No Colour	1
1-6	MPT-1340	1141400017100	BRAKE HOSE C - WITH SHEATH	C016	BRAKE HOSE		No Colour	1
1-7	MPT-1341	1141400017200	BRAKE HOSE D - WITH SHEATH	C016	BRAKE HOSE		No Colour	1
1-8	MPT-1165	1141400038720	MASTER CYLINDER - REAR - ⌀13.5MM	C112	MASTER CYLINDER	⌀13.5mm	No Colour	1
1-9	MPT-1166	1141400038830	MASTER CYLINDER CUP - WITH HOSE	C120	OIL CUP		No Colour	1
1-10	MPT-1167	1141400038850	MASTER CYLINDER CUP HOSE	C016	BRAKE HOSE		No Colour	1
1-11	MPT-1168	1610400263000	SWITCH ASSEMBLY - BRAKE - REAR	C190	SWITCH ASSEMBLY		No Colour	1
1-12	MPT-1342	1141400038700	BRAKE CALIPER - REAR - WITH BRACKET	C030	CALIPER		No Colour	1
1-13	MPT-1343	1141400038710	BRACKET - BRAKE CALIPER - REAR	C015	BRACKET		No Colour	1
1-14	MPT-1355	1141400038763	BRAKE PADS - REAR - PAIR	C017	BRAKE PADS		No Colour	1
2	MPT-1344	1041400322000	BRAKE PEDAL REAR	C018	BRAKE PEDAL		No Colour	1
3	MPT-0973	1290300033000	BRAKE PEDAL SPRING - ⌀14×⌀2×45-11	C176	SPRING	⌀14×⌀2×45 - 11	No Colour	1
4	MPT-1148	1040700070000	BRAKE PEDAL SPACER/BUSH	C167	SPACER/BUSH	34mm	No Colour	1
5	MPT-1149	7031908000148	NUT - M8	C118	NUT	M8	No Colour	1
6	MPT-0913	7040020016008	COTTER PIN - 2×16	C051	COTTER PIN	2×16	No Colour	1
7	MPT-1150	7050008104238	ELASTIC WASHER - 8×10.1×4.2	C206	WASHER	8×10.1×4.2	No Colour	1
8	MPT-1151	7050208242038	WASHER - 8×24×2	C206	WASHER	8×24×2	No Colour	1
9	MPT-1345	1141400038740	BRACKET - BRAKE CALIPER - FRONT	C030	CALIPER		No Colour	1
10	MPT-1346	7012808012178	BOLT - BRAKE CALIPER	C012	BOLT		No Colour	2
11	MPT-1347	7013008030169	HEX BOLT - FLANGED - M8X30	C012	BOLT		No Colour	2
12	MPT-1348	1041400049000	BRACKET - ABS MODULE	C030	CALIPER		No Colour	1
13	MPT-0855	7013006012268	HEX BOLT - FLANGED - M6×12	C012	BOLT	M6×12	No Colour	2
14	MPT-1349	1030100561000	BRACKET - ABS MODULE	C030	CALIPER		No Colour	1
15	MPT-1133	7012808216168	BOLT - M8×16	C012	BOLT	M8×16	No Colour	2
16	MPT-0818	7012801222277	BANJO BOLT - FRONT - COARSE - M10×22×1.25	C008	BANJO BOLT	M10×22×1.25	No Colour	3
17	MPT-0817	7012801222267	BANJO BOLT - FRONT - FINER - M10×22×1.0	C008	BANJO BOLT	M10×22×1.0	No Colour	4
18	MPT-0467	1611000122000	BRAKE LINE COPPER WASHER	C206	WASHER		No Colour	16
19	MPT-0949	7513706012260	LARGE HEXAGONAL FLAT HEAD SCREW - M6×12	C152	SCREW	M6×12	No Colour	2
20	MPT-0967	9890027000967	CABLE CLAMP	C027	CABLE CLAMP		No Colour	3
21	MPT-1350	1142200130000	ABS MODULE	C001	ABS MODULE		No Colour	1
22	MPT-1351	1181400110000	SPEEDOMETER SENSOR - ABS - FRONT	C159	SENSOR	1000mm	No Colour	1
23	MPT-1352	1181400210000	SPEEDOMETER SENSOR - ABS - REAR	C159	SENSOR	1000mm	No Colour	1

250EU5M1-F15A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
F15A	F15	CABLES, MIRRORS, TOOLS & MISC

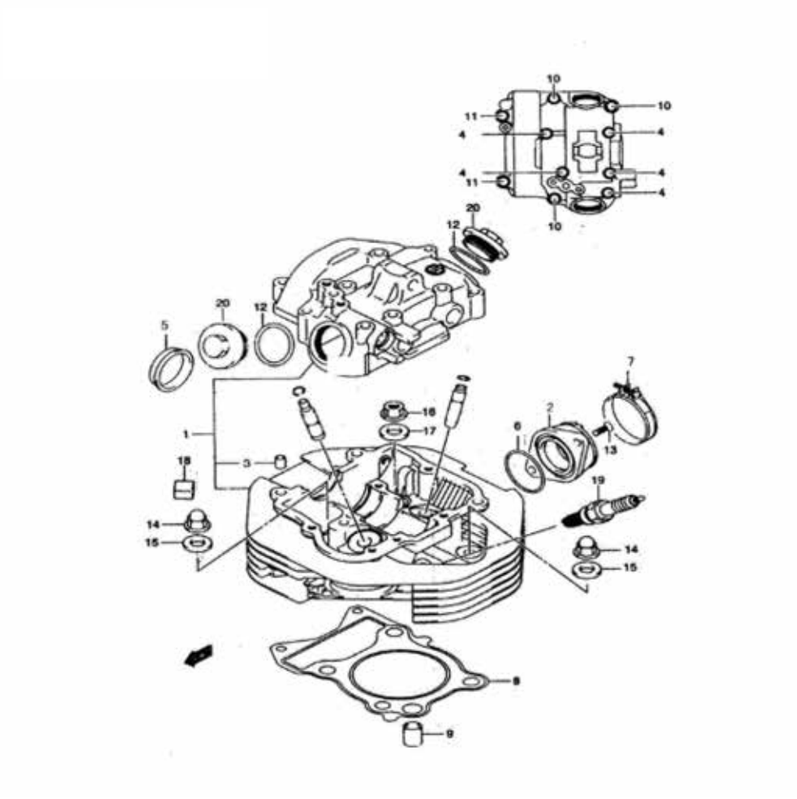


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0318	1201000051200	MIRROR - SINGLE - WITH SWIVEL ADAPTERS - BLACK - LH	C116	MIRROR		Black	1
2	MPT-0319	1201000061200	MIRROR - SINGLE - WITH SWIVEL ADAPTERS - BLACK - RH	C116	MIRROR		Black	1
3	MPT-0404	1260300903100	CABLE TIES - 300×4.8	C029	CABLE TIES	300×4.8	No Colour	10
4	MPT-0405	1260300903200	CABLE TIES - 200×4.8	C029	CABLE TIES	200×4.8	No Colour	10
5	MPT-1353	1281400011000	THROTTLE CABLE	C026	CABLE		No Colour	1
6	MPT-0437	1281400029000	CLUTCH CABLE	C026	CABLE	865mm	No Colour	1
7	MPT-1152	1263200121000	HOSE SLEEVE	C165	SLEEVE		No Colour	1
8	MPT-0375	1260100510000	WHEEL NUT RUBBER COVER - M17	C145	RUBBER COVER	M17	No Colour	1
9	MPT-0376	1260100520000	WHEEL NUT RUBBER COVER - M19	C145	RUBBER COVER	M19	No Colour	1

250EU5M1-E01A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
E01A	E01	CYLINDER HEAD

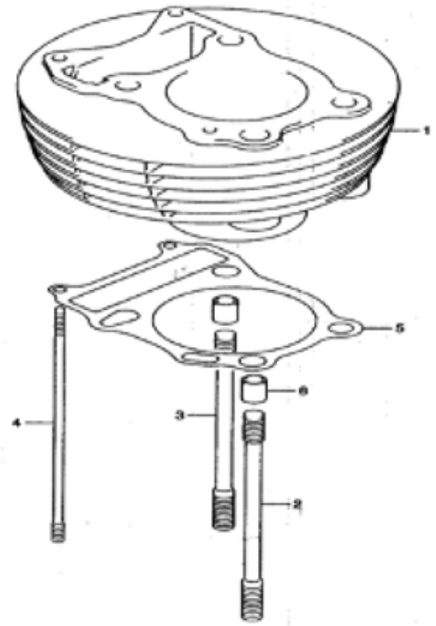


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0514	6260020043002	CYLINDER HEAD ASSEMBLY	C060	CYLINDER HEAD ASSEMBLY		Black	1
3	MPT-0790	6301063100000	PIN - 8×11	C126	PIN	8×11	No Colour	2
4	MPT-0867	7013006060168	HEX BOLT - FLANGED - M6×60	C012	BOLT	M6×60	No Colour	5
5	MPT-0502	6260010080002	PLUG	C130	PLUG		No Colour	1
8	MPT-0761	6261020012000	CYLINDER HEAD GASKET	C088	GASKET		No Colour	1
9	MPT-0793	6301063400000	PIN - 13×18	C126	PIN	13×18	No Colour	2
10	MPT-0864	7013006045167	BOLT - M6×45	C012	BOLT	M6×45	No Colour	3
11	MPT-0953	7523710000105	CAP NUT - M6	C118	NUT	M6	No Colour	2
12	MPT-0735	6260120227000	O-RING - 3.0×29.5	C119	O-RING	3.0×29.5	No Colour	2
14	MPT-0952	7523710000104	CAP NUT - M10	C118	NUT	M10	No Colour	2
15	MPT-0532	6260020191100	WASHER	C206	WASHER		No Colour	2
16	MPT-0954	7523710000204	NUT - M10	C118	NUT	M10	No Colour	1
17	MPT-0533	6260020191200	WASHER	C206	WASHER		No Colour	1
18	MPT-0529	6260020172000	CYLINDER HEAD DAMPING BLOCK	C061	CYLINDER HEAD DAMPING BLOCK		No Colour	4
19	MPT-0512	6260020031000	SPARK PLUG - NGK (DR8EA)	C168	SPARK PLUG		No Colour	1
20	MPT-0504	6260010110000	INSPECTION HOLE CAP	C104	INSPECTION HOLE CAP		No Colour	2

250EU5M1-E02A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
E02A	E02	CYLINDER

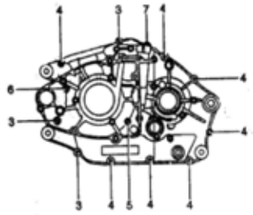


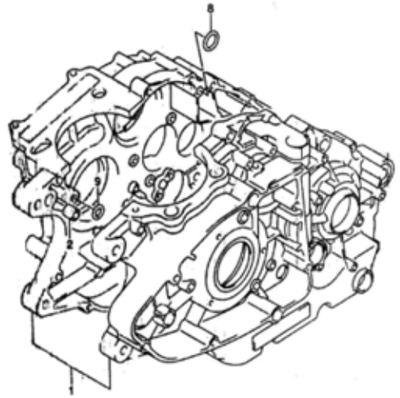
ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0515	6260020053002	CYLINDER BLOCK	C059	CYLINDER BLOCK		Black	1
2	MPT-0638	6260050161000	STUD BOLT - L=166	C012	BOLT	166mm	No Colour	3
3	MPT-0639	6260050162000	STUD BOLT - L=161	C012	BOLT	161mm	No Colour	1
4	MPT-0641	6260050171000	STUD BOLT - L=191	C012	BOLT	191mm	No Colour	2
5	MPT-0543	6260020272000	CYLINDER HEAD GASKET	C088	GASKET		No Colour	1
6	MPT-0761	6261020012000	PIN - 13×18	C126	PIN	13×18	No Colour	2

250EU5M1-E03A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
E03A	E03	CRANKCASE



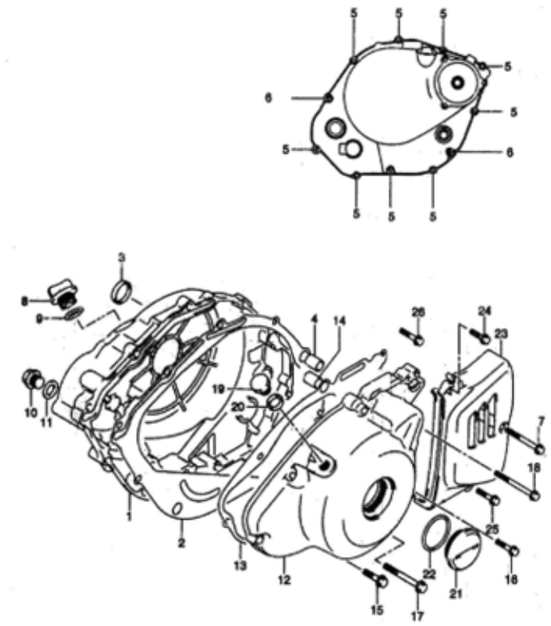


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0802	6401017003202	CRANKCASE	C056	CRANKCASE		Black	1
2	MPT-0793	6301063400000	PIN - 13×18	C126	PIN	13×18	No Colour	2
3	MPT-0831	7012806035104	BOLT - M6×35	C012	BOLT	M6×35	No Colour	4
4	MPT-0865	7013006045168	BOLT - M6×45	C012	BOLT	M6×45	No Colour	9
5	MPT-0836	7012806055104	BOLT - M6×55	C012	BOLT	M6×55	No Colour	1
6	MPT-0837	7012806060104	BOLT - M6×60	C012	BOLT	M6×60	No Colour	2
7	MPT-0838	7012806070104	BOLT - M6×70	C012	BOLT	M6×70	No Colour	1
8	MPT-0506	6260010240000	O-RING	C119	O-RING		No Colour	1
9	MPT-0740	6260120235000	O-RING	C119	O-RING		No Colour	1

250EU5M1-E04A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
E04A	E04	CRANKCASE COVER

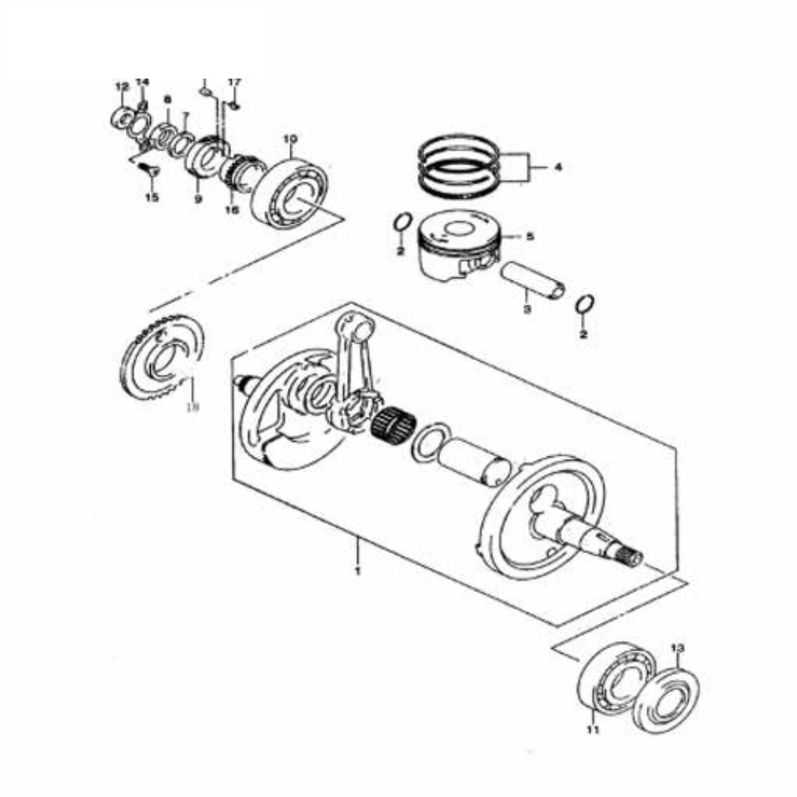


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0004	626012032002	CLUTCH COVER	C049	CLUTCH COVER		No Colour	1
2	MPT-0770	6261050021000	GASKET - CLUTCH COVER	C088	GASKET		No Colour	1
3	MPT-0654	6260050270000	LENS - OIL LEVEL	C108	LENS		No Colour	1
4	MPT-0793	6301063400000	PIN - 13×18	C126	PIN	13×18	No Colour	4
5	MPT-0830	7012806030174	BOLT - M6×30	C012	BOLT	M6×30	No Colour	9
6	MPT-0865	7013006045168	BOLT - M6×45	C012	BOLT	M6×45	No Colour	2
7	MPT-0827	7012805050154	BOLT - M5×50	C012	BOLT	M5×50	No Colour	1
8	MPT-0491	6260010010001	PLUG - OIL FILLER	C130	PLUG		No Colour	1
9	MPT-0739	6260120231000	O-RING - 3.1×16.8	C119	O-RING	3.1×16.8	No Colour	1
10	MPT-0497	6260010051000	PLUG - OIL CHECK - M14×12	C130	PLUG	M14×12	No Colour	1
11	MPT-0685	6260070040000	GASKET	C088	GASKET		No Colour	1
12	MPT-0684	6260070033002	MAGNETO COVER	C054	COVER		No Colour	1
13	MPT-0774	6261070012000	MAGNETO COVER GASKET	C088	GASKET		No Colour	1
14	MPT-0793	6301063400000	PIN - 13×18	C126	PIN	13×18	No Colour	2
15	MPT-0813	7012406025104	BOLT - M6×25	C012	BOLT	M6×25	No Colour	3
16	MPT-0831	7012806035104	BOLT - M6×35	C012	BOLT	M6×35	No Colour	1
17	MPT-0834	7012806050104	BOLT - M6×50	C012	BOLT	M6×50	No Colour	1
18	MPT-0837	7012806060104	BOLT - M6×60	C012	BOLT	M6×60	No Colour	1
19	MPT-0499	6260010060000	PLUG - TDC - M12×10	C130	PLUG	M12×10	No Colour	1
20	MPT-0691	6260070100000	GASKET	C088	GASKET		No Colour	1
21	MPT-0507	6260011100002	PLUG	C130	PLUG		Black	1
22	MPT-0495	6260010041000	O-RING	C119	O-RING		No Colour	1
23	MPT-0489	6250003004002	SPROCKET COVER	C178	SPROCKET COVER		No Colour	1
24	MPT-0820	7012805020154	BOLT - M5×20	C012	BOLT	M5×20	No Colour	1
25	MPT-0824	7012805030154	BOLT - M5×30	C012	BOLT	M5×30	No Colour	1
26	MPT-0822	7012805025154	BOLT - M5×25	C012	BOLT	M5×25	No Colour	1

250EU5M1-E05A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
E05A	E05	CRANKSHAFT

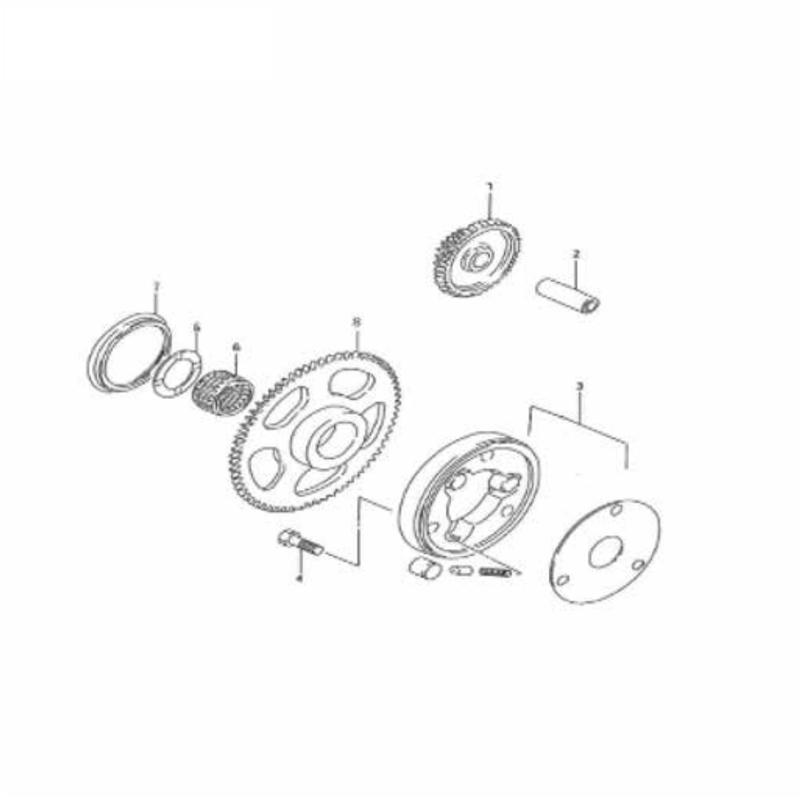


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0568	6260030012000	CRANKSHAFT ASSEMBLY	C058	CRANKSHAFT ASSEMBLY		No Colour	1
2	MPT-0481	6203005000310	CIRCLIP	C040	CIRCLIP		No Colour	2
3	MPT-0767	6261030031000	PISTON PIN	C126	PIN		No Colour	1
4	MPT-0766	6261030021000	PISTON RING SET	C142	RING		No Colour	1
5	MPT-0545	6260020282000	PISTON	C127	PISTON		No Colour	1
6	MPT-0601	6260030135000	KEY	C105	KEY		No Colour	1
7	MPT-0956	7549012210342	WASHER	C206	WASHER		No Colour	1
8	MPT-0610	6260040026000	OIL SEAL - RH	C124	OIL SEAL	14×26	No Colour	1
9	MPT-0593	6260030070001	PRIMARY DRIVE GEAR	C065	DRIVE GEAR		No Colour	1
10	MPT-0936	7120163060000	BEARING - 6306C3 - RH	C011	BEARING		No Colour	1
11	MPT-0937	7120163070000	BEARING - 6307C3 - LH	C011	BEARING		No Colour	1
12	MPT-0749	6260120420000	NUT - M20×1.5 - LEFT HANDED	C118	NUT	M20×1.5	No Colour	1
13	MPT-0689	6260070091000	WASHER	C206	WASHER		No Colour	1
14	MPT-0702	6260070270000	BEARING BRACKET	C015	BRACKET		No Colour	1
15	MPT-0804	7011005010159	BOLT - M5×10	C012	BOLT	M5×10	No Colour	2
16	MPT-0612	6260040031000	DRIVER BELT WHEEL/SPROCKET	C177	SPROCKET		No Colour	1
17	MPT-0599	6260030133000	KEY	C105	KEY		No Colour	1

250EU5M1-E06A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
E06A	E06	STARTER CLUTCH

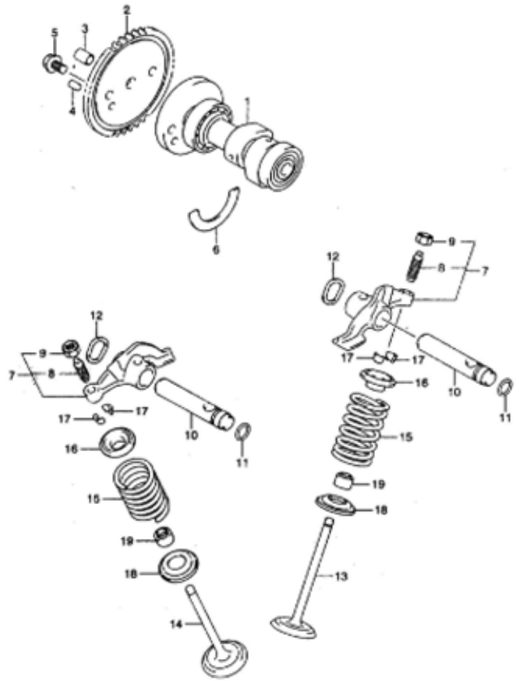


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0781	6261090041000	GEAR - STARTER IDLE	C089	GEAR		No Colour	1
2	MPT-0784	6261090051000	PIN - IDLER SHAFT	C126	PIN		No Colour	1
3	MPT-0771	6261050031000	CLUTCH STARTER ASSEMBLY	C045	CLUTCH		No Colour	1
4	MPT-0606	6260030600000	BOLT	C012	BOLT		No Colour	3
	MPT-0782	6261090042000	WHEEL BOARD	C129	PLATE		No Colour	1
5	MPT-0687	6260070081000	WASHER	C206	WASHER		No Colour	1
6	MPT-0575	6260030028000	NEEDLE ROLLER BEARING	C011	BEARING		No Colour	1
7	MPT-0611	6260040027000	OIL SEAL	C124	OIL SEAL		No Colour	1
8	MPT-0666	6260050352000	STARTER CLUTCH GEAR ASSEMBLY	C090	GEAR ASSEMBLY		No Colour	1

250EU5M1-E07A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
E07A	E07	CAM SHAFT VALVE

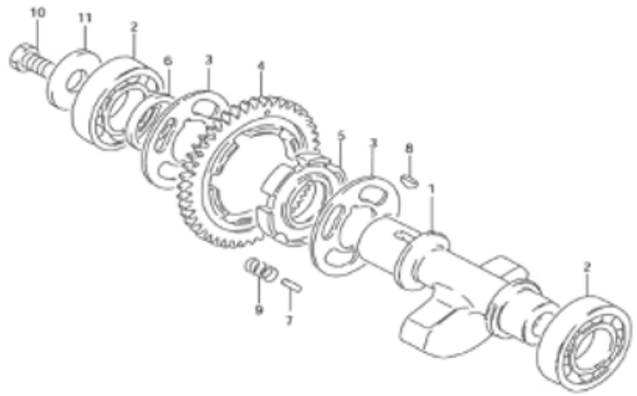


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0561	6260025061000	CAMSHAFT	C032	CAMSHAFT		No Colour	1
2	MPT-0613	6260040032000	SPROCKET	C177	SPROCKET		No Colour	1
3	MPT-0790	6301063100000	PIN - 8×11	C126	PIN	8×11	No Colour	1
4	MPT-0535	6260020222000	PIN	C126	PIN		No Colour	1
5	MPT-0854	7013006012167	HEX BOLT - FLANGED - M6×12	C012	BOLT	M6×12	No Colour	2
6	MPT-0600	6260030134000	C-RING - ROCKER SHAFT	C025	C-RING		No Colour	1
7	MPT-0520	6260020089000	ARM - VALVE ROCKER - INTAKE	C006	ARM		No Colour	2
8	MPT-0001	626001067500	BOLT - M6×0.75	C012	BOLT	M6×0.75	No Colour	2
9	MPT-0002	626001067600	NUT - M6×0.75	C118	NUT	M6×0.75	No Colour	2
10	MPT-0519	6260020088000	SHAFT - ROCKER ARM	C160	SHAFT		No Colour	2
11	MPT-0741	6260120236000	O-RING - 1.9×8.7	C119	O-RING	1.9×8.7	No Colour	2
12	MPT-0485	6212003052000	O-RING WAVE WASHER	C206	WASHER		No Colour	2
13	MPT-0764	6261025070000	VALVE - EXHAUST	C203	VALVE		No Colour	1
14	MPT-0763	6261025060000	VALVE - INTAKE	C203	VALVE		No Colour	1
15	MPT-0650	6260050243000	SPRING - VALVE	C176	SPRING		No Colour	2
16	MPT-0652	6260050252000	RETAINER SPRING	C176	SPRING		No Colour	2
17	MPT-0558	6260025030000	COTTER PIN - VALVE	C126	PIN		No Colour	4
18	MPT-0649	6260050242500	VALVE SPRING	C176	SPRING		No Colour	2
19	MPT-0557	6260020900000	OIL SEAL	C124	OIL SEAL		No Colour	2

250EU5M1-E08A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
E08A	E08	CRANK BALANCER ASSEMBLY

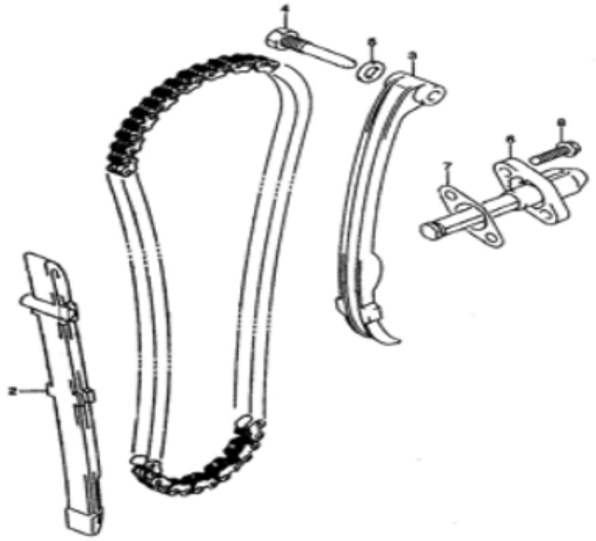


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0578	6260030053000	BALANCE SHAFT	C055	CRANK BALANCER		No Colour	1
2	MPT-0935	7120163050000	BEARING - 6305	C011	BEARING		No Colour	2
3	MPT-0579	6260030054000	WASHER - BALANCE SHAFT	C206	WASHER		No Colour	2
4	MPT-0616	6260040052000	DRIVE GEAR - CRANK BALANCER	C065	DRIVE GEAR		No Colour	1
5	MPT-0619	6260050052000	DRIVENGEAR - CRANK BALANCER - INSIDE TRACK	C065	DRIVE GEAR		No Colour	1
6	MPT-0705	6260080140000	WASHER	C206	WASHER		No Colour	1
7	MPT-0604	6260030222000	PIN	C126	PIN		No Colour	3
8	MPT-0602	6260030136000	KEY - 4×6.5×16	C105	KEY	4×6.5×16	No Colour	1
9	MPT-0580	6260030055000	SPRING - BALANCE SHAFT	C176	SPRING		No Colour	6
10	MPT-0752	6260120520000	BOLT- M12×20	C012	BOLT	M12×20	No Colour	1
11	MPT-0581	6260030056000	WASHER	C206	WASHER		No Colour	1

250EU5M1-E09A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
E09A	E09	CAM CHAIN

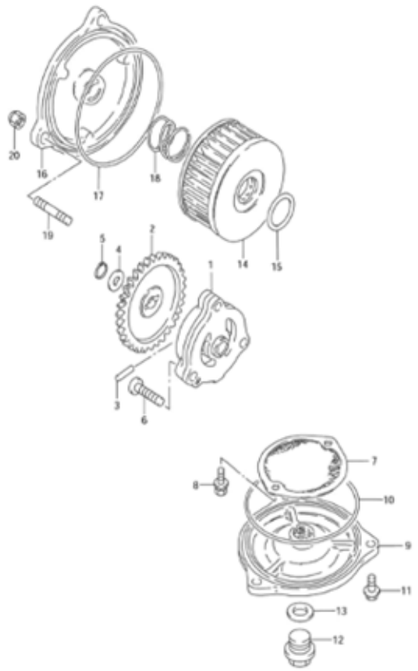


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0551	6260020470000	CHAIN - CAM SHAFT DRIVE	C036	CHAIN		No Colour	1
2	MPT-0552	6260020480000	GUIDE - CAM CHAIN	C094	GUIDE		No Colour	1
3	MPT-0553	6260020490000	TENSIONER - CAM CHAIN	C195	TENSIONER		No Colour	1
4	MPT-0923	7060308395102	BOLT - M8×39.5	C012	BOLT	M8×39.5	No Colour	1
5	MPT-0686	6260070042000	WASHER	C206	WASHER		No Colour	1
6	MPT-0678	6260060280000	ADJUSTER - TENSIONER	C003	ADJUSTER		No Colour	1
7	MPT-0530	6260020190000	GASKET - TENSIONER	C088	GASKET		No Colour	1
8	MPT-0829	7012806020104	BOLT - M6×20	C012	BOLT	M6×20	No Colour	2

250EU5M1-E10A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
E10A	E10	OIL PUMP

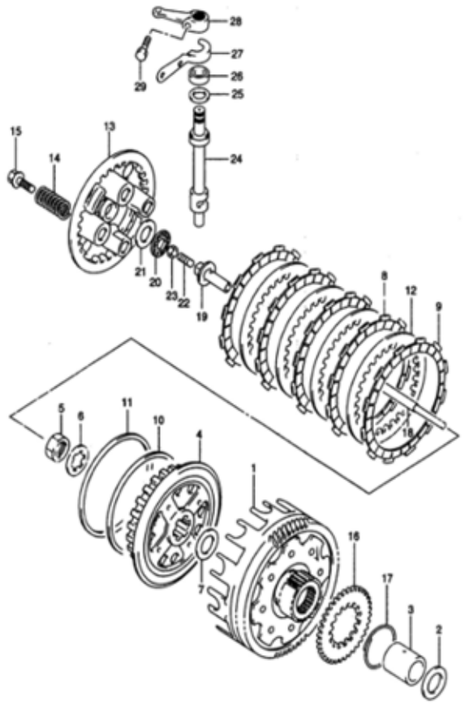


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0754	6260125030000	PUMP - ENGINE OIL	C131	PUMP		No Colour	1
2	MPT-0755	6260125040000	GEAR - OIL PUMP	C089	GEAR		No Colour	1
3	MPT-0799	6301942500000	PIN - DRIVE	C126	PIN		No Colour	1
4	MPT-0486	6212003060000	WASHER	C206	WASHER		No Colour	1
5	MPT-0743	6260120240000	CIRCLIP	C040	CIRCLIP		No Colour	1
6	MPT-0795	6301095100004	SCREW - M6×25	C152	SCREW	M6×25	No Colour	3
7	MPT-0753	6260125010003	STRAINER - ENGINE OIL	C185	STRAINER		No Colour	1
8	MPT-0927	7110605012168	SCREW - M5×12	C152	SCREW	M5×12	No Colour	2
9	MPT-0725	6260120050000	CAP - FILTER COVER	C033	CAP		No Colour	1
10	MPT-0737	6260120229100	O-RING	C119	O-RING		No Colour	1
11	MPT-0829	7012806020104	BOLT - M6×20	C012	BOLT	M6×20	No Colour	3
12	MPT-0496	6260010050000	PLUG - DRAIN - M14×12	C130	PLUG	M14×12	No Colour	1
13	MPT-0685	6260070040000	GASKET	C088	GASKET		No Colour	1
14	MPT-0744	6260120250000	OIL FILTER	C122	OIL FILTER		No Colour	1
15	MPT-0745	6260120256000	O-RING	C119	O-RING		No Colour	1
16	MPT-0756	6260125110002	CAP - FILTER COVER	C033	CAP		No Colour	1
17	MPT-0747	6260120300000	O-RING	C119	O-RING		No Colour	1
18	MPT-0730	6260120160001	SPRING	C176	SPRING		No Colour	1
19	MPT-0643	6260050210001	BOLT - M6×16	C012	BOLT	M6×16	No Colour	3
20	MPT-0953	7523710000105	CAP NUT - M6	C118	NUT	M6	No Colour	3
21	MPT-0789	6261120022000	OIL FILTER - PAPER GASKET	C088	GASKET		No Colour	1

250EU5M1-E11A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
E11A	E11	CLUTCH

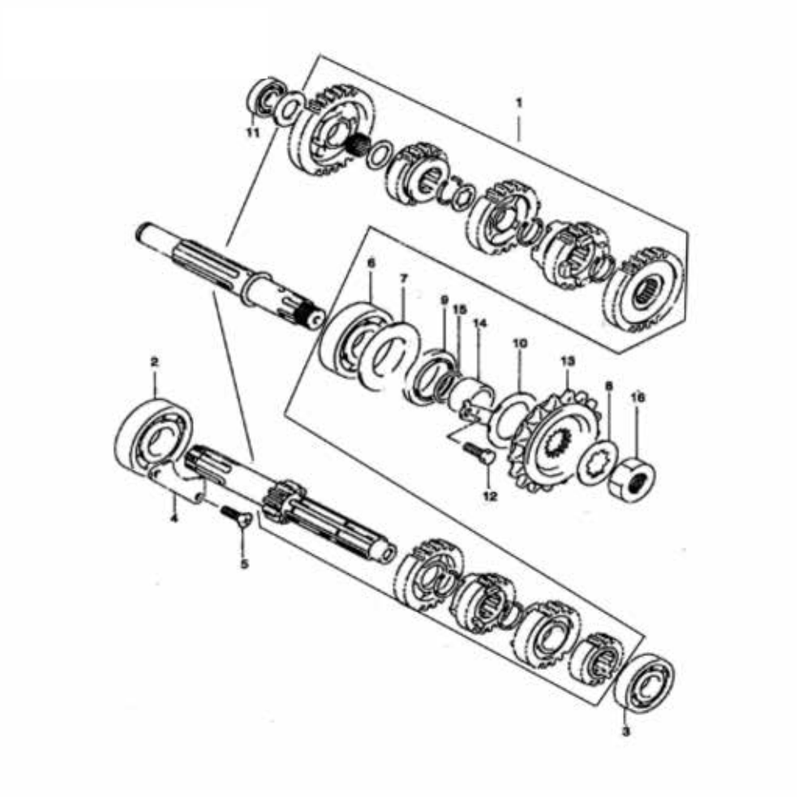


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0788	6261090080000	PRIMARY DRIVE GEAR ASSEMBLY	C065	DRIVE GEAR		No Colour	1
2	MPT-0757	6260250140000	WASHER	C206	WASHER		No Colour	2
3	MPT-0786	6261090070001	LARGE INNER CLUTCH HUB SLEEVE/SPACER	C166	SPACER		No Colour	1
4	MPT-0633	6260050093000	CLUTCH SLEEVE - SPLINED	C165	SLEEVE		No Colour	1
5	MPT-0493	6260010035000	NUT - M22×1.5	C118	NUT	M22×1.5	No Colour	1
6	MPT-0690	6260070093000	WASHER	C206	WASHER		No Colour	1
7	MPT-0772	6261050041000	CLUTCH ASSEMBLY	C045	CLUTCH		No Colour	1
8	MPT-0628	6260050072000	ACTIVE FRICTION PLATE A	C067	DRIVEN PLATE		No Colour	4
9	MPT-0629	6260050073000	ACTIVE FRICTION PLATE B	C067	DRIVEN PLATE		No Colour	1
10	MPT-0582	6260030057000	WASHER	C206	WASHER		No Colour	1
11	MPT-0957	7549012210343	WASHER	C206	WASHER		No Colour	1
12	MPT-0626	6260050067000	DRIVEN PLATE	C067	DRIVEN PLATE		No Colour	4
13	MPT-0634	6260050094000	CLUTCH SPRING PRESSURE PLATE	C129	PLATE		No Colour	1
14	MPT-0651	6260050250003	CLUTCH SPRING	C176	SPRING		No Colour	4
15	MPT-0811	7012406020172	BOLT - M6×20	C012	BOLT	M6×20	No Colour	4
16	MPT-0559	6260025050000	OIL PUMP DRIVE GEAR	C065	DRIVE GEAR		No Colour	1
17	MPT-0758	6260250200000	CIRCLIP	C040	CIRCLIP		No Colour	1
18	MPT-0562	6260025063000	PUSH ROD	C132	PUSH ROD		No Colour	1
19	MPT-0622	6260050062000	CLUTCH COLUMN TOP	C045	CLUTCH		No Colour	1
20	MPT-0574	6260030026000	THRUST BEARING	C011	BEARING		No Colour	1
21	MPT-0692	6260070120000	WASHER	C206	WASHER		No Colour	1
22	MPT-0564	6260025065000	SCREW - M6×25	C152	SCREW	M6×25	No Colour	1
23	MPT-0894	7031906000143	NUT - M6	C118	NUT	M6	No Colour	1
24	MPT-0624	6260050064000	CAMSHAFT	C032	CAMSHAFT		No Colour	1
25	MPT-0690	6260070093000	WASHER	C206	WASHER		No Colour	1
26	MPT-0711	6260100030000	OIL SEAL	C124	OIL SEAL		No Colour	1
27	MPT-0700	6260070261000	WASHER	C206	WASHER		No Colour	1
28	MPT-0566	6260025090000	CLUTCH ARM	C046	CLUTCH ARM		No Colour	1
29	MPT-0947	7512406020164	CLUTCH ROCKER HEX SCREW - M6×20	C152	SCREW	M6×20	No Colour	1

250EU5M1-E12A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
E12A	E12	TRANSMISSION

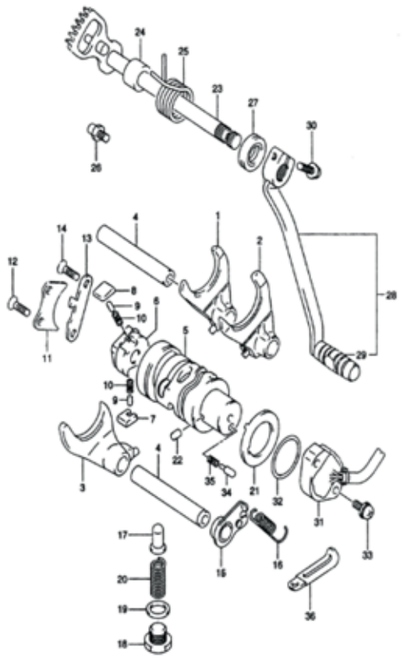


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0617	6260040061000	COUNTERSHAFT	C052	COUNTERSHAFT		No Colour	1
2	MPT-0938	7120163220000	BEARING - 63/22	C011	BEARING		No Colour	1
3	MPT-0934	7120162030001	BEARING - 6203Z	C011	BEARING		No Colour	1
4	MPT-0683	6260070016000	BEARING BRACKET	C015	BRACKET		No Colour	1
5	MPT-0884	7022006012165	SCREW - M6×12	C152	SCREW	M6×12	No Colour	2
6	MPT-0939	7120163220001	BEARING - 63/22RS	C011	BEARING		No Colour	1
7	MPT-0583	6260030058000	WASHER	C206	WASHER		No Colour	1
8	MPT-0697	6260070180000	WASHER	C206	WASHER		No Colour	1
9	MPT-0609	6260040021000	OIL SEAL	C124	OIL SEAL		No Colour	1
10	MPT-0702	6260070270000	BEARING BRACKET	C015	BRACKET		No Colour	1
11	MPT-0933	7120162030000	BEARING - 6203	C011	BEARING		No Colour	1
12	MPT-0808	7012406010164	BOLT - M6×12	C012	BOLT	M6×12	No Colour	2
13	MPT-0768	6261040020000	SPROCKET - FRONT (CHAIN WHEEL)	C177	SPROCKET		No Colour	1
14	MPT-0722	6260100180000	SPACER	C166	SPACER		No Colour	1
15	MPT-0554	6260020540000	O-RING	C119	O-RING		No Colour	1
16	MPT-0796	6301118180000	NUT - M18×1.5	C118	NUT	M18×1.5	No Colour	1

250EU5M1-E13A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
E13A	E13	GEAR SHIFT

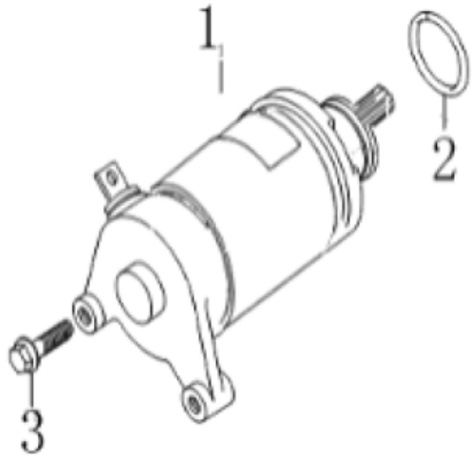


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0657	6260050300001	GEAR SHIFT FORK (1)	C077	FORK		No Colour	2
2	MPT-0658	6260050300002	GEAR SHIFT FORK (2)	C077	FORK		No Colour	1
3	MPT-0659	6260050300003	GEAR SHIFT FORK (3)	C077	FORK		No Colour	1
4	MPT-0660	6260050300004	SHAFT - FORK	C160	SHAFT		No Colour	1
5	MPT-0716	6260100091000	CAM - GEAR SHIFTING	C031	CAM		No Colour	1
6	MPT-0710	6260100012000	CAM - DRIVEN GEAR	C031	CAM		No Colour	1
7	MPT-0537	6260020223000	PAWL (1)	C125	PAWL		No Colour	1
8	MPT-0538	6260020224000	PAWL (2)	C125	PAWL		No Colour	1
9	MPT-0534	6260020220000	SHAFT PIN	C126	PIN		No Colour	1
10	MPT-0748	6260120360000	SPRING	C176	SPRING		No Colour	2
11	MPT-0560	6260025060000	LIFTER - PAWL	C125	PAWL		No Colour	2
12	MPT-0884	7022006012165	SCREW - M6×12	C152	SCREW	M6×12	No Colour	1
13	MPT-0676	6260060062000	CAM GUIDE	C094	GUIDE		No Colour	2
14	MPT-0884	7022006012165	SCREW - M6×12	C152	SCREW	M6×12	No Colour	1
15	MPT-0565	6260025070000	CAM STOPPER	C184	STOPPER		No Colour	2
16	MPT-0714	6260100071000	SPRING	C176	SPRING		No Colour	1
17	MPT-0539	6260020225000	NEUTRAL STOPPER	C126	PIN		No Colour	1
18	MPT-0498	6260010052000	PLUG - CAM STOPPER	C130	PLUG	M14×12	No Colour	1
19	MPT-0685	6260070040000	GASKET	C088	GASKET		No Colour	1
20	MPT-0746	6260120261000	CAM PIN SPRING	C176	SPRING		No Colour	1
21	MPT-0709	6260100011000	STOPPER PLATE	C184	STOPPER		No Colour	1
22	MPT-0536	6260020222200	PIN - 4×6	C126	PIN	4×6	No Colour	1
23	MPT-0720	6260100150000	SHAFT - GEAR SHIFTING	C160	SHAFT		No Colour	2
24	MPT-0717	6260100100000	SPACER	C166	SPACER		No Colour	1
25	MPT-0540	6260020230000	SHIFTING SHAFT TORSION SPRING	C176	SPRING		No Colour	1
26	MPT-0719	6260100140000	STOPPER - GEAR SHIFT ARM	C184	STOPPER		No Colour	1
27	MPT-0711	6260100030000	OIL SEAL	C124	OIL SEAL		No Colour	1
28	MPT-0035	1040300483100	GEAR LEVER - BLACK	C109	LEVER		Black	1
31	MPT-0712	6260100040000	TERMINAL BASE ASSEMBLY	C196	TERMINAL BASE ASSEMBLY		No Colour	1
32	MPT-0738	6260120230000	O-RING - 24×26.2	C119	O-RING	24×26.2	No Colour	1
33	MPT-0883	7022005020165	PHILLIPS HEAD SCREW - M5×20	C152	SCREW	M5×20	No Colour	1
34	MPT-0751	6260120461000	CONTACT PIN	C126	PIN		No Colour	1
35	MPT-0750	6260120460000	SPRING	C176	SPRING		No Colour	1

250EU5M1-E14A

ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
E14A	E14	STARTING MOTOR

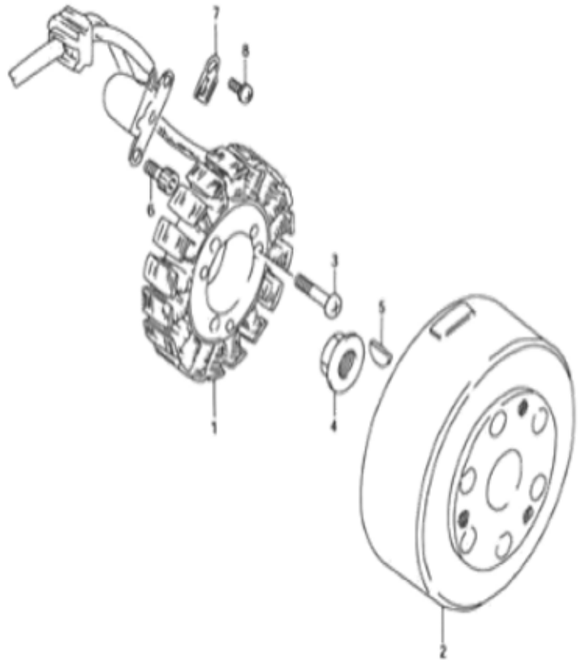


ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-1153	6260090072000	STARTER MOTOR ASSEMBLY	C180	STARTER MOTOR ASSEMBLY		No Colour	1
2	MPT-0742	6260120238000	O-RING - 3×24.5	C119	O-RING	3×24.5	No Colour	1
3	MPT-0830	7012806030174	BOLT - M6×30	C012	BOLT	M6×30	No Colour	2

250EU5M1-E15A

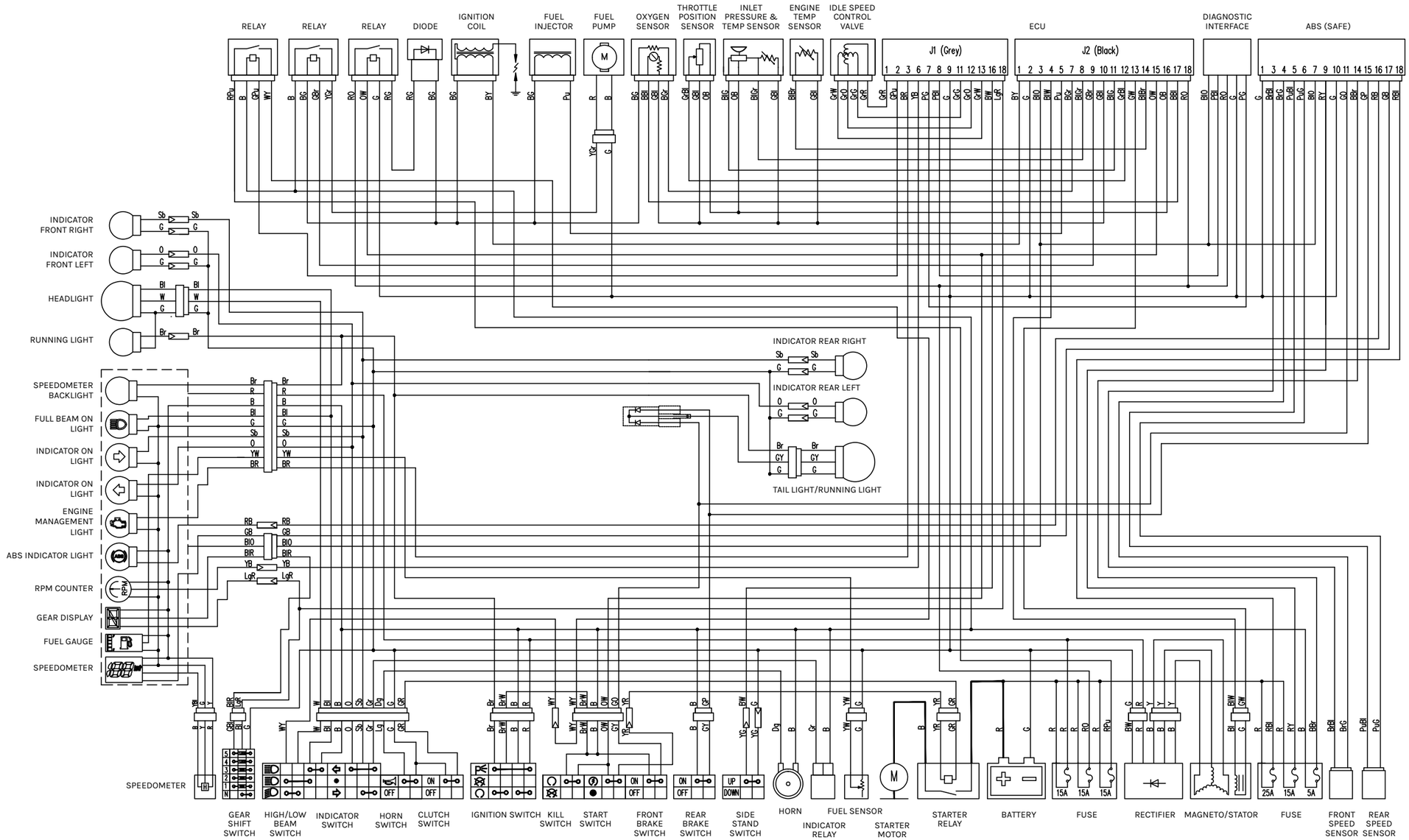
ENGINE	250	APPROVAL	EU5	VERSION	M1

DIAGRAM REF.	GROUP REF.	GROUP
E15A	E15	MAGNETO



ITEM NO.	MUTT PART NO.	BARCODE REF.	PART DESCRIPTION	CAT CODE	CATEGORY	SIZE	COLOUR	QTY.
1	MPT-0776	6261070033000	STATOR ASSEMBLY (ALTERNATOR)	C182	STATOR		No Colour	1
2	MPT-0778	6261070044000	FLYWHEEL	C075	FLYWHEEL		No Colour	1
3	MPT-0795	6301095100004	SCREW - M6×25	C152	SCREW	M6×25	No Colour	3
4	MPT-0508	6260016062000	NUT - M16	C118	NUT	M16	No Colour	1
5	MPT-0597	6260030130000	KEY - 3×13	C105	KEY		No Colour	1
6	MPT-0879	7021805012263	BOLT - M5×12	C012	BOLT	M5×12	No Colour	2
7	MPT-0509	6260016063000	WASHER	C206	WASHER		No Colour	1
8	MPT-0510	6260016064000	SCREW - M5×8	C152	SCREW	M5×8	No Colour	1

WIRING DIAGRAM



TORQUE SETTINGS

MAIN CHASSIS AND WHEEL COMPONENTS	5-10 NM	15-20 NM	25-30 NM	35-40 NM	45-50 NM	55-60 NM	65-70 NM	75-80NM
Front and Rear Axle						✓		
Rear Sprocket				✓				
Brake Disc Bolts Front/Rear			✓					
Shock Nuts			✓					
Fork Top Hat					✓			
Fork Damper Rod Retaining Bolt			✓					
Front/Rear Fender Bracket Mounting Bolts			✓					
Fender Bolts		✓						
Bar Clamps			✓					
Steering Stem Top Nut						✓		
Bottom Yoke Pinch Bolts				✓				
Top Yoke Pinch Bolts				✓				
Clutch Perch		✓						
Front Brake Perch		✓						
Swing Arm Axle						✓		
Foot Pegs					✓			
Rear Frame Loop			✓					

MAIN ENGINE COMPONENTS	5-10 NM	15-20 NM	25-30 NM	35-40 NM	45-50 NM	55-60 NM	65-70 NM	75-80NM
Front Engine Cradle Bolts					✓			
Top Engine Mount Bolts					✓			
Rear Engine Mount Bolt					✓			
Exhaust Header Bolts			✓					
Exhaust Coupler		✓						
Exhaust Silencer Mount			✓					
Exhaust Lambda Sensor		✓						
Cylinder Head Studs			✓					
Barrel Retainers		✓						
Cam Cover BoltS		✓						
Cam Gear Bolt		✓						
Cam Tensioner Bolts		✓						
Oil Drain Plug			✓					
Oil Filter Housing		✓						
Oil Sump Gauze Cover Bolts		✓						
Clutch Basket Main Nut					✓			
Flywheel Main Nut						✓		
Front Sprocket						✓		

HANDOVER - PRE-DELIVERY INSPECTION CHECKLIST

	ITEM	
PRE-BUILD QUALITY CHECKS		
	Check for any significant paintwork issues or physical damage	☐
RAMP DOWN		
1	Check battery and and charge if necessary.	☐
2	Fit battery terminals, ensuring terminals are tight and terminal protection spray is used.	☐
3	Fit adjust and tighten mirrors.	☐
4	Check throttle and clutch cable for free play and correct operation.	☐
5	Check routing of of cables and wiring, handlebars move freely from lock to lock.	☐
6	Check brake fluid levels, top up if necessary.	☐
RAMP UP		
7	Check and clean front and rear brake discs.	☐
8	Check fitment of all brake pads.	☐
9	Visual check of tyre and wheel, check for tyre fitment and rim run out.	☐
10	Check wheel spokes are tensioned.	☐
11	Check tyre pressures.	☐
12	Check front wheel bearings.	☐
13	Check rear wheel bearings.	☐
14	Check steering head bearings, smooth from lock to lock.	☐
15	Check front axle is tight.	☐
16	Check chain drive tension and alignment.	☐
17	Check swing arm bearings.	☐

	ITEM	
18	Check shock bolts are tight.	☐
19	Check rear axle is tight.	☐
20	Check oil level.	☐
21	Fit registration plate.	☐
22	Check all low level fastenings are tight - ALL IN VIEW	☐
23	Tail Light	☐
RAMP DOWN		
24	Add fuel (5 Litres unless otherwise requested).	☐
25	Turn on ignition - check for fuel pump priming/fuel leaks.	☐
26	Start bike and run up to temperature.	☐
27	Check all lights and switches - High & Low Beam/Indicators/Horn.	☐
28	Check kill switch.	☐
29	Move steering from lock to lock, check for idle changes.	☐
30	Check battery and charging system.	☐
31	Check side stand cut out switch is operational.	
32	Check / fit tool kit.	☐
33	Check headlamp aim/height - adjust if necessary.	☐
34	Check steering lock and ignition switch.	☐
35	Check smooth operation of front and rear suspension.	☐
36	Switch off bike - recheck oil level.	☐
	Continues on next page	

HANDOVER - PRE-DELIVERY INSPECTION CHECKLIST

	ITEM	
ROAD TEST (3 MILE MINIMUM)		
37	**IMPORTANT!** PERFORM ROAD TEST (3 mile minimum)	☐
38	No unusual engine noises or rattles.	☐
39	Easy hot restart and smooth idling.	☐
FINAL CHECKS		
40	Re-check oil level.	☐
41	Re-check final drive for tension and alignment.	☐
42	Clean/polish bike ready for handover.	☐
43	Final visual check for any oil leaks.	☐
HANDOVER		
44	Technician - Sign PDI	☐
45	Owners hand book/warranty book.	☐
46	Owners tool kit.	☐
47	MUTT warranty registration form/certificate.	☐
48	Spare keys	☐
49	Customer - Sign PDI	☐
54	MUTT warranty registration form/certificate.	☐
55	Spare keys	☐
56	Customer - Sign PDI	☐

SERVICE INFORMATION - SERVICE SCHEDULE & GENERAL GUIDANCE

It is important that regular servicing is carried out on our motorcycles. The service schedule is outlined below. Please follow the detailed service procedures outlined for each service.

Service schedule and procedures apply to **all 125cc and 250cc bike models**.

SERVICE	INTERVAL
FIRST SERVICE	800KM
SECOND SERVICE	4,000KM
THIRD SERVICE	8,000KM
FOURTH SERVICE	12,000KM
FIFTH SERVICE	16,000KM
SIXTH SERVICE ONWARDS	Every +4,000KM from 20,000KM on

CAUTION

Proper service and repair procedures are essential for the service technician's safety and the motorcycle's safety and reliability. When two or more people work together, pay attention to each other's safety. When it is necessary to run the engine indoors, ensure removal of any exhaust gas using extraction. When working with any toxic or flammable materials, make sure that the area you work in is well ventilated and that you follow all of the material manufacturer's instructions. Never use petrol as a cleaning solvent. To avoid getting burned, do not touch the engine, engine oil or exhaust system during or shortly after engine operation. After servicing the fuel, oil, exhaust or brake system, check all lines and fittings related to these systems for leakage. When working on the brake system, when completed, ALWAYS ensure proper brake system operation.

If parts replacement is necessary, replace the parts with MUTT genuine or approved parts. When removing parts that will be re-used, keep them arranged in an orderly manner for reinstallation in the proper order and orientation. Make sure that all components used in reassembly are clean and lubricated where specified. When performing service to electrical parts, if the service procedures do not require battery power, disconnect the positive terminal. When removing the battery, disconnect the negative cable first and then the positive cable. When reconnecting the battery, connect the positive cable first and then the negative cable, and replace the terminal cover on the positive terminal. Whenever you remove oil seals, gaskets, packing, O-rings, locking washers, cotter pins, circlips, and certain other parts as specified, be sure to replace them with new ones. Before installing new parts, remove any unwanted material from the mating surfaces. After installing a circlip, always ensure that it is completely seated in its groove and securely fitted. Do not re-use locking nuts. Use a torque wrench to tighten fasteners to the torque values specified. After reassembly, check parts for tightness and correct operation.

SUSTAINABILITY

To protect the environment, do not unlawfully dispose of used motor oil and other fluids, batteries and tyres. To ensure that we operate as sustainably as possible, always ensure proper disposal of used motorcycle parts. Whenever possible, we should find ways to recycle and re-use parts and components.

IMPORTANT

Please note that the warnings and the cautions contained in this manual cannot cover all potential hazards relating to the servicing, or lack of servicing, of the motorcycle. In addition to the WARNING and CAUTION stated, you must use good judgment and basic mechanical safety principles. If you are unsure how to perform a particular service operation, ask a more experienced technician for advice.

SERVICE INFORMATION - FIRST SERVICE

SUMMARY

1. PREPARE THE MOTORCYCLE

1.1. Place the motorcycle on the ramp and secure safely.

1.2. Starting and warming the motorcycle is required to thin the engine oil to make it easier to drain. Start the bike in the usual manner; make sure the bike is in neutral, pull in the clutch and make sure the side stand is up.

2. CHECK LIGHTING SYSTEMS

2.1. With the bike running check the lighting systems:

2.2. Headlight: Check that the headlight and sidelight bulbs are running to their full capacity.

2.3. Main beam: Check that the main beam bulb is running at full capacity when switched on. Make sure that this doesn't affect any other headlight bulbs when switched on.

2.4. Front and rear indicators: Check that all four indicators are flashing at the correct speed (60-120 FPM) and that none of the bulbs is dim or defective.

2.5. Rear running light: Check that the rear day running light is continuously running without any intermittent flashes or flickers.

2.6. Brake light and front and rear actuators: Check the rear brake light operation by placing one hand over the rear light cluster and pulling the front brake lever. Do the same again for the rear using your foot to press down the brake pedal.

2.7. Number plate light: Place your fingers underneath the light cluster checking for the bright white light.

2.8. If any of the above are not working of defective, consult the troubleshooting advice.

3. CHECK ELECTRONIC HAND CONTROLS

3.1. With the bike still running, check the electronic hand controls:

3.2. Main beam flash switch: Check if the main beam switches on/off using the yellow button on the LHS switchgear. Do this a few times, releasing the switch to check that the main beam goes off correctly.

3.3. Main beam switch: Switch the main beam switch to the on position and check if the main beam is on. Check the main beam indicator light is on.

3.4. Horn button: Press the horn button on the LHS switchgear an ensure the horn is triggered and audible.

3.5. Indicator switch and cancelling operation: Confirm the indicators operate correctly by sliding the indicator switch from right to left. Click the indicator switch entirely in to check the cancelling operation.

3.6. Kill switch operation: Move the red kill switch to the 'off' position. Restart the bike to continue warming the oil.

4. TURN OFF THE MOTORCYCLE

4.1. After three minutes of run time, turn the motorcycle off. Be careful around the bike once it is warmed up, particularly around the engine and exhaust, as it will now be hot.

5. DRAIN OIL

5.1. Use a suitable drain tub with a capacity of 1L or above. If the bike has no sump guard, move to step 5.3

5.2. Remove the sump guard using a 10mm socket or spanner. Undo the three 10mm bolts securing the sump guard plate in place. Keep these bolts safe. Check the anti-vibration rubber grommets fitted to the sump guard plate. Replace if torn or perished or showing other signs of wear. Worn grommets can cause severe vibration and excessive wear on the sump guard mounting points if they are not replaced.Remove the oil filler cap for better oil flow whilst draining.

5.3. Ensure that your oil drain tub is directly under the engine. Using a 17mm socket with an extension secured on the head of the sump plug, remove the plug by turning counter-clockwise. The sump plug is located on the triangular plate underneath the engine, directly in the middle.

CAUTION - The oil will be extremely hot - remove with care. We recommend that you wear heat-resistant rubber gloves during the draining process.

5.4. Clean and check the threads and washer on the sump plug. If there is any damage to either the threads or the washer, replace the sump plug. Replace the sump plug washer after a maximum of two oil changes.

SERVICE INFORMATION - FIRST SERVICE (Cont.)

5.5. Visually check the oil that is draining, looking for any obvious metal particulates. If metal particulates are present, then consult the troubleshooting advice.

5.6. Leave the oil to drain for approximately three minutes. Make sure the bike stays in the upright position throughout.

5.7. Once the oil has drained completely, refit the sump plug, ensuring that the washer is still fitted correctly. Tighten the sump plug clockwise to 25nm f. DO NOT overtighten the sump plug as there is a risk of stripping internal threads. Always make sure you pay attention to our torque specifications and observe the correct settings.

5.8. Clean any oil residue off of the engine using brake cleaner.

6. REMOVE AND REPLACE OIL FILTER

6.1. It is essential to change the oil filter during the first service. After the break-in process, metal particulates can gather in the oil filter. This is entirely normal and indicates that the engine has bedded in correctly.

6.2. Ensure that your drain tub is still underneath the motorcycle, then remove the three oil filter house nuts using a 10mm socket. Once removed, ease the oil filter housing cap away from the crankcase. Ensure you remove the cap carefully and try not to tear or damage the paper gasket or rubber O-ring. If you damage these items during this process, they will need replacement.

6.3. Remove the oil filter by extracting the filter out of the filter housing. Inspect the oil filter, looking for any obvious signs of damage. Remember that it is normal to find metal particles, especially during the first service.

6.4. Fit a new oil filter into the housing, ensuring that the oil filter is in the correct orientation.

6.5. Refit the oil filter housing, ensuring the correct fitting of the o-ring and paper gasket. Tighten the three 10mm nuts to 15nm.

7. REPLACE OIL

7.1. Remove the oil filler cap. Place a funnel in the oil fill port. Measure out 900MLs of 10w40 semi-synthetic motorcycle oil.Place the oil into the engine slowly, being careful not to spill any oil.

7.2. After adding the required amount of oil, replace the oil filler cap and check for any leaks on the sump plug. Remove the drain tub and dispose of the oil accordingly.

7.3. When you are confident the oil level is correct and that there are no apparent leaks, run the engine for approximately one minute to circulate the oil and refill the oil filter with clean oil. Start the motorcycle in the usual manner. Remember to run the motorcycle outside or with a ventilation system in place. Be careful of the hot engine and exhaust whilst running. If you find any leaks during the running process, turn the motorcycle off immediately. Trace the source and consult troubleshooting advice.

7.4. After running for one minute, turn the motorcycle off and leave for three minutes to cool. Check the oil by looking at the oil level window making sure the bike is entirely upright. If the oil level is below the centre of the window, remove the oil filler cap and add more oil until the window is 3/4 filled. Refit the oil filler cap and clean off any residue.

7.5. Refit the sump guard by bolting the sump guard plate back on to the sump guard mount. Fit the rubber grommets. Tighten the three 10mm sump guard plate bolts up to 40nm.

8. CLEAN AIR FILTER

8.1. Gain access to the airbox by removing the airbox side cover. Remove the three screws that hold the air filter tube in place. Slide the air filter tube out of the airbox. Remove the air filter from the tube. If you have access to an air compressor with an airline nozzle, use it to blow the air filter clean. If you do not have a compressor, clean thoroughly in warm water, then leave to dry.

8.2. Spray the air filter with air filter oil to the directions supplied by the manufacture of the product you are using. Refit the air filter by placing it back over the tube and slide it back into the airbox. Tighten the three screws to secure the air filter tube back into the airbox. Put the airbox cover back on, making sure that the rubber grommets are secured correctly.

9. CHECK SPARK PLUG

9.1. Remove the spark plug cap. Use a 10mm spark plug socket to remove the sparkplug, screwing counter-clockwise. Check the plug tip and side electrode. If they have turned entirely black, it can indicate a problem linked to the spark plug operation. If this is the case, see our troubleshooting advice for guidance.

9.2. Using a feeler gauge, check the spark plug gap, which should be 0.7-0.8mm. If you are not happy with the sparkplug's condition, then replace with a new one.

9.3. Once you are happy with the sparkplug's condition (or have replaced for new), you can refit. Using a 10mm sparkplug socket tighten to 25nm. Once torqued to spec, give it a small nip with a ratchet to check that the crush washer is fully seated.

9.4. Push the sparkplug cap onto the sparkplug, making sure it makes a click.

10. CHECK REAR WHEEL AND TYRE

10.1. Jack the rear of the motorcycle up on the ramp using the jack point. Spin the wheel looking for any nails or objects that have penetrated the tire wall. While spinning the wheel, check the tire tread and shape condition, looking out for any delamination, odd wear patterns, or sidewall bulges.

10.2. Check the rear tire pressure is at the required 2.2 bar/32 psi. If the pressure is too low, re-pressurise to the required amount. If the tire pressure has dropped dramatically, carry out a puncture test. Consult troubleshooting advice for guidance.

11. CHECK AND LUBRICATE CHAIN

11.1. With the wheel jacked in the air, check the tension and lubrication of the chain.

11.2. Slack off the rear wheel axle to release tension from the chain tensioner block.

11.3. Loosen the lock nut off the adjuster by a few centimetres. Rotate the adjusting bolt using the increment marks on the swingarm as a guide. Ensuring the symmetrical movement of both left and right tensioners, check the chain tension. We recommend moving between 4-5mm. Take this measurement from the swingarm to the bottom of the chain. Tighten the adjuster lock nuts and rear axle nut. Fit the rubber axle nut cap securely.

SERVICE INFORMATION - FIRST SERVICE (Cont.)

11.4. To lubricate the chain, spin the wheel and spray the chain lube directly onto the chain. Remember to pay attention to the instructions of the product. Make a few passes then wipe the brake disc and tire clean.

11.5. Lower the jack and turn the bike around. Always make sure the bike is secured on the ramp when doing this. With the bike in the reverse position on the ramp, jack the front wheel into the air using the jacking point.

12. CHECK FRONT WHEEL AND TYRE

12.1. With the front wheel jacked up into the air, spin the wheel looking for any nails or objects that may have penetrated the tire wall. While spinning the wheel, check the tire tread and shape condition, looking out for any delamination, odd wear patterns, or sidewall bulges.

12.2. Check the rear tire pressure is at the required 2.2 bar/32 psi. If the pressure is too low, re-pressurise to the required amount. If the tire pressure has dropped dramatically, carry out a puncture test. Consult troubleshooting advice for guidance.

12.3. Lower and remove the jack from underneath the motorcycle.

13. DIAGNOSTIC CHECK

13.1. Remove the seat and find the diagnostics port. Remove the waterproof cover and plug in the MUTT diagnostic scanner. Follow the on-screen instructions and run an error code test. Consult our P codes troubleshooting booklet for guidance for any error codes shown. Refit the waterproof diagnostics port cover and refit the side panel if the test is clear.

14. FINAL CHECK & CLEAN

14.1. To complete the service, final lubrication and cleaning are required. Lubricate the following parts:

14.2. **Rider footpegs:** lubricate with white grease or penetrating oil. Wipe off ALL overspray from the exhaust and brake pedal.

14.3. **Passenger footpegs:** lubricate with white grease or penetrating oil as with the rider footpegs. Wipe ALL overspray from the exhaust and brake pedal.

14.4. **Brake pedal pivot bush:** lubricate with white grease or penetrating oil.

14.5. Clean and polish the motorcycle thoroughly before returning it to the customer. We recommended using our MUTT cleaning product range for the best finish possible. Cleaning the bike is also an opportunity to check for any other issues that may need attention. Remember always to use brake cleaner to clean brake discs after using any cleaning products.

14.6. Stamp and sign the service booklet once the service is complete. And you're done - great work!

SERVICE INFORMATION - SECOND & THIRD SERVICE

SUMMARY

1. PREPARE THE MOTORCYCLE

1.1. Place the motorcycle on the ramp and secure safely.

1.2. Starting and warming the motorcycle is required to thin the engine oil to make it easier to drain. Start the bike in the usual manner; make sure the bike is in neutral, pull in the clutch and make sure the side stand is up.

2. CHECK LIGHTING SYSTEMS

2.1. With the bike running check the lighting systems:

2.2. Headlight: Check that the headlight and sidelight bulbs are running to their full capacity.

2.3. Main beam: Check that the main beam bulb is running at full capacity when switched on. Make sure that this doesn't affect any other headlight bulbs when switched on.

2.4. Front and rear indicators: Check that all four indicators are flashing at the correct speed (60-120 FPM) and that none of the bulbs is dim or defective.

2.5. Rear running light: Check that the rear day running light is continuously running without any intermittent flashes or flickers.

2.6. Brake light and front and rear actuators: Check the rear brake light operation by placing one hand over the rear light cluster and pulling the front brake lever. Do the same again for the rear using your foot to press down the brake pedal.

2.7. Number plate light: Place your fingers underneath the light cluster checking for the bright white light.

2.8. If any of the above are not working of defective, consult the troubleshooting advice.

3. CHECK ELECTRONIC HAND CONTROLS

3.1. With the bike still running, check the electronic hand controls:

3.2. Main beam flash switch: Check if the main beam switches on/off using the yellow button on the LHS switchgear. Do this a few times, releasing the switch to check that the main beam goes off correctly.

3.3. Main beam switch: Switch the main beam switch to the on position and check if the main beam is on. Check the main beam indicator light is on.

3.4. Horn button: Press the horn button on the LHS switchgear an ensure the horn is triggered and audible.

3.5. Indicator switch and cancelling operation: Confirm the indicators operate correctly by sliding the indicator switch from right to left. Click the indicator switch entirely in to check the cancelling operation.

3.6. Kill switch operation: Move the red kill switch to the 'off' position. Restart the bike to continue warming the oil.

4. TURN OFF THE MOTORCYCLE

4.1. After three minutes of run time, turn the motorcycle off. Be careful around the bike once it is warmed up, particularly around the engine and exhaust, as it will now be hot.

5. DRAIN OIL

5.1. Use a suitable drain tub with a capacity of 1L or above. If the bike has no sump guard, move to step 5.3

5.2. Remove the sump guard using a 10mm socket or spanner. Undo the three 10mm bolts securing the sump guard plate in place. Keep these bolts safe. Check the anti-vibration rubber grommets fitted to the sump guard plate. Replace if torn or perished or showing other signs of wear. Worn grommets can cause severe vibration and excessive wear on the sump guard mounting points if they are not replaced.Remove the oil filler cap for better oil flow whilst draining.

5.3. Ensure that your oil drain tub is directly under the engine. Using a 17mm socket with an extension secured on the head of the sump plug, remove the plug by turning counter-clockwise. The sump plug is located on the triangular plate underneath the engine, directly in the middle.

CAUTION - The oil will be extremely hot - remove with care. We recommend that you wear heat-resistant rubber gloves during the draining process.

5.4. Clean and check the threads and washer on the sump plug. If there is any damage to either the threads or the washer, replace the sump plug. Replace the sump plug washer after a maximum of two oil changes.

SERVICE INFORMATION - SECOND & THIRD SERVICE (Cont.)

5.5. Visually check the oil that is draining, looking for any obvious metal particulates. If metal particulates are present, then consult the troubleshooting advice.

5.6. Leave the oil to drain for approximately three minutes. Make sure the bike stays in the upright position throughout.

5.7. Once the oil has drained completely, refit the sump plug, ensuring that the washer is still fitted correctly. Tighten the sump plug clockwise to 25nm f. DO NOT overtighten the sump plug as there is a risk of stripping internal threads. Always make sure you pay attention to our torque specifications and observe the correct settings.

5.8. Clean any oil residue off of the engine using brake cleaner.

6. INSPECT AND CLEAN OIL STRAINER

6.1. Unbolt the strainer cover - this is the metal triangle that the oil sump plug threads onto. Loosen the bolts and remove being careful not to damage the O-ring.

6.2. Remove the oil strainer and clean off any metal particulates by washing thoroughly with brake cleaner. If there are any unusual sized parts of metal, consult the troubleshooting advice.

6.3. Once clean, reinstall the strainer and bolt the cover back on, ensuring the O-ring is still in place. Torque the bolts to 25nm in a diagonal pattern.

7. REMOVE AND REPLACE OIL FILTER

7.1. It is essential to change the oil filter during the first service. After the break-in process, metal particulates can gather in the oil filter. This is entirely normal and indicates that the engine has bedded in correctly.

7.2. Ensure that your drain tub is still underneath the motorcycle, then remove the three oil filter house nuts using a 10mm socket. Once removed, ease the oil filter housing cap away from the crankcase. Ensure you remove the cap carefully and try not to tear or damage the paper gasket or rubber O-ring. If you damage these items during this process, they will need replacement.

7.3. Remove the oil filter by extracting the filter out of the filter housing. Inspect the oil filter, looking for any obvious signs of damage. Remember that it is normal to find metal particles, especially during the first service.

7.4. Fit a new oil filter into the housing, ensuring that the oil filter is in the correct orientation.

7.5. Refit the oil filter housing, ensuring the correct fitting of the o-ring and paper gasket. Tighten the three 10mm nuts to 15nm.

8. REPLACE OIL

8.1. Remove the oil filler cap. Place a funnel in the oil fill port. Measure out 900MLs of 10w40 semi-synthetic motorcycle oil.Place the oil into the engine slowly, being careful not to spill any oil.

8.2. After adding the required amount of oil, replace the oil filler cap and check for any leaks on the sump plug. Remove the drain tub and dispose of the oil accordingly.

8.3. When you are confident the oil level is correct and that there are no apparent leaks, run the engine for approximately one minute to circulate the oil and refill the oil filter with clean oil. Start the motorcycle in the usual manner. Remember to run the motorcycle outside or with a ventilation system in place. Be careful of the hot engine and exhaust whilst running. If you find any leaks during the running process, turn the motorcycle off immediately. Trace the source and consult troubleshooting advice.

8.4. After running for one minute, turn the motorcycle off and leave for three minutes to cool. Check the oil by looking at the oil level window making sure the bike is entirely upright. If the oil level is below the centre of the window, remove the oil filler cap and add more oil until the window is 3/4 filled. Refit the oil filler cap and clean off any residue.

8.5. Refit the sump guard by bolting the sump guard plate back on to the sump guard mount. Fit the rubber grommets. Tighten the three 10mm sump guard plate bolts up to 40nm.

9. CLEAN AIR FILTER

9.1. Gain access to the airbox by removing the airbox side cover. Remove the three screws that hold the air filter tube in place. Slide the air filter tube out of the airbox. Remove the air filter from the tube. If you have access to an air compressor with an airline nozzle, use it to blow the air filter clean. If you do not have a compressor, clean thoroughly in warm water, then leave to dry.

9.2. Spray the air filter with air filter oil to the directions supplied by the manufacture of the product you are using. Refit the air filter by placing it back over the tube and slide it back into the airbox. Tighten the three screws to secure the air filter tube back into the airbox. Put the airbox cover back on, making sure that the rubber grommets are secured correctly.

9.3. CHECK SPARK PLUG

9.4. Remove the spark plug cap. Use a 10mm spark plug socket to remove the sparkplug, screwing counter-clockwise. Check the plug tip and side electrode. If they have turned entirely black, it can indicate a problem linked to the spark plug operation. If this is the case, see our troubleshooting advice for guidance.

9.5. Using a feeler gauge, check the spark plug gap, which should be 0.7-0.8mm. If you are not happy with the sparkplug's condition, then replace with a new one.

9.6. Once you are happy with the sparkplug's condition (or have replaced for new), you can refit. Using a 10mm sparkplug socket tighten to 25nm. Once torqued to spec, give it a small nip with a ratchet to check that the crush washer is fully seated.

9.7. Push the sparkplug cap onto the sparkplug, making sure it makes a click.

9.8. CHECK BRAKE SYSTEM

9.9. Visually inspect the brake system, checking the following:

9.10. Front and rear brake pad: visually check the condition and placement of the brake pads. Replace the pads if the wear indicator groove depth is 2mm or less, or if there is any sign of ridging on the brake pads

9.11. Caliper banjo fittings: check the area around the banjo on both front and rear calipers, in particular looking for any brake fluid leaks

9.12. Brake line routing and condition: check the front and rear brake lines for any excessive wear. Check thoroughly around the front mudguard bracket area as there can sometimes be excessive wear at this point if brake line routing is incorrect.

SERVICE INFORMATION - SECOND & THIRD SERVICE (Cont.)

9.13. Front and rear brake discs: check for any warp, sever pitting or uneven wear, checking if the rotors have any thin ridges or dips around the outer edge. Should any ridging feel abnormally deep or high, measure the discs for wear using a vernier. The minimum recommended face thickness is 3mm. Replace brake discs is they are below the recommended thickness, or there is abnormal visible damage.

9.14. Replace any parts where issues or damage are visible.

10. CHECK AND ADJUST CLUTCH LEVER

10.1. Check the free play of the clutch lever by removing the rubber cover on the clutch perch. Check the free play is at 20-25mm as recommended.

10.2. Adjust using the quick adjuster if necessary: crack off the lock ring and turn the adjuster counter-clockwise until you achieve the required amount of free play.

10.3. Slide the rubber boot back over the perch, ensuring that the lock ring is tight.

11. CHECK REAR WHEEL AND TYRE

11.1. Jack the rear of the motorcycle up on the ramp using the jack point. Spin the wheel looking for any nails or objects that have penetrated the tire wall. While spinning the wheel, check the tire tread and shape condition, looking out for any delamination, odd wear patterns, or sidewall bulges.

11.2. Check the rear tire pressure is at the required 2.2 bar/32 psi. If the pressure is too low, re-pressurise to the required amount. If the tire pressure has dropped dramatically, carry out a puncture test. Consult troubleshooting advice for guidance.

12. CHECK AND LUBRICATE CHAIN

12.1. With the wheel jacked in the air, check the tension and lubrication of the chain.

12.2. Slack off the rear wheel axle to release tension from the chain tensioner block.

12.3. Loosen the lock nut off the adjuster by a few centimetres. Rotate the adjusting bolt using the increment marks on the swingarm as a guide. Ensuring the symmetrical movement of both left and right tensioners, check the chain tension. We recommend moving between 4-5mm. Take this measurement from the swingarm to the bottom of the chain. Tighten the adjuster lock nuts and rear axle nut. Fit the rubber axle nut cap securely.

12.4. To lubricate the chain, spin the wheel and spray the chain lube directly onto the chain. Remember to pay attention to the instructions of the product. Make a few passes then wipe the brake disc and tire clean.

12.5. Lower the jack and turn the bike around. Always make sure the bike is secured on the ramp when doing this. With the bike in the reverse position on the ramp, jack the front wheel into the air using the jacking point.

13. CHECK FRONT WHEEL AND TYRE

13.1. With the front wheel jacked up into the air, spin the wheel looking for any nails or objects that may have penetrated the tire wall. While spinning the wheel, check the tire tread and shape condition, looking out for any delamination, odd wear patterns, or sidewall bulges.

13.2. Check the rear tire pressure is at the required 2.2 bar/32 psi. If the pressure is too low, re-pressurise to the required amount. If the tire pressure has dropped dramatically, carry out a puncture test. Consult troubleshooting advice for guidance.

13.3. Lower and remove the jack from underneath the motorcycle.

14. CHECK HEADRACE BEARING

14.1. Whilst the front wheel is in the air, check for any looseness or play in the headrace bearings. Turn from side to side, checking for any notching or stiffness, then leave the wheel turned to your preferred direction until it is on the steering stop. Rock the wheel back and forth. If you can feel or hear a knock, then consult our troubleshooting advice guidance. If the bearings are in good condition, you should have a smooth and consistent side to side movement and no knocking from front to rear.

14.2. Lower and remove the jack from underneath the motorcycle.

15. DIAGNOSTIC CHECK

15.1. Remove the seat and find the diagnostics port. Remove the waterproof cover and plug in the MUTT diagnostic scanner. Follow the on-screen instructions and run an error code test. Consult our P codes troubleshooting booklet for guidance for any error codes shown. Refit the waterproof diagnostics port cover and refit the side panel if the test is clear.

16. FINAL CHECK & CLEAN

16.1. To complete the service, final lubrication and cleaning are required. Lubricate the following parts:

16.2. **Rider footpegs:** lubricate with white grease or penetrating oil. Wipe off ALL overspray from the exhaust and brake pedal.

16.3. **Passenger footpegs:** lubricate with white grease or penetrating oil as with the rider footpegs. Wipe ALL overspray from the exhaust and brake pedal.

16.4. **Brake pedal pivot bush:** lubricate with white grease or penetrating oil.

16.5. Clean and polish the motorcycle thoroughly before returning it to the customer. We recommended using our MUTT cleaning product range for the best finish possible. Cleaning the bike is also an opportunity to check for any other issues that may need attention. Remember always to use brake cleaner to clean brake discs after using any cleaning products.

16.6. Stamp and sign the service booklet once the service is complete. And you're done - great work!

SERVICE INFORMATION - FOURTH & FIFTH SERVICE

SUMMARY

1. PREPARE THE MOTORCYCLE

1.1. Place the motorcycle on the ramp and secure safely.

1.2. Starting and warming the motorcycle is required to thin the engine oil to make it easier to drain. Start the bike in the usual manner; make sure the bike is in neutral, pull in the clutch and make sure the side stand is up.

2. CHECK LIGHTING SYSTEMS

2.1. With the bike running check the lighting systems:

2.2. Headlight: Check that the headlight and sidelight bulbs are running to their full capacity.

2.3. Main beam: Check that the main beam bulb is running at full capacity when switched on. Make sure that this doesn't affect any other headlight bulbs when switched on.

2.4. Front and rear indicators: Check that all four indicators are flashing at the correct speed (60-120 FPM) and that none of the bulbs is dim or defective.

2.5. Rear running light: Check that the rear day running light is continuously running without any intermittent flashes or flickers.

2.6. Brake light and front and rear actuators: Check the rear brake light operation by placing one hand over the rear light cluster and pulling the front brake lever. Do the same again for the rear using your foot to press down the brake pedal.

2.7. Number plate light: Place your fingers underneath the light cluster checking for the bright white light.

2.8. If any of the above are not working of defective, consult the troubleshooting advice.

3. CHECK ELECTRONIC HAND CONTROLS

3.1. With the bike still running, check the electronic hand controls:

3.2. Main beam flash switch: Check if the main beam switches on/off using the yellow button on the LHS switchgear. Do this a few times, releasing the switch to check that the main beam goes off correctly.

3.3. Main beam switch: Switch the main beam switch to the on position and check if the main beam is on. Check the main beam indicator light is on.

3.4. Horn button: Press the horn button on the LHS switchgear an ensure the horn is triggered and audible.

3.5. Indicator switch and cancelling operation: Confirm the indicators operate correctly by sliding the indicator switch from right to left. Click the indicator switch entirely in to check the cancelling operation.

3.6. Kill switch operation: Move the red kill switch to the 'off' position. Restart the bike to continue warming the oil.

4. TURN OFF THE MOTORCYCLE

4.1. After three minutes of run time, turn the motorcycle off. Be careful around the bike once it is warmed up, particularly around the engine and exhaust, as it will now be hot.

5. DRAIN OIL

5.1. Use a suitable drain tub with a capacity of 1L or above. If the bike has no sump guard, move to step 5.3

5.2. Remove the sump guard using a 10mm socket or spanner. Undo the three 10mm bolts securing the sump guard plate in place. Keep these bolts safe. Check the anti-vibration rubber grommets fitted to the sump guard plate. Replace if torn or perished or showing other signs of wear. Worn grommets can cause severe vibration and excessive wear on the sump guard mounting points if they are not replaced.Remove the oil filler cap for better oil flow whilst draining.

5.3. Ensure that your oil drain tub is directly under the engine. Using a 17mm socket with an extension secured on the head of the sump plug, remove the plug by turning counter-clockwise. The sump plug is located on the triangular plate underneath the engine, directly in the middle.

CAUTION - The oil will be extremely hot - remove with care. We recommend that you wear heat-resistant rubber gloves during the draining process.

5.4. Clean and check the threads and washer on the sump plug. If there is any damage to either the threads or the washer, replace the sump plug. Replace the sump plug washer after a maximum of two oil changes.

5.5. Visually check the oil that is draining, looking for any obvious metal particulates. If metal particulates are present, then consult the troubleshooting advice.

5.6. Leave the oil to drain for approximately three minutes. Make sure the bike stays in the upright position throughout.

5.7. Once the oil has drained completely, refit the sump plug, ensuring that the washer is still fitted correctly. Tighten the sump plug clockwise to 25nm f. DO NOT overtighten the sump plug as there is a risk of stripping internal threads. Always make sure you pay attention to our torque specifications and observe the correct settings.

5.8. Clean any oil residue off of the engine using brake cleaner.

6. INSPECT AND CLEAN OIL STRAINER

6.1. Unbolt the strainer cover - this is the metal triangle that the oil sump plug threads onto. Loosen the bolts and remove being careful not to damage the O-ring.

6.2. Remove the oil strainer and clean off any metal particulates by washing thoroughly with brake cleaner. If there are any unusual sized parts of metal, consult the troubleshooting advice.

6.3. Once clean, reinstall the strainer and bolt the cover back on, ensuring the O-ring is still in place. Torque the bolts to 25nm in a diagonal pattern.

7. REMOVE AND REPLACE OIL FILTER

7.1. It is essential to change the oil filter during the first service. After the break-in process, metal particulates can gather in the oil filter. This is entirely normal and indicates that the engine has bedded in correctly.

7.2. Ensure that your drain tub is still underneath the motorcycle, then remove the three oil filter house nuts using a 10mm socket. Once removed, ease the oil filter housing cap away from the crankcase. Ensure you remove the cap carefully and try not to tear or damage the paper gasket or rubber O-ring. If you damage these items during this process, they will need replacement.

7.3. Remove the oil filter by extracting the filter out of the filter housing. Inspect the oil filter, looking for any obvious signs of damage. Remember that it is normal to find metal particles, especially during the first service.

7.4. Fit a new oil filter into the housing, ensuring that the oil filter is in the correct orientation.

7.5. Refit the oil filter housing, ensuring the correct fitting of the o-ring and paper gasket. Tighten the three 10mm nuts to 15nm.

8. REPLACE OIL

8.1. Remove the oil filler cap. Place a funnel in the oil fill port. Measure out 900MLs of 10w40 semi-synthetic motorcycle oil.Place the oil into the engine slowly, being careful not to spill any oil.

8.2. After adding the required amount of oil, replace the oil filler cap and check for any leaks on the sump plug. Remove the drain tub and dispose of the oil accordingly.

8.3. When you are confident the oil level is correct and that there are no apparent leaks, run the engine for approximately one minute to circulate the oil and refill the oil filter with clean oil. Start the motorcycle in the usual manner. Remember to run the motorcycle outside or with a ventilation system in place. Be careful of the hot engine and exhaust whilst running. If you find any leaks during the running process, turn the motorcycle off immediately. Trace the source and consult troubleshooting advice.

8.4. After running for one minute, turn the motorcycle off and leave for three minutes to cool. Check the oil by looking at the oil level window making sure the bike is entirely upright. If the oil level is below the centre of the window, remove the oil filler cap and add more oil until the window is 3/4 filled. Refit the oil filler cap and clean off any residue.

8.5. Refit the sump guard by bolting the sump guard plate back on to the sump guard mount. Fit the rubber grommets. Tighten the three 10mm sump guard plate bolts up to 40nm.

9. CLEAN AIR FILTER

9.1. Gain access to the airbox by removing the airbox side cover. Remove the three screws that hold the air filter tube in place. Slide the air filter tube out of the airbox. Remove the air filter from the tube. If you have access to an air compressor with an airline nozzle, use it to blow the air filter clean. If you do not have a compressor, clean thoroughly in warm water, then leave to dry.

9.2. Spray the air filter with air filter oil to the directions supplied by the manufacture of the product you are using. Refit the air filter by placing it back over the tube and slide it back into the airbox. Tighten the three screws to secure the air filter tube back into the airbox. Put the airbox cover back on, making sure that the rubber grommets are secured correctly.

9.3. CHECK SPARK PLUG

9.4. Remove the spark plug cap. Use a 10mm spark plug socket to remove the sparkplug, screwing counter-clockwise. Check the plug tip and side electrode. If they have turned entirely black, it can indicate a problem linked to the spark plug operation. If this is the case, see our troubleshooting advice for guidance.

9.5. Using a feeler gauge, check the spark plug gap, which should be 0.7-0.8mm. If you are not happy with the sparkplug's condition, then replace with a new one.

9.6. Once you are happy with the sparkplug's condition (or have replaced for new), you can refit. Using a 10mm sparkplug socket tighten to 25nm. Once torqued to spec, give it a small nip with a ratchet to check that the crush washer is fully seated.

9.7. Push the sparkplug cap onto the sparkplug, making sure it makes a click.

9.8. CHECK BRAKE SYSTEM

9.9. Visually inspect the brake system, checking the following:

9.10. Front and rear brake pad: visually check the condition and placement of the brake pads. Replace the pads if the wear indicator groove depth is 2mm or less, or if there is any sign of ridging on the brake pads

9.11. Caliper banjo fittings: check the area around the banjo on both front and rear calipers, in particular looking for any brake fluid leaks

9.12. Brake line routing and condition: check the front and rear brake lines for any excessive wear. Check thoroughly around the front mudguard bracket area as there can sometimes be excessive wear at this point if brake line routing is incorrect.

SERVICE INFORMATION - FOURTH & FIFTH SERVICE (Cont.)

9.13. Front and rear brake discs: check for any warp, sever pitting or uneven wear, checking if the rotors have any thin ridges or dips around the outer edge. Should any ridging feel abnormally deep or high, measure the discs for wear using a vernier. The minimum recommended face thickness is 3mm. Replace brake discs is they are below the recommended thickness, or there is abnormal visible damage.

9.14. Replace any parts where issues or damage are visible.

10. CHECK AND ADJUST CLUTCH LEVER

10.1. Check the free play of the clutch lever by removing the rubber cover on the clutch perch. Check the free play is at 20-25mm as recommended.

10.2. Adjust using the quick adjuster if necessary: crack off the lock ring and turn the adjuster counter-clockwise until you achieve the required amount of free play.

10.3. Slide the rubber boot back over the perch, ensuring that the lock ring is tight.

11. CHECK AND LUBRICATE BRAKE HOSES

11.1. Introduce a small amount of synthetic grease at the lever end of any outer brake and gear cable runs. Thread the inner cable in to force the lubricant through the pipe. Wipe off any excess as the inner-wire emerges.

CAUTION: CAUTION: Ensure to use synthetic lubricants, **not** mineral oil or grease. Mineral products may degrade the outer brake hose or gear cable's plastic lining, impacting effective operation.

12. CHECK REAR WHEEL AND TYRE

12.1. Jack the rear of the motorcycle up on the ramp using the jack point. Spin the wheel looking for any nails or objects that have penetrated the tire wall. While spinning the wheel, check the tire tread and shape condition, looking out for any delamination, odd wear patterns, or sidewall bulges.

12.2. Check the rear tire pressure is at the required 2.2 bar/32 psi. If the pressure is too low, re-pressurise to the required amount. If the tire pressure has dropped dramatically, carry out a puncture test. Consult troubleshooting advice for guidance.

13. CHECK AND LUBRICATE CHAIN

13.1. With the wheel jacked in the air, check the tension and lubrication of the chain.

13.2. Slack off the rear wheel axle to release tension from the chain tensioner block.

13.3. Loosen the lock nut off the adjuster by a few centimetres. Rotate the adjusting bolt using the increment marks on the swingarm as a guide. Ensuring the symmetrical movement of both left and right tensioners, check the chain tension. We recommend moving between 4-5mm. Take this measurement from the swingarm to the bottom of the chain. Tighten the adjuster lock nuts and rear axle nut. Fit the rubber axle nut cap securely.

13.4. To lubricate the chain, spin the wheel and spray the chain lube directly onto the chain. Remember to pay attention to the instructions of the product. Make a few passes then wipe the brake disc and tire clean.

13.5. Lower the jack and turn the bike around. Always make sure the bike is secured on the ramp when doing this. With the bike in the reverse position on the ramp, jack the front wheel into the air using the jacking point.

14. CHECK FRONT WHEEL AND TYRE

14.1. With the front wheel jacked up into the air, spin the wheel looking for any nails or objects that may have penetrated the tire wall. While spinning the wheel, check the tire tread and shape condition, looking out for any delamination, odd wear patterns, or sidewall bulges.

14.2. Check the rear tire pressure is at the required 2.2 bar/32 psi. If the pressure is too low, re-pressurise to the required amount. If the tire pressure has dropped dramatically, carry out a puncture test. Consult troubleshooting advice for guidance.

14.3. Lower and remove the jack from underneath the motorcycle.

15. CHECK HEADRACE BEARING

15.1. Whilst the front wheel is in the air, check for any looseness or play in the headrace bearings. Turn from side to side, checking for any notching or stiffness, then leave the wheel turned to your preferred direction until it is on the steering stop. Rock the wheel back and forth. If you can feel or hear a knock, then consult our troubleshooting advice guidance. If the bearings are in good condition, you should have a smooth and consistent side to side movement and no knocking from front to rear.

15.2. Lower and remove the jack from underneath the motorcycle.

16. DIAGNOSTIC CHECK

16.1. Remove the seat and find the diagnostics port. Remove the waterproof cover and plug in the MUTT diagnostic scanner. Follow the on-screen instructions and run an error code test. Consult our P codes troubleshooting booklet for guidance for any error codes shown. Refit the waterproof diagnostics port cover and refit the side panel if the test is clear.

17. FINAL CHECK & CLEAN

17.1. To complete the service, final lubrication and cleaning are required. Lubricate the following parts:

17.2. **Rider footpegs:** lubricate with white grease or penetrating oil. Wipe off ALL overspray from the exhaust and brake pedal.

17.3. **Passenger footpegs:** lubricate with white grease or penetrating oil as with the rider footpegs. Wipe ALL overspray from the exhaust and brake pedal.

17.4. **Brake pedal pivot bush:** lubricate with white grease or penetrating oil.

17.5. Clean and polish the motorcycle thoroughly before returning it to the customer. We recommended using our MUTT cleaning product range for the best finish possible. Cleaning the bike is also an opportunity to check for any other issues that may need attention. Remember always to use brake cleaner to clean brake discs after using any cleaning products.

17.6. Stamp and sign the service booklet once the service is complete. And you're done - great work!

SERVICE INFORMATION - SIXTH SERVICE ONWARDS

SUMMARY

1. PREPARE THE MOTORCYCLE

1.1. Place the motorcycle on the ramp and secure safely.

1.2. Starting and warming the motorcycle is required to thin the engine oil to make it easier to drain. Start the bike in the usual manner; make sure the bike is in neutral, pull in the clutch and make sure the side stand is up.

2. CHECK LIGHTING SYSTEMS

2.1. With the bike running check the lighting systems:

2.2. Headlight: Check that the headlight and sidelight bulbs are running to their full capacity.

2.3. Main beam: Check that the main beam bulb is running at full capacity when switched on. Make sure that this doesn't affect any other headlight bulbs when switched on.

2.4. Front and rear indicators: Check that all four indicators are flashing at the correct speed (60-120 FPM) and that none of the bulbs is dim or defective.

2.5. Rear running light: Check that the rear day running light is continuously running without any intermittent flashes or flickers.

2.6. Brake light and front and rear actuators: Check the rear brake light operation by placing one hand over the rear light cluster and pulling the front brake lever. Do the same again for the rear using your foot to press down the brake pedal.

2.7. Number plate light: Place your fingers underneath the light cluster checking for the bright white light.

2.8. If any of the above are not working of defective, consult the troubleshooting advice.

3. CHECK ELECTRONIC HAND CONTROLS

3.1. With the bike still running, check the electronic hand controls:

3.2. Main beam flash switch: Check if the main beam switches on/off using the yellow button on the LHS switchgear. Do this a few times, releasing the switch to check that the main beam goes off correctly.

3.3. Main beam switch: Switch the main beam switch to the on position and check if the main beam is on. Check the main beam indicator light is on.

3.4. Horn button: Press the horn button on the LHS switchgear an ensure the horn is triggered and audible.

3.5. Indicator switch and cancelling operation: Confirm the indicators operate correctly by sliding the indicator switch from right to left. Click the indicator switch entirely in to check the cancelling operation.

3.6. Kill switch operation: Move the red kill switch to the 'off' position. Restart the bike to continue warming the oil.

4. TURN OFF THE MOTORCYCLE

4.1. After three minutes of run time, turn the motorcycle off. Be careful around the bike once it is warmed up, particularly around the engine and exhaust, as it will now be hot.

5. DRAIN OIL

5.1. Use a suitable drain tub with a capacity of 1L or above. If the bike has no sump guard, move to step 5.3

5.2. Remove the sump guard using a 10mm socket or spanner. Undo the three 10mm bolts securing the sump guard plate in place. Keep these bolts safe. Check the anti-vibration rubber grommets fitted to the sump guard plate. Replace if torn or perished or showing other signs of wear. Worn grommets can cause severe vibration and excessive wear on the sump guard mounting points if they are not replaced.Remove the oil filler cap for better oil flow whilst draining.

5.3. Ensure that your oil drain tub is directly under the engine. Using a 17mm socket with an extension secured on the head of the sump plug, remove the plug by turning counter-clockwise. The sump plug is located on the triangular plate underneath the engine, directly in the middle.

CAUTION - The oil will be extremely hot - remove with care. We recommend that you wear heat-resistant rubber gloves during the draining process.

5.4. Clean and check the threads and washer on the sump plug. If there is any damage to either the threads or the washer, replace the sump plug. Replace the sump plug washer after a maximum of two oil changes.

5.5. Visually check the oil that is draining, looking for any obvious metal particulates. If metal particulates are present, then consult the troubleshooting advice.
5.6. Leave the oil to drain for approximately three minutes. Make sure the bike stays in the upright position throughout.
5.7. Once the oil has drained completely, refit the sump plug, ensuring that the washer is still fitted correctly. Tighten the sump plug clockwise to 25nm f. DO NOT overtighten the sump plug as there is a risk of stripping internal threads. Always make sure you pay attention to our torque specifications and observe the correct settings.
5.8. Clean any oil residue off of the engine using brake cleaner.

6. INSPECT AND CLEAN OIL STRAINER

6.1. Unbolt the strainer cover - this is the metal triangle that the oil sump plug threads onto. Loosen the bolts and remove being careful not to damage the O-ring.
6.2. Remove the oil strainer and clean off any metal particulates by washing thoroughly with brake cleaner. If there are any unusual sized parts of metal, consult the troubleshooting advice.
6.3. Once clean, reinstall the strainer and bolt the cover back on, ensuring the O-ring is still in place. Torque the bolts to 25nm in a diagonal pattern.

7. REMOVE AND REPLACE OIL FILTER

7.1. It is essential to change the oil filter during the first service. After the break-in process, metal particulates can gather in the oil filter. This is entirely normal and indicates that the engine has bedded in correctly.
7.2. Ensure that your drain tub is still underneath the motorcycle, then remove the three oil filter house nuts using a 10mm socket. Once removed, ease the oil filter housing cap away from the crankcase. Ensure you remove the cap carefully and try not to tear or damage the paper gasket or rubber O-ring. If you damage these items during this process, they will need replacement.
7.3. Remove the oil filter by extracting the filter out of the filter housing. Inspect the oil filter, looking for any obvious signs of damage. Remember that it is normal to find metal particles, especially during the first service.
7.4. Fit a new oil filter into the housing, ensuring that the oil filter is in the correct orientation.
7.5. Refit the oil filter housing, ensuring the correct fitting of the o-ring and paper gasket. Tighten the three 10mm nuts to 15nm.

8. REPLACE OIL

8.1. Remove the oil filler cap. Place a funnel in the oil fill port. Measure out 900MLs of 10w40 semi-synthetic motorcycle oil.Place the oil into the engine slowly, being careful not to spill any oil.
8.2. After adding the required amount of oil, replace the oil filler cap and check for any leaks on the sump plug. Remove the drain tub and dispose of the oil accordingly.
8.3. When you are confident the oil level is correct and that there are no apparent leaks, run the engine for approximately one minute to circulate the oil and refill the oil filter with clean oil. Start the motorcycle in the usual manner. Remember to run the motorcycle outside or with a ventilation system in place. Be careful of the hot engine and exhaust whilst running. If you find any leaks during the running process, turn the motorcycle off immediately. Trace the source and consult troubleshooting advice.
8.4. After running for one minute, turn the motorcycle off and leave for three minutes to cool. Check the oil by looking at the oil level window making sure the bike is entirely upright. If the oil level is below the centre of the window, remove the oil filler cap and add more oil until the window is 3/4 filled. Refit the oil filler cap and clean off any residue.
8.5. Refit the sump guard by bolting the sump guard plate back on to the sump guard mount. Fit the rubber grommets. Tighten the three 10mm sump guard plate bolts up to 40nm.

9. CLEAN AIR FILTER

9.1. Gain access to the airbox by removing the airbox side cover. Remove the three screws that hold the air filter tube in place. Slide the air filter tube out of the airbox. Remove the air filter from the tube. If you have access to an air compressor with an airline nozzle, use it to blow the air filter clean. If you do not have a compressor, clean thoroughly in warm water, then leave to dry.
9.2. Spray the air filter with air filter oil to the directions supplied by the manufacture of the product you are using. Refit the air filter by placing it back over the tube and slide it back into the airbox. Tighten the three screws to secure the air filter tube back into the airbox. Put the airbox cover back on, making sure that the rubber grommets are secured correctly.

9.3. CHECK SPARK PLUG

9.4. Remove the spark plug cap. Use a 10mm spark plug socket to remove the sparkplug, screwing counter-clockwise. Check the plug tip and side electrode. If they have turned entirely black, it can indicate a problem linked to the spark plug operation. If this is the case, see our troubleshooting advice for guidance.
9.5. Using a feeler gauge, check the spark plug gap, which should be 0.7-0.8mm. If you are not happy with the sparkplug's condition, then replace with a new one.
9.6. Once you are happy with the sparkplug's condition (or have replaced for new), you can refit. Using a 10mm sparkplug socket tighten to 25nm. Once torqued to spec, give it a small nip with a ratchet to check that the crush washer is fully seated.
9.7. Push the sparkplug cap onto the sparkplug, making sure it makes a click.

9.8. CHECK BRAKE SYSTEM

9.9. Visually inspect the brake system, checking the following:
9.10. Front and rear brake pad: visually check the condition and placement of the brake pads. Replace the pads if the wear indicator groove depth is 2mm or less, or if there is any sign of ridging on the brake pads
9.11. Caliper banjo fittings: check the area around the banjo on both front and rear calipers, in particular looking for any brake fluid leaks
9.12. Brake line routing and condition: check the front and rear brake lines for any excessive wear. Check thoroughly around the front mudguard bracket area as there can sometimes be excessive wear at this point if brake line routing is incorrect.

9.13. Front and rear brake discs: check for any warp, sever pitting or uneven wear, checking if the rotors have any thin ridges or dips around the outer edge. Should any ridging feel abnormally deep or high, measure the discs for wear using a vernier. The minimum recommended face thickness is 3mm. Replace brake discs is they are below the recommended thickness, or there is abnormal visible damage.

9.14. Replace any parts where issues or damage are visible.

10. CHECK AND ADJUST CLUTCH LEVER

10.1. Check the free play of the clutch lever by removing the rubber cover on the clutch perch. Check the free play is at 20-25mm as recommended.

10.2. Adjust using the quick adjuster if necessary: crack off the lock ring and turn the adjuster counter-clockwise until you achieve the required amount of free play.

10.3. Slide the rubber boot back over the perch, ensuring that the lock ring is tight.

11. CHECK AND LUBRICATE BRAKE HOSES

11.1. Introduce a small amount of synthetic grease at the lever end of any outer brake and gear cable runs. Thread the inner cable in to force the lubricant through the pipe. Wipe off any excess as the inner-wire emerges.

CAUTION: CAUTION: Ensure to use synthetic lubricants, **not** mineral oil or grease. Mineral products may degrade the outer brake hose or gear cable's plastic lining, impacting effective operation.

12. CHECK REAR WHEEL AND TYRE

12.1. Jack the rear of the motorcycle up on the ramp using the jack point. Spin the wheel looking for any nails or objects that have penetrated the tire wall. While spinning the wheel, check the tire tread and shape condition, looking out for any delamination, odd wear patterns, or sidewall bulges.

12.2. Check the rear tire pressure is at the required 2.2 bar/32 psi. If the pressure is too low, re-pressurise to the required amount. If the tire pressure has dropped dramatically, carry out a puncture test. Consult troubleshooting advice for guidance.

13. CHECK SWINGARM ROLLER BEARINGS

13.1. Jack the rear of the motorcycle up enough that the rear wheel has cleared the ramp surface. Rock the swingarm. Follow our troubleshooting advice if you feel any free play or excessive movement.

13.2. Test the lateral play by gently lifting the rear wheel using a pry bar. If you feel excessive movement or free play this can be a sign of failed swingarm bearings or failed shock bushings. Check and replace the bearings or bushings as required.

14. CHECK AND LUBRICATE CHAIN

14.1. With the wheel jacked in the air, check the tension and lubrication of the chain.

14.2. Slack off the rear wheel axle to release tension from the chain tensioner block.

14.3. Loosen the lock nut off the adjuster by a few centimetres. Rotate the adjusting bolt using the increment marks on the swingarm as a guide. Ensuring the symmetrical movement of both left and right tensioners, check the chain tension. We recommend moving between 4-5mm. Take this measurement from the swingarm to the bottom of the chain. Tighten the adjuster lock nuts and rear axle nut. Fit the rubber axle nut cap securely.

14.4. To lubricate the chain, spin the wheel and spray the chain lube directly onto the chain. Remember to pay attention to the instructions of the product. Make a few passes then wipe the brake disc and tire clean.

14.5. Lower the jack and turn the bike around. Always make sure the bike is secured on the ramp when doing this. With the bike in the reverse position on the ramp, jack the front wheel into the air using the jacking point.

15. CHECK FRONT WHEEL AND TYRE

15.1. With the front wheel jacked up into the air, spin the wheel looking for any nails or objects that may have penetrated the tire wall. While spinning the wheel, check the tire tread and shape condition, looking out for any delamination, odd wear patterns, or sidewall bulges.

15.2. Check the rear tire pressure is at the required 2.2 bar/32 psi. If the pressure is too low, re-pressurise to the required amount. If the tire pressure has dropped dramatically, carry out a puncture test. Consult troubleshooting advice for guidance.

15.3. Lower and remove the jack from underneath the motorcycle.

16. CHECK HEADRACE BEARING

16.1. Whilst the front wheel is in the air, check for any looseness or play in the headrace bearings. Turn from side to side, checking for any notching or stiffness, then leave the wheel turned to your preferred direction until it is on the steering stop. Rock the wheel back and forth. If you can feel or hear a knock, then consult our troubleshooting advice guidance. If the bearings are in good condition, you should have a smooth and consistent side to side movement and no knocking from front to rear.

16.2. Lower and remove the jack from underneath the motorcycle.

17. CHECK TAPPET, VALVE CLEARANCES AND PERFORM COMPRESSION TEST

CAUTION: PLEASE ENSURE YOU HAVE THE CORRECT TOOLS AND KNOWLEDGE BEFORE CARRYING OUT THIS PROCEDURE.

17.1. Excessive valve clearance may result in excessive valve noise, valve damage and reduced power. Firstly remove the spark plug, and valve inspection caps. Then, remove the generator cover cap and rotate the generator rotor counter-clockwise to align the line on the rotor with the centre arrow mark of the hole on the crankcase to set the piston Top Dead Centre (TDC) on the compression stroke. Check by looking inside the sparkplug hole to see if the piston is in the TDC position.

17.2. IMPORTANT: Check valve clearance only when the engine is cold. Check and adjust both the intake and exhaust valve when the piston is at TDC of the compression stroke.

17.3. To check valve clearances, remove the tappet cover inspection

ports. Make sure that both valves are loose and are not under tension from the camshaft. Then, insert the thickness feeler gauges to the valve stem end and the adjusting screw on the rocker arm. If the clearance is off the specification, bring it into the specified range, shown below.

ENGINE	IN	EX
125cc	0.08 - 0.13mm	0.08 - 0.13mm
250cc	0.05mm - 0.07mm	0.09mm - 0.11mm

17.4. Perform a compression test to determine whether the engine is generating adequate pressure needed for combustion. Fit the compression tester to a cylinder as per the instructions of your tool. We recommend using a dab of grease or Vaseline to lubricate the threads and O-ring on the adapter to help prolong O-ring life and give a more precise reading. Hold the throttle completely open then using the starter button, turn the motorcycle over until the needle stops climbing the gauge, usually after 3-4 rotations. Record the result and compare to the specifications provided.

18. DIAGNOSTIC CHECK

18.1. Remove the seat and find the diagnostics port. Remove the waterproof cover and plug in the MUTT diagnostic scanner. Follow the on-screen instructions and run an error code test. Consult our P codes troubleshooting booklet for guidance for any error codes shown. Refit the waterproof diagnostics port cover and refit the side panel if the test is clear.

19. FINAL CHECK & CLEAN

19.1. To complete the service, final lubrication and cleaning are required. Lubricate the following parts:

19.2. **Rider footpegs:** lubricate with white grease or penetrating oil. Wipe off ALL overspray from the exhaust and brake pedal.

19.3. **Passenger footpegs:** lubricate with white grease or penetrating oil as with the rider footpegs. Wipe ALL overspray from the exhaust and brake pedal.

19.4. **Brake pedal pivot bush:** lubricate with white grease or penetrating oil.

19.5. Clean and polish the motorcycle thoroughly before returning it to the customer. We recommended using our MUTT cleaning product range for the best finish possible. Cleaning the bike is also an opportunity to check for any other issues that may need attention. Remember always to use brake cleaner to clean brake discs after using any cleaning products.

19.6. Stamp and sign the service booklet once the service is complete. And you're done - great work!

TROUBLESHOOTING - GENERAL INFORMATION

General maintenance tools and instruments
The following tools are required for diagnosis and checking purposes.

- Multimeter
- Fuel pressure gauge
- MUTT diagnostic scanner

Replacement parts
Always use MUTT specific parts for any maintenance or replacement; otherwise, we cannot guarantee the correct operation of the EFI system.

General EFI system maintenance information
Only a suitably qualified and trained technician should undertake disassembly or removal of EFI system components.

During maintenance, ensure gentle handling of electronic components (the ECU, sensors, etc.) to prevent damage.

Disconnecting and connecting wiring plugs or the ECU while the engine is on or running can cause significant, irreparable damage to components. Always ensure that the bike is off before disconnecting or reconnecting electronic components.

Even while the engine is off, fuel in the system is still pressurised. Due to fuel being under high pressure in the fuel pipe, do not undertake the fuel pipe's disassembly during routine maintenance. If work on the fuel system is necessary, ensure pressure release before any fuel pipe disassembly.

To release fuel pressure, remove the fuel pump relay (or remove the fuel pump plug), start the engine and idle until it stops. After completing maintenance, to bring the fuel back to the correct pressure, switch the ignition on and leave for a short while. Only suitably qualified, trained technicians should conduct disassembly and replacement of the fuel pipe in a well-ventilated area, away from any equipment that may ignite fuel or fuel vapour.

Never operate the fuel pump without fuel, as it will lead to significant damage, including burnout. Always ensure correct connection of positive and negative electrical connections to the fuel pump. Failure to do so will lead to damage.

When removing the fuel pump from the fuel tank, first disconnect the wiring plug to ensure that electrical current cannot ignite fuel.

When inspecting the ignition system, spark plug testing should be conducted **only** if necessary and should be as short as possible. Do not open the throttle valve during testing; otherwise, a large amount of unburned fuel will enter exhaust pipe, damaging the catalytic converter.

If a spark test is required, disconnect the wiring plug for the fuel injector.

Manual regulation of idling is unnecessary, as the EFI system manages this. Note the limit screw for the throttle is set during manufacture, and therefore should not be adjusted in any way.

Ensure complete disconnection of the battery and the ECU before undertaking any welding work on the bike.

ELECTRONIC FUEL INJECTION (EFI) SYSTEM

Temperature sensor
The temperature sensor provides the engine with a temperature signal to ensure correct ignition angle and fuel injection quantity during start-up, idling and normal operation. When the engine temperature is low, the sensor ensures that the fuel quantity increases.

Oxygen sensor
The oxygen sensor sends measurements of the amount of oxygen flowing into the intake. The sensor outputs a voltage to the ECU, which adjusts the fuel-to-air ratio for correct performance. Voltage decreases when oxygen concentration is high and increases when oxygen concentration is low.

Rotation speed sensor (trigger coil, crank position)
The rotation speed sensor generates and sends an ignition signal to the ECU; according to the signal, the ECU calculates and determines injection and ignition time. There is an installation clearance requirement of between 0.4 to 0.9 mm.

Fuel pump assembly
The fuel pump assembly, which sits in the fuel tank, consists of the fuel pump, the pressure regulating valve, and the fuel pump support. By controlling the power supply, the ECU manages the fuel pump action to provide the fuel injector with fuel at high pressure. The pressure regulating valve regulates the fuel pressure from the pump at 2.5MPa, ensuring delivery to the fuel injector at a stable pressure.

Fuel injector
The fuel injector delivers fuel from the fuel pump via gravity and injects pressurized fuel into the air inlet pipe.

The ECU controls the pressure piston, managing delivery of the necessary amount of fuel at optimal timing during engine operation.

TROUBLESHOOTING - FAULT DIAGNOSIS - GENERAL

ENGINE START FAILURE

Before checking the EFI system, first check for other common issues that may prevent engine start:

- Check if the fuel tank is filled with fuel (but is not overfilled)
- Check that the battery is properly charged
- Check if the main fuse (behind right side panel next to the battery) needs replacing
- Check that the starter works when you press the starter button (spark test)

If excessive fuel has been added to the fuel tank, follow the steps outlined below. Ensure the bike is in neutral before conducting.

- Switch on the ignition and allow the fuel pump to prime.
- Keep the throttle fully opened and press the electric start simultaneously for 5 seconds to remove excess fuel.

If all of the above checks show no issues, investigation of the EFI system is required. Engine start failure is generally caused by faults with the following parts:

Rotation speed sensor	Fuel pump assembly	Fuel injector	Ignition coil

Failure of the following parts will result in the engine operating using standard ECU preset operating values:

Air temperature (pressure) sensor	Throttle position sensor	Cylinder wall temperature sensor	Oxygen sensor

Undertake initial diagnosis using the fault indicator light or a MUTT diagnostic scanner. Check fault codes against the fault code table, and perform the required test to check parts, following the disassembly and testing requirements outlined.

If after checking the fault indicator light or diagnostic scanner, no fault can be identified, conduct a fault diagnosis using the steps in the table.

Fault	Possible Cause	Check	Fix
Engine does not start, or starts and immediately cuts out - no fuel from fuel pump.	No fuel	Open ignition switch and check fuel level gauge, or check the fuel level in the tank	Refuel
	Faulty/damaged fuel pump	Check fuel pump	Replace fuel pump
	No voltage to fuel pump	Check fuse and power relay	Replace damaged parts
	Poor contact on fuel pump plug	Check the fuel pump plug contact	Ensure correct contact
Engine does not start, or starts and immediately cuts out - fuel pump and ignition are working	Low fuel pressure and low ignition voltage caused by low battery charge	Use a multimeter to measure the battery voltage	Charge or replace battery
	Excess carbon build up or incorrect clearance of the spark plug	Remove and check spark plug for carbon deposits, and check clearance	Clean spark plug and adjust to correct clearance
	Fuel leak causes low fuel pressure	Check fuel pipe for leaks	Replace the fuel pipe, or tighten the fuel pipe clamp
Unstable idling	Low fuel pressure	Check fuel pressure using fuel pressure guage connected between the fuel pump and the fuel injector	Check for issues that may be causing low fuel pressure
	Air leak at air idle sensor/motor	Spray with leak test liquid while the ehgnine is running	Check and tighten the step motor
	Leak at valve and flange assembly	Spray with leak test liquid while the engine is running	Check and repair assembly
Excessively high idling	Step motor is stuck	Check stepping motor for debris or fault	Remove debris or replace
Insufficient power	Low fuel pressure	Check fuel pressure using fuel pressure guage connected between the fuel pump and the fuel injector	Check for issues that may be causing low fuel pressure

TROUBLESHOOTING - FAULT DIAGNOSIS - FAULT CODES

Fault/Flash Code	Part Name	Part Code	Fault Description	Check	Fault Indication	Parameters	Verification Test
P0107	MANIFOLD ABSOLUTE PRESSURE SENSOR		Sensor voltage input low	Check the voltage input	Voltage is lower than expected		30 seconds after ignition on
P0108	MANIFOLD ABSOLUTE PRESSURE SENSOR		Sensor voltage input high	Check the voltage input	Voltage is higher than expected		30 seconds after ignition on
P0112	AIR TEMPERATURE (PRESSURE) SENSOR	MPT-0341	Sensor voltage input low	Check the voltage input	Voltage is lower than expected	4.75V ~ 5.25V	30 seconds after ignition on
P0113	AIR TEMPERATURE (PRESSURE) SENSOR	MPT-0341	Sensor voltage input high	Check the voltage input	Voltage is higher than expected	4.75V ~ 5.25V	30 seconds after ignition on
P0117	CYLINDER WALL TEMPERATURE SENSOR	MPT-0181	Sensor voltage input low	Check the voltage input	Voltage is lower than expected		30 seconds after ignition on
P0118	CYLINDER WALL TEMPERATURE SENSOR	MPT-0181	Sensor voltage input high	Check the voltage input	Voltage is higher than expected		30 seconds after ignition on
P0122	THROTTLE POSITION SENSOR	MPT-0342	Sensor voltage input low	Check the voltage input	Voltage is lower than expected	4.75V ~ 5.25V	30 seconds after ignition on
P0123	THROTTLE POSITION SENSOR	MPT-0342	Sensor voltage input high	Check the voltage input	Voltage is higher than expected	4.75V ~ 5.25V	30 seconds after ignition on
P0131	OXYGEN SENSOR	MPT-0180	Sensor voltage input low	Check the voltage input	Voltage is lower than expected	12V ~ 16V	Idle for 5 mins
P0132	OXYGEN SENSOR	MPT-0180	Sensor voltage input high	Check the voltage input	Voltage is higher than expected	12V ~ 16V	Idle for 5 mins
P0031	OXYGEN SENSOR (HEATER)	MPT-0180	Sensor voltage input low	Check the voltage input	Voltage is lower than expected	12V ~ 16V	30 seconds after ignition on
P0032	OXYGEN SENSOR (HEATER)	MPT-0180	Sensor voltage input high	Check the voltage input	Voltage is higher than expected	12V ~ 16V	Idle for 5 mins
P0201	FUEL INJECTOR	MPT-0480	Fuel injector circuit open	Measure the resistance between the fuel injector plug pins	Incorrect resitance	12.6Ω ~ 11.4Ω	Press the start button for 5 seconds
P0232	FUEL PUMP RELAY	MPT-0307	High voltage intput	Check the voltage input	Voltage is higher than expected	approx. 12V	30 seconds after ignition on
P0337	CRANKSHAFT POSITION SENSOR		Low voltage output	Check the voltage output	Voltage is lower than expected		Press the start button for 5 seconds
P0351	IGNITION COIL	MPT-0297 / MPT-0296	Incomplete circuit				30 seconds after ignition on
P0505	AIR IDLE SENSOR (IDLE STEP MOTOR)	MPT-0343	Idle control fault				Idle for 5 mins

TROUBLESHOOTING - TESTING

DIAGNOSIS AND TROUBLESHOOTING WITH A FAULT CODE

Faults are generally caused by one of four main problems:

- Plugs not plugged in correctly
- Damage to connecting wires
- Poor contact from corroded plugs.
- Individual components are damaged or non-operational.
- The ECU is damaged or operating incorrectly.

The main methods for addressing these faults are:

- Check all plugs and wires for loose connections, damage, or incorrect fitting.
- Check individual components for faults.
- Check the ECU is operating correctly.

Before undertaking any of individual component checks, it is essential to ensure the primary wiring system is fitted correctly, is not damaged, and operates normally.

For individual component checks, refer to the disassembly, testing and reassembly information on the pages following

OXYGEN SENSOR

Disassembly

- Disconnect the wiring plug, and remove the oxygen sensor

Testing

Check the resistance of the oxygen sensor heating rod:

- Ensure the ignition is off and unplug the oxygen sensor
- Measure the resistance between pin C and D of the oxygen sensor
- Resistance should be between 8Ω and 15Ωat 23°c

If the heating rod resistance of the oxygen sensor is correct, proceed to check the heating voltage. If not, **replace the oxygen sensor**.

Check the heating voltage of the oxygen sensor:

- Ensure the ignition is off and unplug the oxygen sensor
- Start the engine and keep the bike idling.
- After waiting for 20 seconds, use a multimeter to measure the voltage of the pins on the wiring loom
- The voltage should read between 12V to 16V

If the heating voltage is correct, check the output signal voltage. If not, check for wiring loom damage and if necessary, replace.

Check output signal voltage of the oxygen sensor:

- Ensure the ignition is off and the oxygen sensor plug is connected
- Start the engine and keep the bike idling, heating the engine until the cylinder head reaches a temperature of around 60°c
- Switch your multimeter to DC voltage; contact black and red probes with pin A and B of the oxygen sensor separately
- Check the change in voltage – the output voltage should change between 0 and 1V.

If the heating voltage is correct, check for wiring loom damage and if necessary, replace. If the reading is incorrect, then replace the oxygen sensor.

OXYGEN SENSOR

Assembly

- Screw the oxygen sensor into the threaded hole
- Torque to 13Nm – 17Nm
- Reconnect the wiring plug

NOTES: The bend angle of the wires should not be less than R20. Do not disassemble or assemble the sensor after connecting to the main loom

TROUBLESHOOTING - TESTING

AIR TEMPERATURE (PRESSURE) SENSOR

Disassembly

- Disconnect the wiring plug, and remove the air temperature (pressure) sensor.

Testing

Check the input voltage of the air temperature pressure sensor:

- Ensure the ignition is off and unplug the sensor
- Turn on the ignition, but without starting the engine.
- Measure the voltage at the plug pins
- Input voltage should be between 4.75V to 5.25V

If the voltage reads correctly, this indicates that the ECU's power supply is normal and that **sensor replacement is required**. If the reading is incorrect, then check the main wiring loom for issues

Check the resistance of the air temperature pressure sensor:

- Ensure the ignition is off and unplug the sensor
- Measure the resistance between the plug pins using a multimeter
- Expected resistance should be as follows:

Temperature (°c)	Resistance (KΩ)
-10	8.11 ~ 9.71
0	5.21 ~ 6.04
20	2.32 ~ 2.54
40	1.10 ~ 1.21

If the resistance is between expected levels, the sensor is operating correctly; check the wiring loom for issues. If the resistance is incorrect, **replace the sensor**.

Assembly

- Plug and remount the sensor

THROTTLE POSITION SENSOR

Disassembly (Throttle Valve)

- Disconnect the wiring plug, and remove the throttle position sensor

Testing

Check the input voltage of the throttle position sensor:

- Turn the ignition on;
- Measure the voltage between the connecting pins on the main wiring loom.
- The voltage should be between 4.75V to 5.25V

If the voltage reads correctly, this indicates that the ECU's power supply is normal and that **sensor replacement is required**. If the reading is incorrect, then check the main wiring loom for issues

Assembly

- Plug and remount the sensor.

IMPORTANT: Only a suitably trained and qualified technician should replace the throttle position sensor.

CYLINDER WALL TEMPERATURE SENSOR

Disassembly

- Disconnect the wiring plug, and remove the cylinder wall temperature sensor

Testing

Check the resistance of cylinder wall temperature sensor:

- Ensure the ignition is off and unplug the sensor
- Measure the resistance of the plug pins
- Expected resistance should be as follows:

If the voltage reads correctly, this indicates that the ECU's power supply is normal and that **sensor replacement is required**. If the reading is incorrect, then check the main wiring loom for issues

Temperature (°c)	Resistance (KΩ)
-10	58.1 ~ 68.28
0	33.15 ~ 38.29
20	11.99 ~ 13.43
40	4.89 ~ 5.33

If the resistance is at normal levels, this indicates that the sensor is operating correctly. Check the wiring loom for any issues. If the resistance is incorrect, **replace the sensor**.

Assembly

- Plug and remount the sensor

TROUBLESHOOTING - TESTING

FUEL INJECTOR

Disassembly

- Disassemble the fuel inlet pipe.
- Disconnect the wiring plug.
- Remove the 2x holding and 2x fixing pins.
- Slowly screw out the fuel injector.

Testing

Check resistance of fuel injector coil:

- Ensure the ignition is off and unplug the sensor
- Measure the resistance between the fuel injector plug pins using a multimeter
- The resistance should be between 12.6Ω~11.4Ω

If the resistance is between expected levels, check the main wiring loom for any issues. If not, **replace the fuel injector**.

Assembly

Preparation before assembly:

- Do not use the fuel injector if it has been dropped or knocked, as this could lead to damage to the internal components, which will lead to poor performance and other possible issues.
- Check the O-ring and seal are free from damage.
- Always replace the O-ring when reassembling the fuel injector. Sparingly apply a thin layer of paraffin-based mineral oil to the O-ring and the locating surfaces.

Specific assembly steps:

- Align the fuel injector with the air inlet elbow's corresponding position and carefully screw it into the installation hole.
- After inserting the screw into the installation hole and re-installing the fixing, screw the fuel injector into the air inlet pipe's installation hole, using a torque setting of 6 to 10Nm.

FUEL INJECTOR

Assembly

NOTES:

- Be cautious when disassembling or assembling wiring plugs to avoid damage.
- Always assemble or disassemble the fuel injector gently, ensuring surfaces are clean and free of debris.
- Do not use a 12V supply to directly energize the fuel injector for more than 60 seconds, as this will damage the fuel injector.
- Never run the fuel injector without fuel.

IMPORTANT: Fuel injector removal, inspection and replacement should be undertaken by a trained, qualified technician.

FUEL PUMP ASSEMBLY

Disassembly

- Disassemble the fuel pipe that connects to the fuel outlet pipe
- Disconnect the wiring plug
- Remove the 6x holding bolts, then remove the fuel pump

Testing

Check fuel pump voltage:

- Ensure the ignition is off and unplug the fuel injector
- Switch the ignition on
- Measure the voltage supply to the fuel pump at the main wiring loom, ensuring to do this within 3 seconds after turning on the ignition.
- The voltage should read around 12V.

If the voltage is standard, then **replace the fuel pump**. If not, then proceed to the next step.

Check fuel pump lines:

- Ensure the ignition is off
- Pull out the ECU plug, turn the ignition on and within 3 seconds after turning the ignition on check whether the wiring loom's corresponding pins are connected.

	Inspection Point	Connected	Not Connected
a	Fuel pump relay A pin-ECU_J2-9 pin	Circuit is connected. Change the current ECU for one that is known to be correctly operational to check again.	Fuel pump relay circuit open
b	Fuel pump relay B pin-fuel pump A pin		Fuel pump power circuit open
c	Negative pole of power-fuel pump B pin		Fuel pump earth circuit open

(continues on next page)

TROUBLESHOOTING - TESTING

FUEL PUMP ASSEMBLY

Turn off the engine and reconnect the plug. Turn the ignition back on and check for connection based on the following:

	Inspection Point	Voltage is 12V	Voltage is **not** 12V
d	Fuel pump relay B pin-positive pole of power	Fuel pump has rotation sound	Fuel pump relay +12V - fuel pump relay circuit open. Replace fuel pump relay.
e	Fuel pump A(+)B(-)and power voltage		Fuel pump power +12V Fuel pump circuit open. Replace fuel pump.

IMPORTANT: Do not run the fuel pump assembly without fuel.

Assembly

- Bolt into place using the 6x bolts (torque settings - 2.2Nm to 2.8Nm)
- Reconnect the wiring plug
- Re-attach the fuel pipe to the fuel outlet pipe

NOTES: Ensure the locking device is released sufficiently before removing the plug. Hold the plug-in instead of holding the wires. Do not exert excessive force, as this could lead to wire and component damage.

AIR IDLE SENSOR (IDLE STEP MOTOR)

Disassembly

- Disconnect the wiring plug, and remove the sensor

Testing

Check the resistance of the air idle sensor coil:

- Measure the resistance of the sensor pins using a multimeter:
- Resistance should be between 53±5.3Ωfrom 5°c to 27°c

If the resistance is correct, check the main wiring loom for issues. If not, **replace the sensor**.

Assembly

- Plug and remount the sensor

NOTES: When changing this component, do not pull or push it on to the fitting shaft manually, as this will damage the actuator.

IMPORTANT: Do not remove or refit the idle step motor when the power is on.

THROTTLE VALVE

Disassembly

- Loosen the accelerator cable locking nut using a 10mm open spanner.
- Take the lower end of the accelerator cable out of the throttle valve slot, then take the accelerator cable's interior wire out of the throttle valve slot.
- Remove the connecting sleeve clamp of the air inlet elbow using a screwdriver.
- Disconnect the wiring plug

Never adjust the idling regulating screws. Only a suitably trained, qualified technician should undertake any maintenance on the throttle valve.

Assembly

- To reassemble the throttle valve, reverse the disassembly procedure.

NOTES:

- Do not let the throttle valve open and close suddenly as this can damage the throttle valve and its main body.
- Do not disassemble the throttle valve and its idling regulating bolt.
- Do not apply carburettor cleaner to the main body components of the throttle valve.
- Do not use compressed air.
- Do not adjust the stop screw of the throttle valve
- Take care that no debris or moisture enters the throttle valve access when fitting or replacing the throttle valve.
- The plug should be removed and replaced carefully to prevent damage of the wiring pin

TROUBLESHOOTING - TESTING

AIR INLET ELBOW

Disassembly

- Remove connecting sleeve clamp using a screwdriver.
- Disconnect the wiring plug
- Disassemble the holding nut and bolt, and then remove

Assembly

- Install the air inlet pipe by reversing the disassembly sequence.
- Torque for the holding nut and bolt is between 6Nm to 10Nm.

ECU

Disassembly

- Close ignition switch
- Remove the ECU
- Disconnect wiring plug

Assembly

- Before installation, confirm the plug and ECU slot are free of dust, dirt, water, or other debris.
- Gently push the ECU towards the plug. The plug should click into place fully.

IMPORTANT: Ensure that the engine is not running/on before removing the ECU. **DO NOT DISASSEMBLE THE ECU WHILE THE IGNITION IS ON**.

ENVIRONMENTAL STORAGE/OPERATING CONDITIONS

Item	Specification		Parameters
ECU	Storage temperature (°c)		-40 ~ 105
	Working temperature (°c)		-20 ~ 85
	Working voltage (V/DC)		9 ~ 16
CYLINDER WALL TEMPERATURE SENSOR	-10°c	KΩ	58.10 ~ 68.28
	0°c	KΩ	33.15 ~ 8.29
	20°c	KΩ	11.99 ~ 13.43
	40°c	KΩ	4.89 ~ 5.33
	Working temperature (°c)		-40 ~ 200
	Tightening torque (Nm)		12±2
OXYGEN SENSOR	Working voltage (V/DC)		12 ~ 14
	Heating rod resistance (Ω @ 23°c)		8 ~ 15
	Tightening torque (Nm)		13 ~ 17
FUEL INJECTOR	Working temperature (°c)		-30 ~ 130
	Working voltage (V/DC)		14
	Working medium pressure (KPa)		<500
AIR IDLE SENSOR (IDLE STEP MOTOR)	Resistance Ω (5°c ~ 27 °c)		53±5.3