WINCH (Mechanical Winch)

Specifications

Power take-off	Input gear bushing bore	Maximum	20.1 mm	0.791 in.
Drive shaft	Drive shaft runout	Maximum	0.7 mm	0.028 in.
	Spider bearing axial play	Maximum	0.15 mm	0.0059 in.
Winch	Gear case bushing bore	STD:A	90.000 — 90.035 mm	3.5433 — 3.5447 in.
		STD:B	75.000 — 75.030 mm	2.9528 — 2.9539 in.
		Maximum:A	90.3 mm	3.555 in.
		Maximum:B	75.3 mm	2.965 in.
	Gear case cover bushing bore	STD	65.000 — 65.030 mm	2.5591 —2.5602 in.
		Maximum	65.3 mm	2.571 in.
	End bracket bushing bore	STD	75.000 — 75.030 mm	2.9528 — 2.9539 in.
		Maximum	75.2 mm	2.961 in.
	Wire diameter	Minimum	7.5 mm	0.295 in.

Torque Specifications

Part tightened		kg-cm	ft-lb	N·m
P.T.O case x Lock plate		130	9	13
P.T.O case x P.T.O cover		75	65 in.-lb	7.4
P.T.O case x Bearing retainer		195	14	19
P.T.O case x Transmission	(Front side)	170	12	17
	(Other side)	195	14	19
Universal joint flange x Yoke		200	14	20
Universal joint flang x Output shaft		480	35	47
Locking ball bolt		130	9	13
P.T.O drain plug		300	22	29
P.T.O filler plug		300	22	29
No.1 Drive shaft x Sleeve yoke		250	18	25
Pillow block		120	9	12
Front bumper		150	11	15
		250	18	25
		300	22	29
Winch assembly x Body		400	29	39
Winch gear case x Winch base		380	27	37
Winch gear case x Winch roller bracket		380	27	37
Lever shift lock plate x Winch roller bracket		120	9	12
Winch gear case x Worm bearing retainer		250	18	25
Winch gear case x Gear case cover		120	9	12
Gear case cover bolt		115	8	11
Gear case cover x Shift lock lever		120	9	12
Wire lock x Wire lock plate		120	9	12
Winch wire guide		120	9	12
Winch breather plug		200	14	20
Winch drain plug		175	13	17
Winch filler plug		175	13	17

WINCH (Electric Winch)

Specifications

Winch	Drum spacer No.1 thickness		STD	1.4 mm	0.0551 in.
			Minimum	1.0 mm	0.0394 in.
	Drum bushing bore		STD	64.20 mm	2.5276 in.
			Maximum	64.36 mm	2.5339 in.
	Outer clutch bushing bore		STD	12.00 mm	0.4724 in.
			Maximum	12.03 mm	0.4736 in.
	Clutch outer disc thickness		STD	1.60 mm	0.0630 in.
			Minimum	1.50 mm	0.0591 in.
	Clutch inner disc thickness		STD	2.30 mm	0.0906 in.
			Minimum	2.15 mm	0.0846 in.
	Drum spacer No.2 thickness		STD	1.4 mm	0.0551 in.
			Minimum	1.0 mm	0.0394 in.
	Input shaft thrust washer thickness		STD	2.00 mm	0.0787 in.
			Minimum	1.80 mm	0.0709 in.
	Clutch thrust washer thickness		STD	1.25 mm	0.0492 in.
			Minimum	1.00 mm	0.0394 in.
	Output shaft	Bore	STD	12.00 mm	0.4724 in.
			Maximum	12.03 mm	0.4736 in.
		Diameter	STD	28.00 mm	1.1024 in.
			Minimum	27.90 mm	1.0984 in.
	Brake case bushing bore		STD	27.76 mm	1.0929 in.
			Minimum	27.82 mm	1.0953 in.
	Drive shaft diameter		Minimum: A	11.86 mm	0.4669 in.
			Minimum: B	11.70 mm	0.4606 in.
			Minimum: C	11.95 mm	0.4705 in.
	Clutch input shaft diameter		STD	11.95 mm	0.4705 in.
	Gear case cover bushing bore		STD	12.00 mm	0.4724 in.
			Maximum	12.15 mm	0.4783 in.
	Planetary gear No.3 bushing bore		STD	28.00 mm	1.1024 in.
			Maximum	28.05 mm	1.1043 in.
	Wire diameter		Minimum	7.5 mm	0.295 in.
Winch Motor	Commutator	Circle runout	STD	0.05 mm	0.0020 in.
			Maximum	0.2 mm	0.008 in.
		Diameter	STD	43 mm	1.69 in.
			Minimum	41 mm	1.61 in.
		Undercut depth	STD	0.5 — 0.8 mm	0.020 — 0.031 in.
			Minimum	0.2 mm	0.008 in.
	Brush	Length	STD	22 mm	0.87 in.
			Minimum	15 mm	0.59 in.

Torque Specifications

Part tightened	kg-cm	ft-lb	N·m
Front bumper x Body	150	11	15
	250	18	25
	300	22	29
Winch assembly x Body	400	29	39
Winch base x Winch base No.2	330	24	32
	600	43	59
Winch roller bracket x Winch brake case	220	16	22
Winch wire guide	105	8	10
Winch motor x Winch brake case	400	29	39
Winch wire	10	9 in.-lb	1.0
Drain plug	175	13	17
Winch gear case x Winch gear case cover	90	78 in.-lb	8.8
Winch gear case bolt	45	39 in.-lb	4.4
Commutator end frame x Yoke	78	68 in.-lb	7.6
Brush x Brush holder	35	30 in.-lb	3.4
Magnet switch No.1 x Body	85	74 in.-lb	8.3
Magnet switch	95	82 in.-lb	9.3
Magnet switch x Base	55	48 in.-lb	5.4
Wire harness (screw)	18	16 in.-lb	2.0
Wire harness (nut)	95	82 in.-lb	9.3
Magnet switch x Terminal plate	95	82 in.-lb	9.3
Magnet switch No.2 Assembly x Winch motor	50	43 in.-lb	4.9
Magnet switch No.2 Assembly x Switch cover	15	13 in.-lb	1.5